

Water Resources Data Wisconsin Water Year 1990



U.S. GEOLOGICAL SURVEY WATER-DATA REPORT WI-90-1
Prepared in cooperation with the State of Wisconsin
and with other agencies

CALENDAR FOR WATER YEAR 1990

1989

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	6	7				1	2	3	4						1	2
8	9	10	11	12	13	14	5	6	7	8	9	10	11	3	4	5	6	7	8	9
15	16	17	18	19	20	21	12	13	14	15	16	17	18	10	11	12	13	14	15	16
22	23	24	25	26	27	28	19	20	21	22	23	24	25	17	18	19	20	21	22	23
29	30	31					26	27	28	29	30			24	25	26	27	28	29	30
														31						

1990

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	5	6					1	2	3					1	2	3
7	8	9	10	11	12	13	4	5	6	7	8	9	10	4	5	6	7	8	9	10
14	15	16	17	18	19	20	11	12	13	14	15	16	17	11	12	13	14	15	16	17
21	22	23	24	25	26	27	18	19	20	21	22	23	24	18	19	20	21	22	23	24
28	29	30	31				25	26	27	28				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	6	7			1	2	3	4	5						1	2
8	9	10	11	12	13	14	6	7	8	9	10	11	12	3	4	5	6	7	8	9
15	16	17	18	19	20	21	13	14	15	16	17	18	19	10	11	12	13	14	15	16
22	23	24	25	26	27	28	20	21	22	23	24	25	26	17	18	19	20	21	22	23
29	30						27	28	29	30	31			24	25	26	27	28	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	6	7				1	2	3	4							1
8	9	10	11	12	13	14	5	6	7	8	9	10	11	2	3	4	5	6	7	8
15	16	17	18	19	20	21	12	13	14	15	16	17	18	9	10	11	12	13	14	15
22	23	24	25	26	27	28	19	20	21	22	23	24	25	16	17	18	19	20	21	22
29	30	31					26	27	28	29	30	31		23	24	25	26	27	28	29
														30						



Water Resources Data Wisconsin

Water Year 1990

by B.K. Holmstrom, P.A. Kammerer, Jr., and R.M. Erickson



U.S. GEOLOGICAL SURVEY WATER-DATA REPORT WI-90-1
Prepared in cooperation with the State of Wisconsin
and with other agencies

U. S. DEPARTMENT OF THE INTERIOR
MANUEL LUJAN, JR., Secretary

U. S. GEOLOGICAL SURVEY
DALLAS L. PECK, Director

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City of Middleton
City of Beaver Dam
City of Galena, Ill.
City of Thorp
Madison Metropolitan Sewerage District
Milwaukee Metropolitan Sewerage District
Green Bay Metropolitan Sewerage District
City of Hillsboro
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City of Waupun
City of Peshtigo
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Village of Wittenberg
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Lac Courte Oreilles Governing Board
Oneida Indian Tribe of Wisconsin
Town of Delavan
District of Powers Lake
Green Lake Sanitary District
Okauchee Lake Management District
Wind Lake Management District
Hills Lake Management District
Fowler Lake Management District
City of Fond du Lac
Little Muskego Lake District
City of Muskego/Big Muskego Protection and Rehabilitation Lake District
Chippewa County
Wisconsin Department of Justice
Balsam Lake Protection and Rehabilitation District
Town of Delton

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Madison, Wisconsin 53719

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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James W. George, Merrill, northeast
Josef Habale, Madison, southwest

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17. Document Analysis a. Descriptors *Wisconsin, *Hydrologic data, *Surface water, *Ground water, *Water quality, Flow rate, Gaging stations, Lakes, Chemical analyses, Microbiological analyses, Sediment, Water levels b. Identifiers/Open-Ended Terms c. COSATI Field/Group			
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FOR WHICH RECORDS ARE PUBLISHED

VII

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

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WATER RESOURCES DATA - WISCONSIN, 1990

INTRODUCTION

Water-resources data for Wisconsin for the 1990 water year include 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 131 gaging stations and peak stage and discharge from 103 crest-stage stations; stage for 34 lakes and contents for 24 reservoirs; water-quality data from 60 streams and from 38 lakes; and water-level records from 66 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.

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 water 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." 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.

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.

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)274-3535.

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:

Wisconsin Department of Natural Resources, C. D. Besadny, secretary.
Southeastern Wisconsin Regional Planning Commission, K. W. Bauer, executive director.
U.S. Army Corps of Engineers.
Wisconsin Department of Transportation, Lowell B. Jackson, secretary, and S. W. Woods, chief bridge engineer.
The University of Wisconsin-Extension, Geological and Natural History Survey, Juergen Reinhardt, state geologist and director.
Dane County Department of Public Works, Kenneth J. Koscik, director.
Dane County Regional Planning Commission, Charles Montemayor, executive director.
City of Madison, A. E. Milke, city engineer.
City of Middleton, Dan Ramsey, mayor.
City of Beaver Dam, John Omen, mayor.
City of Galena, IL, Frank L. Einsweiler, mayor.
City of Thorp, Dave M. Keating, mayor.
Madison Metropolitan Sewerage District, James L. Nemke, chief engineer and director.
Milwaukee Metropolitan Sewerage District, Harold Cahill, Jr., executive director.
Green Bay Metropolitan Sewerage District, Paul E. Thormodsgard, general manager.
City of Hillsboro, Wayne Peterson, mayor.
Illinois Department of Transportation.
City of Waupun.
City of Peshtigo.
Rock County Parks Department.
Village of Oconomowoc Lake.
Village of Wittenberg.
Menominee Indian Tribe of Wisconsin.
Lac Courte Oreilles Governing Board.
Oneida Indian Tribe of Wisconsin.
Town of Delavan.
District of Powers Lake.
Green Lake Sanitary District.
Okauchee Lake Management District.
Wind Lake Management District.
Hills Lake Management District.
Fowler Lake Management District.
City of Fond du Lac.
Little Muskego Lake District.
City of Muskego/Big Muskego Protection and Rehabilitation Lake District.
Chippewa County.
Wisconsin Department of Justice.
Balsam Lake Protection and Rehabilitation District.
Town of Delton.

The following organizations aided in collecting streamflow records: Wisconsin Valley Improvement Co., Wisconsin-Michigan Power Co., Wisconsin Public Service Corp., Northern States Power Co., Dairyland Power Cooperative, Wisconsin Power and Light Co., Georgia-Pacific Corp., Wisconsin Electric Power Co., Wisconsin River Power Co., Scott Paper Co., and Milwaukee County Park Commission.

Organizations that supplied data are acknowledged in station descriptions.

SUMMARY OF HYDROLOGIC CONDITIONS

Streamflow

The statewide average precipitation of 34.51 inches for the 1990 water year was 110 percent of the normal annual precipitation of 31.22 inches for water years 1951-80. Precipitation ranged from 102 percent of normal in northwest and southeast Wisconsin to 121 percent of normal in east-central Wisconsin (Pamela Naber, UW-Extension, Geological and Natural History Survey, written commun., 1990).

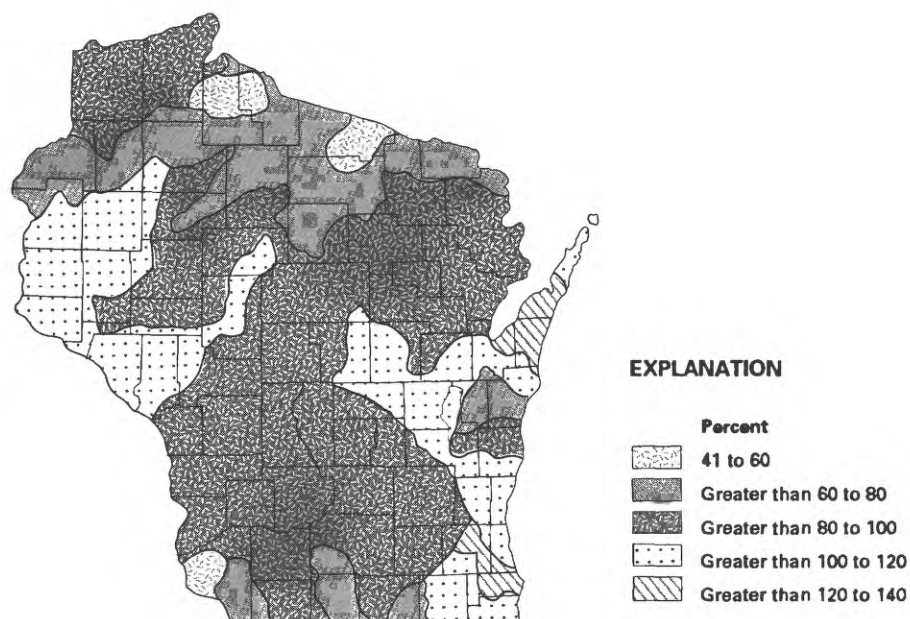


Figure 1. 1990 runoff as percent of long-term average runoff.

Although precipitation was above normal for the entire State, runoff for the 1990 water year was below normal for rivers in a large portion of Wisconsin. This can be attributed to below normal precipitation in most of the State for the last three years. Low base-flow conditions from the 1989 water year continued in the fall and winter months for most streams, and low base flow persisted for many rivers through the end of the 1990 water year. Departure of runoff in the 1990 water year from long-term average runoff is shown in figure 1. The Wisconsin River upstream from Rainbow Reservoir in north-central Wisconsin had the lowest runoff (52 percent of the average annual runoff for 1937-90) and the Kewaunee River in east-central Wisconsin had the highest runoff (129 percent of the average annual runoff for 1967-90).

A comparison of annual discharge for the 1916-90 individual water years at Oconto River near Gillett, Jump River at Sheldon, and Sugar River near Brodhead gaging stations to their long-term annual average discharge for water years 1916-90 is shown in figure 2. Comparisons of monthly and annual discharges for the 1990 water year to average discharges for a 75-year base period at these same three gaging stations are shown in figure 3.

The below-normal base-flow in many Wisconsin rivers in the 1990 water year resulted in annual minimum seven-consecutive day average flows (Q7) with recurrence intervals of five or more years at many gaging stations. The Q7 values and recurrence intervals for stations where the recurrence interval equalled or exceeded five years are listed in the following table:

Station number	Station name	Date	Q7 (ft ³ /s)	Recurrence interval (years)
04024430	Nemadji River near South Superior	Dec. 18-24	31	10
04025500	Bois Brule River near Brule	Aug. 11-17	107	5
04027000	Bad River near Odanah	Aug. 11-17	62	13
04063700	Popple River near Fence	Oct. 1-7	15	16
04066003	Menominee River below Pemene Creek near Pembine	Oct. 1-7	1,010	6
04067500	Menominee River near McAllister	Oct. 2-8	1,090	16
04069500	Peshtigo River at Peshtigo	Oct. 2-8	199	17
04071000	Oconto River near Gillett	Oct. 1-7	197	7
04071858	Pensaukee River near Pensaukee	Dec. 17-23	1.7	6
04077400	Wolf River near Shawano	Oct. 1-7	315	8
04079000	Wolf River at New London	Oct. 1-7	464	11
04084500	Fox River at Rapide Croche dam near Wrightstown	Oct. 2-8	1,100	5
04085427	Manitowoc River at Manitowoc	Oct. 1-7	12	7
04087159	Kinnickinnic River at South 11th Street at Milwaukee	Dec. 24-30	3.0	>15
04087220	Root River near Franklin	Dec. 23-29	2.4	5
05332500	Namekagon River near Trego	Aug. 11-17	250	5
05333500	St. Croix River near Danbury	Aug. 8-14	601	5
05356500	Chippewa River at Bruce	Oct. 18-24	283	15
05360500	Flambeau River near Bruce	Oct. 12-18	349	27
05365500	Chippewa River at Chippewa Falls	Feb. 16-22	694	16
05369500	Chippewa River at Durand	Oct. 17-23	2,110	11

ANNUAL DISCHARGE, IN CUBIC FEET PER SECOND

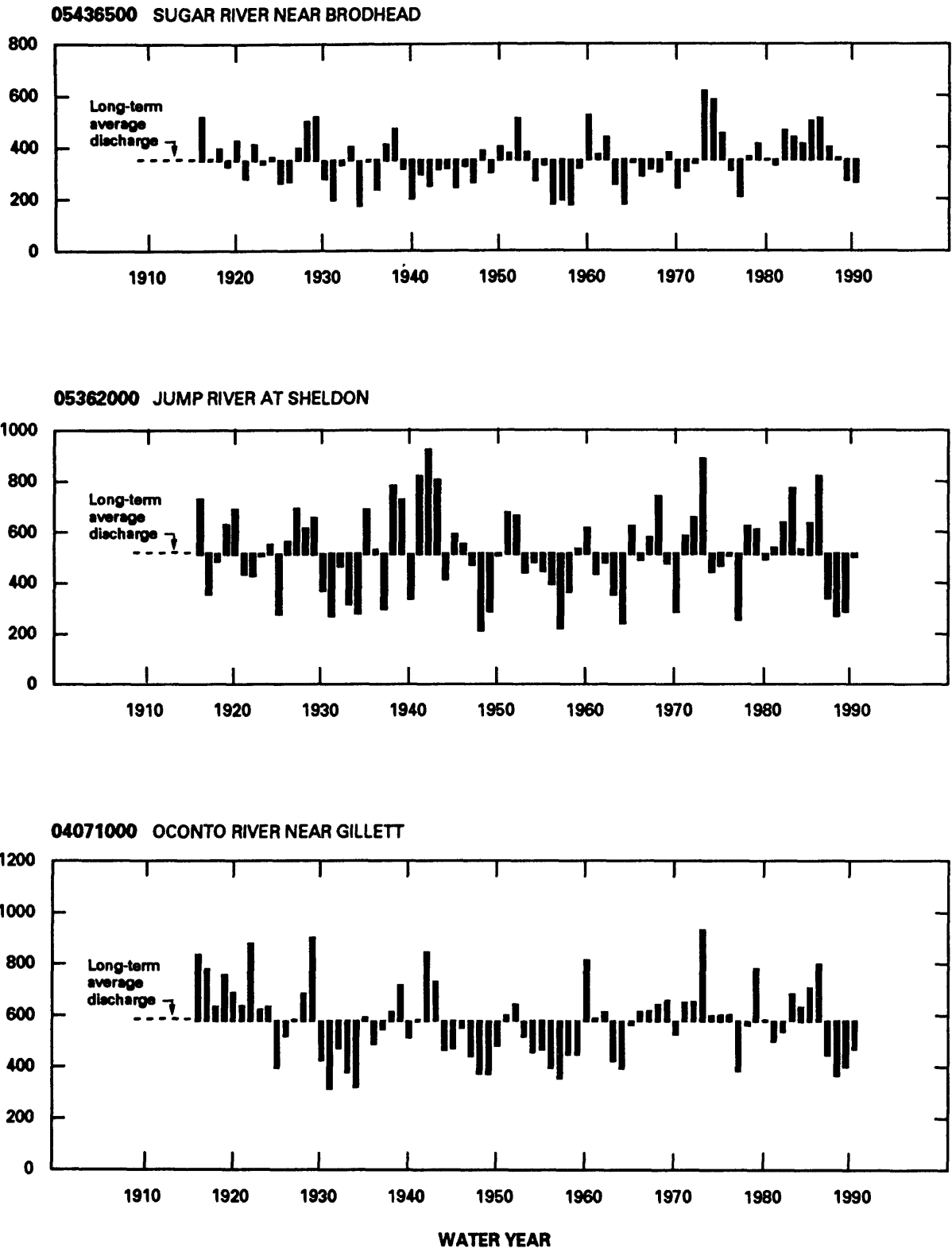


Figure 2. Comparison of annual discharge at representative gaging stations to their long-term average discharge for water years 1916-1990.

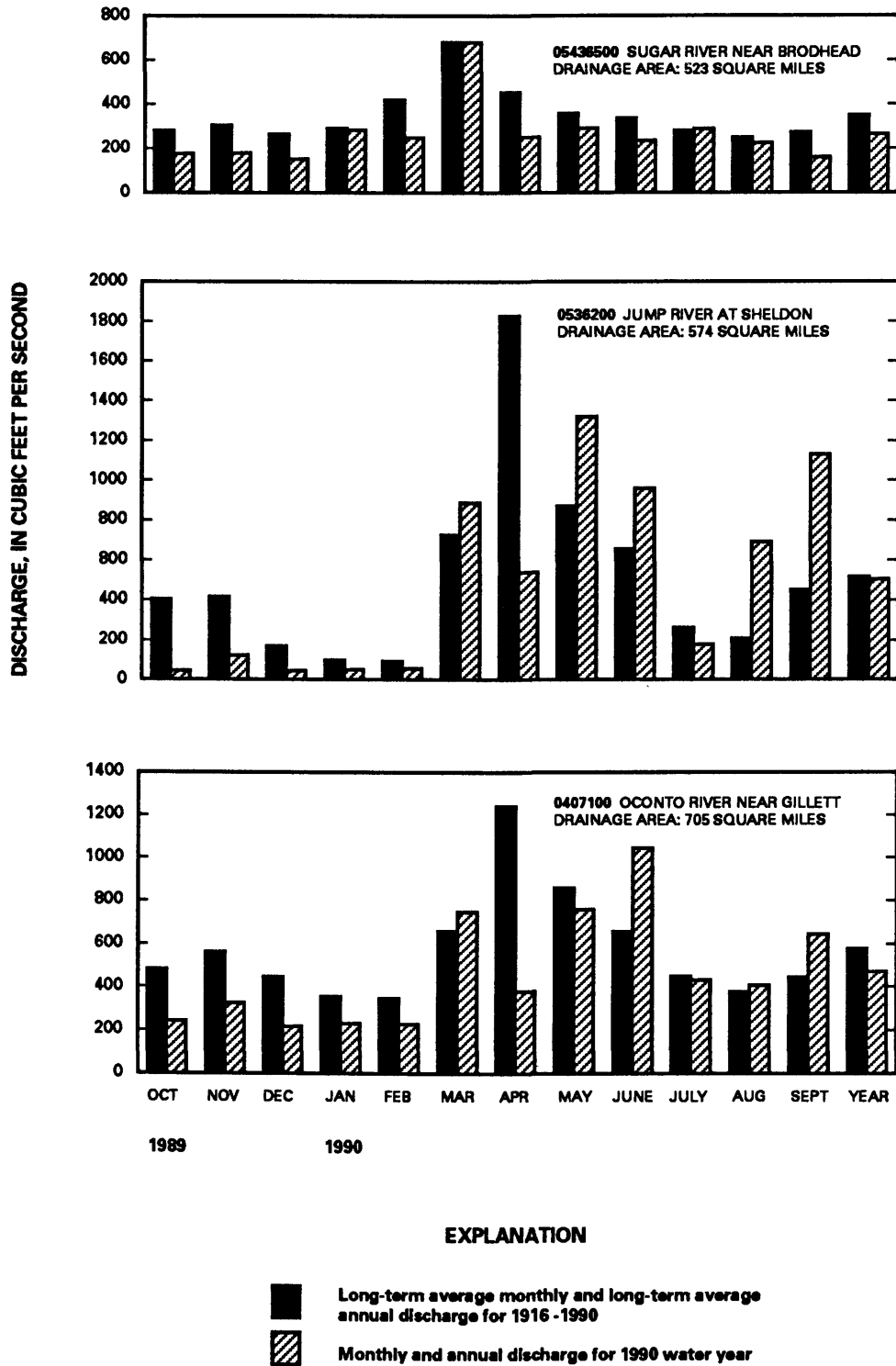


Figure 3. Comparison of discharge at representative gaging stations during 1990 water year with discharge for 1916-1990.

Station number	Station name	Date	Q7 (ft ³ /s)	Recurrence interval (years)
05394500	Prairie River near Merrill	Dec. 18-24	60	11
05395000	Wisconsin River at Merrill	Oct. 22-28	692	26
05398000	Wisconsin River at Rothschild	Dec. 8-14	917	10
05400760	Wisconsin River at Wisconsin Rapids	Oct. 2-8	956	29
05404000	Wisconsin River nr Wisconsin Dells	Dec. 20-26	1,360	48
05407000	Wisconsin River at Muscoda	Oct. 1-7	2,350	23
05413500	Grant River at Burton	Dec. 19-25	46	5
05414000	Platte River near Rockville	Dec. 18-24	22	14
05415000	Galena River at Buncombe	Dec. 10-16	15	9
05427570	Rock River at Indianford	Dec. 27-Jan. 2	111	5
05427948	Pheasant Branch at Middleton	Dec. 21-27	0.18	>16
05432500	Pecatonica River at Darlington	Dec. 18-24	33	15
05433000	East Branch Pecatonica River near Blanchardville	Dec. 18-24	48	10
05434500	Pecatonica River at Martintown	Dec. 18-24	164	14

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Spring runoff from snowmelt and major storms in the period May-September 1990 caused floods with discharges that equalled or exceeded those with a recurrence interval of five years at a number of crest-stage gage and gaging stations.

Precipitation at several stations in northeast Wisconsin exceeded 4 inches (maximum of 5.85 inches recorded at Lakewood) on June 12 and 13, 1990. Peaks recorded at a number of stations in north-central Wisconsin also exceeded 4 inches (maximum of 4.20 inches at Rest Lake) for the June 12 and 13 storm (National Oceanic and Atmospheric Administration, June 1990, p. 7). Peaks recorded at a few crest-stage gages as a result of this storm exceeded recurrence intervals of 100 years.

Precipitation amounts of 4.78 inches in Brillion, 4.90 inches in Green Bay, and 5.00 inches in Sheboygan on June 22 in east-central Wisconsin (National Oceanic and Atmospheric Administration, June 1990, pp. 8, 9) caused damages in Brown, Calumet, and Kewaunee Counties (Wisconsin State Journal, July 1, 1990). The largest losses, \$13.3 million, were the result of flooding along the East River in the Green Bay area (Wisconsin State Journal, June 27, 1990).

A major storm struck southwest and south-central Wisconsin on June 29, 1990. Precipitation amounts for this storm were 5.25 inches at Blanchardville, 5.82 inches at Monroe, and 7.25 inches at Darlington (National Oceanic and Atmospheric Administration, June 1990, p. 9). There were unconfirmed reports of over 8 inches of rain from this storm in some areas in southwestern Wisconsin. The storm caused major flooding in southwest and south-central Wisconsin with crop losses, road and bridge damages, and building damages in Sauk, Grant, Rock, Dane, Crawford, Iowa, and Green Counties in excess of \$13 million (Wisconsin State Journal, July 2, 1990). The largest damages, with estimates in excess of \$8 million, were reported for LaFayette County in southwest Wisconsin (Wisconsin State Journal, July 3, 1990).

Another large storm system moved through the southern half of the State on Aug. 17-20. This system produced four-day precipitation totals of more than 5 inches for stations in west-central (5.34 inches at Ridgeland and 5.65 inches at Fairchild), east-central (5.64 inches at Ripon), southwest (6.77 inches at Dodgeville, 7.17 inches at Blanchardville, 7.47 inches at Darlington), and south-central (6.20 inches at Monroe and 6.67 inches at Lake Mills) Wisconsin (National Oceanic and Atmospheric Administration, August 1990, pp. 8, 9). Thunderstorms on Aug. 17-19 produced 8.72 inches of rain at Tomah in west-central Wisconsin. These storms caused local flooding and flooding along the Lemonweir River which resulted in damages estimated at \$3 to \$5 million in the Tomah area (Wisconsin State Journal, Aug. 21, 1990).

Precipitation totals of 5.28 inches at Foxboro and 5.34 inches at Solon Springs were recorded for a storm system that moved through northwestern Wisconsin on Sept. 5 and 6 (National Oceanic and Atmospheric Administration, September 1990, p. 7). A record peak discharge of 13,700 ft³/s was recorded at Nemadji River near South Superior (station 04024430) as a result of this storm.

Peak discharges with recurrence intervals that equalled or exceeded five years are summarized in the following table:

Station number	Station name	Date	Peak discharge (ft ³ /s)	Recurrence interval (years)
04024430	Nemadji River near South Superior	Sept. 6	13,700	38
04069700	North Branch Oconto River nr Coleman	June 21	306	15
04071700	North Branch Little River nr Coleman	Mar. 21	400	6
04074950	Wolf River at Langlade	June 13	2,010	11
04075200	Evergreen Creek near Langlade	June 13	79	36
04077400	Wolf River near Shawano	June 15	3,150	6
04079700	Spaulding Creek near Big Falls	June 13	72	7
04081900	Sawyer Creek at Oshkosh	Aug. 19	1,650	15
04085200	Kewaunee River near Kewaunee	June 23	8,570	44
04085281	East Twin River at Mishicot	June 24	3,380	17
04085300	Neshota River Tributary near Denmark	June 23	1,040	>100
04085400	Killsnake River near Chilton	June 23	1,060	5
04087100	Honey Creek at Milwaukee	May 10	600	9
04087204	Oak Creek at South Milwaukee	Aug. 18	817	6
04087230	West Branch Root River Canal	May 10	132	5
	Tributary near North Cape			
04087233	Root River Canal near Franklin	May 11	1,080	7
05335380	Bashaw Brook near Shell Lake	Mar. 13	175	5
05341900	Kinnickinnic River Tributary at River Falls	Mar. 13	3,440	11
05364000	Yellow River at Cadott	Mar. 12	11,400	18
05364100	Seth Creek near Cadott	June 13	688	36
05364500	Duncan Creek at Bloomer	June 13	>4,500	Approx. 50
05365700	Goggle-Eye Creek near Thorp	June 13	2,650	34
05366500	Eau Claire River near Fall Creek	June 13	14,300	6
05368000	Hay River at Wheeler	Mar. 14	5,960	5
05369000	Red Cedar River at Menomonie	Mar. 15	15,500	8

Station number	Station name	Date	Peak discharge (ft ³ /s)	Recurrence interval (years)
05370600	Arkansaw Creek Tributary near	June 12	325	12
05371920	Buffalo River near Mondovi	Mar. 14	2,990	8
05379500	Trempealeau River at Dodge	Mar. 15	6,440	5
05380900	Poplar River near Owen	June 13	10,500	13
05386300	Mormon Creek near LaCrosse	June 29	4,200	16
05391260	Gudegast Creek near Starks	May 9	130	48
05394200	Devil Creek near Merrill	June 13	1,600	>100
05395000	Wisconsin River at Merrill	June 13	18,400	5
05395020	Lloyd Creek near Doering	June 13	>1,000	Approx. 100
05395100	Trappe River Tributary near Merrill	June 13	390	17
05397500	Eau Claire River at Kelly	Mar. 14	5,200	6
05397600	Big Sandy Creek near Wausau	June 12 or 13	850	6
05398000	Wisconsin River at Rothschild	June 14	48,300	17
05400760	Wisconsin River at Wisconsin Rapids	June 15	55,900	13
05401800	Yellow River Tributary near Pittsville	Mar. 12	690	13
05403520	Webster Creek at New Lisbon	Aug. 17 or 18	580	46
05404200	Narrows Creek at Loganville	June 29	7,200	>100
05414000	Platte River near Rockville	June 29	19,000	44
05414900	Pats Creek near Elk Grove	June 29	3,100	42
05415000	Galena River at Buncombe	June 29	10,300	11
05425700	Robbins Creek at Columbus	Mar. 13	263	6
05427965	Spring Harbor Storm Sewer at Madison	Mar. 13	547	5
05432300	Rock Branch near Mineral Point	June 29	1,250	44
05432500	Pecatonica River at Darlington	June 29	18,300	57
05433500	Yellowstone River nr Blanchardville	June 29	8,500	65
05434500	Pecatonica River at Martintown	July 1	12,000	12
05543830	Fox River at Waukesha	May 11	1,210	5
05544200	Mukwonago River at Mukwonago	Aug. 23	261	6

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- National Oceanic and Atmospheric Administration, 1990, Climatological data, Wisconsin, June, 1990, Vol. 95, No. 6, 32 p.
- _____, 1990, Climatological data, Wisconsin, August, 1990, Vol. 95, No. 8, 32 p.
- _____, 1990, Climatological data, Wisconsin, September, 1990, Vol. 95, No. 9, 28 p.
- Wisconsin State Journal, Flood damage is \$13.3 million: Madison, Wis., June 27, 1990.
- _____, Storm-damaged counties seek federal aid: Madison, Wis., July 1, 1990.
- _____, Storm damage beginning to add up: Madison, Wis., July 2, 1990.
- _____, LaFayette damage tops \$8 million: Madison, Wis., July 3, 1990.
- _____, Storms prompt flooding, crashes: Madison, Wis., Aug. 21, 1990.

Water Quality

Suspended-sediment and total-phosphorus yields for the 1990 water year at three monitoring stations in southern Wisconsin were near or below average yields. At the Grant River near Burton in southwestern Wisconsin, the suspended-sediment yield for the 1990 water year was 137 tons/mi² (tons per square mile); this is 56 percent of the average annual yield for 1978-90 and 23 percent less than the 1989 yield, which was also less than the 1978-90 average. Below-average runoff in southwestern Wisconsin in 1990 (fig. 1) contributed to the below-average suspended-sediment yield of the Grant River. At Silver Creek near Ripon in south-central Wisconsin, where runoff was also below normal (fig. 1), the suspended-sediment yield was 18.6 tons/mi² (74 percent of the annual average for 1988-90) and the total phosphorus yield was 407 lb/mi² (pounds per square mile) (88 percent of the 1988-90 average). At Delavan Lake Inlet in southeastern Wisconsin, the total-phosphorus yield of 291 lb/mi² for the 1990 water year was equivalent to the 1984-90 annual average yield of 290 lb/mi². Runoff in southeastern Wisconsin was near normal (fig. 1). Suspended-sediment and total-phosphorus yields were not determined at any monitoring stations in central or northern Wisconsin for the 1990 water year.

Dissolved-solids concentration is a measure of the dissolved-mineral content of water. Dissolved-solids concentrations in rivers and streams change with changes in runoff. Concentrations are generally highest during base flow, when streamflow is ground-water runoff, and decrease as base flow is diluted by runoff from snowmelt and precipitation.

Dissolved-solids concentrations measured at selected National Stream-Quality Accounting Network (NASQAN) stations and a Hydrologic Benchmark Network (HBMN) station during the 1990 water year reflect runoff conditions in the State. Dissolved-solids concentrations measured at these stations during the water year are compared to monthly median concentrations for the period of record in figure 4.

Dissolved-solids concentrations measured in October-January of the 1990 water year at the four sites shown in figure 4 were equal to or greater than corresponding monthly median concentrations due to below normal base flow and little surface runoff during the period. Runoff increased through the water year, and dissolved-solids concentrations for March-September of the 1990 water year were generally equal to or less than monthly median concentrations. The lowest dissolved-solids concentrations relative to the monthly median concentrations generally occurred during periods of runoff from snowmelt or rainfall.

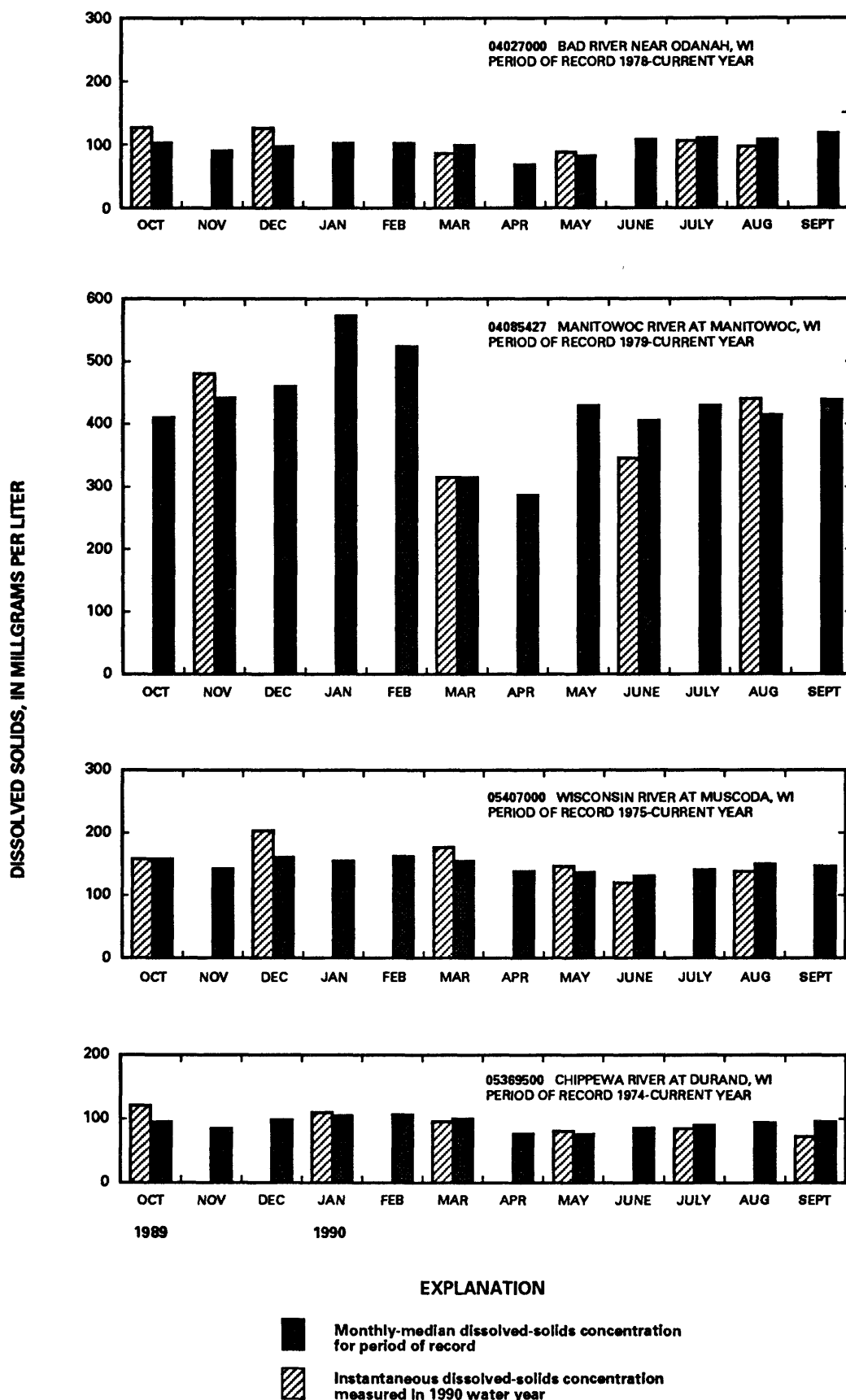


Figure 4. Comparison of dissolved-solids concentrations in streams during 1990 water year with monthly median.

Ground-Water Levels

Maps showing the seasonal ground-water trends for the year (fig. 5) are based on water-level data from 30 shallow-aquifer wells, each having at least 15 years of record. Water-level measurements from each well are grouped so that FALL consists of measurements from September through November 1989; WINTER consists of measurements from December 1989 through February 1990; SPRING consists of measurements from March through May 1990; and SUMMER consists of measurements from June through August 1990. Mean seasonal water levels for these periods were compared to the long-term mean seasonal water levels. The 1990 water level was considered normal if it was within one-half of the standard deviation on the long-term mean.

Shallow ground-water levels during the FALL, WINTER, and SPRING were generally below normal except for narrow areas trending from Waukesha to Burnett Counties and Dodge to Brown Counties. Water levels in about two-thirds of the 30 shallow-aquifer wells were below normal during these seasons. During the SUMMER season, water levels recovered to normal or above with only about one-third of the wells below normal.

Throughout the year, water levels were below normal in extreme southwestern Wisconsin and in north-central and northwestern Wisconsin except in the areas of Burnett, Polk, and Barron Counties. Water levels in all of southwestern Wisconsin were below normal until SUMMER when water levels recovered to normal except in Grant and Iowa Counties. Water levels in Manitowoc County were below normal throughout the year and in Kewaunee County for most of the year. Above normal water levels occurred throughout most of the year in Florence, Clark, Fond du Lac, and Kenosha Counties.

SPECIAL NETWORKS AND PROGRAMS

Hydrologic Bench-Mark Program provides data from river basins where hydrologic conditions are relatively unaffected by man's activities and are expected to remain unaffected within the foreseeable future.

National Stream-Quality Accounting Network was designed by the U.S. Geological Survey to meet information needs of agencies or groups involved in national or regional water-quality planning and management. Both accounting and broad monitoring aspects have been incorporated in the network design. The network is divided into the river-basin accounting units designated by the Office of Water Data Coordination in consultation with the Water Resources Council. Primary objectives of the network are: (1) to assess the areal variability of water-quality conditions, nationwide, on an annual basis; and (2) to assess long-term changes in stream quality.

Radiochemical Surveillance Network is a network of water-quality stations, representing major drainage basins in the conterminous United States, where samples are collected regularly for radioisotope analysis.

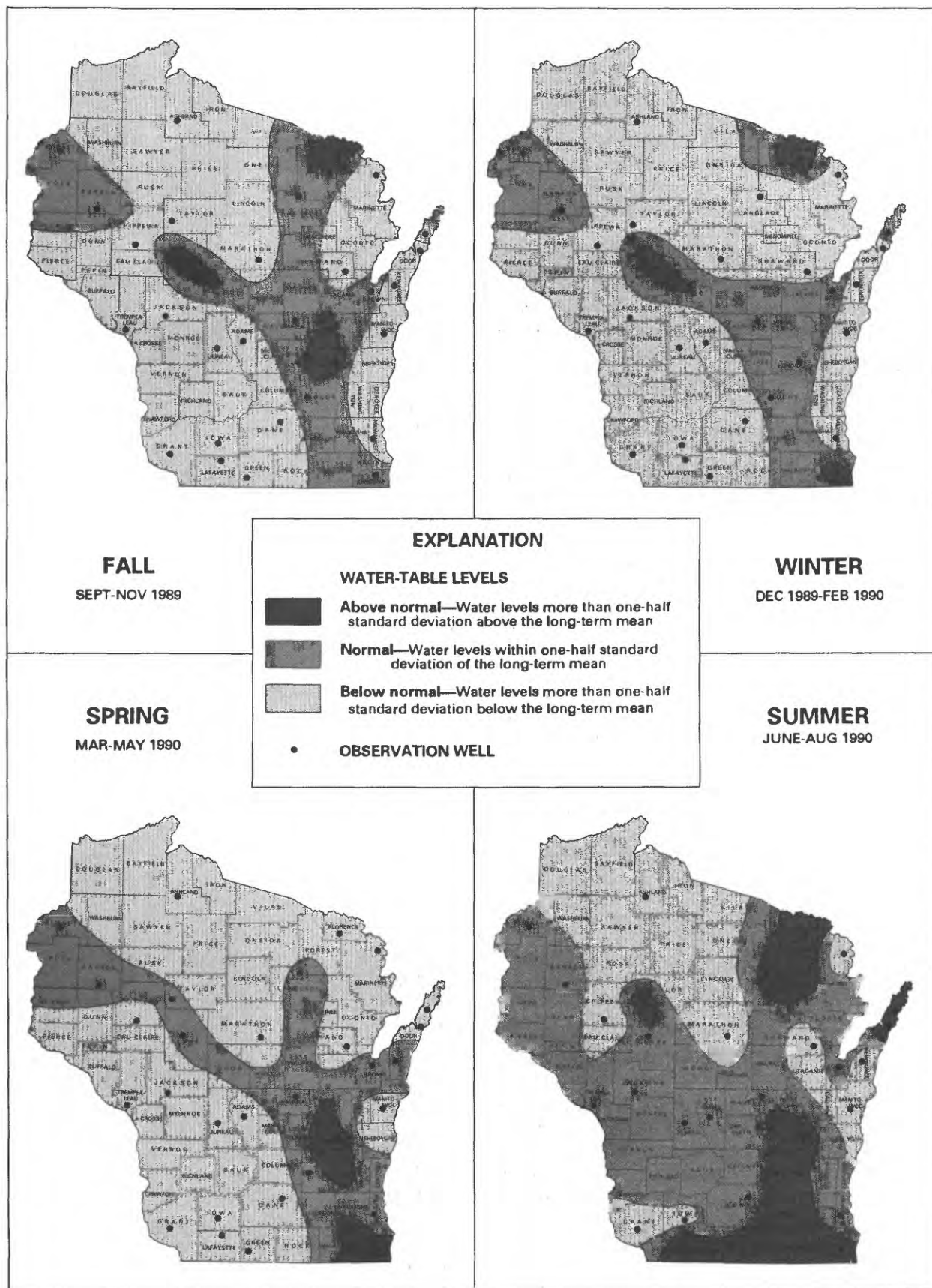


Figure 5. Relation of seasonal water-table levels to long-term means.

EXPLANATION OF THE RECORDS

The surface-water and ground-water records published in this report are from the 1990 water year that began October 1, 1989, and ended September 30, 1990. 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, water-quality data for precipitation and surface and ground water, and ground-water-level data. Figure 6 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 7.

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

Each data station, whether streamsite or well, in this report 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 for the station 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 indention in the "List of Stations" in the front of this report. Each indention represents one rank. This downstream order and system of indention 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 commonly are published for such stations, they are referred to as "daily stations." By contrast, partial records are obtained by 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. These types of stations are each 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, or from a tape punched at selected intervals on a water-stage recorder. 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. 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

The records published for each gaging station consist of two parts, the manuscript or station description and the data table for the current water year. The manuscript provides, under various headings, descriptive information such as station location, period of record, average discharge, historical extremes, 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. These headings may include all or some of the following:

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 National Geodetic Vertical Datum of 1929 (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 estimated record, the paragraph will begin with this information presented as the first entry. 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, possibly, other pertinent items.

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

AVERAGE DISCHARGE.--The discharge value given is the arithmetic mean of the water-year mean discharges. It is computed only for stations having at least 5 water years of complete record, and only water years of complete record are included in the computation. It is not computed for stations where diversions, storage, or other water-use practices cause the value to be meaningless. If water developments significantly altering flow at a station are put into use after the station has been in operation for a period of years, a new average is computed as soon as 5 water years of record have accumulated following the development.

EXTREMES FOR PERIOD OF RECORD.--Extremes may include maximum and minimum stages and maximum and minimum discharges. Unless otherwise qualified, the maximum discharge is the instantaneous maximum corresponding to the highest stage that occurred. The highest stage may have been obtained from a graphic or digital recorder, a crest-stage gage, or by direct observation of a nonrecording gage. If the maximum stage did not occur on the same day as the maximum discharge, it is given separately. Similarly, the minimum is the instantaneous minimum discharge, unless otherwise qualified, and was determined and is reported in the same manner as the maximum.

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.

EXTREMES FOR CURRENT YEAR.--Extremes given here are similar to those for the period of record, except the peak discharge listing may include secondary peaks. For stations meeting certain criteria, all peak discharges and stages occurring during the water year and greater than a selected base discharge are presented under this heading. The peaks greater than the base discharge, excluding the highest one, are referred to as secondary peaks. Peak discharges are not published for canals, ditches, drains, or streams for which the peaks are subject to substantial control by man. The time of occurrence of peaks is expressed in 24-hour local standard time. For example, 12:30 a.m. is 0030 and 1:30 p.m. is 1330. The minimum for the current water year appears below the table of peak data.

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.

RATING TABLE.--Skeleton rating tables allow an approximation of daily gage heights from daily discharges. The tables also indicate the range in stage resulting from any given range in discharge.

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

The daily table for stream-gaging stations gives mean discharge for each day and is followed by monthly and yearly 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 also is usually 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. The figures shown in the yearly summary below the monthly summary are the appropriate discharges for the calendar and water years.

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 ft³/s; to the nearest tenth between 1.0 and 10 ft³/s; to the nearest whole number between 10 and 1,000 ft³/s; and to 3 significant figures for more than 1,000 ft³/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 stream-gaging 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. Water-quality partial-record stations are sites where more limited water-quality data are collected. These data include water temperature and specific conductance measurements made at gaging station visits and other reconnaissance data collected for special purposes. Water-quality data for water-quality partial-record stations appear together 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 given in "U.S. Geological Survey Techniques of Water-Resources Investigations," listed in "Publications on techniques of water-resources investigations."

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 continuous monitors, daily maximum, minimum, and mean values for each constituent or property are computed and reported herein. Continuous records (usually hourly values) 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 method (time-discharge weighted average) given in "U.S. Geological Survey Techniques of Water-Resources Investigations" listed in "Publications on techniques of water-resources investigations." 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.

Concentration values used in discharge computations are given in separate tables.

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 are given in "U.S. Geological Survey Techniques of Water-Resources Investigations" listed in "Publications on techniques of water-resources investigations."

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 differ among stations.

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). These codes may be included in some of the water-quality tables herein. 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; 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 of 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)

Records of Ground-Water Levels

Water-level data for 66 wells are given in this report. The location of these wells is shown on figure 7. 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 66 wells are presented in this report, water-level data are currently being collected for a total of 213 wells in Wisconsin through a cooperative program with the Wisconsin Geological and Natural History Survey (WG&NHS). 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. 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 nine 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), an alphanumeric number, derived from the county, township-range location of the well, and a sequential number for the county.

Water-level records are obtained from direct measurements with a steel tape or from the graph or punched tape of a water-stage 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 the National Geodetic Vertical Datum of 1929 and the height 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.

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) National Geodetic Vertical Datum of 1929 (NGVD of 1929); 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 OF WATSTORE DATA

The National WATER Data STorage and REtrieval System (WATSTORE) was established to process and store water data collected through the activities of the U.S. Geological Survey and to provide more effective and efficient means of releasing the data to the public. The system is operated and maintained on the central computer facilities of the Survey at its National Center in Reston, Virginia.

WATSTORE can provide a variety of useful products ranging from simple data tables to complex statistical analyses. A minimal fee, plus the actual computer cost incurred in producing a desired product, is charged to the requester. Information about the availability of specific types of data, the acquisition of data or products, and user charges can be obtained locally from the District Office.

General inquiries about WATSTORE may be directed to:

Chief Hydrologist
U.S. Geological Survey
437 National Center
Reston, Virginia 22092

Telephone: 703/648-5686

DEFINITION OF TERMS

Terms used in this report with reference to streamflow, water-quality, and other hydrologic data are defined below. For conversion of inch-pound units and International System (SI) units see the table on the inside of the back cover.

Acre-foot (acre-ft) is the quantity of water required to cover 1 acre to a depth of 1 foot. It is the equivalent of 43,560 cubic feet, 325,851 gallons, or 1,233 cubic meters.

Aquifer is a geologic formation, group of formations, or part of a formation that contains sufficient saturated permeable material to yield significant quantities of water to wells and springs.

Bacteria are microscopic, unicellular organisms, typically spherical, rod-like, or spiral and threadlike in shape, and often clumped into colonies. Some bacteria cause disease; others perform essential roles in the natural recycling of materials such as decomposing organic matter into forms available for reuse by plants.

Fecal coliform bacteria are present in the intestines of warmblooded animals and are used to determine the sanitary quality of water. They are defined as those organisms that produce blue colonies within 24 hours when incubated at $44.5^{\circ}\text{C} \pm 0.2^{\circ}$ on M-FC culture medium. Their concentrations are expressed as number of colonies per 100 ml of sample.

Fecal streptococci bacteria are also found in the intestines of warmblooded animals. Their presence in water is used to verify fecal pollution. They are characterized as gram-positive, spherical bacteria capable of growth in brain-heart infusion broth. They are defined as those organisms that produce red or pink colonies within 48 hours at $35^{\circ} \pm 1.0^{\circ}$ on KF-streptococcus culture medium. Their concentrations are expressed as number of colonies per 100 ml of sample.

Bed material is the unconsolidated material at the bottom of a streambed, lake, pond, reservoir, or estuary.

Biochemical oxygen demand (BOD) measures the quantity of dissolved oxygen, in milligrams per liter, used by microorganisms for the decomposition of organic matter.

Cfs-day is the volume of water produced by a flow of 1 cubic foot per second for 24 hours. It is the equivalent of 86,400 cubic feet, 1.9835 acre-feet, 646,000 gallons, or 2,447 cubic meters.

Control is a feature downstream from a gage that determines the stage-discharge relation at the gage. The control may be a natural constriction of the channel, an artificial structure, or a uniform cross section over a long reach of the channel.

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

Cubic foot per second (ft³/s) represents a volume of 1 cubic foot of water passing a given point during 1 second and is the equivalent of 7.48 gallons per second, 448.8 gallons per minute, or 0.02832 cubic meters per second.

Discharge is the volume of fluid or mass of suspended sediment passing a given point in a given period of time.

Mean discharge (MEAN) is the arithmetic average of all daily mean discharges for a specific period of time.

Instantaneous discharge is the discharge at a particular time.

Dissolved is an operational definition used by Federal and State agencies collecting water data as that material in a water sample which passes through a 0.45 μ m membrane filter. Determinations of "dissolved" constituents are made on subsamples of the filtrate.

Drainage area of a stream at a specified location is measured in a horizontal plane and constitutes an area enclosed by a topographic divide from which surface runoff above the specified point drains by gravity into the stream. Values of the drainage areas given herein include closed basins and noncontributing areas within the basin, as noted.

Gage height (G.H.) is the water-surface elevation referred to some arbitrary gage datum. Gage height is often used interchangeably with the general term "stage", although gage height is more appropriate when referring to a reading on a gage. See also Lake stage.

Gaging station is a particular site on a stream or lake where systematic hydrologic data are collected.

Geologic unit is a geologic formation or group of formations; in this report, the term is used in the same sense as "aquifer" and refers to the geologic formation(s) open to the uncased or screened portion of a well.

Hardness is a physical-chemical characteristic of water that is attributable principally to the presence of calcium and magnesium and is expressed as calcium carbonate (CaCO₃). Hardness is commonly recognized by the increased quantity of soap required to produce lather.

Hydrologic unit designates part or all of a surface-drainage basin delineated by the Office of Water Data Coordination; each hydrologic unit is identified by an 8-digit number.

Lake stage is the elevation of the lake's water surface referred to some arbitrary gage datum.

Micrograms per gram ($\mu\text{g/g}$) indicates the concentration of a chemical constituent as the mass (micrograms) of that constituent per unit mass (gram) of sediment.

Micrograms per kilogram ($\mu\text{g/kg}$) indicates the concentration of a chemical constituent as mass (micrograms) of that constituent per unit mass (kilogram) of sediment.

Micrograms per liter ($\mu\text{g/L}$) indicates the concentration of a chemical constituent as the mass (micrograms) of that constituent per unit volume (liter) of water. One thousand micrograms per liter is equivalent to 1 milligram per liter.

Milligrams per liter (mg/L) indicates the concentration of a chemical constituent or suspended sediment as the mass (milligrams) per unit volume (liter) of water.

National Geodetic Vertical Datum of 1929 (NGVD) is a geodetic datum derived from a general adjustment of the first order level nets of both the United States and Canada. It was formerly called "Sea Level Datum of 1929" or "mean sea level" in this series of reports. Although the datum was derived from the average sea level over a period of many years at 26 tide stations along the Atlantic, Gulf of Mexico, and Pacific Coasts, it does not necessarily represent mean sea level at any particular place.

Partial-record station is a site for the systematic collection of limited streamflow or water-quality data over a period of years.

Particle size is measured as the diameter, in millimeters (mm), of suspended sediment and bed material determined by sieve or sedimentation methods. Sedimentation methods (pipet, bottom-withdrawal tube, visual-accumulation tube) measure the fall diameter of particles in distilled water (chemically dispersed) or native water (surface water at the time and point of sampling).

Particle-size classification for this report is based on recommendations of the American Geophysical Union Subcommittee on Sediment Terminology. The classification is as follows:

<u>Classification</u>	<u>Size (mm)</u>	<u>Method of analysis</u>
Clay.....	0.00024 - 0.004	Sedimentation.
Silt.....	.004 - .062	Sedimentation.
Sand.....	.062 - 2.0	Sedimentation or sieve.
Gravel.....	2.0 - 64.0	Sieve.

Pesticides are chemical compounds used to control undesirable plants and animals. They include insecticides, miticides, fungicides, herbicides, and rodenticides. Insecticides and herbicides control insects and plants respectively and are the two categories reported.

Picocurie (PCi) is one trillionth (1×10^{-12}) of a curie (Ci). A curie is the amount of radioactivity that yields 3.7×10^{10} disintegrations per second. A picocurie yields 2.22 disintegrations per minute.

Polychlorinated biphenyls (PCB's) are industrial chemicals composed of biphenyl compounds containing various amounts of chlorine. Their chemical structure is similar to the organochlorine insecticides.

Polychlorinated naphthalenes (PCN's) are industrial chemicals composed of naphthalene compounds containing various amounts of chlorine. Their chemical structure is similar to the organochlorine insecticides.

Recoverable from bottom material is the amount of a given constituent that is in solution after a sample of bottom material has been digested by an acid or mixture of acids that results in dissolution of only readily soluble substances. Complete dissolution of all bottom material usually is not achieved by the digestion treatment and thus the determination represents less than the total amount 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.

Runoff in inches (IN, in) indicates the depth of water that would cover a drainage area if all runoff for a given time period were uniformly distributed.

Secchi disk is a black and white plate, 20-25 cm in diameter, which is lowered into a lake on a calibrated line until it is no longer visible. The depth, in meters, at which the disk just disappears is reported as a measure of transparency.

Sediment originates mostly from disintegrated rocks and is transported by, suspended in, and deposited by water; it includes chemical and biochemical precipitates and decomposed organic material such as humus. Topography, geology, soil type, land cover, land use, quantity and intensity of precipitation, and other environmental factors influence the quantity, characteristics, and cause of sediment in streams.

Suspended sediment is sediment maintained in suspension by turbulent currents or as a colloid.

Suspended-sediment discharge is the quantity of suspended sediment passing through a stream cross section in a unit of time. It is computed by multiplying water discharge times suspended-sediment concentration times 0.0027.

Suspended-sediment concentration is the discharge-weighted concentration of suspended sediment in a sample zone (from the water surface to approximately 0.3 ft above the streambed) and is expressed as milligrams of dry sediment per liter of water-sediment mixture (mg/L).

Mean concentration is the time-weighted concentration of suspended sediment passing through a stream cross section during a 24-hour period.

Sodium-adsorption ratio (SAR) expresses the relative activity of sodium ions in exchange reactions with soil.

Solute is any substance dissolved in water.

Specific conductance is a measure of the ability of water to conduct electrical current and is expressed in microsiemens per centimeter at 25°C. It is related to the number and specific types of ions in solution, and is useful for approximating the concentration of dissolved solids in the water. Commonly, the concentration of dissolved solids mg/L is about 65 percent of the specific conductance.

Stage-discharge relation correlates height (stage) and the volume of water flowing in a channel per unit of time.

Streamflow uniquely describes discharge in the natural channel of a surface stream course as opposed to the term "discharge", which can be applied to the flow of a canal. Unlike the term "runoff", streamflow may be applied to discharge whether it is affected by diversion or regulation or not.

Suspended, recoverable is the amount of a given constituent that is in solution after the part of a water-sediment sample retained on a 0.45 μm membrane filter has been digested by dilute acid that results in dissolution of only readily soluble substances. Complete dissolution of all the particulate matter usually is not achieved by the digestion treatment and thus the determination represents something less than the "total" amount of the constituent present 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.

Determinations of "suspended, recoverable" constituents are made either by analyzing portions of the material collected on the filter or, more commonly, by difference, based on determinations of dissolved and total recoverable concentrations of the constituent.

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 μm membrane filter. 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 determine when the results should be reported as "suspended, total."

Determinations of "suspended, total" constituents are made either by analyzing portions of the material collected on the filter or, more commonly, by difference, based on determinations of dissolved and total recoverable concentrations of the constituent.

Tons per acre-foot indicates the dry weight of a constituent in 1 acre-foot of water. It is computed by multiplying the concentration in milligrams per liter by 0.00136.

Tons per day is the measure of a substance that passes a stream section in solution or suspension during a 24-hour period. It is computed by multiplying the concentration of the substance (mg/L) by 0.0027 times the discharge of the stream (cfs).

Total is the total amount of a given constituent in a water-sediment 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." The term indicates the sample consists of a water-sediment mixture and that the analytical method determines all of the constituent in the sample.

Total, recoverable is the amount of a given constituent that is in solution after a water-sediment sample has been digested by dilute acid resulting in dissolution of only readily soluble substances. Complete dissolution of all particulate matter usually is not achieved, thus the determination represents something less than the "total" amount of the constituent present in the dissolved and suspended phases of 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.

Total in bottom material is the total 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."

WDR is the abbreviation for "Water-Data Report" used in the summary REVISIONS paragraph to indicate previously published State annual basic data report (WRD was used an abbreviation for "Water-Resources Data" in reports published prior to 1982.

WSP is the abbreviation for "Water-Supply Paper" used in references to previously published reports.

The U.S. Geological Survey publishes a series of manuals describing procedures for planning and conducting specialized work in water-resources investigations. The material 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. The chapter, the unit of publication, is limited to a narrow field of subject matter. This format permits flexibility in revision and publication as the need arises.

The reports listed below are for sale by the U.S. Geological Survey, Books and Open-File Reports Section, Federal Center, Box 25425, Denver, Colorado 80225 (authorized agent of the Superintendent of Documents, Government Printing Office). Prepayment is required. Remittance should be sent by check or money order payable to the U.S. Geological Survey. Prices are not included because they are subject to change. Current prices can be obtained by writing to the above address. When ordering or inquiring about prices for any of these publications, please give the title, book number, chapter number, and "U.S. Geological Survey Techniques of Water-Resources Investigations."

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- 3-A6. *General procedure for gaging streams*, by R. W. Carter and Jacob Davidian: USGS--TWRI Book 3, Chapter A6. 1968. 13 pages.
- 3-A7. *Stage measurements at gaging stations*, by T. J. Buchanan and W. P. Somers: USGS--TWRI Book 3, Chapter A7. 1968. 28 pages.
- 3-A8. *Discharge measurements at gaging stations*, by T. J. Buchanan and W. P. Somers: USGS--TWRI Book 3, Chapter A8. 1969. 65 pages.
- 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, Chapter A9. 1989. 27 pages.
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- 8-A2. *Installation and service manual for U.S. Geological Survey manometers*, by J. D. Craig: USGS--TWRI Book 8, Chapter A2. 1983. 57 pages.
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ST. LAWRENCE RIVER BASIN RECORDS

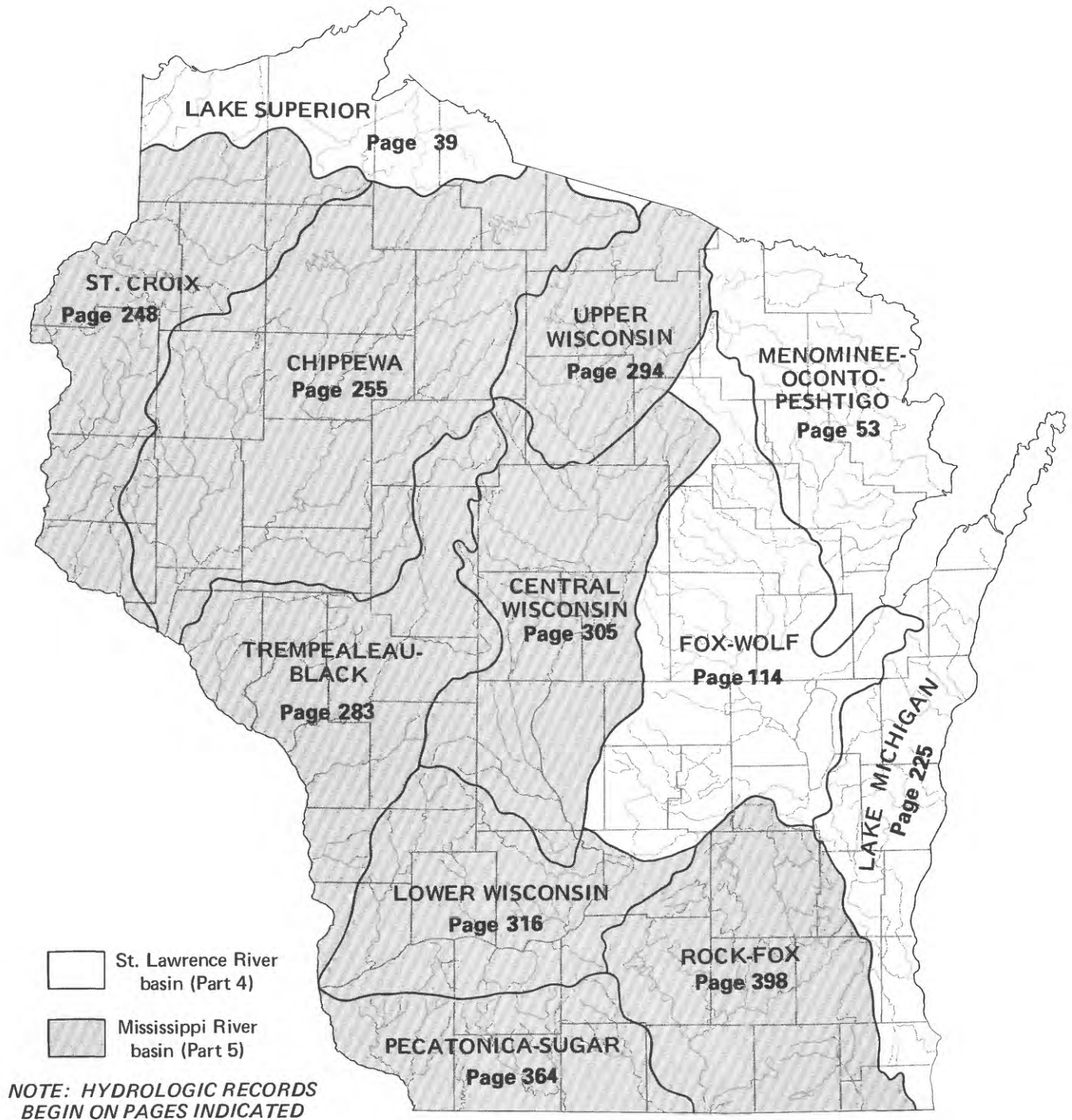


Figure 6. Major surface-water drainage basins and index of hydrologic records.

STREAMS TRIBUTARY TO LAKE SUPERIOR

04024430 NEMADJI RIVER NEAR SOUTH SUPERIOR, WI

LOCATION.--Lat 46°38'00", long 92°05'38", in SW 1/4 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 mi².

PERIOD OF RECORD.--December 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 National Geodetic Vertical Datum of 1929.

REMARKS.--Estimated daily discharges: Ice period listed in rating table below. Records good except for estimated daily discharges, which are fair.

AVERAGE DISCHARGE.--16 years, 399 ft³/s, 12.90 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,700 ft³/s, Sept. 6, 1990, gage height, 25.97 ft, from rating curve extended above 9,000 ft³/s; minimum daily, 16 ft³/s, Dec. 8, 1976.

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

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,500 ft³/s and maximum (*):

DATE	TIME	DISCHARGE (ft ³ /s)	GAGE HEIGHT (ft)	DATE	TIME	DISCHARGE (ft ³ /s)	GAGE HEIGHT (ft)
Mar. 16	1100	(a)3,600	(b)19.55	Sept. 6	2000	*13,700	*25.97
Apr. 30	1300	3,800	17.78				
(a) Estimated daily mean.							
(b) Ice jam.							

Minimum daily, 31 ft³/s, Dec. 20-23.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Shifting-control method used Oct. 17-29 and Sept. 19-30; stage-discharge relation affected by ice Nov. 14 to Apr. 18.)

3.6	43	10.0	1,120
3.8	62	15.0	2,630
4.0	81	19.0	4,500
6.0	313	21.0	5,930
8.0	665	23.0	8,100

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	82	118	47	34	43	58	1800	2460	213	620	117	205
2	77	111	47	35	42	62	1100	1540	192	395	105	185
3	76	98	46	35	43	62	1000	1160	223	305	100	149
4	77	95	45	35	44	60	1200	921	452	255	108	133
5	79	100	45	34	46	60	840	746	401	214	105	129
6	78	144	45	33	48	60	640	636	345	191	96	7630
7	78	168	43	34	49	60	500	527	309	175	86	7140
8	78	160	39	35	49	60	440	455	268	692	80	1910
9	80	156	38	37	49	62	390	410	306	1470	74	928
10	91	153	38	35	49	70	350	371	284	682	69	652
11	94	145	36	36	49	150	320	340	241	422	69	493
12	95	134	34	36	49	500	280	307	296	320	69	398
13	92	122	34	36	52	1900	290	282	378	277	65	363
14	83	110	34	37	50	2500	300	268	350	233	61	1520
15	81	100	33	38	50	3300	300	340	267	205	56	1050
16	78	96	33	39	49	3600	270	402	226	191	53	615
17	74	90	33	40	50	1900	250	476	363	171	51	454
18	64	84	32	40	52	1300	240	432	1620	159	62	367
19	64	84	32	41	54	1100	255	370	967	145	117	358
20	66	86	31	41	54	1100	284	323	611	131	95	353
21	70	80	31	42	56	1000	304	297	478	120	78	352
22	70	70	31	42	56	860	315	277	416	113	68	430
23	70	62	31	43	54	720	337	317	408	109	62	336
24	69	54	32	43	54	620	377	406	358	110	59	280
25	70	48	32	44	52	640	758	479	277	103	243	245
26	71	49	33	45	54	600	1880	458	571	192	897	219
27	69	52	32	46	54	560	1700	402	865	283	965	193
28	69	50	32	46	56	620	2300	377	507	248	525	180
29	72	48	33	46	---	620	2620	311	398	200	332	170
30	95	46	33	46	---	720	3460	269	471	162	252	162
31	118	---	34	44	---	1600	---	237	---	136	208	---
TOTAL	2430	2913	1119	1218	1407	26524	25100	16596	13061	9029	5327	27599
MEAN	78.4	97.1	36.1	39.3	50.2	856	837	535	435	291	172	920
MAX	118	168	47	46	56	3600	3460	2460	1620	1470	965	7630
MIN	64	46	31	33	42	58	240	237	192	103	51	129
CFSM	.19	.23	.09	.09	.12	2.04	1.99	1.27	1.04	.69	.41	2.19
IN.	.22	.26	.10	.11	.12	2.35	2.22	1.47	1.16	.80	.47	2.44
CAL YR 1989	TOTAL 105826	MEAN 290	MAX 3400	MIN 31	CFSM .69	IN. 9.37						
WTR YR 1990	TOTAL 132323	MEAN 363	MAX 7630	MIN 31	CFSM .86	IN. 11.72						

STREAMS TRIBUTARY TO LAKE SUPERIOR

41

04024500 AMNICON LAKE NEAR SOUTH RANGE, WI

LOCATION.--Lat 46°28'59", long 92°04'01", in SW 1/4 NW 1/4 sec.12, T.46 N., R.14 W., Douglas County, Hydrologic Unit 04010301, 9.5 mi southwest of South Range.

DRAINAGE AREA.--4.8 mi², approximately.

PERIOD OF RECORD.--August 1936 to September 1964 (fragmentary), October 1984 to September 1986, May 1988 to current year.

GAGE.--Staff gage read by Dennis Corbin. Datum of gage is 1179.94 ft, National Geodetic Vertical Datum of 1929. Prior to 1964, staff gage 0.3 mi west at datum of 1188.00 ft, National Geodetic Vertical Datum of 1929.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height observed, 1199.32 ft, May 9, 1950; minimum observed, 1195.82 ft, Oct. 28, 1948.

EXTREMES FOR CURRENT YEAR.--Maximum gage height observed, 17.27 ft, Aug. 26-27; minimum observed, 16.81 ft, Sept. 29-30.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17.11	17.05	---	---	---	---	---	---	17.13	17.15	---	17.19
2	17.11	17.05	---	---	---	---	---	---	17.15	17.15	---	17.19
3	17.13	17.03	---	---	---	---	---	---	17.17	17.15	---	17.21
4	17.13	17.03	---	---	---	---	---	---	17.17	17.17	---	17.21
5	17.11	17.05	---	---	---	---	---	---	17.19	17.17	---	17.13
6	17.11	17.07	---	---	---	---	---	---	17.21	17.17	---	17.13
7	17.09	17.07	---	---	---	---	---	---	17.21	17.19	---	17.13
8	17.09	---	---	---	---	---	---	---	17.21	17.19	---	17.15
9	17.07	---	---	---	---	---	---	---	17.19	17.19	---	17.15
10	17.07	---	---	---	---	---	---	---	17.19	---	---	17.15
11	17.05	---	---	---	---	---	---	---	17.19	---	---	17.15
12	17.05	---	---	---	---	---	---	---	17.17	---	---	17.17
13	17.03	---	---	---	---	---	---	---	17.17	---	---	17.17
14	17.03	---	---	---	---	---	---	---	17.17	---	---	17.17
15	17.01	---	---	---	---	---	---	---	17.15	---	---	17.17
16	17.01	---	---	---	---	---	---	---	17.13	---	---	17.19
17	17.01	---	---	---	---	---	---	---	17.15	---	---	17.19
18	17.01	---	---	---	---	---	---	---	17.21	---	---	17.19
19	17.03	---	---	---	---	---	---	---	17.21	---	---	17.17
20	17.03	---	---	---	---	---	---	---	17.19	---	17.13	17.13
21	17.01	---	---	---	---	---	---	17.11	17.19	---	17.13	17.07
22	17.01	---	---	---	---	---	---	17.13	17.17	---	17.11	17.01
23	17.01	---	---	---	---	---	---	17.13	17.17	---	17.11	16.97
24	16.99	---	---	---	---	---	---	17.11	17.17	---	17.09	16.93
25	16.99	---	---	---	---	---	---	17.11	17.17	---	17.09	16.87
26	17.01	---	---	---	---	---	---	17.11	17.15	---	17.27	16.83
27	17.03	---	---	---	---	---	---	17.11	17.15	---	17.27	16.83
28	17.03	---	---	---	---	---	---	17.09	17.17	---	17.25	16.83
29	17.03	---	---	---	---	---	---	17.11	17.17	---	17.25	16.81
30	17.05	---	---	---	---	---	---	17.13	17.15	---	17.23	16.81
31	17.05	---	---	---	---	---	---	---	---	---	17.21	---
MAX	17.13	17.07	---	---	---	---	---	17.13	17.21	17.19	17.27	17.21
MIN	16.99	17.03	---	---	---	---	---	17.09	17.13	17.15	17.09	16.81

STREAMS TRIBUTARY TO LAKE SUPERIOR

04025500 BOIS BRULE RIVER NEAR BRULE, WI

LOCATION.--Lat 46°32'16", long 91°35'43", in NW 1/4 SW 1/4 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.--120 mi².

PERIOD OF RECORD.--October 1942 to September 1981, January 1984 to current year. Prior to January 1943, monthly discharge only, published in WSP 1307.

REVISED RECORDS.--WRD WI-71-1: Drainage area. WSP 1337: 1943(M), 1944, 1945-50(M).

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

REMARKS.--Estimated daily discharges: Ice periods listed in rating table below. Records good except those for ice-affected periods, which are fair.

AVERAGE DISCHARGE.--45 years (water years 1943-81, 1985-90), 171 ft³/s, 19.35 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,520 ft³/s, June 5, 1944, gage height, 5.2 ft, from graph based on gage readings and from rating curve extended above 750 ft³/s; minimum observed, 67 ft³/s, Mar. 13, 1943.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 300 ft³/s and maximum (*):

DATE	TIME	DISCHARGE (ft ³ /s)	GAGE HEIGHT (ft)	DATE	TIME	DISCHARGE (ft ³ /s)	GAGE HEIGHT (ft)
Dec. 20	1800	ice jam	*4.16	Sept. 6	1100	342	2.60
Apr. 28	2200	*404	2.86	Sept. 14	0200	332	2.56

Minimum discharge, 105 ft³/s, Aug. 16.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Nov. 15 to Jan. 14, Jan. 26 to Feb. 4, and Feb. 11 to Mar. 9.)

1.4	101	3.0	443
2.0	200		

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	117	133	120	110	120	110	210	332	130	138	109	118
2	133	132	120	110	110	110	204	303	132	134	109	116
3	128	129	120	120	110	110	202	277	142	127	109	116
4	125	126	120	120	110	110	203	257	138	121	111	118
5	124	142	120	110	115	110	202	245	136	117	109	121
6	122	147	120	110	115	110	195	231	136	115	108	282
7	121	144	120	110	115	110	185	219	134	114	107	281
8	119	141	120	120	115	110	181	213	132	128	107	312
9	124	138	120	120	115	110	188	205	131	128	107	299
10	127	134	120	110	117	117	185	198	127	122	108	253
11	127	130	120	110	110	122	179	191	127	117	108	212
12	125	128	120	110	110	151	174	182	131	115	108	204
13	123	127	120	110	110	159	172	176	132	112	108	288
14	121	127	120	110	110	194	172	178	126	112	108	305
15	120	120	110	115	110	243	173	180	122	111	107	266
16	120	120	110	116	110	236	172	178	126	112	106	254
17	121	120	110	116	110	217	168	177	147	121	107	246
18	120	120	110	115	110	199	165	173	172	121	131	238
19	120	120	110	115	110	185	164	165	160	116	125	237
20	121	130	110	114	110	183	167	160	156	113	117	224
21	121	120	110	116	120	194	170	156	148	111	113	219
22	120	120	110	116	110	189	172	154	139	112	112	216
23	121	120	110	117	110	185	173	158	133	113	112	213
24	120	120	120	118	110	176	177	154	128	112	112	205
25	120	120	120	116	110	169	188	150	124	112	113	195
26	120	120	120	110	110	163	216	147	126	112	136	188
27	120	120	110	110	110	160	243	147	125	115	129	183
28	118	120	110	110	110	160	361	144	130	115	136	178
29	134	120	110	110	---	162	381	140	129	113	127	175
30	134	130	110	110	---	175	378	135	141	111	120	171
31	136	---	110	120	---	191	---	132	---	109	119	---
TOTAL	3822	3818	3580	3524	3132	4920	6120	5857	4060	3629	3538	6433
MEAN	123	127	115	114	112	159	204	189	135	117	114	214
MAX	136	147	120	120	120	243	381	332	172	138	136	312
MIN	117	120	110	110	110	110	164	132	122	109	106	116
CFSM	1.03	1.06	.96	.95	.93	1.32	1.70	1.57	1.13	.98	.95	1.79
IN.	1.18	1.18	1.11	1.09	.97	1.53	1.90	1.82	1.26	1.12	1.10	1.99

CAL YR 1989	TOTAL 55936	MEAN 153	MAX 440	MIN 109	CFSM 1.28	IN. 17.34
WTR YR 1990	TOTAL 52433	MEAN 144	MAX 381	MIN 106	CFSM 1.20	IN. 16.25

STREAMS TRIBUTARY TO LAKE SUPERIOR

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04026346 NORTH FISH CREEK NEAR BENOIT, WI

LOCATION.--Lat 46°31'49", long 90°08'51", in NE 1/4 NW 1/4 sec.29, T.47 N., R.6 W., Bayfield County, Hydrologic Unit 04010301, at U.S. Highway 2, about 4 mi northwest of Benoit.

DRAINAGE AREA.--36 mi².

PERIOD OF RECORD.--May 1989 to September 1990.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
MAY 1989				
25...	1105	70	49	97
SEP				
20...	0935	2.2	3	89

WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SED. TOTAL, FALL DIAM. % FINER THAN .062 MM (80186)	SED. TOTAL, FALL DIAM. % FINER THAN .125 MM (80187)	SED. TOTAL, FALL DIAM. % FINER THAN .250 MM (80188)	SED. TOTAL, FALL DIAM. % FINER THAN .500 MM (80189)	SED. TOTAL, FALL DIAM. % FINER THAN 1.00 MM (80190)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
NOV 1989									
08...	1040	3.5	--	--	--	--	--	7	100
JAN 1990									
16...	1715	1.5	--	--	--	--	--	7	95
MAR									
13...	1420	133	77	83	90	97	100	57	--
14...	1235	366	--	--	--	--	--	168	47
14...	1650	388	--	--	--	--	--	135	48
15...	1930	235	--	--	--	--	--	59	64
JUN									
25...	1645	1.6	--	--	--	--	--	5	82
SEP									
19...	1045	11	--	--	--	--	--	22	79

STREAMS TRIBUTARY TO LAKE SUPERIOR

040263491 NORTH FISH CREEK NEAR MOQUAH, WI

LOCATION.--Lat 46°32'56", long 91°03'43", in SW 1/4 SE 1/4 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 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1989 to September 1990.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 660 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Estimated daily discharges: Oct. 8-23, July 5 to Sept. 18, and ice period listed in rating tables below. Records good except for estimated daily discharges. Estimated daily discharges fair except those greater than 80 ft³/s, which are poor.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,170 ft³/s, Sept. 6, gage height, 10.78 ft; minimum, 35 ft³/s, Dec. 19, result of freezeup.

RATING TABLES (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Dec. 7-25.)

Oct. 1 to Sept. 5		Sept. 6 to Sept. 30	
6.5	40	6.7	48
6.9	102	7.2	128
8.0	352	8.0	315
10.0	920	10.0	920

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	80	58	55	54	54	56	165	105	53	72	66	72
2	63	57	55	54	54	57	135	81	55	62	64	70
3	54	56	55	54	54	54	95	72	56	60	64	70
4	56	57	56	54	54	54	97	67	53	64	64	78
5	57	62	56	54	54	53	85	63	55	62	64	76
6	56	60	55	54	54	53	74	60	55	62	64	660
7	55	59	52	54	54	53	70	59	54	62	64	300
8	56	59	54	55	55	55	70	60	56	80	64	140
9	58	58	52	54	54	55	74	59	55	72	66	74
10	58	58	52	54	53	61	75	57	54	64	68	68
11	58	56	52	54	54	87	69	56	55	64	68	68
12	56	56	50	53	55	328	65	55	59	62	66	400
13	56	57	52	53	53	369	65	55	58	62	64	450
14	56	57	52	54	54	649	68	57	54	60	64	300
15	56	58	52	54	54	601	68	57	54	60	64	120
16	56	57	52	54	57	288	65	57	57	76	64	88
17	58	57	50	55	54	152	62	58	67	120	64	72
18	56	56	50	53	55	115	62	55	71	100	150	68
19	56	57	50	54	53	100	63	55	60	88	180	71
20	56	56	48	54	54	97	65	55	58	80	88	68
21	56	56	50	55	55	104	64	54	56	76	74	67
22	56	56	50	54	55	99	64	56	55	72	70	67
23	54	56	50	55	54	89	65	56	55	70	68	65
24	56	55	52	55	52	80	67	56	53	70	68	63
25	56	56	54	54	54	72	76	55	53	70	70	62
26	57	56	53	54	54	70	85	56	55	70	72	60
27	56	56	54	54	53	71	86	56	53	98	74	60
28	56	55	54	54	53	75	178	55	59	120	74	59
29	59	55	54	55	---	86	181	54	57	140	72	80
30	57	55	54	52	---	127	176	53	70	120	72	141
31	58	---	54	54	---	157	---	53	---	84	72	---
TOTAL	1778	1707	1629	1675	1513	4367	2634	1847	1705	2422	2306	4037
MEAN	57.4	56.9	52.5	54.0	54.0	141	87.8	59.6	56.8	78.1	74.4	135
MAX	80	62	56	55	57	649	181	105	71	140	180	660
MIN	54	55	48	52	52	53	62	53	53	60	64	59

WTR YR 1990 TOTAL 27620 MEAN 75.7 MAX 660 MIN 48

STREAMS TRIBUTARY TO LAKE SUPERIOR

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040263491 NORTH FISH CREEK NEAR MOQUAH, WI--CONTINUED

WATER-QUALITY RECORDS

PERIOD OF RECORD.--May 1989 to September 1990.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	TEMPER- ATURE WATER (DEG C) (00010)	SED. TOTAL, FALL DIAM. % FINER THAN .062 MM (80186)	SED. TOTAL, FALL DIAM. % FINER THAN .125 MM (80187)	SED. TOTAL, FALL DIAM. % FINER THAN .250 MM (80188)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
MAY 1989 25...	1020	192	--	--	--	--	252	50
SEP 20...	1100	56	10.0	98	98	100	11	--

DATE	TIME	BED MAT. SIEVE DIAM. % FINER THAN .125 MM (80165)	BED MAT. SIEVE DIAM. % FINER THAN .250 MM (80166)	BED MAT. SIEVE DIAM. % FINER THAN .500 MM (80167)	BED MAT. SIEVE DIAM. % FINER THAN 1.00 MM (80168)	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM (80169)	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM (80170)	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM (80171)
MAY 1989 25...	1020	--	--	--	--	--	--	--
SEP 20...	1100	0	5	54	89	95	98	100

WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	TEMPER- ATURE WATER (DEG C) (00010)	SED. TOTAL, FALL DIAM. % FINER THAN .062 MM (80186)	SED. TOTAL, FALL DIAM. % FINER THAN .125 MM (80187)	SED. TOTAL, FALL DIAM. % FINER THAN .250 MM (80188)	SED. TOTAL, FALL DIAM. % FINER THAN .500 MM (80189)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	BED MAT. SIEVE DIAM. % FINER THAN .062 MM (80164)
NOV 1989 08...	1245	60	7.5	87	88	93	100	7	--
JAN 1990 16...	1235	53	1.0	70	74	85	100	16	0
MAR 13...	1250	236	4.0	61	66	79	100	227	0
13...	1300	236	--	65	72	87	100	214	--
13...	1835	472	--	60	70	85	100	422	--
14...	1105	674	3.0	61	71	87	100	539	--
14...	1810	724	--	56	66	88	100	488	--
15...	1700	901	2.0	54	66	88	100	788	0
JUN 26...	0935	55	12.0	94	97	100	--	9	0
SEP 18...	1630	67	9.0	86	89	100	--	8	0

DATE	TIME	BED MAT. SIEVE DIAM. % FINER THAN .125 MM (80165)	BED MAT. SIEVE DIAM. % FINER THAN .250 MM (80166)	BED MAT. SIEVE DIAM. % FINER THAN .500 MM (80167)	BED MAT. SIEVE DIAM. % FINER THAN 1.00 MM (80168)	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM (80169)	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM (80170)	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM (80171)	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM (80172)
NOV 1989 08...	1245	0	9	49	78	90	96	99	100
JAN 1990 16...	1235	2	16	43	64	78	86	93	100
MAR 13...	1250	1	8	52	86	95	98	99	99
13...	1835	0	4	29	50	59	66	72	80
14...	1105	0	1	54	81	89	91	94	96
14...	1810	0	3	36	49	53	58	65	73
15...	1700	1	12	50	62	71	78	85	94
JUN 26...	0935	1	6	35	62	86	87	93	--
SEP 18...	1630	1	9	60	82	90	96	100	--

STREAMS TRIBUTARY TO LAKE SUPERIOR

04026350 NORTH FISH CREEK NEAR ASHLAND, WI

LOCATION.--Lat 46°34'43", long 90°57'56", in SW 1/4 SW 1/4 sec.2, T.47 N., R.5 W., Bayfield County, Hydrologic Unit 04010301, at U.S. Highway 2, about 4 mi west of Ashland.

DRAINAGE AREA.--74.4 mi².

PERIOD OF RECORD.--May 1989 to September 1990.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	TEMPER- ATURE WATER (DEG C) (00010)	SED. TOTAL, FALL DIAM. % FINER THAN .062 MM (80186)	SED. TOTAL, FALL DIAM. % FINER THAN .125 MM (80187)	SED. TOTAL, FALL DIAM. % FINER THAN .250 MM (80188)	SED. TOTAL, FALL DIAM. % FINER THAN .500 MM (80189)	SEDI- MENT, SUS- PENDE (MG/L) (80154)
MAY 1989 25...	0915	312	--	--	--	--	--	474
SEP 20...	1500	78	12.5	66	77	96	100	13

DATE	TIME	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	BED MAT. SIEVE DIAM. % FINER THAN .125 MM (80165)	BED MAT. SIEVE DIAM. % FINER THAN .250 MM (80166)	BED MAT. SIEVE DIAM. % FINER THAN .500 MM (80167)	BED MAT. SIEVE DIAM. % FINER THAN 1.00 MM (80168)	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM (80169)	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM (80170)
MAY 1989 25...	0915	66	--	--	--	--	--	--
SEP 20...	1500	--	0	10	64	93	99	100

WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	TEMPER- ATURE WATER (DEG C) (00010)	SED. TOTAL, FALL DIAM. % FINER THAN .062 MM (80186)	SED. TOTAL, FALL DIAM. % FINER THAN .125 MM (80187)	SED. TOTAL, FALL DIAM. % FINER THAN .250 MM (80188)	SED. TOTAL, FALL DIAM. % FINER THAN .500 MM (80189)	SED. TOTAL, FALL DIAM. % FINER THAN 1.00 MM (80190)
NOV 1989 08...	1415	87	--	64	68	93	100	--
JAN 1990 16...	1505	76	1.5	18	32	78	100	--
MAR 13...	1640	349	3.0	44	51	73	100	--
13...	1650	349	--	34	40	61	100	--
14...	1525	703	1.5	27	31	60	99	100
15...	1045	699	1.5	26	28	59	100	--
JUN 26...	1145	89	--	36	37	41	67	100
SEP 19...	0845	96	9.0	95	96	98	100	--

DATE	TIME	SEDI- MENT, SUS- PENDE (MG/L) (80154)	BED MAT. SIEVE DIAM. % FINER THAN .062 MM (80164)	BED MAT. SIEVE DIAM. % FINER THAN .125 MM (80165)	BED MAT. SIEVE DIAM. % FINER THAN .250 MM (80166)	BED MAT. SIEVE DIAM. % FINER THAN .500 MM (80167)	BED MAT. SIEVE DIAM. % FINER THAN 1.00 MM (80168)	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM (80169)	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM (80170)
NOV 1989 08...	1415	14	--	0	10	44	85	98	100
JAN 1990 16...	1505	124	0	1	4	35	79	97	100
MAR 13...	1640	199	0	1	13	64	92	99	100
13...	1650	274	--	--	--	--	--	--	--
14...	1525	465	--	0	8	69	94	99	100
15...	1045	306	--	0	3	27	82	97	100
JUN 26...	1145	38	--	0	1	18	73	94	100
SEP 19...	0845	50	--	0	6	59	92	99	100

04027000 BAD RIVER NEAR ODANAH, WI

LOCATION.--Lat 46°29'15", long 90°41'45", in SE 1/4 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 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1914 to December 1922 (monthly discharge only 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 and crest-stage gage. Datum of gage is 668.30 ft above National Geodetic Vertical Datum 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.--Estimated daily discharges: Ice period listed in rating table below. Records good except those for period of ice affect, which is poor.

AVERAGE DISCHARGE.--50 years (1915-22, 1949-90), 614 ft³/s, 13.97 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 27,700 ft³/s, Apr. 24, 1960, gage height, 21.7 ft from flood-marks and from rating curve extended above 12,000 ft³/s and a comparison with contracted-opening measurement of peak flow 45,600 ft³/s at Odanah, drainage area 990 mi²; minimum, 34 ft³/s, Nov. 8, 1976, result of freezeup.

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

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,000 ft³/s and maximum (*):

DATE	TIME	DISCHARGE (ft ³ /s)	GAGE HEIGHT (ft)	DATE	TIME	DISCHARGE (ft ³ /s)	GAGE HEIGHT (ft)
Mar. 16	0200	(a)*5,800	(b)*13.06	No other peak greater than base discharge.			

(a) Estimated daily mean.

(b) Ice jam.

Minimum discharge, 58 ft³/s, Oct. 1, Aug. 16, 17, 18, gage height, 2.19 ft.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Nov. 16 to Mar. 28.)

2.1	56	4.0	780
2.5	162	5.0	1,380
3.0	323	7.0	2,900

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DAY	MEAN VALUES										
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	SEP
1	60	236	170	150	130	160	702	1610	175	199	67
2	78	244	160	150	130	170	868	1210	168	175	65
3	85	228	150	150	130	170	817	943	185	150	66
4	78	210	140	150	130	170	908	763	313	135	74
5	76	213	150	150	130	170	908	652	361	122	80
6	79	306	160	140	140	160	781	551	321	111	85
7	81	336	140	140	140	160	669	486	284	106	82
8	82	320	130	150	140	170	602	434	246	113	78
9	82	322	130	140	130	180	581	387	219	116	72
10	90	321	130	140	130	190	626	372	201	127	69
11	98	299	120	140	130	290	599	390	186	114	68
12	102	268	120	140	130	520	529	375	268	102	66
13	105	245	120	130	140	1700	488	342	832	93	63
14	103	231	120	130	130	3100	463	321	683	87	61
15	103	226	120	140	130	4700	476	332	410	84	61
16	101	190	120	140	130	5800	506	356	302	82	60
17	101	140	120	140	140	3100	491	383	339	86	58
18	106	170	120	140	140	2000	443	387	478	89	89
19	105	190	120	140	150	1500	407	359	410	85	364
20	106	220	110	130	150	1200	398	325	310	80	401
21	109	200	110	130	150	1000	399	299	261	76	351
22	110	180	110	130	150	880	390	271	242	75	250
23	111	170	120	130	160	820	383	258	237	76	182
24	113	170	120	130	160	800	386	245	221	76	152
25	112	170	130	130	160	680	441	234	191	75	132
26	116	180	130	130	160	600	508	231	177	72	141
27	125	170	140	140	160	580	673	247	172	72	206
28	127	170	140	140	160	540	2000	254	154	72	237
29	130	160	140	140	---	504	2280	231	149	77	212
30	152	160	150	130	---	534	1970	208	160	77	173
31	188	---	150	130	---	614	---	190	---	71	143
TOTAL	3214	6645	4090	4290	3960	33162	21692	13646	8655	3075	4208
MEAN	104	221	132	138	141	1070	723	440	288	99.2	136
MAX	188	336	170	150	160	5800	2280	1610	832	199	401
MIN	60	140	110	130	130	160	383	190	149	71	58
CFSM	.17	.37	.22	.23	.24	1.79	1.21	.74	.48	.17	.23
IN.	.20	.41	.25	.27	.25	2.07	1.35	.85	.54	.19	.26
CAL YR 1989	TOTAL 164348	MEAN 450	MAX 3800	MIN 60	CFSM .75	IN. 10.24					
WTR YR 1990	TOTAL 126438	MEAN 346	MAX 5800	MIN 58	CFSM .58	IN. 7.88					

STREAMS TRIBUTARY TO LAKE SUPERIOR

04027000 BAD RIVER NEAR ODANAH, WI--CONTINUED
(NATIONAL STREAM-QUALITY ACCOUNTING NETWORK STATION)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1974 to January 1978 and October 1987 to current year. Water-quality data collected downstream at bridge on U.S. Highway 2 at Odanah (04027595 Bad River at Odanah) from February 1978 to September 1987.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS-CHARGE, IN CUBIC FEET PER SECOND (00060)	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)
OCT 1989												
23...	1225	--	111	198	8.0	5.0	2.0	12.1	771	94	K12	22
DEC 13...	1230	120	--	222	7.7	0.0	2.4	13.0	770	88	--	--
MAR 1990												
26...	1155	600	--	92	6.7	0.0	4.5	14.6	783	97	K26	K18
MAY 22...	1115	--	269	120	7.8	13.0	1.9	10.4	776	97	K12	36
JUL 10...	1500	--	128	165	8.0	22.0	5.0	8.0	776	90	K68	160
AUG 22...	1615	--	226	112	7.6	19.0	5.4	9.3	774	99	80	72

DATE	HARD-NESS TOTAL (MG/L AS CaCO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS Ca) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS Mg) (00925)	SODIUM, DIS-SOLVED (MG/L AS Na) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE WATER DIS IT FIELD HCO3 (MG/L AS) (00453)	ALKA-LINITY WAT DIS TOT IT FIELD (MG/L AS CaCO3) (39086)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS Cl) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)
OCT 1989												
23...	87	23	7.1	3.9	9	0.2	0.90	101	83	6.0	3.1	0.10
DEC 13...	85	23	6.6	4.0	9	0.2	0.90	90	74	9.0	4.0	0.10
MAR 1990												
26...	42	11	3.5	2.4	11	0.2	1.2	35	28	7.5	2.2	<0.10
MAY 22...	46	11	4.5	2.9	12	0.2	0.70	59	48	4.6	2.9	<0.10
JUL 10...	83	22	6.7	3.8	9	0.2	1.1	92	75	3.4	4.2	0.30
AUG 22...	51	13	4.4	2.4	9	0.1	0.90	56	46	5.2	2.5	<0.10

DATE	SILICA, DIS-SOLVED (MG/L AS SiO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)
OCT 1989												
23...	12	127	106	0.17	38.1	<0.100	0.020	<0.010	0.20	0.020	0.020	0.020
DEC 13...	15	126	108	0.17	40.8	0.250	0.030	0.030	0.40	0.020	0.010	<0.010
MAR 1990												
26...	10	86	57	0.12	139	0.200	0.070	0.070	0.70	0.050	0.030	<0.010
MAY 22...	6.5	88	63	0.12	63.9	<0.100	0.020	0.020	0.50	0.030	0.010	0.010
JUL 10...	8.1	106	95	0.14	36.6	<0.100	0.020	0.010	0.70	0.040	<0.010	<0.010
AUG 22...	9.0	97	65	0.13	59.2	<0.100	0.060	0.050	0.90	0.040	0.020	<0.010

K RESULTS BASED ON COUNT OUTSIDE OF THE ACCEPTABLE RANGE (NON-IDEAL COLONY COUNT).

STREAMS TRIBUTARY TO LAKE SUPERIOR
04027000 BAD RIVER NEAR ODANAH, WI--CONTINUED

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WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS-CHARGE, IN CUBIC FEET PER SECOND (00060)	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	ALUM- INUM, DIS- SOLVED (UG/L AS AL) (01106)	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE) (01010)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	COBALT, DIS- SOLVED (UG/L AS CO) (01035)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)
OCT 1989 23...	1225	--	111	10	<1	25	<0.5	<1.0	<1	<3	1
MAR 1990 26...	1155	600	--	110	<1	16	<0.5	<1.0	<5	4	<10
MAY 22...	1115	--	269	40	<1	18	0.6	<1.0	<1	<3	2
AUG 22...	1615	--	226	40	<1	21	<0.5	<1.0	<1	<3	3

DATE	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	LITHIUM DIS- SOLVED (UG/L AS LI) (01130)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	MERCURY DIS- SOLVED (UG/L AS HG) (71890)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO) (01060)	NICKEL, DIS- SOLVED (UG/L AS NI) (01065)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	STRON- TIUM, DIS- SOLVED (UG/L AS SR) (01080)	VANA- DIUM, DIS- SOLVED (UG/L AS V) (01085)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)
OCT 1989 23...	280	<1	<4	22	1.6	<10	<1	<1	54	<6	<3
MAR 1990 26...	320	<10	<4	24	<0.1	<10	<10	<1	28	<6	24
MAY 22...	340	1	<4	20	<0.1	<10	<1	<1	37	<6	5
AUG 22...	320	<1	<4	24	<0.1	<10	<1	<1	28	<6	<3

DATE	TIME	DIS-CHARGE, IN CUBIC FEET PER SECOND (00060)	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE WATER (DEG C) (00010)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT 1989 23...	1225	--	111	198	5.0	3	0.90	95
DEC 13...	1230	120	--	222	0.0	4	1.3	82
MAR 1990 26...	1155	600	--	92	0.0	21	34	86
MAY 22...	1115	--	269	120	13.0	7	5.1	93
JUL 10...	1500	--	128	165	22.0	10	3.5	95
AUG 22...	1615	--	226	112	19.0	11	6.7	96

STREAMS TRIBUTARY TO LAKE SUPERIOR
04027500 WHITE RIVER NEAR ASHLAND, WI

LOCATION.--Lat 46°29'50", long 90°54'15", in NE 1/4 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 mi².

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

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

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

REMARKS.--Estimated daily discharges: Ice periods listed in rating table below. Records good except those for ice-affected periods, which are fair. Diurnal fluctuation caused by hydroelectric plant at gage.

AVERAGE DISCHARGE.--42 years, 280 ft³/s, 12.63 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,270 ft³/s, July 1, 1953, gage height, 7.90 ft from rating curve extended above 3,000 ft³/s; minimum, 3.1 ft³/s, Apr. 28-30, 1949, gage height, 0.09 ft.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,910 ft³/s, Sept. 6, gage height, 3.82 ft; minimum daily, 93 ft³/s, Nov. 24.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Dec. 16-25, Jan. 26 to Feb. 3, and Feb. 14-27.)

0.8	82	2.0	520
1.0	128	3.0	1,170
1.5	292		

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	155	203	159	173	100	180	407	554	245	239	149	176
2	162	208	224	172	170	179	427	475	243	268	148	142
3	173	188	172	178	170	178	365	381	231	160	150	174
4	177	188	116	180	176	178	336	315	228	184	151	170
5	174	188	145	156	176	172	325	263	245	178	152	136
6	173	215	176	181	176	144	294	214	214	175	152	798
7	165	221	171	180	179	173	278	235	210	173	154	561
8	163	233	130	157	180	176	249	189	204	176	156	683
9	165	182	140	180	179	152	239	215	198	181	156	648
10	171	182	161	179	180	201	266	182	193	183	155	529
11	174	182	212	175	159	245	218	223	155	184	153	394
12	176	210	182	179	128	562	218	182	197	178	152	778
13	172	182	182	147	174	825	218	185	416	139	150	446
14	169	176	169	116	140	1120	201	188	471	172	149	731
15	168	173	153	166	110	1140	251	198	416	171	145	428
16	164	175	160	159	140	1150	208	210	294	183	144	436
17	161	165	140	174	160	931	233	213	241	183	144	411
18	164	95	180	173	160	797	187	212	345	184	156	357
19	172	160	180	177	180	650	227	221	308	176	213	327
20	173	231	130	177	170	475	192	213	284	169	290	295
21	170	171	140	175	160	390	232	208	188	167	263	278
22	167	176	140	173	180	352	198	209	194	128	180	252
23	167	160	130	173	180	316	243	213	170	163	174	228
24	167	93	150	173	170	284	204	220	171	159	165	209
25	170	162	180	174	140	243	248	225	173	124	161	202
26	173	181	191	170	130	228	263	230	172	155	162	181
27	182	238	180	150	170	222	285	234	174	153	173	172
28	184	182	174	170	179	242	394	242	176	153	176	181
29	182	118	160	130	---	224	507	247	182	152	218	180
30	182	133	178	170	---	273	558	245	223	119	159	219
31	211	---	173	150	---	338	---	243	---	153	176	---
TOTAL	5326	5371	5078	5187	4516	12740	8471	7584	7161	5282	5226	10722
MEAN	172	179	164	167	161	411	282	245	239	170	169	357
MAX	211	238	224	181	180	1150	558	554	471	268	290	798
MIN	155	93	116	116	100	144	187	182	155	119	144	136
CFSM	.57	.59	.54	.56	.54	1.37	.94	.81	.79	.57	.56	1.19
IN.	.66	.66	.63	.64	.56	1.57	1.05	.94	.89	.65	.65	1.33
CAL YR 1989	TOTAL 84173	MEAN 231	MAX 1060	MIN 93	CFSM .77	IN. 10.40						
WTR YR 1990	TOTAL 82664	MEAN 226	MAX 1150	MIN 93	CFSM .75	IN. 10.22						

STREAMS TRIBUTARY TO LAKE SUPERIOR

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04029990 MONTREAL RIVER AT SAXON FALLS NEAR SAXON, WI
(Formerly published as Montreal River near Saxon)

LOCATION.--Lat 46°32'13", long 90°22'47", in SW 1/4 NW 1/4 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 mi².

PERIOD OF RECORD.--September 1938 to September 1970. October 1986 to current year. Published as Montreal River near Saxon, 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 (from Power Company data).

REMARKS.--No estimated daily discharges. Records are fair. Diurnal fluctuation caused by Saxon Falls powerplant. Flow regulated by Gile Reservoir on West Branch Montreal River (capacity 1,290,000,000 ft³/s) since April 1941.

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

AVERAGE DISCHARGE.--36 years (1939-70, 1987-90), 313 ft³/s, 16.22 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,600 ft³/s, Apr. 24, 1960, gage height, 7.50 ft; minimum discharge, 2 ft³/s, Sept. 21, Oct. 8, 1939, Sept. 9, 1965.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 3,850 ft³/s, Mar. 16; minimum daily discharge, 30 ft³/s, Oct. 12.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	70	133	98	83	87	95	471	533	70	130	105	105
2	65	130	95	83	77	89	649	400	70	130	105	105
3	80	102	91	83	81	95	585	353	70	110	105	105
4	70	101	85	83	81	95	649	299	300	110	105	105
5	60	101	87	83	85	83	649	236	250	110	105	105
6	120	152	89	83	91	71	526	225	200	110	105	210
7	149	169	87	83	95	83	419	161	160	105	105	198
8	99	191	78	83	89	89	419	155	150	105	105	281
9	64	295	66	89	89	89	325	150	140	110	105	281
10	35	250	77	89	89	89	385	150	190	110	105	215
11	40	221	77	89	89	95	370	150	86	95	105	210
12	30	198	83	83	71	145	325	150	140	105	105	255
13	40	177	66	83	89	525	285	150	465	105	105	255
14	80	147	77	77	71	1120	286	150	400	105	105	286
15	80	135	77	77	71	2760	286	140	285	105	105	360
16	83	139	77	83	89	3850	326	145	200	105	105	360
17	75	91	77	89	89	2500	325	286	235	105	105	360
18	75	83	77	89	89	1120	255	286	235	105	105	300
19	75	102	74	83	83	869	241	234	235	105	105	286
20	70	147	71	83	83	649	221	234	215	105	105	286
21	60	123	75	83	89	718	225	186	190	115	105	240
22	60	107	83	83	89	649	225	150	160	115	115	255
23	55	103	83	83	89	471	225	150	130	110	110	255
24	55	89	83	87	89	371	224	150	130	110	115	320
25	55	95	83	87	89	371	220	140	120	110	115	300
26	55	95	83	87	89	326	234	110	100	105	115	250
27	55	101	83	87	89	386	299	110	100	105	110	200
28	55	95	83	83	89	306	649	110	120	110	105	200
29	50	87	83	77	---	268	765	87	120	110	105	192
30	46	87	83	87	---	326	684	90	130	110	105	192
31	77	---	83	87	---	471	---	80	---	105	105	---
TOTAL	2083	4046	2514	2609	2400	19174	11747	5950	5396	3375	3305	7072
MEAN	67.2	135	81.1	84.2	85.7	619	392	192	180	109	107	236
MAX	149	295	98	89	95	3850	765	533	465	130	115	360
MIN	30	83	66	77	71	71	220	80	70	95	105	105
CFSM	.26	.51	.31	.32	.33	2.36	1.49	.73	.69	.42	.41	.90
IN.	.30	.57	.36	.37	.34	2.72	1.67	.84	.77	.48	.47	1.00
CAL YR 1989	TOTAL 99623	MEAN 273	MAX 2040	MIN 30	CFSM 1.04	IN. 14.14						
WTR YR 1990	TOTAL 69671	MEAN 191	MAX 3850	MIN 30	CFSM .73	IN. 9.89						

STREAMS TRIBUTARY TO LAKE SUPERIOR

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 mi².

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 National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1968, nonrecording gage at same site and at datum 4.00 ft higher.

REMARKS.--No estimated daily discharges. Records good except those below 3.0 ft³/s, which are poor. Flow regulated by Cisco Lake (station 04037400). Several measurements of water temperature were made during the year.

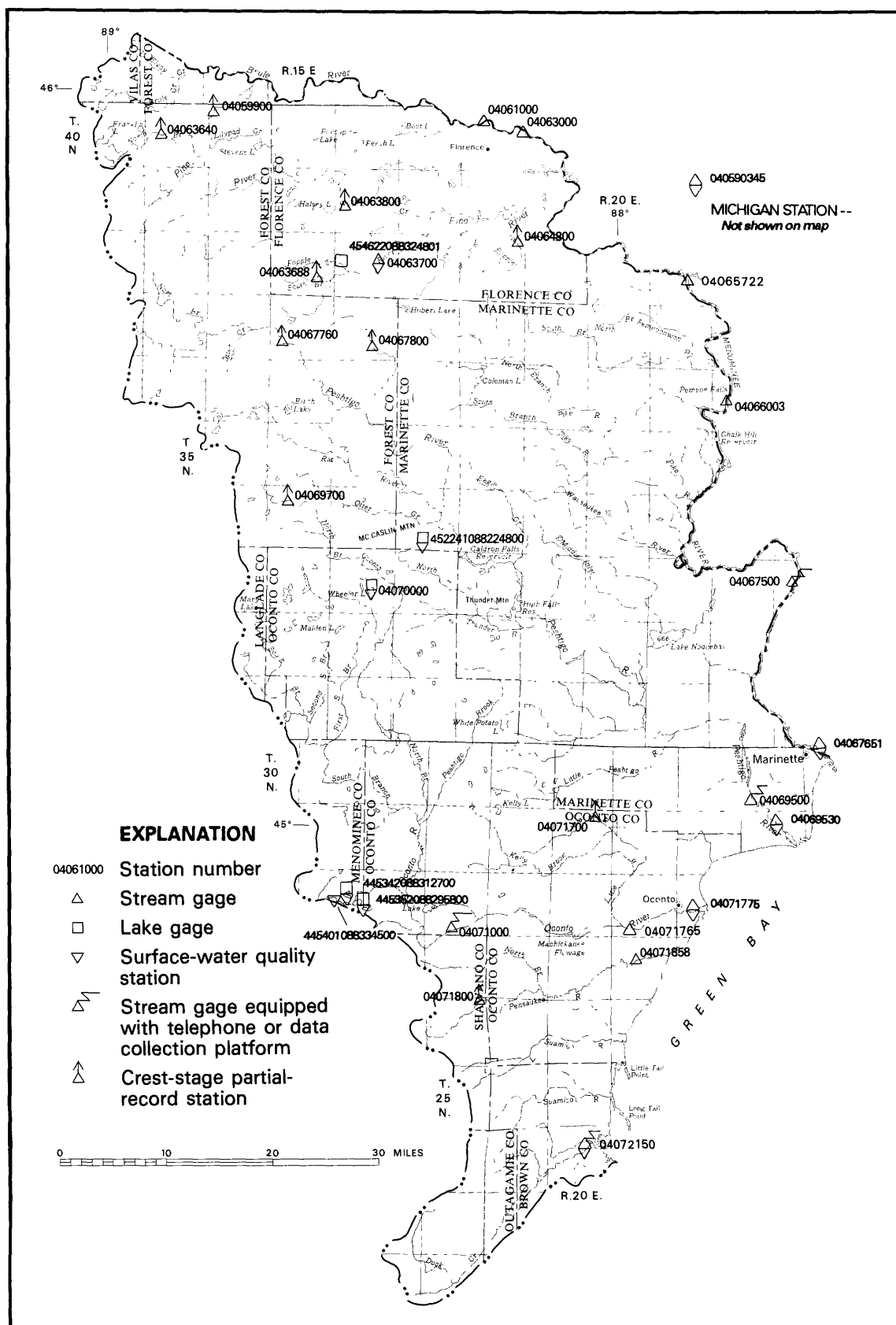
AVERAGE DISCHARGE.--46 years, 46.4 ft³/s, 12.43 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 288 ft³/s, May 1-4, 1951, gage height, 6.10 ft, present datum; minimum daily, 0.08 ft³/s, July 21, Aug. 2, 3, 1988.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 183 ft³/s, June 13, gage height, 5.60 ft; minimum daily, 0.25 ft³/s, Apr. 25, 26, May 2, 3.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.34	64	40	47	26	20	17	.27	13	.64	.53	3.5
2	.33	63	40	46	26	19	17	.25	1.1	.73	.68	3.3
3	.34	63	40	56	27	19	18	.25	.93	.62	.55	3.3
4	.35	63	40	65	27	19	18	.26	.92	.39	.51	3.1
5	.34	62	39	64	45	19	19	.28	1.3	.37	.55	3.0
6	.34	61	31	63	64	19	19	.32	.87	.37	.53	70
7	.34	82	23	61	63	19	19	.29	1.1	.38	.52	109
8	.34	107	13	50	62	19	19	.29	1.2	4.1	.46	102
9	.35	101	6.5	38	61	20	42	.32	8.5	9.9	.39	98
10	.34	98	6.8	37	60	20	74	.36	25	11	.39	97
11	.52	92	7.0	38	58	20	72	.36	26	10	.40	79
12	.34	92	7.3	32	38	58	67	.32	70	16	11	65
13	.34	90	7.7	23	18	98	59	.33	142	22	9.0	51
14	.36	64	8.5	23	9.7	115	43	.31	134	8.8	.55	36
15	.37	45	8.9	23	2.9	58	33	.29	116	.55	.40	37
16	15	44	9.2	23	2.9	57	33	.63	113	.40	.37	37
17	27	45	9.2	23	2.7	99	48	.34	107	.59	.34	37
18	26	45	9.5	23	2.6	108	53	.30	59	.46	.37	37
19	26	45	9.8	23	12	107	49	12	24	.50	.37	36
20	24	43	18	23	19	103	35	26	20	.55	.37	44
21	24	43	27	23	19	93	15	26	16	.65	.37	38
22	25	43	27	23	19	85	1.9	26	9.7	.70	.37	37
23	24	43	27	24	19	78	.38	26	3.6	.65	.34	36
24	24	42	27	25	19	86	.29	26	3.4	.70	.35	19
25	48	41	28	25	19	80	.25	26	2.8	.61	.36	5.4
26	68	41	29	26	20	58	.25	25	1.5	.43	.43	5.4
27	68	41	29	26	19	30	.28	25	1.2	.44	5.2	5.1
28	65	41	29	27	19	17	.30	24	1.1	.40	10	5.0
29	66	41	38	27	---	17	.26	23	.73	.40	9.6	5.0
30	64	41	47	26	---	17	.27	23	.63	.40	8.1	4.9
31	64	---	47	26	---	17	---	22	---	.40	5.4	---
TOTAL	663.34	1786	729.4	1059	779.8	1594	773.18	315.77	905.58	94.13	68.80	1112.0
MEAN	21.4	59.5	23.5	34.2	27.9	51.4	25.8	10.2	30.2	3.04	2.22	37.1
MAX	68	107	47	65	64	115	74	26	142	22	11	109
MIN	.33	41	6.5	23	2.6	17	.25	.25	.63	.37	.34	3.0
CAL YR 1989	TOTAL	11153.59	MEAN	30.6	MAX	138	MIN	.21	CFSM	.60	IN	8.18
WTR YR 1990	TOTAL	9881.00	MEAN	27.1	MAX	142	MIN	.25	CFSM	.54	IN	7.25



STREAMS TRIBUTARY TO LAKE MICHIGAN

040590345 ESCANABA RIVER AT MOUTH AT ESCANABA, MI

LOCATION.--Lat 45°47'29", long 87°00'46", in SW 1/4 NW 1/4 sec.17, T.39 N., R.22 E., Delta County, Michigan, Hydrologic Unit 04030110, at mouth at Escanaba.

DRAINAGE AREA.--928 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1988 to April 1990 (discontinued).

GAGE.--None.

REMARKS.--Estimated daily discharges: June 1, 1988 to Apr. 30, 1990. Daily discharges were estimated by multiplying daily discharges from Escanaba River at Cornell, MI, 04059000, times the drainage area ratio between the two sites of 1.067. Records poor.

EXTREMES FOR CURRENT PERIOD.--

MAY TO SEPTEMBER 1988: Maximum daily discharge, 1,750 ft³/s, Aug. 19; minimum daily discharge, 163 ft³/s, July 3.

WATER YEAR 1989: Maximum daily discharge, 4,050 ft³/s, Nov. 7; minimum daily discharge, 262 ft³/s, Sept. 21.
OCTOBER 1989 TO APRIL 1990: Maximum daily discharge, 3,370 ft³/s, Mar. 17; minimum daily discharge, 212 ft³/s, Oct. 18.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	387	228	168	407
2	---	---	---	---	---	---	---	---	336	197	185	393
3	---	---	---	---	---	---	---	---	312	163	223	448
4	---	---	---	---	---	---	---	---	299	165	281	729
5	---	---	---	---	---	---	---	---	300	177	494	1070
6	---	---	---	---	---	---	---	---	290	170	779	1010
7	---	---	---	---	---	---	---	---	275	170	682	866
8	---	---	---	---	---	---	---	---	269	190	530	701
9	---	---	---	---	---	---	---	---	255	274	403	596
10	---	---	---	---	---	---	---	---	205	222	368	511
11	---	---	---	---	---	---	---	---	202	268	308	457
12	---	---	---	---	---	---	---	---	207	243	302	444
13	---	---	---	---	---	---	---	---	197	260	333	437
14	---	---	---	---	---	---	---	---	224	248	531	440
15	---	---	---	---	---	---	---	---	272	266	904	395
16	---	---	---	---	---	---	---	---	284	313	917	388
17	---	---	---	---	---	---	---	---	458	325	1040	407
18	---	---	---	---	---	---	---	---	462	353	1720	527
19	---	---	---	---	---	---	---	---	373	300	1750	606
20	---	---	---	---	---	---	---	---	322	298	1500	694
21	---	---	---	---	---	---	---	---	268	297	1160	819
22	---	---	---	---	---	---	---	---	252	273	736	811
23	---	---	---	---	---	---	---	---	197	235	699	821
24	---	---	---	---	---	---	---	---	218	196	621	672
25	---	---	---	---	---	---	---	---	190	189	577	583
26	---	---	---	---	---	---	---	---	177	207	569	552
27	---	---	---	---	---	---	---	---	226	229	548	644
28	---	---	---	---	---	---	---	---	243	252	538	701
29	---	---	---	---	---	---	---	---	239	242	508	653
30	---	---	---	---	---	---	---	---	232	228	489	615
31	---	---	---	---	---	---	---	---	---	179	464	---
TOTAL	---	---	---	---	---	---	---	---	8171	7357	20327	18397
MEAN	---	---	---	---	---	---	---	---	272	237	656	613
MAX	---	---	---	---	---	---	---	---	462	353	1750	1070
MIN	---	---	---	---	---	---	---	---	177	163	168	388

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040590345 ESCANABA RIVER AT MOUTH AT ESCANABA, MI--CONTINUED

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DAY	OCT	NOV	DEC	JAN	FEB	MEAN MAR	APR	MAY	JUN	JUL	AUG	SEP
1	543	1320	2070	555	501	363	1600	1930	2020	996	320	514
2	482	1220	2030	550	480	373	1810	1730	1820	875	319	560
3	395	1310	1860	533	459	368	1760	1590	1740	696	317	485
4	449	1320	1550	523	459	363	2670	1500	1540	760	323	411
5	686	2430	1390	512	459	363	2970	1490	1250	702	305	389
6	885	3500	1230	539	459	363	3010	1460	1090	650	298	384
7	869	4050	1010	539	453	363	2890	1410	1030	578	286	359
8	888	3970	854	539	448	368	2840	1300	1940	535	281	345
9	596	3510	694	533	427	373	2410	1240	3550	489	278	332
10	541	2970	555	533	448	379	2260	1150	4010	451	283	321
11	775	2610	576	539	437	389	2010	1060	3830	437	278	340
12	664	2320	555	544	437	400	1870	913	3290	416	288	364
13	643	2200	694	544	459	405	1690	869	2870	383	323	400
14	588	2010	694	533	427	405	1760	843	2990	448	378	381
15	569	1940	555	539	405	427	1870	829	3390	489	458	360
16	575	2600	480	480	405	427	2080	791	3170	503	378	345
17	735	2890	598	427	405	427	2480	736	3010	489	459	327
18	889	2960	619	555	400	427	2570	713	2700	444	361	308
19	949	2900	651	533	395	427	2520	691	2300	446	302	297
20	970	2610	747	533	389	427	2510	713	1950	366	308	287
21	860	2280	726	491	395	427	2420	749	1620	344	299	262
22	880	2020	726	512	368	437	2350	724	1340	331	357	302
23	874	1750	800	533	363	459	2320	697	1570	310	370	285
24	1100	1580	768	544	363	496	2180	721	2060	306	338	280
25	1320	1520	747	533	357	539	2170	1610	1890	296	313	277
26	1370	1490	694	512	357	517	2380	1900	1730	286	300	278
27	1330	2350	715	501	357	939	2540	2180	1750	309	297	283
28	1560	2720	640	523	357	1180	2480	1900	1480	316	289	282
29	1740	2650	587	501	---	1810	2270	1480	1230	329	286	276
30	1600	2410	576	512	---	1810	2080	1400	1080	328	280	270
31	1410	---	555	512	---	1710	---	2020	---	327	345	---
TOTAL	27735	71410	26946	16257	11669	18161	68770	38339	65240	14635	10017	10304
MEAN	895	2380	869	524	417	586	2292	1237	2175	472	323	343
MAX	1740	4050	2070	555	501	1810	3010	2180	4010	996	459	560
MIN	395	1220	480	427	357	363	1600	691	1030	286	278	262

WTR YR 1989 TOTAL 379483 MEAN 1040 MAX 4050 MIN 262

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DAY	OCT	NOV	DEC	JAN	FEB	MEAN MAR	APR	MAY	JUN	JUL	AUG	SEP
1	266	1310	395	320	299	309	822	---	---	---	---	---
2	267	954	373	320	299	315	939	---	---	---	---	---
3	257	887	299	320	299	320	918	---	---	---	---	---
4	254	875	320	320	309	320	907	---	---	---	---	---
5	260	997	352	331	309	315	886	---	---	---	---	---
6	274	1160	373	320	309	315	832	---	---	---	---	---
7	302	1060	299	320	320	309	779	---	---	---	---	---
8	303	949	288	320	299	320	747	---	---	---	---	---
9	287	859	299	320	341	357	747	---	---	---	---	---
10	288	752	331	320	331	331	726	---	---	---	---	---
11	290	663	331	331	331	331	758	---	---	---	---	---
12	294	499	320	320	320	373	747	---	---	---	---	---
13	288	669	299	320	320	469	726	---	---	---	---	---
14	283	633	299	320	320	864	726	---	---	---	---	---
15	281	628	299	320	309	1480	790	---	---	---	---	---
16	281	630	299	320	299	2740	896	---	---	---	---	---
17	255	555	299	320	299	3370	875	---	---	---	---	---
18	212	480	309	320	299	3340	832	---	---	---	---	---
19	268	533	299	320	309	2660	854	---	---	---	---	---
20	347	576	299	309	299	2380	822	---	---	---	---	---
21	473	416	288	320	299	2420	838	---	---	---	---	---
22	540	405	288	309	299	2030	874	---	---	---	---	---
23	555	352	288	320	309	1390	902	---	---	---	---	---
24	511	363	288	331	309	1120	942	---	---	---	---	---
25	493	427	288	320	299	1080	1010	---	---	---	---	---
26	477	395	288	320	309	1010	1050	---	---	---	---	---
27	627	416	288	320	315	976	1130	---	---	---	---	---
28	460	341	299	309	309	854	1240	---	---	---	---	---
29	425	288	299	309	---	843	1180	---	---	---	---	---
30	697	363	320	309	---	822	1080	---	---	---	---	---
31	1200	---	320	309	---	790	---	---	---	---	---	---
TOTAL	12015	19435	9636	9887	8668	34553	26575	---	---	---	---	---
MEAN	388	648	311	319	310	1115	886	---	---	---	---	---
MAX	1200	1310	395	331	341	3370	1240	---	---	---	---	---
MIN	212	288	288	309	299	309	726	---	---	---	---	---

CAL YR 1989 TOTAL 294478 MEAN 807 MAX 4010 MIN 212

040590345 ESCANABA RIVER AT MOUTH AT ESCANABA, MI--CONTINUED

WATER-QUALITY RECORDS

PERIOD OF RECORD.--June 1988 to April 1990 (discontinued).

PERIOD OF DAILY RECORD.--

SUSPENDED-SEDIMENT DISCHARGE: June 1988 to April 1990 (discontinued).

INSTRUMENTATION.--Automatic pumping sampler since June 1988.

REMARKS.--Records fair. Suspended-sediment discharge computed using discharges from Escanaba River at Cornell, MI, 04059000, multiplied by the drainage area ratio between the two sites of 1.067. Suspended-sediment samples were point samples taken by an automatic sampler. The samples are composites of four subsamples taken at six-hour intervals during the day beginning at time 0600. Samples for chemical analysis were composite samples of water pumped from multiple fixed points in the stream cross section. Chemical analyses by the Wisconsin State Laboratory of Hygiene.

EXTREMES FOR CURRENT PERIOD.--

JUNE TO SEPTEMBER 1988:

SUSPENDED-SEDIMENT CONCENTRATIONS: Maximum observed, 15 mg/L, July 1; minimum observed, 2 mg/L, Sept. 27.

SUSPENDED-SEDIMENT DISCHARGE: Maximum daily, 32 tons, Aug. 18; minimum daily, 2.9 tons, Aug. 1.

WATER YEAR 1989:

SUSPENDED-SEDIMENT CONCENTRATIONS: Maximum observed, 22 mg/L, Dec. 13; minimum observed, 0 mg/L, Jan. 24, Feb. 2, and Mar. 5.

SUSPENDED-SEDIMENT DISCHARGE: Maximum daily, 139 tons, June 10; minimum daily, 0.49 ton, Mar. 5.

OCTOBER 1989 TO APRIL 1990:

SUSPENDED-SEDIMENT CONCENTRATIONS: Maximum observed, 32 mg/L, Mar. 16; minimum observed, 1 mg/L, Mar. 31.

SUSPENDED-SEDIMENT DISCHARGE: Maximum daily, 251 tons, Mar. 17; minimum daily, 2.8 tons, Mar. 31.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	SEDI- MENT, SUS- PENDE D (MG/L) (80154)	DATE	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	SEDI- MENT, SUS- PENDE D (MG/L) (80154)
JUN 1988			AUG 1988		
09...	255	14	27...	548	4
11...	202	11	31...	464	5
13...	197	13	SEP		
17...	458	9	02...	393	4
20...	322	7	03...	448	6
24...	218	7	04...	729	4
27...	226	9	05...	1070	3
JUL			06...	1010	4
01...	228	9	07...	866	2
01...	228	15	08...	701	3
04...	165	10	09...	596	4
07...	170	10	10...	511	4
11...	268	10	11...	457	3
14...	248	10	12...	444	6
15...	266	10	13...	437	5
16...	313	9	14...	440	4
20...	298	7	15...	395	6
22...	273	7	16...	388	6
25...	189	8	17...	407	6
29...	242	7	18...	527	7
AUG			19...	606	5
01...	168	6	20...	694	5
05...	494	7	21...	819	3
08...	530	8	22...	811	5
11...	308	6	23...	821	4
12...	302	7	24...	672	4
13...	333	8	25...	583	4
14...	531	8	26...	552	3
16...	917	5	27...	644	2
19...	1750	6	28...	701	3
23...	699	4	29...	653	3
			30...	615	3

STREAMS TRIBUTARY TO LAKE MICHIGAN

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040590345 ESCANABA RIVER AT MOUTH AT ESCANABA, MI--CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	DATE	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	SEDI- MENT, SUS- PENDED (MG/L) (80154)
OCT 1988			MAR 1989		
01...	543	5	25...	539	3
02...	482	6	26...	517	1
03...	395	4	27...	939	3
04...	449	4	28...	1180	3
05...	686	5	29...	1810	5
06...	885	5	30...	1810	3
07...	869	5	31...	1710	2
08...	888	4	APR		
09...	596	3	01...	1600	2
10...	541	6	02...	1810	4
11...	775	2	03...	1760	5
12...	664	5	04...	2670	7
13...	643	4	05...	2970	9
14...	588	5	06...	3010	9
17...	735	4	07...	2890	9
19...	949	4	10...	2260	4
23...	874	3	13...	1690	2
28...	1560	7	16...	2080	4
29...	1740	6	19...	2520	4
NOV			22...	2350	3
01...	1320	5	25...	2170	4
03...	1310	7	28...	2480	6
04...	1320	7	MAY		
05...	2430	9	01...	1930	2
06...	3500	15	04...	1500	3
08...	3970	10	07...	1410	4
11...	2610	4	10...	1150	3
15...	1940	3	13...	869	4
16...	2600	6	16...	791	3
17...	2890	5	19...	691	5
19...	2900	5	22...	724	5
23...	1750	2	25...	1610	5
26...	1490	2	28...	1900	4
28...	2720	3	31...	2020	5
DEC			JUN		
01...	2070	4	03...	1740	5
04...	1550	2	06...	1090	5
07...	1010	1	07...	1030	5
09...	694	3	08...	1940	5
13...	694	22	09...	3550	14
17...	598	3	10...	4010	13
20...	747	2	13...	2870	6
21...	726	2	16...	3170	6
24...	768	2	19...	2300	8
27...	715	2	22...	1340	6
JAN 1989			25...	1890	7
01...	555	2	28...	1480	6
04...	523	2	30...	1080	5
07...	539	1	JUL		
09...	533	1	03...	696	5
12...	544	2	06...	650	5
13...	544	1	22...	331	5
18...	555	2	25...	296	8
21...	491	1	28...	316	11
24...	544	1	31...	327	5
27...	501	1	AUG		
30...	512	1	03...	317	9
FEB			06...	298	6
02...	480	1	09...	278	6
03...	459	9	11...	278	6
12...	437	6	14...	378	5
17...	405	4	17...	459	5
22...	368	3	20...	308	8
26...	357	3	23...	370	9
28...	357	2	26...	300	6
MAR			29...	286	8
02...	373	12	30...	280	8
05...	363	0	SEP		
09...	373	2	01...	514	7
15...	427	6	05...	389	5
17...	427	9	08...	345	4
18...	427	6	11...	340	6
19...	427	5	14...	381	9
20...	427	2	17...	327	10
21...	427	2	20...	287	7
22...	437	5	22...	302	9
23...	459	1	25...	277	6
24...	496	3	28...	282	10

STREAMS TRIBUTARY TO LAKE MICHIGAN

040590345 ESCANABA RIVER AT MOUTH AT ESCANABA, MI--CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	DATE	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	SEDI- MENT, SUS- PENDED (MG/L) (80154)
OCT 1989			MAR 1990		
01...	266	11	03...	320	12
04...	254	8	09...	357	9
07...	302	7	11...	331	9
13...	288	6	12...	373	9
16...	281	7	13...	469	7
19...	268	7	14...	864	12
22...	540	7	15...	1480	12
25...	493	5	16...	2740	32
28...	460	5	17...	3370	29
31...	1200	6	19...	2660	8
NOV			21...	2420	6
02...	954	6	24...	1120	4
JAN 1990			26...	1010	4
11...	331	15	31...	790	1
17...	320	17	APR		
19...	320	12	02...	939	4
23...	320	12	03...	918	3
28...	309	9	08...	747	9
30...	309	10	13...	726	2
FEB			16...	896	7
06...	309	6	19...	854	3
12...	320	7	22...	874	4
16...	299	5	24...	942	19
			26...	1050	3

WATER-QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	TRANS- PAR- ENCY (SECCHI DISK) (M) (00078)	OXYGEN, DIS- SOLVED (MG/L) (00300)	HARD- NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM TOTAL RECOV- ERABLE (MG/L AS CA) (00916)
JUN 1988									
16...	1015	284	638	7.9	21.5	0.50	6.5	140	38
21...	1536	268	530	8.1	24.5	0.50	6.8	120	33
29...	1000	239	682	7.8	15.5	0.60	6.9	180	53
JUL									
19...	0815	300	560	7.9	22.5	0.20	7.1	110	29
AUG									
17...	1205	1040	329	7.8	24.5	0.70	7.8	120	28
SEP									
14...	0820	440	432	7.8	17.0	0.50	8.5	99	25

DATE	MAGNE- SIUM, TOTAL RECOV- ERABLE (MG/L AS MG) (00927)	ALKA- LITY WAT WH TOT FET LAB (MG/L AS CACO3) (00417)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDE (MG/L) (00530)	SOLIDS, RESIDUE AT 105 DEG. C, TOTAL (MG/L) (00500)	RESIDUE VOLA- TILE, SUS- PENDE (MG/L) (00535)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)
JUN 1988									
16...	11	114	95	5.1	10	426	4	--	--
21...	10	112	71	6.8	4	338	2	--	--
29...	11	106	110	7.3	12	450	4	--	--
JUL									
19...	10	132	66	7.6	4	378	4	0.150	0.040
AUG									
17...	11	90	30	9.5	55	--	4	0.170	0.030
SEP									
14...	9.0	97	55	8.4	3	--	2	0.110	0.080

STREAMS TRIBUTARY TO LAKE MICHIGAN

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040590345 ESCANABA RIVER AT MOUTH AT ESCANABA, MI--CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)	CHLORO- PHYLL A TRICHR. UNCORR. WHOLE TOTAL (UG/L) (32210)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
JUN 1988								
16...	--	0.100	--	23	19	5.00	12	72
21...	--	0.060	--	19	17	<10.0	4	100
29...	--	0.120	--	23	20	6.00	8	100
JUL 19...	0.60	0.060	0.026	19	16	<10.0	5	94
AUG 17...	0.60	0.090	0.005	19	17	<10.0	8	--
SEP 14...	0.80	0.080	0.017	29	23	3.00	--	--

WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	TRANS- PAR- ENCY (SECCHI DISK) (M) (00078)	OXYGEN, DIS- SOLVED (MG/L) (00300)	HARD- NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM TOTAL RECOV- ERABLE (MG/L AS CA) (00916)	MAGNE- SIUM, TOTAL RECOV- ERABLE (MG/L AS MG) (00927)	ALKA- LITY WAT WH TOT FET LAB MG/L AS CACO3 (00417)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)
OCT 1988												
13...	0820	643	310	8.1	6.5	0.80	12.8	85	21	8.0	98	22
NOV 09...	1000	3510	148	7.5	3.0	0.80	12.6	55	14	5.0	44	11
DEC 07...	1515	1010	261	8.0	1.0	0.80	15.3	79	20	7.0	71	22
JAN 1989												
24...	1500	544	419	7.4	0.5	1.00	13.2	110	28	10	107	49
APR 11...	1930	2010	202	7.7	0.5	0.90	15.8	73	18	7.0	96	15
MAY 09...	1600	1240	243	7.9	12.0	1.30	12.2	76	19	7.0	72	17
JUN 08...	0800	1940	300	7.7	17.5	0.70	8.8	88	22	8.0	79	30
JUL 05...	1435	702	332	7.7	25.0	0.80	7.3	93	24	8.0	97	35
AUG 01...	1530	320	517	7.9	24.0	0.80	8.0	130	32	11	115	72
30...	1300	280	613	7.9	21.5	0.30	8.5	130	32	11	143	80
SEP 28...	1440	282	610	8.2	12.5	0.40	10.6	120	32	10	149	82

WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

OCT 1989												
24...	1000	511	391	8.2	6.0	0.70	12.5	110	28	11	118	41
NOV 29...	1200	288	454	7.6	0.5	0.30	14.6	130	32	11	109	63
JAN 1990												
10...	1115	320	621	7.7	1.0	0.20	13.4	140	35	12	137	91
FEB 08...	1035	299	547	7.8	1.0	0.50	13.9	140	37	12	121	82
MAR 07...	1620	309	565	7.9	1.0	0.30	14.4	140	35	12	120	83
29...	1500	843	288	7.9	3.0	0.90	15.0	95	24	8.0	69	32
APR 26...	1015	1050	243	7.8	15.5	1.10	9.4	98	24	9.0	84	13

STREAMS TRIBUTARY TO LAKE MICHIGAN

040590345 ESCANABA RIVER AT MOUTH AT ESCANABA, MI--CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDED (MG/L) (00530)	RESIDUE VOLA- TILE, SUS- PENDED (MG/L) (00535)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)	CHLORO- PHYLL A TRICHR. UNCORR. WHOLE TOTAL (UG/L) (32210)	SEDI- MENT, SUS- PENDED (MG/L) (80154)
OCT 1988												
13...	8.8	3	<2	0.050	0.040	0.60	0.020	0.006	19	17	2.00	12
NOV												
09...	6.1	6	3	0.140	0.050	0.70	0.030	0.004	18	17	2.00	8
DEC												
07...	7.4	<2	<2	0.220	0.040	0.50	<0.020	0.004	13	13	2.00	5
JAN 1989												
24...	9.9	2	2	0.270	0.060	0.40	0.030	0.007	10	9.5	2.00	0
APR												
11...	6.4	3	2	0.180	0.020	0.50	<0.020	0.006	9.3	8.3	2.00	5
MAY												
09...	--	4	2	0.090	0.030	0.50	0.020	--	10	8.8	1.00	2
JUN												
08...	4.7	5	4	0.080	0.040	0.90	0.020	0.004	23	23	2.00	14
JUL												
05...	6.7	10	4	0.160	0.050	0.70	0.040	0.017	20	17	1.00	6
AUG												
01...	7.1	3	3	0.140	0.150	0.40	0.040	0.020	14	12	2.00	4
30...	9.2	14	6	0.150	0.070	0.50	0.120	0.011	17	16	2.00	6
SEP												
28...	9.3	9	6	0.080	0.040	0.50	0.050	0.025	19	16	3.00	7

WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

OCT 1989												
24...	6.6	4	4	0.050	0.030	0.40	0.040	0.023	15	13	2.00	5
NOV												
29...	8.0	9	6	0.210	0.060	0.50	0.040	0.009	24	17	4.00	6
JAN 1990												
10...	9.0	15	12	0.260	0.110	0.60	0.130	0.056	29	18	8.00	16
FEB												
08...	9.2	5	4	0.290	0.150	0.60	0.040	0.015	20	14	3.00	5
MAR												
07...	7.9	8	4	0.320	0.110	0.40	0.040	0.021	17	13	4.00	7
29...	6.4	4	4	0.240	0.040	0.50	0.040	0.008	--	--	2.00	4
APR												
26...	4.0	6	6	0.110	0.030	0.51	0.040	0.016	13	12	4.00	4

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	16	7.3	2.9	5.1
2	---	---	---	---	---	---	---	---	13	6.8	3.2	4.5
3	---	---	---	---	---	---	---	---	12	4.9	4.0	6.6
4	---	---	---	---	---	---	---	---	12	4.3	5.2	8.2
5	---	---	---	---	---	---	---	---	12	4.6	9.5	8.9
6	---	---	---	---	---	---	---	---	11	4.4	16	8.9
7	---	---	---	---	---	---	---	---	11	4.4	14	5.8
8	---	---	---	---	---	---	---	---	10	5.0	11	6.2
9	---	---	---	---	---	---	---	---	9.5	7.3	8.0	6.0
10	---	---	---	---	---	---	---	---	6.7	5.9	6.6	5.5
11	---	---	---	---	---	---	---	---	5.9	7.1	5.2	4.6
12	---	---	---	---	---	---	---	---	6.5	6.5	5.5	6.2
13	---	---	---	---	---	---	---	---	6.6	6.9	6.8	6.0
14	---	---	---	---	---	---	---	---	7.5	6.5	11	5.6
15	---	---	---	---	---	---	---	---	8.9	6.9	16	6.3
16	---	---	---	---	---	---	---	---	8.8	7.5	14	6.2
17	---	---	---	---	---	---	---	---	12	6.5	20	6.8
18	---	---	---	---	---	---	---	---	10	5.7	32	9.7
19	---	---	---	---	---	---	---	---	7.4	4.3	29	9.0
20	---	---	---	---	---	---	---	---	5.5	5.1	23	9.0
21	---	---	---	---	---	---	---	---	3.2	5.4	16	7.7
22	---	---	---	---	---	---	---	---	3.2	5.1	9.1	9.8
23	---	---	---	---	---	---	---	---	3.0	4.5	7.8	9.6
24	---	---	---	---	---	---	---	---	4.0	4.0	6.7	6.7
25	---	---	---	---	---	---	---	---	3.8	3.9	6.2	6.1
26	---	---	---	---	---	---	---	---	3.9	4.2	5.9	4.5
27	---	---	---	---	---	---	---	---	5.3	4.5	5.7	3.2
28	---	---	---	---	---	---	---	---	5.5	4.7	6.0	5.6
29	---	---	---	---	---	---	---	---	5.2	4.4	6.2	5.0
30	---	---	---	---	---	---	---	---	5.4	4.0	6.4	5.0
31	---	---	---	---	---	---	---	---	---	3.1	6.5	---
TOTAL	---	---	---	---	---	---	---	---	234.8	165.7	325.4	198.3

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

[illegible]

STREAMS TRIBUTARY TO LAKE MICHIGAN

04061000 BRULE RIVER NEAR FLORENCE, WI

LOCATION.--Lat 45°57'31", long 88°15'57", in SE 1/4 SE 1/4 sec.11, T.41 N., R.32 W., Michigan Meridian, Iron County, Hydrologic Unit 04030106, on left bank 40 ft upstream from highway bridge, 1.0 mi upstream from Paint River, 2.5 mi north of Florence, and 5.0 mi upstream from confluence with Michigamme River.

DRAINAGE AREA.--389 mi².

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

REVISED RECORDS.--WSP 1387: 1914-16. WSP 1911: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,200.55 ft National Geodetic Vertical Datum of 1929 (levels by Owen Ayres Associates). Prior to Aug. 29, 1944, nonrecording gage at bridge 40 ft downstream at same datum.

REMARKS.--Estimated daily discharges: Nov. 17 to Mar. 31. Records excellent except for estimated daily discharges, which are fair. Discharge includes some mine pumpage prior to August 1977. Several measurements of water temperature were made during the year.

AVERAGE DISCHARGE.--47 years (water years 1915, 1945-90), 356 ft³/s, 12.43 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,700 ft³/s, July 2, 1953, gage height, 6.57 ft; maximum gage height, 8.60 ft Dec. 20, 1983, backwater from ice; minimum discharge, 118 ft³/s, Dec. 2, 1963 (discharge measurement); minimum gage height, 1.76 ft, July 29, 1988.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 700 ft³/s, Mar. 16; maximum gage height, 5.76 ft Nov. 19, backwater from ice; minimum discharge, 156 ft³/s, Aug. 9, 10, 11, but may have been less during period of ice effect, Nov. 17 to Dec. 24; minimum gage height, 1.77 ft, Aug. 9, 10, 11.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	169	248	180	198	192	185	227	279	199	185	197	177
2	169	231	190	198	185	188	247	254	204	180	187	175
3	170	221	195	198	182	188	246	232	268	178	239	171
4	169	215	190	195	180	185	239	217	281	178	200	175
5	176	229	190	187	180	180	230	206	258	171	182	186
6	199	279	180	180	185	180	220	216	276	167	173	283
7	193	267	170	180	185	178	217	217	269	170	165	361
8	186	261	160	185	190	177	215	205	249	227	162	309
9	182	251	158	185	190	177	214	225	240	293	161	275
10	184	239	158	190	188	180	225	359	231	243	161	240
11	183	230	160	190	185	190	223	361	219	222	174	213
12	180	215	170	190	185	240	216	363	244	198	185	222
13	178	212	175	190	180	370	210	333	316	180	183	239
14	175	209	174	190	175	570	213	311	300	170	175	305
15	177	218	173	190	178	690	223	382	259	169	209	369
16	181	209	173	192	180	700	223	504	252	177	189	305
17	181	175	170	192	180	600	217	648	327	182	180	266
18	179	157	167	192	180	450	210	533	318	175	201	236
19	180	160	160	191	180	360	210	452	286	171	314	240
20	188	163	160	190	182	310	217	416	255	186	334	239
21	209	168	157	190	184	280	226	371	231	179	274	251
22	205	167	157	190	184	260	221	328	222	172	231	255
23	198	165	157	190	184	240	222	315	232	174	203	245
24	194	162	157	190	184	230	233	302	219	182	188	230
25	187	162	170	190	184	225	243	285	203	173	195	216
26	187	165	190	190	184	222	256	272	209	168	236	203
27	187	170	195	190	184	220	262	258	209	164	240	193
28	187	175	198	190	184	220	298	250	198	167	219	185
29	195	170	198	195	---	220	329	233	195	217	200	182
30	211	167	198	200	---	220	306	219	191	299	187	199
31	247	---	198	200	---	220	---	208	---	230	180	---
TOTAL	5806	6060	5428	5918	5134	8855	7038	9754	7360	5947	6324	7145
MEAN	187	202	175	191	183	286	235	315	245	192	204	238
MAX	247	279	198	200	192	700	329	648	327	299	334	369
MIN	169	157	157	180	175	177	210	205	191	164	161	171
CFSM	.48	.52	.45	.49	.47	.74	.60	.81	.63	.49	.52	.61
IN.	.56	.58	.52	.57	.49	.85	.67	.93	.70	.57	.60	.68

CAL YR 1989 TOTAL 88955 MEAN 244 MAX 661 MIN 157 CFSM .63 IN 8.51
WTR YR 1990 TOTAL 80769 MEAN 221 MAX 700 MIN 157 CFSM .57 IN 7.72

STREAMS TRIBUTARY TO LAKE MICHIGAN

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04063000 MENOMINEE RIVER NEAR FLORENCE, WI

LOCATION.--Lat 45°57'04", long 88°11'13", in NE 1/4 sec.16, T.41 N., R.31 W., Michigan Meridian, Iron County, Hydrologic Unit 04030108, on left bank 0.5 mi downstream from confluence of Brule and Michigamme Rivers, 3.5 mi northeast of Florence, and at mile 117.

DRAINAGE AREA.--1,780 mi².

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

REVISED RECORDS.--WSP 1707: 1953(M). WSP 1911: Drainage area of former site.

GAGE.--Water-stage recorder. Datum of gage is 1,119.23 ft above National Geodetic Vertical Datum of 1929 (levels by Owen Ayres Associates). Prior to July 1950, headwater and tailwater gages and generation data entered hourly in daily log sheets by company employees at the Twin Falls Powerplant of Wisconsin Electric Power Co., 10.4 mi downstream.

REMARKS.--No estimated daily discharges. Records excellent. Prior to July 1950, discharge determined from powerplant records computed on basis of load-discharge rating of hydroelectric units and rating for tailwater gage during periods of spill. Rating developed by U. S. Geological Survey. Flow regulated by powerplants, by Michigamme Reservoir, capacity, 119,950 acre-ft, by Peavy Pond, capacity, 33,860 acre-ft, on Michigamme River, and by many smaller reservoirs upstream from station. Several measurements of water temperature were made during the year.

AVERAGE DISCHARGE.--40 years, 1,838 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 19,500 ft³/s, Apr. 26, 1960, gage height, 14.15 ft; minimum, 38 ft³/s, Aug. 21, 1962, Sept. 26, 1975; minimum gage height, 1.18 ft Aug. 21, 1962, Nov. 4, 1965; minimum daily discharge, 57 ft³/s, Sept. 26, 1975.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,200 ft³/s, June 14, gage height, 6.38 ft; minimum, 203 ft³/s, Dec. 8, gage height, 1.87 ft; minimum daily, 527 ft³/s, Apr. 22.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	728	828	887	1250	1470	1290	692	1110	1180	978	1100	697
2	668	797	733	1210	1510	1290	710	1300	1020	873	1050	582
3	721	856	742	1390	1470	1350	876	1310	940	942	1100	823
4	701	769	841	1330	1470	1370	854	1390	1400	1060	807	1020
5	604	804	703	1480	1500	1370	981	1210	1450	1070	626	1020
6	769	855	547	1340	1470	1380	889	718	1760	801	947	1060
7	767	1040	835	1460	1560	1380	627	672	1750	896	948	1170
8	757	1060	760	1420	1540	1340	702	797	1830	628	1020	1420
9	862	868	763	1370	1540	1290	716	1130	1830	898	1120	1450
10	900	964	614	1370	1530	1300	684	1500	1760	923	968	1220
11	978	828	945	1390	1510	1370	953	1940	1690	924	1230	1300
12	737	794	847	1370	1530	1580	706	2210	1720	985	961	1290
13	925	709	837	1430	1500	1940	790	1830	1300	1020	1040	1440
14	852	868	1020	1420	1560	2550	653	1060	2160	1040	874	1400
15	800	935	1400	1390	1690	3380	559	1540	2460	699	988	1580
16	778	898	1390	1400	1730	3350	808	2330	2070	969	1090	1410
17	766	894	1430	1480	1540	3190	683	2870	2230	1030	1130	1420
18	797	727	1480	1410	1490	2570	760	2930	2090	1030	814	1330
19	677	769	1340	1370	1560	2030	875	2630	2230	1100	588	1300
20	761	746	1380	1410	1540	1770	757	2770	1880	1060	974	1340
21	803	731	1420	1370	1410	1530	553	2570	1990	725	807	1440
22	716	781	1470	1360	1370	1350	527	2650	1240	728	809	1340
23	771	767	1470	1560	1500	1100	860	2560	2120	965	1010	1310
24	728	703	1370	1560	1490	1280	558	2630	2430	1050	895	1330
25	669	687	1330	1500	1380	976	744	2580	1750	1070	653	1190
26	654	797	1480	1480	1480	980	704	2140	1530	1180	578	1000
27	746	863	1440	1320	1330	1000	581	1230	1620	958	927	776
28	671	837	1520	1400	1110	992	702	834	1700	679	933	888
29	789	790	1450	1460	---	993	605	991	1470	716	1090	694
30	685	864	1390	1420	---	974	953	1360	1110	947	980	659
31	772	---	1330	1490	---	640	---	1240	---	841	1010	---
TOTAL	23552	24829	35164	43610	41780	48905	22062	54032	51710	28785	29067	34899
MEAN	760	828	1134	1407	1492	1578	735	1743	1724	929	938	1163
MAX	978	1060	1520	1560	1730	3380	981	2930	2460	1180	1230	1580
MIN	604	687	547	1210	1110	640	527	672	940	628	578	582
CAL YR 1989	TOTAL	514686	MEAN	1410	MAX	7100	MIN	535				
WTR YR 1990	TOTAL	438395	MEAN	1201	MAX	3380	MIN	527				

STREAMS TRIBUTARY TO LAKE MICHIGAN

454622088324801 MORGAN LAKE NEAR FENCE, WI

LOCATION.--Lat 45°46'22", long 88°32'48", in NE 1/4 NW 1/4 SW 1/4 sec.18, T.38 N., R.16 E., Florence County, Hydrologic Unit 04030108, at southwest end of lake on dirt road off Forest Service Road 2161, 6 mi west northwest of Fence.

DRAINAGE AREA.--Not determined. Area of lake, 44 acres.

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

GAGE.--Water-stage recorder. Datum of gage is approximately 1,400.00 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except for periods when the recorder malfunctioned, which are estimated and are fair to poor. Lake does not have surface inlet or outlet.

EXTREMES FOR PERIOD OF RECORD.--Maximum observed gage height, 65.17 ft, Apr. 7-9, 11-13, 1988; minimum observed gage height, 63.61 ft, Oct. 19, 1989.

EXTREMES FOR CURRENT YEAR.--Maximum observed gage height, 64.19 ft, June 24; minimum observed gage height, 63.61 ft, Oct. 19.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	63.74	63.72	63.76	63.78	63.76	e63.82	63.90	63.76	63.92	64.14	63.96	64.02
2	63.72	63.72	63.76	63.78	63.76	e63.82	63.90	63.75	63.92	64.12	63.94	64.01
3	63.71	63.72	63.76	63.78	63.76	e63.82	63.90	63.74	63.96	64.11	63.93	64.00
4	63.70	63.75	63.76	63.78	63.76	e63.82	63.90	63.73	63.96	64.11	63.96	64.00
5	63.69	63.75	63.76	63.77	63.76	e63.82	63.90	63.71	63.96	64.10	63.98	64.00
6	63.69	63.76	63.76	63.77	63.77	e63.82	63.90	63.70	63.95	64.07	63.98	64.03
7	63.69	63.76	63.76	63.77	63.77	e63.82	63.90	63.69	63.96	64.06	63.97	64.05
8	63.69	63.77	63.76	63.77	63.77	e63.82	63.90	63.68	63.96	64.06	63.96	e64.04
9	63.69	63.77	63.76	63.77	63.76	e63.82	63.89	63.69	63.96	64.07	63.95	e64.03
10	63.69	63.77	63.75	63.77	e63.76	e63.82	63.89	63.78	63.96	64.07	63.94	e64.02
11	63.69	63.77	e63.75	63.77	e63.76	e63.88	63.89	63.81	63.96	64.07	63.93	64.05
12	63.68	63.77	e63.75	63.77	e63.76	e63.88	63.88	63.81	64.04	64.05	63.91	64.08
13	63.68	63.77	e63.75	63.77	e63.76	e63.88	63.88	63.81	64.11	64.02	63.90	64.09
14	63.68	63.78	63.75	63.77	e63.76	e63.88	63.88	63.82	64.12	64.02	63.90	64.15
15	63.66	63.78	63.75	63.77	e63.76	e63.88	63.87	63.84	64.12	64.00	63.92	e64.16
16	63.64	63.78	63.75	63.77	e63.81	e63.88	63.86	63.91	64.11	64.00	63.92	64.15
17	63.63	63.78	63.75	63.74	e63.81	e63.90	63.86	63.93	64.12	64.01	63.92	e64.14
18	63.62	63.78	63.75	63.74	e63.81	e63.90	63.86	63.93	64.14	64.02	64.00	64.15
19	63.61	63.78	63.75	63.74	e63.81	e63.90	63.86	63.93	64.14	64.02	64.05	e64.17
20	63.62	63.76	e63.75	63.74	e63.81	e63.90	63.84	63.96	64.14	64.02	e64.04	e64.18
21	63.63	63.75	e63.75	63.74	e63.81	e63.90	63.84	63.97	64.12	64.02	e64.03	e64.17
22	63.63	63.75	e63.75	63.74	e63.81	e63.90	63.84	63.97	64.14	64.01	e64.02	e64.17
23	63.63	63.75	e63.75	63.74	e63.81	e63.90	63.84	63.97	64.18	63.99	e64.04	e64.16
24	63.63	63.75	e63.75	63.74	e63.82	e63.90	63.83	63.97	64.19	63.99	e64.04	e64.16
25	63.63	63.75	e63.75	63.74	e63.82	e63.90	63.83	63.97	64.18	63.99	e64.07	e64.16
26	63.63	63.75	e63.75	63.74	e63.82	e63.90	63.82	63.96	64.18	63.99	e64.06	64.15
27	63.63	63.75	e63.75	63.74	e63.82	e63.90	63.82	63.96	64.18	63.98	e64.06	64.15
28	63.63	63.75	e63.77	63.75	e63.82	e63.90	63.81	63.96	64.17	63.97	64.05	64.15
29	63.64	63.75	e63.77	63.76	---	63.90	63.81	63.96	64.16	63.97	64.05	64.15
30	63.66	63.76	e63.78	63.76	---	63.90	63.79	63.96	64.15	63.97	64.05	64.14
31	63.71	---	63.78	63.76	---	63.90	---	63.94	---	63.97	64.03	---
MEAN	63.66	63.76	63.76	63.76	63.79	63.87	63.86	63.86	64.07	64.03	63.99	64.10
MAX	63.74	63.78	63.78	63.78	63.82	63.90	63.90	63.97	64.19	64.14	64.07	64.18
MIN	63.61	63.72	63.75	63.74	63.76	63.82	63.79	63.68	63.92	63.97	63.90	64.00

WTR YR 1990 MEAN 63.88 MAX 64.19 MIN 63.61

e ESTIMATED

STREAMS TRIBUTARY TO LAKE MICHIGAN

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04063700 POPPLE RIVER NEAR FENCE, WI
(HYDROLOGIC BENCHMARK STATION)
(NATIONAL RADIOCHEMICAL SURVEILLANCE NETWORK STATION)

LOCATION.--Lat 45°45'49", long 88°27'47", in NW 1/4 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 mi².

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 National Geodetic Vertical Datum of 1929. Prior to June 18, 1964, nonrecording gage at same site and datum.

REMARKS.--Estimated daily discharges: Ice period listed in rating table below. Records good except those for ice-affected period, which is fair.

AVERAGE DISCHARGE.--27 years, 118 ft³/s, 11.53 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,640 ft³/s, Apr. 25, 1979, gage height, 4.52 ft; minimum, 5.9 ft³/s, Oct. 28, 1976, gage height, 0.75 ft, result of temporary storage from beaver dam.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 300 ft³/s and maximum (*):

DATE	TIME	DISCHARGE (ft ³ /s)	GAGE HEIGHT (ft)	DATE	TIME	DISCHARGE (ft ³ /s)	GAGE HEIGHT (ft)
Mar. 16	2300	362	2.47	May 19	2300	*394	2.55
Mar. 18	0700	ice jam	*2.60	June 17	1500	354	2.45

Minimum discharge, 13 ft³/s, part of each day Oct. 2, 4, 5, gage height, 0.97 ft.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Nov. 23 to Mar. 18.)

1.0	14	1.7	110
1.2	30	2.0	195
1.4	55	2.5	374
		3.0	591

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16	74	29	23	29	29	45	133	90	77	42	45
2	14	70	29	24	29	29	46	117	84	69	38	42
3	14	62	28	25	29	29	48	101	109	64	34	38
4	14	56	27	25	29	28	47	88	112	59	44	38
5	14	61	28	24	30	28	51	79	116	55	49	37
6	16	73	28	24	31	28	47	71	141	55	45	48
7	18	70	26	25	31	29	46	66	149	47	40	74
8	20	70	25	27	31	30	44	62	139	53	36	102
9	19	68	25	26	30	29	44	78	122	62	33	108
10	19	63	26	26	29	28	44	141	107	66	30	105
11	18	59	25	26	28	30	41	184	93	60	28	96
12	18	54	24	25	29	40	41	231	173	55	28	109
13	17	52	23	24	30	62	40	240	281	52	28	122
14	22	51	24	24	26	130	40	244	327	47	28	172
15	19	51	23	25	27	270	41	269	337	43	35	196
16	23	45	22	27	28	320	42	330	332	46	34	204
17	20	44	23	27	27	350	43	366	344	46	33	194
18	19	41	23	28	27	330	42	380	349	44	45	181
19	22	39	23	25	28	295	41	374	336	44	102	174
20	28	40	22	27	26	219	42	389	304	44	136	160
21	36	39	22	28	28	194	45	383	264	42	115	155
22	33	36	21	29	30	149	47	365	245	41	93	152
23	31	31	21	30	28	118	51	347	248	41	75	142
24	29	28	22	31	28	109	56	320	230	40	63	134
25	29	28	23	31	27	95	63	286	207	37	59	122
26	30	29	21	29	28	84	72	251	166	35	59	108
27	39	29	20	29	28	87	80	223	136	33	62	97
28	27	28	22	30	28	62	98	198	114	32	62	86
29	33	27	23	31	---	58	120	169	99	38	61	77
30	48	28	22	31	---	52	131	135	88	43	56	77
31	71	---	22	30	---	49	---	108	---	46	50	---
TOTAL	776	1446	742	836	799	3390	1638	6728	5842	1516	1643	3395
MEAN	25.0	48.2	23.9	27.0	28.5	109	54.6	217	195	48.9	53.0	113
MAX	71	74	29	31	31	350	131	389	349	77	136	204
MIN	14	27	20	23	26	28	40	62	84	32	28	37
CFSM	.18	.35	.17	.19	.21	.79	.39	1.56	1.40	.35	.38	.81
IN.	.21	.39	.20	.22	.21	.91	.44	1.80	1.56	.41	.44	.91
CAL YR 1989	TOTAL 22358	MEAN 61.3	MAX 263	MIN 10	CFSM .44	IN. 5.98						
WTR YR 1990	TOTAL 28751	MEAN 78.8	MAX 389	MIN 14	CFSM .57	IN. 7.69						

STREAMS TRIBUTARY TO LAKE MICHIGAN

04063700 POPPLE RIVER NEAR FENCE, WI--CONTINUED
(HYDROLOGIC BENCH-MARK STATION)
(NATIONAL RADIOCHEMICAL SURVEILLANCE NETWORK STATION)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--June 1964 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	TUR- BID- ITY (NTU) (00076)	OXYGEN, DIS- SOLVED (MG/L) (00300)	BARO- METRIC PRES- SURE (MM OF HG) (00025)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP- TOCOCCHI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD- NESS TOTAL (MG/L AS CACO3) (00900)
NOV 1989												
14...	1145	51	190	7.7	1.0	1.0	12.8	731	94	K3	K6	95
MAR 1990												
27...	1255	96	142	7.4	1.0	1.9	--	742	--	K3	K2	--
JUN												
27...	1410	135	118	7.3	21.0	2.0	7.3	736	85	26	23	59
AUG												
28...	1320	61	173	7.8	22.0	1.2	8.2	731	98	K64	32	84
DATE	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	BICAR- BONATE WATER DIS IT FIELD MG/L AS HCO3 (00453)	ALKA- LINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)
NOV 1989												
14...	20	11	1.8	4	0.1	1.0	--	--	11	2.3	0.10	10
MAR 1990												
27...	--	--	--	--	--	--	64	53	11	0.70	0.20	--
JUN												
27...	12	7.1	1.4	5	0.1	0.40	62	50	2.5	0.60	<0.10	8.1
AUG												
28...	17	10	1.5	4	0.1	0.70	101	82	2.8	2.0	<0.10	8.8
DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L) (70301)	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS- SOLVED (TONS PER DAY) (70302)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	
NOV 1989												
14...	114	106	0.16	15.5	<0.100	0.010	0.010	0.40	0.010	0.010	<0.010	
MAR 1990												
27...	104	--	--	--	0.200	0.080	0.080	0.80	0.020	0.010	<0.010	
JUN												
27...	117	64	0.16	42.6	0.100	0.070	0.070	1.1	0.030	0.030	<0.010	
AUG												
28...	140	93	0.19	23.1	<0.100	<0.010	0.010	0.80	0.070	0.020	<0.010	

K RESULTS BASED ON COUNT OUTSIDE OF THE ACCEPTABLE RANGE (NON-IDEAL COLONY COUNT).

STREAMS TRIBUTARY TO LAKE MICHIGAN

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04063700 POPPLE RIVER NEAR FENCE, WI--CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	ALUMINUM, DIS-SOLVED (UG/L AS AL) (01106)	ARSENIC, DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE) (01010)	CADMIUM, DIS-SOLVED (UG/L AS CD) (01025)	CHROMIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, DIS-SOLVED (UG/L AS FE) (01046)
NOV 1989 14...	1145	51	<10	<1	11	<0.5	<1.0	<1	<3	<1	180
MAR 1990 27...	1255	96	30	<1	--	--	--	--	--	--	--
JUN 27...	1410	135	60	6	16	<0.5	<1.0	<1	<3	4	900
AUG 28...	1320	61	20	1	15	<0.5	3.0	<1	<3	3	530

DATE	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM, DIS-SOLVED (UG/L AS LI) (01130)	MANGANESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY, DIS-SOLVED (UG/L AS HG) (71890)	MOLYBDENUM, DIS-SOLVED (UG/L AS MO) (01060)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELENIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRONTIUM, DIS-SOLVED (UG/L AS SR) (01080)	VANADIUM, DIS-SOLVED (UG/L AS V) (01085)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)
NOV 1989 14...	14	4	24	<0.1	<10	1	<1	23	<6	<3
MAR 1990 27...	--	--	--	<0.1	--	--	<1	--	--	--
JUN 27...	6	4	250	<0.1	<10	4	<1	22	<6	45
AUG 28...	20	<4	120	<0.1	<10	1	<1	29	<6	6

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPECIFIC CONDUCTANCE (US/CM) (00095)	TEMPERATURE WATER (DEG C) (00010)	SEDIMENT, SUSPENDED (MG/L) (80154)	SEDIMENT, SUSPENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
NOV 1989 14...	1145	51	190	1.0	2	0.27	93
MAR 1990 27...	1255	96	142	1.0	6	1.5	96
AUG 28...	1320	61	173	22.0	9	1.5	22

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	GROSS ALPHA, DIS-SOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DIS-SOLVED (PCI/L AS CS-137) (03515)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)	GROSS BETA, DIS-SOLVED (PCI/L AS SR/YT-90) (80050)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90) (80060)	RADIUM 226, DIS-SOLVED, RADON METHOD (PCI/L) (09511)
NOV 1989 14...	1145	51	0.9	<0.4	3.8	<0.4	3.2	<0.4	0.08
JUN 1990 27...	1410	135	0.4	<0.4	2.6	<0.4	2.1	<0.4	0.07

STREAMS TRIBUTARY TO LAKE MICHIGAN

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 mi².

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

GAGE.--Water-stage recorder. Elevation of gage is 820 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Records excellent. 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.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,760 ft³/s, June 10, 1989, gage height, 11.63 ft; minimum, 815 ft³/s, Aug. 3, 4, 1988, gage height, 4.67 ft; minimum daily, 846 ft³/s, Aug. 3, 1988.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 7,230 ft³/s, Mar. 16, gage height, 10.45 ft; minimum, 912 ft³/s, Oct. 2-4, gage height, 4.75 ft; minimum daily, 912 ft³/s Oct. 3.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	957	1660	1200	1800	1810	1720	1220	1990	1890	1550	1290	1320
2	924	1560	1140	1650	1780	1560	1360	2150	1630	1350	1510	1010
3	912	1510	1120	1720	1730	1370	1460	2170	1560	1540	1470	1060
4	927	1520	1130	1670	1740	1500	1530	2160	2360	1550	1190	1370
5	935	1310	1080	1750	1710	1750	1310	2060	2470	1520	1080	1370
6	927	1640	1050	1760	1750	1730	1500	1300	2670	1420	1310	1410
7	943	1730	1070	1730	1880	1620	1320	1330	2680	1070	1430	1570
8	967	1960	1080	1790	1790	1670	1260	1280	2920	1130	1250	2010
9	989	1720	1070	1750	1790	1790	1290	1650	2860	1500	1300	2390
10	1310	1560	1060	1700	1860	1540	1330	2710	2640	1620	1300	2040
11	1110	1560	1070	1720	1840	1630	1320	3390	2640	1480	1170	2010
12	1180	1310	1080	1840	1870	2060	1340	4270	2750	1500	1320	2040
13	1120	1520	1100	1780	1770	2320	1330	4160	3070	1510	1390	2110
14	1150	1430	1090	1730	1850	3580	1110	2950	3560	1520	1300	2270
15	1110	1460	1650	1690	1800	6180	1090	3640	4850	1150	1480	2630
16	1090	1460	1760	1770	1990	6370	1270	4430	3560	1430	1290	2610
17	1070	1490	1730	1750	1980	5890	1280	6510	4160	1650	1480	2410
18	1090	1130	1660	1730	1900	5060	1300	6540	3700	1360	2100	2290
19	1030	1090	1810	1740	1660	4050	1350	5890	3920	1460	1630	2320
20	996	1240	2210	1680	1750	3640	1340	5280	3510	1570	1640	2180
21	1000	1180	2050	1810	1740	2880	1120	5030	3010	1200	1750	2140
22	1240	1180	2120	1650	1720	2860	1130	4990	2600	1110	1680	2420
23	1250	1150	2210	1720	1750	2230	1340	4570	2830	1290	1600	2270
24	1050	1170	1860	1850	1620	2100	1330	4360	3640	1260	1400	2170
25	1010	1070	1850	1800	1670	1590	1590	4140	3410	1450	1160	2060
26	1010	1030	2090	1870	1710	1830	1320	3810	2370	1440	1090	1950
27	1010	1120	2150	1900	1630	1770	1530	2700	2240	1450	1490	1790
28	1020	1330	2030	1610	1560	1850	1380	2030	2400	1090	1560	1520
29	1120	1190	2040	1810	---	1600	1700	2120	2290	1090	1550	1220
30	1220	1170	1920	1690	---	1570	1920	2340	1870	1220	1430	1100
31	1840	---	1740	1820	---	1210	---	2120	---	1510	1350	---
TOTAL	33507	41450	48220	54280	49650	78520	40670	104070	86060	42990	43990	57060
MEAN	1081	1382	1555	1751	1773	2533	1356	3357	2869	1387	1419	1902
MAX	1840	1960	2210	1900	1990	6370	1920	6540	4850	1650	2100	2630
MIN	912	1030	1050	1610	1560	1210	1090	1280	1560	1070	1080	1010
CAL YR 1989	TOTAL	753983	MEAN	2066	MAX	8460	MIN	912				
WTR YR 1990	TOTAL	680467	MEAN	1864	MAX	6540	MIN	912				

STREAMS TRIBUTARY TO LAKE MICHIGAN

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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 mi².

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

GAGE.--Water-stage recorder. Elevation of gage is 740 ft, from topographic map. October 1949 to Oct. 27, 1972, water-stage recorder at site 1.0 mi upstream at different datum, and Oct. 28, 1972, to August 1982, water-stage recorder at site 1.5 mi upstream at different datum.

REMARKS.--Estimated daily discharges: Ice period listed in rating table below. Records good except those for ice-affected period, which is fair. 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.

AVERAGE DISCHARGE.--41 years, 2,945 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 26,900 ft³/s, May 8, 1960, gage height, 13.90 ft site and datum then in use; minimum, 694 ft³/s, Sept. 3, 1969, gage height, 1.66 ft site and datum then in use.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 7,880 ft³/s, May 18, gage height, 11.06 ft; maximum gage height, 14.67 ft, Mar. 15, backwater from ice; minimum daily, 989 ft³/s, Oct. 3.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Nov. 22 to Mar. 16.)

6.7	965	9.0	3,840
7.0	1,180	10.0	5,600
8.0	2,370	11.0	7,740

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1030	1990	1200	1300	1700	1400	1250	2120	2110	1770	1480	1500
2	1010	1680	1100	1300	1500	1400	1370	2240	1850	1510	1480	1110
3	989	1570	1200	1300	1500	1200	1470	2220	1710	1540	1590	1100
4	996	1560	1200	1200	1500	1200	1580	2300	2280	1580	1390	1270
5	1020	1510	1100	1200	1500	1400	1450	2230	2640	1610	1190	1410
6	1020	1590	1100	1500	1500	1400	1470	1460	2860	1510	1270	1490
7	1030	1830	1000	1300	1600	1500	1420	1420	2850	1280	1430	1600
8	1050	2010	1000	1400	1600	1400	1350	1350	3010	1140	1400	2010
9	1040	1880	1100	1500	1600	1400	1280	1450	3110	1360	1340	2480
10	1230	1620	1100	1400	1600	1500	1360	2870	2730	1670	1370	2090
11	1210	1670	1100	1400	1400	1400	1380	3880	2630	1440	1370	2010
12	1210	1440	1000	1400	1500	2000	1310	4680	2980	1520	1280	2070
13	1170	1550	1000	1300	1500	3000	1410	4740	3490	1470	1400	2140
14	1150	1520	1000	1400	1400	4500	1270	3680	3920	1460	1370	2320
15	1160	1460	1200	1400	1500	6200	1160	4170	5370	1310	1430	2740
16	1130	1440	1500	1400	1600	7000	1290	4840	3980	1260	1380	2910
17	1110	1590	1500	1500	1700	6740	1340	7420	4290	1620	1390	2370
18	1110	1260	1300	1500	1500	5560	1360	7700	4020	1490	1780	2330
19	1090	1540	1500	1500	1500	4300	1410	6850	4010	1400	2240	2320
20	1060	1220	1400	1400	1400	3930	1420	6040	3860	1570	1750	2230
21	1080	1260	1300	1500	1500	3100	1300	5610	3260	1460	1960	2100
22	1210	1100	1300	1400	1500	3120	1260	5480	2740	1180	1810	2380
23	1340	1100	1200	1400	1400	2300	1360	5010	2860	1230	1670	2210
24	1170	1200	1200	1400	1400	2140	1520	4690	3830	1350	1530	2090
25	1080	1200	1200	1600	1300	1950	1630	4640	3550	1430	1380	2030
26	1080	1200	1300	1600	1400	1770	1620	4260	2690	1550	1190	1970
27	1090	1200	1400	1400	1500	1820	1490	3070	2310	1530	1400	1440
28	1090	1100	1500	1200	1300	1870	1690	2310	2490	1370	1580	1470
29	1150	1100	1500	1400	---	1680	1770	2130	2540	1200	1600	1370
30	1240	1100	1300	1500	---	1660	1970	2480	2090	1200	1510	1150
31	1700	---	1300	1600	---	1340	---	2320	---	1490	1400	---
TOTAL	35045	43490	38100	43600	41900	81180	42960	115660	92060	44500	46360	57710
MEAN	1130	1450	1229	1406	1496	2619	1432	3731	3069	1435	1495	1924
MAX	1700	2010	1500	1600	1700	7000	1970	7700	5370	1770	2240	2910
MIN	989	1100	1000	1200	1300	1200	1160	1350	1710	1140	1190	1100

CAL YR 1989 TOTAL 775725 MEAN 2125 MAX 9280 MIN 989
WTR YR 1990 TOTAL 682565 MEAN 1870 MAX 7700 MIN 989

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

PERIOD OF RECORD.--March 1943 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 (discontinued).

GAGE.--Water-stage recorder. Datum of gage is 622.20 ft above National Geodetic Vertical Datum 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.

AVERAGE DISCHARGE.--25 years (water years 1946-61, 1980-86, 1989-90), 3,503 ft³/s.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 10,000 ft³/s, May 18 (estimated); maximum gage height recorded, 15.04 ft, Mar. 17, backwater from ice, but may have been higher during period of no gage-height record, May 7 to July 12; minimum daily, 1.050 ft³/s, Oct. 6.

8.2	1,020	11.0	4,600
8.5	1,270	12.0	6,400
9.0	1,760	14.0	10,500
10.0	3,040		

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1250	2120	1560	1800	1900	1900	1870	2360	2600	2200	1900	1680
2	1060	2400	1510	1700	2000	1900	1820	2360	2500	2000	2000	1590
3	1220	2210	1280	1700	1900	1800	2020	2580	2200	1800	1750	1490
4	1060	1850	1430	1700	1800	1700	2040	2660	2300	1700	1900	1340
5	1060	2070	1330	1700	1900	1600	2120	2420	2500	1800	1770	1450
6	1050	1950	1370	1800	1900	1900	2120	2210	3100	1700	1490	1800
7	1060	2010	1300	1900	1900	1900	1870	1600	3200	1600	1580	2040
8	1120	2350	1200	1800	2000	1900	1710	1700	3200	1600	1680	2210
9	1210	2380	1200	1800	2100	1900	1770	1800	3300	1800	1680	2560
10	1300	2230	1300	2000	2000	1800	1890	2700	3600	1800	1460	2940
11	1280	2030	1300	1800	2000	2000	1910	4100	3100	1900	1500	2480
12	1240	1950	1200	1800	2000	1900	1870	5800	3000	1800	1620	2480
13	1480	1690	1100	1900	2000	2500	1780	6200	5200	1710	1470	2590
14	1290	1700	1200	1800	2000	4000	1680	5800	6400	1660	1810	3060
15	1340	1960	1200	1900	1900	5200	1800	5400	6200	1670	1580	3210
16	1310	1770	1300	2000	2000	6400	1520	6000	7000	1750	1590	3420
17	1250	1750	1900	1900	2100	8600	1660	7400	5600	1890	1690	3710
18	1420	1680	1900	2000	2300	9000	1770	10000	5600	1990	1660	3360
19	1230	1420	1800	2000	2100	8370	1780	9000	5200	1880	2400	3580
20	1280	1580	2000	1900	1900	6370	1750	8000	5000	1470	2630	3320
21	1090	1510	1400	1800	1800	5760	1820	7600	4900	1660	2020	3140
22	1330	1340	1700	2000	2000	4250	1580	6200	3900	1670	2330	2900
23	1270	1230	1700	2000	1900	3830	1660	6400	3400	1520	2110	3090
24	1630	1360	1800	1900	1900	3170	1740	6000	4300	1520	2140	2840
25	1490	1430	1700	2000	1900	2540	1920	5800	5200	1590	2050	2820
26	1140	1420	1600	2000	1700	2610	2160	5800	3500	1630	1630	2540
27	1220	1390	1700	1900	1900	2640	2100	5400	2900	1650	1630	2370
28	1310	1300	1800	1900	1900	2770	2040	4000	2500	1750	1960	1860
29	1210	1200	2000	1800	---	2610	2050	2500	2800	1790	1910	1790
30	1400	1300	2000	1800	---	2000	2240	2600	2600	1860	1960	1720
31	1900	---	1700	1900	---	2070	---	2700	---	1840	1770	---
TOTAL	39500	52580	47480	57900	54700	107090	56060	145090	116800	54200	56670	75380
MEAN	1274	1753	1532	1868	1954	3455	1869	4680	3893	1748	1828	2513
MAX	1900	2400	2000	2000	2300	9000	2240	10000	7000	2200	2630	

STREAMS TRIBUTARY TO LAKE MICHIGAN

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04067651 MENOMINEE RIVER AT MOUTH AT MARINETTE, WI

LOCATION.--Lat 45°05'38", long 87°35'00", in SE 1/4 SW 1/4 sec.4, T.30 N., R.24 E., Marinette County, Hydrologic Unit 04030108, at mouth at Marinette.

DRAINAGE AREA.--4,070 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1988 to April 1990 (discontinued).

GAGE.--None.

REMARKS.--Estimated daily discharges: June 1, 1988 to Apr. 30, 1990. Daily discharges were estimated by multiplying daily discharges from Menominee River near McAllister, 04067500, by the drainage area ratio between the two sites of 1.036. Records poor.

EXTREMES FOR CURRENT PERIOD.--

JUNE TO SEPTEMBER 1988: Maximum daily discharge, 2,900 ft³/s, Aug. 19; minimum daily discharge, 1,080 ft³/s, Aug. 3.

WATER YEAR 1989: Maximum daily discharge, 9,830 ft³/s, June 12; minimum daily discharge, 1,110 ft³/s, Sept. 29-30.

OCTOBER 1989 TO APRIL 1990: Maximum daily discharge, 9,320 ft³/s, Mar. 18; minimum daily discharge, 1,090 ft³/s, Oct. 6.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	1760	1250	1140	1980
2	---	---	---	---	---	---	---	---	1780	1320	1190	2060
3	---	---	---	---	---	---	---	---	1510	1570	1080	2060
4	---	---	---	---	---	---	---	---	1540	1190	1420	1560
5	---	---	---	---	---	---	---	---	1380	1190	1750	2510
6	---	---	---	---	---	---	---	---	1410	1190	1210	2310
7	---	---	---	---	---	---	---	---	1330	1510	1360	2320
8	---	---	---	---	---	---	---	---	1330	1350	2250	2090
9	---	---	---	---	---	---	---	---	1250	1380	1420	1860
10	---	---	---	---	---	---	---	---	1320	1360	1410	2380
11	---	---	---	---	---	---	---	---	1200	1640	1620	1470
12	---	---	---	---	---	---	---	---	1340	1220	1270	1240
13	---	---	---	---	---	---	---	---	1200	1520	1520	1650
14	---	---	---	---	---	---	---	---	1180	1320	1430	1660
15	---	---	---	---	---	---	---	---	1340	1770	1370	1230
16	---	---	---	---	---	---	---	---	1220	1790	2000	1220
17	---	---	---	---	---	---	---	---	1310	1620	1730	2020
18	---	---	---	---	---	---	---	---	1190	1860	2360	1380
19	---	---	---	---	---	---	---	---	1190	1230	2900	1260
20	---	---	---	---	---	---	---	---	1200	1420	2590	2090
21	---	---	---	---	---	---	---	---	1410	1780	2600	1910
22	---	---	---	---	---	---	---	---	1350	1380	2250	1370
23	---	---	---	---	---	---	---	---	1310	1810	2100	2170
24	---	---	---	---	---	---	---	---	1590	1230	1860	2180
25	---	---	---	---	---	---	---	---	1290	1230	1550	1400
26	---	---	---	---	---	---	---	---	1190	1460	1930	2040
27	---	---	---	---	---	---	---	---	1200	1380	1760	1440
28	---	---	---	---	---	---	---	---	1280	1380	1520	1630
29	---	---	---	---	---	---	---	---	1340	1360	2430	2080
30	---	---	---	---	---	---	---	---	1350	1240	1700	1670
31	---	---	---	---	---	---	---	---	---	1170	1860	---
TOTAL	---	---	---	---	---	---	---	---	40290	44120	54580	54240
MEAN	---	---	---	---	---	---	---	---	1343	1423	1761	1808
MAX	---	---	---	---	---	---	---	---	1780	1860	2900	2510
MIN	---	---	---	---	---	---	---	---	1180	1170	1080	1220
CFSM	---	---	---	---	---	---	---	---	.33	.35	.43	.44

04067651 MENOMINEE RIVER AT MOUTH AT MARINETTE. WI--CONTINUED

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DISCHARGE, CUBIC FEET PER SECOND, WHICH YEAR OCTOBER 1988 TO SEPTEMBER 1989												
DAY	MEAN VALUES											
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1700	2980	5180	2800	2070	1970	9120	4010	5940	2580	1850	1510
2	1510	2590	5390	2900	2070	1970	7250	3860	6390	2240	1790	1860
3	1490	2880	4660	2800	1970	1970	7040	3810	6630	2200	1690	1720
4	1570	2640	4140	2800	1860	1970	7460	3520	6770	2290	1560	1710
5	1800	2990	3520	2590	1970	1970	7670	3780	5190	2100	1470	1880
6	1670	3620	4680	2900	1970	1860	7800	3570	3860	1930	2000	1640
7	1680	4040	4320	2690	1970	1970	8350	3760	3460	2120	1780	1670
8	1680	5170	4040	2590	1970	1970	7040	3540	3340	2090	1700	1850
9	1810	5430	3520	2490	1860	2280	7030	3210	4500	2020	1400	1880
10	1440	5360	3080	2070	1860	2380	6670	3000	6260	1500	1460	1960
11	1550	4660	2800	2380	1860	2380	6140	2970	8740	1650	1360	1350
12	1660	4870	3110	2280	1860	2490	5360	2770	9830	1790	1370	1480
13	1660	5250	3000	2280	1970	2590	5140	2560	9720	1510	1490	1350
14	1390	5080	3000	2280	2070	2490	4710	2650	8690	1480	1470	1140
15	1530	5050	3110	2280	1970	2590	4810	2540	7780	1830	1760	1390
16	1400	5180	2800	2280	2070	2490	5110	2350	8030	1510	2840	1220
17	1220	6220	2690	2280	2070	2490	5150	2540	7750	1390	2020	1190
18	1600	6840	2900	2280	1970	2590	5280	2490	6590	1420	1770	1290
19	1710	7460	2280	2180	1970	2490	5100	2600	6100	1700	1660	1130
20	1630	8290	3110	2070	1860	2380	5060	2680	5930	1610	1570	1280
21	1560	8290	3630	1970	1970	2280	4080	2900	4690	1420	1260	1460
22	1740	7250	3320	2070	1970	1860	4230	2520	4700	1370	1280	1400
23	1660	5590	3320	1550	1860	1860	4250	2760	3930	1390	1250	1350
24	1940	5080	3420	1860	1860	1860	4060	2540	3980	1280	1190	1280
25	2320	4240	3320	1860	1860	2070	3950	3040	4440	1190	1240	1320
26	2590	4270	3110	1970	1860	2380	3930	4360	4580	1170	1420	1320
27	2590	5290	3000	2070	2070	2900	3980	5360	4200	1390	1220	1250
28	2490	4660	3210	2070	1970	4140	4430	5350	3780	1480	1250	1120
29	2280	6220	3210	1860	---	5590	4220	4180	2800	1430	1320	1110
30	2280	6840	2900	2070	---	6630	4250	3460	2770	1280	1170	1110
31	2490	---	3110	1970	---	8290	---	3980	---	1610	1190	---
TOTAL	55640	154330	106880	70540	54660	85150	168670	102660	171370	51970	47800	43220
MEAN	1795	5144	3448	2275	1952	2747	5622	3312	5712	1676	1542	1441
MAX	2590	8290	5390	2900	2070	8290	9120	5360	9830	2580	2840	1960
MIN	1220	2590	2280	1550	1860	1860	3930	2350	2770	1170	1170	1110
CFSM	.44	1.26	.85	.56	.48	.67	1.38	.81	1.40	.41	.38	.35
WTR YR 1989	TOTAL	1112890	MEAN	3049	MAX	9830	MIN	1110	CFSM	.75		

DISCHARGE. CUBIC FEET PER SECOND. WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

MEAN VALUES												
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1290	2200	1620	1860	1970	1970	1940	---	---	---	---	---
2	1100	2490	1560	1760	2070	1970	1890	---	---	---	---	---
3	1260	2290	1330	1760	1970	1860	2090	---	---	---	---	---
4	1100	1920	1480	1760	1860	1760	2110	---	---	---	---	---
5	1100	2140	1380	1760	1970	1660	2200	---	---	---	---	---
6	1090	2020	1420	1860	1970	1970	2200	---	---	---	---	---
7	1100	2080	1350	1970	1970	1970	1940	---	---	---	---	---
8	1160	2430	1240	1860	2070	1970	1770	---	---	---	---	---
9	1250	2470	1240	1860	2180	1970	1830	---	---	---	---	---
10	1350	2310	1350	2070	2070	1860	1960	---	---	---	---	---
11	1330	2100	1350	1860	2070	2070	1980	---	---	---	---	---
12	1280	2020	1240	1860	2070	1970	1940	---	---	---	---	---
13	1530	1750	1140	1970	2070	2590	1840	---	---	---	---	---
14	1340	1760	1240	1860	2070	4140	1740	---	---	---	---	---
15	1390	2030	1240	1970	1970	5390	1860	---	---	---	---	---
16	1360	1830	1350	2070	2070	6630	1570	---	---	---	---	---
17	1290	1810	1970	1970	2180	8910	1720	---	---	---	---	---
18	1470	1740	1970	2070	2380	9320	1830	---	---	---	---	---
19	1270	1470	1860	2070	2180	8670	1840	---	---	---	---	---
20	1330	1640	2070	1970	1970	6810	1810	---	---	---	---	---
21	1130	1560	1450	1860	1860	5970	1890	---	---	---	---	---
22	1380	1390	1760	2070	2070	4400	1640	---	---	---	---	---
23	1320	1270	1760	2070	1970	3970	1720	---	---	---	---	---
24	1690	1410	1860	1970	1970	3280	1800	---	---	---	---	---
25	1540	1480	1760	2070	1970	2630	1990	---	---	---	---	---
26	1180	1470	1660	2070	1760	2700	2240	---	---	---	---	---
27	1260	1440	1760	1970	1970	2740	2180	---	---	---	---	---
28	1360	1350	1860	1970	1970	2870	2110	---	---	---	---	---
29	1250	1240	2070	1860	---	2700	2120	---	---	---	---	---
30	1450	1350	2070	1860	---	2070	2320	---	---	---	---	---
31	1970	---	1760	1970	---	2140	---	---	---	---	---	---
TOTAL	40920	54460	49170	59930	56670	110930	58070	---	---	---	---	---
MEAN	1320	1815	1586	1933	2024	3578	1936	---	---	---	---	---
MAX	1970	2490	2070	2070	2380	9320	2320	---	---	---	---	---
MIN	1090	1240	1140	1760	1760	1660	1570	---	---	---	---	---
CFSM	.32	.45	.39	.47	.50	.88	.48	---	---	---	---	---
CAL YR 1989	TOTAL 940590	MEAN 2577	MAX 9830	MIN 1090	CFSM .63							

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04067651 MENOMINEE RIVER AT MOUTH AT MARINETTE, WI--CONTINUED

WATER-QUALITY RECORDS

PERIOD OF RECORD.--June 1988 to April 1990 (discontinued).

PERIOD OF DAILY RECORD.--

SUSPENDED-SEDIMENT DISCHARGE: June 1988 to April 1990 (discontinued).

INSTRUMENTATION.--Single-vertical sampler on downstream side of Ogden Street bridge.

REMARKS.--Records fair. Suspended-sediment discharge computed using discharges from Menominee River near McAllister, 04067500, multiplied by the drainage area ratio of 1.036 to estimate discharges at mouth. Samples for chemical analysis were composite samples of water pumped from multiple fixed points in the stream cross section. Suspended-sediment samples collected at a single vertical at the mid-point of the cross section. Chemical analyses by Wisconsin State Laboratory of Hygiene.

COOPERATION.--Local observer.

EXTREMES FOR CURRENT PERIOD.--

JUNE TO SEPTEMBER 1988:

SUSPENDED-SEDIMENT CONCENTRATIONS: Maximum observed, 126 mg/L, Sept. 1; minimum observed, 1 mg/L, July 7, Aug. 30, and Sept. 8.

SUSPENDED-SEDIMENT DISCHARGE: Maximum daily, 525 tons, Sept. 1; minimum daily, 5.5 tons, July 8.

WATER YEAR 1989:

SUSPENDED-SEDIMENT CONCENTRATIONS: Maximum observed, 82 mg/L, Sept. 19; minimum observed, 0 mg/L, Aug. 24 and Sept. 4.

SUSPENDED-SEDIMENT DISCHARGE: Maximum daily, 463 tons, June 10; minimum daily, 4.6 tons, Oct. 30.

OCTOBER 1989 TO APRIL 1990:

SUSPENDED-SEDIMENT CONCENTRATIONS: Maximum observed, 55 mg/L, Mar. 17; minimum observed, 1 mg/L, Oct. 16 and Apr. 13, 20.

SUSPENDED-SEDIMENT DISCHARGE: Maximum daily, 1,150 tons, Mar. 17; minimum daily, 5.6 tons, Apr. 20.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	DATE	TIME	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	SEDI- MENT, SUS- PENDED (MG/L) (80154)
JUN 1988				AUG 1988			
24...	0920	1590	2	08...	0715	2250	11
28...	1510	1280	65	11...	0800	1620	2
30...	1443	1350	2	15...	1057	1370	3
JUL				18...	0720	2360	13
04...	0710	1190	6	22...	0740	2250	2
05...	1520	1190	16	25...	0956	1550	8
07...	0730	1510	3	30...	0815	1700	1
11...	1915	1640	5	SEP			
14...	0745	1320	14	01...	0710	1980	126
18...	0920	1860	4	08...	0900	2090	1
21...	1740	1780	46	12...	0710	1240	9
25...	0930	1230	15	15...	0730	1230	2
28...	0720	1380	3	19...	0945	1260	2
AUG				22...	0710	1370	6
01...	0726	1140	3	26...	1045	2040	2
04...	0915	1420	3	29...	0730	2080	6

WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

OCT 1988				JUN 1989			
03...	0845	1490	5	26...	0745	4580	11
06...	0715	1670	20	27...	1143	4200	16
10...	0730	1440	5	29...	1350	2800	9
12...	0915	1660	26	JUL			
17...	0705	1220	33	06...	1100	1930	19
24...	0920	1940	3	06...	1905	1930	12
27...	0900	2590	3	10...	1905	1500	18
31...	0745	2490	1	17...	0705	1390	6
NOV				20...	0745	1610	7
03...	1000	2880	40	22...	1050	1370	8
JAN 1989				24...	0935	1280	6
18...	1445	2280	5	28...	1732	1480	9
APR				29...	1600	1430	49
27...	1416	3980	6	30...	1930	1280	4
MAY				31...	0950	1610	7
01...	0900	4010	5	AUG			
08...	0930	3540	7	03...	0910	1690	4
11...	0900	2970	5	07...	1940	1780	8
16...	0900	2350	2	10...	0830	1460	23
18...	0730	2490	13	17...	1305	2020	4
22...	0830	2520	4	21...	0820	1260	2
23...	1203	2760	8	28...	1430	1250	2
25...	0730	3040	35	SEP			
29...	1715	4180	7	07...	1100	1670	4
JUN				09...	1250	1880	1
01...	0900	5940	7	15...	1900	1390	2
05...	0830	5190	8	18...	0830	1290	21
10...	2230	6260	26	21...	1030	1460	2
12...	1030	9830	11	28...	1245	1120	7

STREAMS TRIBUTARY TO LAKE MICHIGAN

04067651 MENOMINEE RIVER AT MOUTH AT MARINETTE, WI--CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	DATE	TIME	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	SEDI- MENT, SUS- PENDED (MG/L) (80154)
OCT 1989				APR 1990			
02...	1000	1100	3	03...	2305	2090	41
09...	0930	1250	11	04...	2005	2110	3
16...	0900	1360	1	05...	2325	2200	3
26...	0950	1180	2	06...	2045	2200	2
NOV				07...	2135	1940	2
01...	1225	2200	10	08...	2120	1770	2
MAR 1990				09...	1945	1830	3
17...	1400	8910	55	10...	1910	1960	3
18...	1445	9320	32	11...	1950	1980	3
19...	1440	8670	29	12...	2040	1940	3
20...	1445	6810	8	13...	2055	1840	1
21...	1553	5970	4	14...	2045	1740	3
22...	1545	4400	5	15...	1300	1860	2
23...	1815	3970	3	16...	2100	1570	4
24...	0715	3280	5	17...	2120	1720	4
25...	1300	2630	4	18...	1900	1830	2
26...	1445	2700	3	19...	1835	1840	3
28...	1100	2870	3	20...	1340	1810	1
29...	2300	2700	3	21...	2040	1890	2
30...	2245	2070	3	23...	0916	1720	4
31...	2105	2140	4	24...	2100	1800	3
APR				25...	1425	1990	2
01...	1800	1940	4	25...	1500	1990	5
02...	1945	1890	4	27...	1430	2180	3
				28...	1245	2110	3

WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	TRANS- PAR- ENCY (SECCHI DISK) (M) (00078)	OXYGEN, DIS- SOLVED (MG/L) (00300)	HARD- NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM TOTAL RECOV- ERABLE (MG/L AS CA) (00916)
JUN 1988									
15...	1530	1340	286	8.3	16.5	1.00	9.2	130	32
22...	0900	1350	293	8.0	18.0	1.00	8.7	130	31
28...	1530	1280	298	7.9	19.5	0.60	7.8	170	50
JUL									
07...	0915	1510	291	8.0	19.5	1.10	7.8	130	32
12...	1200	1220	288	7.7	21.5	1.40	6.6	120	30
18...	1545	1860	282	7.7	22.5	1.30	6.7	120	28
26...	1500	1460	294	8.1	23.0	1.30	7.2	130	31
AUG									
02...	1355	1190	284	7.9	19.5	1.10	7.6	130	32
09...	1535	1420	294	7.8	21.5	1.10	7.4	130	31
16...	1525	2000	291	7.9	17.5	1.40	8.8	130	31
23...	1345	2100	277	8.1	22.0	1.10	7.9	120	29
31...	1410	1860	278	8.0	18.0	1.60	8.3	130	31
SEP									
07...	1425	2320	255	8.0	17.0	1.60	8.9	120	28
14...	1200	1660	269	8.1	17.0	1.90	9.0	120	30
21...	1345	1910	281	8.0	16.5	1.40	8.0	120	30
28...	0915	1630	286	7.9	16.5	1.30	9.4	120	29

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04067651 MENOMINEE RIVER AT MOUTH AT MARINETTE, WI--CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	MAGNE- SIUM, TOTAL RECOV- ERABLE (MG/L AS MG) (00927)	ALKA- LINIT WAT WE TOT FET LAB MG/L AS CACO3 (00417)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDE (MG/L) (00530)	SOLIDS, RESIDUE AT 105 DEG. C, TOTAL (MG/L) (00500)	RESIDUE VOLA- TILE, SUS- PENDE (MG/L) (00535)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)
JUN 1988									
15...	12	110	12	1.4	13	190	3	--	--
22...	12	110	14	2.4	6	188	2	--	--
28...	12	110	14	2.2	6	192	3	--	--
JUL									
07...	12	112	13	1.9	6	188	4	--	--
12...	12	108	14	2.7	6	190	2	0.040	0.040
18...	12	102	12	3.8	6	184	4	0.070	<0.020
26...	12	110	13	2.8	6	--	5	0.020	0.030
AUG									
02...	12	--	13	3.0	6	--	4	0.080	<0.020
09...	12	108	14	3.2	10	--	4	0.060	<0.020
16...	12	106	13	3.8	4	--	3	0.110	<0.020
23...	12	104	12	3.9	26	--	7	0.030	<0.020
31...	12	108	12	3.4	14	--	6	0.050	<0.020
SEP									
07...	12	101	12	4.6	10	--	4	<0.020	<0.020
14...	11	107	11	3.2	4	--	3	0.060	<0.020
21...	11	107	12	3.2	6	--	2	0.040	<0.020
28...	12	106	16	5.1	8	--	2	0.040	<0.020

DATE	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)	CHLORO- PHYLL A TRICHR. UNCORR. WHOLE TOTAL (UG/L) (32210)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
JUN 1988								
15...	--	0.030	--	6.6	4.8	12.0	5	80
22...	--	0.030	--	6.4	5.8	13.0	70	77
28...	--	<0.020	--	6.0	4.8	12.0	20	82
JUL								
07...	--	0.020	--	5.1	4.4	14.0	1	--
12...	0.50	0.030	0.006	5.6	4.9	<10.0	73	61
18...	0.40	0.030	0.007	7.8	6.9	<10.0	5	90
26...	0.50	0.030	0.002	6.9	5.8	11.0	8	83
AUG								
02...	0.40	0.030	0.004	6.2	5.0	14.0	24	--
09...	0.60	0.040	0.003	6.0	4.7	12.0	28	--
16...	0.60	0.020	0.003	6.1	5.1	<10.0	96	--
23...	0.50	0.050	0.005	6.2	15	15.0	5	--
31...	0.40	0.020	0.004	5.3	16	10.0	6	--
SEP								
07...	0.50	0.030	0.003	7.9	6.2	6.00	8	--
14...	0.40	0.020	0.002	6.3	5.7	6.00	91	--
21...	0.30	0.020	0.003	6.7	4.8	6.00	26	--
28...	0.50	0.030	0.003	9.1	7.1	6.00	39	--

STREAMS TRIBUTARY TO LAKE MICHIGAN

04067651 MENOMINEE RIVER AT MOUTH AT MARINETTE, WI--CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS- CHARGE, IN CUBIC FEET PER SECOND (000060)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (000095)	PH (STAND- ARD UNITS) (000400)	TEMPER- ATURE WATER (DEG C) (000010)	TRANS- PAR- ENCY (SECCHI DISK) (M) (000078)	OXYGEN, DIS- SOLVED (MG/L) (00300)	HARD- NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM TOTAL RECOV- ERABLE (MG/L AS CA) (00916)	MAGNE- SIUM, TOTAL RECOV- ERABLE (MG/L AS MG) (00927)	ALKA- LITY WAT WH TOT FET LAB MG/L AS CACO3 (00417)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)
OCT 1988												
04...	0830	1570	--	--	--	--	--	120	29	12	107	14
13...	1100	1660	280	8.4	8.5	2.00	12.2	120	29	12	110	12
18...	1410	1600	--	--	--	--	--	120	28	12	108	13
25...	1545	2320	248	8.1	6.5	1.60	11.0	110	26	12	109	5.4
NOV												
01...	1415	2980	266	8.1	3.0	1.80	13.4	120	27	13	110	9.8
08...	1540	5170	253	8.2	8.0	0.80	13.2	120	28	12	103	9.9
15...	1230	5050	218	8.1	3.5	1.20	14.3	98	23	10	84	6.5
30...	1500	6840	202	8.0	1.0	1.20	15.3	91	20	10	73	7.3
DEC												
08...	1530	4040	217	7.9	0.0	1.40	15.7	89	21	9.0	79	7.8
JAN 1989												
18...	1400	2280	255	7.7	0.0	--	13.6	100	24	11	97	11
APR												
12...	0945	5360	186	7.9	3.0	1.40	14.0	100	22	11	166	4.4
18...	1445	5280	195	7.6	7.0	0.80	12.2	91	20	10	80	4.6
25...	1315	3950	232	7.8	11.0	1.50	11.0	100	24	10	89	5.8
MAY												
02...	1400	3860	236	7.8	10.0	0.90	10.5	110	25	11	88	7.8
10...	0830	3000	235	7.9	10.5	1.60	11.1	100	24	10	88	8.6
*18...	0830	2490	284	8.0	12.0	1.30	11.3	120	30	11	107	9.9
*18...	1045	2490	282	8.0	13.0	1.20	11.1	120	29	11	105	10
23...	1300	2760	288	8.0	14.0	1.30	11.1	120	30	11	107	11
31...	1340	3980	261	7.9	15.0	0.60	9.1	100	22	11	99	7.2
JUN												
07...	1700	3460	258	8.1	17.5	1.00	9.9	110	28	10	100	7.4
14...	0915	8690	196	7.5	16.0	0.90	9.7	84	19	9.0	74	4.2
20...	1250	5930	219	7.5	20.0	1.00	8.5	92	22	9.0	84	5.0
27...	1200	4200	247	7.5	19.5	1.10	7.9	96	22	10	89	8.5
JUL												
06...	0800	1930	260	7.8	19.0	0.90	7.8	120	28	11	106	9.4
11...	1140	1650	266	7.8	21.5	1.20	7.6	100	25	10	94	10
18...	1130	1420	272	7.8	22.0	1.20	7.6	130	32	12	106	11
25...	1300	1190	276	7.9	22.0	1.50	7.4	120	30	11	105	12
AUG												
01...	1000	1850	308	7.9	21.0	1.60	8.2	130	31	12	109	10
08...	1150	1700	307	8.0	19.5	1.40	8.4	120	30	11	115	13
14...	1210	1470	290	7.8	18.5	1.60	6.5	120	30	11	109	12
*22...	1215	1280	312	7.7	16.0	1.50	6.2	120	30	11	111	13
*22...	1345	1280	310	7.7	16.0	1.40	7.4	120	31	11	112	12
30...	1700	1170	304	8.0	21.0	1.20	8.4	120	28	11	116	13
SEP												
06...	1530	1640	302	7.8	16.5	1.70	6.9	140	33	13	117	15
12...	1235	1480	283	8.0	19.0	1.00	8.5	130	31	13	114	13
19...	1125	1130	285	7.9	14.0	2.40	6.2	130	32	12	115	12
28...	0825	1120	314	8.2	13.0	1.40	10.3	120	29	12	116	19

WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

OCT 1989												
03...	1250	1260	310	8.0	14.0	1.20	9.8	130	31	13	117	19
11...	1200	1330	286	7.9	9.5	1.80	11.2	130	31	14	117	10
17...	1200	1290	302	7.8	11.0	1.10	10.4	130	30	14	123	16
23...	1210	1320	308	7.9	7.0	1.70	12.1	130	30	13	119	18
NOV												
01...	1255	2200	297	7.9	9.5	1.60	9.9	140	32	14	121	17
08...	1050	2430	313	7.9	6.0	1.40	11.9	130	31	14	124	15
14...	1400	1760	315	8.1	4.0	1.80	13.3	130	32	14	125	15
29...	1600	1240	324	7.9	0.0	--	14.8	150	35	16	128	19
DEC												
12...	1300	1240	334	7.4	0.0	2.10	16.6	150	36	16	137	20
JAN 1990												
09...	1610	1860	294	7.8	0.0	--	13.8	120	27	12	110	14
*24...	1300	1970	304	7.9	0.0	--	13.2	130	29	13	114	14
*24...	1500	1970	306	8.0	0.0	--	13.1	130	29	13	114	14
FEB												
07...	1535	1970	299	7.9	0.0	--	12.8	120	29	13	111	13
26...	1300	1760	295	7.4	0.0	--	13.5	130	30	13	113	14
MAR												
07...	1120	1970	318	7.8	0.0	1.50	13.9	130	31	13	117	14
26...	1330	2700	232	8.2	1.5	1.20	13.8	120	27	12	93	7.6
APR												
03...	1425	2090	266	7.6	5.0	1.70	12.6	120	28	13	103	10
12...	1005	1940	272	8.2	6.0	1.80	12.7	130	30	14	111	12
17...	1440	1720	285	8.3	8.0	1.20	13.8	140	31	14	116	15
25...	1505	1990	304	8.3	12.0	1.40	12.2	150	36	14	119	12
MAY												
02...	1450	2440	295	8.2	12.0	1.10	10.6	160	37	16	123	12

*SAMPLES WITH SAME DATES ARE REPLICATES.

04067651 MENOMINEE RIVER AT MOUTH AT MARINETTE, WI--CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	SILICA, DIS- SOLVED (MG/L AS SIO ₂) (00955)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDE (MG/L) (00530)	RESIDUE VOLA- TILE, SUS- PENDE (MG/L) (00535)	NITRO- GEN, NO ₂ +NO ₃ DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)	CHLORO- PHYLL A TRICHR. UNCORR. WHOLE TOTAL (UG/L) (32210)	SEDI- MENT, SUS- PENDE (MG/L) (80154)
OCT 1988												
04...	5.4	4	2	0.060	0.020	0.40	0.020	0.005	7.6	7.0	6.00	8
13...	4.7	2	<2	0.030	<0.020	0.40	0.020	0.004	8.2	7.4	2.00	5
18...	4.4	3	3	0.040	<0.020	0.40	<0.020	0.003	8.3	7.9	3.00	77
25...	4.9	3	2	0.020	<0.020	0.30	<0.020	0.003	7.1	6.6	2.00	3
NOV												
01...	6.9	2	<2	0.100	<0.020	0.40	<0.020	0.003	8.4	7.9	2.00	5
08...	7.2	10	4	0.140	<0.020	0.60	0.040	0.003	9.3	8.6	11.0	18
15...	7.6	6	2	0.180	<0.020	0.50	0.020	0.003	13	13	7.00	6
30...	7.8	6	3	0.160	0.030	0.60	0.030	0.007	7.7	7.0	5.00	12
DEC												
08...	8.0	2	<2	0.170	0.030	0.60	0.050	0.004	12	11	2.00	3
JAN 1989												
18...	9.8	<2	<2	0.220	0.060	0.30	0.020	0.010	7.5	7.5	1.00	5
APR												
12...	7.8	6	4	0.240	0.030	0.50	0.030	0.006	7.5	7.5	2.00	6
18...	7.4	8	5	0.220	<0.020	0.60	0.030	0.004	7.9	6.8	3.00	4
25...	6.2	6	4	0.120	<0.020	0.50	0.030	0.004	9.5	8.7	4.00	5
MAY												
02...	5.6	6	4	0.120	0.050	0.50	0.020	0.002	8.7	8.1	4.00	14
10...	4.9	6	4	0.090	<0.020	0.60	0.030	0.004	8.6	8.3	3.00	8
18...	2.3	6	4	0.080	<0.020	0.50	0.030	0.003	7.3	6.6	7.00	58
18...	2.7	7	4	0.070	<0.020	0.50	0.030	0.003	6.6	5.9	7.00	--
23...	2.2	8	7	0.070	0.030	0.50	0.020	0.003	6.0	5.9	7.00	8
31...	4.0	12	10	0.070	0.020	0.80	0.050	0.004	9.5	9.3	10.0	15
JUN												
07...	5.8	8	7	0.080	<0.020	0.70	0.030	0.005	14	12	9.00	41
14...	5.8	20	11	0.130	0.030	0.70	0.050	0.008	15	14	7.00	18
20...	6.3	8	5	0.130	0.020	0.70	0.040	0.005	18	17	4.00	15
27...	5.1	8	8	0.120	0.030	0.50	0.030	0.005	12	10	3.00	8
JUL												
06...	3.3	26	4	0.100	0.030	0.50	0.040	0.006	8.3	6.6	7.00	69
11...	3.4	12	11	0.060	0.060	0.80	0.030	0.004	12	11	8.00	6
18...	3.0	8	7	0.070	0.030	0.60	0.040	0.003	7.8	6.3	9.00	14
25...	2.7	3	2	0.050	0.040	0.40	0.020	0.002	7.1	6.1	7.00	5
AUG												
01...	3.1	6	4	0.060	0.060	0.50	0.030	0.004	6.3	6.2	--	7
08...	--	9	4	0.050	0.040	0.70	0.040	0.004	5.9	5.0	8.00	6
14...	3.1	6	4	0.090	0.040	0.40	0.020	0.005	5.3	4.7	9.00	4
22...	4.1	2	<2	0.120	0.040	0.30	0.020	0.006	5.5	5.0	7.00	2
22...	3.8	3	2	0.150	0.030	0.40	0.020	0.003	4.8	3.9	--	--
30...	2.6	5	4	<0.020	0.060	0.50	0.030	0.003	6.6	6.2	5.00	2
SEP												
06...	4.4	3	3	0.080	<0.020	0.50	0.020	0.005	5.9	5.7	4.00	3
12...	4.5	6	4	0.030	0.030	0.30	0.020	0.004	7.2	5.8	5.00	4
19...	4.0	3	2	0.160	<0.020	0.40	0.020	0.003	4.9	3.9	6.00	82
28...	3.9	6	4	0.060	<0.020	0.40	0.020	0.006	8.8	7.7	3.00	2

WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

OCT 1989												
03...	3.8	6	5	0.080	<0.020	0.40	0.020	0.007	7.2	7.2	5.00	7
11...	3.7	4	4	0.040	<0.020	0.40	0.020	0.003	6.5	6.2	2.00	7
17...	4.8	8	7	0.050	<0.020	0.40	0.020	0.003	8.3	6.3	4.00	7
23...	4.3	<2	<2	0.050	<0.020	0.30	0.020	0.004	10	9.6	2.00	2
NOV												
01...	4.0	4	4	<0.020	0.030	0.40	<0.020	0.004	8.6	8.0	3.00	10
08...	6.4	2	2	0.140	<0.020	0.40	0.020	0.003	8.8	8.9	4.00	5
14...	6.9	3	3	0.140	<0.020	0.40	<0.020	0.006	8.7	7.5	3.00	5
29...	7.2	15	6	0.140	0.100	0.50	0.040	0.008	--	--	4.00	9
DEC												
12...	7.8	2	2	0.200	<0.020	0.40	0.020	0.007	12	9.2	--	2
JAN 1990												
09...	9.0	4	4	0.200	0.090	0.40	<0.020	0.004	7.3	5.7	2.00	3
24...	9.4	4	3	0.210	0.090	0.40	0.030	0.008	8.0	6.0	3.00	3
24...	9.3	2	2	0.210	0.090	0.40	0.030	0.005	8.1	5.9	2.00	2
FEB												
07...	9.5	4	3	0.220	0.100	0.40	0.020	0.009	6.9	6.0	2.00	5
26...	9.7	2	2	0.250	0.100	0.40	0.020	0.011	6.9	5.3	1.00	--
MAR												
07...	9.7	5	4	0.270	0.090	0.40	0.020	0.012	6.2	5.1	2.00	4
26...	7.3	6	4	0.350	0.070	0.70	0.040	0.007	13	12	2.00	5
APR												
03...	6.8	14	7	0.290	0.070	0.60	0.030	0.009	11	9.0	5.00	9
12...	5.9	4	4	0.210	0.040	0.60	0.030	0.005	10	9.7	5.00	3
17...	4.4	7	6	0.110	0.040	0.52	0.029	0.002	12	10	8.00	3
25...	2.1	9	5	0.060	0.030	0.50	0.025	0.004	8.2	6.6	9.00	6
MAY												
02...	2.5	9	6	0.070	<0.020	0.50	0.030	0.003	8.4	7.2	10.0	6

STREAMS TRIBUTARY TO LAKE MICHIGAN

04067651 MENOMINEE RIVER AT MOUTH AT MARINETTE, WI--CONTINUED

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	91	8.8	15	525
2	---	---	---	---	---	---	---	---	84	13	55	429
3	---	---	---	---	---	---	---	---	65	20	26	274
4	---	---	---	---	---	---	---	---	60	23	13	131
5	---	---	---	---	---	---	---	---	49	42	21	141
6	---	---	---	---	---	---	---	---	45	23	20	80
7	---	---	---	---	---	---	---	---	39	8.4	31	47
8	---	---	---	---	---	---	---	---	35	5.5	79	7.9
9	---	---	---	---	---	---	---	---	30	8.0	85	9.8
10	---	---	---	---	---	---	---	---	29	12	30	21
11	---	---	---	---	---	---	---	---	24	22	10	23
12	---	---	---	---	---	---	---	---	24	151	7.7	39
13	---	---	---	---	---	---	---	---	20	123	10	158
14	---	---	---	---	---	---	---	---	18	49	11	258
15	---	---	---	---	---	---	---	---	19	48	19	9.3
16	---	---	---	---	---	---	---	---	23	35	330	6.6
17	---	---	---	---	---	---	---	---	36	23	182	11
18	---	---	---	---	---	---	---	---	49	24	78	7.5
19	---	---	---	---	---	---	---	---	72	31	59	8.7
20	---	---	---	---	---	---	---	---	109	73	33	42
21	---	---	---	---	---	---	---	---	190	176	21	97
22	---	---	---	---	---	---	---	---	190	136	14	23
23	---	---	---	---	---	---	---	---	40	132	26	26
24	---	---	---	---	---	---	---	---	11	66	32	20
25	---	---	---	---	---	---	---	---	18	47	31	9.7
26	---	---	---	---	---	---	---	---	37	33	26	15
27	---	---	---	---	---	---	---	---	86	18	16	41
28	---	---	---	---	---	---	---	---	134	11	9.0	105
29	---	---	---	---	---	---	---	---	29	11	9.6	39
30	---	---	---	---	---	---	---	---	9.4	10	6.7	26
31	---	---	---	---	---	---	---	---	---	9.5	47	---
TOTAL	---	---	---	---	---	---	---	---	1665.4	1392.2	1353.0	2630.5

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26	38	146	28	28	28	135	67	125	112	32	9.3
2	22	109	125	30	28	28	108	127	128	132	26	12
3	24	277	89	29	26	28	105	131	135	173	21	12
4	39	241	65	29	25	28	111	108	139	245	22	13
5	67	233	46	28	26	28	114	103	125	303	24	15
6	81	240	50	31	26	26	117	87	180	185	38	14
7	60	229	38	30	26	28	125	81	316	74	38	16
8	42	252	30	29	27	28	106	70	328	80	30	12
9	33	224	25	28	25	32	106	65	383	85	48	7.9
10	24	188	22	24	25	34	101	58	463	68	78	10
11	58	138	20	28	25	34	93	42	449	35	51	9.7
12	88	121	23	27	25	36	80	31	332	30	34	14
13	28	110	23	27	27	37	72	23	385	25	24	12
14	30	90	23	28	28	36	62	19	412	24	16	8.7
15	54	77	24	28	27	37	59	15	364	29	19	9.5
16	84	81	22	29	28	36	59	14	363	23	30	15
17	125	103	22	29	28	36	55	38	339	26	21	34
18	286	119	24	29	27	37	54	223	278	48	16	94
19	220	137	19	28	27	36	52	190	249	42	13	173
20	119	161	26	27	26	35	54	99	234	30	10	45
21	67	169	31	26	27	33	45	53	178	27	7.3	8.8
22	43	156	29	27	27	27	48	29	170	27	7.9	7.0
23	23	127	29	20	26	27	50	60	137	24	7.7	7.0
24	17	122	30	24	26	27	50	118	132	19	7.2	6.8
25	19	107	30	24	26	30	51	249	142	17	7.4	7.2
26	21	114	29	26	26	35	57	261	150	19	8.3	7.4
27	20	149	28	27	29	43	65	219	129	28	7.1	7.2
28	13	138	30	27	28	61	71	153	86	38	7.1	13
29	7.3	194	31	25	---	82	64	84	69	121	7.3	16
30	4.6	222	28	27	---	98	61	89	89	32	6.4	13
31	6.3	---	31	26	---	123	---	141	---	28	6.8	---
TOTAL	1751.2	4666	1188	845	745	1234	2330	3047	7009	2149	671.5	629.5

WTR YR 1989 TOTAL 26265.2

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SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

[illegible]

STREAMS TRIBUTARY TO LAKE MICHIGAN
452241088224800 McCASLIN LAKE NEAR LAKEWOOD, WI

LAKE-STAGE RECORDS

LOCATION.--Lat 45°22'41", long 88°22'48", in SW 1/4 sec.33, T.34 N., R.17 E., Marinette County, Hydrologic Unit 04030105, 8.8 mi northeast of Lakewood.

PERIOD OF RECORD.--October 1984 to current year.

GAGE.--Staff gage read by Norman Kretz. Elevation of gage is 1190 ft, from topographic map.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height observed, 11.85, May 12, 1990; minimum observed, 10.77, Aug. 3, 1985.

EXTREMES FOR CURRENT YEAR.--Maximum gage height observed, 11.85 ft, May 12; minimum observed, 10.80 ft, Nov. 11, 18.

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	GAGE HEIGHT	DATE	GAGE HEIGHT	DATE	GAGE HEIGHT	DATE	GAGE HEIGHT
OCT. 7	10.82	APR. 7	11.07	JUNE 10	11.25	AUG. 1	11.25
21	10.82	21	11.31	17	11.71	4	11.21
29	10.82	MAY 12	11.85	30	11.45	18	11.31
NOV. 11	10.80	15	11.64	JULY 7	11.35	19	11.37
18	10.80	28	11.51	15	11.27	23	11.21
		JUNE 3	11.37	29	11.21	SEPT. 8	11.37

WATER-QUALITY RECORDS

LOCATION.--Lat 45°22'51", long 88°22'40", in SW 1/4 sec.33, T.34 N., R.17 E., Marinette County, Hydrologic Unit 04030105, near center of lake, and 9.0 mi northeast of Lakewood.

PERIOD OF RECORD.--May 1985 to current year.

SECCHI DISC TRANSPARENCY (IN METERS) WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	SECCHI DISC (M) (00078)	DATE	TIME	SECCHI DISC (M) (00078)
OCT 1989			JUN 1990		
07...	1100	1.8	30...	1500	1.8
21...	1400	1.7	JUL		
29...	0900	2.0	07...	1300	1.7
NOV			15...	1000	1.5
11...	1100	2.0	29...	1300	1.4
18...	1100	2.1	AUG		
APR 1990			01...	1200	1.2
07...	1330	2.3	04...	1400	1.2
21...	1400	1.8	18...	1300	1.5
MAY			19...	1400	1.2
12...	1000	1.2	23...	1400	1.7
28...	1500	1.3	SEP		
JUN			01...	1500	1.8
03...	1500	1.1	08...	1200	1.8
10...	1400	1.7	30...	1400	1.7
17...	1300	1.8			

STREAMS TRIBUTARY TO LAKE MICHIGAN

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04069500 PESHTIGO RIVER AT PESHTIGO, WI

LOCATION.--Lat 45°02'49", long 87°44'40", in NE 1/4 sec.30, T.30 N., R.23 E., Marinette County, Hydrologic Unit 04030105, on left bank 75 ft downstream from Chicago and Northwestern Railway bridge, 0.5 mi downstream from Wisconsin Public Service Corp. Powerplant at Peshtigo, and 11.5 mi upstream from mouth.

DRAINAGE AREA.--1,080 mi².

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 National Geodetic Vertical Datum of 1929.

REMARKS.--Estimated daily discharges: Ice period listed in rating table below. Records good except those for ice-affected period, which is poor. Diurnal fluctuation caused by two powerplants upstream. Gage-height telemeter at station.

AVERAGE DISCHARGE.--37 years, 922 ft³/s, 11.59 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,790 ft³/s, May 9, 1960, gage height, 11.59 ft, from rating curve extended above 5,000 ft³/s on basis of computation of peak flow through dam gates; minimum, 17 ft³/s, Nov. 29, 1966, gage height, 1.00 ft; minimum daily, 84 ft³/s, Aug. 5, 1957.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,250 ft³/s, June 15, gage height, 9.05 ft; minimum daily, 169 ft³/s, Oct. 3.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Shifting-control method used Nov. 10-16, Mar. 24 to May 10, May 30 to June 6, and June 8-11; stage-discharge relation affected by ice Dec. 7 to Mar. 10.)

1.1	150	3.0	1,060
1.2	185	5.0	2,220
1.6	340	7.0	3,580
2.0	525	9.0	5,200

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	211	1130	307	220	250	270	526	572	720	1010	680	618
2	219	769	318	210	280	310	673	524	689	878	605	492
3	169	701	338	230	250	250	674	586	693	886	575	578
4	191	679	304	250	230	260	648	592	668	719	538	507
5	215	783	295	260	260	270	622	501	625	554	516	624
6	202	724	301	260	350	260	583	446	701	642	414	682
7	203	617	310	240	600	250	477	444	979	407	545	1130
8	197	764	280	240	450	250	422	389	845	457	484	1480
9	233	751	240	280	350	270	414	469	768	561	465	1440
10	194	585	270	240	370	300	441	724	750	720	456	1460
11	281	634	290	260	310	392	457	1460	602	1070	414	1400
12	206	595	250	280	260	756	500	1740	1210	783	329	1240
13	219	515	200	270	240	1520	451	1870	2950	742	331	1190
14	219	571	220	240	270	2230	454	1940	4390	336	387	1230
15	242	490	250	230	210	3110	450	1940	5150	853	305	1720
16	313	436	260	260	250	3690	440	1960	4790	546	516	1980
17	330	392	230	290	230	2780	397	2410	3890	355	440	1790
18	307	356	220	310	240	2610	436	2730	3310	589	396	1770
19	260	264	230	280	240	2310	410	2440	3000	432	453	1820
20	279	333	260	310	260	2070	373	2360	2350	364	700	1700
21	316	410	260	310	220	1860	426	2240	2230	519	768	1440
22	304	314	220	280	250	1450	375	2100	1950	433	675	1310
23	345	293	200	320	230	1260	415	1870	2790	443	625	1180
24	365	278	200	320	250	942	428	1730	2930	538	598	1060
25	373	316	220	320	260	905	496	1580	2390	545	598	974
26	439	334	220	330	250	846	468	1300	2090	543	797	854
27	466	341	210	250	260	797	537	1090	1680	531	1200	840
28	502	330	210	270	290	793	622	958	1470	471	1230	770
29	476	330	220	230	---	781	448	1080	1370	612	1140	614
30	596	258	220	250	---	665	490	894	1140	1090	957	487
31	729	---	200	270	---	627	---	843	---	964	869	---
TOTAL	9601	15293	7753	8310	7910	35084	14553	41782	59120	19593	19006	34380
MEAN	310	510	250	268	282	1132	485	1348	1971	632	613	1146
MAX	729	1130	338	330	600	3690	674	2730	5150	1090	1230	1980
MIN	169	258	200	210	210	250	373	389	602	336	305	487
CFSM	.29	.47	.23	.25	.26	1.05	.45	1.25	1.82	.59	.57	1.06
IN.	.33	.53	.27	.29	.27	1.21	.50	1.44	2.04	.67	.65	1.18
CAL YR 1989	TOTAL 203607	MEAN 558	MAX 3010	MIN 169	CFSM .52	IN. 7.01						
WTR YR 1990	TOTAL 272385	MEAN 746	MAX 5150	MIN 169	CFSM .69	IN. 9.38						

STREAMS TRIBUTARY TO LAKE MICHIGAN

04069530 PESHTIGO RIVER AT MOUTH NEAR PESHTIGO, WI

LOCATION.--Lat 44°58'23", long 87°39'18", in NW 1/4 NW 1/4 sec.24, T.29 N., R.23 E., Marinette County, Hydrologic Unit 04030105, at mouth near Peshtigo.

DRAINAGE AREA.--1,100 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1988 to April 1990 (discontinued).

GAGE.--None.

REMARKS.--Estimated daily discharges: May 1, 1988 to Apr. 30, 1990. Daily discharges were estimated by multiplying daily discharges from the Peshtigo River at Peshtigo, 04069500, times the drainage area ratio between the two sites of 1.019. Records poor.

EXTREMES FOR CURRENT PERIOD.--

MAY TO SEPTEMBER 1988: Maximum daily discharge, 1,270 ft³/s, May 2; minimum daily discharge, 169 ft³/s, June 29.

WATER YEAR 1989: Maximum daily discharge, 3,070 ft³/s, Apr. 1; minimum daily discharge, 198 ft³/s, Aug. 10.

OCTOBER 1989 TO APRIL 1990: Maximum daily discharge, 3,760 ft³/s, Mar. 16; minimum daily discharge, 172 ft³/s, Oct. 3.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	1260	398	181	311	308
2	---	---	---	---	---	---	---	1270	265	252	244	308
3	---	---	---	---	---	---	---	1110	233	302	238	290
4	---	---	---	---	---	---	---	1090	203	183	239	411
5	---	---	---	---	---	---	---	965	233	257	359	311
6	---	---	---	---	---	---	---	855	262	181	322	374
7	---	---	---	---	---	---	---	816	207	181	399	491
8	---	---	---	---	---	---	---	839	309	223	329	497
9	---	---	---	---	---	---	---	773	215	255	552	361
10	---	---	---	---	---	---	---	715	301	348	391	411
11	---	---	---	---	---	---	---	684	318	283	334	361
12	---	---	---	---	---	---	---	786	260	239	450	361
13	---	---	---	---	---	---	---	784	206	294	480	257
14	---	---	---	---	---	---	---	857	219	292	323	208
15	---	---	---	---	---	---	---	794	225	368	323	265
16	---	---	---	---	---	---	---	732	256	356	309	236
17	---	---	---	---	---	---	---	589	220	440	364	312
18	---	---	---	---	---	---	---	770	199	516	396	323
19	---	---	---	---	---	---	---	642	219	437	323	329
20	---	---	---	---	---	---	---	493	186	355	315	381
21	---	---	---	---	---	---	---	512	195	370	347	397
22	---	---	---	---	---	---	---	541	202	431	357	365
23	---	---	---	---	---	---	---	462	179	443	396	443
24	---	---	---	---	---	---	---	536	207	463	466	427
25	---	---	---	---	---	---	---	392	247	466	418	415
26	---	---	---	---	---	---	---	364	207	515	316	395
27	---	---	---	---	---	---	---	448	207	339	315	365
28	---	---	---	---	---	---	---	385	197	363	450	296
29	---	---	---	---	---	---	---	434	169	350	303	313
30	---	---	---	---	---	---	---	529	215	237	297	354
31	---	---	---	---	---	---	---	511	---	371	327	---
TOTAL	---	---	---	---	---	---	---	21938	6959	10291	10993	10565
MEAN	---	---	---	---	---	---	---	708	232	332	355	352
MAX	---	---	---	---	---	---	---	1270	398	516	552	497
MIN	---	---	---	---	---	---	---	364	169	181	238	208
CFSM	---	---	---	---	---	---	---	.64	.21	.30	.32	.32
IN.	---	---	---	---	---	---	---	.74	.24	.35	.37	.36

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DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990												
	MEAN VALUES											
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	215	1150	313	224	255	275	536	---	---	---	---	---
2	223	784	324	214	285	316	686	---	---	---	---	---
3	172	714	344	234	255	255	687	---	---	---	---	---
4	195	692	310	255	234	265	660	---	---	---	---	---
5	219	798	301	265	265	275	634	---	---	---	---	---
6	206	738	307	265	357	265	594	---	---	---	---	---
7	207	629	316	245	611	255	486	---	---	---	---	---
8	201	779	285	245	459	255	430	---	---	---	---	---
9	237	765	245	285	357	275	422	---	---	---	---	---
10	198	596	275	245	377	306	449	---	---	---	---	---
11	286	646	296	265	316	399	466	---	---	---	---	---
12	210	606	255	285	265	770	509	---	---	---	---	---
13	223	525	204	275	245	1550	460	---	---	---	---	---
14	223	582	224	245	275	2270	463	---	---	---	---	---
15	247	499	255	234	214	3170	459	---	---	---	---	---
16	319	444	265	265	255	3760	448	---	---	---	---	---
17	336	399	234	296	234	2830	405	---	---	---	---	---
18	313	363	224	316	245	2660	444	---	---	---	---	---
19	265	269	234	285	245	2350	418	---	---	---	---	---
20	284	339	265	316	265	2110	380	---	---	---	---	---
21	322	418	265	316	224	1900	434	---	---	---	---	---
22	310	320	224	285	255	1480	382	---	---	---	---	---
23	352	299	204	326	234	1280	423	---	---	---	---	---
24	372	283	204	326	255	960	436	---	---	---	---	---
25	380	322	224	326	265	922	505	---	---	---	---	---
26	447	340	224	336	255	862	477	---	---	---	---	---
27	475	347	214	255	265	812	547	---	---	---	---	---
28	512	336	214	275	296	808	634	---	---	---	---	---
29	485	336	224	234	---	796	457	---	---	---	---	---
30	607	263	224	255	---	678	499	---	---	---	---	---
31	743	---	204	275	---	639	---	---	---	---	---	---
TOTAL	9784	15581	7901	8468	8063	35748	14830	---	---	---	---	---
MEAN	316	519	255	273	288	1153	494	---	---	---	---	---
MAX	743	1150	344	336	611	3760	687	---	---	---	---	---
MIN	172	263	204	214	214	255	380	---	---	---	---	---
CFSM	.29	.47	.23	.25	.26	1.05	.45	---	---	---	---	---
IN.	.33	.53	.27	.29	.27	1.21	.50	---	---	---	---	---
CAL YR 1989	TOTAL 207465		MEAN 568		MAX 3070		MIN 172		CFSM .52		IN. 7.02	

STREAMS TRIBUTARY TO LAKE MICHIGAN

04069530 PESHTIGO RIVER AT MOUTH NEAR PESHTIGO, WI--CONTINUED

WATER-QUALITY RECORDS

PERIOD OF RECORD.--May 1988 to April 1990 (discontinued).

PERIOD OF DAILY RECORD.--

SUSPENDED-SEDIMENT DISCHARGE: May 1988 to April 1990 (discontinued).

INSTRUMENTATION.--Automatic pumping sampler since May 1988.

REMARKS.--Records fair. Suspended-sediment discharge computed using discharges from Peshtigo River at Peshtigo, 04069500, multiplied by the drainage area ratio between the two sites of 1.019. Suspended-sediment samples were point samples taken by an automatic sampler. The samples are composites of four subsamples taken at six-hour intervals during the day beginning at time 0600. Samples for chemical analysis were composite samples of water pumped from multiple fixed points in the stream cross section. Chemical analyses by Wisconsin State Laboratory of Hygiene.

EXTREMES FOR CURRENT PERIOD.--

MAY TO SEPTEMBER 1988:

SUSPENDED-SEDIMENT CONCENTRATIONS: Maximum observed, 32 mg/L, July 7; minimum observed, 0 mg/L, Sept. 6.

SUSPENDED-SEDIMENT DISCHARGE: Maximum daily, 50 tons, May 1; minimum daily, 1.3 tons, Sept. 5.

WATER YEAR 1989:

SUSPENDED-SEDIMENT CONCENTRATIONS: Maximum observed, 45 mg/L, Mar. 28; minimum observed, 0 mg/L, Jan. 19.

SUSPENDED-SEDIMENT DISCHARGE: Maximum daily, 268 tons, Mar. 28; minimum daily, 0.18 ton, Jan. 17, 19, 20, 25, 28, Feb. 23, and Mar. 10.

OCTOBER 1989 TO APRIL 1990:

SUSPENDED-SEDIMENT CONCENTRATIONS: Maximum observed, 28 mg/L, Mar. 16; minimum observed, 0 mg/L, Nov. 13, 15, and Jan. 4, 25.

SUSPENDED-SEDIMENT DISCHARGE: Maximum daily, 249 tons, Mar. 16; minimum daily, 0.30 ton, Jan. 25.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	DATE	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	SEDI- MENT, SUS- PENDE (MG/L) (80154)
MAY 1988			JUL 1988		
19...	642	7	04...	183	21
20...	493	8	07...	181	32
21...	512	9	11...	283	26
22...	541	10	14...	292	10
23...	462	10	17...	440	10
24...	536	12	19...	437	6
25...	392	8	22...	431	9
26...	364	14	26...	515	6
27...	448	17	29...	350	5
28...	385	10	AUG		
29...	434	11	01...	311	11
30...	529	8	02...	244	21
31...	511	5	05...	359	22
JUN			09...	552	6
01...	398	7	12...	450	12
02...	265	7	15...	323	8
05...	233	29	17...	364	12
06...	262	6	19...	323	17
08...	309	10	23...	396	7
09...	215	10	26...	316	8
10...	301	6	30...	297	5
12...	260	6	SEP		
14...	219	7	02...	308	7
16...	256	6	05...	311	1
18...	199	6	08...	497	3
20...	186	6	11...	361	4
22...	202	5	15...	265	7
24...	207	5	16...	236	2
26...	207	17	20...	381	9
28...	197	12	23...	443	5
29...	169	19	30...	354	6

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04069530 PESHTIGO RIVER AT MOUTH NEAR PESHTIGO, WI--CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	DATE	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	SEDI- MENT, SUS- PENDED (MG/L) (80154)
OCT 1988			MAR 1989		
02...	357	12	01...	397	2
03...	259	13	02...	326	5
04...	291	7	03...	459	7
07...	250	7	04...	550	4
11...	289	1	05...	509	4
13...	232	21	06...	408	6
14...	216	3	07...	428	5
16...	266	4	08...	509	3
17...	310	12	09...	469	2
18...	294	4	10...	448	0
20...	461	6	13...	459	4
21...	321	3	14...	509	3
23...	362	10	15...	550	3
25...	669	8	16...	509	3
28...	799	3	17...	611	4
31...	760	7	18...	571	2
NOV			19...	509	6
03...	616	3	20...	489	3
07...	1300	8	21...	438	3
08...	1250	5	22...	550	1
09...	1290	5	23...	652	4
12...	955	5	24...	550	2
13...	1030	7	25...	509	7
14...	896	3	26...	917	9
15...	866	5	27...	1830	19
16...	1140	7	28...	2550	45
18...	1390	3	29...	2960	32
22...	1210	3	30...	2550	11
25...	908	4	31...	2850	8
26...	794	3	APR		
27...	1020	5	01...	3070	6
30...	1030	4	02...	2990	7
DEC			03...	2560	8
04...	816	5	04...	2180	8
07...	719	3	05...	2160	8
20...	459	7	06...	2040	8
21...	499	5	06...	2040	8
JAN 1989			07...	2090	10
10...	459	1	08...	2080	13
11...	408	2	09...	1690	10
12...	459	2	10...	1670	6
13...	408	4	11...	1550	7
14...	408	2	12...	1290	7
15...	361	5	13...	1370	6
16...	370	8	14...	1270	8
17...	366	0	15...	1120	7
18...	509	1	16...	803	7
19...	459	0	17...	843	8
20...	408	0	18...	963	7
21...	551	1	19...	955	5
22...	377	2	20...	1060	6
23...	463	5	21...	1100	5
24...	455	2	22...	1050	11
25...	412	8	23...	893	6
25...	412	0	24...	896	7
26...	437	1	25...	846	7
27...	484	1	28...	867	9
28...	392	0	29...	899	7
29...	405	2	MAY		
FEB			01...	701	4
03...	428	5	02...	771	3
06...	377	5	05...	717	4
07...	418	12	06...	836	4
14...	459	5	08...	790	5
17...	408	3	09...	876	4
19...	285	1	10...	801	5
20...	326	2	10...	801	4
21...	408	4	11...	722	5
22...	357	1	12...	637	5
23...	316	0	14...	561	3
24...	275	4	15...	570	5
25...	357	3	16...	467	4
26...	377	2	17...	616	6
27...	357	1	18...	632	6
28...	306	3	19...	609	6

STREAMS TRIBUTARY TO LAKE MICHIGAN

04069530 PESHTIGO RIVER AT MOUTH NEAR PESHTIGO, WI--CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	DATE	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	SEDI- MENT, SUS- PENDE (MG/L) (80154)
MAY 1989			JUL 1989		
20...	615	6	25...	335	4
21...	685	12	26...	202	5
22...	636	12	27...	296	3
23...	561	8	28...	266	6
24...	495	14	29...	322	4
25...	754	14	30...	282	3
26...	1130	10	31...	410	4
27...	1380	10	AUG		
28...	1410	5	01...	653	4
29...	1110	7	02...	337	2
30...	1220	9	03...	304	1
31...	1280	9	04...	319	4
JUN			05...	272	3
01...	1660	7	06...	248	2
02...	1700	7	07...	281	5
03...	1650	7	08...	254	3
04...	1550	7	09...	228	7
05...	1320	7	10...	198	7
06...	1130	7	11...	247	4
07...	849	8	12...	207	3
08...	822	8	13...	249	3
09...	1050	6	14...	354	5
10...	1170	8	15...	343	4
11...	1180	9	16...	301	5
12...	1130	6	17...	329	9
13...	1050	8	18...	427	5
14...	1070	8	19...	327	3
15...	1170	8	20...	384	3
16...	1280	7	21...	352	4
17...	1250	7	22...	314	7
18...	1130	7	23...	371	3
19...	973	6	24...	346	1
20...	896	7	25...	277	6
21...	688	12	26...	321	5
22...	706	8	27...	311	5
23...	629	7	28...	329	8
24...	616	6	29...	291	13
25...	490	7	31...	282	5
26...	410	7	SEP		
27...	477	6	01...	289	6
28...	369	6	02...	268	5
29...	415	5	03...	281	8
30...	371	6	04...	229	6
JUL			05...	272	6
01...	550	6	06...	287	7
02...	262	6	07...	260	6
03...	447	4	09...	357	5
04...	314	7	10...	369	6
05...	327	5	11...	258	3
06...	365	6	12...	300	4
07...	302	6	13...	246	4
08...	310	6	14...	293	3
09...	240	5	15...	261	2
10...	231	6	16...	249	3
11...	211	5	17...	269	4
12...	357	5	18...	253	5
13...	315	7	19...	278	4
14...	353	7	20...	240	4
15...	307	3	21...	372	7
16...	359	5	22...	254	3
17...	313	5	23...	249	5
18...	286	4	24...	225	5
19...	268	4	25...	259	5
20...	257	2	26...	246	4
21...	220	3	27...	246	4
22...	203	3	28...	234	4
23...	284	3	29...	228	3
24...	299	3	30...	225	4

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04069530 PESHTIGO RIVER AT MOUTH NEAR PESHTIGO, WI--CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	DATE	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	SEDI- MENT, SUS- PENDED (MG/L) (80154)
OCT 1989			DEC 1989		
01...	215	5	03...	344	5
02...	223	1	04...	310	1
03...	172	2	05...	301	4
04...	195	4	06...	307	3
05...	219	4	07...	316	1
06...	206	3	08...	285	9
07...	207	2	09...	245	2
08...	201	4	10...	275	25
09...	237	6	11...	296	27
10...	198	11	12...	255	28
11...	286	15	13...	204	7
12...	210	9	17...	234	26
13...	223	11	18...	224	13
14...	223	14	25...	224	5
15...	247	8	26...	224	4
16...	319	6	27...	214	4
17...	336	3	28...	214	3
18...	313	3	29...	224	3
19...	265	5	30...	224	3
20...	284	4	JAN 1990		
21...	322	3	01...	224	1
22...	310	4	04...	255	0
23...	352	4	08...	245	2
24...	372	4	11...	265	1
25...	380	6	15...	234	5
26...	447	7	18...	316	3
27...	475	7	22...	285	1
28...	512	6	25...	326	0
29...	485	5	29...	234	1
30...	607	4	FEB		
31...	743	4	01...	255	2
NOV			05...	265	3
01...	1150	5	08...	459	5
02...	784	4	12...	265	5
03...	714	4	15...	214	3
04...	692	3	19...	245	7
05...	798	2	22...	255	1
06...	738	2	27...	265	1
07...	629	3	MAR		
08...	779	2	02...	316	3
09...	765	3	04...	265	3
10...	596	1	06...	265	4
11...	646	1	07...	255	1
12...	606	1	08...	255	5
13...	525	0	09...	275	5
14...	582	4	13...	1550	10
15...	499	0	14...	2270	17
16...	444	5	15...	3170	20
17...	399	5	16...	3760	26
18...	363	8	21...	1900	13
19...	269	3	23...	1280	8
20...	339	10	25...	922	8
21...	418	2	27...	812	7
22...	320	7	28...	808	6
23...	299	2	29...	796	5
24...	283	2	31...	639	4
25...	322	7	APR		
26...	340	3	02...	686	6
27...	347	5	04...	660	4
28...	336	3	13...	460	6
29...	336	4	15...	459	5
30...	263	1	18...	444	5
DEC			28...	634	7
01...	313	3	30...	499	5
02...	324	3			

STREAMS TRIBUTARY TO LAKE MICHIGAN

04069530 PESHTIGO RIVER AT MOUTH NEAR PESHTIGO, WI--CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	DIS-CHARGE, IN CUBIC FEET PER SECOND (00060)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	TRANS- PAR- ENCY (SECCHI DISK) (M) (00078)	OXYGEN, DIS- SOLVED (MG/L) (00300)	HARD- NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM TOTAL RECOV- ERABLE (MG/L AS CA) (00916)
JUN 1988									
15...	1130	225	310	7.8	24.5	0.60	6.0	130	32
22...	1200	202	286	7.8	26.0	0.80	5.9	180	43
29...	1530	169	--	--	--	--	--	170	46
JUL									
19...	1325	437	261	7.7	24.5	1.20	6.6	130	30
AUG									
17...	0810	364	315	7.6	26.5	0.80	5.8	150	36
SEP									
13...	1450	257	285	8.0	19.5	0.90	8.9	140	32

DATE	MAGNE- SIUM, TOTAL RECOV- ERABLE (MG/L AS MG) (00927)	ALKA- LITY WAT WH TOT FET LAB MG/L AS CACO3 (00417)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDE (MG/L) (00530)	SOLIDS, RESIDUE AT 105 DEG. C, TOTAL (MG/L) (00500)	RESIDUE VOLA- TILE, SUS- PENDE (MG/L) (00535)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)
JUN 1988									
15...	13	116	17	6.1	11	226	4	--	--
22...	19	114	14	7.2	164	536	30	--	--
29...	13	116	18	7.4	6	224	4	--	--
JUL									
19...	13	110	10	6.7	5	194	4	0.090	<0.020
AUG									
17...	14	118	20	7.9	21	--	9	0.040	0.130
SEP									
13...	14	120	13	6.0	2	--	2	<0.020	<0.020

DATE	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)	CHLORO- PHYLL A TRICHR. UNCORR. WHOLE TOTAL (UG/L) (32210)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
JUN 1988								
15...	--	0.060	--	13	11	15.0	8	91
22...	--	0.250	--	13	11	16.0	5	100
29...	--	0.020	--	13	11	22.0	5	82
JUL								
19...	0.60	0.030	0.003	11	10	<10.0	3	100
AUG								
17...	1.0	0.070	0.003	16	13	12.0	9	--
SEP								
13...	0.50	0.020	0.002	10	8.6	9.00	5	--

STREAMS TRIBUTARY TO LAKE MICHIGAN

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04069530 PESHTIGO RIVER AT MOUTH NEAR PESHTIGO, WI--CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	TRANS- PAR- ENCY (SECCHI DISK) (M) (00078)	OXYGEN, DIS- SOLVED (MG/L) (00300)	HARD- NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM TOTAL RECOV- ERABLE (MG/L AS CA) (00916)	MAGNE- SIUM, TOTAL RECOV- ERABLE (MG/L AS MG) (00927)	ALKA- LITY WAT WH TOT FET LAB MG/L AS CACO3 (00417)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)
OCT 1988												
12...	1015	346	303	8.0	8.0	--	10.6	140	34	14	129	12
NOV												
08...	1355	1250	260	8.1	8.0	1.20	12.9	130	31	13	120	6.1
JAN 1989												
25...	1000	412	288	7.7	0.0	--	12.1	140	35	14	124	10
APR												
12...	1630	1290	221	7.8	4.5	0.80	12.8	120	28	13	134	6.2
MAY												
10...	1515	801	258	8.0	13.0	1.20	11.2	120	29	12	104	8.0
JUN												
07...	1325	849	280	7.6	21.0	1.10	7.8	120	29	11	116	8.1
JUL												
06...	1100	365	255	7.9	26.5	0.70	7.3	110	26	12	116	6.7
AUG												
02...	0800	337	260	7.8	23.5	1.30	6.9	130	29	13	116	7.9
31...	0830	282	280	7.6	21.0	1.80	6.8	110	26	12	122	8.6
SEP												
26...	1215	246	316	8.0	13.5	1.00	9.5	140	33	14	127	16

DATE	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDED (MG/L) (00530)	RESIDUE VOLA- TILE, SUS- PENDED (MG/L) (00535)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)	CHLORO- PHYLL A TRICHR. UNCORR. WHOLE TOTAL (UG/L) (32210)	SEDI- MENT, SUS- PENDED (MG/L) (80154)
OCT 1988												
12...	7.6	4	2	0.070	<0.020	0.50	0.030	0.004	8.8	7.9	11.0	20
NOV												
08...	9.1	12	4	0.170	<0.020	0.60	0.040	0.003	8.2	7.4	6.00	14
JAN 1989												
25...	11	4	3	0.440	0.030	0.40	0.020	0.004	9.5	8.8	2.00	--
APR												
12...	8.6	11	6	0.410	0.040	0.70	0.040	0.005	7.6	6.7	4.00	10
MAY												
10...	5.6	7	4	0.190	0.020	0.60	0.030	0.004	7.8	7.5	6.00	--
JUN												
07...	6.3	6	4	0.100	0.030	1.0	0.040	0.006	18	17	5.00	6
JUL												
06...	5.9	14	6	0.060	0.100	0.90	0.060	0.004	14	12	21.0	--
AUG												
02...	6.5	4	4	0.100	0.040	0.40	0.030	0.008	8.3	7.6	6.00	4
31...	5.5	3	3	0.030	0.030	0.60	0.020	0.003	10	9.3	5.00	10
SEP												
26...	4.3	3	3	<0.020	<0.020	0.60	0.020	0.003	12	12	3.00	3

STREAMS TRIBUTARY TO LAKE MICHIGAN

04069530 PESHTIGO RIVER AT MOUTH NEAR PESHTIGO, WI--CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	TRANS- PAR- ENCY (SECCHI DISK) (M) (00078)	OXYGEN, DIS- SOLVED (MG/L) (00300)	HARD- NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM TOTAL RECOV- ERABLE (MG/L AS CA) (00916)	MAGNE- SIUM, TOTAL RECOV- ERABLE (MG/L AS MG) (00927)	ALKA- LITY WAT WH TOT FET LAB MG/L AS CACO3 (00417)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)
OCT 1989												
23...	1500	352	296	8.0	8.5	1.20	11.7	150	35	15	134	11
NOV												
28...	1615	336	320	7.8	0.0	0.90	14.5	180	42	18	147	13
JAN 1990												
09...	1220	285	328	7.5	0.0	1.20	11.9	150	35	15	135	13
FEB												
07...	1200	611	337	7.8	0.0	1.20	11.9	170	40	17	144	10
MAR												
*08...	0850	255	366	7.6	0.0	1.20	12.2	--	42	17	131	15
*08...	0855	255	366	7.6	0.0	1.20	12.2	--	41	17	146	15
*22...	1230	1480	256	7.8	3.5	1.10	12.4	140	32	14	111	6.5
APR												
25...	1220	505	299	7.8	17.5	0.90	8.4	160	38	16	126	8.9

DATE	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDE (MG/L) (00530)	RESIDUE VOLATILE, SUS- PENDE (MG/L) (00535)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)	CHLORO- PHYLL A TRICHR. UNCORR. WHOLE TOTAL (UG/L) (32210)	SEDI- MENT, SUS- PENDE (MG/L) (80154)
OCT 1989												
23...	5.6	2	2	0.100	<0.020	0.50	0.020	0.003	12	11	2.00	2
NOV												
28...	7.2	8	6	0.250	<0.020	0.50	0.020	0.004	12	10	5.00	5
JAN 1990												
09...	8.9	3	3	0.290	0.050	0.40	<0.020	0.008	8.7	7.1	2.00	1
FEB												
07...	10	6	6	0.380	0.040	0.50	0.020	0.006	7.1	7.1	3.00	5
MAR												
08...	10	4	4	0.460	0.080	0.50	0.020	0.005	8.5	6.6	2.00	2
08...	11	5	5	0.460	0.080	0.50	0.020	0.005	8.8	6.7	2.00	1
22...	9.7	13	8	0.580	0.060	0.60	0.040	0.005	11	9.6	4.00	--
APR												
25...	4.7	7	3	0.200	0.160	0.86	0.060	0.006	10	8.5	14.0	13

* SAMPLES WITH SAME DATES ARE REPLICATES.

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SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

WTR YR 1989 TOTAL 4142.40

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

[illegible]

STREAMS TRIBUTARY TO LAKE MICHIGAN
04070000 WHEELER LAKE NEAR LAKEWOOD, WI

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LAKE-STAGE RECORDS

LOCATION.--Lat 45°19'07", long 88°28'58", in NW 1/4 sec.27, T.33 N., R.16 E., Oconto County, Hydrologic Unit 04030104, on south shore of lake, 2.5 mi northeast of Lakewood.

DRAINAGE AREA.--2.27 mi², approximately. Area of Wheeler Lake, 380 acres.

PERIOD OF RECORD.--August 1936 to September 1981, April 1986 to current year.

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

GAGE.--Nonrecording gage. Datum of gage is 90.00 ft above datum assumed by Wisconsin Department of Natural Resources; gage readings have been reduced to elevations above this datum. Staff gage read by Roy A. Green on south side of lake. Prior to Apr. 19, 1936, nonrecording gage was located on east shore of lake. Apr. 20, 1939, to Apr. 13, 1960, nonrecording gage was located on southwest shore of lake.

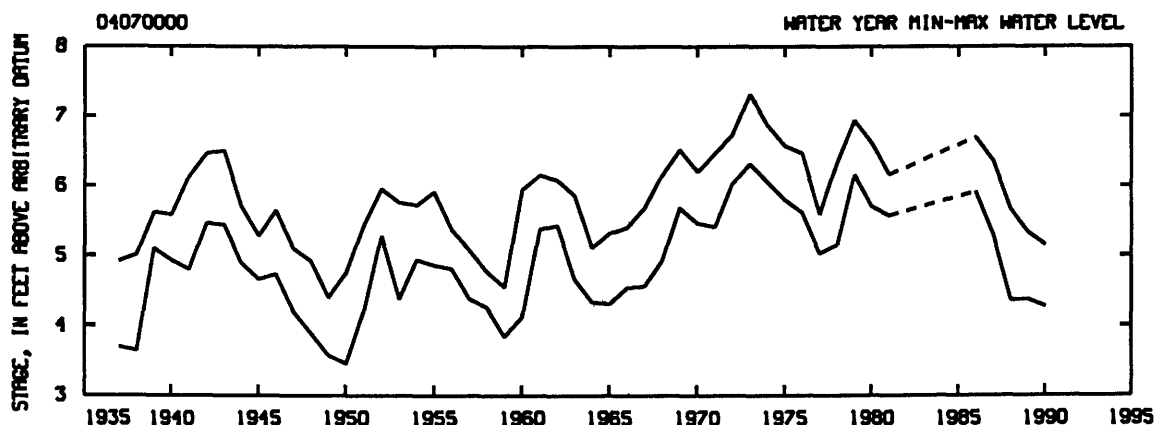
REMARKS.--Add 90 ft to obtain elevation above datum assumed for this lake by Wisconsin Department of Natural Resources. Lake has no surface outlet.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height observed, 7.31 ft June 6, 1973; minimum observed, 3.45 ft Feb. 5, 1950.

EXTREMES FOR CURRENT YEAR.--Maximum gage height observed, 5.15 ft, Sept. 13; minimum observed, 4.27 ft, Oct. 22, 1990.

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	GAGE HEIGHT	DATE	GAGE HEIGHT	DATE	GAGE HEIGHT	DATE	GAGE HEIGHT
OCT. 1	4.37	OCT. 25	4.27	JUNE 21	4.94	AUG. 8	4.65
7	4.33	31	4.39	26	4.92	22	4.75
12	4.29	NOV. 8	4.43	JULY 6	4.89	28	4.95
15	4.28	MAY 22	4.67	18	4.85	SEPT. 4	4.87
22	4.27	JUNE 15	4.97	26	4.77	13	5.15
				31	4.72	28	5.01



WATER-QUALITY RECORDS

LOCATION.--Lat 45°19'07", long 88°28'32", in NE 1/4 sec.27, T.33 N., R.16 E., Oconto County, Hydrologic Unit 04030104, near center of lake, and 2.6 mi northeast of Lakewood.

PERIOD OF RECORD.--July 1985 to current year.

REMARKS.--Secchi disc readings made by Roy A. Green.

SECCHI DISC TRANSPARENCY (IN METERS) WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	SECCHI DISC (M) (00078)	DATE	TIME	SECCHI DISC (M) (00078)
MAY 1990			JUL 1990		
22...	1400	6.0	31...	1400	4.4
JUN			AUG		
15...	1430	7.0	08...	1430	4.4
21...	1430	6.1	22...	1500	4.0
26...	1500	5.2	27...	1400	3.7
JUL			SEP		
06...	1430	4.7	04...	1430	3.8
18...	1430	4.9	13...	1400	3.7
26...	1400	4.6	28...	1430	4.7

445401088334500 LEGEND LAKE SITE #2 (CENTER) NEAR SHAWANO, WI

LOCATION.--Lat 44°54'01", long 88°33'45", in SE 1/4 SW 1/4 sec. 16, T.28 N., R.16 E., Menominee County, Hydrologic Unit 04030104, 8.6 mi northeast of Shawano.

PERIOD OF RECORD.--February to September 1990.

REMARKS.--Lake sampled near center and approximately 2 mi west of the dam at the east end at a lake depth of about 70 ft. Lake ice-covered during February sampling.

WATER-QUALITY DATA, FEBRUARY 20 TO AUGUST 08, 1990
(Milligrams per liter unless otherwise indicated)

	Feb. 20		May 21		July 09		Aug. 08	
Depth of sample (ft)	1.5	10.0	2.0	48.0	1.5	66.0	1.5	65.0
Lake stage (ft)	---		1.92		1.87		1.80	
Specific conductance (μS/cm)	288	290	277	285	268	363	251	299
pH (units)	7.7	7.5	7.3	7.3	8.1	6.7	8.3	7.1
Water temperature (°C)	1.9	4.3	14.3	6.7	24.8	6.3	23.5	6.3
Color (Pt-Co. scale)	---	---	3	12	---	---	---	---
Turbidity (NTU)	---	---	0.5	0.6	---	---	---	---
Secchi-depth (meters)	3.0		5.6		4.1		4.8	
Dissolved oxygen	8.7	7.4	10.8	5.4	9.0	0.0	---	0.0
Hardness, as CaCO ₃	---	---	140	150	---	---	---	---
Calcium, dissolved (Ca)	---	---	30	31	---	---	---	---
Magnesium, dissolved (Mg)	---	---	16	17	---	---	---	---
Sodium, dissolved (Na)	---	---	2.2	2.2	---	---	---	---
Potassium, dissolved (K)	---	---	1.0	1.1	---	---	---	---
Alkalinity, as CaCO ₃	---	---	138	145	---	---	---	---
Sulfate, dissolved (SO ₄)	---	---	6.8	7.1	---	---	---	---
Fluoride, dissolved (F)	---	---	0.1	0.1	---	---	---	---
Chloride, dissolved (Cl)	---	---	2.9	3.4	---	---	---	---
Silica, dissolved (SiO ₂)	---	---	2.4	3.9	---	---	---	---
Solids, dissolved, at 180°C	---	---	140	148	---	---	---	---
Nitrogen, nitrite, total (as N)	---	---	---	0.01	<0.01	<0.01	<0.01	0.03
Nitrogen, NO ₂ + NO ₃ , total (as N)	---	---	---	<0.10	<0.10	<0.10	<0.10	<0.10
Nitrogen, ammonia, total (as N)	---	---	---	0.06	0.03	<0.01	0.01	0.13
Nitrogen, organic, total (as N)	---	---	---	1.0	0.67	---	0.39	0.47
Nitrogen, amm. + org., total (as N)	---	---	---	1.10	0.70	0.50	0.40	0.60
Phosphorus, total (as P)	---	---	---	0.007	0.004	0.007	0.007	0.012
Phosphorus, ortho, dissolved (as P)	---	---	---	<0.001	0.004	0.003	0.007	<0.001
Iron, dissolved (Fe) μg/L	---	---	22	7	---	---	---	---
Manganese, dissolved (Mn) μg/L	---	---	3	33	---	---	---	---
Chlorophyll a, phytoplankton (μg/L)	---	---	0.4	---	0.5	---	1.1	---

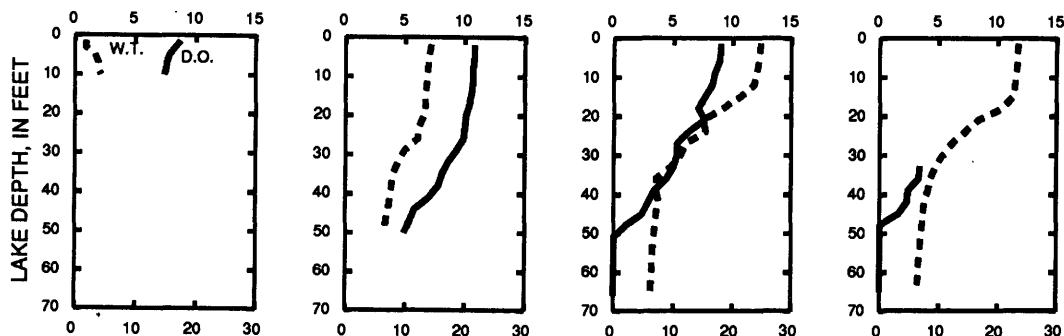
2-20-90

5-21-90

7-9-90

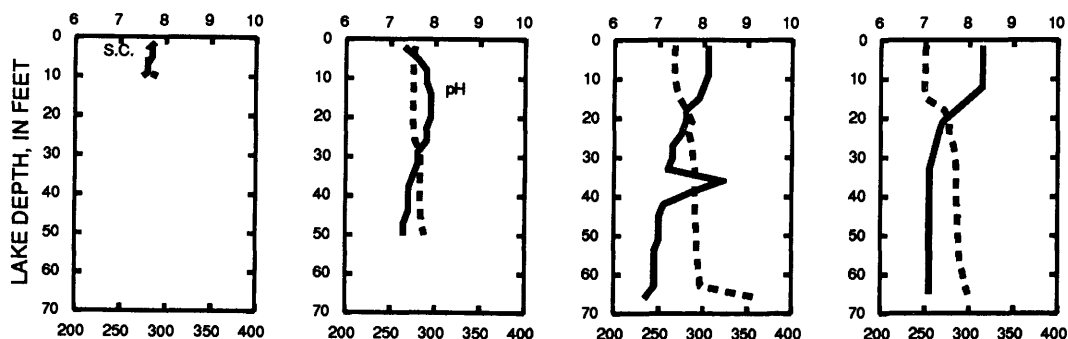
8-8-90

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

STREAMS TRIBUTARY TO LAKE MICHIGAN

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445342088312700 LEGEND LAKE SITE #1 (NEAR DAM) NEAR SHAWANO, WI

LOCATION.--Lat 44°53'42", long 88°31'27", in NW 1/4 NE 1/4 sec. 23, T.28 N., R.16 E., Menominee County, Hydrologic Unit 04030104, 9.0 mi northeast of Shawano.

LAKE-STAGE RECORDS

PERIOD OF RECORD.--May to September 1990.

GAGE.--Staff gage read by A. Fowler. Elevation of gage 845 ft, from topographic map.

EXTREMES FOR CURRENT YEAR.--Maximum gage-height observed, 2.00 ft, June 14 and Sept. 14; minimum gage-height observed, 1.48 ft, May 4.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	1.85	---	---	---
2	---	---	---	---	---	---	---	---	---	---	---	---
3	---	---	---	---	---	---	---	---	---	---	1.76	---
4	---	---	---	---	---	---	---	1.48	---	---	---	---
5	---	---	---	---	---	---	---	---	---	---	---	---
6	---	---	---	---	---	---	---	---	---	1.84	---	1.82
7	---	---	---	---	---	---	---	---	---	---	---	---
8	---	---	---	---	---	---	---	---	1.85	---	1.80	---
9	---	---	---	---	---	---	---	---	---	1.87	---	---
10	---	---	---	---	---	---	---	---	---	---	---	---
11	---	---	---	---	---	---	---	1.70	---	---	---	---
12	---	---	---	---	---	---	---	---	---	---	---	---
13	---	---	---	---	---	---	---	---	---	1.76	---	---
14	---	---	---	---	---	---	---	---	2.00	---	---	2.00
15	---	---	---	---	---	---	---	---	---	---	1.74	---
16	---	---	---	---	---	---	---	---	---	---	---	---
17	---	---	---	---	---	---	---	---	---	---	---	---
18	---	---	---	---	---	---	---	1.90	---	---	---	---
19	---	---	---	---	---	---	---	---	---	---	---	---
20	---	---	---	---	---	---	---	---	---	1.81	---	1.96
21	---	---	---	---	---	---	---	1.92	---	---	---	---
22	---	---	---	---	---	---	---	---	---	---	---	---
23	---	---	---	---	---	---	---	---	---	---	---	---
24	---	---	---	---	---	---	---	---	---	---	1.80	---
25	---	---	---	---	---	---	---	---	---	---	---	---
26	---	---	---	---	---	---	---	---	---	---	---	---
27	---	---	---	---	---	---	---	---	---	---	---	---
28	---	---	---	---	---	---	---	---	---	---	---	---
29	---	---	---	---	---	---	---	---	1.96	---	---	---
30	---	---	---	---	---	---	---	---	---	---	---	---
31	---	---	---	---	---	---	---	---	---	---	1.80	---
MAX	---	---	---	---	---	---	---	1.92	2.00	1.87	1.80	2.00
MIN	---	---	---	---	---	---	---	1.48	1.85	1.76	1.74	1.82

WATER-QUALITY RECORDS

PERIOD OF RECORD.--February to September 1990.

REMARKS.--Lake sampled at east end near dam at a lake depth of about 35 ft. Lake ice-covered during February sampling.

WATER-QUALITY DATA, FEBRUARY 19 TO AUGUST 08, 1990
(Milligrams per liter unless otherwise indicated)

	Feb. 19		May 21		July 09		Aug. 08	
Depth of sample (ft)	1.5	11.0	1.5	---	1.5	23.0	1.5	15.0
Lake stage (ft)	---	---	---	1.92	---	1.87	---	1.80
Specific conductance ($\mu\text{S}/\text{cm}$)	247	251	240	238	242	248	228	227
pH (units)	7.5	7.4	7.9	7.9	8.2	7.5	8.3	8.4
Water temperature ($^{\circ}\text{C}$)	1.2	4.0	13.1	11.7	24.7	19.2	23.3	23.3
Color (Pt-Co. scale)	---	---	3.0	5.0	---	---	---	---
Turbidity (NTU)	---	---	0.6	0.6	---	---	---	---
Secchi-depth (meters)	---	2.1	---	8.5	---	4.3	---	3.4
Dissolved oxygen	11.0	8.6	10.7	---	9.1	6.1	8.9	9.0
Hardness, as CaCO_3	---	---	120	120	---	---	---	---
Calcium, dissolved (Ca)	---	---	26	25	---	---	---	---
Magnesium, dissolved (Mg)	---	---	14	14	---	---	---	---
Sodium, dissolved (Na)	---	---	1.8	1.8	---	---	---	---
Potassium, dissolved (K)	---	---	0.7	0.7	---	---	---	---
Alkalinity, as CaCO_3	---	---	118	118	---	---	---	---
Sulfate, dissolved (SO_4)	---	---	5.7	5.5	---	---	---	---
Fluoride, dissolved (F)	---	---	<0.1	0.3	---	---	---	---
Chloride, dissolved (Cl)	---	---	4.4	2.5	---	---	---	---
Silica, dissolved (SiO_2)	---	---	1.1	1.1	---	---	---	---
Solids, dissolved, at 180°C	---	---	128	121	---	---	---	---
Nitrogen, nitrite, total (as N)	---	---	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nitrogen, $\text{NO}_2 + \text{NO}_3$, total (as N)	---	---	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Nitrogen, ammonia, total (as N)	---	---	0.01	0.01	0.01	0.02	0.02	0.01
Nitrogen, organic, total (as N)	---	---	0.49	0.39	0.49	0.38	0.38	0.99
Nitrogen, amm. + org., total (as N)	---	---	0.50	0.40	0.50	0.40	0.40	1.00
Phosphorus, total (as P)	---	---	0.006	0.006	0.006	0.005	0.005	0.009
Phosphorus, ortho, dissolved (as P)	---	---	0.002	<0.001	0.002	0.004	0.007	0.007
Iron, dissolved (Fe) $\mu\text{g}/\text{L}$	---	---	5.0	5.0	---	---	---	---
Manganese, dissolved (Mn) $\mu\text{g}/\text{L}$	---	---	2.0	<1.0	---	---	---	---
Chlorophyll a, phytoplankton ($\mu\text{g}/\text{L}$)	---	---	0.3	---	0.4	---	0.9	---

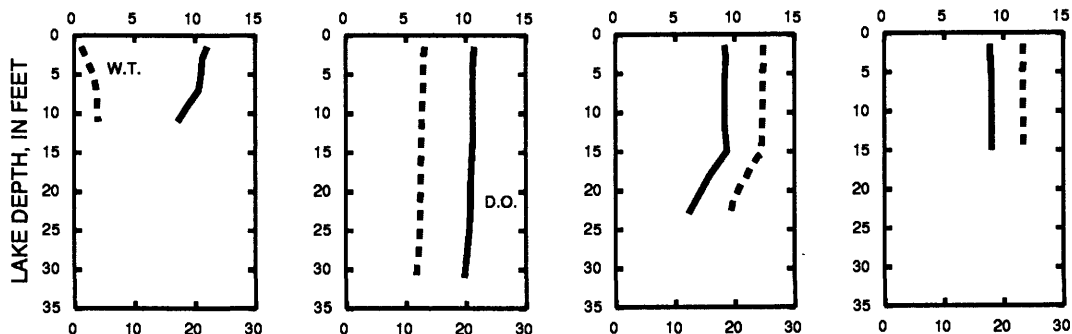
2-19-90

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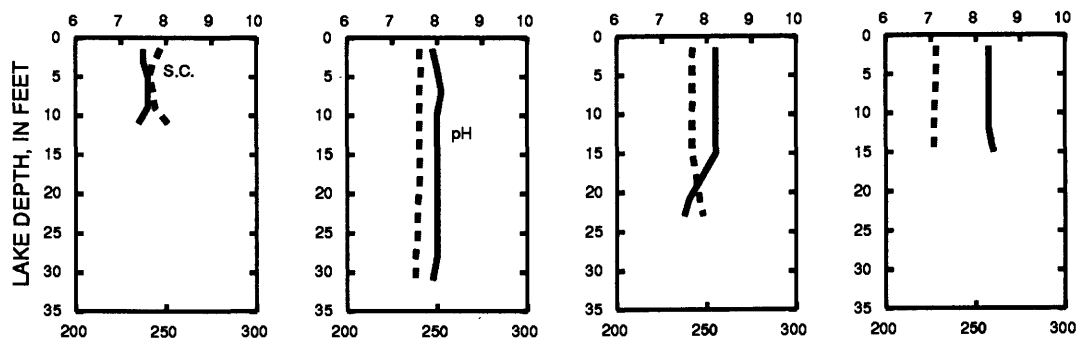
8-8-90

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

STREAMS TRIBUTARY TO LAKE MICHIGAN

97

445352088295800 MOSHAWQUIT LAKE NEAR SHAWANO, WI

LOCATION.--Lat 44°53'52", long 88°29'58", in NW 1/4 NE 1/4 sec. 24, T.28 N., R.16 E., Menominee County, Hydrologic Unit 04030104, 9.7 mi northeast of Shawano.

LAKE-STAGE RECORDS

PERIOD OF RECORD.--May to September 1990.

GAGE.--Staff gage read by A. Fowler. Elevation of gage 830 ft, from topographic map.

EXTREMES FOR CURRENT YEAR.--Maximum gage-height observed, 1.80 ft, June 29; minimum gage-height observed, 1.26 ft, May 4.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	1.51	---	---	---
2	---	---	---	---	---	---	---	---	---	---	---	---
3	---	---	---	---	---	---	---	---	---	---	1.42	---
4	---	---	---	---	---	---	---	1.26	---	---	---	---
5	---	---	---	---	---	---	---	---	---	---	---	---
6	---	---	---	---	---	---	---	---	---	1.56	1.43	1.50
7	---	---	---	---	---	---	---	---	---	---	---	---
8	---	---	---	---	---	---	---	---	1.49	---	---	---
9	---	---	---	---	---	---	---	---	---	---	---	---
10	---	---	---	---	---	---	---	---	---	1.49	---	---
11	---	---	---	---	---	---	---	1.48	---	---	---	---
12	---	---	---	---	---	---	---	---	---	---	---	---
13	---	---	---	---	---	---	---	---	---	1.40	---	---
14	---	---	---	---	---	---	---	---	1.69	---	---	1.60
15	---	---	---	---	---	---	---	---	---	---	1.40	---
16	---	---	---	---	---	---	---	---	---	---	---	---
17	---	---	---	---	---	---	---	1.50	---	---	---	---
18	---	---	---	---	---	---	---	---	---	---	---	---
19	---	---	---	---	---	---	---	---	---	---	---	---
20	---	---	---	---	---	---	---	---	---	1.46	---	1.66
21	---	---	---	---	---	---	---	---	---	---	---	---
22	---	---	---	---	---	---	---	1.59	---	---	---	---
23	---	---	---	---	---	---	---	---	---	---	---	---
24	---	---	---	---	---	---	---	---	---	---	1.46	---
25	---	---	---	---	---	---	---	---	---	---	---	---
26	---	---	---	---	---	---	---	---	---	---	---	---
27	---	---	---	---	---	---	---	---	---	---	---	---
28	---	---	---	---	---	---	---	---	---	---	---	---
29	---	---	---	---	---	---	---	---	1.80	---	---	---
30	---	---	---	---	---	---	---	---	---	---	---	---
31	---	---	---	---	---	---	---	---	---	---	1.48	---
MAX	---	---	---	---	---	---	---	1.59	1.80	1.56	1.48	1.66
MIN	---	---	---	---	---	---	---	1.26	1.49	1.40	1.40	1.50

445352088295800 MOSHAWQUIT LAKE NEAR SHAWANO, WI--CONTINUED

WATER-QUALITY RECORDS

PERIOD OF RECORD.--February to September 1990.

REMARKS.--Lake sampled near east end at a lake depth of about 25 ft. Lake ice-covered during February sampling.

WATER-QUALITY DATA, FEBRUARY 20 TO AUGUST 06, 1990
(Milligrams per liter unless otherwise indicated)

	Feb. 20		May 22		July 10		Aug. 06	
Depth of sample (ft)	1.5	18.0	1.5	22.0	1.5	23.0	1.5	17.0
Lake stage (ft)	---		1.59		1.49		1.43	
Specific conductance ($\mu\text{S}/\text{cm}$)	254	264	22	221	220	234	224	233
pH (units)	6.9	7.0	7.9	7.8	7.9	7.0	8.2	7.5
Water temperature ($^{\circ}\text{C}$)	1.6	4.5	14.6	13.0	24.7	20.0	22.5	21.7
Color (Pt-Co. scale)	---	---	5.0	5.0	---	---	---	---
Turbidity (NTU)	---	---	0.6	0.4	---	---	---	---
Secchi-depth (meters)	2.4		3.1		2.6		2.0	
Dissolved oxygen	7.2	3.0	10.6	9.6	8.0	0.1	8.2	0.4
Hardness, as CaCO_3	---	---	110	110	---	---	---	---
Calcium, dissolved (Ca)	---	---	24	24	---	---	---	---
Magnesium, dissolved (Mg)	---	---	11	11	---	---	---	---
Sodium, dissolved (Na)	---	---	2.5	2.5	---	---	---	---
Potassium, dissolved (K)	---	---	0.7	0.7	---	---	---	---
Alkalinity, as CaCO_3	---	---	104	104	---	---	---	---
Sulfate, dissolved (SO_4)	---	---	5.3	5.5	---	---	---	---
Fluoride, dissolved (F)	---	---	<0.10	<0.10	---	---	---	---
Chloride, dissolved (Cl)	---	---	3.70	4.00	---	---	---	---
Silica, dissolved (SiO_2)	---	---	3.10	3.20	---	---	---	---
Solids, dissolved, at 180°C	---	---	113	106	---	---	---	---
Nitrogen, nitrite, total (as N)	---	---	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nitrogen, $\text{NO}_2 + \text{NO}_3$, total (as N)	---	---	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Nitrogen, ammonia, total (as N)	---	---	0.01	0.01	0.03	0.22	0.01	<0.01
Nitrogen, organic, total (as N)	---	---	0.59	0.39	0.37	0.28	0.59	---
Nitrogen, amm. + org., total (as N)	---	---	0.60	0.40	0.40	0.50	0.60	0.50
Phosphorus, total (as P)	---	---	0.006	0.005	0.006	0.009	0.007	0.012
Phosphorus, ortho, dissolved (as P)	---	---	<0.001	<0.001	0.001	0.002	0.006	0.002
Iron, dissolved (Fe) $\mu\text{g}/\text{L}$	---	---	8.0	7.0	---	---	---	---
Manganese, dissolved (Mn) $\mu\text{g}/\text{L}$	---	---	6.0	5.0	---	---	---	---
Chlorophyll a, phytoplankton ($\mu\text{g}/\text{L}$)	---	---	1.5	---	1.1	---	1.9	---

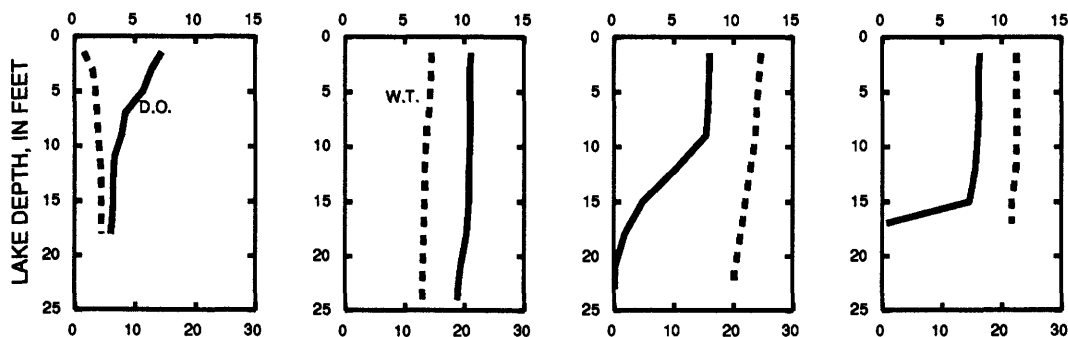
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5-22-90

7-10-90

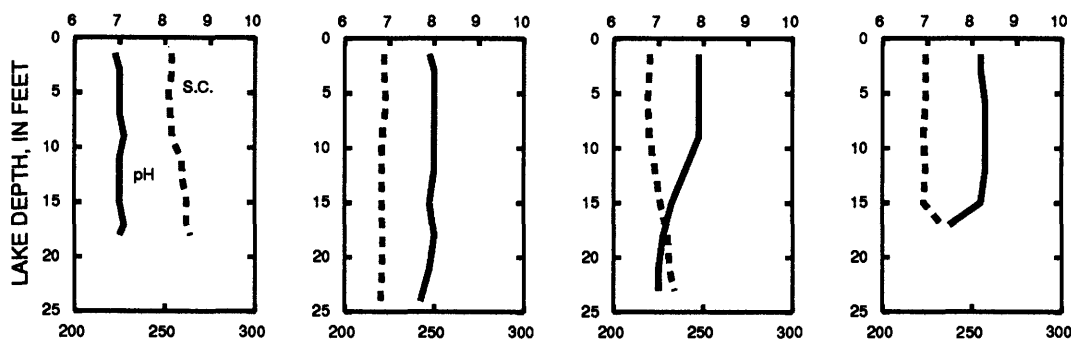
8-6-90

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

STREAMS TRIBUTARY TO LAKE MICHIGAN

99

04071000 OCONTO RIVER NEAR GILLETT, WI

LOCATION.--Lat 44°51'53", long 88°18'00", in NW 1/4 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 mi².

PERIOD OF RECORD.--June 1906 to March 1909, October 1913 to current year. Monthly discharge only 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 National Geodetic Vertical Datum of 1929 (levels by Wisconsin Department of Transportation). See WSP 1727 for history of changes prior to Aug. 25, 1938.

REMARKS.--Estimated daily discharges: Ice period listed in rating table below. Records good except those for ice-affected period, which is fair. Gage-height telemeter at station.

AVERAGE DISCHARGE.--79 years (water years 1907-08, 1914-90), 578 ft³/s, 11.13 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,400 ft³/s, Apr. 10, 1922, gage height, 11.2 ft from flood-marks, caused by a failure of dam at Pulcifer 4 mi above station; minimum, 93 ft³/s, Nov. 26, 1941, gage height, 0.13 ft flow retarded by anchor ice above station.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,500 ft³/s and maximum (*):

DATE	TIME	DISCHARGE (ft ³ /s)	GAGE HEIGHT (ft)	DATE	TIME	DISCHARGE (ft ³ /s)	GAGE HEIGHT (ft)
Mar. 16	0700	(a)2,300	(b)*6.98	June 16	2100	*2,770	4.87

(a) Estimated, daily mean discharge.
(b) Ice jam.

Minimum discharge, 189 ft³/s, Oct. 2, 3, 4, gage height, 0.52 ft.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Nov. 16 to Mar. 16.)

0.5	184	3.0	1,400
1.0	330	4.0	2,100
2.0	780	5.0	2,880

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	195	462	260	210	230	210	426	399	485	676	368	438
2	192	526	250	210	220	220	416	380	458	635	343	403
3	191	476	240	230	220	220	424	361	446	596	334	361
4	192	428	230	240	230	220	436	344	439	559	377	353
5	196	407	240	230	240	220	429	332	434	519	381	351
6	204	392	250	220	220	220	415	319	426	470	350	409
7	212	405	230	220	230	220	402	300	438	446	328	570
8	218	405	210	230	250	230	389	298	433	447	316	716
9	213	390	210	220	250	240	381	319	410	455	310	762
10	216	374	220	230	240	260	379	514	390	447	302	752
11	217	362	220	220	230	370	379	780	369	428	305	682
12	219	351	210	230	230	1300	360	923	420	409	307	580
13	218	343	220	230	240	1200	354	973	869	389	305	474
14	216	334	220	220	230	1500	350	989	1170	370	299	737
15	217	327	210	230	230	1900	350	944	2170	363	313	896
16	246	300	210	240	230	2300	326	969	2710	370	337	991
17	268	260	220	260	220	1810	327	1010	2650	407	323	1050
18	296	220	220	260	220	1680	344	1080	2200	418	327	1050
19	277	230	200	250	230	1420	348	1240	1790	401	448	996
20	255	250	200	240	210	1170	348	1370	1540	384	647	886
21	266	280	200	230	220	923	350	1310	1360	367	614	818
22	273	250	200	230	220	773	355	1260	1300	351	516	738
23	276	230	200	230	210	696	364	1180	1340	366	451	679
24	269	210	200	230	220	603	364	1050	1210	393	414	639
25	264	230	210	230	220	523	367	923	1160	397	405	597
26	260	250	200	220	220	490	370	814	1170	366	403	554
27	257	270	210	230	220	489	380	740	1050	337	485	518
28	256	250	200	230	210	462	398	690	934	333	589	470
29	258	230	200	220	---	449	436	642	833	395	638	458
30	286	240	200	230	---	440	430	572	733	421	564	461
31	348	---	210	220	---	435	---	521	---	403	485	---
TOTAL	7471	9682	6700	7120	6340	23193	11397	23546	31337	13318	12584	19389
MEAN	241	323	216	230	226	748	380	760	1045	430	406	646
MAX	348	526	260	260	250	2300	436	1370	2710	676	647	1050
MIN	191	210	200	210	210	210	326	298	369	333	299	351
CFSM	.34	.46	.31	.33	.32	1.06	.54	1.08	1.48	.61	.58	.92
IN.	.39	.51	.35	.38	.33	1.22	.60	1.24	1.65	.70	.66	1.02

CAL YR 1989 TOTAL 137149 MEAN 376 MAX 1800 MIN 191 CFSM .53 IN. 7.24
WTR YR 1990 TOTAL 172077 MEAN 471 MAX 2710 MIN 191 CFSM .67 IN. 9.08

STREAMS TRIBUTARY TO LAKE MICHIGAN

04071765 OCONTO RIVER NEAR OCONTO, WI

LOCATION.--Lat 44°51'38", long 87°59'02", in NW 1/4 NW 1/4 sec.32, T.28 N., R.21 E., Oconto County, Hydrologic Unit 04030104, on right bank 40 ft upstream from County Trunk Highway J bridge, 0.7 mi downstream from mouth of Little River, 5.0 mi west and 2.0 mi south of intersection of U.S. Highway 41 and Wisconsin Highway 22 in town of Oconto.

DRAINAGE AREA.--966 mi².

PERIOD OF RECORD.--October 1988 to September 1990 (discontinued).

GAGE.--Water-stage recorder. Datum of gage is 583.14 ft above National Geodetic Vertical Datum of 1929 (levels by Wisconsin Department of Transportation).

REMARKS.--Estimated daily discharges: Ice period listed in rating table below. Records good except those for period of period of ice affect, which is fair. Flow regulated by Machickanee Flowage (capacity, 556 acre-ft) 3.9 mi upstream. Gage-height telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,300 ft³/s, Mar. 28, 1989, gage height, 10.91 ft, backwater from ice; maximum gage height, 11.24 ft, Mar. 13, 1990, backwater from ice; minimum daily 174 ft³/s, Oct. 8, 1989.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,060 ft³/s, June 23, gage height, 9.65 ft; maximum gage height, 11.24 ft, Mar. 13, backwater from ice; minimum daily, 174 ft³/s, Oct. 8.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Shifting-control method used Oct. 1-15, June 13-22, 24-30; stage-discharge relation affected by ice Dec. 7 to Mar. 15.)

3.5	172	6.0	1,430
4.0	286	7.0	2,270
4.5	470	9.0	4,330
5.0	752		

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	188	435	287	210	270	270	463	418	529	783	434	352
2	195	621	219	210	270	270	443	407	478	801	421	530
3	191	594	478	220	230	220	454	388	514	729	540	566
4	187	345	506	230	230	220	573	440	564	662	273	495
5	193	441	321	250	320	330	515	224	523	592	427	432
6	198	560	304	250	260	270	558	328	482	575	553	646
7	181	432	290	240	260	260	356	376	483	384	401	1040
8	174	465	270	240	280	290	410	321	574	498	346	961
9	219	453	230	270	290	290	475	357	360	615	349	1220
10	240	425	220	250	220	250	411	728	406	483	372	1170
11	235	267	280	270	220	500	462	1100	444	487	245	1150
12	207	364	230	260	340	2000	452	1450	590	448	277	907
13	208	485	240	230	290	4000	458	1260	1440	517	354	815
14	198	357	240	230	280	3200	247	1300	1670	244	374	1290
15	193	359	230	290	260	3400	377	1240	2400	384	368	1890
16	306	367	220	260	280	3340	446	1780	3110	481	427	1780
17	269	356	220	270	220	2960	365	1870	3400	473	481	1860
18	265	337	250	280	220	2210	361	1590	2760	493	263	1750
19	315	297	240	300	280	1740	379	1600	2140	494	623	1730
20	310	275	230	250	260	1420	394	2120	1710	519	783	1590
21	209	319	220	260	260	1170	325	1680	1490	248	887	1360
22	231	328	220	300	260	986	385	1640	1800	350	772	1190
23	396	280	210	270	290	862	451	1380	4140	486	619	1050
24	297	393	200	290	220	686	407	1270	2630	379	720	1060
25	259	226	220	300	230	645	404	1090	2000	469	274	951
26	301	219	210	300	290	566	397	940	1720	397	561	845
27	277	367	210	270	270	564	463	815	1560	509	650	783
28	218	337	200	260	260	565	305	805	1180	248	804	817
29	212	346	190	310	---	531	433	713	1080	567	785	429
30	442	295	190	300	---	569	534	657	984	760	928	667
31	440	---	200	270	---	497	---	570	---	657	758	---
TOTAL	7754	11345	7775	8140	7360	35081	12703	30857	43161	15732	16069	31326
MEAN	250	378	251	263	263	1132	423	995	1439	507	518	1044
MAX	442	621	506	310	340	4000	573	2120	4140	801	928	1890
MIN	174	219	190	210	220	220	247	224	360	244	245	352
CFSM	.26	.39	.26	.27	.27	1.17	.44	1.03	1.49	.53	.54	1.08
IN.	.30	.44	.30	.31	.28	1.35	.49	1.19	1.66	.61	.62	1.21

WTR YR 1990 TOTAL 227303 MEAN 623 MAX 4140 MIN 174 CFSM .64 IN. 8.75

STREAMS TRIBUTARY TO LAKE MICHIGAN

101

04071775 OCONTO RIVER AT MOUTH AT OCONTO, WI

LOCATION.--Lat 44°53'42", long 87°49'00", in SE 1/4 SE 1/4 sec.17, T.28 N., R.22 E., Oconto County, Hydrologic Unit 04030103, at mouth at Oconto.

DRAINAGE AREA.--982 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1988 to April 1990 (discontinued).

GAGE.--None.

REMARKS.--Estimated daily discharges: Oct. 1, 1988 to Apr. 30, 1990. Daily discharges were estimated by multiplying daily discharges from Oconto River near Oconto, 04071765, by the drainage area ratio between the two sites of 1.017. Records poor.

EXTREMES FOR CURRENT PERIOD.--

WATER YEAR 1989: Maximum daily discharge, 4,680 ft³/s, Mar. 28; minimum daily discharge, 190 ft³/s, Sept. 30.
OCTOBER 1989 TO APRIL 1990: Maximum daily discharge, 4,070 ft³/s, Mar. 13; minimum daily discharge, 177 ft³/s, Oct. 8.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	214	403	563	356	336	264	1830	641	1520	220	304	234
2	254	351	460	407	315	254	1660	550	1530	202	322	215
3	305	335	281	336	376	285	1740	562	1470	345	309	214
4	264	419	575	356	244	214	1250	573	1480	285	266	230
5	214	299	562	315	254	214	1190	639	1320	279	218	246
6	224	534	528	356	346	264	1170	380	1080	260	207	231
7	264	613	480	244	315	285	1160	656	961	283	214	236
8	203	703	376	356	356	285	1130	678	751	212	219	242
9	203	654	376	407	336	264	1100	579	719	206	242	225
10	275	606	254	336	264	264	1040	525	620	270	231	215
11	214	592	234	336	234	214	946	530	730	253	234	362
12	203	400	285	305	264	224	810	626	823	238	217	288
13	203	499	285	376	295	386	856	251	799	246	215	258
14	224	588	417	244	264	407	799	412	684	244	250	243
15	203	527	325	254	275	570	780	512	718	216	296	255
16	203	638	325	397	295	478	716	438	881	233	379	217
17	295	703	234	336	285	529	637	438	702	295	369	215
18	254	715	305	305	224	254	754	430	784	259	407	252
19	244	713	407	315	224	346	686	559	716	376	227	232
20	265	702	356	386	366	427	765	242	529	357	212	231
21	307	704	356	224	285	356	705	370	458	407	284	219
22	231	615	356	234	254	356	670	468	483	221	263	221
23	227	593	590	397	254	356	669	440	580	214	271	206
24	415	563	356	346	285	447	695	370	229	338	242	204
25	349	538	508	346	214	712	622	582	376	248	267	203
26	464	413	458	325	214	3050	598	727	517	229	216	194
27	444	530	447	366	275	4270	588	836	408	246	214	191
28	450	682	346	224	264	4680	657	926	343	250	359	198
29	226	670	346	264	---	3660	460	916	347	211	276	203
30	333	664	407	397	---	2960	606	897	502	232	241	190
31	444	---	254	356	---	2160	---	1730	---	320	250	---
TOTAL	8618	16966	12052	10202	7913	29435	27289	18483	23060	8195	8221	6870
MEAN	278	566	389	329	283	950	910	596	769	264	265	229
MAX	464	715	590	407	376	4680	1830	1730	1530	407	407	362
MIN	203	299	234	224	214	214	460	242	229	202	207	190
CFSM	.28	.58	.40	.34	.29	.97	.93	.61	.78	.27	.27	.23
IN.	.33	.64	.46	.39	.30	1.12	1.03	.70	.87	.31	.31	.26

WTR YR 1989 TOTAL 177304 MEAN 486 MAX 4680 MIN 190 CFSM .49 IN. 6.72

STREAMS TRIBUTARY TO LAKE MICHIGAN

04071775 OCONTO RIVER AT MOUTH AT OCONTO, WI--CONTINUED

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	191	442	292	214	275	275	471	---	---	---	---	---
2	198	632	223	214	275	275	451	---	---	---	---	---
3	194	604	486	224	234	224	462	---	---	---	---	---
4	190	351	515	234	234	224	583	---	---	---	---	---
5	196	448	326	254	325	336	524	---	---	---	---	---
6	201	570	309	254	264	275	567	---	---	---	---	---
7	184	439	295	244	264	264	362	---	---	---	---	---
8	177	473	275	244	285	295	417	---	---	---	---	---
9	223	461	234	275	295	295	483	---	---	---	---	---
10	244	432	224	254	224	254	418	---	---	---	---	---
11	239	272	285	275	224	508	470	---	---	---	---	---
12	211	370	234	264	346	2030	460	---	---	---	---	---
13	212	493	244	234	295	4070	466	---	---	---	---	---
14	201	363	244	234	285	3250	251	---	---	---	---	---
15	196	365	234	295	264	3460	383	---	---	---	---	---
16	311	373	224	264	285	3400	454	---	---	---	---	---
17	274	362	224	275	224	3010	371	---	---	---	---	---
18	270	343	254	285	224	2250	367	---	---	---	---	---
19	320	302	244	305	285	1770	385	---	---	---	---	---
20	315	280	234	254	264	1440	401	---	---	---	---	---
21	213	324	224	264	264	1190	331	---	---	---	---	---
22	235	334	224	305	264	1000	392	---	---	---	---	---
23	403	285	214	275	295	877	459	---	---	---	---	---
24	302	400	203	295	224	698	414	---	---	---	---	---
25	263	230	224	305	234	656	411	---	---	---	---	---
26	306	223	214	305	295	576	404	---	---	---	---	---
27	282	373	214	275	275	574	471	---	---	---	---	---
28	222	343	203	264	264	575	310	---	---	---	---	---
29	216	352	193	315	---	540	440	---	---	---	---	---
30	450	300	193	305	---	579	543	---	---	---	---	---
31	447	---	203	275	---	505	---	---	---	---	---	---
TOTAL	7886	11539	7909	8279	7486	35675	12921	---	---	---	---	---
MEAN	254	385	255	267	267	1151	431	---	---	---	---	---
MAX	450	632	515	315	346	4070	583	---	---	---	---	---
MIN	177	223	193	214	224	224	251	---	---	---	---	---
CFSM	.26	.39	.26	.27	.27	1.17	.44	---	---	---	---	---
IN.	.30	.44	.30	.31	.28	1.35	.49	---	---	---	---	---

CAL YR 1989 TOTAL 167002 MEAN 458 MAX 4680 MIN 177 CFSM .47 IN. 6.33

04071775 OCONTO RIVER AT MOUTH AT OCONTO, WI--CONTINUED

WATER-QUALITY RECORDS

PERIOD OF RECORD.--June 1988 to April 1990 (discontinued).

PERIOD OF DAILY RECORD.--

SUSPENDED-SEDIMENT DISCHARGE: October 1988 to April 1990 (discontinued).

INSTRUMENTATION.--Single-vertical sampler on downstream side of Collins Avenue bridge.

REMARKS.--Records fair. Suspended-sediment discharge computed using discharges from Oconto River near Oconto, 04071765, multiplied by the drainage area ratio between the two sites of 1.017. Samples for chemical analysis were composite samples of water pumped from multiple fixed points in the stream cross section. Suspended-sediment samples collected at a single vertical at the mid-point of the stream cross section. Chemical analyses by Wisconsin State Laboratory of Hygiene.

COOPERATION.--Local observer.

EXTREMES OUTSIDE PERIOD OF DAILY RECORD.--

SUSPENDED-SEDIMENT CONCENTRATION: Maximum observed, 39 mg/L, Aug. 16, 1988; minimum observed, 2 mg/L, July 16, Aug. 28, and Sept. 8, 9, 26, 1988.

EXTREMES FOR CURRENT PERIOD.--

WATER YEAR 1989:

SUSPENDED-SEDIMENT CONCENTRATIONS: Maximum observed, 67 mg/L, May 31; minimum observed, 0 mg/L, on several days.

SUSPENDED-SEDIMENT DISCHARGE: Maximum daily, 466 tons, Mar. 28; minimum daily, 0.20 ton, Dec. 11 and Sept. 26.

OCTOBER 1989 TO APRIL 1990:

SUSPENDED-SEDIMENT CONCENTRATIONS: Maximum observed, 127 mg/L, Mar. 17; minimum observed, 0 mg/L, Jan. 10 and Feb. 4.

SUSPENDED-SEDIMENT DISCHARGE: Maximum daily, 1,270 tons, Mar. 16; minimum daily, 0.23 ton, Feb. 4.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	SEDI- MENT, SUS- PENDE (MG/L) (80154)	DATE	TIME	SEDI- MENT, SUS- PENDE (MG/L) (80154)
JUN 1988			JUL 1988		
01...	1010	6	16...	1610	2
02...	0700	6	19...	0915	5
03...	0645	10	21...	1010	4
04...	0715	5	25...	1430	6
05...	0740	3	29...	1245	4
06...	0730	3	AUG		
07...	0900	4	02...	0700	8
08...	0630	6	05...	0740	15
09...	0710	10	08...	1410	13
10...	0710	4	12...	1235	6
11...	1150	4	14...	0715	9
12...	0745	7	15...	0700	14
13...	1015	6	19...	0710	9
14...	0710	11	22...	0630	3
15...	0700	11	23...	1810	3
16...	0710	10	28...	0710	2
17...	0645	6	30...	0705	4
18...	0715	6	SEP		
19...	0730	7	02...	0710	5
20...	0720	5	05...	1345	3
23...	0745	6	08...	1320	2
27...	1410	4	09...	1320	2
JUL			13...	1230	4
01...	0810	4	15...	0815	3
05...	1430	4	20...	1107	5
08...	1109	5	23...	0950	4
11...	1110	3	26...	0630	2
15...	1010	4			

STREAMS TRIBUTARY TO LAKE MICHIGAN

04071775 OCONTO RIVER AT MOUTH AT OCONTO, WI--CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	DATE	TIME	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	SEDI- MENT, SUS- PENDED (MG/L) (80154)
OCT 1988				MAY 1989			
01...	1430	214	2	13...	1250	251	3
04...	0730	264	2	17...	1600	438	3
07...	1510	264	1	22...	0710	468	4
10...	1420	275	1	25...	1915	582	7
14...	0710	224	2	29...	0715	916	13
17...	0720	295	3	31...	0700	1730	67
21...	1300	307	1	JUN			
24...	0714	415	1	03...	1005	1470	17
27...	1610	444	3	08...	0700	751	8
31...	1010	444	1	10...	1020	620	7
NOV				12...	0720	823	8
04...	0950	419	0	13...	1520	799	8
07...	0830	613	2	14...	1810	684	6
08...	0900	703	3	16...	1510	881	9
11...	0920	592	1	17...	0728	702	6
14...	0700	588	2	20...	0740	529	6
16...	1430	638	5	23...	0710	580	6
18...	1530	715	3	24...	0700	229	5
22...	0945	615	2	27...	0640	408	5
26...	0951	413	1	JUL			
29...	1430	670	4	01...	0720	220	5
DEC				05...	1420	279	4
02...	1630	460	5	08...	0918	212	6
05...	1050	562	2	11...	1345	253	6
07...	1340	480	0	14...	0920	244	17
MAR 1989				17...	1420	295	3
02...	1410	254	3	18...	0730	259	4
04...	0920	214	3	21...	1030	407	4
07...	1310	285	3	24...	0725	338	5
09...	0910	264	1	27...	0715	246	4
12...	1031	224	11	31...	0648	320	3
14...	0945	407	3	AUG			
16...	1230	478	13	02...	0640	322	6
18...	1201	254	18	05...	0740	218	7
20...	0910	427	12	08...	1628	219	3
21...	1348	356	4	11...	0720	234	4
23...	0831	356	6	14...	0730	250	2
25...	0809	712	7	17...	1625	369	3
30...	1510	2960	29	20...	0705	212	4
APR				23...	0710	271	3
01...	1233	1830	17	26...	0715	216	3
03...	1510	1740	15	29...	1020	276	3
06...	1330	1170	14	SEP			
07...	0745	1160	7	01...	1630	234	3
11...	0830	946	5	04...	0715	230	3
14...	0720	799	3	08...	0715	242	3
18...	1350	754	7	11...	0710	362	4
23...	0700	669	4	12...	0833	288	1
26...	1410	598	6	14...	0652	243	4
28...	0705	657	3	17...	1545	215	1
MAY				20...	0720	231	3
01...	1420	641	6	23...	0832	206	1
04...	0710	573	5	26...	0728	194	0
08...	1649	678	3	29...	0700	203	2
10...	1525	525	8				

STREAMS TRIBUTARY TO LAKE MICHIGAN

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04071775 OCONTO RIVER AT MOUTH AT OCONTO, WI--CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	DATE	TIME	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	SEDI- MENT, SUS- PENDED (MG/L) (80154)
OCT 1989				JAN 1990			
02...	1445	198	5	18...	0810	285	3
05...	0640	196	2	20...	0815	254	3
09...	0647	223	2	23...	0800	275	2
10...	0710	244	3	26...	1103	305	2
15...	0940	196	5	29...	0710	315	1
21...	0731	213	3	FEB			
24...	1110	302	3	01...	0830	275	2
27...	1031	282	3	04...	0845	234	0
30...	1445	450	4	07...	0830	264	3
NOV				07...	1045	264	2
03...	1430	604	3	12...	1020	346	5
06...	1322	570	4	17...	0745	224	2
09...	1830	461	2	20...	0910	264	3
12...	2200	370	2	23...	0820	295	3
15...	0945	365	2	26...	1010	295	2
18...	1020	343	2	MAR			
21...	0920	324	2	01...	0832	275	3
24...	1110	400	1	04...	1030	224	1
27...	0730	373	3	07...	0810	264	3
30...	0820	300	2	10...	0815	254	6
DEC				12...	1110	2030	52
03...	0810	486	2	14...	1200	3250	45
06...	0810	309	2	17...	1530	3010	127
09...	0820	234	3	20...	1220	1440	11
12...	0840	234	2	20...	1415	1440	14
15...	0820	234	3	23...	1530	877	7
18...	0740	254	3	26...	1430	576	6
21...	0850	224	1	29...	0930	540	4
23...	1010	214	2	APR			
26...	0710	214	1	01...	1510	471	5
29...	0840	193	2	04...	1030	583	9
31...	1235	203	1	07...	1010	362	6
JAN 1990				10...	1425	418	3
03...	1510	224	1	13...	1000	466	4
06...	1102	254	5	16...	1530	454	4
09...	0815	275	3	19...	1020	385	3
11...	0830	275	2	22...	1410	392	4
14...	1025	234	2	25...	1800	411	4
17...	1530	275	3	28...	1520	310	6

WATER-QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	TRANS- PAR- ENCY (SECCHI DISK) (M) (00078)	OXYGEN, DIS- SOLVED (MG/L) (00300)	HARD- NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM TOTAL RECOV- ERABLE (MG/L AS CA) (00916)	MAGNE- SIUM, TOTAL RECOV- ERABLE (MG/L AS MG) (00927)
JUN 1988									
14...	1630	330	8.5	25.5	0.80	9.6	150	35	16
22...	1500	323	8.5	28.0	0.70	8.5	180	39	20
30...	0818	327	8.3	20.0	1.00	8.2	190	48	17
JUL									
18...	1325	326	8.3	25.0	1.20	8.6	160	33	18
AUG									
16...	1325	313	8.4	27.5	0.80	9.5	140	31	16
SEP									
14...	1530	307	8.6	20.0	1.60	10.3	150	31	17

STREAMS TRIBUTARY TO LAKE MICHIGAN

04071775 OCONTO RIVER AT MOUTH AT OCONTO, WI--CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	ALKA-LINITY WAT WH TOT FET LAB MG/L AS CACO3 (00417)	CHLO-RIDE, DIS- SOLVED (MG/L AS CL) (00940)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDE (MG/L) (00530)	SOLIDS, RESIDUE AT 105 DEG. C, TOTAL (MG/L) (00500)	RESIDUE VOLA- TILE, SUS- PENDE (MG/L) (00535)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)
JUN 1988								
14...	148	12	3.9	11	220	4	--	--
22...	146	11	5.7	417	790	21	--	--
30...	148	11	7.3	6	210	3	--	--
JUL								
18...	146	12	7.7	8	214	4	0.040	0.060
AUG								
16...	136	10	8.0	13	--	8	<0.020	<0.020
SEP								
14...	143	11	5.6	6	--	2	0.030	<0.020

DATE	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)	CHLORO- PHYLL A TRICHR. UNCORR. WHOLE TOTAL (UG/L) (32210)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
JUN 1988								
14...	--	0.060	--	7.8	5.4	34.0	8	96
22...	--	0.210	--	8.0	6.6	52.0	10	83
30...	--	0.050	--	6.4	4.5	16.0	4	100
JUL								
18...	0.60	0.040	0.006	6.7	5.8	23.0	7	67
AUG								
16...	0.80	0.060	0.004	8.9	6.7	33.0	39	--
SEP								
14...	0.50	0.030	0.002	6.4	5.6	9.00	6	--

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	TRANS- PAR- ENCY (SECCI DISK) (M) (00078)	OXYGEN, DIS- SOLVED (MG/L) (00300)	HARD- NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM TOTAL RECOV- ERABLE (MG/L AS CA) (00916)	MAGNE- SIUM, TOTAL RECOV- ERABLE (MG/L AS MG) (00927)	ALKA- LINITY WAT WH TOT FET LAB MG/L AS CACO3 (00417)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)
OCT 1988												
12...	1550	203	317	8.6	8.5	2.00	12.5	160	34	17	148	8.8
NOV												
08...	1200	703	321	8.3	3.5	1.40	12.8	160	36	17	149	7.6
JAN 1989												
25...	1500	346	326	7.7	0.0	--	13.5	160	38	17	157	8.5
APR												
13...	0900	856	243	7.8	3.0	1.50	11.7	120	28	13	98	6.3
MAY												
10...	1545	525	310	8.3	11.5	1.40	11.6	160	37	16	136	8.1
JUN												
07...	0830	961	273	7.5	17.5	0.70	6.8	130	32	12	113	5.9
JUL												
*05...	1500	279	286	8.3	28.0	0.80	8.2	140	33	15	137	6.8
*05...	1715	279	291	8.3	27.5	0.80	8.1	140	32	14	138	7.5
AUG												
02...	1045	322	306	8.3	25.0	1.40	8.6	150	32	16	142	8.4
30...	0815	241	318	8.2	21.5	1.50	9.6	130	28	15	144	9.2
SEP												
*26...	1510	194	316	8.7	14.0	1.80	11.2	140	30	16	149	10
*26...	1655	194	314	8.7	14.0	1.50	11.5	140	30	16	148	10

* SAMPLES WITH SAME DATES ARE REPLICATES.

04071775 OCONTO RIVER AT MOUTH AT OCONTO, WI--CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDED (MG/L) (00530)	RESIDUE VOLA- TILE, SUS- PENDED (MG/L) (00535)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)	CHLORO- PHYLL A TRICHR. UNCORR. WHOLE TOTAL (UG/L) (32210)	SEDI- MENT, SUS- PENDED (MG/L) (80154)
OCT 1988												
12...	6.0	2	<2	<0.020	<0.020	0.30	<0.020	0.004	4.7	4.3	3.00	55
NOV												
08...	7.8	7	4	0.200	<0.020	0.40	0.030	0.003	5.8	5.3	5.00	8
JAN 1989												
25...	12	2	2	0.390	0.100	0.30	<0.020	0.007	4.3	4.0	3.00	1
APR												
13...	7.3	4	2	0.420	0.070	0.70	0.040	0.010	9.3	8.7	3.00	9
MAY												
10...	4.2	4	3	0.110	0.040	0.80	0.040	0.008	9.1	8.5	6.00	8
JUN												
07...	8.2	12	7	0.150	0.070	1.2	0.060	0.009	25	25	5.00	12
JUL												
05...	6.5	11	4	0.020	<0.020	0.80	0.060	0.004	13	11	14.0	1
05...	6.5	4	4	0.040	0.060	0.80	0.060	0.004	12	11	16.0	--
AUG												
02...	6.5	6	4	0.030	0.030	0.50	0.040	0.012	6.4	5.7	10.0	6
30...	6.9	4	3	<0.020	0.040	0.40	0.030	0.003	5.5	4.9	4.00	9
SEP												
26...	4.0	2	2	<0.020	<0.020	0.40	<0.020	0.003	4.4	3.9	2.00	0
26...	4.0	2	2	<0.020	0.030	0.40	<0.020	0.003	4.4	3.9	1.00	--

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	TRANS- PAR- ENCY (SECCHI DISK) (M) (00078)	OXYGEN, DIS- SOLVED (MG/L) (00300)	HARD- NESS TOTAL (MG/L AS CaCO3) (00900)	CALCIUM TOTAL RECOV- ERABLE (MG/L AS Ca) (00916)	MAGNE- SIUM, TOTAL RECOV- ERABLE (MG/L AS Mg) (00927)	ALKA- LINITY WAT WH TOT FET LAB MG/L AS CaCO3 (00417)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)
OCT 1989												
24...	1330	302	320	8.4	9.5	1.90	11.9	170	37	19	156	7.7
NOV												
28...	1115	343	316	7.9	0.5	--	14.2	170	37	18	155	7.8
JAN 1990												
10...	1610	254	345	7.8	0.0	1.50	11.2	170	39	18	171	10
FEB												
07...	0910	264	345	7.7	0.0	1.50	11.3	180	42	19	166	9.0
MAR												
08...	1410	295	345	7.7	0.0	2.10	12.2	--	40	19	165	9.1
20...	1235	1440	196	7.7	2.0	0.70	13.4	110	24	11	71	5.9
30...	1135	579	283	7.8	5.5	1.40	11.5	140	31	14	110	9.0
APR												
25...	0900	411	332	8.0	18.0	1.10	6.9	190	43	19	143	7.8

DATE	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDED (MG/L) (00530)	RESIDUE VOLA- TILE, SUS- PENDED (MG/L) (00535)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)	CHLORO- PHYLL A TRICHR. UNCORR. WHOLE TOTAL (UG/L) (32210)	SEDI- MENT, SUS- PENDED (MG/L) (80154)
OCT 1989												
24...	5.1	3	3	<0.020	<0.020	0.30	0.020	0.004	6.3	5.3	3.00	4
NOV												
28...	8.0	4	3	0.400	0.030	0.40	<0.020	0.006	7.0	5.5	4.00	3
JAN 1990												
10...	12	2	2	0.390	0.150	0.40	<0.020	0.003	3.4	2.9	2.00	0
FEB												
07...	12	2	2	0.410	0.150	0.50	<0.020	0.007	4.3	3.8	3.00	36
MAR												
08...	12	4	3	0.440	0.140	0.40	0.020	0.011	3.5	2.6	3.00	2
20...	6.2	10	6	0.880	0.160	1.3	0.080	0.016	16	14	4.00	11
30...	7.6	5	5	0.570	0.130	0.80	0.040	0.009	14	12	4.00	4
APR												
25...	2.0	15	6	0.120	0.150	0.89	0.067	0.007	9.9	8.2	16.0	21

04071775 OCONTO RIVER AT MOUTH AT OCONTO, WI--CONTINUED

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

[illegible]

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

[illegible]

STREAMS TRIBUTARY TO LAKE MICHIGAN

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04071858 PENSANKEE RIVER NEAR PENSANKEE, WI

LOCATION.--Lat 44°49'08", long 87°57'12", in NW 1/4 NE 1/4 sec.16, T.27 N., R.21 E., Oconto County, Hydrologic Unit 04030103, on right bank 300 ft downstream from bridge on town road, 2.8 mi downstream from Brookside Creek, 2.6 mi west of Pensaukee, 3.5 mi upstream from mouth.

DRAINAGE AREA.--134 mi².

PERIOD OF RECORD.--October 1972 to current year.

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

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 583.69 ft above National Geodetic Vertical Datum of 1929 (Wisconsin Department of Transportation bench mark).

REMARKS.--Estimated daily discharges: Ice period listed in rating table below. Records good except for ice-affected period, which is poor.

AVERAGE DISCHARGE.--18 years, 89.0 ft³/s, 9.02 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,310 ft³/s, May 31, 1979, gage height, 13.58 ft; minimum discharge, 0.44 ft³/s, Sept. 13, 1987 and Sept. 22, 1989.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 800 ft³/s and maximum (*):

DATE	TIME	DISCHARGE (ft ³ /s)	GAGE HEIGHT (ft)	DATE	TIME	DISCHARGE (ft ³ /s)	GAGE HEIGHT (ft)
Mar. 13	1900	(a)*2,100	*11.88	June 23	1800	1,330	8.20

(a) Ice jam.

Minimum discharge, 1.0 ft³/s, Oct. 1 and 28.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Shifting-control method used Oct. 1 to Nov. 17; stage-discharge relation affected by ice Nov. 18 to Mar. 14.)

2.1	1.0	2.5	29	6.0	610
2.2	3.5	3.0	84	7.0	910
2.3	9.0	4.0	210	9.0	1,650
		5.0	390	11.0	2,650

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.6	65	12	2.7	5.4	7.0	43	21	29	67	42	11
2	1.7	57	10	3.2	5.4	8.2	54	19	27	54	39	14
3	2.0	58	6.6	3.4	5.4	8.8	61	18	44	44	26	17
4	2.6	58	5.6	3.3	5.4	8.0	59	15	59	38	28	18
5	2.8	59	4.5	3.2	5.8	7.4	55	16	53	31	46	19
6	4.6	54	4.8	3.2	6.0	7.0	50	13	45	26	75	52
7	6.6	51	4.0	3.3	6.2	7.0	45	12	36	21	70	102
8	14	50	3.5	3.7	6.6	8.0	41	11	28	23	45	92
9	24	47	3.1	4.0	7.0	18	37	16	22	24	27	79
10	38	48	3.3	4.2	7.2	50	37	135	18	21	19	62
11	52	34	3.0	4.1	6.6	150	43	295	16	18	14	41
12	63	4.5	2.5	3.9	6.0	400	41	376	25	15	11	28
13	70	3.8	2.3	3.9	6.4	1700	36	310	77	14	10	20
14	56	5.0	2.1	4.3	6.0	1800	34	213	132	13	8.8	146
15	28	6.4	2.0	5.4	5.8	1300	35	210	99	12	8.4	389
16	42	8.3	1.9	7.4	5.8	577	31	420	70	12	7.9	358
17	71	6.1	1.8	8.6	5.8	347	33	667	85	34	7.9	230
18	61	7.0	1.7	9.0	5.8	235	28	398	88	68	8.8	144
19	54	9.0	1.7	7.4	6.0	167	27	255	62	52	58	124
20	48	11	1.7	7.0	6.4	134	26	518	52	33	69	110
21	13	9.0	1.7	6.6	6.6	119	32	551	41	24	57	92
22	29	7.4	1.7	6.4	7.0	110	34	328	137	19	38	75
23	6.9	6.0	1.8	6.6	6.6	100	35	206	1150	18	26	61
24	6.5	5.2	2.0	7.2	6.4	83	36	152	967	19	20	50
25	13	6.0	2.3	7.0	6.0	70	37	124	473	16	18	40
26	14	8.0	2.7	6.2	6.0	63	42	103	249	14	23	31
27	2.0	10	2.6	6.0	6.2	58	37	85	169	12	23	25
28	1.4	11	2.4	6.2	6.4	51	31	70	126	16	20	22
29	19	9.0	2.3	6.4	---	47	27	57	105	52	16	17
30	41	10	2.3	6.4	---	47	24	46	85	82	11	21
31	57	---	2.4	6.0	---	45	---	37	---	51	8.9	---
TOTAL	845.7	723.7	102.3	166.2	172.2	7732.4	1151	5697	4569	943	881.7	2490
MEAN	27.3	24.1	3.30	5.36	6.15	249	38.4	184	152	30.4	28.4	83.0
MAX	71	65	12	9.0	7.2	1800	61	667	1150	82	75	389
MIN	1.4	3.8	1.7	2.7	5.4	7.0	24	11	16	12	7.9	11
CFSM	.20	.18	.02	.04	.05	1.86	.29	1.37	1.14	.23	.21	.62
IN.	.23	.20	.03	.05	.05	2.15	.32	1.58	1.27	.26	.24	.69

CAL YR 1989 TOTAL 16854.39 MEAN 46.2 MAX 2200 MIN .52 CFSM .34 IN. 4.68
WTR YR 1990 TOTAL 25474.2 MEAN 69.8 MAX 1800 MIN 1.4 CFSM .52 IN. 7.07

STREAMS TRIBUTARY TO LAKE MICHIGAN

04072150 DUCK CREEK NEAR HOWARD, WI

LOCATION.--Lat 44°32'01", long 88°07'46", in SW 1/4 sec.19, T.24 N., R.20 E., Brown County, Hydrologic Unit 04030103, at County Highway FF near Howard and about 1 mi upstream from mouth.

DRAINAGE AREA.--108 mi².

WATER-DISCHARGE RECORDS

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

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

GAGE.--Continuous water-stage recorder since April 1988. Elevation of gage is 615 ft from topographic map.

REMARKS.--Estimated daily discharges: Apr. 5-9, May 25-30, and ice-affected periods, Nov. 21-24 and Nov. 30 to Mar. 14. Records fair except for estimated daily discharges, which are poor.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,520 ft³/s, June 23, 1990, gage height, 21.0 ft, estimated from flood marks, based on rating curve extended above 1,500 ft³/s on basis of contracted-opening measurement of peak flow; minimum, no flow many days during period of record.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,520 ft³/s, June 23, gage height, 21.0 ft, estimated from flood marks; minimum, 0.0 ft³/s, during the period Oct. 1-15 and Dec. 17-25.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	2.3	2.5	.10	.10	1.4	12	4.4	8.1	47	8.1	5.4
2	.00	1.8	2.3	.10	.10	1.6	14	3.9	13	30	6.2	4.5
3	.00	1.4	2.0	.10	.10	1.7	15	3.3	33	19	5.5	4.0
4	.00	2.0	1.8	.10	.10	1.6	16	3.0	61	13	5.7	3.6
5	.00	2.2	1.8	.10	.15	1.5	14	2.7	37	10	5.3	3.0
6	.00	2.3	1.7	.10	.25	1.4	13	2.3	21	8.7	5.1	17
7	.00	2.3	1.4	.10	.40	1.4	12	2.4	13	8.7	4.5	39
8	.00	2.3	1.1	.10	.54	1.5	11	2.3	10	8.7	3.8	11
9	.00	2.1	.90	.12	.60	4.0	10	3.1	8.7	7.4	3.2	14
10	.00	2.2	.70	.15	.56	15	9.9	12	7.3	5.1	2.8	10
11	.00	2.5	.50	.17	.52	200	10	104	6.0	4.7	2.4	8.5
12	.00	2.5	.35	.14	.50	1200	11	232	8.3	4.9	2.3	7.2
13	.00	2.2	.25	.10	.54	1100	11	210	152	4.2	2.1	6.1
14	.00	1.7	.18	.10	.60	1200	9.7	121	488	3.5	2.1	57
15	.00	1.6	.12	.10	.80	1280	9.2	100	299	3.8	2.0	244
16	.72	1.6	.10	.10	1.0	491	8.6	148	131	3.6	2.0	218
17	1.8	1.3	.00	.10	1.0	259	8.4	407	173	4.8	2.0	123
18	1.0	1.2	.00	.10	1.0	139	7.8	300	349	4.8	2.1	76
19	.73	1.1	.00	.10	1.1	91	7.5	168	195	4.0	7.1	56
20	.70	1.0	.00	.10	1.1	68	7.6	349	108	4.1	90	48
21	.84	.98	.00	.10	1.2	56	7.7	518	65	3.3	59	38
22	1.0	.94	.00	.10	1.4	52	7.7	283	529	2.9	31	26
23	1.0	.90	.00	.10	1.3	48	7.3	148	3690	2.7	17	19
24	.82	.92	.00	.10	1.3	42	6.9	102	2220	2.5	12	14
25	.64	.93	.00	.10	1.2	33	6.4	54	1030	2.2	10	11
26	.56	.99	.10	.10	1.2	26	6.0	30	632	2.2	8.8	9.7
27	.51	1.6	.10	.10	1.2	19	5.8	20	438	2.3	8.3	8.5
28	.47	3.8	.10	.10	1.3	15	5.6	15	208	4.1	8.5	7.9
29	.46	2.9	.10	.10	---	13	5.5	12	97	6.0	8.4	7.2
30	1.1	2.6	.10	.10	---	12	5.4	10	70	6.7	7.4	7.0
31	3.9	---	.10	.10	---	12	---	8.9	---	16	6.4	---
TOTAL	16.25	54.16	18.30	3.28	21.16	6387.1	282.0	3379.3	11100.4	250.9	341.1	1103.6
MEAN	.52	1.81	.59	.11	.76	206	9.40	109	370	8.09	11.0	36.8
MAX	3.9	3.8	2.5	.17	1.4	1280	16	518	3690	47	90	244
MIN	.00	.90	.00	.10	.10	1.4	5.4	2.3	6.0	2.2	2.0	3.0
CFSM	.00	.02	.01	.00	.01	1.91	.09	1.01	3.43	.07	.10	.34
IN.	.01	.02	.01	.00	.01	2.20	.10	1.16	3.82	.09	.12	.38

CAL YR 1989 TOTAL 7872.57 MEAN 21.6 MAX 1400 MIN .00 CFSM .20 IN. 2.71
WTR YR 1990 TOTAL 22957.55 MEAN 62.9 MAX 3690 MIN .00 CFSM .58 IN. 7.91

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04072150 DUCK CREEK NEAR HOWARD, WI--CONTINUED

WATER-QUALITY RECORDS

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

INSTRUMENTATION.--Water-quality sampler since April 1988.

REMARKS.--Samples are point samples unless otherwise noted.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	OXYGEN, DIS- SOLVED (MG/L) (00300)	HARD- NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)
NOV 1989							
*21...	1030	--	400	92	41	36	6.6
FEB 1990							
*21...	0930	--	240	59	22	26	24
MAR							
*29...	0940	--	360	93	32	21	9.7
MAY							
*08...	0900	--	420	97	43	32	7.6
JUN							
*13...	1315	--	170	42	15	11	5.0
AUG							
*10...	0915	7.2	--	--	--	--	--
SEP							
*14...	1100	--	180	46	16	12	7.2

DATE	ALKA- LINITY LAB (MG/L AS CACO3) (90410)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)
NOV 1989						
21...	290	95	67	0.20	6.2	518
FEB 1990						
21...	177	49	53	0.20	8.0	351
MAR						
29...	183	120	51	0.20	7.4	465
MAY						
08...	235	170	65	<0.10	1.1	558
JUN						
13...	127	37	22	0.30	5.4	218
AUG						
10...	146	45	38	0.20	2.5	--
SEP						
14...	144	35	24	0.10	5.8	235

* COLLECTED BY EQUAL-WIDTH INCREMENT (EWI) METHOD.

STREAMS TRIBUTARY TO LAKE MICHIGAN
04072150 DUCK CREEK NEAR HOWARD, WI--CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N) (00618)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS NO2) (71856)
NOV 1989									
*21...	1030	--	1.1	1010	7.1	4.0	--	<0.010	--
FEB 1990									
*21...	0930	1.2	--	623	6.3	1.0	--	<0.010	--
MAR									
*12...	1400	1200	--	485	7.8	1.5	1.15	0.050	0.16
*14...	1245	1200	--	525	7.8	2.0	1.90	0.100	0.33
14...	1246	1200	--	525	7.8	2.0	1.58	0.120	0.39
*15...	1130	--	1370	575	7.9	3.0	3.51	0.190	0.62
15...	1131	--	1370	575	7.9	3.0	3.24	0.260	0.85
*15...	1530	--	999	605	7.6	3.0	3.40	0.200	0.66
15...	1531	--	999	605	7.6	3.0	3.26	0.240	0.79
*17...	1105	--	261	475	8.2	2.0	4.68	0.220	0.72
17...	1106	--	261	475	8.2	2.0	4.41	0.190	0.62
*18...	0830	--	149	510	8.2	2.0	5.12	0.180	0.59
18...	0831	--	149	510	8.2	2.0	2.42	0.080	0.26
*29...	0940	--	13	760	6.8	6.0	4.43	0.070	0.23
APR									
*09...	1335	--	8.3	830	8.6	10.5	1.18	0.020	0.07
09...	1336	--	8.3	830	8.6	10.5	1.27	0.030	0.10
MAY									
*08...	0900	--	2.5	680	7.8	11.5	--	0.180	0.59
08...	0901	--	2.5	680	7.8	11.5	--	<0.010	--
11...	0645	--	64	--	--	--	0.560	0.040	0.13
11...	1515	--	129	--	--	--	0.480	0.020	0.07
12...	0630	--	207	--	--	--	2.98	0.120	0.39
12...	1745	--	261	--	--	--	5.09	0.110	0.36
13...	1745	--	183	--	--	--	7.82	0.180	0.59
14...	1745	--	110	--	--	--	7.35	0.250	0.82
*15...	1055	--	97	600	7.1	13.5	--	0.010	0.03
15...	1056	--	97	600	7.1	14.0	6.74	0.160	0.53
16...	2145	--	213	--	--	--	5.07	0.130	0.43
17...	0445	--	346	--	--	--	4.79	0.110	0.36
17...	0945	--	431	--	--	--	5.17	0.130	0.43
17...	1245	--	470	--	--	--	5.16	0.140	0.46
18...	0045	--	404	--	--	--	5.77	0.130	0.43
19...	1600	--	157	--	--	--	5.99	0.110	0.36
20...	1045	--	308	--	--	--	5.01	0.090	0.30
20...	1500	--	402	--	--	--	5.30	0.100	0.33
20...	1915	--	486	--	--	--	5.42	0.080	0.26
21...	0230	--	570	--	--	--	5.59	0.110	0.36
21...	1430	--	516	--	--	--	6.10	0.100	0.33
22...	0100	--	385	--	--	--	6.30	0.100	0.33
25...	1230	54	--	--	--	--	4.92	0.080	0.26
JUN									
13...	0630	--	50	--	--	--	0.550	0.050	0.16
13...	0745	--	136	--	--	--	0.560	0.040	0.13
*13...	1315	--	128	416	6.4	20.0	0.670	0.030	0.10
13...	1645	--	183	--	--	--	1.15	0.050	0.16
14...	0130	--	426	--	--	--	2.42	0.080	0.26
14...	0730	--	506	--	--	--	2.23	0.070	0.23
14...	1930	--	493	--	--	--	2.30	0.100	0.33
15...	0700	--	354	--	--	--	3.37	0.130	0.43
16...	2030	--	99	--	--	--	3.75	0.150	0.49
17...	1730	--	186	--	--	--	2.54	0.160	0.53
17...	1900	--	231	--	--	--	2.87	0.130	0.43
AUG									
*10...	0915	--	2.3	598	7.9	20.5	--	<0.010	--
SEP									
*14...	1100	--	110	420	7.4	19.0	0.380	0.020	0.07

* COLLECTED BY EQUAL-WIDTH INCREMENT (EWI) METHOD.

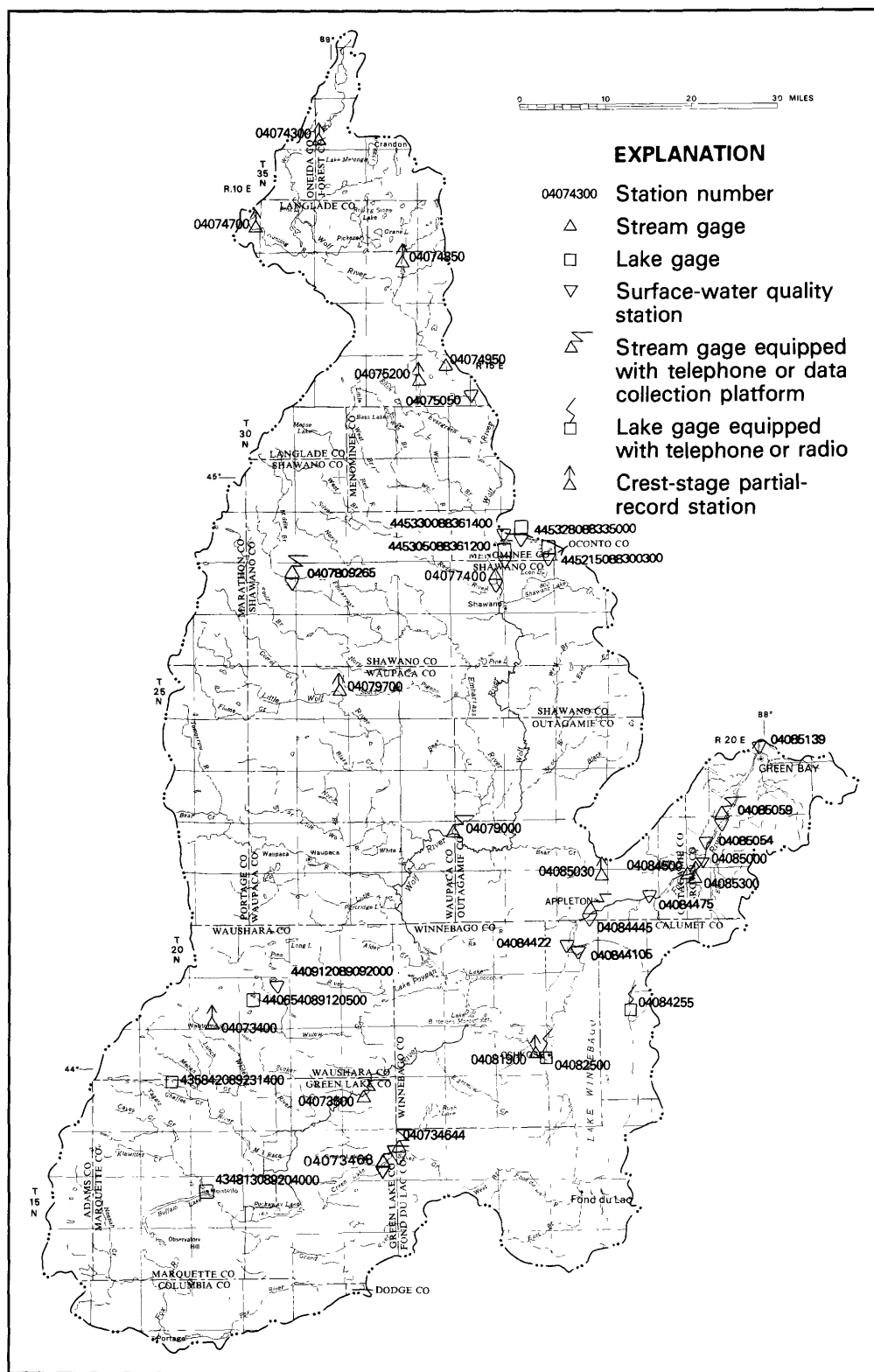
STREAMS TRIBUTARY TO LAKE MICHIGAN

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04072150 DUCK CREEK NEAR HOWARD, WI--CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)
NOV 1989								
21...	<0.100	0.020	0.040	0.88	0.90	0.070	0.050	0.030
FEB 1990								
21...	<0.100	3.40	1.80	1.8	5.2	0.670	0.530	0.470
MAR								
12...	1.20	1.70	1.70	3.7	5.4	0.630	0.470	0.440
14...	2.00	1.10	1.00	2.8	3.9	0.450	0.360	0.300
14...	1.70	1.30	1.30	3.8	5.1	0.600	0.420	0.370
15...	3.70	0.950	0.830	2.4	3.3	0.450	0.370	0.300
15...	3.50	0.940	0.940	3.2	4.1	0.780	0.310	0.400
15...	3.60	0.930	0.840	2.9	3.8	0.440	0.350	0.300
15...	3.50	1.00	0.900	3.9	4.9	0.300	0.300	0.310
17...	4.90	0.810	0.780	1.7	2.5	0.300	0.260	0.210
17...	4.60	0.620	0.620	3.7	4.3	0.190	0.160	0.130
18...	5.30	0.800	0.770	1.5	2.3	0.280	0.240	0.190
18...	2.50	0.350	0.350	1.4	1.8	0.170	0.130	0.100
29...	4.50	0.370	0.390	1.2	1.6	0.120	0.120	0.090
APR								
09...	1.20	0.050	0.030	1.4	1.4	0.060	0.030	0.010
09...	1.30	0.060	0.050	1.2	1.3	0.060	0.030	0.010
MAY								
08...	<0.100	0.030	0.040	1.5	1.5	0.170	0.100	0.130
08...	<0.100	0.040	0.020	1.6	1.6	0.180	0.090	0.020
11...	0.600	0.060	0.030	1.1	1.2	0.190	0.090	0.070
11...	0.500	0.190	0.170	1.8	2.0	0.260	0.130	0.110
12...	3.10	0.340	0.360	3.4	3.7	0.580	0.190	0.150
12...	5.20	0.260	0.230	2.9	3.2	0.540	0.240	0.200
13...	8.00	0.110	0.110	2.8	2.9	0.300	0.220	0.190
14...	7.60	0.070	0.070	1.9	2.0	0.260	0.160	0.130
15...	<0.100	0.090	0.040	1.9	2.0	0.200	0.160	0.080
15...	6.90	0.090	0.090	2.0	2.1	0.220	0.150	0.140
16...	5.20	0.140	0.110	1.7	1.8	0.240	0.150	0.130
17...	4.90	0.160	0.130	2.5	2.7	0.270	0.180	0.160
17...	5.30	0.170	0.170	2.2	2.4	0.310	0.190	0.170
17...	5.30	0.180	0.170	1.7	1.9	0.320	0.210	0.190
18...	5.90	0.100	0.100	1.7	1.8	0.310	0.210	0.180
19...	6.10	0.020	0.030	2.3	2.3	0.180	0.130	0.110
20...	5.10	0.150	0.130	2.0	2.2	0.300	0.140	0.130
20...	5.40	0.170	0.150	2.8	3.0	0.400	0.140	0.120
20...	5.50	0.170	0.140	5.0	5.2	0.380	0.100	0.090
21...	5.70	0.180	0.110	6.1	6.3	0.210	0.110	0.090
21...	6.20	0.150	0.080	8.7	8.9	1.20	0.090	0.070
22...	6.40	0.090	0.040	5.4	5.5	1.10	0.110	0.090
25...	5.00	0.030	0.030	3.0	3.0	0.290	0.090	0.100
JUN								
13...	0.600	0.040	0.030	0.96	1.0	0.510	0.040	<0.010
13...	0.600	0.070	0.060	1.0	1.1	0.450	0.050	0.010
13...	0.700	0.210	0.120	1.3	1.5	0.440	0.160	0.140
13...	1.20	0.040	0.020	1.1	1.1	0.620	0.080	0.040
14...	2.50	0.090	0.080	2.1	2.2	1.10	0.130	0.090
14...	2.30	0.070	0.040	2.3	2.4	0.580	0.160	0.120
14...	2.40	0.080	0.080	2.1	2.2	0.840	0.190	0.140
15...	3.50	0.090	0.090	2.1	2.2	0.670	0.210	0.160
16...	3.90	0.080	0.070	1.3	1.4	0.400	0.190	0.140
17...	2.70	0.090	0.070	2.1	2.2	0.410	0.210	0.130
17...	3.00	0.080	0.070	1.8	1.9	0.610	0.190	0.130
AUG								
10...	<0.100	0.030	0.040	1.6	1.6	0.200	0.130	0.120
SEP								
14...	0.400	0.090	0.070	1.5	1.6	0.240	0.140	0.150



FOX-WOLF RIVER BASIN

STREAMS TRIBUTARY TO LAKE MICHIGAN

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434813089204000 MONTELLO LAKE AT MONTELLO, WI

LOCATION.--Lat 43°48'13", long 89°20'40", in SW 1/4 sec.5, T.15 N., R.10 E., Marquette County, Hydrologic Unit 04030201, at Montello.

PERIOD OF RECORD.--October 1984 to current year.

GAGE.--Staff gage read by Harry Clark. Elevation of gage is 783 ft, from topographic map.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height observed, 11.94 ft, July 26, 1985; minimum observed, 10.24 ft, Aug. 23, 24, 1985.

EXTREMES FOR CURRENT YEAR.--Maximum gage height observed, 11.59 ft, May 10; minimum observed, 11.17 ft, May 7.

GAGE HEIGHT (FEET ABOVE DAUM), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	GAGE HEIGHT	DATE	GAGE HEIGHT	DATE	GAGE HEIGHT	DATE	GAGE HEIGHT
APR. 25	11.25	MAY 3	11.41	MAY 16	11.41	MAY 28	11.21
MAY 1	11.35	7	11.17	23	11.55	30	11.31
2	11.36	10	11.59				

STREAMS TRIBUTARY TO LAKE MICHIGAN

435842089231400 SHARON LAKE NEAR DAKOTA, WI

LOCATION.--Lat 43°58'42", long 89°23'14", in NE 1/4 sec.2, T.17 N., R.9 E., Marquette County, Hydrologic Unit 04030201, 1.7 mi southwest of Dakota.

PERIOD OF RECORD.--November 1984 to current year.

GAGE.--Staff gage read by Mike Jacobi. Elevation of gage is 845 ft, from topographic map.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height observed, 9.21 ft, Oct. 4-6, 12-15, 1986; minimum observed, 6.10 ft, Sept. 18, 1988.

EXTREMES FOR CURRENT YEAR.--Maximum gage height observed, 7.80 ft, June 26-29; minimum observed, 7.06 ft, May 9.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	7.18	7.18	7.40	7.78	7.52	7.60
2	---	---	---	---	---	---	7.22	7.18	7.42	7.76	7.50	7.58
3	---	---	---	---	---	---	7.20	7.16	7.42	7.74	7.54	7.56
4	---	---	---	---	---	---	7.18	7.14	7.42	7.72	7.66	7.54
5	---	---	---	---	---	---	7.16	7.14	7.42	7.70	7.66	7.54
6	---	---	---	---	---	---	7.14	7.12	7.44	7.68	7.64	7.64
7	---	---	---	---	---	---	7.12	7.10	7.44	7.68	7.64	7.68
8	---	---	---	---	---	---	7.12	7.08	7.44	7.68	7.62	7.68
9	---	---	---	---	---	---	7.10	7.06	7.44	7.66	7.60	7.66
10	---	---	---	---	---	---	7.10	7.28	7.42	7.64	7.60	7.66
11	---	---	---	---	---	---	7.10	7.28	7.42	7.64	7.58	7.64
12	---	---	---	---	---	---	7.10	7.28	7.40	7.62	7.56	7.64
13	---	---	---	---	---	---	7.10	7.26	7.62	7.60	7.56	7.62
14	---	---	---	---	---	---	7.14	7.26	7.62	7.58	7.54	7.66
15	---	---	---	---	---	---	7.16	7.28	7.62	7.58	7.52	7.66
16	---	---	---	---	---	---	7.22	7.34	7.66	7.56	7.48	7.64
17	---	---	---	---	---	---	7.22	7.34	7.66	7.56	7.46	7.64
18	---	---	---	---	---	---	7.22	7.34	7.66	7.54	7.56	7.68
19	---	---	---	---	---	---	7.20	7.36	7.66	7.54	7.64	7.68
20	---	---	---	---	---	---	7.20	7.44	7.66	7.52	7.68	7.68
21	---	---	---	---	---	---	7.18	7.44	7.66	7.50	7.68	7.68
22	---	---	---	---	---	---	7.18	7.44	7.74	7.56	7.66	7.66
23	---	---	---	---	---	---	7.16	7.46	7.78	7.56	7.66	7.66
24	---	---	---	---	---	---	7.14	7.46	7.78	7.56	7.68	7.66
25	---	---	---	---	---	7.20	7.14	7.44	7.78	7.54	7.68	7.64
26	---	---	---	---	---	---	7.16	7.44	7.80	7.54	7.72	7.64
27	---	---	---	---	---	---	7.18	7.42	7.80	7.52	7.72	7.62
28	---	---	---	---	---	---	7.18	7.42	7.80	7.52	7.70	7.62
29	---	---	---	---	---	---	7.20	7.42	7.80	7.52	7.68	7.62
30	---	---	---	---	---	---	7.20	7.40	7.78	7.52	7.66	7.60
31	---	---	---	---	---	---	---	7.40	---	7.52	7.64	---
MAX	---	---	---	---	---	7.20	7.22	7.46	7.80	7.78	7.72	7.68
MIN	---	---	---	---	---	7.20	7.10	7.06	7.40	7.50	7.46	7.54

040734644 SILVER CREEK AT SOUTH KORO ROAD NEAR RIPON, WI

LOCATION.--Lat 43°51'30", long 88°52'17" in NW 1/4 SE 1/4 sec.18, T.16 N., R.14 E., Fond du Lac County, Hydrologic Unit 04030201, on left bank at upstream side of culvert on South Koro Road, 1.8 mi west of Ripon.

DRAINAGE AREA.--36.2 mi².

WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WDR WI-88-1: (M).

GAGE.--Water-stage recorder, crest-stage gage, and concrete control. Elevation of gage is 810 ft, from topographic map.

REMARKS.--Estimated daily discharges: Dec. 21-24 and Sept. 14-20. Records good, except for estimated daily discharges, which are fair. Approximately 2.1 ft³/s of daily flow is effluent from Ripon Wastewater Treatment Plant. Gage-height telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 545 ft³/s, May 31, 1989, gage height, 10.83 ft; minimum daily, 1.8 ft³/s, July 31, 1988.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 198 ft³/s, Mar. 14, gage height, 8.02 ft; minimum daily, 2.1 ft³/s, Dec. 25.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).

5.0	1.6	6.0	31
5.1	2.8	6.5	64
5.4	9.4	7.0	105
5.7	18	8.0	196

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.8	12	7.7	2.9	5.7	6.0	20	13	15	56	16	22
2	5.8	12	7.4	3.0	4.8	11	34	12	26	52	15	20
3	5.6	11	5.8	3.2	4.1	9.5	33	12	21	47	29	19
4	5.2	12	5.9	3.6	3.9	8.3	35	11	19	41	55	18
5	13	12	6.2	3.5	4.9	7.5	33	11	21	36	88	18
6	9.6	12	6.6	2.9	4.9	6.8	28	10	20	32	91	19
7	7.9	13	5.6	2.9	5.3	6.0	23	10	18	30	78	19
8	7.0	12	4.9	3.6	24	34	20	9.4	18	28	66	16
9	7.2	11	4.4	6.4	24	48	19	18	15	26	53	15
10	8.7	11	4.5	4.0	23	71	24	40	13	24	43	16
11	7.6	10	4.8	3.8	25	103	22	42	13	22	35	15
12	7.4	9.5	4.2	3.7	22	126	21	46	13	21	29	15
13	7.2	10	3.6	3.3	21	124	20	44	21	20	25	15
14	6.5	9.7	3.5	3.3	14	153	21	40	15	19	22	50
15	6.1	9.4	3.5	3.9	10	147	20	34	14	20	19	48
16	17	8.2	3.0	3.9	8.5	122	20	38	14	19	17	44
17	11	6.7	2.8	9.2	6.4	86	19	31	62	18	16	40
18	9.6	6.3	3.2	5.5	6.0	80	18	28	52	17	68	37
19	9.2	6.2	3.1	5.3	6.0	64	19	42	53	18	102	35
20	10	7.5	2.8	4.8	5.3	50	18	55	55	17	101	33
21	9.7	7.7	2.6	4.8	5.4	41	18	56	42	16	97	31
22	9.5	7.6	2.4	5.0	5.4	38	17	55	100	15	89	28
23	9.7	6.6	2.3	6.7	5.6	29	17	48	139	16	76	25
24	9.8	5.9	2.2	10	4.7	25	17	39	140	15	66	24
25	9.5	5.9	2.1	6.5	3.9	22	16	32	134	14	53	23
26	9.2	6.6	2.2	5.2	4.8	21	16	27	113	15	47	21
27	8.9	12	2.6	5.2	4.9	20	16	23	87	14	41	19
28	7.9	11	2.7	4.5	4.3	18	16	20	78	20	36	18
29	7.8	8.5	2.6	4.7	---	18	15	19	68	20	32	16
30	13	7.7	2.6	4.7	---	17	14	16	61	19	28	16
31	13	---	2.6	4.5	---	17	---	14	---	17	25	---
TOTAL	275.4	281.0	120.4	144.5	267.8	1529.1	629	895.4	1460	744	1558	735
MEAN	8.88	9.37	3.88	4.66	9.56	49.3	21.0	28.9	48.7	24.0	50.3	24.5
MAX	17	13	7.7	10	25	153	35	56	140	56	102	50
MIN	5.2	5.9	2.1	2.9	3.9	6.0	14	9.4	13	14	15	15
CFSM	.25	.26	.11	.13	.26	1.36	.58	.80	1.34	.66	1.39	.68
IN.	.28	.29	.12	.15	.28	1.57	.65	.92	1.50	.76	1.60	.76

CAL YR 1989 TOTAL 7718.5 MEAN 21.1 MAX 478 MIN 2.1 CFSM .58 IN. 7.93
WTR YR 1990 TOTAL 8639.6 MEAN 23.7 MAX 153 MIN 2.1 CFSM .65 IN. 8.88

040734644 SILVER CREEK AT SOUTH KORO ROAD NEAR RIPON, 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 since April 1987.

REMARKS.--Records good. Phosphorus analyses by the Wisconsin State Laboratory of Hygiene. Samples are point samples unless indicated otherwise.

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

EXTREMES FOR PERIOD OF DAILY RECORD.--

SUSPENDED-SEDIMENT DISCHARGE: Maximum daily, 378 tons, May 30, 1989; minimum daily, 0.00 ton, Aug. 12, 1988.

TOTAL-PHOSPHORUS DISCHARGE: Maximum daily, 1,620 lb, May 30, 1989; minimum daily, 2.3 lb, Aug. 7, 1988.

EXTREMES FOR CURRENT YEAR.--

SUSPENDED-SEDIMENT DISCHARGE: Maximum daily, 55 tons, Mar. 14; minimum daily, 0.03 ton, Oct. 4, 8-15.

TOTAL-PHOSPHORUS DISCHARGE: Maximum daily, 590 lb, Mar. 14; minimum daily, 3.9 lb, Dec. 25.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	SEDI- MENT, SUS- PENDED (MG/L) (80154)
OCT 1989					FEB 1990				
05...	0920	14	0.360	--	09...	1820	35	--	37
05...	1000	26	0.500	84	10...	0020	23	--	17
05...	1200	29	0.580	56	10...	0220	21	0.560	--
05...	1400	28	--	31	12...	1420	22	--	20
05...	1535	18	0.390	14	12...	1620	22	0.900	--
*06...	1455	10	0.320	2	12...	2220	25	--	22
10...	0030	11	--	1	13...	0020	25	0.860	--
16...	0305	12	0.320	8	14...	0025	17	--	12
16...	0410	24	--	20	14...	1225	15	0.900	--
16...	0430	32	0.340	33	*28...	1245	7.4	0.200	13
16...	0830	27	0.180	24	MAR				
16...	1230	18	--	9	02...	0950	5.8	--	6
16...	1430	15	0.410	--	02...	1415	11	--	26
16...	1830	13	--	5	02...	1505	16	--	57
16...	2030	12	0.290	--	02...	1610	22	0.700	91
17...	0630	10	--	6	02...	2359	13	0.440	--
17...	0830	10	0.490	--	02...	2400	13	--	13
22...	2315	9.4	--	3	08...	1340	7.3	0.610	35
30...	1005	19	0.370	12	08...	1355	7.2	--	70
30...	1045	17	0.410	14	08...	1405	27	1.01	--
30...	1245	13	--	9	08...	1415	7.2	--	325
30...	1445	13	0.490	--	08...	1500	7.0	--	498
30...	1735	19	--	6	08...	1505	7.0	1.54	558
30...	2020	18	0.360	16	08...	2325	5.8	--	58
31...	0020	13	--	6	09...	0750	5.0	0.550	33
31...	0420	14	0.360	37	09...	1250	45	--	55
31...	1220	15	--	2	09...	1435	56	0.730	--
NOV					09...	2350	69	--	49
06...	1545	12	0.560	--	10...	1150	71	0.690	--
06...	1745	12	--	2	10...	1750	77	--	46
*20...	1215	9.1	0.610	7	11...	0845	85	--	98
27...	1405	18	0.770	49	11...	1035	97	1.74	--
27...	1605	21	0.410	37	11...	1345	113	--	266
27...	1925	19	0.230	16	11...	1420	127	1.01	--
JAN 1990					11...	1455	143	--	205
*05...	1215	4.1	0.420	18	11...	1540	157	0.910	167
23...	2300	14	--	45	12...	0100	116	0.700	81
24...	0100	14	--	21	12...	0700	128	--	71
24...	1520	13	--	11	12...	0950	127	0.310	--
FEB					12...	1145	128	0.670	85
08...	1235	14	--	39	*12...	1150	128	0.730	69
08...	1310	19	0.600	--	13...	1900	119	0.690	56
08...	1340	26	--	268	14...	0240	136	0.680	74
08...	1405	35	1.02	--	14...	0320	151	--	273
08...	1430	44	--	377	14...	0345	167	1.29	--
08...	1630	49	1.06	--	14...	0415	181	--	545
08...	1830	50	--	150	14...	0435	194	1.08	322
08...	2030	47	0.900	--	14...	1305	149	0.590	77
08...	2230	38	--	58	15...	1434	157	0.460	97
09...	0230	25	0.790	--	*15...	1435	157	0.460	57
09...	0430	21	--	28	16...	1200	150	--	48
09...	0830	15	--	21	16...	1600	146	0.330	--
09...	1030	15	0.490	--	17...	1210	90	--	33
09...	1405	22	--	31	18...	0610	75	--	27
09...	1620	37	0.630	--	18...	1210	86	0.280	--

STREAMS TRIBUTARY TO LAKE MICHIGAN

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040734644 SILVER CREEK AT SOUTH KORO ROAD NEAR RIPON, WI--CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	SEDI- MENT, SUS- PENDE (MG/L) (80154)
MAR 1990					JUN 1990				
19...	0610	68	--	24	17...	2250	45	0.400	--
20...	1810	48	0.220	--	18...	1050	54	--	27
21...	0610	42	--	17	19...	2340	71	0.410	46
25...	0930	21	0.210	--	21...	2340	36	0.370	19
25...	2130	22	--	9	22...	0750	48	--	46
31...	2130	17	--	10	22...	0800	63	0.480	--
APR					22...	0810	84	--	265
01...	0930	17	0.140	--	22...	0820	101	1.26	--
01...	2015	22	--	36	22...	0835	115	--	532
01...	2105	29	0.230	--	22...	1325	132	0.600	302
01...	2155	38	0.260	59	22...	1425	143	--	283
04...	2235	34	0.140	--	22...	1515	156	0.520	--
05...	2235	31	--	8	22...	2115	144	0.460	92
08...	2235	19	--	6	23...	0315	147	--	35
*12...	1425	22	0.100	5	23...	0915	136	0.390	--
12...	2400	21	--	9	23...	2115	136	--	24
14...	0410	22	--	7	24...	1515	141	0.300	--
16...	1740	24	--	6	24...	2115	141	--	23
26...	2115	24	--	49	27...	0915	89	--	18
MAY					27...	1515	84	0.310	--
09...	1210	26	0.560	98	28...	0315	79	--	23
09...	1235	34	0.510	294	28...	0905	92	--	120
09...	2045	24	0.270	41	30...	2105	59	--	18
10...	0215	24	--	28	JUL				
10...	0250	33	0.240	50	01...	0905	56	0.550	--
10...	1150	42	--	37	04...	0905	41	--	20
10...	1305	52	0.300	66	04...	2105	38	0.450	--
11...	0105	39	0.250	--	09...	0220	26	--	15
11...	1305	45	--	24	09...	1420	27	0.460	--
12...	0105	44	--	23	12...	1455	22	--	10
12...	1305	47	0.190	--	*17...	1200	18	0.290	3
14...	0105	41	0.180	--	28...	0445	24	--	48
14...	1305	40	--	14	28...	1715	35	0.490	65
16...	0215	42	0.210	--	28...	1720	43	--	209
16...	0240	52	--	55	28...	1735	52	0.800	358
18...	0240	28	--	14	28...	2050	22	0.360	26
19...	0240	25	0.180	--	AUG				
19...	1155	43	--	37	03...	0645	27	0.530	73
19...	2055	58	0.240	53	03...	0700	42	--	255
19...	2125	88	0.620	--	03...	0710	56	0.760	217
19...	2140	104	--	429	03...	0735	80	0.980	484
19...	2215	115	0.790	478	03...	1010	58	--	72
19...	2330	91	--	165	03...	1105	40	0.340	39
20...	0040	71	0.240	--	03...	2310	24	0.380	35
20...	0640	52	--	22	04...	0040	53	0.610	237
*22...	1050	58	0.180	12	04...	0340	65	--	110
26...	1835	24	0.150	--	04...	0540	77	0.350	91
27...	0635	25	--	16	04...	2025	58	0.350	32
JUN					05...	0520	82	--	34
02...	1715	28	0.490	--	05...	2320	95	--	21
02...	1725	49	--	355	06...	1720	89	0.330	--
02...	1735	75	1.16	--	07...	1120	79	--	15
02...	1745	94	--	906	07...	1720	75	0.350	--
02...	1800	107	1.22	637	13...	1120	27	0.570	--
02...	1905	81	--	361	14...	1355	23	--	10
02...	1935	59	0.470	--	18...	0415	32	--	74
02...	2025	41	--	86	18...	0420	43	0.790	--
03...	0040	28	0.220	28	18...	0435	75	--	443
05...	1155	32	--	42	18...	0450	86	1.34	471
13...	0825	27	2.71	247	18...	0555	65	--	85
13...	0840	36	--	231	18...	0705	93	0.520	118
13...	0855	46	0.610	--	18...	1340	34	0.300	11
13...	0915	56	0.680	351	18...	1845	53	--	50
13...	1100	38	--	66	18...	1855	76	0.520	--
13...	1335	24	0.260	22	18...	1900	90	--	267
17...	0135	26	--	170	18...	1915	113	0.950	--
17...	0145	41	0.700	--	18...	1940	127	--	285
17...	0155	56	--	439	18...	2035	163	1.35	810
17...	0305	70	0.440	--	18...	2140	197	0.540	221
17...	0320	85	--	301	18...	2335	148	--	61
17...	0335	100	0.600	--	19...	0035	124	0.360	--
17...	0350	117	--	700	21...	1015	98	--	12
17...	0410	129	1.30	--	23...	0415	79	0.350	--
17...	0440	143	1.13	715	23...	1015	77	--	9
17...	0640	117	--	176	28...	2300	34	--	10
17...	0720	97	0.430	--	29...	1100	33	0.450	--
17...	1050	56	--	40					

STREAMS TRIBUTARY TO LAKE MICHIGAN

040734644 SILVER CREEK AT SOUTH KORO ROAD NEAR RIPON, WI--CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	SEDI- MENT, SUS- PENDED (MG/L) (80154)
SEP 1990					
06...	2205	--	26	--	73
06...	2230	--	45	--	261
06...	2350	--	29	--	64
09...	2235	--	25	--	134
14...	0630	50	--	--	72
14...	0650	50	--	--	320
14...	0715	50	--	--	461
14...	0740	50	--	--	332
14...	1110	50	--	--	44
21...	0135	--	30	--	10
25...	1335	--	24	--	14
26...	1210	--	22	0.160	--

* EQUAL-WIDTH INCREMENT (EWI).

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)
NOV 1989				
20...	1210	8.6	1200	6.5
JAN 1990				
05...	1220	4.6	1730	3.0

STREAMS TRIBUTARY TO LAKE MICHIGAN

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040734644 SILVER CREEK AT SOUTH KORO ROAD NEAR RIPON, WI--CONTINUED

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.04	.08	.22	.13	.12	.14	1.2	.26	.50	2.8	.65	.58
2	.04	.07	.21	.14	.10	1.0	2.0	.23	13	2.7	.58	.52
3	.04	.07	.17	.15	.09	.27	.88	.22	1.2	2.5	7.9	.49
4	.03	.07	.17	.17	.08	.21	.87	.21	.87	2.1	8.3	.46
5	1.0	.07	.19	.17	.10	.18	.77	.19	1.1	1.8	6.7	.43
6	.07	.07	.20	.14	.11	.16	.60	.17	.83	1.5	4.6	1.6
7	.04	.08	.18	.13	.11	.14	.45	.17	.73	1.3	3.1	.78
8	.03	.09	.15	.15	9.3	19	.35	.15	.69	1.2	2.4	.47
9	.03	.09	.14	.25	2.0	6.7	.35	2.5	.56	.99	1.9	.71
10	.03	.09	.15	.15	1.4	8.9	.84	4.2	.48	.81	1.4	.52
11	.03	.09	.16	.14	1.6	34	.39	2.7	.46	.66	1.1	.47
12	.03	.09	.14	.13	1.3	24	.32	2.6	.42	.54	.86	.43
13	.03	.11	.12	.11	.93	20	.46	2.0	4.2	.42	.70	.41
14	.03	.11	.12	.10	.45	55	.41	1.5	.62	.32	.57	8.2
15	.03	.12	.12	.12	.34	24	.35	1.2	.54	.26	.49	1.9
16	.63	.11	.11	.11	.28	15	.31	2.4	.53	.20	.43	1.6
17	.16	.10	.10	.47	.21	7.8	.29	1.2	34	.15	.39	1.4
18	.13	.10	.12	.16	.20	5.7	.28	1.0	3.6	.15	33	1.2
19	.11	.11	.12	.14	.20	4.0	.29	12	3.3	.15	6.5	1.1
20	.11	.14	.11	.13	.18	2.6	.28	5.0	3.8	.14	3.7	.96
21	.09	.14	.10	.13	.18	1.8	.28	2.1	2.3	.13	3.1	.90
22	.08	.13	.09	.13	.18	1.4	.27	1.9	46	.13	2.5	.84
23	.08	.11	.09	.35	.19	.97	.27	1.7	12	.13	1.9	.82
24	.08	.09	.09	.34	.16	.72	.27	1.4	8.9	.12	1.7	.83
25	.08	.09	.08	.14	.13	.58	.26	1.3	7.9	.12	1.4	.83
26	.07	.09	.09	.11	.17	.54	.45	1.1	6.0	.12	1.2	.74
27	.07	.75	.11	.11	.17	.50	.39	.97	4.2	.12	1.1	.62
28	.06	.32	.12	.10	.14	.48	.33	.81	5.4	3.0	.99	.57
29	.06	.23	.11	.10	---	.48	.31	.72	3.6	.94	.86	.48
30	.32	.22	.12	.10	---	.48	.29	.60	3.1	.86	.75	.46
31	.12	---	.12	.10	---	.47	---	.51	---	.75	.66	---
TOTAL	3.75	4.03	4.12	4.90	20.42	237.22	14.81	53.01	170.83	27.11	101.43	31.32

WTR YR 1990 TOTAL 672.95

PHOSPHORUS TOTAL, POUNDS PER DAY, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	26	10	6.2	12	6.4	18	7.1	12	163	23	48
2	11	27	9.9	6.5	10	27	43	6.6	63	146	20	42
3	10	28	7.9	7.0	9.0	17	33	6.4	23	123	72	39
4	8.9	31	8.1	8.1	8.5	13	29	6.1	17	101	127	36
5	31	33	8.7	7.8	11	12	24	5.7	24	87	163	33
6	17	35	9.4	6.7	11	11	20	5.4	21	79	164	34
7	13	38	8.2	6.6	11	9.8	16	5.4	19	75	146	33
8	11	36	7.1	8.1	106	204	13	5.1	18	70	132	28
9	11	35	6.6	14	82	183	12	24	15	65	117	25
10	14	34	6.8	9.1	76	262	14	63	13	57	103	25
11	12	32	7.4	8.6	96	495	12	52	13	49	90	23
12	11	30	6.6	8.4	104	481	12	48	12	44	82	22
13	10	32	5.8	7.5	99	468	11	44	38	40	76	20
14	9.2	31	5.6	7.4	66	590	12	38	17	36	60	67
15	8.4	30	5.8	8.8	45	376	11	32	15	35	47	62
16	25	26	5.0	8.7	33	230	11	55	15	31	39	55
17	26	22	4.7	20	22	142	10	36	188	28	32	48
18	24	21	5.4	12	19	120	9.9	29	112	27	240	43
19	22	20	5.5	12	17	88	10	75	118	27	198	39
20	24	24	5.0	11	14	61	9.9	68	118	25	195	36
21	22	23	4.7	11	12	49	9.6	61	86	24	185	33
22	21	21	4.4	11	11	44	9.3	53	318	22	168	28
23	20	17	4.3	15	10	33	9.3	44	289	23	145	24
24	20	14	4.1	22	7.9	28	9.0	35	237	21	131	22
25	18	13	3.9	14	5.8	25	8.7	28	219	20	110	20
26	17	13	4.3	11	6.4	23	8.8	22	187	20	101	18
27	16	28	5.1	11	5.9	20	8.7	19	146	20	91	16
28	14	14	5.4	9.9	4.7	17	8.5	16	148	40	84	15
29	13	11	5.2	10	---	16	8.1	15	151	31	76	13
30	27	10	5.4	10	---	15	7.8	13	160	29	65	13
31	27	---	5.6	9.9	---	13	---	12	---	26	56	---
TOTAL	525.5	755	191.9	319.3	915.2	4079.2	418.6	929.8	2812	1584	3338	960

WTR YR 1990 TOTAL 16828.5

STREAMS TRIBUTARY TO LAKE MICHIGAN

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

LOCATION.--Lat 43°49'18", long 88°55'36" in NE 1/4 SE 1/4 SE 1/4 sec.27, T.16 N., R.13 E., Green Lake County, Hydrologic Unit 04030201, on left bank at downstream side of County Trunk Highway A, 2.3 mi southeast of Green Lake.

DRAINAGE AREA.--53.5 mi².

WATER-DISCHARGE RECORDS

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

GAGE.--Acoustical Velocity Meter (AVM) system. Single-path, mid-depth transducer installation. Cross-path, dual-depth transducers installed on June 6. Data are stored using CR-21X datalogger with phone modem connection for daily retrieval.

REMARKS.--Discharge estimated Oct. 1 to Aug. 9 based on discharge from upstream station, Silver Creek near Ripon (040734644), adjusted for drainage area. Approximately 2.1 ft³/s of daily flow is effluent from Ripon Wastewater Treatment Plant.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 705 ft³/s, May 31, 1989; minimum daily, 1.6 ft³/s, July 31, 1988.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 226 ft³/s, Mar. 14; minimum daily, 3.1 ft³/s, Dec. 25.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.6	18	11	4.3	8.4	8.9	30	19	22	83	24	30
2	8.6	18	11	4.4	7.1	16	50	18	38	77	22	29
3	8.3	16	8.6	4.7	6.1	14	49	18	31	70	43	25
4	7.7	18	8.7	5.3	5.8	12	52	16	28	61	81	25
5	19	18	9.2	5.2	7.3	11	49	16	31	53	130	21
6	14	18	9.8	4.3	7.3	10	41	15	30	47	135	21
7	12	19	8.3	4.3	7.8	8.9	34	15	27	44	115	21
8	10	18	7.3	5.3	36	50	30	14	27	41	98	18
9	11	16	6.5	9.5	36	71	28	27	22	38	78	20
10	13	16	6.7	5.9	34	105	36	59	19	36	51	22
11	11	15	7.1	5.6	37	152	33	62	19	33	47	18
12	11	14	6.2	5.5	33	186	31	68	19	31	28	24
13	11	15	5.3	4.9	31	184	30	65	31	30	26	16
14	9.6	14	5.2	4.9	21	226	31	59	22	28	20	56
15	9.0	14	5.2	5.8	15	218	30	50	21	30	25	46
16	25	12	4.4	5.8	13	181	30	56	21	28	16	38
17	16	9.9	4.1	14	9.5	127	28	46	92	27	18	42
18	14	9.3	4.7	8.1	8.9	118	27	41	77	25	78	41
19	14	9.2	4.6	7.8	8.9	95	28	62	78	27	208	45
20	15	11	4.1	7.1	7.8	74	27	81	81	25	131	44
21	14	11	3.8	7.1	8.0	61	27	83	62	24	109	40
22	14	11	3.6	7.4	8.0	56	25	81	148	22	100	37
23	14	9.8	3.4	9.9	8.3	43	25	71	206	24	95	30
24	15	8.7	3.3	15	7.0	37	25	58	207	22	80	31
25	14	8.7	3.1	9.6	5.8	33	24	47	198	21	71	38
26	14	9.8	3.3	7.7	7.1	31	24	40	167	22	59	25
27	13	18	3.8	7.7	7.3	30	24	34	129	21	50	24
28	12	16	4.0	6.7	6.4	27	24	30	115	30	44	26
29	12	13	3.8	7.0	---	27	22	28	101	30	37	22
30	19	11	3.8	7.0	---	25	21	24	90	28	37	18
31	19	---	3.8	6.7	---	25	---	21	---	25	35	---
TOTAL	407.8	415.4	177.7	214.5	398.8	2262.8	935	1324	2159	1103	2091	893
MEAN	13.2	13.8	5.73	6.92	14.2	73.0	31.2	42.7	72.0	35.6	67.5	29.8
MAX	25	19	11	15	37	226	52	83	207	83	208	56
MIN	7.7	8.7	3.1	4.3	5.8	8.9	21	14	19	21	16	16
CFSM	.25	.26	.11	.13	.27	1.36	.58	.80	1.35	.67	1.26	.56
IN.	.28	.29	.12	.15	.28	1.57	.65	.92	1.50	.77	1.45	.62
CAL YR 1989	TOTAL 11114.0	MEAN 30.4	MAX 705	MIN 3.1	CFSM .37	IN. 7.73						
WTR YR 1990	TOTAL 12382.0	MEAN 33.9	MAX 226	MIN 3.1	CFSM .63	IN. 8.61						

STREAMS TRIBUTARY TO LAKE MICHIGAN

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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.--Observer takes samples during periods of low flow and more frequently during runoff periods.

REMARKS.--Records fair. Phosphorus analyses by the Wisconsin State Laboratory of Hygiene. All samples are equal-width increment (EWI).

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

EXTREMES FOR PERIOD OF DAILY RECORD.--

SUSPENDED-SEDIMENT DISCHARGE: Maximum daily, 456 tons, May 31, 1989; minimum daily, 0.03 ton, Sept. 10-11, 14-17, 1988, Feb. 18 to Mar. 2, 1989, Jan. 28, 31, and Feb. 2-4, 1990.

TOTAL-PHOSPHORUS DISCHARGE: Maximum daily, 3,230 lb, May 31, 1989; minimum daily, 0.27 lb, Sept. 11, 1988.

EXTREMES FOR CURRENT YEAR.--

SUSPENDED-SEDIMENT DISCHARGE: Maximum daily, 87 tons, June 22; minimum daily, 0.03 ton, Jan. 28, 31, and Feb. 2-4.

TOTAL-PHOSPHORUS DISCHARGE: Maximum daily, 757 lb, Mar. 12; minimum daily, 1.3 lb, Oct. 3.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	DATE	TIME	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	SEDI- MENT, SUS- PENDED (MG/L) (80154)
OCT 1989					MAY 1990				
06...	1515	14	0.070	18	09...	1335	27	0.230	--
11...	1145	11	--	10	14...	1425	59	0.230	228
11...	1150	11	0.040	--	16...	1510	56	0.210	42
16...	1255	25	0.130	21	19...	2020	62	--	15
17...	1045	16	0.080	3	19...	2030	62	0.090	--
20...	1600	15	--	12	21...	1105	83	0.190	31
25...	1600	14	0.120	--	22...	0855	81	0.180	29
31...	1355	19	0.040	132	JUN				
NOV					03...	1220	31	0.330	114
07...	1045	19	0.040	5	05...	1430	31	0.060	8
28...	1440	16	0.040	6	08...	1325	27	0.160	30
DEC					13...	1540	31	0.060	10
12...	1245	6.2	--	8	14...	0910	22	0.160	21
JAN 1990					18...	1510	77	0.420	227
03...	1345	4.7	0.120	--	20...	1340	81	0.240	33
05...	1255	5.2	0.170	4	22...	1610	148	0.770	334
24...	1220	15	0.190	--	23...	1000	206	0.360	73
24...	1230	15	--	2	24...	1600	207	0.280	32
FEB					25...	1142	198	0.300	29
02...	1345	7.1	0.150	2	27...	1130	129	0.290	73
12...	1245	33	0.500	--	29...	1800	101	0.240	34
22...	1230	8.0	0.100	--	JUL				
28...	0750	6.4	--	4	01...	1115	83	0.230	29
MAR					06...	1020	47	0.280	28
08...	1350	50	0.770	30	09...	1500	38	0.220	35
12...	1210	186	0.780	62	17...	0820	27	0.060	5
15...	1055	218	0.200	23	31...	0915	25	0.200	18
16...	1040	181	0.330	29	AUG				
18...	0935	118	0.280	17	05...	1425	130	0.370	44
21...	1030	61	0.270	21	06...	1300	135	0.340	38
26...	1150	31	0.190	13	18...	1315	80	0.260	32
APR					19...	1815	215	0.320	25
02...	1120	50	0.260	57	20...	1325	136	0.300	38
10...	1120	36	0.260	68	24...	1515	82	0.270	29
24...	0840	25	0.100	50	29...	1000	38	0.200	32
MAY					SEP				
03...	1140	18	0.160	147	07...	1300	22	0.190	36
09...	1325	27	--	167	14...	1425	58	0.180	31
					20...	1525	46	0.190	39

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

PHOSPHORUS TOTAL, POUNDS PER DAY, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

[illegible]

04073500 FOX RIVER AT BERLIN, WI

LOCATION.--Lat 43°57'14", long 88°57'08", in NE 1/4 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 mi².

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.--Estimated daily discharges: Ice period listed in rating table below. Records good except for period of ice effect, which is fair. Usually less than about 20 ft³/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.

AVERAGE DISCHARGE.--92 years, 1,122 ft³/s, 11.37 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,900 ft³/s, Mar. 17, 18, 1946, gage height, 15.5 ft; minimum observed, 210 ft³/s, June 27, 1988, gage height, 7.30 ft.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,270 ft³/s, Mar. 22, gage height, 11.54 ft; minimum daily discharge, 400 ft³/s, Dec. 24-27.

RATING TABLE (gage height, in feet, and discharge in cubic feet per second).
(Stage-discharge relation affected by ice Nov. 17 to Mar. 13.)

7.7	370	10.0	1,370
8.0	490	11.0	1,950
9.0	910	12.0	2,560

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	487	729	700	430	580	700	1790	1140	1920	2130	743	1170
2	481	753	740	430	580	720	1800	1130	1860	2110	660	1120
3	432	768	700	440	580	740	1760	1110	1820	2090	590	1060
4	436	797	620	440	580	740	1730	1070	1770	2070	758	1010
5	470	822	660	440	580	720	1700	1020	1730	2030	942	956
6	504	812	680	440	600	720	1640	998	1690	1980	1030	920
7	489	802	680	440	640	700	1570	980	1630	1950	1020	941
8	505	827	660	440	680	800	1520	980	1570	1920	977	958
9	501	847	640	450	720	960	1480	1010	1510	1880	930	967
10	527	844	620	450	740	1200	1450	1160	1440	1830	889	985
11	538	836	600	460	760	1400	1400	1360	1380	1770	836	981
12	577	827	580	460	760	1600	1350	1530	1280	1690	798	969
13	540	809	560	460	760	1900	1290	1690	1250	1570	776	959
14	538	785	540	460	740	1940	1230	1820	1250	1440	741	1050
15	547	768	520	460	720	2010	1190	1930	1240	1330	727	1120
16	603	724	500	470	700	2090	1160	2020	1250	1240	701	1150
17	596	680	480	480	680	2160	1150	2050	1290	1180	712	1140
18	591	620	460	490	680	2210	1110	2040	1340	1100	793	1120
19	609	720	450	500	700	2240	1120	2050	1370	1020	1040	1140
20	592	820	430	520	700	2250	1140	2160	1430	969	1170	1150
21	643	760	420	520	700	2260	1140	2210	1470	910	1250	1180
22	666	740	410	520	720	2270	1130	2240	1580	864	1280	1230
23	678	740	410	520	720	2250	1140	2240	1780	834	1310	1250
24	669	780	400	540	700	2210	1140	2250	1890	808	1330	1230
25	654	820	400	540	680	2170	1130	2240	1970	782	1350	1210
26	655	880	400	540	680	2130	1110	2220	2050	762	1350	1160
27	650	940	400	540	680	2070	1110	2180	2090	743	1360	1120
28	649	880	410	560	680	2020	1130	2140	2120	762	1340	1090
29	628	740	410	560	---	1960	1140	2090	2150	778	1290	1040
30	658	680	420	560	---	1890	1150	2040	2140	762	1250	1000
31	686	---	420	560	---	1840	---	1980	---	737	1210	---
TOTAL	17799	23550	16320	15120	19040	50870	39900	53078	49260	42041	31153	32376
MEAN	574	785	526	488	680	1641	1330	1712	1642	1356	1005	1079
MAX	686	940	740	560	760	2270	1800	2250	2150	2130	1360	1250
MIN	432	620	400	430	580	700	1110	980	1240	737	590	920
CFSM	.43	.59	.39	.36	.51	1.22	.99	1.28	1.23	1.01	.75	.81
IN.	.49	.65	.45	.42	.53	1.41	1.11	1.47	1.37	1.17	.86	.90

CAL YR 1989 TOTAL 335222 MEAN 918 MAX 3330 MIN 400 CFSM .69 IN. 9.31
WTR YR 1990 TOTAL 390507 MEAN 1070 MAX 2270 MIN 400 CFSM .80 IN. 10.84

STREAMS TRIBUTARY TO LAKE MICHIGAN

04074950 WOLF RIVER AT LANGLADE, WI

LOCATION.--Lat 45°11'24", long 88°44'00", between secs. 3 and 10, 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 mi².

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, from topographic map. Prior to Oct. 1, 1976, nonrecording gage 50 ft downstream at same elevation.

REMARKS.--Estimated daily discharges: Ice period listed in rating table below. Records good except those for ice-affected period, which is fair.

AVERAGE DISCHARGE.--23 years (water years 1967-79, 1981-90), 445 ft³/s, 13.05 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge observed, 2,200 ft³/s, Mar. 15, 1973, gage height, 9.48 ft; maximum gage height, 10.18 ft, Mar. 16, 1990, backwater from ice; minimum discharge, 119 ft³/s, Nov. 8, 1976, gage height, 7.24 ft.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 2,010 ft³/s, June 13, gage height, 10.02 ft; maximum gage height, 10.18 ft, Mar. 16, backwater from ice; minimum discharge, 135 ft³/s, Oct. 2, gage height, 7.33 ft.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Nov. 18 to Mar. 18.)

7.3	135	8.5	647
7.5	197	9.0	973
8.0	397	9.5	1,420
		10.0	1,960

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	140	400	250	230	260	270	241	374	375	456	247	385
2	139	354	260	250	250	270	261	345	355	429	236	362
3	139	331	250	250	250	260	258	324	436	406	240	349
4	145	320	240	240	240	260	255	290	425	371	259	339
5	152	336	250	240	240	250	249	257	394	341	258	331
6	165	373	250	240	250	240	243	244	417	322	251	546
7	174	360	240	230	260	250	239	237	415	314	241	687
8	172	346	220	230	260	260	234	225	393	335	228	657
9	165	340	230	230	270	270	230	268	373	362	216	659
10	167	328	230	240	270	300	243	518	352	366	214	660
11	168	312	220	240	260	400	242	567	333	354	213	635
12	167	304	230	240	250	580	237	552	506	331	216	625
13	166	291	230	240	250	800	233	525	1630	302	215	625
14	167	292	230	240	250	1100	230	500	1700	279	211	847
15	170	262	220	240	250	1400	234	533	1350	279	228	945
16	181	244	240	240	250	1300	237	683	1280	289	226	896
17	186	179	240	240	250	1100	245	795	1270	296	223	856
18	183	190	230	240	240	900	239	758	1200	293	282	833
19	184	240	220	240	240	676	235	722	1050	288	426	837
20	194	260	210	240	250	584	233	772	926	289	400	797
21	219	270	210	240	260	497	240	750	805	283	394	766
22	275	260	210	240	270	428	254	700	760	280	397	730
23	308	250	210	250	260	330	266	671	815	342	374	694
24	314	230	220	260	250	300	268	649	731	320	358	656
25	311	230	220	270	250	331	277	613	621	299	330	621
26	306	230	220	260	250	300	280	558	649	288	364	594
27	296	240	220	250	260	269	298	498	585	271	418	564
28	269	250	210	250	260	264	366	466	551	263	421	530
29	273	250	210	250	---	253	435	437	532	263	426	494
30	314	250	210	250	---	247	401	414	495	264	431	467
31	425	---	220	260	---	243	---	395	---	255	409	---
TOTAL	6634	8522	7050	7560	7100	14932	7903	15640	21724	9830	9352	18987
MEAN	214	284	227	244	254	482	263	505	724	317	302	633
MAX	425	400	260	270	270	1400	435	795	1700	456	431	945
MIN	139	179	210	230	240	240	230	225	333	255	211	331
CFSM	.46	.61	.49	.53	.55	1.04	.57	1.09	1.56	.68	.65	1.37
IN.	.53	.68	.57	.61	.57	1.20	.63	1.26	1.75	.79	.75	1.53

CAL YR 1989 TOTAL 110698 MEAN 303 MAX 1500 MIN 139 CFSM .66 IN. 8.89
WTR YR 1990 TOTAL 135234 MEAN 371 MAX 1700 MIN 139 CFSM .80 IN. 10.87

STREAMS TRIBUTARY TO LAKE MICHIGAN

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04075050 WOLF RIVER AT HIGHWAY M NEAR LANGLADE, WI

LOCATION.--Lat 45°07'38", long 88°39'45", in SE 1/4 NE 1/4 sec.31, T.31 N., R.14 E., Langland County, Hydrologic Unit 04030202, at County Highway M bridge near State Highway 55, 5.7 mi southeast of Langlade.

DRAINAGE AREA.--489 mi².

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

REMARKS.--Discharge values are estimated from record at station 04074950 Wolf River at Langlade.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS-CHARGE, IN CUBIC FEET PER SECOND (00060)	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY LAB (MG/L AS CACO3) (90410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)
OCT 1989												
11...	1450	--	170	260	6.9	10.0	28	14	2.8	1.2	120	8.0
NOV 20...	1530	--	255	280	7.3	2.5	27	13	2.9	1.2	111	8.0
JAN 1990												
03...	1430	250	--	195	6.2	1.0	29	14	2.6	1.1	122	8.0
FEB 16...	1000	--	247	365	7.8	1.5	30	14	2.7	1.1	125	8.0
MAR 28...	1400	--	2620	205	8.4	3.5	24	12	2.5	1.3	98	8.5
MAY 07...	1500	--	216	225	6.9	16.5	24	11	2.4	1.0	105	7.5
JUN 14...	0815	--	1740	97	7.3	19.0	11	5.1	1.3	0.70	39	5.9
AUG 06...	1530	--	248	222	8.3	20.5	24	12	2.3	0.60	109	5.5
SEP 13...	1330	--	617	165	6.4	21.5	19	8.7	2.0	0.80	79	3.9

DATE	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, AM-MONIA + ORGANIC DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, AM-MONIA + ORGANIC DIS-SOLVED (MG/L AS N) (00623)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	ARSENIC TOTAL (UG/L AS AS) (01002)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD) (01027)
OCT 1989												
11...	2.9	0.20	7.2	146	--	0.010	--	--	--	<1	<100	<1
NOV 20...	2.7	0.20	9.1	127	--	<0.010	--	--	--	<1	<100	<1
JAN 1990												
03...	2.7	0.20	13	160	0.330	--	0.130	0.80	0.010	--	<100	<1
FEB 16...	2.8	0.20	13	160	0.300	--	0.050	0.60	0.010	<1	<100	1
MAR 28...	2.5	0.10	10	138	0.400	--	0.030	0.60	0.030	--	<100	<1
MAY 07...	4.2	<0.10	4.7	122	<0.100	--	0.020	0.50	0.020	--	<100	<1
JUN 14...	0.40	0.10	5.7	84	<0.100	--	0.060	0.60	0.060	1	<100	<1
AUG 06...	3.2	0.20	6.3	126	<0.100	--	0.020	0.50	0.020	1	<100	<1
SEP 13...	3.6	0.10	9.6	122	<0.100	--	0.020	1.0	0.020	1	<100	<1

DATE	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	CYANIDE TOTAL (MG/L AS CN) (00720)
OCT 1989											
11...	<1	2	100	1	20	<0.10	3	<1	<1	<10	<0.010
NOV 20...	2	2	160	1	50	--	1	<1	<1	<10	<0.010
JAN 1990											
03...	1	4	210	2	30	1.0	2	--	<1	40	--
FEB 16...	22	6	160	1	30	<0.10	<1	--	<1	<10	--
MAR 28...	<1	2	250	1	30	<0.10	1	--	<1	<10	--
MAY 07...	<1	2	140	1	40	<0.10	<1	--	<1	<10	--
JUN 14...	2	4	810	2	130	0.10	1	--	<1	30	--
AUG 06...	<1	3	200	1	50	<0.10	1	--	<1	<10	--
SEP 13...	1	2	600	1	70	<0.10	3	--	<1	20	--

445330088361400 LEGEND LAKE SITE #3 (NEAR LODGE) NEAR SHAWANO, WI

LOCATION.--Lat 44°53'30", long 88°36'14", in NE 1/4 SW 1/4 sec. 19, T.28 N., R.16 E, Menominee County, Hydrologic Unit 04030202, 7.4 mi north of Shawano.

PERIOD OF RECORD.--February to September 1990.

REMARKS.--Lake sampled approximately 1 mi east of lodge located on west shore at a depth of about 40 ft.

WATER-QUALITY DATA, FEBRUARY 19 TO AUGUST 08, 1990
(Milligrams per liter unless otherwise indicated)

	Feb. 19		May 22		July 10		Aug. 08	
Depth of sample (ft)	1.5	12.5	1.5	34.0	1.5	39.0	1.5	39.0
Lake stage (ft)	---	---	---	1.92	---	1.87	---	1.80
Specific conductance ($\mu\text{S}/\text{cm}$)	333	338	306	348	284	347	277	347
pH (units)	7.4	7.4	8.2	7.3	8.0	6.9	8.4	7.0
Water temperature ($^{\circ}\text{C}$)	1.7	4.0	13.7	7.7	24.0	8.7	24.3	9.6
Color (Pt-Co. scale)	---	---	5.0	5.0	---	---	---	---
Turbidity (NTU)	---	---	0.5	0.5	---	---	---	---
Secchi-depth (meters)	---	1.8	---	6.2	---	3.8	---	2.9
Dissolved oxygen	7.2	4.1	10.0	0.0	8.2	0.0	---	0.0
Hardness, as CaCO_3	---	---	150	160	---	---	---	---
Calcium, dissolved (Ca)	---	---	31	32	---	---	---	---
Magnesium, dissolved (Mg)	---	---	18	19	---	---	---	---
Sodium, dissolved (Na)	---	---	2.6	2.4	---	---	---	---
Potassium, dissolved (K)	---	---	0.9	1.0	---	---	---	---
Alkalinity, as CaCO_3	---	---	150	151	---	---	---	---
Sulfate, dissolved (SO_4)	---	---	9.0	9.1	---	---	---	---
Fluoride, dissolved (F)	---	---	<0.10	0.20	---	---	---	---
Chloride, dissolved (Cl)	---	---	3.70	4.20	---	---	---	---
Silica, dissolved (SiO_2)	---	---	0.90	1.40	---	---	---	---
Solids, dissolved, at 180°C	---	---	155	171	---	---	---	---
Nitrogen, nitrite, total (as N)	---	---	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nitrogen, $\text{NO}_2 + \text{NO}_3$, total (as N)	---	---	<0.10	<0.10	<0.10	0.20	<0.10	<0.10
Nitrogen, ammonia, total (as N)	---	---	<0.01	0.03	<0.01	1.70	<0.01	0.22
Nitrogen, organic, total (as N)	---	---	---	0.37	---	0.80	---	0.98
Nitrogen, amm. + org., total (as N)	---	---	0.40	0.40	0.70	2.50	0.50	1.20
Nitrogen, total (as N)	---	---	---	---	---	2.7	---	---
Phosphorus, total (as P)	---	---	0.012	0.006	0.006	0.160	0.012	0.021
Phosphorus, ortho, dissolved (as P)	---	---	<0.001	0.002	0.001	0.104	0.004	0.002
Iron, dissolved (Fe) $\mu\text{g}/\text{L}$	---	---	4.0	4.0	---	---	---	---
Manganese, dissolved (Mn) $\mu\text{g}/\text{L}$	---	---	3.0	1.0	---	---	---	---
Chlorophyll a, phytoplankton ($\mu\text{g}/\text{L}$)	---	---	0.5	---	1.1	---	1.6	---

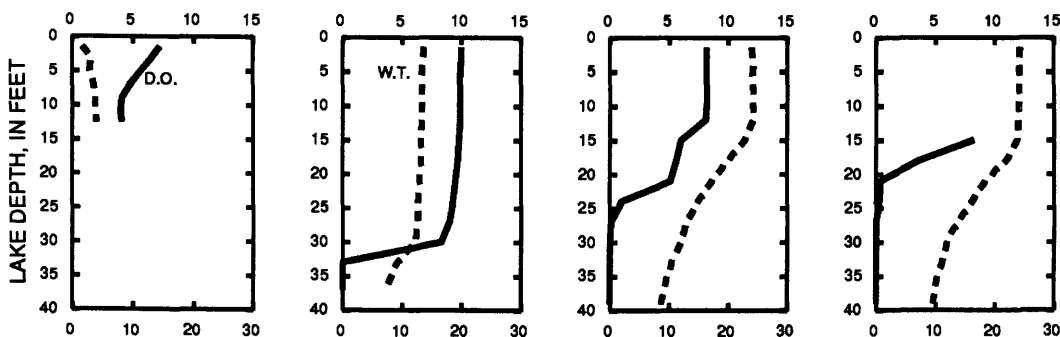
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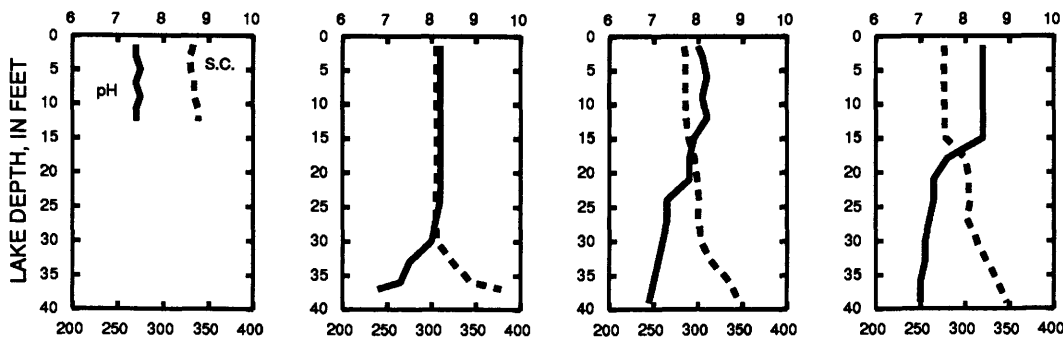
8-8-90

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

STREAMS TRIBUTARY TO LAKE MICHIGAN

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445328088335000 ROUND LAKE NEAR SHAWANO, WI

LOCATION.--Lat 44°53'28", long 88°33'50", in NE 1/4 SW 1/4 sec. 21, T.28 N., R.16 E., Menominee County, Hydrologic Unit 04030202, 7.8 mi northeast of Shawano.

LAKE-STAGE RECORDS

PERIOD OF RECORD.--May to September 1990.

GAGE.--Staff gage read by A. Fowler. Elevation of gage 841 ft, from topographic map.

EXTREMES FOR CURRENT YEAR.--Maximum gage-height observed, 2.68 ft, Sept. 20; minimum gage-height observed, 1.49 ft, May 4.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	1.78	---	---	---
2	---	---	---	---	---	---	---	---	---	---	---	---
3	---	---	---	---	---	---	---	---	---	---	2.14	---
4	---	---	---	---	---	---	---	1.49	---	---	---	---
5	---	---	---	---	---	---	---	---	---	---	---	---
6	---	---	---	---	---	---	---	---	---	1.86	---	2.48
7	---	---	---	---	---	---	---	---	---	---	2.19	---
8	---	---	---	---	---	---	---	---	1.78	---	---	---
9	---	---	---	---	---	---	---	---	---	---	---	---
10	---	---	---	---	---	---	---	---	---	1.88	---	---
11	---	---	---	---	---	---	---	1.70	---	---	---	---
12	---	---	---	---	---	---	---	---	---	---	---	---
13	---	---	---	---	---	---	---	---	---	1.84	---	---
14	---	---	---	---	---	---	---	---	1.91	---	---	2.60
15	---	---	---	---	---	---	---	---	---	---	2.30	---
16	---	---	---	---	---	---	---	---	---	---	---	---
17	---	---	---	---	---	---	---	---	---	---	---	---
18	---	---	---	---	---	---	---	1.74	---	---	---	---
19	---	---	---	---	---	---	---	---	---	---	---	---
20	---	---	---	---	---	---	---	---	---	2.00	---	2.68
21	---	---	---	---	---	---	---	---	---	---	---	---
22	---	---	---	---	---	---	---	1.76	---	---	---	---
23	---	---	---	---	---	---	---	---	---	---	---	---
24	---	---	---	---	---	---	---	---	---	---	2.28	---
25	---	---	---	---	---	---	---	---	---	---	---	---
26	---	---	---	---	---	---	---	---	---	---	---	---
27	---	---	---	---	---	---	---	---	---	---	---	---
28	---	---	---	---	---	---	---	---	---	---	---	---
29	---	---	---	---	---	---	---	---	1.96	---	---	---
30	---	---	---	---	---	---	---	---	---	---	---	---
31	---	---	---	---	---	---	---	---	---	---	2.30	---
MAX	---	---	---	---	---	---	---	1.76	1.96	2.00	2.30	2.68
MIN	---	---	---	---	---	---	---	1.49	1.78	1.84	2.14	2.48

WATER-QUALITY RECORDS

PERIOD OF RECORD.--February to September 1990.

REMARKS.--Lake sampled near southeast end at a lake depth of about 35 ft. Lake ice-covered during February sampling.

WATER-QUALITY DATA, FEBRUARY 20 TO AUGUST 07, 1990
(Milligrams per liter unless otherwise indicated)

	Feb. 20		May 22		July 10		Aug. 07	
Depth of sample (ft)	1.6	25.0	1.5	32.0	1.5	29.0	1.5	25.0
Lake stage (ft)	---	---	---	1.76	---	1.88	---	2.19
Specific conductance (μ S/cm)	190	191	180	249	167	218	165	222
pH (units)	7.4	7.0	7.8	6.2	8.6	6.7	8.3	6.5
Water temperature ($^{\circ}$ C)	1.6	4.4	14.5	8.5	25.0	11.4	21.9	12.4
Color (Pt-Co. scale)	---	---	10	12	---	---	---	---
Turbidity (NTU)	---	---	0.4	1.0	---	---	---	---
Secchi-depth (meters)	---	3.0	---	4.2	---	2.6	---	4.4
Dissolved oxygen	7.3	2.3	10.3	0.0	9.5	0.0	9.5	0.2
Hardness, as CaCO_3	---	---	82	85	---	---	---	---
Calcium, dissolved (Ca)	---	---	19	20	---	---	---	---
Magnesium, dissolved (Mg)	---	---	8.3	8.6	---	---	---	---
Sodium, dissolved (Na)	---	---	2.2	2.2	---	---	---	---
Potassium, dissolved (K)	---	---	0.4	0.5	---	---	---	---
Alkalinity, as CaCO_3	---	---	76	78	---	---	---	---
Sulfate, dissolved (SO_4)	---	---	7.5	6.6	---	---	---	---
Fluoride, dissolved (F)	---	---	<0.1	<0.1	---	---	---	---
Chloride, dissolved (Cl)	---	---	4.0	3.6	---	---	---	---
Silica, dissolved (SiO_2)	---	---	0.8	3.2	---	---	---	---
Solids, dissolved, at 180°C	---	---	88	91	---	---	---	---
Nitrogen, nitrite, total (as N)	---	---	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nitrogen, $\text{NO}_2 + \text{NO}_3$, total (as N)	---	---	<0.10	<0.10	<0.10	0.20	<0.10	<0.10
Nitrogen, ammonia, total (as N)	---	---	0.03	0.45	0.02	0.81	0.02	0.11
Nitrogen, organic, total (as N)	---	---	0.57	0.55	0.58	0.49	0.78	0.59
Nitrogen, amm. + org., total (as N)	---	---	0.60	1.00	0.60	1.30	0.80	0.70
Nitrogen, total (as N)	---	---	---	---	---	1.5	---	---
Phosphorus, total (as P)	---	---	0.006	0.029	0.006	0.084	0.005	0.019
Phosphorus, ortho, dissolved (as P)	---	---	<0.001	0.005	<0.001	0.064	0.008	0.001
Iron, dissolved (Fe) $\mu\text{g/L}$	---	---	14	210	---	---	---	---
Manganese, dissolved (Mn) $\mu\text{g/L}$	---	---	3	360	---	---	---	---
Chlorophyll a, phytoplankton ($\mu\text{g/L}$)	---	---	0.5	---	0.9	---	1.7	---

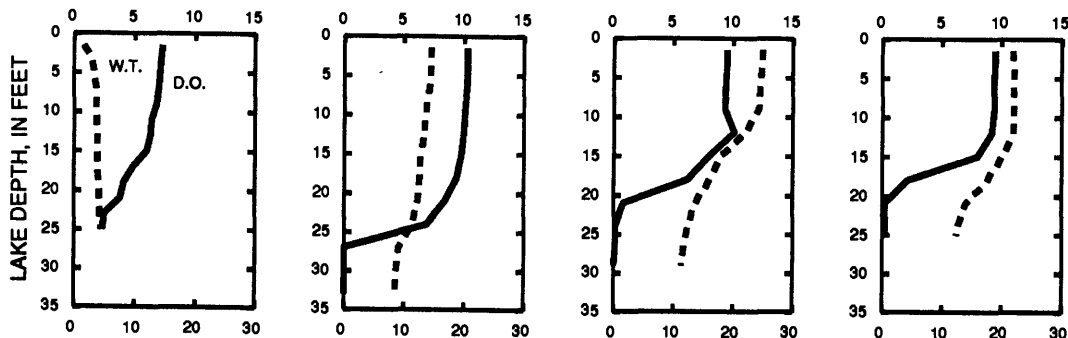
2-20-90

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7-10-90

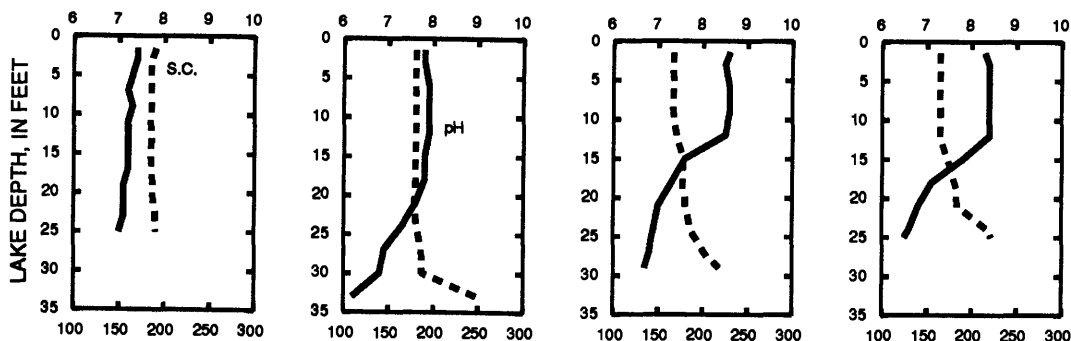
8-7-90

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

STREAMS TRIBUTARY TO LAKE MICHIGAN
445305088361200 LAMOTTE LAKE NEAR SHAWANO, WI

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LOCATION.--Lat 44°53'05", long 88°36'12", in NE 1/4 NW 1/4 sec. 30, T.28 N., R.16 E., Menominee County, Hydrologic Unit 04030202, 6.9 mi north of Shawano.

LAKE-STAGE RECORDS

PERIOD OF RECORD.--May to September 1990.

GAGE.--Staff gage read by A. Fowler. Elevation of gage, 838 ft, from topographic map.

EXTREMES FOR CURRENT YEAR.--Maximum gage-height observed, 1.55 ft, Sept. 13; minimum gage-height observed, 1.36 ft, July 11 and Aug. 7.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	---	---	---	---
2	---	---	---	---	---	---	---	---	---	---	---	---
3	---	---	---	---	---	---	---	---	---	---	---	---
4	---	---	---	---	---	---	---	1.50	---	---	---	---
5	---	---	---	---	---	---	---	---	---	---	---	---
6	---	---	---	---	---	---	---	---	---	---	---	---
7	---	---	---	---	---	---	---	---	---	---	1.36	---
8	---	---	---	---	---	---	---	---	---	---	---	---
9	---	---	---	---	---	---	---	---	---	---	---	---
10	---	---	---	---	---	---	---	---	---	---	---	---
11	---	---	---	---	---	---	---	---	---	1.36	---	---
12	---	---	---	---	---	---	---	---	---	---	---	---
13	---	---	---	---	---	---	---	---	---	---	---	1.55
14	---	---	---	---	---	---	---	---	---	---	---	---
15	---	---	---	---	---	---	---	---	---	---	---	---
16	---	---	---	---	---	---	---	---	---	---	---	---
17	---	---	---	---	---	---	---	---	---	---	---	---
18	---	---	---	---	---	---	---	---	---	---	---	---
19	---	---	---	---	---	---	---	---	---	---	---	---
20	---	---	---	---	---	---	---	---	---	---	---	---
21	---	---	---	---	---	---	---	---	---	---	---	---
22	---	---	---	---	---	---	---	1.45	---	---	---	---
23	---	---	---	---	---	---	---	---	---	---	---	---
24	---	---	---	---	---	---	---	---	---	---	---	---
25	---	---	---	---	---	---	---	---	---	---	---	---
26	---	---	---	---	---	---	---	---	---	---	---	---
27	---	---	---	---	---	---	---	---	---	---	---	---
28	---	---	---	---	---	---	---	---	---	---	---	---
29	---	---	---	---	---	---	---	---	---	---	---	---
30	---	---	---	---	---	---	---	---	---	---	---	---
31	---	---	---	---	---	---	---	---	---	---	---	---
MAX	---	---	---	---	---	---	---	1.50	---	1.36	1.36	1.55
MIN	---	---	---	---	---	---	---	1.45	---	1.36	1.36	1.55

WATER-QUALITY RECORDS

PERIOD OF RECORD.--February to September 1990.

REMARKS.--Lake sampled near center at a lake depth of about 70 ft. Lake ice-covered during February sampling.

WATER-QUALITY DATA, FEBRUARY 20 TO AUGUST 07, 1990
(Milligrams per liter unless otherwise indicated)

	Feb. 20		May 22		July 11		Aug. 07	
Depth of sample (ft)	1.5	48.0	1.5	52.0	1.5	59.0	1.5	56.0
Lake stage (ft)	---		1.45		1.36		1.36	
Specific conductance (μ S/cm)	323	336	309	349	247	312	262	354
pH (units)	7.6	7.3	8.3	7.2	8.2	7.0	8.1	6.7
Water temperature ($^{\circ}$ C)	1.4	4.0	14.0	5.6	23.3	5.9	24.1	6.1
Color (Pt-Co. scale)	---		10		---		---	
Turbidity (NTU)	---		0.6		---		---	
Secchi-depth (meters)	3.0		3.3		3.0		5.7	
Dissolved oxygen	6.4	0.2	10.7	0.0	9.4	0.0	9.0	0.0
Hardness, as CaCO_3	---		150		---		---	
Calcium, dissolved (Ca)	---		34		---		---	
Magnesium, dissolved (Mg)	---		17		---		---	
Sodium, dissolved (Na)	---		3.0		---		---	
Potassium, dissolved (K)	---		0.9		---		---	
Alkalinity, as CaCO_3	---		154		---		---	
Sulfate, dissolved (SO_4)	---		4.7		---		---	
Fluoride, dissolved (F)	---		<0.1		---		---	
Chloride, dissolved (Cl)	---		4.8		---		---	
Silica, dissolved (SiO_2)	---		6.6		---		---	
Solids, dissolved, at 180°C	---		164		---		---	
Nitrogen, nitrite, total (as N)	---		<0.01		<0.01		<0.01	
Nitrogen, $\text{NO}_2 + \text{NO}_3$, total (as N)	---		<0.10		<0.10		<0.10	
Nitrogen, ammonia, total (as N)	---		0.01		0.01		<0.01	
Nitrogen, organic, total (as N)	---		0.79		0.49		---	
Nitrogen, amm. + org., total (as N)	---		0.80		0.50		0.40	
Phosphorus, total (as P)	---		0.005		0.004		0.007	
Phosphorus, ortho, dissolved (as P)	---		<0.001		0.002		0.006	
Iron, dissolved (Fe) $\mu\text{g/L}$	---		5		---		---	
Manganese, dissolved (Mn) $\mu\text{g/L}$	---		12		---		---	
Chlorophyll a, phytoplankton ($\mu\text{g/L}$)	---		0.8		1.8		0.7	

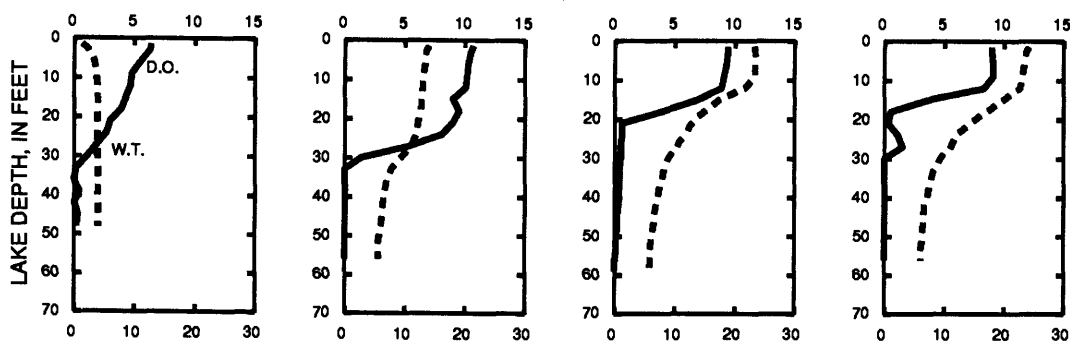
2-20-90

5-22-90

7-11-90

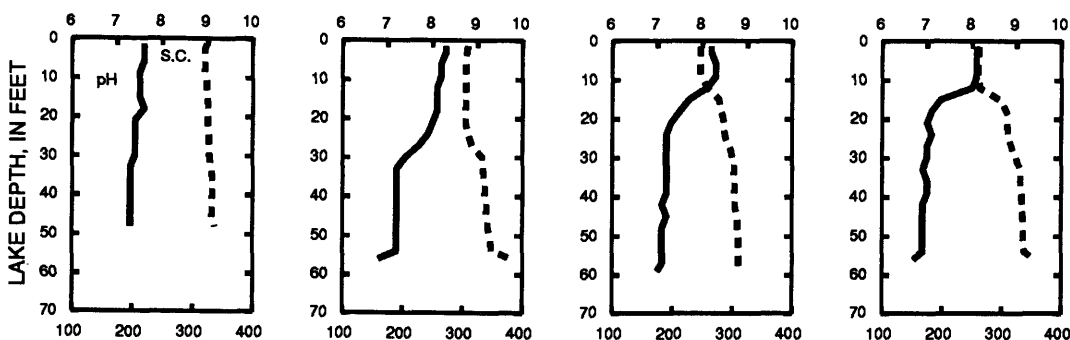
8-7-90

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

04077400 WOLF RIVER NEAR SHAWANO, WI

LOCATION.--Lat 44°50'09", long 88°37'30", in SE 1/4 NW 1/4 sec.12, T.27 N., R.15 E., Shawano County, Hydrologic Unit 04030202, on left bank 350 ft downstream from dam, 3.7 mi north of Shawano, 1.5 mi upstream from Red River, and at mile 130.6.

DRAINAGE AREA.--816 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1907 to March 1909, October 1910 to current year. Monthly discharge only for some periods, published in WSP 1307. Published as "at Keshena" prior to April 1928. Published as "at Keshena Falls" April 1928 to September 1981. Published as "at Keshena Falls near Keshena" October 1981 to September 1985.

REVISED RECORDS.--WSP 1337: 1914-15(M), 1918-19(M), 1921, 1923(M), 1926(M), 1928(M), 1933. WDR WI-80-1: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 810 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Mar. 23, 1928, nonrecording gage at bridge in Keshena 4.1 mi upstream at different datum, and from Mar. 23, 1928 to Sept. 30, 1985, water-stage recorder at site 5.8 mi upstream at different datum.

REMARKS.--Estimated daily discharges: Ice periods listed in rating table below. Records good except those for ice-affected periods, which are fair. Minor regulation by power dam upstream.

AVERAGE DISCHARGE.--81 years (1908, 1911-90), 758 ft³/s, 12.61 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge 5,200 ft³/s, Mar. 15, 1973; maximum gage height, 15.59 ft, Dec. 2, 1983, from high-water mark in well, at site and datum then in use (backwater from ice); minimum discharge (unregulated), 91 ft³/s, Dec. 22, 1939, gage height, 4.67 ft, site and datum then in use, result of ice storage; minimum discharge (regulated), 77 ft³/s, Nov. 19, 1989.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,150 ft³/s, June 15, gage height 11.42 ft; minimum daily, 246 ft³/s Nov. 19.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Shifting-control method used Mar. 16 to Apr. 8, May 2-9, 19-29, and July 6 to Sept. 6; stage-discharge relation affected by ice Dec. 9 and Dec. 11 to Mar. 15.)

7.2	220	8.0	590
7.3	255	10.0	2,030
7.5	335	12.0	3,630

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	316	858	389	380	340	340	643	553	651	881	506	775
2	316	820	515	380	340	370	636	582	527	738	492	744
3	315	705	406	370	350	360	658	470	752	654	462	697
4	314	560	400	360	360	350	647	446	771	619	632	565
5	299	636	371	350	350	350	634	428	818	630	575	622
6	302	699	438	330	340	340	616	383	758	529	572	652
7	344	709	394	320	360	340	634	449	706	554	518	1090
8	368	693	286	360	350	350	576	419	650	662	477	1160
9	387	557	330	350	350	370	562	464	610	728	466	1020
10	401	567	283	340	350	390	602	686	589	756	432	1010
11	418	542	390	350	350	460	576	1030	540	697	411	1010
12	399	548	350	330	360	700	558	977	699	675	423	947
13	395	566	310	350	350	1000	552	882	1520	588	472	933
14	429	570	340	360	340	1700	532	881	2870	540	410	1370
15	422	532	360	360	370	2200	509	832	2870	520	468	1760
16	450	496	370	360	370	2610	548	993	1950	425	609	1760
17	552	327	360	360	360	2200	498	1190	2020	602	521	1530
18	388	384	360	370	350	1630	490	1280	1930	614	504	1360
19	405	246	350	360	350	1460	505	1220	1710	580	823	1400
20	414	499	350	350	340	1210	501	1400	1340	605	979	1340
21	431	594	350	350	360	1210	508	1470	1230	526	941	1250
22	426	491	310	360	350	938	490	1260	1140	471	848	1180
23	466	415	340	370	350	781	509	1110	1410	493	692	1130
24	557	415	360	360	350	693	517	1040	1420	636	662	1020
25	529	432	360	360	340	744	536	1010	1110	587	697	1010
26	539	487	350	350	350	803	551	948	945	528	744	972
27	542	559	350	350	360	778	568	838	1000	541	839	963
28	535	482	350	360	350	629	618	782	871	507	874	845
29	531	438	350	340	---	658	746	723	796	517	835	840
30	612	402	350	350	---	579	686	702	902	578	743	807
31	821	---	350	350	---	629	---	632	---	452	821	---
TOTAL	13623	16229	11172	10990	9840	27172	17206	26080	35105	18433	19448	31762
MEAN	439	541	360	355	351	877	574	841	1170	595	627	1059
MAX	821	858	515	380	370	2610	746	1470	2870	881	979	1760
MIN	299	246	283	320	340	340	490	383	527	425	410	565
CFSM	.54	.66	.44	.43	.43	1.07	.70	1.03	1.43	.73	.77	1.30
IN.	.62	.74	.51	.50	.45	1.24	.78	1.19	1.60	.84	.89	1.45

CAL YR 1989 TOTAL 194372 MEAN 533 MAX 1530 MIN 246 CFSM .65 IN. 8.86
WTR YR 1990 TOTAL 237060 MEAN 649 MAX 2870 MIN 246 CFSM .80 IN. 10.81

STREAMS TRIBUTARY TO LAKE MICHIGAN
04077400 WOLF RIVER NEAR SHAWANO, WI--CONTINUED

WATER-QUALITY RECORDS

PERIOD OF RECORD.--November 1989 to September 1990.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS-CHARGE, IN CUBIC FEET PER SECOND (00060)	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY LAB (MG/L AS CAC03) (90410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)
NOV 1989												
21...	0900	--	681	278	6.5	3.5	35	17	3.6	1.6	142	11
JAN 1990												
03...	1600	370	--	290	6.6	1.5	34	16	2.8	1.2	144	9.0
FEB												
16...	1200	370	--	380	8.0	1.0	36	17	2.8	1.2	146	10
MAR												
28...	1515	--	535	255	8.4	4.0	29	14	2.8	1.1	113	12
MAY												
07...	1730	--	465	315	7.1	11.5	29	14	2.5	1.1	129	12
JUN												
14...	0715	--	2800	145	6.6	18.5	18	8.2	1.7	0.90	66	7.4
AUG												
06...	1630	--	584	275	7.9	21.0	30	15	2.5	0.90	135	7.0
SEP												
13...	1500	--	921	215	7.6	21.5	23	11	2.3	1.0	100	5.4

DATE	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	ARSENIC TOTAL (UG/L AS AS) (01002)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD) (01027)
NOV 1989												
21...	3.5	0.20	10	167	--	<0.010	--	--	--	<1	<100	<1
JAN 1990												
03...	3.1	0.20	13	175	0.510	--	0.100	0.50	<0.010	--	<100	<1
FEB												
16...	2.9	0.20	14	183	0.500	--	0.040	0.30	0.030	<1	--	--
MAR												
28...	5.1	0.20	11	150	0.600	--	0.050	0.40	0.020	1	<100	<1
MAY												
07...	5.6	<0.10	4.5	150	<0.100	--	0.030	0.40	0.020	--	<100	<1
JUN												
14...	2.7	0.20	6.7	116	0.100	--	0.050	0.70	0.060	1	100	<1
AUG												
06...	4.7	0.50	7.0	163	0.100	--	0.040	0.60	0.020	1	<100	<1
SEP												
13...	4.2	0.10	10	138	0.200	--	0.050	0.70	0.020	<1	<100	3

DATE	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	CYANIDE TOTAL (MG/L AS CN) (00720)
NOV 1989											
21...	2	1	160	2	40	--	2	<1	<1	100	<0.010
JAN 1990											
03...	2	23	120	3	20	<1.0	40	--	<1	30	--
FEB											
16...	--	--	--	--	--	<0.10	--	--	--	--	--
MAR											
28...	<1	2	190	1	30	<0.10	2	--	<1	<10	--
MAY											
07...	<1	2	180	1	70	<0.10	<1	--	<1	<10	--
JUN											
14...	2	5	830	2	120	<0.10	2	--	<1	10	--
AUG											
06...	<1	3	190	1	50	<0.10	4	--	<1	<10	--
SEP											
13...	1	2	300	1	30	<0.10	1	--	<1	10	--

STREAMS TRIBUTARY TO LAKE MICHIGAN

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445215088300300 BASS LAKE NEAR SHAWANO, WI

LOCATION.--Lat 44°52'15", long 88°30'03", in SE 1/4 SE 1/4 sec. 25, T.28 N., R.16 E., Menominee County, Hydrologic Unit 04030202, 8.1 mi northeast of Shawano.

LAKE-STAGE RECORDS

PERIOD OF RECORD.--May to September 1990.

GAGE.--Staff gage read by A. Fowler. Elevation of gage 835 ft, from topographic map.

EXTREMES FOR CURRENT YEAR.--Maximum gage-height observed, 2.64 ft, Sept. 14 and 20; minimum gage-height observed, 2.00 ft, May 4.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	2.27	---	---	---
2	---	---	---	---	---	---	---	---	---	---	---	---
3	---	---	---	---	---	---	---	---	---	---	2.45	---
4	---	---	---	---	---	---	---	2.00	---	---	---	---
5	---	---	---	---	---	---	---	---	---	---	---	---
6	---	---	---	---	---	---	---	---	---	2.40	---	2.52
7	---	---	---	---	---	---	---	---	---	---	2.44	---
8	---	---	---	---	---	---	---	---	2.21	---	---	---
9	---	---	---	---	---	---	---	---	---	---	---	---
10	---	---	---	---	---	---	---	---	---	2.40	---	---
11	---	---	---	---	---	---	---	2.19	---	---	---	---
12	---	---	---	---	---	---	---	---	---	---	---	---
13	---	---	---	---	---	---	---	---	---	2.38	---	---
14	---	---	---	---	---	---	---	---	2.38	---	---	2.64
15	---	---	---	---	---	---	---	---	---	---	2.40	---
16	---	---	---	---	---	---	---	---	---	---	---	---
17	---	---	---	---	---	---	---	---	---	---	---	---
18	---	---	---	---	---	---	---	2.20	---	---	---	---
19	---	---	---	---	---	---	---	---	---	---	---	---
20	---	---	---	---	---	---	---	---	---	2.40	---	2.64
21	---	---	---	---	---	---	---	---	---	---	---	---
22	---	---	---	---	---	---	---	---	---	---	---	---
23	---	---	---	---	---	---	---	---	---	---	---	---
24	---	---	---	---	---	---	---	---	---	---	2.44	---
25	---	---	---	---	---	---	---	---	---	---	---	---
26	---	---	---	---	---	---	---	---	---	---	---	---
27	---	---	---	---	---	---	---	---	---	---	---	---
28	---	---	---	---	---	---	---	---	---	---	---	---
29	---	---	---	---	---	---	---	---	2.46	---	---	---
30	---	---	---	---	---	---	---	---	---	---	---	---
31	---	---	---	---	---	---	---	---	---	---	2.46	---
MAX	---	---	---	---	---	---	---	2.20	2.46	2.40	2.46	2.64
MIN	---	---	---	---	---	---	---	2.00	2.21	2.38	2.40	2.52

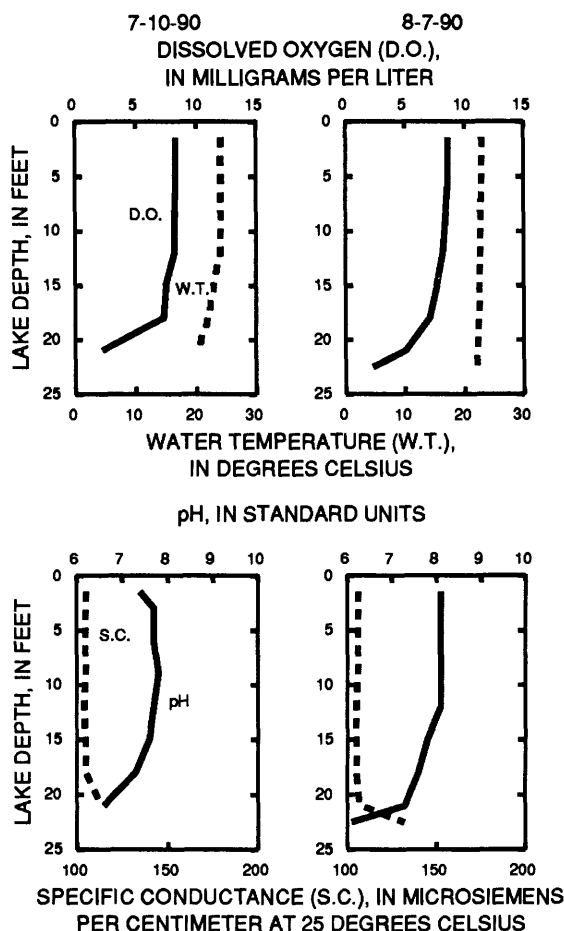
WATER-QUALITY RECORDS

PERIOD OF RECORD.--July to September 1990.

REMARKS.--Lake sampled near west end at a lake depth of about 25 ft.

WATER-QUALITY DATA, JULY 10 AND AUGUST 07, 1990
(Milligrams per liter unless otherwise indicated)

	July 10		Aug. 07	
Depth of sample (ft)	1.5	21.0	1.5	22.5
Lake stage (ft)	2.40		2.44	
Specific conductance ($\mu\text{S}/\text{cm}$)	105	114	106	132
pH (units)	7.4	6.6	8.1	6.1
Water temperature ($^{\circ}\text{C}$)	24.1	20.3	23.0	22.0
Secchi-depth (meters)		4.5		4.5
Dissolved oxygen	8.3	2.3	8.6	2.3
Nitrogen, nitrite, total (as N)	<0.01	<0.01	<0.01	<0.01
Nitrogen, $\text{NO}_2 + \text{NO}_3$, total (as N)	<0.10	<0.10	<0.10	<0.10
Nitrogen, ammonia, total (as N)	0.04	0.04	0.02	<0.01
Nitrogen, organic, total (as N)	0.56	0.46	1.1	---
Nitrogen, amm. + org., total (as N)	0.60	0.50	1.10	1.20
Phosphorus, total (as P)	0.006	0.007	0.005	0.009
Phosphorus, ortho, dissolved (as P)	0.004	0.004	0.003	0.003
Chlorophyll a, phytoplankton ($\mu\text{g}/\text{L}$)	0.5	---	1.6	---



STREAMS TRIBUTARY TO LAKE MICHIGAN

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0407809265 MIDDLE BRANCH EMBARRASS RIVER NEAR WITTENBERG, WI

LOCATION.--Lat 44°49'31", long 89°07'05", in NW 1/4 NW 1/4 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 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1989 to September 1990.

GAGE.--Water-stage recorder. Datum of gage is 1,118.24 ft above National Geodetic Vertical Datum of 1929 (levels by Wisconsin Department of Transportation.)

REMARKS.--Estimated daily discharges: Ice periods listed in rating tables below. Records good except those for ice-affected periods, which are fair. Gage-height telemeter at station.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 710 ft³/s, Mar. 14, gage height 4.77 ft, backwater from ice; minimum, 7.6 ft³/s Nov. 28, gage height, 0.17 ft³/s, result of freezeup.

RATING TABLES (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Nov. 13 to Feb. 4 and Feb. 10 to Mar. 14.)

Oct. 1 to June 15(1645)

June 15(1700) to Sept. 30

0.2	8.4	1.5	97
0.4	15	2.0	160
0.6	24	3.0	335
0.8	36	4.0	576
1.0	50	5.0	880

0.2	10	1.5	106
0.4	18	2.0	170
0.6	28	3.0	338
1.0	56	4.0	576

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15	59	21	13	29	35	38	50	34	65	36	36
2	16	43	19	14	29	33	42	43	36	58	32	34
3	15	34	17	15	30	32	42	38	51	54	35	32
4	15	31	16	15	31	31	40	35	57	49	57	32
5	18	33	17	15	32	30	39	32	50	46	59	33
6	21	36	16	15	33	30	37	31	51	43	45	40
7	22	40	15	15	34	31	33	30	48	42	36	60
8	22	39	14	16	35	32	32	30	42	55	31	55
9	21	36	14	17	35	34	34	40	37	63	29	45
10	21	33	14	17	30	39	35	108	34	53	27	42
11	22	31	14	19	29	60	36	151	33	45	28	39
12	23	28	13	8	30	100	34	144	70	41	31	38
13	22	26	13	18	30	280	32	103	234	38	31	37
14	22	26	12	17	28	600	33	78	275	36	28	92
15	23	25	12	18	27	601	35	73	355	37	26	164
16	32	24	12	19	27	480	37	98	293	42	26	197
17	30	22	12	21	26	295	38	122	174	43	26	162
18	26	21	12	20	27	165	37	112	139	42	27	100
19	24	20	12	20	26	100	35	94	119	41	46	80
20	24	19	12	22	25	75	36	137	87	41	71	76
21	23	20	12	22	29	77	40	147	74	40	67	68
22	22	19	11	22	33	61	43	120	76	36	51	60
23	22	17	11	23	31	65	42	85	145	35	40	59
24	21	16	12	25	28	46	43	72	156	34	37	53
25	21	16	12	25	27	43	44	62	113	32	39	47
26	21	17	13	25	29	45	46	54	86	31	48	42
27	21	21	12	26	31	39	46	50	100	31	71	39
28	21	22	12	28	33	39	56	46	88	32	72	36
29	23	21	12	30	---	38	66	42	79	45	52	35
30	34	20	13	30	---	37	61	38	73	50	43	38
31	57	---	13	29	---	37	---	35	---	45	38	---
TOTAL	720	815	420	629	834	3610	1212	2300	3209	1345	1285	1871
MEAN	23.2	27.2	13.5	20.3	29.8	116	40.4	74.2	107	43.4	41.5	62.4
MAX	57	59	21	30	35	601	66	151	355	65	72	197
MIN	15	16	11	13	25	30	32	30	33	31	26	32
CFSM	.30	.36	.18	.27	.39	1.53	.53	.97	1.40	.57	.54	.82
IN.	.35	.40	.20	.31	.41	1.76	.59	1.12	1.56	.66	.63	.91

WTR YR 1990 TOTAL 18250 MEAN 50.0 MAX 601 MIN 11 CFSM .66 IN. 8.90

STREAMS TRIBUTARY TO LAKE MICHIGAN

0407809265 MIDDLE BRANCH EMBARRASS RIVER NEAR WITTENBERG, WI--CONTINUED

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: December 1989 to September 1990.

INSTRUMENTATION.--Water temperature recording data logger since December 1989. Data logger records temperature at 15-min intervals. Sensor attached to orifice located at midstream.

REMARKS.--Records represent water temperature at sensor within 0.5°C. Interruptions in record were due to malfunctions of the instrument.

EXTREMES FOR CURRENT PERIOD.--

WATER TEMPERATURE: Maximum, 28.0°C, July 3-4, 20, Aug. 16; minimum, 0.0°C, on many days during winter.

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	---	---	---	---	---	---	.0	.0	.0	.0	.0	.0
2	---	---	---	---	---	---	.0	.0	.0	.0	.0	.0
3	---	---	---	---	---	---	.0	.0	.0	.0	.0	.0
4	---	---	---	---	---	---	.0	.0	.0	.0	.0	.0
5	---	---	---	---	---	---	.0	.0	.0	.0	.0	.0
6	---	---	---	---	---	---	.0	.0	.0	.0	.0	.0
7	---	---	---	---	---	---	.0	.0	.0	.0	.0	.0
8	---	---	---	---	---	---	.0	.0	.0	.0	.0	.0
9	---	---	---	---	---	---	.0	.0	.0	.0	.0	.0
10	---	---	---	---	---	---	.0	.0	.0	.0	.0	.0
11	---	---	---	---	---	---	.0	.0	.0	.0	.0	.0
12	---	---	---	---	---	---	.0	.0	.0	.0	.0	.0
13	---	---	---	---	---	---	.0	.0	.0	.0	.0	.0
14	---	---	---	---	---	---	.0	.0	.0	.0	.0	.0
15	---	---	---	---	---	---	.0	.0	.0	.0	.0	.0
16	---	---	---	---	---	---	.0	.0	.0	.0	.0	.0
17	---	---	---	---	---	---	.0	.0	.0	.0	.0	.0
18	---	---	---	---	---	---	.0	.0	.0	.0	.0	.0
19	---	---	---	---	---	---	.0	.0	.0	.0	.0	.0
20	---	---	---	---	---	---	.0	.0	.0	.0	.0	.0
21	---	---	---	---	---	---	.0	.0	.0	.0	.0	.0
22	---	---	---	---	---	---	.0	.0	.0	.0	.0	.0
23	---	---	---	---	---	---	.0	.0	.0	.0	.0	.0
24	---	---	---	---	---	---	.0	.0	.0	.0	.0	.0
25	---	---	---	---	---	---	.0	.0	.0	.0	.0	.0
26	---	---	---	---	---	---	.0	.0	.0	.0	.0	.0
27	---	---	---	---	---	---	.0	.0	.0	.0	.0	.0
28	---	---	---	---	---	---	.0	.0	.0	.0	.0	.0
29	---	---	---	---	---	---	.0	.0	.0	.0	.0	.0
30	---	---	---	---	---	---	.0	.0	.0	.0	.0	.0
31	---	---	---	---	---	---	.0	.0	.0	.0	.0	.0
MONTH	---	---	---	---	---	---	.0	.0	.0	.0	.0	.0

STREAMS TRIBUTARY TO LAKE MICHIGAN

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0407809265 MIDDLE BRANCH EMBARRASS RIVER NEAR WITTENBERG, WI--CONTINUED

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY				MARCH			APRIL			MAY		
1	.0	.0	.0	.0	.0	.0	8.0	6.0	7.0	15.0	10.5	12.5
2	.0	.0	.0	.0	.0	.0	8.0	4.0	5.5	16.5	9.0	12.0
3	.0	.0	.0	.5	.0	.0	10.0	2.5	6.0	17.0	9.0	12.5
4	.0	.0	.0	.0	.0	.0	11.5	5.5	7.5	16.5	10.0	12.5
5	.0	.0	.0	.0	.0	.0	8.0	4.0	6.0	18.5	10.5	14.0
6	.0	.0	.0	.0	.0	.0	9.0	3.0	5.0	19.5	11.0	15.0
7	.5	.0	.0	.0	.0	.0	9.5	2.0	5.0	22.0	12.0	16.5
8	.0	.0	.0	.0	.0	.0	---	---	---	22.0	14.5	18.0
9	.5	.0	.0	.0	.0	.0	7.5	5.5	6.5	17.0	11.5	14.0
10	.5	.0	.0	.0	.0	.0	10.5	4.5	7.0	11.7	6.5	9.5
11	.0	.0	.0	.0	.0	.0	7.5	3.5	5.5	9.8	5.5	7.5
12	.0	.0	.0	.0	.0	.0	9.5	2.0	5.5	10.7	8.0	9.0
13	.0	.0	.0	.0	.0	.0	11.5	2.5	6.5	14.0	8.5	11.0
14	.0	.0	.0	1.0	.0	.5	13.0	5.0	8.5	12.5	10.5	11.5
15	.0	.0	.0	2.0	1.0	1.5	13.5	6.5	9.5	13.0	11.5	12.0
16	.0	.0	.0	2.0	1.0	1.5	9.0	6.5	8.0	13.0	11.5	12.0
17	.0	.0	.0	2.0	.5	1.0	11.5	4.5	7.0	11.5	10.0	11.0
18	.0	.0	.0	1.5	.0	.5	13.0	4.5	8.0	13.5	9.5	11.5
19	.0	.0	.0	3.0	.0	.5	11.0	6.0	8.0	11.5	9.5	10.5
20	.0	.0	.0	5.0	.0	1.5	13.0	8.0	10.0	10.0	8.5	9.0
21	.0	.0	.0	3.0	1.0	1.5	17.0	8.5	12.0	11.0	8.5	9.5
22	.0	.0	.0	5.0	.5	2.0	19.0	10.5	14.0	14.0	10.0	12.0
23	.0	.0	.0	4.5	.0	1.0	18.5	12.0	14.5	15.5	11.5	13.5
24	.0	.0	.0	6.0	.0	2.0	22.0	14.5	17.5	18.5	12.5	15.0
25	.0	.0	.0	6.5	.0	2.5	23.5	16.0	19.0	17.0	14.0	15.5
26	.0	.0	.0	6.5	.0	2.5	23.0	17.5	19.5	16.5	14.5	15.0
27	.0	.0	.0	8.0	.0	3.0	23.0	18.0	20.0	18.0	14.0	15.5
28	.0	.0	.0	8.5	1.5	4.5	19.5	17.0	18.5	21.0	13.5	16.5
29	---	---	---	8.5	2.0	5.0	18.5	14.5	16.5	21.5	13.0	16.5
30	---	---	---	10.5	4.0	6.5	18.0	12.5	15.0	22.0	13.0	17.0
31	---	---	---	11.5	3.5	7.0	---	---	---	23.5	13.5	18.0
MONTH	.5	.0	.0	11.5	.0	1.4	---	---	---	23.5	5.5	13.1
JUNE				JULY			AUGUST			SEPTEMBER		
1	21.5	15.5	18.0	26.0	20.0	22.5	26.5	18.0	22.0	25.5	19.0	22.0
2	21.5	17.0	19.0	27.0	20.0	23.0	---	---	---	26.0	18.5	21.5
3	17.5	13.5	15.5	28.0	21.0	24.0	---	---	---	21.0	18.5	20.0
4	18.5	12.0	15.0	28.0	23.5	25.5	25.5	21.0	23.0	25.5	19.5	22.0
5	14.0	12.5	13.0	26.0	22.0	23.5	24.5	20.0	22.0	26.5	20.5	23.0
6	18.5	12.0	15.0	26.5	19.5	22.5	24.0	18.0	20.5	25.0	21.5	23.0
7	19.5	13.0	16.0	20.0	18.0	19.0	24.5	16.5	20.5	22.5	20.0	21.5
8	20.0	15.0	17.5	23.5	18.0	20.5	25.0	17.5	21.0	21.0	19.0	20.0
9	20.5	16.0	18.0	24.0	18.5	21.0	26.0	18.0	21.5	22.5	18.5	20.0
10	25.0	15.5	19.5	24.5	19.0	21.5	26.0	19.0	22.0	24.0	18.0	20.5
11	21.5	16.0	18.5	23.5	19.0	20.5	22.5	19.5	21.0	21.5	17.5	19.5
12	20.0	17.0	18.0	24.5	17.5	20.5	23.0	19.0	20.5	22.0	19.0	20.0
13	19.0	17.5	18.0	25.5	16.5	20.5	24.5	16.5	20.0	24.0	18.0	21.0
14	21.0	18.5	19.5	22.0	17.5	19.5	26.0	17.0	21.0	21.0	19.0	20.0
15	19.5	19.0	19.0	20.5	17.5	19.0	25.0	20.0	22.0	19.0	16.5	18.0
16	19.0	17.5	18.0	25.0	17.0	20.5	28.0	21.0	23.5	16.5	15.0	15.5
17	20.5	17.0	18.5	24.5	18.5	20.5	24.0	21.0	22.5	15.5	13.5	14.5
18	20.5	18.0	19.5	27.0	20.0	23.0	23.0	20.0	22.0	14.5	13.5	14.0
19	19.5	17.0	18.5	25.5	20.5	22.5	20.0	18.5	19.5	17.0	13.5	15.0
20	22.5	17.0	19.0	28.0	21.0	24.0	18.5	17.0	18.0	17.0	13.5	15.0
21	23.0	17.5	20.0	26.0	20.5	23.0	21.0	16.5	18.0	16.5	14.5	15.0
22	19.5	17.5	18.5	24.0	20.0	21.5	22.5	16.5	19.0	15.0	12.5	14.0
23	19.5	16.5	17.5	25.5	18.0	21.5	23.0	17.5	20.0	15.0	11.5	13.0
24	20.0	16.0	18.0	26.0	18.0	22.0	23.5	19.5	21.0	15.5	11.5	13.5
25	22.0	17.0	19.5	24.0	18.5	21.0	26.0	20.0	22.5	17.5	12.5	15.0
26	24.5	19.0	21.5	26.0	19.5	22.5	26.0	21.0	23.0	18.5	13.5	16.0
27	21.0	19.0	20.0	22.5	20.0	21.0	25.0	22.0	23.0	17.5	14.0	15.5
28	20.5	18.0	19.5	25.0	20.5	22.0	26.0	22.0	23.5	18.5	14.5	16.0
29	24.5	18.5	21.0	24.0	20.5	22.0	25.5	20.5	22.5	16.0	14.0	15.0
30	26.5	20.5	23.0	25.0	20.5	22.5	26.0	19.0	22.0	16.0	13.0	14.5
31	---	---	---	26.0	18.0	21.5	22.5	19.0	20.5	---	---	---
MONTH	26.5	12.0	18.4	28.0	16.5	21.7	---	---	---	26.5	11.5	17.8

STREAMS TRIBUTARY TO LAKE MICHIGAN

04079000 WOLF RIVER AT NEW LONDON, WI

LOCATION.--Lat 44°23'32", long 88°44'25", in NE 1/4 SE 1/4 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 mi².

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 National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers). Prior to Oct. 4, 1951, nonrecording gage.

REMARKS.--Estimated daily discharges: Ice period listed in rating table below. Records good except those for ice-affected period, which is fair. Gage-height telemeter and data-collection platform at station.

AVERAGE DISCHARGE.--94 years, 1,753 ft³/s, 10.53 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 15,500 ft³/s, Apr. 13, 1922, gage height, 11.4 ft; maximum gage height, 11.83 ft, Apr. 3, 1979, backwater from ice; minimum daily, 150 ft³/s, Mar. 1, 1900.

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.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 7,670 ft³/s, Mar. 19, gage height, 9.19 ft; minimum discharge, 425 ft³/s, Oct. 4, 5, gage height, 0.15 ft.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Shifting-contol method used Mar. 12-15, Mar. 24 to Apr. 6, Apr. 29 to May 3, May 11 to July 11, Aug. 6, 21-29, and Sept. 10-30; stage-discharge relation affected by ice Nov. 21 to Mar. 17.)

0.1	410	6.0	2,760
1.0	680	7.0	3,450
2.0	1,000	8.0	4,900
4.0	1,740	10.0	9,800
5.0	2,230		

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	457	915	660	580	640	660	2030	1550	2960	3860	1040	1120
2	470	1070	640	580	640	680	1780	1580	2730	3570	1060	1040
3	447	1170	620	600	660	680	1620	1500	2550	3330	1030	982
4	427	1190	620	600	660	660	1590	1370	2290	3110	1050	952
5	450	1190	620	580	640	660	1520	1310	2050	2890	1200	932
6	484	1150	640	580	640	640	1430	1250	1970	2640	1320	888
7	511	1090	620	580	640	660	1350	1160	1880	2360	1270	981
8	510	1080	600	600	660	700	1290	1060	1750	2110	1190	1090
9	485	1110	600	620	660	780	1240	982	1660	1790	1090	1180
10	509	1120	620	620	640	1100	1230	1310	1570	1550	1010	1330
11	514	1120	620	640	640	1400	1250	1960	1490	1400	955	1410
12	527	1090	600	620	660	2000	1260	2490	1460	1300	922	1420
13	512	1060	580	600	660	2500	1250	2800	1690	1210	895	1390
14	513	996	580	580	620	3100	1240	2890	2130	1140	878	1460
15	508	932	580	600	640	3900	1210	2960	2370	1100	870	1670
16	603	897	580	600	620	5400	1180	3050	2480	1080	868	1930
17	663	848	560	620	640	6600	1170	3170	2670	1080	849	2110
18	662	721	560	600	640	7400	1160	3230	2840	1060	851	2220
19	691	654	560	580	640	7640	1130	3280	2980	1030	977	2310
20	716	682	540	600	640	7420	1130	3440	3090	1030	1140	2370
21	709	700	520	620	660	6930	1160	3600	3150	1010	1290	2410
22	703	680	520	620	680	6390	1220	3760	3230	983	1530	2400
23	704	660	520	640	660	5770	1260	3900	3650	964	1600	2360
24	693	660	540	620	660	5180	1290	3980	4020	952	1560	2310
25	688	680	540	620	640	4580	1340	4030	4460	935	1470	2270
26	690	680	540	620	620	4000	1400	4060	4740	920	1360	2210
27	691	680	540	620	620	3590	1400	4010	4760	915	1280	2130
28	694	660	540	640	640	3260	1380	3870	4660	933	1270	2020
29	689	640	560	660	---	2970	1430	3640	4440	997	1230	1860
30	734	640	560	660	---	2650	1500	3420	4120	1050	1220	1730
31	843	---	580	660	---	2320	---	3200	---	1030	1190	---
TOTAL	18497	26765	17960	18960	18060	102220	40440	83812	85840	49329	35465	50485
MEAN	597	892	579	612	645	3297	1348	2704	2861	1591	1144	1683
MAX	843	1190	660	660	680	7640	2030	4060	4760	3860	1600	2410
MIN	427	640	520	580	620	640	1130	982	1460	915	849	888
CFSM	.26	.39	.26	.27	.29	1.46	.60	1.20	1.27	.70	.51	.74
IN.	.30	.44	.30	.31	.30	1.68	.67	1.38	1.41	.81	.58	.83
CAL YR 1989	TOTAL 430668	MEAN 1180	MAX 5600	MIN 418	CFSM .52	IN. 7.09						
WTR YR 1990	TOTAL 547833	MEAN 1501	MAX 7640	MIN 427	CFSM .66	IN. 9.02						

440912089092000 HILLS LAKE NEAR WILD ROSE, WI

LOCATION.--Lat 44°09'12", long 89°09'20", in SW 1/4 NE 1/4 sec.2, T.19 N., R.11 E., Waushara County, Hydrologic Unit 04030202, 4.6 mi southeast of Wild Rose.

DRAINAGE AREA.--0.78 mi².

PERIOD OF RECORD.--June 1983 to August 1984, February to August 1987, and February to August 1990.

REMARKS.--Lake sampled at east end at a lake depth of about 22 ft. Lake ice-covered February 14. Water-quality analyses by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, FEBRUARY 14 TO AUGUST 16, 1990
(Milligrams per liter unless otherwise indicated)

	Feb. 14		Apr. 10		June 13		July 18		Aug. 16	
Depth of sample (ft)	2.0	18	1.5	18	1.5	18	1.5	18	1.5	18
Lake stage (ft)	2.60		2.66		2.82		2.92		2.83	
Specific conductance (μS/cm)	254	257	229	228	231	237	231	232	230	233
pH (units)	7.3	7.2	7.7	7.9	8.4	7.7	8.0	7.6	8.3	8.0
Water temperature (°C)	4.4	4.4	8.3	8.0	21.2	19.3	25.1	23.6	25.1	24.1
Color (Pt-Co. scale)	---	---	5.0	5.0	---	---	---	---	---	---
Turbidity (NTU)	---	---	0.5	0.5	---	---	---	---	---	---
Secchi-depth (meters)	---		5.2		5.1		3.2		2.8	
Dissolved oxygen	4.9	4.6	11.3	10.9	8.6	5.8	8.9	5.9	9.1	6.0
Hardness, as CaCO ₃	---	---	120	120	---	---	---	---	---	---
Calcium, dissolved (Ca)	---	---	24	24	---	---	---	---	---	---
Magnesium, dissolved (Mg)	---	---	14	14	---	---	---	---	---	---
Sodium, dissolved (Na)	---	---	2.0	2.0	---	---	---	---	---	---
Potassium, dissolved (K)	---	---	0.41	0.47	---	---	---	---	---	---
Alkalinity, as CaCO ₃	---	---	106	107	---	---	---	---	---	---
Sulfate, dissolved (SO ₄)	---	---	10.8	10.8	---	---	---	---	---	---
Fluoride, dissolved (F)	---	---	0.04	0.04	---	---	---	---	---	---
Chloride, dissolved (Cl)	---	---	2.9	2.9	---	---	---	---	---	---
Silica, dissolved (SiO ₂)	---	---	0.6	0.6	---	---	---	---	---	---
Solids, dissolved, at 180°C	---	---	126	126	---	---	---	---	---	---
Nitrogen, NO ₂ + NO ₃ , diss. (as N)	---	---	0.07	0.07	---	---	---	---	---	---
Nitrogen, ammonia, dissolved (as N)	---	---	0.03	0.03	---	---	---	---	---	---
Nitrogen, amm. + org., total (as N)	---	---	0.40	0.40	---	---	---	---	---	---
Phosphorus, total (as P)	---	---	0.007	0.008	0.012	0.014	0.009	<0.020	0.008	<0.020
Phosphorus, ortho, dissolved (as P)	---	---	0.004	0.005	---	0.004	---	0.004	---	0.005
Iron, dissolved (Fe) μg/L	---	---	<50	60	---	---	---	---	---	---
Manganese, dissolved (Mn) μg/L	---	---	<40	<40	---	---	---	---	---	---
Chlorophyll a, phytoplankton (μg/L)	---	---	1.0	---	2.0	---	3.0	---	2.0	---

2-14-90

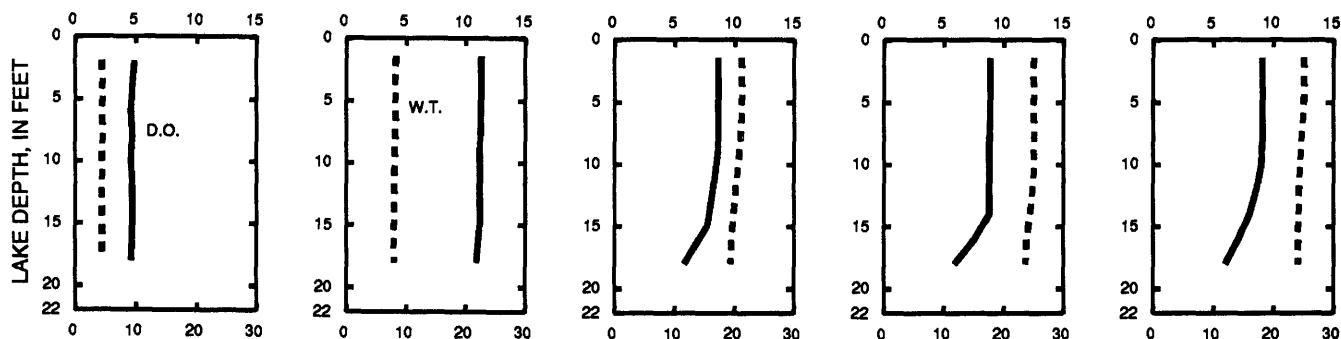
4-10-90

6-13-90

7-18-90

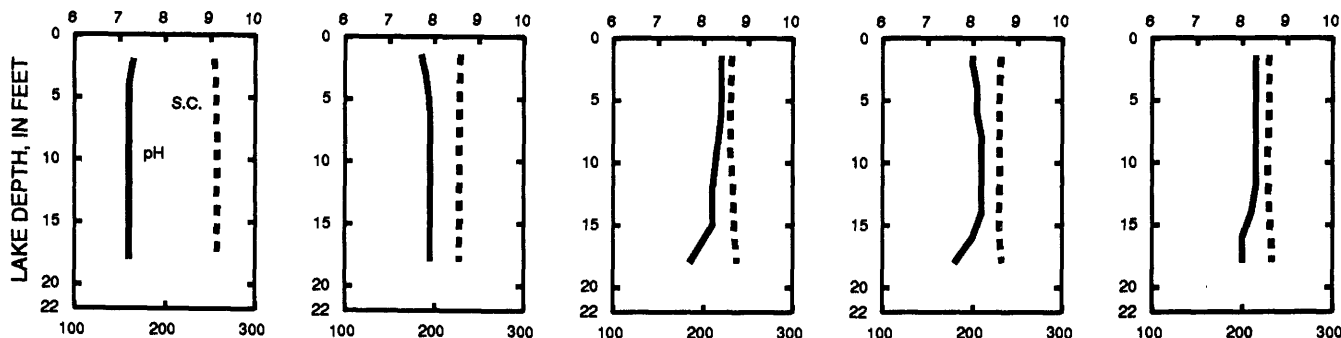
8-16-90

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

LOCATION.--Lat 44°06'54", long 89°12'05", in SE 1/4 SE 1/4 sec.16, T.19 N., R.11 E., Waushara County, Hydrologic Unit 04030202, at Mount Morris.

PERIOD OF RECORD.--June 1983 to current year.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height observed, 5.82 ft May 1, 1984; minimum observed, 4.80 ft Feb. 8, 1988.

EXTREMES FOR CURRENT YEAR.--Maximum gage height observed, 5.62 ft, July 17; minimum observed, 5.04 ft Sept. 28.

[illegible]

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LOCATION.--Lat 44°00'35", long 88°31'38", in NE 1/4 NE 1/4 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.

PERIOD OF RECORD.--October 1938 to current year in reports of Geological Survey. Records from 1882 to 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.

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.

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 gage height, 3.84 ft, Aug. 18, local condition due to seiche; minimum, 1.18 ft. Mar. 8.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.40	2.35	2.06	1.62	1.39	1.25	2.25	2.72	3.12	3.02	2.98	2.90
2	2.33	2.29	2.00	1.60	1.38	1.24	2.32	2.76	3.14	2.98	2.95	2.88
3	2.39	2.26	2.07	1.58	1.39	1.24	2.35	2.74	3.07	2.97	3.01	2.83
4	2.36	2.17	2.04	1.58	1.39	1.24	2.34	2.76	3.24	3.01	3.12	2.75
5	2.36	2.14	2.05	1.57	1.39	1.24	2.32	2.76	3.17	3.07	3.16	2.76
6	2.37	2.14	2.05	1.56	1.38	1.24	2.34	2.78	3.12	3.06	3.12	2.75
7	2.40	2.14	2.05	1.55	1.38	1.24	2.35	2.78	3.13	3.04	3.11	2.77
8	2.40	2.11	2.03	1.53	1.37	1.26	2.34	2.78	3.11	3.01	3.10	2.72
9	2.37	2.07	2.01	1.53	1.38	1.30	2.32	2.94	3.10	3.06	3.09	2.70
10	2.37	2.09	1.99	1.53	1.39	1.31	2.37	2.85	3.14	3.08	3.10	2.78
11	2.37	2.04	1.97	1.52	1.39	1.36	2.32	3.07	3.12	3.06	3.09	2.74
12	2.37	2.09	1.96	1.51	1.38	1.43	2.35	3.08	3.08	3.07	3.08	2.71
13	2.40	2.05	1.93	1.49	1.38	1.47	2.34	3.14	3.15	3.02	3.06	2.70
14	2.40	2.08	1.93	1.47	1.38	1.64	2.36	3.19	3.17	3.02	3.01	2.78
15	2.41	2.05	1.91	1.46	1.37	1.70	2.37	3.27	3.16	3.06	3.03	2.82
16	2.54	2.00	1.89	1.45	1.38	1.73	2.36	3.26	3.13	3.06	3.02	2.82
17	2.52	2.08	1.87	1.45	1.37	1.70	2.40	3.22	3.15	3.05	3.01	2.77
18	2.49	2.00	1.85	1.46	1.35	1.76	2.42	3.32	3.14	3.06	3.12	2.72
19	2.49	2.01	1.83	1.44	1.34	1.83	2.41	3.41	3.18	3.07	3.41	2.72
20	2.43	1.95	1.82	1.43	1.32	1.85	2.47	3.35	3.09	3.09	3.40	2.72
21	2.45	2.03	1.80	1.44	1.30	1.89	2.50	3.29	3.05	3.08	3.38	2.65
22	2.44	2.03	1.78	1.43	1.28	1.87	2.53	3.26	3.25	3.06	3.33	2.62
23	2.44	1.99	1.76	1.43	1.28	1.92	2.54	3.23	3.41	3.04	3.26	2.62
24	2.43	2.02	1.74	1.46	1.29	2.01	2.56	3.21	3.36	3.02	3.21	2.57
25	2.41	2.02	1.72	1.48	1.29	1.95	2.59	3.18	3.25	3.00	3.17	2.54
26	2.40	2.02	1.70	1.48	1.27	2.06	2.62	3.17	3.18	2.99	3.14	2.54
27	2.37	2.07	1.68	1.46	1.27	2.09	2.65	3.17	3.14	2.96	3.12	2.53
28	2.36	2.07	1.67	1.45	1.26	2.11	2.65	3.18	3.05	2.98	3.08	2.53
29	2.34	2.08	1.66	1.42	---	2.14	2.70	3.18	3.01	3.00	3.06	2.50
30	2.38	2.07	1.64	1.40	---	2.17	2.67	3.13	3.00	3.04	2.99	2.46
31	2.33	---	1.63	1.39	---	2.22	---	3.12	---	3.00	2.94	---
MEAN	2.40	2.08	1.87	1.49	1.35	1.66	2.44	3.07	3.15	3.03	3.12	2.70
MAX	2.54	2.35	2.07	1.62	1.39	2.22	2.70	3.41	3.41	3.09	3.41	2.90
MIN	2.33	1.95	1.63	1.39	1.26	1.24	2.25	2.72	3.00	2.96	2.94	2.46
CAL YR 1989	MEAN 2.31	MAX 3.55	MIN 1.15									
WTR YR 1990	MEAN 2.37	MAX 3.41	MIN 1.24									

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.

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.--Records good. 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 at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height observed, 3.82 ft, May 30, 1989, local condition due to seiche. Minimum observed, 0.30 ft, Mar. 1, 1986.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 3.80 ft, June 3, local condition due to seiche; minimum, 1.15 ft. Feb. 27. Mar. 7. 8.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.37	2.37	2.03	1.58	1.36	1.21	2.22	2.82	3.09	2.97	2.96	2.89
2	2.43	2.33	2.05	1.56	1.35	1.20	2.22	2.71	3.19	2.97	2.95	2.84
3	2.43	2.24	2.05	1.54	1.36	1.21	2.31	2.69	3.39	2.99	3.01	2.77
4	2.38	2.21	2.02	1.55	1.35	1.21	2.31	2.68	3.23	3.02	3.10	2.77
5	2.39	2.16	2.02	1.53	1.34	1.21	2.34	2.73	3.22	3.02	3.09	2.71
6	2.46	2.18	2.03	1.52	1.35	1.20	2.36	2.75	3.15	3.01	3.06	2.69
7	2.42	2.12	2.02	1.50	1.34	1.20	2.36	2.81	3.10	3.01	3.09	2.68
8	2.35	2.11	1.99	1.49	1.34	1.22	2.30	2.82	3.09	3.04	3.10	2.68
9	2.36	2.17	1.97	1.50	1.35	1.27	2.29	2.65	3.15	3.04	3.10	2.69
10	2.39	2.16	1.96	1.49	1.36	1.28	2.23	2.94	3.11	3.01	3.06	2.74
11	2.38	2.15	1.95	1.50	1.35	1.32	2.33	3.06	3.08	2.96	3.03	2.69
12	2.37	2.06	1.92	1.49	1.34	1.39	2.36	3.05	3.11	2.88	3.01	2.71
13	2.36	2.01	1.90	1.45	1.35	1.44	2.35	3.11	3.14	2.91	3.02	2.71
14	2.37	2.00	1.90	1.43	1.34	1.60	2.34	3.15	3.14	2.94	3.05	2.77
15	2.36	1.98	1.88	1.42	1.33	1.66	2.40	3.17	3.12	3.04	3.01	2.82
16	2.38	2.14	1.86	1.41	1.35	1.69	2.39	3.26	3.08	3.06	3.00	2.71
17	2.37	2.14	1.83	1.42	1.34	1.74	2.43	3.41	3.20	3.08	3.00	2.72
18	2.38	2.08	1.81	1.43	1.31	1.79	2.43	3.41	3.23	3.07	3.06	2.70
19	2.29	2.05	1.80	1.40	1.30	1.81	2.42	3.16	3.13	3.05	3.26	2.72
20	2.39	2.02	1.78	1.39	1.28	1.84	2.43	3.15	3.10	3.05	3.30	2.70
21	2.43	1.98	1.76	1.40	1.26	1.85	2.47	3.23	3.12	3.04	3.30	2.71
22	2.42	1.97	1.74	1.39	1.25	1.91	2.49	3.24	3.10	3.01	3.28	2.72
23	2.40	2.01	1.71	1.39	1.24	1.99	2.50	3.21	3.39	3.01	3.23	2.66
24	2.40	1.99	1.70	1.43	1.26	2.02	2.53	3.17	3.34	3.00	3.19	2.65
25	2.38	1.98	1.69	1.45	1.25	2.06	2.57	3.13	3.25	2.98	3.16	2.57
26	2.36	1.98	1.67	1.44	1.23	2.01	2.60	3.13	3.19	2.94	3.13	2.51
27	2.34	1.98	1.66	1.43	1.23	2.06	2.62	3.14	3.07	2.92	3.10	2.49
28	2.33	2.06	1.63	1.40	1.22	2.07	2.65	3.12	3.03	2.95	3.08	2.45
29	2.31	2.08	1.63	1.38	---	2.08	2.68	3.07	3.03	2.99	3.03	2.43
30	2.30	2.05	1.61	1.37	---	2.14	2.74	3.08	3.00	2.97	2.97	2.47
31	2.42	---	1.60	1.35	---	2.18	---	3.10	---	2.97	2.92	---
MEAN	2.38	2.09	1.84	1.45	1.31	1.64	2.42	3.04	3.15	3.00	3.09	2.68
MAX	2.46	2.37	2.05	1.58	1.36	2.18	2.74	3.41	3.39	3.08	3.30	2.89
MIN	2.29	1.97	1.60	1.35	1.22	1.20	2.22	2.65	3.00	2.88	2.92	2.43
CAL YR 1989	MEAN 2.29		MAX 3.53		MIN 1.12							
WTR YR 1990	MEAN 2.35		MAX 3.41		MIN 1.20							

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LOCATION.--Neenah channel: Lat 44°11'14", long 88°26'31", in SW 1/4 SW 1/4 sec.23, T.20 N., R.17 E., Winnebago County, Hydrologic Unit 04030203, at exit of Fox River from Lake Winnebago 1.0 mi east of Neenah city hall. Menasha channel: Lat 44°12'08", long 88°25'41", in SE 1/4 SE 1/4 sec.14, T.20 N., R.17 E., Winnebago County, Hydrologic Unit 04030203, at exit of Fox River from Lake Winnebago 1.1 mi east of Menasha city hall.

PERIOD OF RECORD.--April 1989 to April 1990 (discontinued).

REMARKS.--Equal sample volumes were collected from each outlet channel and composited for analysis, except for April 18, 1989. The sample at time 1252 was collected from the Neenah channel (station number 040844128) and the sample at time 1608 was collected from the Menasha channel (station number 040844126). Samples for chemical analysis were composite samples of water pumped from multiple fixed points in the stream cross section. Chemical analyses by Wisconsin State Laboratory of Hygiene.

DATE	TIME	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	TRANS- PAR- ENCY (SECCHI DISK) (M) (00078)	OXYGEN, DIS- SOLVED (MG/L) (00300)	HARD- NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM TOTAL RECOV- ERABLE (MG/L AS CA) (00916)	MAGNE- SIUM, TOTAL RECOV- ERABLE (MG/L AS MG) (00927)	ALKA- LINITY WAT WH TOT FET LAB MG/L AS CACO3 (00417)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)
a)APR 1989 18...	1252	362	7.8	6.0	1.00	13.9	180	34	22	163	12	3.0
DATE		RESIDUE TOTAL AT 105 DEG. C, SUS- PENDE (MG/L) (00530)	RESIDUE VOLA- TILE, SUS- PENDE (MG/L) (00535)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)	CHLORO- PHYLL A TRICHR. UNCORR. WHOLE TOTAL (UG/L) (32210)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
APR 1989 18...	16	10	0.230	<0.020	0.90	0.050	6.3	5.8	27.0	4	98	
	DATE	TIME	HARD- NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM TOTAL RECOV- ERABLE (MG/L AS CA) (00916)	MAGNE- SIUM, TOTAL RECOV- ERABLE (MG/L AS MG) (00927)	ALKA- LINITY WAT WH TOT FET LAB MG/L AS CACO3 (00417)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDE (MG/L) (00530)	RESIDUE VOLA- TILE, SUS- PENDE (MG/L) (00535)		
(b)APR 1989 18...	1608	160	30	22	162	12	2.8	15	9			
	DATE	TIME	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)	CHLORO- PHYLL A TRICHR. UNCORR. WHOLE TOTAL (UG/L) (32210)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	
APR 1989 18...	0.240	<0.020	0.80	0.050	6.2	5.4	24.0	3	92			

(a) MENASHA CHANNEL ONLY.

(b) NEENAH CHANNEL ONLY.

STREAMS TRIBUTARY TO LAKE MICHIGAN

040844105 LAKE WINNEBAGO OUTLET AT NEENAH-MENASHA, WI--CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	TRANS- PAR- ENCY (SECCHI DISK) (M) (00078)	OXYGEN, DIS- SOLVED (MG/L) (00300)	HARD- NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM TOTAL RECOV- ERABLE (MG/L AS CA) (00916)	MAGNE- SIUM, TOTAL RECOV- ERABLE (MG/L AS MG) (00927)	ALKA- LILITY WAT WH TOT FET LAB MG/L AS CACO3 (00417)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)
MAY 1989												
02...	1150	356	9.2	10.0	1.30	13.3	180	36	23	165	13	<0.20
16...	1130	346	9.0	15.0	1.00	12.6	170	33	21	158	13	<0.20
31...	1010	341	8.4	17.0	0.90	8.2	170	32	21	151	12	<0.20
JUN												
15...	1425	336	8.2	17.0	1.80	7.3	150	31	18	144	12	3.8
28...	1300	339	8.6	23.0	1.00	8.7	180	36	21	151	11	7.0
JUL												
12...	1200	327	8.8	24.5	0.60	9.1	140	26	19	147	11	10
26...	0915	317	8.8	26.0	0.60	9.7	170	34	20	143	11	13
AUG												
08...	1120	314	9.0	22.5	0.60	9.5	160	32	19	147	12	--
22...	1030	317	9.0	23.0	0.60	9.0	160	32	19	149	11	19
SEP												
05...	1740	335	8.9	21.5	0.90	11.0	180	38	21	161	11	22
19...	1040	337	8.7	18.5	0.90	9.5	180	38	21	168	11	20

DATE	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDE (MG/L) (00530)	RESIDUE VOLATILE, SUS- PENDE (MG/L) (00535)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)	CHLORO- PHYLL A TRICHR. UNCORR. WHOLE TOTAL (UG/L) (32210)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
MAY 1989												
02...	11	8	0.160	<0.020	0.90	0.040	0.002	6.6	5.9	24.0	3	91
16...	14	8	0.070	<0.020	0.40	0.030	0.003	6.4	5.5	19.0	7	97
31...	17	13	0.100	0.060	1.1	0.070	0.004	6.1	6.0	23.0	7	93
JUN												
15...	8	8	0.230	0.080	1.0	0.060	0.012	7.8	6.2	22.0	7	37
28...	23	13	0.030	<0.020	1.0	0.060	0.006	7.4	5.6	27.0	37	12
JUL												
12...	23	18	<0.020	<0.020	1.9	0.090	0.004	9.1	6.9	80.0	8	82
26...	22	17	<0.020	0.030	1.6	0.100	0.004	9.7	6.8	96.0	8	88
AUG												
08...	36	26	<0.020	<0.020	2.1	0.160	0.008	7.9	7.2	130	15	100
22...	23	16	<0.020	<0.020	1.2	0.110	0.014	7.2	6.4	60.0	12	91
SEP												
05...	14	11	<0.020	<0.020	1.2	0.120	0.016	7.3	7.3	31.0	8	96
19...	14	9	<0.020	<0.020	1.0	0.090	0.039	9.8	6.7	38.0	6	97

STREAMS TRIBUTARY TO LAKE MICHIGAN

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040844105 LAKE WINNEBAGO OUTLET AT NEENAH-MENASHA, WI--CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	TRANS- PAR- ENCY (SECCHI DISK) (M) (00078)	OXYGEN, DIS- SOLVED (MG/L) (00300)	HARD- NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM TOTAL RECOV- ERABLE (MG/L AS CA) (00916)	MAGNE- SIUM, TOTAL RECOV- ERABLE (MG/L AS MG) (00927)	ALKA- LITY WAT WH TOT FET LAB MG/L AS CACO3 (00417)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)
OCT 1989												
04...	0900	343	9.0	12.0	1.00	10.1	180	37	22	165	11	19
04...	1145	342	9.0	12.5	1.00	10.8	190	38	22	165	11	19
18...	1155	339	9.0	9.0	1.00	11.5	180	36	22	161	11	18
31...	1330	346	8.6	10.5	0.90	11.8	190	38	22	160	12	13
NOV												
14...	1240	346	8.8	4.5	0.60	14.0	180	38	21	164	11	11
DEC												
05...	1150	363	8.4	0.0	0.90	15.6	190	40	23	170	12	11
JAN 1990												
17...	0945	402	8.3	2.5	2.00	15.0	190	40	23	181	13	12
FEB												
*13...	1000	393	8.3	2.5	2.70	12.7	210	42	25	182	12	12
*13...	1005	393	8.3	2.5	2.70	12.7	210	42	24	183	12	12
MAR												
13...	0930	406	8.0	4.0	1.50	11.5	210	43	26	177	12	12
APR												
02...	1000	360	8.5	4.0	1.50	14.7	200	40	24	164	11	8.3
19...	1305	323	8.8	7.0	0.50	14.0	190	39	22	157	11	2.8

DATE	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDE (MG/L) (00530)	RESIDUE VOLA- TILE, SUS- PENDE (MG/L) (00535)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)	CHLORO- PHYLL A TRICHR. UNCORR. WHOLE TOTAL (UG/L) (32210)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT 1989												
04...	14	9	<0.020	<0.020	0.80	0.070	0.010	9.5	7.4	27.0	5	99
04...	12	9	<0.020	<0.020	0.80	0.060	0.010	10	7.9	25.0	--	--
18...	8	8	<0.020	<0.020	0.70	0.050	0.010	7.8	6.9	22.0	6	96
31...	14	8	0.050	0.040	0.80	0.050	0.005	10	7.8	34.0	7	97
NOV												
14...	25	13	<0.020	<0.020	1.2	0.070	0.005	10	7.2	48.0	12	100
DEC												
05...	13	8	0.030	0.020	0.80	0.040	0.005	9.6	7.4	26.0	5	100
JAN 1990												
17...	4	3	0.030	0.040	0.70	0.020	0.005	14	8.9	5.00	0	71
FEB												
13...	3	2	0.060	0.030	0.70	<0.020	0.007	8.6	6.5	3.00	1	96
13...	2	2	0.060	0.040	0.70	<0.020	0.007	8.3	6.4	3.00	--	--
MAR												
13...	13	9	0.100	0.050	0.80	0.040	0.004	9.7	7.3	16.0	6	65
APR												
02...	37	14	0.160	<0.020	0.80	0.060	0.003	--	--	--	28	21
19...	40	20	0.230	<0.020	1.2	0.093	0.005	12	8.1	77.0	17	97

* SAMPLES WITH SAME DATES ARE REPLICATES.

STREAMS TRIBUTARY TO LAKE MICHIGAN

04084422 LITTLE LAKE BUTTE DES MORTS AT MENASHA, WI

LOCATION.--Lat 44°12'17", long 88°28'07", in NE 1/4 SE 1/4 sec.16, T.20 N., R.17 E., Winnebago County, Hydrologic Unit 04030204, at railroad bridge.

DRAINAGE AREA.--5,910 mi².

PERIOD OF RECORD.--October 1989 to September 1990 (discontinued).

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	SEDI- MENT, SUS- PENDED (MG/L) (80154)		SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	
OCT 1989					
18...	0905	8		96	
NOV					
14...	0940	15		100	
MAR 1990					
13...	1220	6		83	
23...	1145	2		83	
MAY					
31...	1515	18		78	
JUN					
20...	1515	72		98	
JUL					
19...	1435	13		98	
AUG					
14...	1600	11		94	
29...	1400	8		--	
SEP					
11...	0930	14		--	
25...	0950	16		--	

DATE	TIME	TEMPER- ATURE WATER (DEG C) (00010)	TRANS- PAR- ENCY (SECCHI DISK) (M) (00078)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	OXYGEN, DIS- SOLVED (MG/L) (00300)	PH (STAND- ARD UNITS) (00400)
OCT 1989						
18...	0905	8.5	0.80	342	11.0	8.9
NOV						
14...	0940	4.5	0.50	348	13.2	8.4
MAR 1990						
13...	1220	5.5	1.90	404	12.7	8.2
23...	1145	2.5	3.20	366	13.7	8.3

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LOCATION.--Lat 44°14'53", long 88°25'23" in NW 1/4 SE 1/4 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.

WATER-DISCHARGE RECORDS

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 14,200 ft³/s, June 25; minimum daily, 965 ft³/s, Oct. 3.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1010	4390	2940	2300	2150	2590	4230	1470	6360	8940	2160	6180
2	1060	4520	2100	2400	2220	2310	3890	1520	5460	8530	2170	6000
3	965	5050	1920	2300	2230	2020	4250	1520	5920	6740	2490	5890
4	985	5580	1960	2400	2200	1980	4410	1510	5360	4690	2670	5260
5	1060	5430	1990	2400	2190	1960	4280	1510	7390	4530	2420	3860
6	1060	4880	1990	2300	2170	1970	4370	1580	8920	4070	2070	3960
7	1010	4390	2330	2400	2230	1970	4390	1760	7280	4100	2290	3980
8	1010	3980	3080	2400	2210	2010	4450	1870	3870	4420	2350	3900
9	1040	3280	3140	2500	2270	2640	4400	1510	3900	4710	2600	3940
10	1040	3050	3150	2500	2240	3000	4160	1610	3910	4670	2440	4030
11	1090	3350	3140	2300	2210	3060	3740	2340	4070	3690	2350	3950
12	1030	3080	3080	2400	2210	3620	2780	2520	4610	2790	2260	4000
13	1020	2880	3140	2500	2200	3530	2940	2450	5880	2230	2220	3990
14	1000	2780	3120	2300	2670	8070	2940	2800	6620	1730	2400	5730
15	999	1950	2900	2400	3110	8690	2910	3700	6330	1950	2310	5970
16	1030	1620	2600	2500	3160	9040	2930	6940	5780	2360	2270	5740
17	1200	2010	3000	2670	3140	9060	2180	6650	6930	2570	2300	5480
18	2040	1980	2000	2690	3110	9190	1120	7650	6960	2460	2340	5770
19	2090	2020	2300	2650	3100	9310	1140	9850	7800	2320	3970	6040
20	2140	1830	2600	2630	3070	9480	1190	11200	9270	2230	6440	6350
21	2240	1650	2500	2680	3080	9500	1210	11400	8280	2290	7090	6510
22	2310	1870	2400	2290	3030	9100	1230	11500	6270	3000	8420	6350
23	2320	1890	2400	2170	2550	8370	1380	11500	12100	2860	9380	6010
24	2790	1600	2500	2250	2020	8630	1420	11300	12400	3120	9420	6050
25	3330	1590	2300	2220	2000	8760	1340	10300	14200	2240	9290	6290
26	3330	1830	2400	2700	1960	7910	1400	8960	14000	2180	9210	5800
27	3430	2010	2400	3180	2240	5860	1470	8890	13600	2160	8750	5390
28	3360	1900	2300	3120	2610	5890	1520	8860	12900	2250	7540	5260
29	3300	2220	2400	3200	---	4960	1490	8340	12000	2270	7300	5220
30	3280	3080	2400	3210	---	4190	1490	7840	10700	2100	6770	4770
31	3620	---	2300	2630	---	4200	---	6830	---	2080	6330	---
TOTAL	57189	87690	78780	78590	69580	172870	80650	177680	239070	106280	142020	157670
MEAN	1845	2923	2541	2535	2485	5576	2688	5732	7969	3428	4581	5256
MAX	3620	5580	3150	3210	3160	9500	4450	11500	14200			

STREAMS TRIBUTARY TO LAKE MICHIGAN

04084445 FOX RIVER AT APPLETON, WI--CONTINUED

WATER-QUALITY RECORDS

PERIOD OF RECORD.--July 1986 to September 1990 (discontinued).

PERIOD OF DAILY RECORD.--

SUSPENDED-SEDIMENT DISCHARGE: July 1986 to September 1990 (discontinued).

WATER TEMPERATURE: October 1986 to September 1990 (discontinued).

REMARKS.--Records good. Two samples per day were normally collected using automatic samplers, and EWI suspended-sediment measurements were made approximately every eight weeks during the open-water period. Samples for chemical analysis were composite samples of water pumped from multiple fixed points in the stream cross section. Chemical analyses by Wisconsin State Laboratory of Hygiene.

Water-temperature records are considered good to excellent, based on the daily average of 15-minute thermistor probe readings. No record Dec. 8 to Mar. 15.

EXTREMES FOR PERIOD OF RECORD.--

SUSPENDED-SEDIMENT CONCENTRATION--Maximum daily average concentration, 172 mg/L, Mar. 9, 1990; minimum daily average concentration, 1.0 mg/L, Dec. 27, 30, 1989, and Jan. 1, 3, 4, 5, 1990.

SUSPENDED-SEDIMENT DISCHARGE--Maximum discharge, 2,606 tons, Mar. 16, 1990; minimum discharge, 5.6 tons, Jan. 5, 1990.

WATER TEMPERATURE--Maximum daily average, 29.0°C, Aug. 2, 3, 1987; minimum daily average, 0.5°C, on many days during winter of the 1987 water year.

EXTREMES FOR CURRENT YEAR.--

SUSPENDED-SEDIMENT CONCENTRATION--Maximum daily average concentration, 172 mg/L, Mar. 9; minimum daily average concentration, 1.0 mg/L, Dec. 27, 30, Jan. 1, 3, 4, 5.

SUSPENDED-SEDIMENT DISCHARGE--Maximum discharge, 2,606 tons, Mar. 16; minimum discharge, 5.6 tons, Jan. 5.

WATER TEMPERATURE: Maximum daily average, 25.6°C, July 4.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
(Samples collected by automatic sampler unless otherwise noted)

DATE	TIME	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	DATE	TIME	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	SEDI- MENT, SUS- PENDED (MG/L) (80154)
OCT 1989				OCT 1989			
01...	0400	1010	11	28...	0400	3360	18
01...	1600	1010	11	28...	1600	3360	35
02...	0400	1060	20	29...	0400	3300	17
02...	1600	1060	15	29...	1600	3300	25
03...	0400	965	25	30...	0400	3280	24
03...	1600	965	16	30...	1600	3280	27
04...	0400	985	11	31...	0400	3620	28
04...	1600	985	19	31...	1600	3620	31
05...	0400	1060	18	NOV			
05...	1600	1060	18	01...	0400	4390	20
06...	0400	1060	20	01...	1125	4390	17
06...	1600	1060	12	01...	1130	4390	13
07...	0400	1010	10	*01...	1220	4390	14
07...	1600	1010	12	01...	1600	4390	17
08...	0400	1010	13	02...	0400	4520	16
08...	1600	1010	6	02...	1600	4520	16
12...	1445	1030	21	03...	0400	5050	14
12...	1600	1030	15	03...	1600	5050	15
13...	0400	1020	10	04...	0400	5580	13
13...	1600	1020	18	04...	1600	5580	30
14...	0400	1000	12	05...	0400	5430	21
14...	1600	1000	21	05...	1600	5430	24
15...	0400	999	13	06...	0400	4890	24
15...	1600	999	21	06...	1600	4890	31
16...	0400	1030	18	07...	0400	4390	23
16...	1600	1030	22	07...	1600	4390	14
17...	0400	1200	23	08...	0400	3980	35
17...	1600	1200	26	08...	1600	3980	23
18...	0400	2040	26	09...	0400	3280	24
18...	1600	2040	28	09...	1600	3280	26
19...	0400	2090	13	10...	0400	3050	22
19...	1600	2090	14	10...	1600	3050	20
20...	0400	2140	13	11...	0400	3350	33
20...	1600	2140	12	11...	1600	3350	25
21...	0400	2240	9	12...	0400	3080	21
21...	1600	2240	15	12...	1600	3080	21
22...	0400	2310	7	13...	0400	2880	23
22...	1600	2310	14	13...	1600	2880	19
23...	0400	2320	15	14...	1400	2780	21
23...	1600	2320	18	14...	1600	2780	23
24...	0400	2790	11	15...	0400	1950	20
24...	1600	2790	23	15...	1035	1950	18
25...	0400	3340	16	15...	1600	1950	20
25...	1600	3340	21	16...	0400	1630	18
26...	0400	3330	15	16...	1600	1630	22
26...	1600	3330	19	17...	0400	2010	21
27...	0400	3430	15	17...	1600	2010	23
27...	1600	3430	18	18...	0400	1980	20

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WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	DATE	TIME	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	SEDI- MENT, SUS- PENDED (MG/L) (80154)
NOV 1989				JAN 1990			
18...	1600	1980	16	19...	0400	2650	26
19...	0400	2020	6	20...	0400	2630	35
19...	1600	2020	15	21...	0400	2690	2
20...	0400	1830	13	22...	0400	2290	17
20...	1600	1830	20	23...	0400	2170	4
21...	0400	1650	14	23...	1045	2170	10
21...	1600	1650	16	24...	0400	2250	2
22...	0400	1870	18	25...	0400	2220	23
22...	1600	1870	19	26...	0400	2700	5
23...	0400	1890	25	27...	0400	3180	254
23...	1600	1890	17	28...	0400	3120	4
24...	0400	1600	14	29...	0400	3200	6
24...	1600	1600	21	30...	0400	3210	31
25...	0400	1590	13	31...	0400	2630	10
25...	1600	1590	17	FEB			
26...	0400	1830	13	01...	0400	2150	109
26...	1600	1830	16	02...	0400	2220	21
27...	0400	2010	11	03...	0400	2230	11
27...	1600	2010	15	04...	0400	2200	8
28...	0400	1900	9	05...	0400	2190	10
28...	1600	1900	14	06...	0400	2180	11
29...	0400	2220	11	07...	0400	2230	36
29...	1600	2220	13	08...	0400	2210	33
30...	0400	3080	12	09...	0400	2270	46
30...	1600	3080	13	10...	0400	2250	10
DEC				11...	0400	2210	6
01...	0400	2940	11	12...	0400	2210	42
01...	1600	2940	12	13...	0400	2200	130
02...	0400	2100	11	13...	1520	2200	21
02...	1600	2100	12	28...	1105	2620	7
03...	0400	1920	11	*28...	1125	2620	4
03...	1600	1920	14	28...	1130	2620	5
04...	0400	1960	16	28...	1215	2620	3
04...	1600	1960	10	MAR			
05...	0400	1990	10	01...	0400	2590	10
05...	1535	1990	4	02...	0400	2320	6
05...	1600	1990	10	03...	0400	2020	25
06...	0400	1990	7	04...	0400	1980	67
07...	0400	2330	6	05...	0400	1960	11
08...	0400	3080	5	06...	0400	1970	19
09...	0400	3140	4	07...	0400	1970	6
10...	0400	3150	81	08...	0400	2010	28
11...	0400	3140	5	09...	0400	2640	262
12...	0400	3080	4	10...	0400	3000	115
13...	0400	3140	5	11...	0400	3060	45
14...	0400	3120	15	12...	0400	3620	30
14...	0900	3120	23	13...	0400	3530	24
15...	0400	2900	2	14...	0400	8070	32
16...	0400	2600	24	15...	0400	8700	61
17...	0400	3000	143	15...	1030	8700	53
18...	0400	2000	6	15...	1035	8700	57
25...	0400	2300	11	16...	0400	9040	43
26...	0400	2400	11	16...	1600	9040	238
27...	0400	2400	0	17...	0400	9060	18
28...	0400	2300	1	17...	1600	9060	73
29...	0400	2400	5	18...	0400	9190	10
30...	0400	2400	1	18...	1600	9190	30
31...	0400	2300	3	19...	0400	9310	5
JAN 1990				19...	1600	9310	11
01...	0400	2300	2	20...	0400	9480	3
02...	0400	2400	1	20...	1600	9480	5
03...	0400	2300	3	20...	1605	9480	6
03...	1045	2300	0	21...	0400	9500	2
04...	0400	2400	2	21...	1600	9500	3
05...	0400	2400	1	22...	0400	9100	2
06...	0400	2300	0	22...	1600	9100	5
07...	0400	2400	6	23...	0400	8370	6
08...	0400	2400	1	23...	1600	8370	6
09...	0400	2500	5	24...	0400	8630	3
10...	0400	2500	4	24...	1600	8630	3
11...	0400	2300	11	25...	0400	8760	6
12...	0400	2400	163	25...	1600	8760	9
13...	0400	2500	8	26...	0400	7920	3
14...	0400	2300	4	26...	1600	7920	5
15...	0400	2400	4	27...	0400	5860	2
16...	0400	2500	34	27...	1600	5860	4
17...	0400	2670	5	28...	0400	5890	3
18...	0400	2690	14	28...	1600	5890	4

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04084445 FOX RIVER AT APPLETON, WI--CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	DATE	TIME	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	SEDI- MENT, SUS- PENDED (MG/L) (80154)
MAR 1990				MAY 1990			
29...	0400	4960	4	09...	1600	1520	16
29...	1600	4960	3	10...	0400	1610	6
30...	0400	4190	3	10...	1600	1610	12
30...	1600	4190	4	11...	0400	2340	14
31...	0400	4200	3	11...	1600	2340	16
31...	1600	4200	8	12...	0400	2530	13
APR				12...	1600	2530	9
01...	0400	4230	6	13...	0400	2450	8
01...	1600	4230	12	13...	1600	2450	20
02...	0400	3890	7	14...	0400	2800	19
02...	1600	3890	25	14...	1600	2800	24
03...	0400	4260	18	15...	0400	3700	11
03...	1600	4260	11	15...	1600	3700	32
04...	0400	4410	9	16...	0400	6940	16
04...	1600	4410	9	16...	1600	6940	15
05...	0400	4280	7	17...	0400	6650	28
05...	1600	4280	7	17...	1600	6650	32
06...	0400	4370	6	18...	0400	7650	19
06...	1600	4370	5	18...	1600	7650	19
07...	0400	4400	6	19...	0400	9850	16
07...	1600	4400	8	19...	1600	9850	20
08...	0400	4450	9	20...	0400	11200	28
08...	1600	4450	26	20...	1600	11200	32
09...	0400	4400	10	21...	0400	11400	35
09...	1600	4400	12	21...	1600	11400	33
10...	0400	4160	12	22...	0400	11500	40
10...	1600	4160	13	22...	1600	11500	23
16...	1508	2930	24	23...	0400	11500	21
16...	1600	2930	22	23...	1600	11500	20
17...	0400	2180	18	24...	0400	11300	26
17...	1600	2180	18	24...	1600	11300	18
18...	0400	1120	20	25...	0400	10300	15
18...	1600	1120	17	25...	1600	10300	14
19...	0400	1140	23	26...	0400	8960	15
19...	1600	1140	15	26...	1600	8960	18
20...	0400	1190	48	27...	0400	8890	19
20...	1600	1190	25	27...	1600	8890	16
21...	0400	1210	36	31...	1615	6830	35
21...	1600	1210	30	JUN			
22...	0400	1240	24	01...	0400	6360	20
22...	1600	1240	31	01...	1600	6360	34
23...	0400	1380	40	02...	0400	5470	25
23...	1600	1380	35	02...	1600	5470	42
24...	0400	1420	39	03...	0400	5930	61
24...	1600	1420	41	03...	1600	5930	51
25...	0400	1340	44	04...	0400	5370	30
25...	1600	1340	32	04...	1600	5370	31
26...	0400	1400	45	05...	0400	7400	21
26...	1600	1400	36	05...	1600	7400	25
27...	0400	1470	43	06...	0400	8920	25
27...	1600	1470	45	06...	1600	8920	43
28...	0400	1520	47	07...	0400	7290	24
28...	1600	1520	44	07...	1600	7290	28
29...	0400	1490	48	08...	0400	3870	39
29...	1600	1490	42	08...	1600	3870	31
30...	0400	1490	34	09...	0400	3900	116
30...	1600	1490	14	09...	1600	3900	34
MAY				10...	0400	3910	50
01...	0400	1470	8	10...	1600	3910	58
01...	0915	1470	9	11...	0400	4070	64
01...	0925	1470	10	11...	1600	4070	34
*01...	1000	1470	14	12...	0400	4610	35
01...	1600	1470	12	12...	1600	4610	50
02...	0400	1520	9	13...	0400	5880	34
02...	1600	1520	12	13...	1600	5880	65
03...	0400	1520	11	14...	0400	6620	36
03...	1600	1520	23	14...	1600	6620	46
04...	0400	1510	7	15...	0400	6330	22
04...	1600	1510	6	15...	1600	6330	32
05...	0400	1520	8	16...	0400	5790	20
05...	1600	1520	16	16...	1600	5790	31
06...	0400	1580	10	17...	0400	6930	18
06...	1600	1580	15	17...	1600	6930	52
07...	0400	1760	10	18...	0400	6960	31
07...	1600	1760	18	18...	1600	6960	37
08...	0400	1870	17	19...	0400	7800	21
08...	1600	1870	15	19...	1600	7800	30
09...	0400	1520	8	20...	0400	9270	16

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WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	SEDI- MENT, SUS- PENDE D (MG/L) (80154)	DATE	TIME	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	SEDI- MENT, SUS- PENDE D (MG/L) (80154)
JUN 1990				JUL 1990			
20...	1600	9270	22	28...	1600	2250	35
21...	0400	8280	21	29...	0400	2270	26
21...	1040	8280	23	29...	1600	2270	34
21...	1050	8280	24	30...	0400	2100	32
21...	1130	8280	15	30...	1600	2100	33
21...	1600	8280	26	31...	0400	2080	28
22...	0400	6270	17	31...	1600	2080	28
22...	1600	6270	30	AUG			
23...	0400	12100	47	01...	0400	2160	25
23...	1600	12100	56	01...	1600	2160	34
24...	0400	12400	28	02...	0400	2170	31
24...	1600	12400	29	02...	1600	2170	32
25...	0400	14200	20	03...	0400	2490	41
25...	1600	14200	27	03...	1600	2490	33
26...	0400	14000	23	04...	0400	2670	39
26...	1600	14000	26	04...	1600	2670	39
27...	0400	13600	34	05...	0400	2420	28
27...	1600	13600	25	05...	1600	2420	30
28...	0400	12900	17	06...	0400	2070	29
28...	1600	12900	28	06...	1600	2070	31
29...	0400	12000	27	07...	0400	2290	28
29...	1600	12000	33	07...	1600	2290	30
30...	0400	10700	27	08...	0400	2360	20
30...	1600	10700	35	08...	1600	2360	39
JUL				09...	0400	2600	26
01...	0400	8940	28	09...	1600	2600	31
01...	1600	8940	43	10...	0400	2440	37
02...	0400	8540	35	10...	1600	2440	30
02...	1600	8540	44	11...	0400	2350	23
03...	0400	6740	27	11...	1600	2350	28
03...	1600	6740	49	12...	0400	2260	22
04...	0400	4690	40	12...	1600	2260	35
04...	1600	4690	48	13...	0400	2220	29
05...	0400	4540	41	13...	1600	2220	30
05...	1600	4540	47	14...	0400	2400	25
06...	0400	4080	39	15...	0810	2310	25
06...	1600	4080	43	15...	0825	2310	24
07...	0400	4100	40	15...	0905	2310	24
07...	1600	4100	43	15...	1600	2310	24
08...	0400	4420	29	16...	0400	2280	43
08...	1600	4420	43	16...	1600	2280	26
09...	0400	4720	28	17...	0400	2300	25
09...	1600	4720	42	17...	1600	2300	24
10...	0400	4670	38	18...	0400	2340	27
10...	1600	4670	39	18...	1600	2340	23
11...	0400	3690	44	19...	0400	3970	31
11...	1600	3690	43	19...	1600	3970	38
12...	0400	2800	39	20...	0400	6440	29
12...	1600	2800	50	20...	1600	6440	22
13...	0400	2230	33	21...	0400	7090	21
13...	1600	2230	48	21...	1600	7090	22
14...	0400	1740	41	22...	0400	8420	22
14...	1600	1740	40	22...	1600	8420	21
15...	0400	1950	32	23...	0400	9380	18
15...	1600	1950	39	23...	1600	9380	21
16...	0400	2360	25	24...	0400	9420	19
16...	1600	2360	32	24...	1600	9420	19
17...	0400	2570	31	25...	0400	9290	17
17...	1600	2570	37	25...	1600	9290	22
19...	1545	2320	29	26...	0400	9210	18
19...	1600	2320	36	26...	1600	9210	24
20...	0400	2240	29	27...	0400	8750	18
20...	1600	2240	25	27...	1600	8750	19
21...	0400	2290	25	28...	0400	7540	12
21...	1600	2290	41	28...	1600	7540	15
22...	0400	3000	21	29...	0400	7300	20
22...	1600	3000	24	29...	1600	7300	18
23...	0400	2860	27	30...	0400	6770	15
23...	1600	2860	25	30...	1600	6770	20
24...	0400	3120	24	31...	0400	6330	14
24...	1600	3120	22	31...	1600	6330	22
25...	0400	2250	17	SEP			
25...	1600	2250	28	01...	0400	6180	17
26...	0400	2180	21	01...	1600	6180	16
26...	1600	2180	31	02...	0400	6000	13
27...	0400	2160	22	02...	1600	6000	15
27...	1600	2160	31	03...	0400	5890	15
28...	0400	2250	25	03...	1600	5890	17

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04084445 FOX RIVER AT APPLETON, WI--CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	DATE	TIME	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	SEDI- MENT, SUS- PENDED (MG/L) (80154)
SEP 1990				SEP 1990			
04...	0400	5260	17	16...	0400	5740	16
04...	1600	5260	13	16...	1600	5740	23
05...	0400	3860	14	17...	0400	5480	22
05...	1600	3860	14	17...	1600	5480	22
06...	0400	3960	16	18...	0400	5770	13
06...	1600	3960	18	18...	1600	5770	21
07...	0400	3980	15	19...	0400	6040	14
07...	1600	3980	13	19...	1600	6040	25
08...	0400	3900	15	20...	0400	6350	14
08...	1600	3900	16	20...	1600	6350	17
09...	0400	3940	19	21...	0400	6510	12
09...	1600	3940	18	21...	1600	6510	19
10...	0400	4030	20	22...	0400	6350	13
10...	1600	4030	13	22...	1600	6350	16
11...	0400	3950	19	23...	0400	6010	10
11...	1600	3950	16	23...	1600	6010	12
12...	0400	4000	23	25...	1030	6290	11
12...	1600	4000	16	*25...	1115	6290	16
13...	0400	3990	13	25...	1600	6290	15
13...	1600	3990	24	26...	1600	5800	16
14...	0400	5730	33	27...	1600	5400	11
14...	1600	5730	25	28...	1600	5260	13
15...	0400	5970	26	29...	1600	5220	19
15...	1600	5970	27	30...	1600	4780	17

* COLLECTED BY EQUAL-WIDTH INCREMENT (EWI).

DATE	TIME	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	TRANS- PAR- ENCY (SECCHI DISK) (M) (00078)	OXYGEN, DIS- SOLVED (MG/L) (00300)	HARD- NESS TOTAL (MG/L AS CaCO3) (00900)	CALCIUM TOTAL RECOV- ERABLE (MG/L AS Ca) (00916)
OCT 1989									
03...	0945	965	385	9.0	15.0	0.60	9.5	190	39
17...	1000	1200	375	8.9	11.5	0.50	10.7	190	38
31...	1710	3620	357	8.6	10.0	0.60	11.1	190	39
NOV									
15...	0840	1950	367	8.6	5.0	0.60	13.4	180	38
DEC									
05...	1535	1990	385	8.8	0.5	0.90	15.9	190	40
JAN 1990									
18...	1215	2690	414	8.6	2.0	3.00	15.0	200	40
FEB									
13...	1400	2200	408	8.5	2.0	3.00	13.9	210	42
MAR									
13...	1425	3530	419	8.1	7.0	0.80	12.2	190	39
19...	1010	9310	390	8.4	2.5	0.70	14.2	220	46
23...	1315	8370	378	8.5	2.5	2.10	13.6	--	--
APR									
02...	1225	3890	376	8.5	4.5	1.50	14.4	200	40
18...	1630	1120	357	8.9	8.0	0.60	16.1	190	39
MAY									
01...	0925	1470	--	--	--	--	--	--	--
01...	1000	1470	--	--	--	--	--	--	--

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WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	MAGNE- SIUM, TOTAL RECOV- ERABLE (MG/L AS MG) (00927)	ALKA- LINITY WAT WH TOT FET LAB MG/L AS CACO3 (00417)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDE (MG/L) (00530)	RESIDUE VOLA- TILE, SUS- PENDE (MG/L) (00535)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)
OCT 1989								
03...	22	168	19	18	26	14	0.050	<0.020
17...	22	162	17	14	26	12	0.080	<0.020
31...	22	163	14	14	29	12	0.090	0.050
NOV								
15...	21	166	14	11	26	13	0.020	0.030
DEC								
05...	22	174	16	11	12	9	0.090	0.090
JAN 1990								
18...	23	181	18	--	4	3	0.100	0.080
FEB								
13...	24	183	17	11	4	4	0.070	0.040
MAR								
13...	23	168	20	10	24	9	0.260	0.210
19...	26	176	14	12	6	4	0.090	0.040
23...	--	--	--	--	--	--	--	--
APR								
02...	24	167	13	8.6	32	11	0.170	0.020
18...	22	164	15	2.9	23	13	0.240	<0.020
MAY								
01...	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--

DATE	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)	CHLORO- PHYLL A TRICHR. UNCORR. WHOLE TOTAL (UG/L) (32210)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT 1989								
03...	1.4	0.100	0.004	10	8.5	63.0	15	100
17...	1.0	0.090	0.005	11	8.3	57.0	22	99
31...	1.1	0.080	0.008	11	7.9	53.0	18	98
NOV								
15...	1.2	0.080	0.006	8.5	7.4	52.0	13	100
DEC								
05...	0.90	0.050	0.006	12	7.8	21.0	4	100
JAN 1990								
18...	1.8	0.060	0.010	10	9.8	4.00	2	99
FEB								
13...	0.90	0.050	0.011	9.1	7.0	5.00	2	96
MAR								
13...	1.4	0.120	0.023	11	8.8	30.0	23	83
19...	0.70	0.030	0.003	8.3	7.0	8.00	3	92
23...	--	--	--	--	--	--	4	90
APR								
02...	0.90	0.060	0.004	--	--	24.0	6	75
18...	1.1	0.076	0.004	11	8.4	44.0	8	95
MAY								
01...	--	--	--	--	--	--	10	78
01...	--	--	--	--	--	--	14	86

STREAMS TRIBUTARY TO LAKE MICHIGAN
04084445 FOX RIVER AT APPLETON, WI--CONTINUED

SEDIMENT, SUSPENDED CONCENTRATION (MG/L), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10	15	10	1	62	7	8	9	23	31	26	14
2	15	14	10	1	15	10	14	9	32	33	28	12
3	16	12	11	1	9	32	12	13	45	34	31	14
4	13	19	11	1	7	38	8	6	26	38	32	13
5	16	20	8	1	9	12	6	11	21	37	25	12
6	13	23	6	2	16	12	5	11	28	35	26	14
7	10	17	5	3	30	11	6	13	24	35	24	12
8	8	24	4	2	32	78	14	13	35	31	25	13
9	7	21	19	4	27	172	10	10	57	31	26	16
10	10	19	41	5	7	77	11	9	47	34	28	14
11	13	23	4	43	14	35	12	13	40	37	22	15
12	15	18	4	82	58	24	14	9	36	37	25	16
13	12	18	7	6	53	23	15	13	42	35	25	17
14	14	18	12	3	12	36	17	18	34	34	22	24
15	15	17	7	10	29	46	19	19	23	30	23	22
16	18	17	49	19	47	107	19	15	21	25	28	18
17	21	19	73	7	40	37	16	24	30	29	21	18
18	22	14	6	15	33	16	16	16	28	29	22	14
19	12	10	6	25	28	7	18	16	21	27	29	17
20	10	14	6	19	23	3	30	26	17	23	21	13
21	10	13	7	6	19	2	27	29	19	28	19	13
22	10	17	8	10	16	3	25	25	23	20	18	12
23	13	17	8	5	14	5	32	18	41	22	17	10
24	15	15	9	7	11	3	35	18	24	19	16	10
25	16	13	10	13	10	6	33	13	21	20	16	12
26	15	12	6	50	8	3	34	15	22	22	18	13
27	15	11	1	122	7	3	38	15	24	23	16	10
28	22	10	2	5	5	3	39	17	20	26	12	11
29	19	11	3	11	---	3	37	20	25	26	16	15
30	22	11	1	19	---	3	19	24	27	27	15	15
31	24	---	2	31	---	5	---	27	---	24	16	---
TOTAL	451	482	356	529	641	822	589	494	876	902	688	429

WTR YR 1990 TOTAL 7259

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	28	182	80	7.7	360	51	89	37	403	747	151	234
2	43	169	56	9.4	92	61	152	36	471	763	165	200
3	42	166	57	8.3	52	176	133	55	718	614	211	223
4	36	284	56	7.6	43	204	90	24	373	479	232	183
5	45	290	43	5.6	50	64	69	43	409	458	163	126
6	37	308	32	13	94	65	54	46	683	390	143	152
7	26	202	31	22	178	58	70	60	467	385	150	130
8	22	253	34	12	190	423	173	65	370	366	162	142
9	20	188	165	25	166	1228	117	41	600	395	180	171
10	27	156	348	35	44	628	123	37	495	426	182	157
11	39	212	35	266	82	287	126	81	439	366	139	163
12	41	153	32	532	349	236	103	62	447	281	152	169
13	34	138	60	40	318	217	121	87	665	213	151	187
14	38	135	104	21	84	775	134	133	607	159	141	374
15	40	87	54	66	247	1086	146	187	393	156	143	348
16	49	76	345	126	404	2606	153	277	332	162	169	271
17	68	102	588	47	336	910	92	439	568	204	132	267
18	120	76	30	111	279	406	49	336	533	190	137	225
19	69	53	36	176	232	166	57	438	452	168	311	271
20	60	70	45	134	193	86	95	786	427	139	372	226
21	58	60	47	40	161	61	88	905	428	171	360	231
22	60	83	49	61	133	82	84	783	389	165	408	206
23	83	86	54	32	94	103	119	557	1354	168	422	154
24	112	64	62	41	62	132	132	539	799	162	402	167
25	140	56	59	80	51	137	119	350	784	119	413	203
26	134	61	39	366	42	66	130	354	825	131	444	211
27	135	59	5.8	1043	40	45	149	364	870	135	368	150
28	200	52	11	38	36	47	161	396	705	157	250	154
29	165	63	18	99	---	37	150	450	827	159	314	211
30	196	89	8.9	166	---	33	76	511	770	156	272	192
31	238	---	12	220	---	52	---	503	---	135	268	---
TOTAL	2405	3973	2596.7	3850.6	4412	10458	3354	8982	17603	8719	7507	6098

WTR YR 1990 TOTAL 79958.3

04084445 FOX RIVER AT APPLETON, WI--CONTINUED

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16.3	9.7	1.3	---	---	---	6.2	15.0	17.1	23.3	23.7	23.1
2	16.6	8.5	1.5	---	---	---	5.0	14.0	17.8	23.5	23.8	23.2
3	14.7	6.9	1.9	---	---	---	4.4	14.1	16.2	24.4	23.4	22.8
4	13.5	6.3	1.8	---	---	---	5.6	13.8	15.3	25.6	23.7	22.9
5	12.8	6.7	1.7	---	---	---	5.4	13.8	15.3	25.3	23.3	24.0
6	12.4	7.0	1.8	---	---	---	4.5	14.3	15.1	23.8	21.7	24.1
7	11.6	6.9	1.4	---	---	---	4.6	15.7	16.6	22.8	21.4	23.3
8	11.5	7.1	---	---	---	---	5.6	17.0	17.6	22.3	22.8	22.0
9	11.2	6.7	---	---	---	---	6.8	15.0	17.8	23.5	23.2	21.9
10	11.2	5.8	---	---	---	---	6.6	11.1	18.3	23.4	22.8	22.6
11	11.6	5.3	---	---	---	---	6.0	10.4	19.7	22.6	22.1	22.3
12	12.6	5.2	---	---	---	---	5.5	11.7	19.9	21.8	21.6	22.5
13	12.9	5.0	---	---	---	---	6.6	13.4	20.7	20.9	21.2	23.3
14	13.4	5.2	---	---	---	---	7.8	14.1	21.1	20.7	21.9	21.9
15	13.8	5.0	---	---	---	---	8.5	13.5	21.1	20.6	22.5	20.7
16	13.6	3.9	---	---	---	5.5	8.2	13.5	20.6	21.4	23.3	19.7
17	12.0	2.2	---	---	---	4.7	5.4	13.2	21.6	22.6	23.6	18.7
18	10.1	2.1	---	---	---	3.8	4.8	12.6	21.6	23.3	23.5	18.6
19	7.9	1.9	---	---	---	3.3	6.8	12.4	21.0	23.6	22.0	17.9
20	6.8	1.6	---	---	---	3.9	9.2	10.8	21.2	23.4	20.8	18.2
21	6.9	1.8	---	---	---	4.2	9.3	11.4	21.3	23.8	20.5	18.1
22	7.6	1.6	---	---	---	4.0	10.3	12.8	21.7	23.8	21.0	16.7
23	8.7	1.5	---	---	---	3.2	13.0	13.5	18.4	23.6	22.0	15.5
24	9.8	1.8	---	---	---	2.7	15.8	14.2	19.1	24.2	22.2	15.2
25	11.0	2.2	---	---	---	2.6	16.4	15.2	21.6	24.3	22.9	15.6
26	11.7	2.6	---	---	---	2.6	17.8	15.7	21.4	24.7	23.0	16.4
27	12.2	1.9	---	---	---	3.1	18.9	16.3	21.6	24.0	23.5	17.2
28	12.3	1.8	---	---	---	3.9	18.6	16.7	21.5	23.9	24.3	17.1
29	12.4	1.3	---	---	---	3.9	17.3	16.6	22.2	24.2	24.0	16.1
30	12.4	1.0	---	---	---	3.9	16.8	16.4	23.1	24.1	23.8	15.2
31	11.1	---	---	---	---	5.4	---	16.8	---	23.1	23.5	---
MEAN	11.7	4.2	---	---	---	---	9.3	14.0	19.6	23.3	22.7	19.9
MAX	16.6	9.7	---	---	---	---	18.9	17.0	23.1	25.6	24.3	24.1
MIN	6.8	1.0	---	---	---	---	4.4	10.4	15.1	20.6	20.5	15.2

STREAMS TRIBUTARY TO LAKE MICHIGAN

04084475 FOX RIVER AT STATE HIGHWAY 55 AT KAUKAUNA, WI

LOCATION.--Lat 44°16'50", long 88°16'07", in N 1/2 sec.22, T.21 N., R.18 E., Outagamie County, Hydrologic Unit 04030204, at State Highway 55.

DRAINAGE AREA.--5,980 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1988 to September 1990 (discontinued).

GAGE.--None.

REMARKS.--Estimated daily discharges: Oct. 1, 1988 to Sept. 30, 1990. Daily discharges were estimated by multiplying daily discharges from Fox River at Appleton, 04084445, by the drainage area ratio between the two sites of 1.005. Records poor.

EXTREMES FOR CURRENT PERIOD.--

WATER YEAR 1989: Maximum daily discharge, 14,500 ft³/s, June 2-3; minimum daily discharge, 1,060 ft³/s, Sept. 24.

WATER YEAR 1990: Maximum daily discharge, 14,200 ft³/s, June 25; minimum daily discharge, 970 ft³/s, Oct. 3.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2580	2080	5000	3010	3620	1810	9000	1680	14400	2260	1740	1430
2	2550	2070	5610	2710	3420	2110	9140	1740	14500	1880	1900	1420
3	2580	2100	5510	2910	3520	2310	9430	1860	14500	1720	1940	1450
4	3140	2120	5460	2810	3520	2110	9500	2180	14300	1850	1920	1480
5	3330	2170	5070	2810	3420	2110	9120	2110	13700	1850	2150	1390
6	3470	2190	4570	2910	3520	3220	8610	1880	13800	1830	1770	1350
7	3690	2950	4220	2910	3320	4120	8210	1930	12900	1770	1650	1360
8	3530	3400	3220	2110	3320	4120	7840	1980	11300	1710	1700	1360
9	3430	3600	2810	3010	3420	4120	7810	2010	9760	1890	1750	1300
10	3350	4100	2710	2910	3420	4310	7950	1990	8160	1990	1760	1320
11	3090	4100	2710	2710	3420	4300	6680	1970	8180	1800	1770	1360
12	3120	4140	2710	2710	3320	4290	4630	2030	7980	1580	1720	1300
13	3300	4150	2710	2810	3520	3890	4240	2100	8000	1700	1790	1290
14	2910	4120	2810	2810	3820	3970	2440	2160	7830	1800	1740	1300
15	2310	4110	2710	2710	3420	4260	2780	2240	6340	1840	1630	1300
16	2230	4770	2810	2810	2810	4290	2900	2240	4900	1820	1620	1300
17	1870	4970	2710	2710	2810	4210	2800	2260	5070	1780	1730	1320
18	2240	5960	2710	2710	2810	4330	2130	2340	5180	2070	1660	1350
19	2200	6410	2810	2910	2710	4320	1190	2370	5220	1880	1670	1360
20	2180	6320	2810	2810	2710	4300	1170	2260	5160	1670	1630	1330
21	2200	6350	2910	2810	2610	4300	1190	2300	5090	1740	1570	1320
22	2130	6100	2910	2810	2510	4240	1210	2300	5050	1830	1670	1400
23	2230	5220	3010	2810	2510	4230	1250	2310	5060	1900	1540	1170
24	2220	4610	2910	2910	2510	4420	1290	2340	5010	1890	1360	1060
25	2840	4540	2810	2910	2710	4770	1380	4360	4940	1850	1420	1230
26	3360	4570	2810	3010	2610	5500	1410	4890	5010	1840	1470	1100
27	3390	4750	2910	2910	3220	6140	1410	5240	4270	1840	1490	1120
28	2640	4610	2810	2910	2610	7540	1420	5410	3600	1590	1490	1210
29	2070	4680	2710	2910	---	8530	1510	5170	3220	1680	1440	1150
30	2080	4630	2810	2910	---	8700	1610	6900	3140	1730	1480	1130
31	2210	---	3010	3520	---	8840	---	14000	---	1720	1410	---
TOTAL	84470	125890	103290	88220	87140	139710	131250	96550	235570	56300	51580	38960
MEAN	2725	4196	3332	2846	3112	4507	4375	3115	7852	1816	1664	1299
MAX	3690	6410	5610	3520	3820	8840	9500	14000	14500	2260	2150	1480
MIN	1870	2070	2710	2110	2510	1810	1170	1680	3140	1580	1360	1060
CFSM	.46	.70	.56	.48	.52	.75	.73	.52	1.31	.30	.28	.22
IN.	.53	.78	.64	.55	.54	.87	.82	.60	1.47	.35	.32	.24

WTR YR 1989 TOTAL 1238930 MEAN 3394 MAX 14500 MIN 1060 CFSM .57 IN. 7.71

STREAMS TRIBUTARY TO LAKE MICHIGAN

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04084475 FOX RIVER AT STATE HIGHWAY 55 AT KAUKAUNA, WI--CONTINUED

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1020	4410	2960	2310	2160	2600	4250	1480	6390	8980	2170	6210
2	1060	4540	2110	2410	2240	2330	3910	1530	5490	8580	2180	6030
3	970	5080	1930	2310	2240	2030	4280	1530	5950	6780	2500	5920
4	990	5610	1970	2410	2210	1990	4430	1520	5390	4720	2690	5290
5	1060	5460	2000	2410	2200	1970	4310	1520	7430	4560	2430	3880
6	1070	4910	2000	2310	2190	1980	4390	1590	8960	4100	2080	3980
7	1020	4410	2340	2410	2240	1980	4420	1770	7320	4120	2300	4000
8	1010	4000	3100	2410	2220	2020	4470	1880	3890	4440	2370	3920
9	1040	3300	3160	2510	2280	2650	4420	1520	3920	4740	2610	3960
10	1050	3060	3160	2510	2260	3020	4180	1620	3930	4690	2450	4050
11	1090	3360	3160	2310	2220	3080	3760	2350	4090	3710	2360	3970
12	1040	3100	3100	2410	2220	3630	2800	2540	4630	2810	2270	4020
13	1020	2890	3160	2510	2210	3550	2960	2460	5910	2250	2230	4010
14	1010	2790	3130	2310	2690	8110	2960	2820	6660	1740	2410	5750
15	1000	1960	2910	2410	3130	8740	2920	3720	6360	1960	2330	6000
16	1030	1630	2610	2510	3170	9090	2940	6980	5810	2370	2290	5760
17	1200	2020	3010	2680	3160	9110	2190	6680	6960	2590	2310	5510
18	2050	1990	2010	2710	3130	9240	1120	7690	6990	2480	2350	5800
19	2100	2030	2310	2660	3120	9360	1140	9900	7840	2330	3990	6070
20	2150	1840	2610	2650	3090	9530	1190	11200	9320	2250	6470	6380
21	2250	1660	2510	2700	3090	9550	1220	11500	8320	2310	7130	6550
22	2320	1880	2410	2300	3040	9140	1240	11500	6300	3010	8460	6380
23	2340	1900	2410	2180	2570	8410	1380	11600	12200	2870	9430	6040
24	2800	1610	2510	2260	2030	8670	1420	11400	12400	3140	9470	6080
25	3350	1590	2310	2240	2010	8810	1340	10300	14200	2260	9340	6320
26	3350	1840	2410	2710	1970	7950	1410	9010	14100	2190	9260	5830
27	3450	2020	2410	3190	2250	5890	1470	8940	13700	2170	8790	5420
28	3380	1910	2310	3130	2630	5920	1530	8910	13000	2260	7580	5290
29	3310	2240	2410	3220	---	4990	1490	8380	12100	2280	7340	5250
30	3300	3100	2410	3230	---	4210	1500	7880	10800	2110	6810	4800
31	3640	---	2310	2640	---	4220	---	6860	---	2090	6360	---
TOTAL	57470	88140	79150	78960	69970	173770	81040	178580	240360	106890	142760	158470
MEAN	1854	2938	2553	2547	2499	5605	2701	5761	8012	3448	4605	5282
MAX	3640	5610	3160	3230	3170	9550	4470	11600	14200	8980	9470	6550
MIN	970	1590	1930	2180	1970	1970	1120	1480	3890	1740	2080	3880
CFSM	.31	.49	.43	.43	.42	.94	.45	.96	1.34	.58	.77	.88
IN.	.36	.55	.49	.49	.44	1.08	.50	1.11	1.50	.66	.89	.99

CAL YR 1989 TOTAL 1150040 MEAN 3151 MAX 14500 MIN 970 CFSM .53 IN. 7.15
WTR YR 1990 TOTAL 1455560 MEAN 3988 MAX 14200 MIN 970 CFSM .67 IN. 9.05

04084475 FOX RIVER AT STATE HIGHWAY 55 AT KAUKAUNA, WI--CONTINUED

WATER-QUALITY RECORDS

PERIOD OF RECORD.--April 1989 to September 1990 (discontinued).

PERIOD OF DAILY RECORD.--

SUSPENDED-SEDIMENT DISCHARGE: May 1989 to September 1990 (discontinued).

REMARKS.--Records fair. Suspended-sediment discharge computed using discharges from Fox River at Appleton, 04084445, multiplied times the drainage area ratio between the two sites of 1.005. Samples for chemical analysis were composite samples of water pumped from multiple fixed points in the stream cross section. Suspended-sediment samples collected at a single vertical in the stream cross section. Chemical analyses by Wisconsin State Laboratory of Hygiene.

COOPERATION.--Observer provided by U.S. Army Corps of Engineers.

EXTREMES FOR CURRENT PERIOD.--

MAY TO SEPTEMBER 1989:

SUSPENDED-SEDIMENT CONCENTRATIONS: Maximum observed, 219 mg/L, May 30; minimum observed, 12 mg/L, June 1.

SUSPENDED-SEDIMENT DISCHARGE: Maximum daily, 3,480 tons, May 30; minimum daily, 68 tons, Sept. 30.

WATER YEAR 1990:

SUSPENDED-SEDIMENT CONCENTRATIONS: Maximum observed, 55 mg/L, Mar. 14; minimum observed, 0 mg/L, Dec. 18, Jan. 4, 10, 12, and 16.

SUSPENDED-SEDIMENT DISCHARGE: Maximum daily, 1,800 tons, June 23; minimum daily, 3.7 tons, Jan. 6.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	DATE	TIME	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	SEDI- MENT, SUS- PENDED (MG/L) (80154)
APR 1989				JUL 1989			
20...	0830	1170	43	14...	0805	1800	38
21...	0900	1190	48	17...	0804	1780	58
24...	1430	1290	31	18...	0920	2070	42
25...	1353	1380	50	19...	0815	1880	46
26...	0802	1410	53	20...	0802	1670	37
27...	0800	1410	42	21...	1032	1740	37
28...	0753	1420	35	24...	0750	1890	35
MAY				25...	0811	1850	35
01...	0755	1680	31	26...	0755	1840	29
02...	0910	1740	42	27...	0753	1840	56
03...	0815	1860	25	28...	0835	1590	77
04...	1522	2180	32	AUG			
05...	0816	2110	47	01...	1040	1740	54
08...	0830	1980	21	02...	0805	1900	53
09...	1248	2010	23	03...	0750	1940	46
10...	1520	1990	24	04...	0759	1920	62
11...	1456	1970	27	07...	0800	1650	67
15...	1427	2240	26	08...	0802	1700	61
16...	1521	2240	42	09...	0845	1750	51
17...	0810	2260	43	10...	0800	1760	53
18...	1242	2340	47	11...	1352	1770	42
19...	0950	2370	55	14...	0830	1740	42
22...	1506	2300	51	15...	0806	1630	38
23...	0820	2310	44	16...	0918	1620	37
24...	1506	2340	18	17...	0830	1730	39
25...	0802	4360	32	18...	0800	1660	35
26...	0832	4890	47	21...	1200	1570	33
30...	1530	6900	219	22...	0825	1670	48
31...	0805	14000	88	23...	0803	1540	52
JUN				24...	0827	1360	69
01...	1534	14400	12	25...	0754	1420	62
02...	1507	14500	38	28...	0757	1490	53
05...	0802	13700	31	29...	0750	1440	53
06...	0813	13800	31	30...	0832	1480	49
07...	0832	12900	46	31...	0752	1410	41
08...	1521	11300	54	SEP			
09...	0820	9760	36	01...	0755	1430	71
12...	0801	7980	34	02...	1120	1420	26
13...	0815	8000	43	05...	0800	1390	50
14...	1419	7830	48	06...	0755	1350	40
15...	0755	6340	40	07...	0810	1360	48
16...	0750	4900	33	08...	0834	1360	33
19...	0800	5220	24	11...	0800	1360	46
20...	0845	5160	36	12...	0803	1300	46
21...	0845	5090	29	13...	0800	1290	48
21...	1517	5090	33	14...	0756	1300	33
22...	0850	5050	33	15...	0845	1300	45
23...	1040	5060	32	18...	1200	1350	35
26...	0800	5010	33	19...	1200	1360	37
28...	1528	3600	68	20...	0754	1330	31
29...	0814	3220	64	22...	0853	1400	28
30...	1200	3140	69	25...	0826	1230	44
JUL				26...	1445	1100	34
10...	0810	1990	43	27...	0830	1120	32
11...	0952	1800	45	28...	0841	1210	34
13...	1145	1700	43	29...	0820	1150	21

04084475 FOX RIVER AT STATE HIGHWAY 55 AT KAUKAUNA, WI--CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	DATE	TIME	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	SEDI- MENT, SUS- PENDED (MG/L) (80154)
OCT 1989				FEB 1990			
02...	0825	1060	24	01...	0800	2160	4
03...	0805	970	47	02...	0815	2240	4
04...	0800	990	45	05...	0830	2200	3
05...	0819	1060	48	06...	0815	2190	1
06...	0800	1070	35	07...	0821	2240	6
10...	1500	1050	42	08...	0840	2220	3
11...	1500	1090	27	09...	0823	2280	6
12...	0825	1040	29	12...	0812	2220	20
13...	0830	1020	54	13...	0800	2210	3
16...	0804	1030	46	14...	0810	2690	4
17...	0802	1200	42	15...	0850	3130	2
18...	0800	2050	36	16...	0822	3170	2
19...	0800	2100	38	20...	0849	3090	4
20...	0850	2150	20	21...	0831	3090	2
23...	0830	2340	25	22...	0902	3040	2
24...	0804	2800	25	23...	0830	2570	7
25...	0755	3350	30	26...	0832	1970	5
26...	0800	3350	28	27...	0810	2250	3
27...	0814	3450	22	28...	0802	2630	6
30...	0810	3300	26	MAR			
31...	0759	3640	25	01...	0815	2600	4
NOV				02...	0800	2330	6
01...	0810	4410	29	05...	0815	1970	2
02...	0800	4540	20	06...	0812	1980	4
03...	0820	5080	16	07...	0901	1980	2
06...	1240	4910	33	08...	0838	2020	2
07...	0805	4410	27	09...	0902	2650	2
08...	0803	4000	27	12...	1400	3630	49
09...	0815	3300	22	13...	0812	3550	50
13...	0750	2890	23	14...	0830	8110	55
14...	1353	2790	20	15...	0827	8740	38
15...	0805	1960	24	16...	0805	9090	28
16...	0832	1630	21	19...	0856	9360	4
17...	0834	2020	19	20...	0813	9530	7
20...	0830	1840	12	21...	0802	9550	10
21...	0835	1660	15	22...	0851	9140	9
22...	1523	1880	30	23...	0805	8410	8
27...	0825	2020	17	26...	0802	7950	7
28...	1402	1910	17	27...	0800	5890	6
29...	1422	2240	17	28...	0815	5920	8
30...	0820	3100	13	29...	0759	4990	7
DEC				30...	0753	4210	5
01...	0816	2960	12	APR			
04...	0820	1970	9	02...	0755	3910	6
05...	0825	2000	9	03...	0754	4280	8
06...	0820	2000	8	04...	0810	4430	10
07...	1512	2340	5	05...	0755	4310	6
08...	0841	3100	6	06...	0850	4390	9
11...	1503	3160	9	09...	0817	4420	9
12...	0838	3100	15	10...	0757	4180	14
13...	1330	3160	9	11...	1107	3760	15
14...	0904	3130	8	12...	0758	2800	13
15...	0845	2910	6	13...	0751	2960	15
18...	1400	2010	0	17...	0741	2190	27
19...	0830	2310	2	18...	0801	1120	25
20...	0830	2610	2	19...	0800	1140	15
21...	1500	2510	1	20...	0815	1190	23
22...	1450	2410	3	23...	0800	1380	15
28...	1245	2310	2	24...	0900	1420	25
JAN 1990				25...	0800	1340	24
02...	0830	2410	2	26...	0800	1410	28
03...	0815	2310	1	27...	1500	1470	32
04...	1510	2410	0	30...	0941	1500	32
05...	1350	2410	1	MAY			
08...	1405	2410	1	01...	0801	1480	35
10...	0806	2510	0	02...	0811	1530	16
11...	0804	2310	2	03...	0759	1530	12
12...	0809	2410	0	04...	0757	1520	14
16...	0802	2510	0	07...	0751	1770	10
17...	0801	2680	3	08...	0755	1880	13
18...	0758	2710	8	09...	1303	1520	14
19...	0858	2660	5	10...	0755	1620	28
22...	0800	2300	9	11...	0810	2350	14
23...	0815	2180	5	14...	0840	2820	9
24...	0804	2260	3	15...	0815	3720	7
25...	0821	2240	6	16...	0800	6980	10
26...	0800	2710	3	17...	0818	6680	20
29...	0830	3220	4	18...	0810	7690	26
30...	0910	3230	4	21...	0810	11500	38
31...	1400	2640	5	22...	0800	11500	48

STREAMS TRIBUTARY TO LAKE MICHIGAN

04084475 FOX RIVER AT STATE HIGHWAY 55 AT KAUKAUNA, WI--CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	DATE	TIME	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	SEDI- MENT, SUS- PENDED (MG/L) (80154)
MAY 1990				JUL 1990			
23...	0803	11600	25	27...	0800	2170	20
24...	0803	11400	13	30...	0808	2110	22
25...	0812	10300	25	31...	0827	2090	26
29...	0830	8380	15	AUG			
30...	0814	7880	11	01...	0748	2170	26
31...	0841	6860	17	02...	0808	2180	25
JUN				03...	0758	2500	23
01...	0803	6390	12	07...	0820	2300	25
02...	1530	5490	33	08...	0830	2370	26
04...	0803	5390	29	09...	1024	2610	24
05...	0758	7430	25	10...	0812	2450	18
06...	0807	8960	26	13...	0800	2230	23
07...	0813	7320	21	14...	0830	2410	27
08...	1427	3890	24	15...	0758	2330	29
11...	0830	4090	18	16...	0821	2290	29
12...	1500	4630	35	17...	0758	2310	28
13...	0749	5910	35	20...	0802	6470	38
14...	0754	6660	24	21...	0759	7130	50
15...	0758	6360	43	22...	1318	8460	29
18...	1502	6990	43	23...	0758	9430	46
19...	0804	7840	36	24...	0806	9470	22
20...	1504	9320	29	27...	0802	8790	47
21...	0800	8320	23	28...	0759	7580	21
22...	0800	6300	37	28...	1200	7580	19
25...	1300	14200	30	29...	0807	7340	26
26...	0758	14100	23	30...	0757	6810	26
27...	0747	13700	30	31...	0821	6360	29
JUL				SEP			
02...	0805	8580	34	04...	0820	5290	18
03...	0803	6780	34	05...	0800	3880	26
05...	0757	4560	31	06...	0800	3980	20
06...	0745	4100	38	07...	0830	4000	19
09...	0754	4740	36	10...	0759	4050	25
10...	0759	4690	41	11...	0758	3970	17
11...	0800	3710	42	12...	0810	4020	18
12...	0815	2810	41	13...	0801	4010	24
13...	0807	2250	44	14...	0759	5750	28
16...	0758	2370	53	17...	0854	5510	29
17...	0801	2590	34	18...	0800	5800	20
18...	0810	2480	36	19...	0815	6070	27
19...	0825	2330	38	20...	0840	6380	21
20...	0800	2250	34	21...	0759	6550	24
23...	0756	2870	29	24...	0802	6080	16
24...	0820	3140	33	25...	0812	6320	20
25...	0749	2260	30	25...	1220	6320	17
26...	0801	2190	22	26...	0745	5830	27

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04084475 FOX RIVER AT STATE HIGHWAY 55 AT KAUKAUNA, WI--CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	TRANS- PAR- ENCY (SECCHI DISK) (M) (00078)	OXYGEN, DIS- SOLVED (MG/L) (00300)	HARD- NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM TOTAL RECOV- ERABLE (MG/L AS CA) (00916)
APR 1989									
19...	1540	1190	412	8.4	9.0	0.80	12.4	180	33
MAY									
03...	1315	1860	427	8.7	11.5	0.50	11.1	200	40
16...	1520	2240	399	8.7	17.5	0.60	10.3	190	39
JUN									
01...	1400	14400	344	8.3	18.0	--	10.0	170	32
14...	1525	7830	357	8.1	18.0	0.70	9.0	160	30
*27...	1435	4270	350	8.6	25.0	0.60	9.0	160	34
*27...	1630	4270	349	8.6	25.0	0.60	9.5	170	35
JUL									
11...	1150	1800	374	8.4	26.5	0.50	6.7	160	33
26...	1440	1840	365	8.8	28.0	0.40	10.4	170	35
AUG									
09...	1310	1750	375	9.0	23.0	0.40	11.1	160	34
23...	1125	1540	348	9.0	24.0	0.40	7.9	150	30
SEP									
06...	0800	1350	383	8.7	21.5	0.50	8.9	190	40
20...	0815	1330	403	8.8	20.0	0.60	8.8	190	39

DATE	MAGNE- SIUM, TOTAL RECOV- ERABLE (MG/L AS MG) (00927)	ALKA- LINIT WAT WH TOT FET LAB (MG/L AS CACO3) (00417)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDED (MG/L) (00530)	RESIDUE VOLA- TILE, SUS- PENDED (MG/L) (00535)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)
APR 1989								
19...	23	168	18	2.3	25	12	0.260	0.070
MAY								
03...	24	171	24	<0.20	24	12	0.230	0.180
16...	23	167	20	<0.20	28	13	0.150	0.070
JUN								
01...	21	148	14	0.30	37	17	0.190	0.090
14...	20	150	14	3.2	25	11	0.260	0.170
27...	19	149	14	5.4	32	18	0.100	0.020
27...	19	149	14	5.3	31	16	0.090	<0.020
JUL								
11...	19	146	18	8.5	39	21	0.130	0.090
26...	20	145	20	12	38	20	0.040	0.030
AUG								
09...	19	153	20	12	45	22	<0.020	<0.020
23...	18	136	20	15	40	20	0.040	0.060
SEP								
06...	22	160	20	22	30	16	0.050	0.020
20...	22	161	20	20	22	12	0.050	0.060

DATE	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)	CHLORO- PHYLL A TRICHR. UNCORR. WHOLE TOTAL (UG/L) (32210)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
APR 1989								
19...	1.2	0.100	--	6.7	6.7	31.0	12	95
MAY								
03...	1.4	0.100	0.004	7.3	6.6	38.0	14	98
16...	1.3	0.110	0.004	7.0	6.6	36.0	14	98
JUN								
01...	1.4	0.120	0.005	6.4	6.3	24.0	24	85
14...	1.3	0.100	0.012	7.9	6.9	27.0	15	95
27...	1.2	0.100	0.005	7.1	5.7	44.0	24	77
27...	1.1	0.100	0.004	7.2	6.4	43.0	--	--
JUL								
11...	1.9	0.140	0.005	11	7.3	100	25	82
26...	2.4	0.160	0.004	11	8.3	140	16	98
AUG								
09...	1.9	0.150	0.007	8.9	7.7	120	27	93
23...	1.6	0.160	0.011	8.8	7.3	92.0	22	99
SEP								
06...	1.5	0.130	0.008	7.3	7.2	50.0	18	98
20...	1.7	0.110	0.013	9.0	7.2	64.0	14	100

* SAMPLES WITH SAME DATES ARE REPLICATES.

STREAMS TRIBUTARY TO LAKE MICHIGAN

04084475 FOX RIVER AT STATE HIGHWAY 55 AT KAUKAUNA, WI--CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS-CHARGE, IN CUBIC FEET PER SECOND (00060)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	TRANS- PAR- ENCY (SECCHI DISK) (M) (00078)	OXYGEN, DIS- SOLVED (MG/L) (00300)	HARD- NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM TOTAL RECOV- ERABLE (MG/L AS CA) (00916)
OCT 1989									
03...	1235	970	413	9.0	15.0	0.60	9.4	200	42
17...	1305	1200	400	8.8	12.0	0.50	9.9	180	38
NOV									
01...	0830	4410	370	8.3	9.0	0.60	10.8	190	40
15...	1530	1960	387	8.7	5.0	0.50	13.2	190	40
DEC									
*06...	1225	2000	396	8.5	1.0	0.60	15.6	200	42
*06...	1300	2000	--	--	--	--	--	190	39
JAN 1990									
18...	0830	2710	433	8.4	2.0	2.10	14.2	200	41
FEB									
14...	1050	2690	427	8.4	1.0	2.70	14.6	200	42
MAR									
13...	1645	3550	425	8.0	7.0	0.90	12.1	210	43
APR									
02...	1455	3910	380	8.5	5.0	1.10	13.7	200	40
18...	1430	1120	376	8.7	8.5	0.60	14.6	190	40

DATE	MAGNE- SIUM, TOTAL RECOV- ERABLE (MG/L AS MG) (00927)	ALKA- LINITY WAT WH TOT FET LAB (MG/L AS CACO3) (00417)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDE (MG/L) (00530)	RESIDUE VOLA- TILE, SUS- PENDE (MG/L) (00535)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)
OCT 1989								
03...	23	170	22	17	25	14	0.050	0.090
17...	21	161	21	12	28	14	0.070	0.150
NOV								
01...	22	164	16	14	30	13	0.110	0.120
15...	21	168	17	11	28	13	0.070	0.110
DEC								
06...	23	175	18	--	12	7	0.090	0.230
06...	22	175	18	--	9	6	0.090	0.230
JAN 1990								
18...	23	182	22	--	6	4	0.120	0.170
FEB								
14...	24	182	19	11	4	3	0.090	0.120
MAR								
13...	24	168	22	10	22	11	0.220	0.200
APR								
02...	24	166	14	8.2	18	9	0.190	0.060
18...	22	164	17	2.8	26	13	0.230	0.070

DATE	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)	CHLORO- PHYLL A TRICHR. UNCORR. WHOLE TOTAL (UG/L) (32210)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT 1989								
03...	1.4	0.120	0.008	9.1	8.6	62.0	15	99
17...	1.4	0.120	0.010	12	9.2	63.0	23	99
NOV								
01...	1.2	0.090	0.010	10	7.9	51.0	20	100
15...	1.4	0.110	0.021	10	7.4	59.0	15	100
DEC								
06...	2.3	0.117	0.021	12	8.7	--	5	100
06...	1.1	0.060	0.017	12	8.2	14.0	--	--
JAN 1990								
18...	1.0	0.050	0.017	13	8.9	5.00	3	94
FEB								
14...	1.0	0.040	0.014	9.3	7.7	5.00	3	93
MAR								
13...	1.3	0.110	0.018	13	8.6	32.0	17	94
APR								
02...	1.0	0.050	0.007	--	--	26.0	7	87
18...	1.2	0.095	0.004	12	8.4	--	11	97

* SAMPLES WITH SAME DATES ARE REPLICATES.

STREAMS TRIBUTARY TO LAKE MICHIGAN

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04084475 FOX RIVER AT STATE HIGHWAY 55 AT KAUKAUNA, WI--CONTINUED

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	151	753	351	255	225
2	---	---	---	---	---	---	---	176	1220	244	270	115
3	---	---	---	---	---	---	---	137	1380	190	260	129
4	---	---	---	---	---	---	---	189	1260	202	324	165
5	---	---	---	---	---	---	---	228	1140	205	400	175
6	---	---	---	---	---	---	---	113	1270	205	326	153
7	---	---	---	---	---	---	---	106	1600	201	293	162
8	---	---	---	---	---	---	---	113	1550	196	272	126
9	---	---	---	---	---	---	---	123	973	219	246	132
10	---	---	---	---	---	---	---	128	774	235	241	150
11	---	---	---	---	---	---	---	140	767	219	206	169
12	---	---	---	---	---	---	---	147	782	189	194	164
13	---	---	---	---	---	---	---	151	941	195	203	155
14	---	---	---	---	---	---	---	154	985	193	194	127
15	---	---	---	---	---	---	---	165	668	224	168	152
16	---	---	---	---	---	---	---	234	426	254	164	144
17	---	---	---	---	---	---	---	268	396	259	176	135
18	---	---	---	---	---	---	---	300	367	244	159	130
19	---	---	---	---	---	---	---	346	376	223	156	132
20	---	---	---	---	---	---	---	328	486	169	149	111
21	---	---	---	---	---	---	---	326	456	171	149	105
22	---	---	---	---	---	---	---	315	441	178	213	108
23	---	---	---	---	---	---	---	244	436	183	229	92
24	---	---	---	---	---	---	---	142	435	181	244	91
25	---	---	---	---	---	---	---	394	434	169	237	136
26	---	---	---	---	---	---	---	686	478	172	232	104
27	---	---	---	---	---	---	---	1280	554	289	223	99
28	---	---	---	---	---	---	---	2020	620	317	214	101
29	---	---	---	---	---	---	---	1960	568	315	201	69
30	---	---	---	---	---	---	---	3480	565	297	189	68
31	---	---	---	---	---	---	---	2940	---	270	182	---
TOTAL	---	---	---	---	---	---	---	17484	23101	6959	6969	3924

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	64	321	94	11	21	29	68	120	250	797	150	421
2	81	243	61	9.5	21	31	71	65	426	777	143	361
3	117	276	50	4.6	20	19	97	53	498	609	163	313
4	122	551	47	4.2	18	12	106	57	410	410	210	278
5	128	540	47	3.9	14	10	82	52	518	403	185	252
6	103	437	38	3.7	13	17	107	49	607	412	149	213
7	100	327	32	3.9	28	12	110	52	428	413	158	210
8	104	277	52	4.0	22	9.7	110	65	246	440	164	223
9	112	194	80	5.9	36	29	119	62	231	479	165	247
10	114	176	80	8.5	56	209	154	102	207	521	126	252
11	88	255	79	11	85	319	151	99	223	418	129	192
12	94	217	111	12	88	465	103	125	399	318	134	206
13	143	176	78	14	21	487	120	88	513	262	145	266
14	139	158	62	15	23	1110	139	67	515	194	176	427
15	130	121	47	17	16	855	160	81	726	248	179	456
16	125	90	33	19	15	616	188	227	731	307	177	446
17	132	102	30	29	18	351	154	371	915	247	175	404
18	204	90	16	51	23	195	68	549	814	244	181	349
19	190	81	15	39	29	128	53	806	747	234	355	419
20	122	62	14	45	31	188	71	1030	733	197	698	382
21	132	73	11	55	19	241	65	1230	594	163	869	411
22	148	135	19	48	25	213	56	1300	678	221	764	357
23	158	141	20	29	45	175	63	721	1800	231	982	296
24	195	104	20	25	34	175	92	480	1440	270	633	281
25	265	70	17	32	29	173	90	647	1160	173	761	329
26	240	79	16	27	24	149	108	518	931	132	968	404
27	212	91	15	41	22	107	124	450	1080	120	954	365
28	216	88	14	39	37	122	131	392	1070	128	450	334
29	224	98	14	37	---	92	127	314	1020	133	505	312
30	230	110	13	34	---	57	131	265	934	130	487	268
31	255	---	12	30	---	61	---	287	---	144	480	---
TOTAL	4687	5683	1237	708.2	833	6656.7	3218	10724	20844	9775	11815	9674

WTR YR 1990 TOTAL 85854.9

LOCATION.--Lat 44°19'03", long 88°11'50", in SE 1/4 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.

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

REMARKS.--Flow regulated by storage in Lake Winnebago (see sta. 04082500 and 04084255). Daily discharge determined from records of flow through turbines, head, gate openings, and lockages through navigation canal. Usually less than about 20 ft³/s is diverted into basin from Wisconsin River at Portage Canal throughout the year.

AVERAGE DISCHARGE.--94 years, 4,252 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 24,000 ft³/s, Apr. 18, 1952; minimum daily, 138 ft³/s, Aug. 2, 1936.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge during year, 15,500 ft³/s, June 24; minimum daily, 1,040 ft³/s, Oct. 3.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1180	4750	2570	2460	2080	2720	4600	1420	5640	8670	2200	5730
2	1120	5570	1870	2510	2280	2320	4330	1380	5230	5490	2280	5560
3	1040	5560	2080	2400	2320	2220	4520	1580	5270	5450	2860	5420
4	1050	5600	2020	2530	2240	2010	4680	1520	5270	3740	2750	4980
5	1240	5440	2040	2570	2330	2170	4510	1550	7810	4520	2440	3980
6	1140	4650	1870	2440	2290	1990	4540	1670	9340	4280	2020	4450
7	1070	3960	2440	2510	2370	2090	4750	1930	6710	4580	2380	3890
8	1060	3720	3190	2560	2530	2530	4790	1880	3780	4860	2420	4060
9	1210	3110	3230	2610	2420	3470	4830	1680	4190	4530	2680	4070
10	1200	3090	3130	2700	2320	3480	4830	1870	4350	4660	2390	4150
11	1160	3210	3110	2420	2200	4050	3730	2610	4360	3790	2330	4030
12	1050	3080	3110	2450	2260	4540	2810	2670	4630	3080	2150	4130
13	1080	2750	3150	2570	2140	5120	3320	2540	6410	2240	2090	3970
14	1100	2910	3140	2440	2830	10800	3260	2670	6670	2010	2320	6290
15	1190	1770	3070	2580	3230	10400	3200	3630	6490	2310	2160	6270
16	1160	1990	2690	2580	3260	9930	3200	7790	6330	2450	2370	5940
17	1350	2230	3210	2870	3200	9840	1960	6180	6580	2590	2360	5580
18	2620	2130	1990	2660	3280	10500	1130	8040	7370	2480	2460	5720
19	2190	2210	2430	2480	3230	10500	1260	10300	8710	2410	4120	6010
20	2510	1880	2680	2620	3210	11100	1260	12500	9190	2260	6380	5960
21	2490	1380	2780	2670	3250	10900	1210	13200	7740	2330	6750	6410
22	2480	2120	2560	2020	3080	10100	1310	13200	13300	3190	7230	6040
23	2500	1840	2460	2320	2370	8940	1440	13000	14300	2990	11100	5870
24	3590	1670	2580	2210	1980	9160	1430	13200	15500	3140	9130	5860
25	3530	1690	2470	2140	2040	9340	1320	10100	15300	2210	8620	5990
26	3780	2210	2550	2960	2060	8330	1420	10100	14400	2290	9050	5650
27	3800	2070	2470	3260	2470	5590	1500	9800	13400	2200	7300	5410
28	3600	1740	2430	3080	2700	5970	1560	9810	12500	2360	6380	5350
29	3610	2450	2460	3310	---	4780	1530	8080	11800	2370	6790	5290
30	3210	3140	2470	3240	---	4490	1460	7640	10500	2070	6060	5250
31	4300	---	2460	2380	---	4420	---	5900	---	2120	5880	---
TOTAL	63610	89920	80710	80550	71970	193800	85690	189440	253070	103670	137450	157310
MEAN	2052	2997	2604	2598	2570	6252	2856	6111	8436	3344	4434	5244
MAX	4300	5600	3230	3310	3280	11100	4830	13200	15500	8670	11100	6410
MIN	1040	1380	1870	2020	1980	1990	1130	1380	3780	2010	2020	3890
CAL YR 1989	TOTAL 1229260		MEAN 3368	MAX 15800	MIN 1040							
WTR YR 1990	TOTAL 1507190		MEAN 4129	MAX 15500	MIN 1040							

04085000 FOX RIVER AT WRIGHTSTOWN, WI
(NATIONAL STREAM-QUALITY ACCOUNTING NETWORK STATION)

LOCATION.--Lat 44°19'36", long 88°09'54", in NE 1/4 NW 1/4 sec.2, T.21 N., R.19 E., Brown County, Hydrologic Unit 04030204, at bridge on State Highway 96 at Wrightstown.

DRAINAGE AREA.--6,050 mi², approximately.

PERIOD OF RECORD.--Water years 1970, 1974 to current year.

REMARKS.--Records of discharge used are for 04084500 Fox River at Rapide Croche Dam near Wrightstown.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS-CHARGE, IN CUBIC FEET PER SECOND (00060)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS TOTAL (MG/L AS CaCO3) (00900)	
NOV 1989													
08...	1010	3720	381	8.7	7.0	16	12.0	738	102	220	250	180	
MAR 1990													
28...	0845	5970	380	8.4	3.0	2.0	13.0	763	97	K2200	77	190	
JUN													
20...	0800	9070	397	7.7	20.5	24	7.5	748	85	--	130	180	
AUG													
22...	0940	7230	379	8.4	20.0	19	8.5	752	95	1200	150	170	
DATE		CALCIUM DIS-SOLVED (MG/L AS Ca) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS Mg) (00925)	SODIUM, DIS-SOLVED (MG/L AS Na) (00930)	SODIUM AD-SORP-TION RATIO (00932)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE WATER DIS IT FIELD (MG/L AS HCO3) (00453)	CAR-BONATE WATER DIS IT FIELD (MG/L AS CO3) (00452)	ALKA-LINITY WAT DIS TOT IT FIELD (MG/L AS CaCO3) (39086)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS Cl) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	
NOV 1989													
08...	40	20	10	10	0.3	2.8	182	2	153	23	14	0.20	
MAR 1990													
28...	40	22	10	10	0.3	9.2	200	2	168	25	17	0.20	
JUN													
20...	40	20	10	10	0.3	2.9	187	--	153	23	15	0.20	
AUG													
22...	38	19	9.3	10	0.3	3.0	174	6	152	25	14	1.2	
DATE		SILICA, DIS-SOLVED (MG/L AS SiO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)
NOV 1989													
08...	13	228	215	0.31	2290	<0.100	0.100	0.100	1.8	0.090	0.010	0.010	
MAR 1990													
28...	10	224	235	0.30	3610	0.200	0.090	0.080	1.0	0.040	0.010	<0.010	
JUN													
20...	2.9	226	209	0.31	5530	0.500	0.150	0.130	1.4	0.140	0.030	0.030	
AUG													
22...	0.59	212	202	0.29	4140	<0.100	0.030	0.060	1.6	0.190	0.030	<0.010	

K RESULTS BASED ON COUNT OUTSIDE OF THE ACCEPTABLE RANGE (NON-IDEAL COLONY COUNT).

STREAMS TRIBUTARY TO LAKE MICHIGAN

04085000 FOX RIVER AT WRIGHTSTOWN, WI--CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	ALUM- INUM, DIS- SOLVED (UG/L AS AL) (01106)	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE) (01010)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	COBALT, DIS- SOLVED (UG/L AS CO) (01035)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, DIS- SOLVED (UG/L AS FE) (01046)
NOV 1989 08...	1010	3720	20	<1	24	<0.5	<1.0	<1	<3	1	10
MAR 1990 28...	0845	5970	<10	1	26	<0.5	<1.0	<5	<1	5	6
JUN 20...	0800	9070	<10	<1	27	0.6	1.0	<1	<3	<1	7
AUG 22...	0940	7230	20	1	26	<0.5	<1.0	<1	<3	1	9

DATE	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	LITHIUM DIS- SOLVED (UG/L AS LI) (01130)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	MERCURY DIS- SOLVED (UG/L AS HG) (71890)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO) (01060)	NICKEL, DIS- SOLVED (UG/L AS NI) (01065)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	STRON- TIUM, DIS- SOLVED (UG/L AS SR) (01080)	VANA- DIUM, DIS- SOLVED (UG/L AS V) (01085)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)
NOV 1989 08...	<1	5	2	<0.1	<10	<1	<1	150	<6	10
MAR 1990 28...	1	<4	4	<0.1	<10	2	<1	150	<6	7
JUN 20...	<1	<4	2	<0.1	<10	<1	<1	130	<6	4
AUG 22...	<1	<4	2	<0.1	<10	<1	<1	130	<6	6

DATE	TIME	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
NOV 1989 08...	1010	3720	381	7.0	42	422	70
MAR 1990 28...	0845	5970	380	3.0	17	274	43
JUN 20...	0800	9070	397	20.5	108	2640	98
AUG 22...	0940	7230	379	20.0	45	878	93

STREAMS TRIBUTARY TO LAKE MICHIGAN

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04085054 FOX RIVER AT LITTLE RAPIDS, WI

LOCATION.--Lat 44°22'37", long 88°07'00", in NE 1/4 SW 1/4 sec.18, T.22 N., R.20 E., Brown County, Hydrologic Unit 04030204, at dam at Little Rapids.

DRAINAGE AREA.--6,100 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1988 to September 1990 (discontinued).

GAGE.--None.

REMARKS.--Estimated daily discharges: Oct. 1, 1988 to Sept. 30, 1990. Daily discharges were estimated by multiplying daily discharges from Fox River at Appleton, 04084445, by the drainage area ratio between the two sites of 1.025. Records poor.

EXTREMES FOR CURRENT PERIOD.--

WATER YEAR 1989: Maximum daily discharge, 14,800 ft³/s, June 2-3; minimum daily discharge, 1,080 ft³/s, Sept. 24.

WATER YEAR 1990: Maximum daily discharge, 14,500 ft³/s, June 25; minimum daily discharge, 989 ft³/s, Oct. 3.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2630	2120	5100	3070	3690	1840	9180	1710	14700	2310	1770	1460
2	2600	2110	5720	2770	3480	2150	9320	1770	14800	1920	1940	1450
3	2630	2140	5620	2970	3590	2360	9610	1900	14800	1750	1980	1480
4	3200	2160	5570	2870	3590	2150	9690	2220	14600	1890	1960	1510
5	3390	2210	5170	2870	3480	2150	9300	2150	13900	1890	2190	1410
6	3540	2230	4660	2970	3590	3280	8780	1920	14000	1870	1800	1370
7	3760	3010	4300	2970	3380	4200	8370	1970	13100	1800	1680	1380
8	3600	3460	3280	2150	3380	4200	7990	2020	11500	1740	1730	1380
9	3500	3670	2870	3070	3480	4200	7960	2050	9950	1930	1780	1320
10	3410	4180	2770	2970	3480	4400	8110	2030	8320	2030	1790	1340
11	3150	4180	2770	2770	3480	4390	6820	2010	8340	1830	1800	1380
12	3180	4220	2770	2770	3380	4380	4730	2070	8140	1610	1750	1320
13	3360	4230	2770	2870	3590	3970	4330	2140	8160	1730	1820	1310
14	2970	4200	2870	2870	3890	4050	2490	2200	7980	1830	1770	1320
15	2360	4190	2770	2770	3480	4350	2840	2290	6470	1880	1660	1320
16	2280	4870	2870	2870	2870	4380	2960	2290	5000	1860	1650	1320
17	1910	5070	2770	2770	2870	4290	2860	2310	5170	1810	1760	1340
18	2290	6080	2770	2770	2870	4420	2170	2390	5280	2110	1690	1370
19	2240	6540	2870	2970	2770	4410	1210	2420	5320	1920	1700	1380
20	2220	6450	2870	2870	2770	4390	1190	2310	5260	1700	1660	1350
21	2240	6480	2970	2870	2660	4390	1210	2350	5190	1770	1600	1340
22	2170	6220	2970	2870	2560	4330	1230	2350	5150	1870	1700	1420
23	2280	5320	3070	2870	2560	4320	1270	2360	5160	1940	1570	1190
24	2270	4700	2970	2970	2560	4510	1310	2390	5110	1930	1380	1080
25	2900	4630	2870	2970	2770	4870	1400	4450	5040	1890	1450	1250
26	3420	4660	2870	3070	2660	5610	1430	4990	5110	1880	1500	1120
27	3450	4850	2970	2970	3280	6260	1430	5340	4360	1880	1520	1140
28	2700	4700	2870	2970	2660	7690	1450	5510	3670	1620	1520	1230
29	2110	4780	2770	2970	---	8700	1540	5270	3280	1710	1470	1170
30	2120	4730	2870	2970	---	8880	1640	7040	3200	1760	1510	1150
31	2250	---	3070	3590	---	9020	---	14200	---	1750	1430	---
TOTAL	86130	128390	105430	90070	88820	142540	133820	98420	240060	57410	52530	39600
MEAN	2778	4280	3401	2905	3172	4598	4461	3175	8002	1852	1695	1320
MAX	3760	6540	5720	3590	3890	9020	9690	14200	14800	2310	2190	1510
MIN	1910	2110	2770	2150	2560	1840	1190	1710	3200	1610	1380	1080
CFSM	.46	.70	.56	.48	.52	.75	.73	.52	1.31	.30	.28	.22
IN.	.53	.78	.64	.55	.54	.87	.82	.60	1.46	.35	.32	.24

WTR YR 1989 TOTAL 1263220 MEAN 3461 MAX 14800 MIN 1080 CFSM .57 IN. 7.70

STREAMS TRIBUTARY TO LAKE MICHIGAN

04085054 FOX RIVER AT LITTLE RAPIDS, WI--CONTINUED

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1040	4500	3020	2360	2210	2660	4330	1510	6520	9160	2220	6330
2	1080	4630	2150	2460	2280	2370	3990	1560	5600	8750	2220	6150
3	989	5180	1960	2360	2280	2070	4360	1560	6070	6910	2550	6040
4	1010	5720	2000	2460	2260	2030	4520	1550	5500	4810	2740	5390
5	1090	5570	2040	2460	2240	2010	4390	1550	7580	4650	2480	3960
6	1090	5010	2040	2360	2230	2020	4480	1620	9140	4180	2120	4060
7	1040	4500	2390	2460	2280	2020	4500	1810	7470	4200	2350	4080
8	1030	4080	3160	2460	2260	2060	4560	1920	3970	4530	2410	4000
9	1060	3370	3220	2560	2330	2700	4510	1550	4000	4830	2670	4040
10	1070	3120	3230	2560	2300	3080	4260	1650	4010	4780	2500	4130
11	1110	3430	3220	2360	2270	3140	3830	2400	4170	3790	2410	4050
12	1060	3160	3160	2460	2260	3710	2850	2590	4720	2860	2320	4100
13	1040	2950	3220	2560	2260	3620	3020	2510	6030	2290	2270	4090
14	1030	2850	3200	2360	2740	8270	3020	2870	6790	1780	2460	5870
15	1020	1990	2970	2460	3190	8910	2980	3790	6490	2000	2370	6120
16	1050	1670	2660	2560	3240	9270	3000	7120	5930	2420	2330	5880
17	1230	2060	3070	2730	3220	9290	2240	6820	7100	2640	2360	5610
18	2090	2030	2050	2760	3190	9420	1140	7840	7130	2530	2400	5920
19	2150	2070	2360	2710	3180	9540	1170	10100	7990	2370	4070	6190
20	2200	1870	2660	2700	3150	9720	1220	11500	9510	2290	6600	6500
21	2290	1690	2560	2750	3160	9740	1240	11700	8480	2350	7270	6680
22	2370	1910	2460	2350	3100	9330	1270	11800	6430	3070	8630	6510
23	2380	1940	2460	2220	2620	8580	1410	11800	12400	2930	9620	6160
24	2860	1640	2560	2310	2070	8850	1450	11600	12700	3200	9650	6200
25	3420	1630	2360	2280	2050	8980	1370	10600	14500	2300	9520	6440
26	3420	1880	2460	2770	2010	8110	1440	9190	14400	2230	9440	5950
27	3510	2060	2460	3260	2290	6010	1500	9110	13900	2210	8970	5530
28	3450	1950	2360	3190	2680	6030	1560	9090	13300	2310	7730	5400
29	3380	2280	2460	3280	---	5090	1520	8550	12300	2330	7480	5350
30	3360	3160	2460	3290	---	4290	1530	8040	11000	2160	6940	4890
31	3710	---	2360	2690	---	4300	---	7000	---	2130	6490	---
TOTAL	58629	89900	80740	80550	71350	177220	82660	182300	245130	108990	145590	161620
MEAN	1891	2997	2605	2598	2548	5717	2755	5881	8171	3516	4696	5387
MAX	3710	5720	3230	3290	3240	9740	4560	11800	14500	9160	9650	6680
MIN	989	1630	1960	2220	2010	2010	1140	1510	3970	1780	2120	3960
CFSM	.31	.49	.43	.43	.42	.94	.45	.96	1.34	.58	.77	.88
IN.	.36	.55	.49	.49	.44	1.08	.50	1.11	1.49	.66	.89	.99

CAL YR 1989 TOTAL 1172539 MEAN 3212 MAX 14800 MIN 989 CFSM .53 IN. 7.15
WTR YR 1990 TOTAL 1484679 MEAN 4068 MAX 14500 MIN 989 CFSM .67 IN. 9.05

04085054 FOX RIVER AT LITTLE RAPIDS, WI--CONTINUED

WATER-QUALITY RECORDS

PERIOD OF RECORD.--March 1989 to September 1990 (discontinued).

PERIOD OF DAILY RECORD.--

SUSPENDED-SEDIMENT DISCHARGE: April 1989 to September 1990 (discontinued).

INSTRUMENTATION.--Automatic pumping sampler since May 1989.

REMARKS.--Records fair. Suspended-sediment discharge computed using discharges from Fox River at Appleton, 04084445, multiplied times the drainage area ratio between the two sites of 1.025. Suspended-sediment samples were point samples taken by an automatic sampler. The samples are composites of four subsamples taken at six-hour intervals during the day beginning at time 0600. Samples for chemical analysis were composite samples of water pumped from multiple fixed points in the stream cross section. Chemical analyses by Wisconsin State Laboratory of Hygiene.

COOPERATION.--Observer provided by U.S. Army Corps of Engineers.

EXTREMES FOR CURRENT PERIOD.--

APRIL TO SEPTEMBER 1989:

SUSPENDED-SEDIMENT CONCENTRATIONS: Maximum observed, 263 mg/L, May 25; minimum observed, 4 mg/L, Mar. 20.

SUSPENDED-SEDIMENT DISCHARGE: Maximum daily, 3,400 tons, May 31; minimum daily, 43 tons, Apr. 19.

WATER YEAR 1990:

SUSPENDED-SEDIMENT CONCENTRATIONS: Maximum observed, 418 mg/L, June 23; minimum observed, 2 mg/L, Jan. 17 and Feb. 5-6.

SUSPENDED-SEDIMENT DISCHARGE: Maximum daily, 10,400 tons, June 23; minimum daily, 13 tons, Feb. 5-6.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	DATE	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	SEDI- MENT, SUS- PENDED (MG/L) (80154)
MAR 1989			MAY 1989		
15...	4350	51	22...	2350	17
16...	4380	22	23...	2360	19
17...	4290	10	24...	2390	18
20...	4390	4	25...	4450	263
21...	4390	5	26...	4990	109
22...	4330	6	27...	5340	61
24...	4510	10	28...	5510	52
27...	6260	109	29...	5270	44
28...	7690	78	30...	7040	90
29...	8700	34	31...	14200	108
30...	8880	17	JUN		
31...	9020	16	01...	14700	67
APR			02...	14800	46
03...	9610	15	03...	14800	43
04...	9690	18	04...	14600	35
05...	9300	16	05...	13900	36
06...	8780	14	06...	14000	39
07...	8370	16	07...	13100	41
10...	8110	15	08...	11500	41
11...	6820	12	09...	9950	48
12...	4730	6	10...	8320	42
18...	2170	18	11...	8340	47
19...	1210	14	12...	8140	53
20...	1190	14	13...	8160	58
21...	1210	17	14...	7980	57
24...	1310	17	15...	6470	46
25...	1400	17	16...	5000	33
26...	1430	25	17...	5170	30
27...	1430	21	18...	5280	32
28...	1450	28	19...	5320	26
MAY			20...	5260	27
01...	1710	18	21...	5190	30
02...	1770	18	22...	5150	31
03...	1900	32	23...	5160	30
04...	2220	33	24...	5110	36
05...	2150	27	25...	5040	38
08...	2020	31	26...	5110	35
09...	2050	31	27...	4360	29
10...	2030	18	28...	3670	33
10...	2030	27	29...	3280	25
11...	2010	22	30...	3200	20
11...	2010	19	JUL		
12...	2070	30	01...	2310	24
13...	2140	17	02...	1920	22
14...	2200	19	03...	1750	21
15...	2290	21	04...	1890	21
16...	2290	17	05...	1890	23
16...	2290	15	06...	1870	22
17...	2310	19	07...	1800	28
18...	2390	20	08...	1740	24
19...	2420	19	09...	1930	24
20...	2310	19	10...	2030	23
21...	2350	18	11...	1830	21

STREAMS TRIBUTARY TO LAKE MICHIGAN

04085054 FOX RIVER AT LITTLE RAPIDS, WI--CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	DATE	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	SEDI- MENT, SUS- PENDE (MG/L) (80154)
JUL 1989			AUG 1989		
12...	1610	26	21...	1600	23
13...	1730	29	22...	1700	28
14...	1830	24	23...	1570	36
15...	1880	26	24...	1380	39
16...	1860	28	25...	1450	33
17...	1810	26	26...	1500	35
18...	2110	25	27...	1520	33
19...	1920	31	28...	1520	31
20...	1700	31	29...	1470	28
21...	1770	31	30...	1510	28
22...	1870	26	31...	1430	30
23...	1940	30	SEP		
24...	1930	32	01...	1460	32
25...	1890	32	02...	1450	26
26...	1880	32	03...	1480	25
27...	1880	29	04...	1510	26
28...	1620	31	05...	1410	26
29...	1710	33	06...	1370	26
30...	1760	29	07...	1380	23
31...	1750	29	08...	1380	22
AUG			09...	1320	23
01...	1770	30	10...	1340	24
02...	1940	29	11...	1380	23
03...	1980	31	12...	1320	21
04...	1960	34	13...	1310	22
05...	2190	35	14...	1320	21
06...	1800	38	15...	1320	20
07...	1680	43	16...	1320	21
08...	1730	33	17...	1340	23
09...	1780	33	18...	1370	21
10...	1790	32	19...	1380	17
11...	1800	31	20...	1350	20
12...	1750	35	21...	1340	20
13...	1820	31	22...	1420	20
14...	1770	28	23...	1190	20
15...	1660	31	24...	1080	19
16...	1650	33	25...	1250	19
17...	1760	28	26...	1120	18
18...	1690	30	27...	1140	18
19...	1700	27	28...	1230	20
20...	1660	30	29...	1170	17
			30...	1150	18

WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

OCT 1989	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	NOV 1989	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	SEDI- MENT, SUS- PENDE (MG/L) (80154)
01...	1040	18	01...	4500	30
02...	1080	20	02...	4630	30
03...	989	17	03...	5180	28
05...	1090	18	04...	5720	23
06...	1090	15	05...	5570	30
07...	1040	15	06...	5010	40
08...	1030	15	07...	4500	36
09...	1060	16	08...	4080	42
10...	1070	15	09...	3370	35
11...	1110	22	10...	3120	23
12...	1060	17	11...	3430	26
13...	1040	15	12...	3160	18
14...	1030	16	13...	2950	22
15...	1020	18	14...	2850	23
16...	1050	22	15...	1990	31
17...	1230	22	16...	1670	26
18...	2090	24	17...	2060	19
19...	2150	28	18...	2030	22
20...	2200	22	19...	2070	13
21...	2290	21	20...	1870	14
22...	2370	18	21...	1690	13
23...	2380	21	22...	1910	10
24...	2860	24	23...	1940	10
25...	3420	36	24...	1640	13
26...	3420	31	25...	1630	11
27...	3510	26	26...	1880	11
28...	3450	25	27...	2060	12
29...	3380	30	28...	1950	12
30...	3360	30	29...	2280	12
31...	3710	32	30...	3160	12

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04085054 FOX RIVER AT LITTLE RAPIDS, WI--CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	DATE	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	SEDI- MENT, SUS- PENDED (MG/L) (80154)
DEC 1989			MAR 1990		
01...	3020	9	01...	2660	4
02...	2150	13	02...	2370	10
03...	1960	12	03...	2070	7
04...	2000	8	04...	2030	6
05...	2040	14	05...	2010	9
06...	2040	52	06...	2020	6
08...	3160	26	07...	2020	5
09...	3220	42	08...	2060	3
10...	3230	32	09...	2700	7
11...	3220	40	10...	3080	20
12...	3160	31	11...	3140	33
13...	3220	46	12...	3710	100
14...	3200	46	13...	3620	76
15...	2970	15	14...	8270	391
29...	2460	7	15...	8910	266
30...	2460	5	16...	9270	98
31...	2360	4	17...	9290	81
JAN 1990			18...	9420	55
01...	2360	5	19...	9540	80
02...	2460	4	20...	9720	66
03...	2360	5	21...	9740	52
04...	2460	3	22...	9330	47
05...	2460	3	APR		
06...	2360	4	04...	4520	130
07...	2460	4	05...	4390	23
08...	2460	4	06...	4480	33
09...	2560	3	07...	4500	24
10...	2560	4	08...	4560	23
11...	2360	4	09...	4510	27
12...	2460	4	10...	4260	40
13...	2560	4	11...	3830	30
14...	2360	5	12...	2850	28
15...	2460	7	13...	3020	28
16...	2560	3	14...	3020	30
17...	2730	2	15...	2980	30
18...	2760	5	16...	3000	26
19...	2710	6	17...	2240	31
20...	2700	7	18...	1140	23
21...	2750	6	19...	1170	18
22...	2350	4	20...	1220	20
23...	2220	3	21...	1240	21
24...	2310	4	22...	1270	29
25...	2280	6	23...	1410	37
26...	2770	5	24...	1450	37
27...	3260	5	25...	1370	37
28...	3190	5	26...	1440	48
29...	3280	6	27...	1500	41
30...	3290	5	28...	1560	40
31...	2690	4	29...	1520	29
FEB			30...	1530	30
01...	2210	3	MAY		
02...	2280	4	01...	1510	33
03...	2280	4	02...	1560	34
04...	2260	3	03...	1560	32
05...	2240	2	04...	1550	18
06...	2230	2	05...	1550	16
07...	2280	4	06...	1620	13
08...	2260	5	07...	1810	26
09...	2330	8	08...	1920	28
10...	2300	5	09...	1550	20
11...	2270	6	10...	1650	28
12...	2260	4	11...	2400	29
13...	2260	4	12...	2590	33
14...	2740	3	13...	2510	26
15...	3190	5	14...	2870	30
16...	3240	4	15...	3790	35
17...	3220	3	17...	6820	64
18...	3190	3	18...	7840	61
19...	3180	3	19...	10100	85
20...	3150	4	20...	11500	121
21...	3160	8	21...	11700	99
22...	3100	4	22...	11800	88
23...	2620	4	23...	11800	77
24...	2070	4	24...	11600	93
25...	2050	9	25...	10600	87
26...	2010	12	26...	9190	59
27...	2290	4	27...	9110	72

STREAMS TRIBUTARY TO LAKE MICHIGAN
04085054 FOX RIVER AT LITTLE RAPIDS, WI--CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	DATE	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	SEDI- MENT, SUS- PENDE (MG/L) (80154)
MAY 1990			AUG 1990		
28...	9090	79	05...	2480	48
29...	8550	52	06...	2120	31
30...	8040	41	07...	2350	31
31...	7000	56	08...	2410	29
JUN			09...	2670	34
01...	6520	67	10...	2500	36
02...	5600	60	11...	2410	29
03...	6070	63	12...	2320	31
04...	5500	63	13...	2270	30
05...	7580	60	14...	2460	31
06...	9140	77	15...	2370	36
07...	7470	70	16...	2330	32
08...	3970	36	17...	2360	33
09...	4000	23	18...	2400	38
19...	7990	173	19...	4070	78
20...	9510	103	20...	6600	60
21...	8480	69	21...	7270	63
22...	6430	238	22...	8630	51
23...	12400	418	23...	9620	73
24...	12700	127	24...	9650	61
25...	14500	51	25...	9520	59
26...	14400	44	26...	9440	50
27...	13900	53	27...	8970	45
28...	13300	54	28...	7730	32
29...	12300	59	28...	7730	30
30...	11000	87	29...	7480	36
JUL			30...	6940	36
01...	9160	89	31...	6490	34
02...	8750	63	SEP		
03...	6910	53	01...	6330	36
04...	4810	45	02...	6150	36
05...	4650	38	03...	6040	37
06...	4180	35	04...	5390	36
07...	4200	36	05...	3960	32
08...	4530	35	06...	4060	34
09...	4830	31	07...	4080	40
10...	4780	34	08...	4000	40
11...	3790	36	09...	4040	37
12...	2860	46	10...	4130	42
13...	2290	42	11...	4050	37
14...	1780	40	11...	4050	37
15...	2000	34	11...	4050	24
16...	2420	36	12...	4100	41
17...	2640	29	13...	4090	42
18...	2530	28	14...	5870	58
19...	2370	29	15...	6120	117
20...	2290	20	16...	5880	114
21...	2350	20	17...	5610	98
22...	3070	20	18...	5920	56
23...	2930	22	19...	6190	44
24...	3200	29	20...	6500	97
25...	2300	35	21...	6680	53
26...	2230	36	22...	6510	89
27...	2210	39	23...	6160	83
28...	2310	43	24...	6200	49
29...	2330	45	25...	6440	32
30...	2160	48	25...	6440	18
31...	2130	41	26...	5950	37
AUG			27...	5530	31
01...	2220	39	28...	5400	35
02...	2220	38	29...	5350	40
03...	2550	37	30...	4890	46
04...	2740	43			

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04085054 FOX RIVER AT LITTLE RAPIDS, WI--CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	TRANS- PAR- ENCY (SECCHI DISK) (M) (00078)	OXYGEN, DIS- SOLVED (MG/L) (00300)	HARD- NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM TOTAL RECOV- ERABLE (MG/L AS CA) (00916)
APR 1989									
19...	1004	1210	423	8.3	8.5	0.70	11.8	180	35
MAY									
03...	0915	1900	452	8.5	11.5	0.60	10.1	200	42
17...	0850	2310	419	8.4	17.0	0.60	8.9	190	40
JUN									
01...	0930	14700	359	8.2	17.5	0.40	9.4	170	32
15...	0935	6470	360	7.9	17.0	0.70	9.1	160	30
28...	0845	3670	358	8.5	24.5	0.60	8.6	170	36
JUL									
11...	1530	1830	379	8.6	27.0	0.50	8.2	160	34
*27...	0900	1880	377	8.7	27.5	0.40	9.6	170	36
*27...	1120	1880	375	8.8	27.5	0.40	9.8	170	36
AUG									
09...	0850	1780	374	9.0	24.0	0.40	12.8	160	34
23...	0840	1570	357	9.1	24.0	0.40	9.5	150	30
SEP									
07...	1340	1380	392	8.9	22.5	0.40	10.0	180	39
19...	1400	1380	391	8.8	20.5	0.50	12.5	180	39

DATE	MAGNE- SIUM, TOTAL RECOV- ERABLE (MG/L AS MG) (00927)	ALKA- LINITY WAT WH TOT FET LAB (MG/L AS CACO3) (00417)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDE (MG/L) (00530)	RESIDUE VOLA- TILE, SUS- PENDE (MG/L) (00535)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)
APR 1989								
19...	23	170	19	2.0	24	12	0.310	0.110
MAY								
03...	24	174	25	<0.20	28	13	0.250	0.200
17...	23	169	22	<0.20	31	16	0.210	0.120
JUN								
01...	23	155	15	0.40	85	24	0.320	0.100
15...	20	152	14	3.3	50	17	0.300	0.180
28...	20	149	15	5.0	29	15	0.110	<0.020
JUL								
11...	19	146	18	7.2	42	22	0.160	<0.020
27...	20	148	20	10	40	22	<0.020	0.030
27...	20	146	20	10	40	22	<0.020	0.030
AUG								
09...	19	152	20	12	59	32	<0.020	<0.020
23...	18	139	20	13	44	23	<0.020	<0.020
SEP								
07...	21	161	21	21	29	15	0.050	<0.020
19...	20	166	21	18	25	13	0.040	<0.020

DATE	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00671)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)	CHLORO- PHYLL A TRICHR. UNCORR. WHOLE TOTAL (UG/L) (32210)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
APR 1989								
19...	1.3	0.110	--	6.8	6.4	35.0	11	97
MAY								
03...	1.6	0.140	0.005	7.5	6.7	50.0	19	97
17...	1.5	0.130	0.003	7.2	6.7	43.0	15	98
JUN								
01...	1.8	0.180	0.006	6.4	6.2	36.0	55	96
15...	1.4	0.130	0.019	9.1	7.3	31.0	42	74
28...	1.2	0.100	0.005	6.9	5.6	52.0	28	64
JUL								
11...	2.1	0.170	0.006	13	8.6	100	29	82
27...	1.9	0.140	0.004	12	7.6	120	22	99
27...	2.2	0.160	0.003	12	7.7	130	--	--
AUG								
09...	2.2	0.180	0.006	10	7.7	160	42	92
23...	1.6	0.150	0.005	8.7	7.5	120	26	99
SEP								
07...	1.4	0.120	0.006	8.1	7.7	85.0	19	99
19...	1.6	0.110	0.006	9.3	8.1	88.0	18	98

* SAMPLES WITH SAME DATES ARE REPLICATES.

STREAMS TRIBUTARY TO LAKE MICHIGAN

04085054 FOX RIVER AT LITTLE RAPIDS, WI--CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	TRANS- PAR- ENCY (SECCHI DISK) (M) (00078)	OXYGEN, DIS- SOLVED (MG/L) (00300)	HARD- NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM TOTAL RECOV- ERABLE (MG/L AS CA) (00916)
OCT 1989									
03...	1510	989	436	9.0	16.0	0.60	11.1	200	42
17...	1545	1230	435	8.9	11.5	0.50	12.4	200	42
NOV									
01...	1250	4500	377	8.3	10.0	0.50	10.9	190	41
15...	1230	1990	383	8.6	5.0	0.50	13.5	190	40
DEC									
06...	0830	2040	403	8.1	0.5	--	15.3	190	41
JAN 1990									
17...	1330	2730	430	7.5	0.5	--	14.8	190	40
FEB									
14...	0800	2740	444	7.9	1.5	--	14.0	200	43
MAR									
14...	1135	8270	416	7.8	7.0	0.10	11.3	270	57
APR									
04...	1400	4520	384	8.4	5.5	0.80	14.4	200	41
*19...	0815	1170	379	8.7	8.5	0.70	13.7	200	41
*19...	0925	1170	379	8.7	8.5	0.60	13.7	200	41

DATE	MAGNE- SIUM, TOTAL RECOV- ERABLE (MG/L AS MG) (00927)	ALKA- LINITY WAT WH TOT FET LAB MG/L AS CACO3 (00417)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDE (MG/L) (00530)	RESIDUE VOLA- TILE, SUS- PENDE (MG/L) (00535)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)
OCT 1989								
03...	23	173	24	16	28	15	0.030	<0.020
17...	22	169	25	9.4	31	13	0.090	0.060
NOV								
01...	22	164	16	14	42	15	0.110	0.140
15...	21	168	15	9.9	28	12	0.070	0.120
DEC								
06...	22	174	19	--	12	8	0.100	0.240
JAN 1990								
17...	22	179	18	11	4	4	0.110	0.240
FEB								
14...	24	184	23	10	6	4	0.140	0.260
MAR								
14...	32	162	24	8.3	504	66	1.47	0.340
APR								
04...	24	166	15	7.4	21	10	0.200	0.060
19...	23	165	18	<0.20	24	12	0.280	0.030
19...	23	166	18	1.7	27	12	0.220	0.030

DATE	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)	CHLORO- PHYLL A TRICHR. UNCORR. WHOLE TOTAL (UG/L) (32210)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT 1989								
03...	1.4	0.120	0.005	13	9.3	96.0	15	99
17...	1.6	0.110	0.005	12	9.0	110	22	99
NOV								
01...	1.5	0.120	0.008	9.9	8.3	48.0	30	99
15...	1.3	0.090	0.006	11	7.6	57.0	--	--
DEC								
06...	1.1	0.050	0.013	11	8.1	--	7	100
JAN 1990								
17...	1.0	0.040	0.011	690	640	3.00	--	--
FEB								
14...	1.2	0.060	0.024	1500	1400	5.00	7	99
MAR								
14...	3.7	0.770	0.042	18	8.9	140	353	98
APR								
04...	1.0	0.120	0.004	--	--	27.0	11	66
19...	1.2	0.093	<0.002	12	7.8	51.0	--	--
19...	<1.2	0.091	0.005	11	7.9	52.0	12	93

* SAMPLES WITH SAME DATES ARE REPLICATES.

STREAMS TRIBUTARY TO LAKE MICHIGAN

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04085054 FOX RIVER AT LITTLE RAPIDS, WI--CONTINUED

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	386	87	2320	128	126	110
2	---	---	---	---	---	---	380	93	1710	103	137	93
3	---	---	---	---	---	---	397	126	1500	91	149	92
4	---	---	---	---	---	---	459	181	1270	99	159	94
5	---	---	---	---	---	---	398	158	1230	105	188	89
6	---	---	---	---	---	---	342	146	1330	104	168	85
7	---	---	---	---	---	---	348	158	1300	115	167	75
8	---	---	---	---	---	---	328	170	1170	102	150	74
9	---	---	---	---	---	---	319	159	1120	111	163	73
10	---	---	---	---	---	---	312	119	875	114	140	77
11	---	---	---	---	---	---	221	111	956	113	137	76
12	---	---	---	---	---	---	87	133	1040	107	143	68
13	---	---	---	---	---	---	87	109	1130	118	136	68
14	---	---	---	---	---	---	60	100	1080	110	124	66
15	---	---	---	---	---	---	81	114	717	119	123	65
16	---	---	---	---	---	---	101	100	419	123	127	67
17	---	---	---	---	---	---	116	100	386	113	122	74
18	---	---	---	---	---	---	98	114	399	132	121	68
19	---	---	---	---	---	---	43	113	343	142	115	63
20	---	---	---	---	---	---	46	105	343	129	115	64
21	---	---	---	---	---	---	54	102	376	130	95	65
22	---	---	---	---	---	---	55	101	382	124	115	68
23	---	---	---	---	---	---	57	109	386	142	126	57
24	---	---	---	---	---	---	59	183	442	150	127	50
25	---	---	---	---	---	---	69	2070	461	148	119	57
26	---	---	---	---	---	---	92	1420	430	142	126	49
27	---	---	---	---	---	---	87	838	318	128	121	51
28	---	---	---	---	---	---	103	695	275	122	113	57
29	---	---	---	---	---	---	102	639	202	132	100	50
30	---	---	---	---	---	---	95	1460	163	124	105	50
31	---	---	---	---	---	---	---	3400	---	122	105	---
TOTAL	---	---	---	---	---	---	5382	13513	24073	3742	4062	2095

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	45	343	72	27	19	27	1080	119	1030	1900	210	551
2	50	335	63	27	23	47	1080	126	838	1380	205	539
3	41	344	54	26	20	35	1270	115	926	888	236	540
4	42	344	43	18	15	32	830	73	838	524	283	467
5	46	413	60	19	13	40	241	59	1150	433	273	313
6	41	467	156	21	13	30	332	57	1650	359	171	341
7	37	403	218	24	19	25	273	106	1200	368	175	388
8	38	397	224	23	27	20	257	125	361	384	176	383
9	40	281	303	22	41	51	303	81	239	372	219	371
10	41	188	269	22	31	147	380	106	217	392	213	409
11	54	205	296	22	32	287	288	169	216	337	178	336
12	44	147	259	24	23	774	193	198	235	309	172	392
13	40	152	345	23	24	907	206	167	753	235	167	437
14	41	162	317	28	33	6470	220	209	1190	170	186	882
15	45	140	126	38	33	5500	214	331	1350	170	199	1600
16	55	105	90	18	28	2520	199	830	1470	205	182	1600
17	69	101	98	15	25	1800	159	1020	2110	190	191	1280
18	123	102	62	29	22	1400	62	1220	2520	172	243	841
19	140	73	67	40	24	1730	48	2120	3100	158	688	758
20	121	62	71	44	34	1550	59	3160	2440	118	996	1310
21	114	51	65	39	52	1250	66	2840	1800	113	1070	1010
22	108	49	59	25	32	1090	89	2520	3590	149	1160	1320
23	120	48	56	17	24	1060	123	2290	10400	160	1590	1190
24	170	50	55	24	22	1180	130	2540	4350	224	1470	763
25	277	43	48	30	44	1290	127	2160	2030	192	1350	464
26	255	49	47	34	50	1260	160	1420	1600	196	1160	483
27	228	57	44	40	24	1010	151	1580	1740	208	975	432
28	213	56	40	42	23	1100	145	1640	1760	238	659	456
29	239	64	39	45	---	1000	111	1110	1830	257	634	521
30	246	89	30	37	---	915	112	860	2230	246	597	534
31	286	---	22	25	---	992	---	947	---	215	543	---
TOTAL	3409	5320	3698	868	770	35539	8908	30298	55163	11262	16571	20911

WTR YR 1990 TOTAL 192717

STREAMS TRIBUTARY TO LAKE MICHIGAN

04085059 FOX RIVER AT DE PERE, WI

LOCATION.--Lat 44°26'58", long 88°03'52", in N 1/2 of land grant 33, T.23 N., R.20 E., Brown County, Hydrologic Unit 04030204, 8.3 mi upstream of mouth, at dam at DePere.

DRAINAGE AREA.--6,110 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1988 to September 1990 (discontinued).

GAGE.--Acoustical Velocity Meter (AVM) system. Single path, mid-depth transducer installation. Data are stored using CR21X datalogger with telephone modem connection for daily retrieval. Gage located on left bank 0.2 mi upstream of dam.

REMARKS.--Estimated daily discharges: Oct. 9 to Nov. 3, 1988, July 9-26, 1989, Feb. 2, 8, 26, 27, Apr. 21-22, May 2, 3, 11, June 10, 11, 23-30, July 1-6, 20, 21, 23, 26, 31, Aug. 1, 7, 8, 13, 16, and Sept. 5, 10, 1990. Records fair except estimated daily discharges, which are poor.

EXTREMES FOR CURRENT PERIOD.--

WATER YEAR 1989: Maximum daily discharge, 14,900 ft³/s, May 31; minimum daily discharge, 950 ft³/s, Sept. 24.

WATER YEAR 1990: Maximum daily discharge, 14,500 ft³/s, June 25; minimum daily discharge, 930 ft³/s, Oct. 14.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2300	2120	4450	2740	3140	1950	8550	1640	14600	2430	2100	1520
2	2490	2110	5020	2630	3060	1840	8680	1690	14400	1890	2110	1520
3	2180	2150	5080	2660	3040	2060	9270	2140	14600	1690	1920	1580
4	2450	2200	4970	2670	2960	2200	9150	1840	14100	1830	1980	1220
5	3050	2160	5040	2690	2940	2060	8730	2090	13700	1730	2120	2040
6	3170	2180	4180	2640	3020	2250	8230	1710	13500	1660	1890	1750
7	3270	2430	3130	2680	2930	3410	7830	1970	12800	1890	1670	1630
8	3410	3240	2840	2530	2930	3550	7540	2190	11000	1800	1410	1590
9	3500	3110	2610	2400	2860	3410	7250	1990	9530	1930	1530	1490
10	3420	3980	2300	2740	2910	3420	7220	1970	8030	2030	2040	1390
11	3150	3700	2440	2650	2970	3420	6940	2020	7640	1840	1830	1720
12	3180	3750	2530	2640	2870	3440	4480	2170	7180	1610	1760	1270
13	3370	3740	2610	2620	2870	3210	4070	2130	7590	1730	1830	1330
14	2980	3960	2610	2630	2910	3250	2430	2340	7360	1840	1820	1400
15	2360	3720	2580	2590	3420	4010	2330	2550	6310	1880	1790	1550
16	2280	4000	2600	2600	2530	3480	2630	2240	4740	1860	1720	1210
17	1910	4650	2610	2570	2510	3340	2810	2380	4740	1820	1610	1540
18	2290	5250	2610	2600	2500	3210	2300	2760	4740	2110	1800	1470
19	2250	5840	2620	2610	2420	3290	1280	2330	4890	1920	1840	1420
20	2230	5920	2720	2610	2440	3310	1270	2360	4840	1700	1760	1580
21	2250	5930	2610	2620	2410	3160	1210	2530	4780	1780	1640	1740
22	2180	5820	2610	2540	2330	3150	1250	2480	4590	1870	1600	1300
23	2280	4910	2700	2560	2390	3140	1200	2790	4910	1940	1610	1260
24	2270	4140	2720	2540	2420	3350	1400	2670	4680	1930	1530	950
25	2910	4160	2610	2590	2410	4310	1350	5180	4610	1890	1540	1180
26	3430	4320	2600	2620	2390	8020	1450	4730	4580	1880	1660	1170
27	3460	4170	2750	2540	2490	8020	1670	5280	4320	1930	1750	1010
28	2700	4410	2680	2480	2910	7720	1560	4870	3700	1790	1560	1080
29	2110	4150	2650	2500	---	8370	1510	5060	2970	1490	1880	1300
30	2120	4320	2740	2470	---	8460	1550	7180	3450	1760	1500	1260
31	2260	---	2700	2550	---	8380	---	14900	---	1720	1430	---
TOTAL	83210	116540	94920	80510	76980	126190	127140	100180	228880	57170	54230	42470
MEAN	2684	3885	3062	2597	2749	4071	4238	3232	7629	1844	1749	1416
MAX	3500	5930	5080	2740	3420	8460	9270	14900	14600	2430	2120	2040
MIN	1910	2110	2300	2400	2330	1840	1200	1640	2970	1490	1410	950
CFSM	.44	.64	.50	.43	.45	.67	.69	.53	1.25	.30	.29	.23
IN.	.51	.71	.58	.49	.47	.77	.77	.61	1.39	.35	.33	.26

WTR YR 1989 TOTAL 1188420 MEAN 3256 MAX 14900 MIN 950 CFSM .53 IN. 7.24

STREAMS TRIBUTARY TO LAKE MICHIGAN

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04085059 FOX RIVER AT DE PERE, WI--CONTINUED

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1150	4420	2590	2330	1950	2320	3890	1200	6210	9180	2220	5970
2	988	4910	2060	2280	2280	2290	4190	1560	5480	8760	2330	5760
3	978	4880	1780	2310	2050	2040	3670	1560	5550	6920	2460	5530
4	986	5040	1860	2250	2040	1900	4260	1560	5420	4820	2640	5290
5	942	5160	1880	2420	2040	2110	4170	1470	6230	4660	2550	3970
6	1080	4550	1770	2360	2010	1940	4040	1570	9070	4180	2320	3800
7	1040	3660	1810	2390	2080	1890	4050	1620	7470	4120	2350	3820
8	993	4170	2550	2340	2270	1880	4020	1750	4160	4880	2420	3570
9	946	3110	2670	2400	2250	2940	4260	1940	3740	4760	2430	3760
10	1120	2870	2670	2390	2010	3660	4610	1850	4020	4390	2430	4130
11	1100	3000	2620	2370	1910	3800	3840	2400	4180	4220	2490	3710
12	1190	2870	2630	2280	1980	5630	2520	2410	4350	3580	2380	3850
13	1060	2830	2670	2320	2000	4210	2480	1830	5670	2620	2280	3630
14	930	2960	2650	2370	2180	9930	2840	2150	7140	2110	2440	5280
15	1020	1980	2640	2330	2630	9120	2910	3350	6530	2140	2290	5840
16	1690	1810	2500	2330	2680	8750	2670	7070	6260	2570	2340	5670
17	1270	1500	2700	2430	2630	8700	2360	6320	6900	2460	2180	5100
18	2050	1990	2650	2500	2650	8710	1210	6800	7360	2390	2380	5210
19	2630	1710	2480	2390	2670	8830	938	9940	7630	2300	2940	5650
20	2240	1910	2520	2370	2580	8980	1100	11900	9360	2290	7210	5900
21	2210	1430	2550	2400	2640	9190	1240	12200	8220	2350	6730	6130
22	2100	1710	2440	2300	2540	8790	1270	11800	8130	2580	7890	5930
23	2350	1860	2380	1850	2500	7960	1380	11600	12400	2930	9460	5860
24	2610	1750	2320	2170	1880	7990	1440	11500	12700	2820	9300	5620
25	3390	1600	2410	2110	1840	8120	1650	10600	14500	2620	9150	5960
26	3270	1630	2350	2290	2010	8090	1520	9200	14400	2240	8990	5810
27	3060	1940	2370	2720	2300	5340	1310	8880	14000	2110	8510	5280
28	3200	2020	2340	2630	2290	5240	1360	8790	13300	2290	7350	5070
29	3060	1840	2330	2620	---	5220	1370	8000	12300	2400	6970	4860
30	3190	2610	2340	2750	---	3920	1480	8100	11000	2330	6670	4880
31	3520	---	2350	2480	---	4040	---	6600	---	2130	5940	---
TOTAL	57363	83720	73880	73480	62890	173530	78048	177520	243680	110150	140040	150840
MEAN	1850	2791	2383	2370	2246	5598	2602	5726	8123	3553	4517	5028
MAX	3520	5160	2700	2750	2680	9930	4610	12200	14500	9180	9460	6130
MIN	930	1430	1770	1850	1840	1880	938	1200	3740	2110	2180	3570
CFSM	.30	.46	.39	.39	.37	.92	.43	.94	1.33	.58	.74	.82
IN.	.35	.51	.45	.45	.38	1.06	.48	1.08	1.48	.67	.85	.92
CAL YR 1989	TOTAL 1108713	MEAN 3038	MAX 14900	MIN 930	CFSM .50	IN. 6.75						
WTR YR 1990	TOTAL 1425141	MEAN 3904	MAX 14500	MIN 930	CFSM .64	IN. 8.68						

STREAMS TRIBUTARY TO LAKE MICHIGAN

04085059 FOX RIVER AT DE PERE, WI--CONTINUED

WATER-QUALITY RECORDS

PERIOD OF RECORD.--June 1988 to September 1990 (discontinued).

PERIOD OF DAILY RECORD.--

SUSPENDED-SEDIMENT DISCHARGE: October 1988 to July 1989 and May to September 1990 (discontinued).

TOTAL SUSPENDED-SOLIDS DISCHARGE: July 1989 to April 1990 (discontinued).

INSTRUMENTATION.--Automatic pumping sampler.

REMARKS.--Records fair. Samples for suspended-sediment analyses (1988 water year), suspended-solids analyses (1989-90 water years), and chloride analyses (1990 water year) were point samples taken by an automatic sampler. The samples are composites of four subsamples taken at six-hour intervals during the day beginning at time 0600. Other samples for more comprehensive chemical analysis (water years 1988-90) were composite samples of water pumped from multiple fixed points in the stream cross section. Chemical analyses by Wisconsin State Laboratory of Hygiene.

EXTREMES OUTSIDE PERIOD OF DAILY RECORD.--

SUSPENDED-SEDIMENT CONCENTRATIONS: Maximum observed, 158 mg/L, June 14, 1988; minimum observed, 8 mg/L, July 6, 1988.

TOTAL SUSPENDED-SOLIDS CONCENTRATIONS: Maximum observed, 56 mg/L, Aug. 9, 1988; minimum observed, 16 mg/L, September 13, 1988.

EXTREMES FOR CURRENT PERIOD.--

OCTOBER TO JULY 1989:

SUSPENDED-SEDIMENT CONCENTRATIONS: Maximum observed, 194 mg/L, May 31; minimum observed, 1 mg/L, Jan. 22 and Feb. 21.

SUSPENDED-SEDIMENT DISCHARGE: Maximum daily, 7,290 tons, June 1; minimum daily, 9.7 tons, Jan. 22 and Feb. 21.

WATER YEAR 1989:

TOTAL SUSPENDED-SOLIDS CONCENTRATIONS: Maximum observed, 72 mg/L, June 28 and Aug. 9; minimum observed, 3 mg/L, Jan. 19.

TOTAL SUSPENDED-SOLIDS DISCHARGE: Maximum daily, 324 tons, Aug. 13; minimum daily, 74.3 tons, Sept. 16.

MAY TO SEPTEMBER 1990:

SUSPENDED-SEDIMENT CONCENTRATIONS: Maximum observed, 71 mg/L, June 6; minimum observed, 10 mg/L, Sept. 10.

SUSPENDED-SEDIMENT DISCHARGE: Maximum daily, 1,970 tons, June 26; minimum daily, 52 tons, May 7.

OCTOBER TO APRIL 1990:

TOTAL SUSPENDED-SOLIDS CONCENTRATIONS: Maximum observed, 74 mg/L, Mar. 16; minimum observed, 1 mg/L, Feb. 6-7.

TOTAL SUSPENDED-SOLIDS DISCHARGE: Maximum daily, 1,650 tons, Mar. 16; minimum daily, 6.45 tons, Feb. 7.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	SEDI- MENT, SUS- PENDE (MG/L) (80154)	DATE	SEDI- MENT, SUS- PENDE (MG/L) (80154)	DATE	SEDI- MENT, SUS- PENDE (MG/L) (80154)
JUN 1988		AUG 1988		SEP 1988	
19...	51	05...	33	01...	31
23...	42	09...	32	02...	37
27...	35	12...	29	03...	23
JUL		16...	32	04...	25
01...	18	18...	26	05...	28
03...	22	21...	33	06...	26
06...	28	23...	31	07...	23
09...	42	24...	29	10...	19
13...	35	25...	28	13...	15
17...	33	26...	23	16...	19
21...	27	27...	24	19...	21
26...	28	28...	24	21...	20
AUG		29...	25	23...	17
02...	18	30...	24	27...	17
		31...	25	30...	20

WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	DATE	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	SEDI- MENT, SUS- PENDE (MG/L) (80154)
OCT 1988			NOV 1988		
01...	2300	23	08...	3240	14
11...	3150	17	11...	3700	15
14...	2980	17	15...	3720	10
17...	1910	17	18...	5250	21
20...	2230	15	22...	5820	13
23...	2280	17	25...	4160	10
25...	2910	17	29...	4150	15
28...	2700	17	30...	4320	10
NOV			DEC		
01...	2130	10	03...	5080	20
04...	2200	11	07...	3130	14

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WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	DATE	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	SEDI- MENT, SUS- PENDE (MG/L) (80154)
DEC 1988			MAY 1989		
10...	2300	13	01...	1640	26
13...	2610	6	02...	1690	26
16...	2600	5	03...	2140	38
19...	2620	3	04...	1840	35
20...	2720	3	05...	2090	28
23...	2700	4	06...	1710	26
27...	2750	4	07...	1970	23
31...	2700	3	08...	2190	29
JAN 1989			09...	1990	27
04...	2670	3	11...	2020	34
08...	2530	3	12...	2170	35
10...	2740	3	13...	2130	30
14...	2630	4	14...	2340	33
18...	2600	2	15...	2550	30
22...	2540	1	16...	2240	27
26...	2620	2	17...	2380	21
30...	2470	3	18...	2760	33
FEB			19...	2330	33
02...	3060	11	20...	2360	36
06...	3020	4	21...	2530	34
11...	2970	3	22...	2480	31
16...	2530	3	23...	2790	23
21...	2410	1	24...	2670	22
23...	2390	7	25...	5180	121
26...	2390	2	26...	4730	128
MAR			27...	5280	76
01...	1950	3	28...	4870	64
04...	2200	10	29...	5060	49
07...	3410	3	30...	7180	110
10...	3420	7	31...	14900	194
13...	3210	7	JUN		
14...	3250	9	01...	14600	183
15...	4010	41	02...	14400	190
16...	3480	38	03...	14600	145
17...	3340	14	04...	14100	182
18...	3210	7	05...	13700	132
19...	3290	4	06...	13500	148
20...	3310	4	07...	12800	127
21...	3160	3	08...	11000	96
22...	3150	4	09...	9530	85
23...	3140	8	10...	8030	54
24...	3350	10	11...	7640	63
25...	4310	24	12...	7180	58
26...	8020	89	13...	7590	64
27...	8020	103	14...	7360	131
28...	7720	74	15...	6310	38
29...	8370	53	16...	4740	35
30...	8460	73	17...	4740	32
31...	8380	58	18...	4740	43
APR			19...	4890	38
01...	8550	51	20...	4840	41
02...	8680	63	21...	4780	46
03...	9270	55	22...	4590	47
04...	9150	71	23...	4910	43
05...	8730	63	24...	4680	50
06...	8230	47	25...	4610	51
07...	7830	42	26...	4580	49
08...	7540	37	27...	4320	47
09...	7250	34	28...	3700	44
10...	7220	19	29...	2970	36
11...	6940	11	30...	3450	41
12...	4480	5	JUL		
13...	4070	9	01...	2430	36
14...	2430	12	02...	1890	30
15...	2330	17	03...	1690	24
16...	2630	19	04...	1830	32
17...	2810	24	05...	1730	29
18...	2300	23	06...	1660	22
19...	1280	19	07...	1890	27
20...	1270	18	08...	1800	25
21...	1210	20	09...	1930	25
22...	1250	20	10...	2030	26
23...	1200	21	11...	1840	26
24...	1400	17	12...	1610	28
25...	1350	26	13...	1740	26
26...	1450	28	14...	1840	32
27...	1670	35	15...	1880	33
28...	1560	32	16...	1860	28
29...	1510	29	17...	1820	26
30...	1550	27	18...	2120	25
			19...	1920	30

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04085059 FOX RIVER AT DE PERE, WI--CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	DATE	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	SEDI- MENT, SUS- PENDE (MG/L) (80154)
MAY 1990			JULY 1990		
01...	1200	40	20...	2300	66
02...	1570	33	21...	2360	36
03...	1560	31	22...	2580	41
04...	1560	95	23...	2930	30
05...	1470	87	AUG		
06...	1570	12	02...	2330	21
07...	1620	11	03...	2460	26
08...	1750	18	04...	2640	19
09...	1940	17	05...	2550	21
10...	1850	21	06...	2320	19
11...	2400	22	07...	2350	15
12...	2410	29	08...	2420	18
13...	1830	26	09...	2430	22
14...	2150	23	10...	2430	13
15...	3350	24	11...	2490	12
16...	7070	49	12...	2380	16
17...	6320	48	13...	2280	17
18...	6800	44	14...	2440	19
30...	8100	41	15...	2290	14
31...	6600	32	16...	2340	19
JUN			17...	2180	20
01...	6210	33	18...	2380	15
02...	5480	48	19...	2940	21
03...	5550	54	20...	7210	21
04...	5420	50	21...	6730	25
05...	6230	67	22...	7890	24
06...	9070	71	23...	9460	31
07...	7470	49	24...	9300	26
08...	4160	27	25...	9150	28
09...	3740	35	26...	8990	26
10...	4020	38	27...	8510	23
11...	4180	33	28...	7350	22
27...	14000	52	28...	7350	18
28...	13300	47	29...	6970	18
29...	12300	53	SEP		
30...	11000	55	05...	3970	12
JUL			06...	3800	16
01...	9180	60	07...	3820	13
03...	6920	49	08...	3570	18
04...	4820	61	09...	3760	18
05...	4660	46	10...	4130	10
06...	4180	37	11...	3710	19
07...	4120	57	11...	3710	17
08...	4880	40	12...	3850	20
09...	4760	30	13...	3630	24
10...	4390	32	14...	5280	24
11...	4220	31	15...	5840	30
12...	3580	48	25...	5960	26
13...	2620	37	25...	5960	59
14...	2110	24	26...	5810	15
15...	2140	23	27...	5280	16
16...	2570	32	28...	5070	16
17...	2460	35	29...	4860	18
18...	2390	31	30...	4880	22
19...	2300	19			

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04085059 FOX RIVER AT DE PERE, WI--CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	DIS-CHARGE, IN CUBIC FEET PER SECOND (00060)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDE (MG/L) (00530)	RESIDUE VOLA- TILE, SUS- PENDE (MG/L) (00535)	DATE	DIS-CHARGE, IN CUBIC FEET PER SECOND (00060)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDE (MG/L) (00530)	RESIDUE VOLA- TILE, SUS- PENDE (MG/L) (00535)
JUL 1989				AUG 1989			
20...	1700	44	15	28...	1560	50	23
21...	1780	44	15	29...	1880	7	7
22...	1870	45	15	30...	1500	39	19
23...	1940	40	18	31...	1430	32	17
24...	1930	35	15	SEP			
25...	1890	35	15	01...	1520	28	16
26...	1880	45	17	02...	1520	35	17
27...	1930	46	20	03...	1580	25	15
28...	1790	46	18	04...	1220	35	17
29...	1490	38	16	05...	2040	31	16
30...	1760	43	18	06...	1750	25	14
31...	1720	37	16	07...	1630	27	14
AUG				08...	1590	33	17
01...	2100	34	15	09...	1490	32	16
02...	2110	40	17	10...	1390	38	18
03...	1920	47	19	11...	1720	28	15
09...	1530	72	27	12...	1270	37	20
10...	2040	54	23	13...	1330	23	12
11...	1830	56	21	14...	1400	20	11
12...	1760	63	24	15...	1550	22	11
13...	1830	65	27	16...	1210	22	12
14...	1820	52	17	17...	1540	21	12
15...	1790	54	19	18...	1470	25	14
16...	1720	54	20	19...	1420	23	14
17...	1610	58	21	20...	1580	26	15
18...	1800	50	19	21...	1740	26	14
19...	1840	48	18	22...	1300	28	15
20...	1760	47	19	23...	1260	28	15
21...	1640	53	22	24...	950	29	17
22...	1600	53	23	25...	1180	30	16
23...	1610	43	17	26...	1170	30	17
24...	1530	49	19	27...	1010	26	15
25...	1540	51	19	28...	1080	29	16
26...	1660	58	23	29...	1300	29	16
27...	1750	48	20	30...	1260	28	16

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	DIS-CHARGE, IN CUBIC FEET PER SECOND (00060)	CHLO- RIDE, DIS- SOLVED (MG/L) AS CL (00940)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDE (MG/L) (00530)	RESIDUE VOLA- TILE, SUS- PENDE (MG/L) (00535)	DATE	DIS-CHARGE, IN CUBIC FEET PER SECOND (00060)	CHLO- RIDE, DIS- SOLVED (MG/L) AS CL (00940)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDE (MG/L) (00530)	RESIDUE VOLA- TILE, SUS- PENDE (MG/L) (00535)
OCT 1989					NOV 1989				
01...	1150	--	28	15	01...	4420	16	38	12
02...	988	--	32	16	02...	4910	16	37	13
03...	978	--	33	18	03...	4880	16	30	11
04...	986	23	22	12	04...	5040	15	27	10
05...	942	25	27	13	05...	5160	15	32	10
06...	1080	24	27	16	06...	4550	15	36	12
07...	1040	23	27	15	07...	3660	14	37	12
08...	993	23	32	16	08...	4170	14	38	12
09...	946	24	26	14	09...	3110	15	39	13
10...	1120	24	30	15	10...	2870	15	38	13
11...	1100	25	32	15	11...	3000	16	37	13
12...	1190	26	35	17	12...	2870	16	32	11
13...	1060	26	35	16	13...	2830	16	29	11
14...	930	25	35	17	14...	2960	16	24	9
15...	1020	24	31	16	15...	1980	16	31	12
16...	1690	24	44	18	16...	1810	16	28	11
17...	1270	24	39	16	17...	1500	16	28	11
18...	2050	24	36	16	18...	1990	17	26	10
19...	2630	24	39	16	19...	1710	17	24	10
20...	2240	23	34	14	20...	1910	18	23	11
21...	2210	22	30	13	21...	1430	18	23	10
22...	2100	21	28	12	22...	1710	18	22	9
23...	2350	19	27	10	23...	1860	18	18	9
24...	2610	19	24	9	24...	1750	19	16	8
25...	3390	18	30	11	25...	1600	19	17	8
26...	3270	18	35	13	26...	1630	19	17	9
27...	3060	17	31	10	27...	1940	20	18	9
28...	3200	17	33	11	28...	2020	19	17	8
29...	3060	16	36	13	29...	1840	18	16	9
30...	3190	16	33	11	30...	2610	19	17	8
31...	3520	16	37	13					

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04085059 FOX RIVER AT DE PERE, WI--CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDED (MG/L) (00530)	RESIDUE VOLA- TILE, SUS- PENDED (MG/L) (00535)	DATE	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDED (MG/L) (00530)	RESIDUE VOLA- TILE, SUS- PENDED (MG/L) (00535)
DEC 1989					FEB 1990				
01...	2590	20	14	6	17...	2630	20	2	2
02...	2060	19	12	7	18...	2650	20	2	2
03...	1780	18	13	6	19...	2670	19	2	2
04...	1860	17	13	7	20...	2580	18	2	2
05...	1880	18	10	6	21...	2640	19	2	2
06...	1770	18	10	5	22...	2540	18	2	2
07...	1810	19	10	6	23...	2500	19	2	2
08...	2550	20	9	5	24...	1880	19	4	3
09...	2670	20	9	5	25...	1840	19	3	3
10...	2670	20	10	5	26...	2010	19	3	2
11...	2620	18	12	6	27...	2300	20	2	2
12...	2630	17	9	6	28...	2290	20	2	2
13...	2670	17	10	9	MAR				
14...	2650	17	6	6	01...	2320	20	2	2
15...	2640	16	7	7	02...	2290	20	4	3
16...	2500	16	16	12	03...	2040	21	4	3
17...	2700	16	7	7	04...	1900	21	4	4
18...	2650	16	5	5	05...	2110	22	4	4
19...	2480	17	5	5	06...	1940	22	6	4
24...	2320	17	8	8	07...	1890	22	3	3
25...	2410	18	4	4	08...	1880	21	3	3
26...	2350	18	2	2	09...	2940	21	4	4
27...	2370	18	2	2	10...	3660	23	7	4
28...	2340	16	4	4	11...	3800	24	10	6
29...	2330	17	4	4	12...	5630	23	37	10
30...	2340	17	4	4	13...	4210	21	25	8
31...	2350	18	4	4	14...	9930	24	36	12
JAN 1990					15...	9120	23	57	14
01...	2330	18	4	4	16...	8750	18	74	21
02...	2280	18	4	4	17...	8700	16	43	14
03...	2310	19	4	4	18...	8710	16	54	16
04...	2250	18	4	3	19...	8830	16	55	16
05...	2420	18	4	4	20...	8980	15	38	13
06...	2360	20	4	4	21...	9190	15	41	14
07...	2390	21	4	4	22...	8790	15	35	11
08...	2340	20	4	4	23...	7960	14	23	10
09...	2400	20	3	3	24...	7990	15	22	10
10...	2390	19	4	4	25...	8120	14	19	8
11...	2370	20	2	2	26...	8090	14	29	11
12...	2280	25	2	2	27...	5340	15	17	9
13...	2320	23	2	2	28...	5240	15	13	9
14...	2370	21	2	2	29...	5220	16	11	8
15...	2330	21	2	2	30...	3920	15	11	8
16...	2330	21	2	2	31...	4040	15	13	8
17...	2430	20	2	2	APR				
18...	2500	19	2	2	01...	3890	16	15	9
19...	2390	21	2	2	02...	4190	16	28	12
20...	2370	23	3	2	03...	3670	16	25	10
21...	2400	22	3	2	04...	4260	16	14	7
22...	2300	21	2	2	05...	4170	16	11	6
23...	1850	21	2	2	06...	4040	17	13	6
24...	2170	21	2	2	07...	4050	16	12	5
25...	2110	20	4	3	08...	4020	16	12	8
26...	2290	20	2	2	09...	4260	15	15	7
27...	2720	23	2	2	10...	4610	14	22	9
28...	2630	22	3	2	11...	3840	14	30	12
29...	2620	22	4	4	12...	2520	15	23	10
30...	2750	21	3	3	13...	2480	15	22	10
31...	2480	20	4	3	14...	2840	16	17	9
FEB					15...	2910	17	21	11
01...	1950	19	3	3	16...	2670	17	27	11
02...	2280	19	3	2	17...	2360	17	13	7
03...	2050	19	3	2	18...	1210	17	18	6
04...	2040	22	3	2	19...	938	17	18	8
05...	2040	22	2	2	20...	1100	18	14	9
06...	2010	22	1	1	21...	1250	18	18	9
07...	2080	22	1	1	22...	1270	18	16	7
08...	2270	22	2	2	23...	1380	19	22	9
09...	2250	24	2	2	24...	1440	20	24	11
10...	2010	24	4	3	25...	1650	22	24	12
11...	1910	26	2	2	26...	1520	23	29	14
12...	1980	26	3	3	27...	1310	23	35	14
13...	2000	25	3	3	28...	1360	23	32	13
14...	2180	23	4	4	29...	1370	24	26	10
15...	2630	23	3	2	30...	1480	24	35	13
16...	2680	22	2	2					

STREAMS TRIBUTARY TO LAKE MICHIGAN

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04085059 FOX RIVER AT DE PERE, WI--CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	TRANS- PAR- ENCY (SECCHI DISK) (M) (00078)	OXYGEN, DIS- SOLVED (MG/L) (00300)	HARD- NESS TOTAL (MG/L CACO3) (00900)	HARD- NESS NONCARB TOT LAB MG/L AS CACO3 (00903)	CALCIUM TOTAL RECOV- ERABLE (MG/L AS CA) (00916)	MAGNE- SIUM, TOTAL RECOV- ERABLE (MG/L AS MG) (00927)
JUN 1988										
14...	1310	424	8.7	24.0	0.30	8.2	190	24	40	21
23...	0825	440	8.5	26.0	0.40	7.6	190	29	40	22
30...	1300	--	--	--	--	--	190	20	39	22
JUL										
06...	1130	444	8.7	25.5	0.40	9.4	180	21	37	21
11...	1200	428	8.6	26.5	0.40	7.1	180	30	34	22
18...	1110	446	8.5	25.5	0.20	8.3	180	30	38	22
26...	1045	439	8.6	25.5	0.20	9.4	180	28	34	22
AUG										
02...	1045	403	8.7	27.0	0.20	9.3	170	--	31	22
09...	1200	398	8.6	26.0	0.20	8.5	160	31	29	22
18...	1020	404	8.5	27.0	0.30	5.9	160	34	30	22
23...	1030	404	8.6	23.5	0.20	8.3	160	24	28	21
31...	1015	405	8.7	20.5	0.40	11.0	160	30	30	22
SEP										
07...	1055	408	8.8	18.0	0.40	11.4	180	31	32	23
13...	1145	390	8.6	20.0	0.50	9.0	160	21	30	20
21...	1035	422	8.3	18.0	0.40	8.0	170	20	33	21
28...	1320	427	8.5	17.0	0.40	11.0	180	27	36	21

DATE	ALKA- LINITY WAT WH TOT FET LAB MG/L AS CACO3 (00417)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDED (MG/L) (00530)	SOLIDS, RESIDUE AT 105 DEG. C, TOTAL (MG/L) (00500)	RESIDUE FIXED NON FILTER- ABLE (MG/L) (00540)	RESIDUE VOLATILE, SUS- PENDED (MG/L) (00535)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS NH4) (71846)
JUN 1988										
14...	162	23	<0.20	43	320	28	15	--	--	--
23...	162	25	0.30	32	318	19	13	--	--	--
30...	168	27	<0.20	22	310	10	12	--	--	--
JUL										
06...	158	28	0.30	26	310	13	13	--	--	--
11...	146	27	0.50	32	306	15	17	0.020	<0.020	--
18...	156	26	0.50	23	308	8	15	<0.020	<0.020	--
26...	148	29	0.40	28	--	7	21	<0.020	<0.020	--
AUG										
02...	--	29	0.70	41	--	18	23	<0.020	<0.020	--
09...	132	27	<0.20	56	--	26	30	<0.020	<0.020	--
18...	132	27	<0.20	46	--	27	19	0.020	0.030	0.04
23...	132	28	<0.20	46	--	22	24	0.030	0.060	0.08
31...	136	28	<0.20	46	--	29	17	<0.020	<0.020	--
SEP										
07...	144	27	1.0	22	--	8	14	0.070	<0.020	--
13...	136	25	1.7	16	--	6	10	0.230	0.090	0.12
21...	149	27	3.4	21	--	12	9	0.220	0.120	0.15
28...	149	27	4.6	22	--	11	11	0.330	<0.020	--

DATE	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4) (00660)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)	CHLORO- PHYLL A TRICHR. UNCORR. WHOLE TOTAL (UG/L) (32210)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	SED. SUSP. SIEVE DIAM. % FINER THAN (70331)
JUN 1988									
14...	--	0.260	--	--	13	8.3	79.0	158	84
23...	--	0.190	--	--	14	9.0	60.0	83	98
30...	--	0.110	--	--	11	8.5	46.0	76	87
JUL									
06...	--	0.140	--	--	13	8.1	53.0	53	--
11...	1.9	0.200	0.032	0.10	13	8.3	85.0	53	92
18...	1.5	0.140	0.014	0.04	13	8.7	69.0	27	88
26...	1.8	0.150	0.003	0.01	18	9.2	23.0	27	93
AUG									
02...	2.3	0.200	0.005	0.02	11	8.4	130	27	--
09...	2.4	0.220	0.004	0.01	16	9.1	170	32	--
18...	2.1	0.210	0.004	0.01	16	8.5	160	68	--
23...	2.2	0.190	0.004	0.01	12	19	150	53	--
31...	1.9	0.150	0.006	0.02	13	17	110	82	--
SEP									
07...	2.1	0.150	0.003	0.01	11	9.3	120	36	--
13...	1.7	0.120	0.002	0.01	10	8.5	80.0	45	--
21...	1.6	0.130	0.004	0.01	10	7.8	95.0	15	--
28...	1.7	0.130	0.004	0.01	9.4	7.5	110	140	--

STREAMS TRIBUTARY TO LAKE MICHIGAN

04085059 FOX RIVER AT DE PERE, WI--CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	TRANS- PAR- ENCY (SECCHI DISK) (M) (00078)	OXYGEN, DIS- SOLVED (MG/L) (00300)	HARD- NESS TOTAL (MG/L AS CACO3) (00900)	HARD- NESS NONCARB WH WAT TOT LAB MG/L AS CACO3 (00903)
OCT 1988										
03...	1620	--	1920	383	8.7	16.0	0.40	9.9	170	21
11...	1150	3150	--	356	8.6	12.0	0.60	10.5	160	11
18...	1110	2290	--	386	8.4	11.5	0.80	9.7	180	24
25...	1110	2910	--	390	8.3	7.5	0.60	9.9	170	15
NOV										
01...	1115	2130	--	382	8.6	4.0	0.80	13.2	180	16
08...	1000	--	3250	388	8.4	5.0	0.60	12.5	170	15
15...	1515	--	3680	380	8.6	4.5	0.50	13.8	170	14
30...	1130	--	3820	367	7.8	2.5	0.80	14.4	170	17
DEC										
07...	1045	--	3360	367	8.6	1.0	0.70	15.6	170	10
JAN 1989										
19...	1500	--	2540	406	8.7	0.0	--	14.8	170	8
APR										
13...	1345	--	5480	383	8.3	3.5	1.30	13.6	190	21
*19...	0900	--	1290	406	8.2	9.0	0.40	11.2	180	17
*19...	1115	--	1180	408	8.2	9.0	0.40	11.6	180	15
26...	1245	--	1180	448	8.6	14.0	0.50	13.2	210	30
MAY										
03...	1245	--	2560	466	8.4	12.0	1.50	10.8	200	26
11...	1600	--	1700	422	8.5	12.5	1.60	11.9	200	27
17...	1600	--	2350	428	8.6	18.0	1.50	11.3	180	13
24...	1240	--	2850	418	8.2	21.0	1.90	10.8	180	18
JUN										
01...	1450	--	14800	367	8.1	18.5	1.30	9.4	170	12
06...	1530	--	13200	352	8.1	20.5	1.90	8.9	150	4
13...	1000	--	1730	370	7.7	19.5	1.50	7.9	170	23
21...	1400	--	4610	376	8.2	24.0	1.50	9.6	160	12
28...	1330	--	3960	361	8.4	24.0	0.30	9.1	160	15
JUL										
05...	1030	--	1410	368	8.7	27.0	0.50	10.8	150	1
12...	1245	1610	--	361	8.7	26.0	0.30	10.0	160	7
20...	1230	1700	--	387	8.5	22.5	0.30	9.4	180	38
25...	1145	1890	--	392	8.7	25.5	0.40	10.8	170	25
31...	1420	--	1870	370	8.6	23.5	0.40	9.5	170	22
AUG										
09...	1120	--	1900	358	8.9	23.5	0.30	14.9	160	14
14...	1000	--	1550	368	8.7	23.5	0.30	9.3	150	11
23...	1030	--	1790	371	9.0	23.5	0.30	10.4	150	10
29...	1500	--	2450	386	8.8	24.0	0.40	9.3	170	21
SEP										
06...	1045	--	1670	394	8.9	22.0	0.50	11.6	180	21
13...	0850	--	1010	415	8.7	19.0	0.40	10.5	190	24
20...	1345	--	3000	406	8.7	20.0	0.40	11.9	190	21
27...	0810	--	1060	412	9.2	15.0	0.40	12.7	180	8

* SAMPLES WITH SAME DATES ARE REPLICATES.

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04085059 FOX RIVER AT DE PERE, WI--CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	CALCIUM TOTAL RECOV- ERABLE (MG/L AS CA) (00916)	MAGNE- SIUM, TOTAL RECOV- ERABLE (MG/L AS MG) (00927)	ALKA- LINITY WAT WE TOT FET LAB MG/L AS CACO3 (00417)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDE (MG/L) (00530)	RESIDUE FIXED NON FILTER- ABLE (MG/L) (00540)	RESIDUE VOLA- TILE, SUS- PENDE (MG/L) (00535)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)
OCT 1988										
03...	35	21	153	20	6.1	20	12	8	0.130	0.040
11...	31	21	153	16	7.3	18	11	7	0.100	0.120
18...	32	23	151	18	7.8	12	5	7	0.140	0.260
25...	32	22	156	19	7.1	13	9	4	0.180	0.290
NOV										
01...	32	23	159	17	4.9	13	8	5	0.120	0.150
08...	34	21	156	20	4.2	16	10	6	0.250	0.190
15...	33	22	159	18	3.6	14	8	6	0.300	0.100
30...	33	22	156	17	2.8	18	9	9	0.230	0.100
DEC										
07...	32	21	156	16	2.3	16	9	7	0.110	0.100
JAN 1989										
19...	32	23	167	20	1.2	3	0	3	0.050	0.100
APR										
13...	36	24	168	16	3.7	9	5	4	0.270	0.160
19...	36	23	168	19	2.1	24	12	12	0.290	0.110
19...	36	23	170	19	2.0	27	16	11	0.290	0.120
26...	43	24	176	24	<0.20	28	13	15	0.290	0.060
MAY										
03...	42	24	178	27	<0.20	57	36	21	0.250	0.250
11...	40	24	172	23	<0.20	32	18	14	0.280	0.100
17...	38	22	173	22	--	24	11	13	0.280	0.060
24...	36	22	163	21	<0.20	24	10	14	0.180	<0.020
JUN										
01...	32	21	154	15	0.40	60	39	21	0.320	0.110
06...	32	18	150	13	0.80	44	31	13	0.240	0.120
13...	36	20	149	14	2.1	38	25	13	0.270	0.140
21...	34	19	151	15	3.8	28	16	12	0.190	0.030
28...	33	20	150	15	4.9	72	52	20	0.160	<0.020
JUL										
05...	32	18	153	18	2.9	36	23	13	<0.020	<0.020
12...	33	18	150	18	6.0	37	15	22	<0.020	<0.020
20...	38	22	148	20	7.7	52	25	27	<0.020	<0.020
25...	36	20	147	20	7.5	32	14	18	<0.020	0.030
31...	34	20	145	22	12	40	19	21	0.020	0.030
AUG										
09...	33	19	147	20	13	50	22	28	<0.020	<0.020
14...	32	18	143	20	9.9	51	29	22	<0.020	<0.020
23...	30	18	139	21	13	46	24	22	<0.020	<0.020
29...	33	20	144	21	14	40	19	21	0.020	0.019
SEP										
06...	38	21	160	22	20	23	7	16	<0.020	<0.020
13...	40	21	162	21	21	32	15	17	0.040	<0.020
20...	40	22	170	22	18	29	13	16	<0.020	<0.020
27...	38	20	169	21	18	26	9	17	<0.020	<0.020

STREAMS TRIBUTARY TO LAKE MICHIGAN

04085059 FOX RIVER AT DE PERE, WI--CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS NH ₄) (71846)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO ₄) (00660)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)	CHLORO- PHYLL A TRICHR. UNCORR. WHOLE TOTAL (UG/L) (32210)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT 1988										
03...	0.05	1.5	0.120	0.005	0.02	9.7	7.3	83.0	--	--
11...	0.15	1.2	0.090	0.005	0.02	9.1	6.9	45.0	--	--
18...	0.33	1.3	0.070	0.005	0.02	7.8	7.0	29.0	--	--
25...	0.37	1.2	0.080	0.005	0.02	8.0	7.0	19.0	--	--
NOV										
01...	0.19	1.3	0.070	0.003	0.01	8.1	7.5	31.0	--	--
08...	0.24	1.2	0.090	0.004	0.01	8.2	7.1	34.0	--	--
15...	0.13	1.1	0.070	0.004	0.01	7.9	7.4	38.0	--	--
30...	0.13	1.1	0.060	0.004	0.01	7.6	6.9	44.0	--	--
DEC										
07...	0.13	1.0	0.060	0.004	0.01	7.9	6.8	41.0	--	--
JAN 1989										
19...	0.13	0.80	0.040	0.010	0.03	7.6	6.9	7.00	--	--
APR										
13...	0.21	0.90	0.040	0.002	0.01	6.6	5.9	10.0	--	--
19...	0.14	1.3	0.100	0.003	0.01	5.6	5.5	49.0	--	--
19...	0.15	1.4	0.120	0.003	0.01	--	--	49.0	--	--
26...	0.08	1.6	0.140	0.004	0.01	7.9	7.2	74.0	--	--
MAY										
03...	0.32	1.8	0.160	0.005	0.02	8.0	6.9	57.0	--	--
11...	0.13	1.5	0.130	0.005	0.02	7.5	7.1	47.0	--	--
17...	0.08	1.4	0.110	--	--	8.8	7.4	40.0	12	100
24...	--	1.2	0.100	0.004	0.01	7.2	6.9	45.0	15	99
JUN										
01...	0.14	1.6	0.150	0.010	0.03	6.2	6.0	34.0	53	99
06...	0.15	1.1	0.090	0.007	0.02	8.1	6.9	13.0	--	--
13...	0.18	1.3	0.110	0.005	0.02	8.4	7.0	27.0	52	47
21...	0.04	1.2	0.100	0.006	0.02	9.1	7.5	40.0	--	--
28...	--	1.3	0.150	0.006	0.02	6.6	5.8	65.0	40	67
JUL										
05...	--	1.0	0.100	0.004	0.01	10	7.1	41.0	--	--
12...	--	1.9	0.160	0.005	0.02	12	7.5	110	18	98
20...	--	2.2	0.190	0.005	0.02	13	7.5	150	--	--
25...	0.04	1.5	0.120	0.004	0.01	15	7.8	79.0	15	99
31...	0.04	2.2	0.170	0.005	0.02	3.5	2.7	160	--	--
AUG										
09...	--	2.2	0.180	0.007	0.02	8.5	7.7	150	29	97
14...	--	1.9	0.160	0.007	0.02	9.2	7.8	120	--	--
23...	--	1.7	0.160	0.005	0.02	8.7	8.3	120	36	99
29...	0.02	1.9	0.160	0.004	0.01	9.0	8.3	120	--	--
SEP										
06...	--	1.8	0.120	0.007	0.02	7.8	7.3	92.0	15	98
13...	--	1.7	0.140	0.008	0.02	9.0	7.1	95.0	--	--
20...	--	1.7	0.110	0.004	0.01	9.2	8.1	100	16	99
27...	--	1.7	0.110	0.004	0.01	12	9.0	85.0	--	--

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04085059 FOX RIVER AT DE PERE, WI--CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 SEPTEMBER 1990

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	TRANS- PAR- ENCY (SECCHI DISK) (M) (00078)	OXYGEN, DIS- SOLVED (MG/L) (00300)	HARD- NESS TOTAL (MG/L AS CACO3) (00900)	HARD- NESS NONCARB TOT LAB MG/L AS CACO3 (00903)	CALCIUM TOTAL RECOV- ERABLE (MG/L AS CA) (00916)
OCT 1989										
04...	0920	735	424	8.9	13.5	0.50	12.5	190	19	40
12...	1225	1430	439	8.8	12.0	0.40	12.9	200	29	43
18...	1400	2450	402	8.9	9.5	0.30	12.5	200	26	42
24...	1515	2780	380	8.6	9.5	0.50	13.1	180	21	40
31...	1315	3870	366	8.4	11.0	0.30	9.9	180	18	39
NOV										
07...	1115	2900	371	8.4	6.5	0.30	12.7	180	20	39
14...	0840	3040	378	8.4	5.0	0.46	13.7	180	9	38
*30...	1415	2780	400	8.5	0.5	0.61	14.9	200	24	41
*30...	1545	2790	--	--	--	--	--	210	36	44
DEC										
13...	0845	2660	404	8.6	0.0	--	17.5	210	29	43
JAN 1990										
11...	1125	2400	403	8.4	0.0	--	14.6	190	19	42
25...	1030	2120	429	8.3	0.5	--	14.0	210	28	44
FEB										
06...	1035	1910	436	7.9	0.5	2.00	15.0	210	32	46
21...	1635	2670	446	8.4	0.5	1.80	15.5	210	25	43
MAR										
06...	1520	1560	446	8.3	1.0	0.90	14.7	210	31	44
21...	1115	8960	400	8.6	4.0	0.80	13.2	220	42	46
28...	1210	5310	388	8.4	3.5	1.20	15.0	200	34	41
APR										
04...	0840	4230	387	8.4	5.5	0.80	13.7	200	34	41
11...	1010	3710	349	8.6	7.0	0.60	12.9	180	26	38
17...	1025	2850	376	8.6	8.0	0.60	14.2	190	29	41
*24...	1045	1490	406	8.6	13.5	0.50	13.6	200	42	44
*24...	1210	1580	407	8.6	14.0	0.30	13.6	210	40	44
MAY										
01...	1010	1220	421	8.5	17.0	0.30	8.6	190	26	42

DATE	MAGNE- SIUM, TOTAL RECOV- ERABLE (MG/L AS MG) (00927)	ALKA- LINITY WAT WH TOT FET LAB MG/L AS CACO3 (00417)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDED (MG/L) (00530)	RESIDUE FIXED NON FILTER- ABLE (MG/L) (00540)	RESIDUE VOLA- TILE, SUS- PENDED (MG/L) (00535)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS NH4) (71846)
OCT 1989										
04...	22	172	22	14	34	16	18	<0.020	<0.020	--
12...	22	169	24	11	35	18	17	0.120	0.030	0.04
18...	22	170	24	8.4	40	21	19	0.020	<0.020	--
24...	21	165	18	15	23	12	11	0.120	0.080	0.10
31...	21	166	16	14	36	22	14	0.070	0.110	0.14
NOV										
07...	21	164	14	12	36	21	15	0.040	0.110	0.14
14...	20	168	15	9.4	28	15	13	0.090	0.150	0.19
30...	23	173	19	11	18	9	9	0.080	0.210	0.27
30...	24	173	19	11	17	7	10	0.080	0.220	0.28
DEC										
13...	24	177	17	11	9	4	5	0.070	0.190	0.24
JAN 1990										
11...	22	177	19	11	8	4	4	0.090	0.250	0.32
25...	24	181	20	10	8	4	4	0.100	0.300	0.39
FEB										
06...	24	182	21	10	7	3	4	0.160	0.260	0.33
21...	25	185	19	10	6	4	2	0.110	0.140	0.18
MAR										
06...	24	178	22	8.9	13	7	6	0.160	0.240	0.31
21...	25	176	14	11	25	14	11	0.130	0.080	0.10
28...	24	167	15	9.4	10	3	7	0.170	0.080	0.10
APR										
04...	24	167	15	7.3	43	32	11	0.190	0.080	0.10
11...	21	155	14	4.5	24	15	9	0.400	0.080	0.10
17...	22	164	17	3.4	27	14	13	0.180	0.050	0.06
24...	23	163	20	<0.20	33	19	14	0.170	<0.020	--
24...	23	165	20	<0.20	33	18	15	0.200	<0.020	--
MAY										
01...	21	165	24	<0.20	36	24	12	0.210	0.170	0.22

* SAMPLES WITH SAME DATES ARE REPLICATES.

STREAMS TRIBUTARY TO LAKE MICHIGAN
04085059 FOX RIVER AT DE PERE, WI--CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 SEPTEMBER 1990

DATE	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4) (00660)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)	CHLORO- PHYLL A TRICHR. UNCORR. WHOLE TOTAL (UG/L) (32210)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT 1989									
04...	1.3	0.110	0.005	0.02	12	8.9	89.0	18	99
12...	1.7	0.110	0.004	0.01	12	9.5	110	--	--
18...	1.4	0.110	0.005	0.02	10	8.3	130	32	99
24...	1.3	0.090	0.006	0.02	15	12	48.0	--	--
31...	1.4	0.110	0.005	0.02	11	9.4	63.0	22	99
NOV									
07...	1.4	0.090	0.005	0.02	15	9.4	59.0	--	--
14...	1.2	0.080	0.006	0.02	10	7.2	67.0	16	99
30...	1.3	0.080	0.009	0.03	12	8.7	29.0	--	--
30...	1.2	0.070	0.009	0.03	13	8.7	27.0	--	--
DEC									
13...	1.1	0.050	0.017	0.05	12	8.8	--	--	--
JAN 1990									
11...	1.0	0.040	0.015	0.05	9.5	7.6	5.00	3	97
25...	1.2	0.060	0.017	0.05	13	8.8	6.00	--	--
FEB									
06...	1.2	0.050	0.014	0.04	12	9.4	4.00	--	--
21...	1.0	0.040	0.011	0.03	9.2	6.9	4.00	--	--
MAR									
06...	1.1	0.080	0.031	0.09	11	8.0	9.00	--	--
21...	0.90	0.060	0.003	0.01	9.4	8.4	13.0	16	96
28...	0.80	0.050	0.004	0.01	12	8.8	14.0	--	--
APR									
04...	1.0	0.060	0.003	0.01	10	8.7	24.0	--	--
11...	1.3	0.090	0.005	0.02	10	8.8	45.0	--	--
17...	1.3	0.093	0.005	0.02	11	7.9	45.0	13	97
24...	1.7	0.119	0.004	0.01	13	8.9	70.0	--	--
24...	1.5	0.120	0.004	0.01	13	8.7	74.0	--	--
MAY									
01...	1.5	0.157	0.014	0.04	12	8.4	64.0	--	--

STREAMS TRIBUTARY TO LAKE MICHIGAN

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04085059 FOX RIVER AT DE PERE, WI--CONTINUED

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	143	57	153	25	59	16	1230	114	7290	234	---	---
2	151	58	217	23	83	22	1420	124	7130	151	---	---
3	128	61	265	23	70	37	1460	206	6090	117	---	---
4	140	65	245	22	52	52	1670	171	6480	151	---	---
5	169	68	225	21	40	38	1450	163	5160	132	---	---
6	170	73	169	20	32	28	1070	118	5220	105	---	---
7	170	86	116	19	28	31	883	126	4330	133	---	---
8	172	120	102	17	25	39	756	166	2910	124	---	---
9	171	118	92	17	23	50	630	147	2100	133	---	---
10	162	153	77	19	21	63	379	161	1270	144	---	---
11	145	143	65	21	20	65	204	184	1260	132	---	---
12	145	132	52	24	20	66	76	202	1150	120	---	---
13	152	119	42	27	21	64	96	176	1440	124	---	---
14	133	113	39	29	22	100	77	202	2110	154	---	---
15	107	100	37	24	27	381	101	208	776	162	---	---
16	105	136	35	19	21	322	137	161	442	141	---	---
17	88	207	30	15	18	136	177	148	425	129	---	---
18	102	289	26	12	15	66	138	234	527	147	---	---
19	95	300	22	11	12	39	66	211	519	152	---	---
20	91	270	22	11	10	33	64	225	540	---	---	---
21	94	240	23	10	9.7	28	65	229	584	---	---	---
22	94	210	25	9.7	21	33	67	203	576	---	---	---
23	102	163	28	10	39	61	66	180	588	---	---	---
24	104	126	29	10	30	97	71	214	624	---	---	---
25	135	119	29	11	20	318	91	1460	633	---	---	---
26	159	133	29	11	14	1730	113	1520	609	---	---	---
27	158	140	32	12	15	2100	152	1140	546	---	---	---
28	121	162	29	13	20	1550	135	833	430	---	---	---
29	84	157	27	15	---	1300	120	781	299	---	---	---
30	73	127	27	18	---	1550	114	2130	369	---	---	---
31	68	---	25	29	---	1330	---	7260	---	---	---	---
TOTAL	3931	4245	2334	547.7	787.7	11745	13078	19397	62427	---	---	---

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	127	575	1440	130	246
2	---	---	---	---	---	---	---	142	692	1290	136	224
3	---	---	---	---	---	---	---	156	791	961	161	203
4	---	---	---	---	---	---	---	354	769	748	145	183
5	---	---	---	---	---	---	---	296	1090	581	143	136
6	---	---	---	---	---	---	---	70	1650	456	117	157
7	---	---	---	---	---	---	---	52	971	578	103	145
8	---	---	---	---	---	---	---	80	340	531	120	166
9	---	---	---	---	---	---	---	93	344	403	133	169
10	---	---	---	---	---	---	---	102	399	377	92	136
11	---	---	---	---	---	---	---	146	379	379	83	172
12	---	---	---	---	---	---	---	180	398	429	102	207
13	---	---	---	---	---	---	---	128	534	258	105	232
14	---	---	---	---	---	---	---	138	692	145	119	357
15	---	---	---	---	---	---	---	242	651	140	94	465
16	---	---	---	---	---	---	---	859	642	214	115	456
17	---	---	---	---	---	---	---	807	729	225	113	404
18	---	---	---	---	---	---	---	814	800	191	106	406
19	---	---	---	---	---	---	---	1170	854	150	161	433
20	---	---	---	---	---	---	---	1400	1080	336	420	445
21	---	---	---	---	---	---	---	1430	974	255	446	454
22	---	---	---	---	---	---	---	1370	992	272	535	432
23	---	---	---	---	---	---	---	1340	1560	246	753	420
24	---	---	---	---	---	---	---	1320	1640	219	666	396
25	---	---	---	---	---	---	---	1210	1930	197	671	570
26	---	---	---	---	---	---	---	1050	1970	162	620	315
27	---	---	---	---	---	---	---	1010	1930	148	537	224
28	---	---	---	---	---	---	---	992	1730	155	404	223
29	---	---	---	---	---	---	---	899	1760	157	340	238
30	---	---	---	---	---	---	---	879	1640	147	309	276
31	---	---	---	---	---	---	---	591	---	130	260	---
TOTAL	---	---	---	---	---	---	---	19447	30506	11920	8239	8890

STREAMS TRIBUTARY TO LAKE MICHIGAN

04085059 FOX RIVER AT DE PERE, WI--CONTINUED

SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED(TONS PER DAY), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	---	---	209	125
2	---	---	---	---	---	---	---	---	---	---	237	140
3	---	---	---	---	---	---	---	---	---	---	249	121
4	---	---	---	---	---	---	---	---	---	---	264	113
5	---	---	---	---	---	---	---	---	---	---	286	174
6	---	---	---	---	---	---	---	---	---	---	257	123
7	---	---	---	---	---	---	---	---	---	---	230	126
8	---	---	---	---	---	---	---	---	---	---	196	143
9	---	---	---	---	---	---	---	---	---	---	253	137
10	---	---	---	---	---	---	---	---	---	---	323	140
11	---	---	---	---	---	---	---	---	---	---	291	146
12	---	---	---	---	---	---	---	---	---	---	308	125
13	---	---	---	---	---	---	---	---	---	---	324	100
14	---	---	---	---	---	---	---	---	---	---	275	81.0
15	---	---	---	---	---	---	---	---	---	---	270	94.6
16	---	---	---	---	---	---	---	---	---	---	263	74.3
17	---	---	---	---	---	---	---	---	---	---	255	93.4
18	---	---	---	---	---	---	---	---	---	---	256	100
19	---	---	---	---	---	---	---	---	---	---	249	94.1
20	---	---	---	---	---	---	---	---	---	224	236	118
21	---	---	---	---	---	---	---	---	---	225	241	130
22	---	---	---	---	---	---	---	---	---	232	234	101
23	---	---	---	---	---	---	---	---	---	218	207	99.5
24	---	---	---	---	---	---	---	---	---	191	208	77.4
25	---	---	---	---	---	---	---	---	---	186	223	99.0
26	---	---	---	---	---	---	---	---	---	231	260	96.5
27	---	---	---	---	---	---	---	---	---	249	243	75.5
28	---	---	---	---	---	---	---	---	---	226	184	86.8
29	---	---	---	---	---	---	---	---	---	166	128	105
30	---	---	---	---	---	---	---	---	---	205	161	99.5
31	---	---	---	---	---	---	---	---	---	186	130	---
TOTAL	---	---	---	---	---	---	---	---	---	---	7450	3338.6

SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED(TONS PER DAY), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	92.0	467	103	26.2	17.1	14.4	176	---	---	---	---	---
2	87.7	499	71.5	25.6	19.2	23.8	303	---	---	---	---	---
3	90.7	417	64.3	25.9	17.3	22.9	285	---	---	---	---	---
4	77.1	396	65.8	25.3	16.4	21.3	293	---	---	---	---	---
5	69.7	461	54.6	27.2	14.8	25.0	136	---	---	---	---	---
6	81.9	453	49.7	26.5	17.7	41.7	143	---	---	---	---	---
7	80.6	377	50.2	26.8	6.45	21.3	138	---	---	---	---	---
8	85.2	445	65.3	25.4	11.8	16.4	139	---	---	---	---	---
9	72.2	338	68.4	21.8	13.9	34.6	184	---	---	---	---	---
10	93.5	306	75.8	28.8	19.3	71.1	276	---	---	---	---	---
11	99.2	307	83.4	29.2	12.4	127	281	---	---	---	---	---
12	116	260	69.0	12.8	15.9	489	168	---	---	---	---	---
13	104	232	67.5	13.0	17.5	326	149	---	---	---	---	---
14	90.1	221	48.8	13.3	22.8	1030	144	---	---	---	---	---
15	94.4	165	57.6	13.1	22.0	1440	173	---	---	---	---	---
16	197	144	93.3	13.1	15.9	1650	196	---	---	---	---	---
17	140	117	57.8	13.6	14.8	1160	133	---	---	---	---	---
18	219	145	38.9	14.0	14.9	1290	58.9	---	---	---	---	---
19	284	116	35.2	14.2	15.0	1300	46.0	---	---	---	---	---
20	214	124	38.9	19.0	14.5	960	46.1	---	---	---	---	---
21	188	91.8	43.3	19.3	24.5	872	60.2	---	---	---	---	---
22	166	104	45.5	13.6	17.7	841	60.3	---	---	---	---	---
23	176	95.1	48.7	10.4	15.5	541	87.2	---	---	---	---	---
24	179	80.4	47.7	15.5	18.9	488	122	---	---	---	---	---
25	281	75.8	27.9	28.1	16.1	467	119	---	---	---	---	---
26	311	78.4	14.6	14.2	16.2	589	124	---	---	---	---	---
27	273	96.7	14.7	16.1	13.6	266	124	---	---	---	---	---
28	298	96.4	24.4	22.0	12.9	178	121	---	---	---	---	---
29	303	83.9	26.2	27.5	---	159	107	---	---	---	---	---
30	303	123	26.3	25.0	---	124	141	---	---	---	---	---
31	358	---	26.4	26.0	---	147	---	---	---	---	---	---
TOTAL	5224.3	6915.5	1604.7	632.5	455.05	14736.5	4533.7	---	---	---	---	---

04085139 FOX RIVER AT MOUTH AT GREEN BAY, WI

LOCATION.--Lat 44°32'22", long 88°00'16", in land grant 45, T.24 N., R.21 E., Brown County, Hydrologic Unit 04030204, at mouth 0.5 mi downstream of Interstate Highway 43.

DRAINAGE AREA.--6,330 mi².

PERIOD OF RECORD.--July 1988 to May 1990 (discontinued).

INSTRUMENTATION.--Two automatic pumping samplers with intakes at depths of 5 and 16 ft and continuous recorder for specific conductance, pH, water temperature, and dissolved oxygen concentration at depths of 5 and 16 ft.

REMARKS.--Samples for suspended-sediment analyses (October 1988-July 23, 1989) and suspended-solids and chloride analyses (July 24, 1989-April 1990) were point samples taken by automatic samplers. The samples are composites of four subsamples taken at six-hour intervals during the day beginning at time 0600. Other samples for more comprehensive chemical analysis were composite samples of water pumped from multiple fixed points in the stream cross section. Chemical analyses by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, OCTOBER 1988 TO SEPTEMBER 1989

DATE	SAM- PLING DEPTH (FEET) (000003)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	DATE	SAM- PLING DEPTH (FEET) (000003)	SEDI- MENT, SUS- PENDE (MG/L) (80154)
OCT 1988			DEC 1988		
01...	5.00	22	01...	5.00	15
01...	16.0	41	02...	5.00	30
02...	5.00	24	02...	16.0	28
02...	16.0	36	04...	5.00	16
03...	5.00	25	06...	16.0	17
03...	16.0	46	08...	5.00	25
04...	5.00	38	08...	16.0	26
04...	16.0	37	09...	5.00	10
05...	5.00	35	11...	16.0	20
05...	16.0	42	12...	5.00	52
06...	5.00	22	14...	16.0	29
06...	16.0	24	15...	5.00	24
07...	5.00	15	17...	16.0	7
07...	16.0	15	20...	16.0	11
08...	5.00	16	23...	16.0	11
08...	16.0	15	27...	16.0	10
09...	5.00	15	30...	16.0	7
09...	16.0	15	JAN 1989		
10...	5.00	23	03...	16.0	9
10...	16.0	20	06...	16.0	5
11...	5.00	26	10...	16.0	69
11...	16.0	24	19...	5.00	25
12...	5.00	20	23...	5.00	3
12...	16.0	27	28...	5.00	4
13...	5.00	15	FEB		
13...	16.0	18	10...	16.0	16
14...	5.00	14	12...	16.0	8
14...	16.0	15	17...	16.0	9
15...	5.00	14	22...	5.00	28
15...	16.0	17	22...	16.0	49
16...	5.00	29	25...	5.00	38
16...	16.0	18	25...	16.0	9
17...	5.00	21	28...	5.00	18
17...	16.0	29	28...	16.0	11
18...	5.00	18	MAR		
18...	16.0	20	03...	5.00	23
19...	5.00	17	04...	16.0	7
19...	16.0	19	07...	16.0	4
20...	5.00	12	11...	5.00	7
20...	16.0	24	13...	5.00	12
21...	5.00	18	13...	16.0	6
21...	16.0	18	14...	5.00	27
22...	5.00	10	14...	16.0	11
22...	16.0	18	15...	5.00	30
23...	5.00	14	15...	16.0	35
23...	16.0	17	16...	5.00	20
24...	5.00	20	16...	16.0	60
24...	16.0	16	17...	5.00	48
25...	5.00	15	17...	16.0	71
25...	16.0	15	18...	5.00	24
26...	5.00	16	18...	16.0	36
26...	16.0	23	19...	5.00	14
27...	5.00	13	19...	16.0	14
27...	16.0	15	20...	5.00	9
28...	16.0	40	20...	16.0	10
29...	5.00	24	21...	5.00	6
29...	16.0	23	21...	16.0	7
30...	16.0	26	22...	5.00	9
31...	16.0	14	22...	16.0	7
NOV			23...	5.00	10
16...	16.0	54	23...	16.0	8
19...	16.0	21	24...	5.00	11
23...	16.0	22	24...	16.0	9
26...	16.0	13	25...	5.00	29
30...	16.0	17	25...	16.0	18

STREAMS TRIBUTARY TO LAKE MICHIGAN

04085139 FOX RIVER AT MOUTH AT GREEN BAY, WI--CONTINUED

WATER-QUALITY DATA, OCTOBER 1988 TO SEPTEMBER 1989

DATE	SAM- PLING DEPTH (FEET) (00003)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	DATE	SAM- PLING DEPTH (FEET) (00003)	SEDI- MENT, SUS- PENDED (MG/L) (80154)
MAR 1989			MAY 1989		
26...	16.0	69	17...	5.00	14
27...	5.00	124	17...	16.0	16
27...	16.0	127	18...	5.00	19
28...	5.00	79	18...	16.0	18
28...	16.0	83	19...	5.00	14
29...	5.00	42	19...	16.0	13
29...	16.0	44	20...	5.00	20
30...	5.00	17	20...	16.0	20
30...	16.0	20	21...	5.00	22
31...	5.00	14	21...	16.0	28
31...	16.0	17	22...	5.00	16
APR			22...	16.0	25
01...	16.0	21	23...	5.00	7
02...	5.00	16	23...	16.0	18
02...	16.0	17	24...	5.00	15
03...	5.00	21	24...	16.0	21
03...	16.0	21	25...	5.00	132
05...	5.00	24	25...	16.0	236
05...	16.0	23	26...	5.00	79
06...	16.0	19	26...	16.0	82
07...	5.00	21	27...	5.00	74
07...	16.0	21	27...	16.0	89
08...	5.00	14	28...	5.00	46
09...	5.00	18	28...	16.0	52
09...	16.0	20	29...	5.00	39
10...	5.00	12	29...	16.0	48
10...	16.0	11	30...	5.00	70
14...	16.0	19	30...	16.0	88
15...	16.0	15	31...	5.00	134
16...	16.0	22	31...	16.0	123
17...	16.0	37	JUN		
18...	16.0	22	01...	5.00	63
19...	16.0	24	01...	16.0	80
20...	16.0	23	02...	5.00	54
21...	16.0	29	02...	16.0	69
22...	16.0	30	03...	5.00	54
23...	16.0	33	03...	16.0	65
24...	16.0	26	04...	5.00	51
25...	16.0	31	04...	16.0	61
26...	5.00	31	05...	5.00	44
26...	16.0	46	05...	16.0	61
27...	5.00	29	06...	5.00	47
27...	16.0	44	06...	16.0	59
28...	5.00	33	07...	5.00	35
28...	16.0	33	07...	16.0	46
29...	5.00	26	08...	5.00	32
29...	16.0	32	08...	16.0	42
30...	5.00	23	09...	5.00	26
30...	16.0	30	09...	16.0	42
MAY			10...	5.00	32
01...	5.00	28	10...	16.0	41
01...	16.0	33	11...	5.00	37
02...	5.00	22	11...	16.0	47
02...	16.0	29	12...	5.00	30
03...	5.00	21	12...	16.0	37
03...	16.0	27	13...	5.00	30
04...	5.00	21	13...	16.0	42
04...	16.0	23	14...	5.00	35
05...	16.0	32	14...	16.0	49
06...	5.00	19	15...	5.00	31
06...	16.0	37	15...	16.0	49
07...	5.00	21	16...	5.00	28
07...	16.0	29	16...	16.0	42
08...	5.00	20	17...	5.00	20
08...	16.0	21	17...	16.0	27
09...	5.00	14	18...	5.00	21
09...	16.0	27	18...	16.0	28
10...	5.00	26	19...	5.00	16
10...	16.0	28	19...	16.0	21
11...	5.00	27	20...	5.00	17
11...	16.0	17	20...	16.0	24
12...	5.00	22	21...	5.00	19
12...	16.0	27	21...	16.0	12
13...	5.00	21	22...	5.00	18
13...	16.0	25	22...	16.0	21
14...	5.00	15	23...	5.00	21
14...	16.0	20	23...	16.0	18
15...	5.00	17	24...	5.00	20
15...	16.0	24	24...	16.0	27
16...	5.00	14	25...	5.00	22
16...	16.0	17	25...	16.0	25

STREAMS TRIBUTARY TO LAKE MICHIGAN

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04085139 FOX RIVER AT MOUTH AT GREEN BAY, WI--CONTINUED

WATER-QUALITY DATA, OCTOBER 1988 TO SEPTEMBER 1989

DATE			SAM- PLING DEPTH (FEET) (000003)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	DATE			SAM- PLING DEPTH (FEET) (000003)	SEDI- MENT, SUS- PENDE (MG/L) (80154)
JUN 1989					JUL 1989				
26...					10...				
26...					10...				
27...					11...				
27...					11...				
28...					12...				
28...					12...				
29...					13...				
29...					13...				
30...					14...				
30...					14...				
JUL					15...				
01...					15...				
01...					16...				
02...					16...				
02...					17...				
03...					17...				
03...					18...				
04...					18...				
04...					19...				
05...					19...				
05...					20...				
06...					20...				
06...					21...				
07...					21...				
07...					22...				
08...					22...				
08...					23...				
09...					23...				
09...									

DATE					SAM- PLING DEPTH (FEET) (000003)	CHLO- RIDE, DIS- SOLVED (MG/L) (00940)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDE (MG/L) (00530)	RESIDUE VOLA- TILE, SUS- PENDE (MG/L) (00535)	DATE					SAM- PLING DEPTH (FEET) (000003)	CHLO- RIDE, DIS- SOLVED (MG/L) (00940)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDE (MG/L) (00530)	RESIDUE VOLA- TILE, SUS- PENDE (MG/L) (00535)		
JUL 1989										AUG 1989									
24...					19...					20...					20...				
24...					20...					21...					21...				
25...					21...					22...					22...				
25...					22...					23...					23...				
26...					23...					24...					24...				
26...					24...					25...					25...				
27...					25...					26...					26...				
27...					26...					27...					27...				
28...					27...					28...					28...				
28...					28...					29...					29...				
29...					29...					30...					30...				
29...					30...					31...					31...				
30...					31...														
30...					AUG					01...					01...				
31...					01...					02...					02...				
31...					02...					03...					03...				
					03...					04...					04...				
					04...					05...					05...				
					05...					06...					06...				
					06...					07...					07...				
					07...					08...					08...				
					08...					09...					09...				
					09...					10...					10...				
					10...					11...					11...				
					11...					12...					12...				
					12...					13...					13...				
					13...					14...					14...				
					14...					15...					15...				
					15...					16...					16...				
					16...					17...					17...				
					17...					18...					18...				

STREAMS TRIBUTARY TO LAKE MICHIGAN

04085139 FOX RIVER AT MOUTH AT GREEN BAY, WI--CONTINUED

WATER-QUALITY DATA, OCTOBER 1988 TO SEPTEMBER 1989

DATE	SAM- PLING DEPTH (FEET) (00003)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDED (MG/L) (00530)	RESIDUE VOLA- TILE, SUS- PENDED (MG/L) (00535)	DATE	SAM- PLING DEPTH (FEET) (00003)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDED (MG/L) (00530)	RESIDUE VOLA- TILE, SUS- PENDED (MG/L) (00535)
SEP 1989					SEP 1989				
10...	16.0	30	50	20	21...	5.00	33	29	15
11...	5.00	37	29	15	21...	16.0	27	49	17
11...	16.0	33	42	19	22...	5.00	31	40	18
12...	5.00	34	50	20	22...	16.0	31	40	17
12...	16.0	30	53	24	23...	5.00	33	61	24
13...	5.00	33	24	12	23...	16.0	40	74	25
13...	16.0	34	28	12	24...	5.00	34	93	27
14...	5.00	34	20	11	24...	16.0	33	128	35
14...	16.0	31	26	12	25...	5.00	30	40	19
15...	5.00	32	20	12	25...	16.0	30	49	21
15...	16.0	31	36	15	26...	5.00	34	41	19
16...	5.00	33	21	12	26...	16.0	34	48	22
16...	16.0	31	30	13	27...	5.00	35	34	15
17...	5.00	31	25	14	27...	16.0	35	37	16
17...	16.0	31	31	13	28...	5.00	33	41	17
18...	5.00	31	27	17	28...	16.0	33	35	15
18...	16.0	31	32	15	29...	5.00	43	33	17
19...	5.00	31	24	15	29...	16.0	42	54	21
19...	16.0	29	32	15	30...	5.00	36	31	15
20...	5.00	29	31	15	30...	16.0	35	40	17
20...	16.0	29	35	14					

WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

OCT 1989	SAM- PLING DEPTH (FEET) (00003)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDED (MG/L) (00530)	RESIDUE VOLA- TILE, SUS- PENDED (MG/L) (00535)	OCT 1989	SAM- PLING DEPTH (FEET) (00003)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDED (MG/L) (00530)	RESIDUE VOLA- TILE, SUS- PENDED (MG/L) (00535)
01...	5.00	32	30	15	27...	5.00	22	20	10
01...	16.0	24	38	16	27...	16.0	22	32	20
02...	5.00	36	42	18	28...	5.00	22	31	13
02...	16.0	27	46	18	28...	16.0	22	42	17
03...	5.00	38	43	18	29...	5.00	22	42	18
03...	16.0	36	52	22	29...	16.0	21	43	19
04...	5.00	34	35	16	30...	5.00	25	52	19
04...	16.0	32	52	22	30...	16.0	26	66	23
05...	5.00	47	32	17	31...	5.00	28	47	19
05...	16.0	26	45	18	31...	16.0	28	57	23
06...	5.00	30	43	17	NOV				
06...	16.0	28	56	21	01...	5.00	23	38	15
07...	5.00	37	34	16	01...	16.0	21	46	18
07...	16.0	34	47	20	02...	5.00	22	30	13
08...	5.00	54	42	19	02...	16.0	21	32	13
08...	16.0	38	56	21	03...	5.00	19	27	12
09...	5.00	47	33	17	03...	16.0	21	29	12
09...	16.0	40	44	20	04...	5.00	25	27	12
10...	5.00	40	38	18	04...	16.0	19	33	12
10...	16.0	42	38	18	05...	5.00	18	22	11
11...	5.00	35	38	17	05...	16.0	20	32	14
11...	16.0	31	50	21	06...	5.00	18	30	14
12...	5.00	33	37	18	06...	16.0	22	31	13
12...	16.0	33	48	20	07...	5.00	44	30	14
13...	5.00	40	48	20	07...	16.0	33	36	13
13...	16.0	37	69	24	08...	5.00	21	30	12
14...	5.00	47	48	20	08...	16.0	19	40	17
14...	16.0	46	60	24	09...	5.00	17	40	18
15...	5.00	44	53	20	09...	16.0	18	41	17
15...	16.0	44	65	24	10...	5.00	18	36	15
16...	5.00	42	70	24	10...	16.0	18	58	20
16...	16.0	46	71	26	11...	5.00	19	40	21
17...	5.00	31	96	27	11...	16.0	21	58	22
17...	16.0	31	105	32	12...	5.00	25	41	19
18...	5.00	32	88	23	12...	16.0	29	54	20
18...	16.0	34	98	25	13...	5.00	35	32	13
19...	5.00	35	108	23	13...	16.0	30	33	13
19...	16.0	36	93	24	14...	5.00	34	30	13
20...	5.00	29	73	19	14...	16.0	23	42	15
20...	16.0	31	71	22	15...	5.00	28	49	15
21...	5.00	32	50	17	15...	16.0	31	33	12
21...	16.0	32	57	20	16...	5.00	23	46	15
22...	5.00	32	33	15	16...	16.0	23	39	14
22...	16.0	33	42	19	17...	5.00	24	37	13
23...	5.00	32	27	14	17...	16.0	25	47	17
23...	16.0	34	39	18	18...	5.00	25	52	20
24...	5.00	44	24	12	18...	16.0	26	39	15
24...	16.0	32	28	13	19...	5.00	24	34	13
25...	5.00	37	23	11	19...	16.0	25	40	16
25...	16.0	28	32	18	20...	5.00	26	39	15
26...	5.00	25	39	16	20...	16.0	26	37	14
26...	16.0	25	56	24	21...	5.00	26	54	17

STREAMS TRIBUTARY TO LAKE MICHIGAN

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04085139 FOX RIVER AT MOUTH AT GREEN BAY, WI--CONTINUED

WATER-QUALITY DATA, OCTOBER 1989 TO SEPTEMBER 1990

DATE	SAM- PLING DEPTH (FEET) (000003)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDED (MG/L) (00530)	RESIDUE VOLA- TILE, SUS- PENDED (MG/L) (00535)	DATE	SAM- PLING DEPTH (FEET) (000003)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDED (MG/L) (00530)	RESIDUE VOLA- TILE, SUS- PENDED (MG/L) (00535)
NOV 1989					JAN 1990				
21...	16.0	26	65	19	09...	16.0	27	4	3
22...	5.00	26	27	12	10...	5.00	28	2	2
22...	16.0	27	31	13	10...	16.0	30	4	2
23...	5.00	27	34	13	11...	5.00	30	4	2
23...	16.0	28	34	14	11...	16.0	31	4	4
24...	5.00	26	128	54	12...	5.00	28	4	2
24...	16.0	27	32	12	12...	16.0	31	6	4
25...	5.00	29	28	14	13...	5.00	27	3	2
25...	16.0	30	33	12	13...	16.0	32	5	4
26...	5.00	28	21	13	14...	5.00	32	4	3
26...	16.0	29	25	10	14...	16.0	36	5	5
27...	5.00	30	26	11	15...	5.00	29	3	3
27...	16.0	32	25	10	15...	16.0	31	4	3
28...	5.00	29	26	11	16...	5.00	28	4	4
28...	16.0	31	24	10	16...	16.0	32	5	4
29...	5.00	28	89	32	17...	5.00	27	4	3
29...	16.0	28	34	12	17...	16.0	32	4	4
30...	5.00	29	57	17	18...	5.00	30	3	3
30...	16.0	27	74	22	18...	16.0	32	4	4
DEC					19...	5.00	30	2	2
01...	5.00	27	28	12	19...	16.0	33	4	4
01...	16.0	29	43	17	20...	5.00	28	3	2
02...	5.00	28	26	9	20...	16.0	31	5	4
02...	16.0	26	63	17	21...	5.00	26	2	2
03...	16.0	26	43	12	21...	16.0	27	5	4
04...	5.00	29	30	19	22...	5.00	30	3	2
04...	16.0	29	25	10	22...	16.0	32	4	4
05...	16.0	34	27	10	23...	5.00	34	24	13
06...	5.00	30	36	10	23...	16.0	41	32	20
06...	16.0	31	26	12	24...	5.00	30	8	7
07...	5.00	28	17	10	24...	16.0	32	5	5
07...	16.0	32	31	12	25...	5.00	39	15	8
08...	5.00	27	60	12	25...	16.0	48	16	9
08...	16.0	26	22	10	26...	16.0	45	10	6
09...	16.0	25	24	11	27...	16.0	34	6	5
10...	5.00	25	47	20	28...	16.0	32	4	4
10...	16.0	24	16	10	29...	16.0	34	4	4
11...	5.00	24	18	9	30...	16.0	32	4	3
11...	16.0	28	17	10	31...	16.0	29	4	3
12...	5.00	24	9	8	FEB				
12...	16.0	24	12	8	01...	16.0	34	6	3
13...	5.00	24	41	17	02...	16.0	35	10	6
13...	16.0	23	14	9	03...	16.0	34	4	2
14...	16.0	25	34	15	04...	16.0	32	4	4
15...	5.00	27	65	--	05...	16.0	33	4	4
15...	16.0	23	18	10	06...	5.00	38	2	2
16...	5.00	21	16	9	06...	16.0	35	6	4
16...	16.0	25	55	19	07...	5.00	37	2	2
17...	5.00	21	58	20	07...	16.0	44	6	4
17...	16.0	22	37	15	08...	5.00	35	2	2
18...	16.0	23	39	12	08...	16.0	41	4	4
23...	16.0	22	117	62	09...	5.00	38	2	2
28...	5.00	28	3	3	09...	16.0	41	8	4
28...	16.0	31	6	4	10...	5.00	36	2	2
29...	5.00	25	4	2	11...	5.00	34	4	4
29...	16.0	25	6	3	12...	5.00	34	6	4
30...	5.00	26	4	3	12...	16.0	37	45	27
30...	16.0	25	6	4	13...	5.00	34	9	4
31...	5.00	23	4	2	13...	16.0	35	12	8
31...	16.0	26	4	3	15...	5.00	40	16	8
JAN 1990					16...	5.00	34	8	6
01...	5.00	24	2	2	17...	5.00	29	8	4
01...	16.0	27	3	3	18...	5.00	28	4	3
02...	5.00	23	3	3	18...	16.0	34	17	11
02...	16.0	24	4	3	19...	5.00	27	7	5
03...	5.00	26	4	2	20...	5.00	27	8	5
03...	16.0	28	6	4	21...	5.00	27	2	2
04...	5.00	27	2	2	21...	16.0	29	45	23
04...	16.0	31	4	2	22...	5.00	30	2	2
05...	5.00	27	4	3	22...	16.0	36	6	6
05...	16.0	28	6	4	23...	5.00	27	2	2
06...	5.00	27	3	3	23...	16.0	31	7	7
06...	16.0	29	5	4	24...	5.00	27	7	6
07...	5.00	26	4	3	26...	5.00	27	12	12
07...	16.0	28	6	5	27...	5.00	30	5	4
08...	5.00	28	3	3	27...	16.0	33	118	52
08...	16.0	33	4	4	28...	5.00	30	5	4
09...	5.00	27	4	2	28...	16.0	46	12	10

STREAMS TRIBUTARY TO LAKE MICHIGAN

04085139 FOX RIVER AT MOUTH AT GREEN BAY, WI--CONTINUED

WATER-QUALITY DATA, OCTOBER 1989 TO SEPTEMBER 1990

DATE	SAM- PLING DEPTH (FEET) (000003)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDED (MG/L) (00530)	RESIDUE VOLA- TILE, SUS- PENDED (MG/L) (00535)	DATE	SAM- PLING DEPTH (FEET) (000003)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDED (MG/L) (00530)	RESIDUE VOLA- TILE, SUS- PENDED (MG/L) (00535)
MAR 1990					APR 1990				
01...	5.00	28	3	3	04...	16.0	20	30	10
01...	16.0	30	11	9	05...	5.00	21	21	9
02...	5.00	30	3	3	05...	16.0	21	27	8
02...	16.0	31	7	7	06...	5.00	20	29	11
03...	5.00	32	5	5	06...	16.0	20	45	14
04...	5.00	36	5	5	07...	5.00	22	18	8
05...	5.00	33	8	8	07...	16.0	20	20	8
06...	5.00	29	4	4	08...	5.00	21	21	8
07...	5.00	30	5	5	08...	16.0	22	31	11
08...	5.00	33	5	5	09...	5.00	22	28	8
09...	5.00	36	5	5	09...	16.0	21	37	12
09...	16.0	41	16	11	10...	5.00	23	34	12
10...	5.00	30	4	4	10...	16.0	26	65	17
10...	16.0	30	9	6	11...	5.00	24	32	12
11...	5.00	28	12	9	11...	16.0	21	58	17
11...	16.0	27	23	10	12...	5.00	48	28	13
12...	5.00	26	19	9	12...	16.0	19	23	10
12...	16.0	28	47	13	13...	5.00	30	27	11
13...	5.00	24	41	14	13...	16.0	29	45	14
13...	16.0	25	50	14	14...	5.00	24	27	10
14...	16.0	30	176	27	14...	16.0	21	34	13
15...	16.0	26	136	21	15...	5.00	21	35	12
16...	16.0	30	58	12	15...	16.0	22	44	16
17...	16.0	20	67	17	16...	5.00	23	34	14
18...	16.0	18	44	14	16...	16.0	22	40	15
20...	16.0	17	24	11	17...	5.00	26	45	18
21...	16.0	18	23	10	17...	16.0	29	57	19
22...	16.0	17	21	9	18...	5.00	27	27	12
23...	16.0	19	20	14	18...	16.0	32	24	8
24...	16.0	16	20	10	19...	5.00	24	38	15
25...	16.0	15	19	9	19...	16.0	22	48	15
26...	16.0	19	20	9	20...	5.00	26	24	12
27...	5.00	19	17	9	20...	16.0	21	23	7
27...	16.0	17	19	9	21...	5.00	42	19	8
28...	5.00	20	6	6	21...	16.0	36	31	11
28...	16.0	20	14	7	22...	5.00	40	21	11
29...	5.00	20	13	10	22...	16.0	24	31	13
29...	16.0	18	17	7	23...	5.00	29	37	15
30...	5.00	20	12	8	23...	16.0	20	41	15
31...	5.00	34	15	9	24...	5.00	21	24	11
31...	16.0	30	21	8	24...	16.0	17	22	10
APR					25...	5.00	22	16	9
01...	5.00	26	14	8	25...	16.0	15	18	7
01...	16.0	22	21	8	26...	5.00	19	18	11
02...	5.00	22	36	11	27...	5.00	34	17	10
02...	16.0	23	32	10	28...	5.00	27	21	11
03...	5.00	24	21	9	29...	5.00	27	21	10
03...	16.0	27	37	11	30...	5.00	29	18	10
04...	5.00	20	18	7					

WATER-QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	TRANS- PAR- ENCY (SECCHI DISK) (M) (00078)	OXYGEN, DIS- SOLVED (MG/L) (00300)	HARD- NESS TOTAL (MG/L AS CACO3) (00900)	HARD- NESS NONCARB TOT LAB MG/L AS CACO3 (00903)	CALCIUM TOTAL RECOV- ERABLE (MG/L AS CA) (00916)
JUL 1988									
06...	1530	414	8.3	24.0	0.50	6.3	170	24	40
12...	0830	514	7.9	27.0	0.40	3.3	190	39	46
20...	0845	482	7.9	26.0	0.30	4.7	180	35	42
27...	0835	457	8.1	25.5	0.20	5.6	180	36	39
AUG									
03...	0830	446	8.2	27.5	0.20	5.2	180	36	39
10...	0835	394	8.0	22.5	0.20	5.6	150	25	35
18...	0755	398	7.8	24.0	0.40	6.0	190	63	45
24...	0835	415	8.1	23.0	0.20	5.2	160	27	34
SEP									
01...	0830	421	8.4	21.5	0.40	8.1	160	34	36
08...	0850	403	8.6	18.0	0.40	8.5	160	32	36
15...	0845	460	8.6	21.0	0.40	7.7	200	35	39
22...	0830	451	8.0	18.5	0.40	6.4	180	38	39
27...	1055	422	8.3	19.5	0.40	9.1	180	36	40

STREAMS TRIBUTARY TO LAKE MICHIGAN

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04085139 FOX RIVER AT MOUTH AT GREEN BAY, WI--CONTINUED

WATER-QUALITY DATA, OCTOBER 1987 TO SEPTEMBER 1988

DATE	MAGNE- SIUM, TOTAL RECOV- ERABLE (MG/L AS MG) (00927)	ALKA- LITY WAT WH TOT FET LAB (MG/L AS CACO3) (00417)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDED (MG/L) (00530)	SOLIDS, RESIDUE AT 105 DEG. C, TOTAL (MG/L) (00500)	RESIDUE FIXED NON FILTER- ABLE (MG/L) (00540)	RESIDUE VOLA- TILE, SUS- PENDED (MG/L) (00535)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)
JUL 1988									
06...	17	146	27	1.1	20	280	10	10	--
12...	19	154	46	1.1	35	374	21	14	0.170
20...	19	148	40	0.70	29	332	14	15	0.080
27...	19	140	38	0.30	44	--	24	20	0.070
AUG									
03...	19	140	36	0.30	39	--	24	15	0.070
10...	16	128	26	1.4	42	--	22	20	0.020
18...	18	124	28	0.70	137	--	117	20	0.080
24...	18	132	33	<0.20	50	--	30	20	0.040
SEP									
01...	18	130	32	0.30	46	--	29	17	<0.020
08...	18	132	31	0.20	40	--	23	17	0.050
15...	19	141	42	--	28	--	14	14	0.080
22...	19	138	41	1.0	32	--	21	11	0.110
27...	19	142	34	1.6	21	--	13	8	0.220
DATE	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS NH4) (71846)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4) (00660)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)	CHLORO- PHYLL A TRICHR. UNCORR. WHOLE TOTAL (UG/L) (32210)
JUL 1988									
06...	--	--	--	0.120	--	--	9.2	6.9	41.0
12...	0.260	0.33	1.9	0.190	0.053	0.16	13	9.2	60.0
20...	0.390	0.50	2.0	0.180	0.040	0.12	13	9.6	76.0
27...	0.280	0.36	2.1	0.180	0.015	0.05	23	9.3	41.0
AUG									
03...	0.200	0.26	2.2	0.220	0.040	0.12	11	7.9	95.0
10...	<0.020	--	1.7	0.160	0.005	0.02	8.1	6.7	110
18...	0.300	0.39	1.9	0.240	0.004	0.01	11	6.9	99.0
24...	0.150	0.19	2.0	0.150	0.014	0.04	10	16	99.0
SEP									
01...	0.050	0.06	1.8	0.160	0.005	0.02	10	17	99.0
08...	0.200	0.26	1.8	0.140	0.006	0.02	9.6	7.2	100
15...	0.420	0.54	2.1	0.150	0.005	0.02	12	11	98.0
22...	0.350	0.45	1.9	0.160	0.011	0.03	11	7.4	87.0
27...	0.420	0.54	2.2	0.130	0.005	0.02	12	7.6	93.0

STREAMS TRIBUTARY TO LAKE MICHIGAN

04085139 FOX RIVER AT MOUTH AT GREEN BAY, WI--CONTINUED

WATER-QUALITY DATA, OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	TRANS- PAR- ENCY (SECCHI DISK) (M) (00078)	OXYGEN, DIS- SOLVED (MG/L) (00300)	HARD- NESS TOTAL (MG/L AS CACO3) (00900)	HARD- NESS NONCARB WH WAT TOT LAB MG/L AS CACO3 (00903)	CALCIUM TOTAL RECOV- ERABLE (MG/L AS CA) (00916)
OCT 1988									
05...	1120	429	8.3	14.0	0.40	9.0	190	32	40
11...	1430	397	8.6	13.0	0.40	10.4	180	27	36
19...	0800	502	8.2	13.5	0.50	8.6	270	37	43
26...	0920	430	8.0	8.0	0.50	9.7	180	21	35
NOV									
02...	0915	411	8.3	4.5	0.60	12.6	180	20	34
10...	0800	566	8.0	7.5	0.40	11.1	220	34	51
15...	1000	419	8.4	6.5	0.30	13.2	180	24	38
DEC									
01...	0845	404	8.5	3.0	0.60	14.6	180	26	36
08...	0830	398	8.5	1.5	0.80	15.3	180	13	34
JAN 1989									
19...	0945	433	8.6	0.5	--	14.4	180	12	34
APR									
14...	0915	403	8.3	5.0	0.80	12.9	200	63	37
20...	0845	474	8.1	10.0	0.30	10.9	190	24	40
26...	0830	500	8.4	15.0	0.30	10.6	220	44	49
MAY									
03...	0840	519	8.3	12.5	1.20	10.0	220	40	46
11...	1000	500	8.3	13.5	0.30	10.3	230	52	51
17...	1130	488	8.3	18.5	1.50	10.3	210	33	47
24...	0850	464	7.9	19.5	1.80	8.4	180	20	40
JUN									
01...	0845	404	7.8	17.5	0.20	7.9	170	22	35
*06...	0945	358	7.9	20.5	1.60	8.0	160	7	33
*06...	1155	359	8.0	20.5	1.70	8.0	170	20	35
13...	1330	380	7.7	20.0	1.00	7.7	150	4	29
21...	0845	389	--	22.0	1.70	8.8	160	6	34
28...	0845	381	8.1	24.5	0.30	7.4	170	14	35
JUL									
06...	0815	382	8.2	25.0	0.50	5.6	150	7	33
12...	0800	405	8.2	27.0	0.40	5.8	170	20	38
17...	1010	405	8.4	25.5	0.30	7.2	160	16	34
17...	1535	408	8.5	26.0	0.30	7.3	180	35	39
18...	0715	392	8.2	25.5	0.30	6.5	170	25	36
18...	1630	386	8.5	26.0	0.30	7.7	160	18	34
19...	0830	418	8.1	25.5	0.30	6.2	190	40	40
19...	1515	412	8.3	25.0	0.30	6.8	180	35	37
20...	0800	436	8.1	23.5	0.30	6.4	170	30	37
20...	1555	421	8.3	24.0	0.30	7.4	170	26	36
21...	0715	432	8.3	23.5	0.30	6.8	170	24	38
21...	1420	446	8.5	25.0	0.30	9.4	190	35	43
22...	0715	438	8.5	23.0	0.30	8.3	180	31	40
22...	1415	436	8.7	25.5	0.30	11.2	180	29	39
23...	0730	509	8.4	24.5	0.30	8.4	180	29	40
23...	1420	428	8.7	26.5	0.30	11.8	180	27	38
*24...	0745	391	8.6	25.0	0.30	9.6	170	24	36
*24...	1000	426	8.5	25.5	0.30	--	170	26	38
24...	1510	372	8.5	25.0	0.30	9.2	170	32	37
25...	0740	383	8.4	24.5	0.30	7.1	170	28	37
25...	1600	372	8.3	25.0	0.40	7.6	170	31	38
26...	0850	376	8.3	25.0	0.50	5.7	160	28	36
26...	1600	398	8.3	25.5	0.40	6.6	160	27	38
27...	0735	425	7.9	25.5	0.40	4.5	170	29	39
27...	1405	452	8.0	25.5	0.30	6.0	180	34	40
28...	0745	428	8.2	24.5	0.20	6.4	180	38	42
28...	1425	414	8.3	26.5	0.20	7.3	180	34	38
29...	0755	392	8.2	25.0	0.30	6.4	170	29	38
29...	1500	403	8.2	24.5	0.30	6.3	170	26	37
30...	0755	420	7.9	25.0	0.30	5.0	180	30	38
30...	1425	414	8.2	24.5	0.30	6.0	180	29	38
31...	0755	400	8.2	24.0	0.30	6.1	170	27	38
AUG									
09...	0810	398	8.5	23.0	0.30	7.2	160	15	35
14...	1355	355	8.3	23.0	0.30	5.3	160	21	35
23...	1345	456	8.6	24.5	0.20	7.8	160	18	34
29...	1045	396	8.6	24.0	0.30	6.4	170	33	33
SEP									
07...	0900	412	8.5	22.5	0.30	5.5	180	31	38
13...	1225	454	8.4	20.5	0.30	7.2	190	33	43
20...	0845	416	8.5	20.0	0.30	8.7	180	30	41
27...	1215	530	8.9	16.0	0.30	9.4	190	19	45

* REPLICATE SAMPLES.

STREAMS TRIBUTARY TO LAKE MICHIGAN

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04085139 FOX RIVER AT MOUTH AT GREEN BAY, WI--CONTINUED

WATER-QUALITY DATA, OCTOBER 1988 TO SEPTEMBER 1989

DATE	MAGNE- SIUM, TOTAL RECOV- ERABLE (MG/L AS MG) (00927)	ALKA- LINITY WAT WH TOT FET LAB MG/L AS CACO3 (00417)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDED (MG/L) (00530)	RESIDUE FIXED NON FILTER- ABLE (MG/L) (00540)	RESIDUE VOLA- TILE, SUS- PENDED (MG/L) (00535)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)
OCT 1988									
05...	22	159	35	5.7	34	21	13	0.230	0.820
11...	22	154	24	6.4	38	25	13	0.130	0.360
19...	22	161	51	--	19	10	9	0.270	2.00
26...	22	157	25	6.7	33	24	9	0.190	0.340
NOV									
02...	23	160	24	5.3	15	12	3	0.170	0.210
10...	22	184	57	4.9	33	15	18	0.420	1.90
15...	22	162	24	3.8	24	17	7	0.480	0.220
DEC									
01...	23	159	23	2.5	25	15	10	0.300	0.160
08...	22	163	22	2.3	23	17	6	0.160	0.230
JAN 1989									
19...	23	168	27	1.4	4	1	3	0.080	0.240
APR									
14...	25	132	20	3.2	22	15	7	0.270	0.180
20...	23	171	32	1.9	32	19	13	0.350	0.410
26...	24	177	38	<0.20	53	41	12	0.280	0.290
MAY									
03...	26	182	36	<0.20	34	20	14	0.300	0.370
11...	25	178	44	0.40	36	21	15	0.380	0.690
17...	22	175	42	0.50	36	23	13	0.270	0.450
24...	19	158	30	0.30	28	15	13	0.140	0.230
JUN									
01...	21	152	19	0.90	55	40	15	0.560	0.170
06...	18	150	14	0.60	42	30	12	0.240	0.150
06...	20	150	14	0.60	38	26	12	0.240	0.150
13...	20	151	16	1.6	47	31	16	0.300	0.180
21...	18	153	17	2.2	24	12	12	0.230	0.030
28...	19	152	20	3.5	81	57	24	0.040	0.120
JUL									
06...	17	145	23	1.6	33	19	14	<0.020	0.070
12...	19	153	29	1.3	71	44	27	0.030	0.180
17...	18	143	28	2.3	53	28	25	0.020	0.030
17...	20	145	30	2.4	56	30	26	<0.020	0.240
18...	19	143	25	2.5	54	30	24	<0.020	0.040
18...	18	141	25	3.0	50	27	23	<0.020	<0.020
19...	21	146	30	3.4	84	54	30	<0.020	0.430
19...	21	144	28	3.9	67	39	28	<0.020	0.080
20...	20	145	32	4.0	76	44	32	<0.020	0.310
20...	20	146	28	5.1	58	35	23	<0.020	0.080
21...	19	149	32	4.4	42	21	21	<0.020	0.520
21...	20	155	46	4.6	44	21	23	<0.020	1.80
22...	19	147	33	3.0	55	31	24	<0.020	0.920
22...	20	151	32	4.0	47	22	25	<0.020	0.330
23...	20	153	33	4.4	44	22	22	<0.020	0.340
23...	20	150	30	4.0	40	15	25	<0.020	0.040
24...	19	144	26	3.6	38	18	20	<0.020	0.030
24...	19	147	26	2.9	37	19	18	<0.020	0.090
24...	20	143	25	3.6	37	17	20	<0.020	0.030
25...	18	139	22	4.3	31	15	16	<0.020	0.030
25...	18	138	20	4.4	71	47	24	<0.020	0.030
26...	18	136	21	4.7	28	13	15	<0.020	0.030
26...	17	138	23	4.5	26	11	15	0.030	0.350
27...	18	143	27	5.0	54	35	19	<0.020	0.370
27...	19	144	28	4.0	70	45	25	<0.020	0.280
28...	19	145	30	3.2	69	43	26	<0.020	0.370
28...	20	143	26	4.8	53	28	25	<0.020	0.070
29...	19	144	26	3.8	47	24	23	<0.020	0.140
29...	19	145	25	4.2	47	26	21	<0.020	0.030
30...	20	147	28	3.9	78	57	21	<0.020	0.260
30...	20	148	26	4.3	48	27	21	<0.020	0.090
31...	19	146	27	3.4	45	24	21	<0.020	0.130
AUG									
09...	18	147	27	8.2	53	28	25	0.040	<0.020
14...	17	136	24	8.0	41	23	18	<0.020	0.130
23...	18	141	34	9.8	70	46	24	<0.020	0.190
29...	21	136	28	9.3	59	36	23	0.020	0.020
SEP									
07...	20	146	30	8.6	45	26	19	<0.020	0.210
13...	21	161	32	17	50	29	21	<0.020	0.120
20...	20	155	30	10	50	28	22	<0.020	<0.020
27...	20	176	44	15	41	20	21	<0.020	0.450

STREAMS TRIBUTARY TO LAKE MICHIGAN

04085139 FOX RIVER AT MOUTH AT GREEN BAY, WI--CONTINUED

WATER-QUALITY DATA, OCTOBER 1988 TO SEPTEMBER 1989

DATE	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS NH4) (71846)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4) (00660)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)	CHLORO- PHYLL A TRICHR. UNCORR. WHOLE TOTAL (UG/L) (32210)
OCT 1988								
05...	1.1	2.6	0.160	0.005	0.02	10	9.3	86.0
11...	0.46	1.7	0.130	0.004	0.01	8.7	7.5	60.0
19...	2.6	3.5	0.110	0.014	0.04	12	11	38.0
26...	0.44	1.4	0.100	0.009	0.03	8.9	8.0	30.0
NOV								
02...	0.27	1.4	0.080	0.003	0.01	8.3	7.8	31.0
10...	2.4	4.6	0.300	0.028	0.09	14	12	37.0
15...	0.28	<0.20	0.030	0.004	0.01	9.4	9.4	26.0
DEC								
01...	0.21	1.3	0.080	0.006	0.02	12	12	41.0
08...	0.30	1.5	0.080	0.004	0.01	8.9	7.4	45.0
JAN 1989								
19...	0.31	1.0	0.050	0.013	0.04	7.8	7.5	7.00
APR								
14...	0.23	1.1	0.060	--	--	6.1	5.7	18.0
20...	0.53	1.8	0.130	0.002	0.01	7.0	6.2	53.0
26...	0.37	2.1	0.180	0.004	0.01	8.8	8.2	75.0
MAY								
03...	0.48	1.9	0.160	0.012	0.04	8.1	7.8	53.0
11...	0.89	2.4	0.150	0.009	0.03	9.8	9.6	48.0
17...	0.58	2.2	0.160	--	--	9.5	8.7	55.0
24...	0.30	1.5	0.130	0.007	0.02	8.0	7.7	38.0
JUN								
01...	0.22	1.5	0.160	0.021	0.06	7.2	6.6	31.0
06...	0.19	1.2	0.110	0.007	0.02	9.3	7.0	17.0
06...	0.19	1.3	0.090	0.008	0.02	9.7	6.9	20.0
13...	0.23	1.3	0.120	0.005	0.02	9.3	6.9	36.0
21...	0.04	1.2	0.090	0.005	0.02	11	8.0	56.0
28...	0.15	1.7	0.190	0.007	0.02	7.8	6.6	81.0
JUL								
06...	0.09	1.2	0.130	0.010	0.03	9.5	7.3	49.0
12...	0.23	2.3	0.220	0.019	0.06	13	8.9	81.0
17...	0.04	2.2	0.210	0.008	0.02	14	8.0	150
17...	0.31	2.7	0.250	0.006	0.02	14	8.6	140
18...	0.05	2.1	0.220	0.005	0.02	11	7.7	130
18...	--	1.9	0.180	0.004	0.01	12	7.4	110
19...	0.55	2.6	0.240	0.005	0.02	12	7.6	120
19...	0.10	2.4	0.230	0.003	0.01	14	7.9	120
20...	0.40	2.7	0.240	0.010	0.03	16	8.2	130
20...	0.10	2.1	0.200	0.004	0.01	14	8.5	150
21...	0.67	2.7	0.220	--	--	12	8.9	110
21...	2.3	4.7	0.270	--	--	19	11	150
22...	1.2	3.4	0.230	--	--	12	9.2	130
22...	0.42	2.9	0.220	--	--	14	9.2	150
23...	0.44	2.8	0.220	0.006	0.02	12	9.0	140
23...	0.05	2.3	0.180	0.005	0.02	14	8.8	140
24...	0.04	2.0	0.170	0.004	0.01	12	7.9	110
24...	0.12	1.9	0.170	0.006	0.02	11	7.8	110
24...	0.04	1.8	0.150	0.007	0.02	11	7.8	110
25...	0.04	1.6	0.140	0.004	0.01	11	6.6	78.0
25...	0.04	1.6	0.160	0.006	0.02	9.2	6.8	73.0
26...	0.04	1.5	0.130	0.007	0.02	11	6.5	66.0
26...	0.45	1.7	0.120	0.007	0.02	9.9	6.5	55.0
27...	0.48	2.2	0.180	0.005	0.02	6.2	5.3	79.0
27...	0.36	2.3	0.230	0.006	0.02	8.4	7.0	99.0
28...	0.48	2.5	0.220	--	--	7.6	6.5	120
28...	0.09	1.6	0.210	--	--	6.3	5.5	120
29...	0.18	1.6	0.200	0.008	0.02	5.8	5.5	120
29...	0.04	1.5	0.200	0.005	0.02	6.1	5.5	120
30...	0.33	1.9	0.220	0.008	0.02	6.4	4.9	120
30...	0.12	1.6	0.200	0.005	0.02	6.2	4.4	110
31...	0.17	1.6	0.190	0.004	0.01	6.8	6.5	120
AUG								
09...	--	2.2	0.210	0.016	0.05	8.2	7.9	140
14...	0.17	1.3	0.130	0.013	0.04	7.8	6.8	77.0
23...	0.24	2.2	0.220	0.012	0.04	11	9.9	110
29...	0.03	2.1	0.190	0.003	0.01	9.3	8.2	110
SEP								
07...	0.27	2.1	0.190	0.007	0.02	10	7.0	85.0
13...	0.15	1.9	0.180	0.010	0.03	9.8	7.6	94.0
20...	--	1.8	0.150	0.005	0.02	9.1	8.1	85.0
27...	0.58	2.5	0.180	0.013	0.04	15	12	110

04085139 FOX RIVER AT MOUTH AT GREEN BAY, WI--CONTINUED

WATER-QUALITY DATA, OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	TRANS- PAR- ENCY (SECCHI DISK) (M) (00078)	OXYGEN, DIS- SOLVED (MG/L) (00300)	HARD- NESS TOTAL (MG/L AS CACO3) (00900)	HARD- NESS NONCARB TOT LAB MG/L AS CACO3 (00903)	CALCIUM TOTAL RECOV- ERABLE (MG/L AS CA) (00916)
OCT 1989									
04...	1425	441	8.7	15.0	0.30	10.6	210	47	49
12...	0900	471	8.8	12.0	0.30	11.4	210	43	48
18...	0930	530	8.5	11.5	0.20	10.2	210	50	52
24...	1045	512	8.5	11.0	0.30	11.9	190	26	43
30...	1520	454	8.2	13.5	0.20	10.2	210	37	49
31...	0840	393	8.1	12.5	0.40	9.1	190	23	41
31...	1615	386	8.3	12.0	0.30	9.0	190	22	41
NOV									
01...	0800	446	8.0	12.0	0.30	9.1	190	25	43
01...	1650	459	8.2	11.0	0.40	9.7	180	9	38
02...	0835	402	8.2	10.5	0.30	10.3	180	18	39
02...	1415	401	8.3	10.0	0.40	10.5	180	13	38
03...	0835	514	8.1	10.0	0.37	13.0	190	23	42
03...	1500	390	8.3	8.0	0.46	14.4	170	8	37
04...	0945	391	8.4	8.0	0.46	11.8	180	17	38
06...	1415	388	8.4	8.0	0.30	12.7	190	22	40
07...	0800	438	8.3	8.0	0.46	12.6	180	16	38
07...	1415	471	8.4	8.5	0.30	12.6	190	28	41
08...	0645	407	8.4	7.5	0.30	12.1	190	24	41
08...	1455	399	8.4	8.5	0.30	12.0	190	23	41
09...	0755	397	8.2	8.0	0.46	11.6	180	20	39
09...	1345	393	8.3	7.5	0.46	12.1	190	19	40
10...	0800	391	8.2	7.0	0.46	11.8	180	17	39
10...	1400	380	8.3	6.5	0.40	12.3	180	8	38
11...	0820	384	8.3	7.0	0.30	11.0	190	22	42
11...	1350	395	8.3	7.0	0.30	12.0	190	25	42
12...	0815	496	8.0	8.0	0.30	11.2	200	26	46
12...	1355	397	8.4	6.5	0.30	12.2	190	23	40
13...	0830	403	8.2	6.0	0.30	12.4	180	9	39
30...	0830	440	8.2	1.0	0.30	14.2	210	37	47
DEC									
13...	0745	414	8.1	1.0	--	16.7	210	31	44
JAN 1990									
11...	0830	475	7.3	1.0	1.90	14.4	200	22	43
29...	1415	467	8.2	2.5	1.00	14.1	210	25	45
FEB									
06...	1615	492	8.2	1.0	1.80	14.9	220	33	48
21...	1100	480	8.2	1.0	1.50	14.8	220	34	48
MAR									
06...	1130	467	8.4	2.0	1.00	13.1	210	34	46
19...	1605	416	8.4	4.5	0.50	15.0	230	51	48
20...	0840	406	8.4	4.0	0.80	13.2	230	49	48
20...	1545	407	8.4	4.5	0.80	14.2	230	49	48
21...	0815	409	8.4	5.0	0.90	13.0	110	0	21
21...	1505	414	8.5	5.0	0.90	13.4	220	43	46
22...	0800	406	8.4	5.0	0.90	13.4	220	45	46
22...	1545	405	8.3	5.5	0.90	13.0	220	45	45
23...	0715	412	8.1	4.0	0.90	13.4	220	47	46
23...	1535	400	8.5	4.0	0.80	13.6	190	21	40
24...	0720	402	8.5	4.5	0.90	13.5	220	49	45
24...	1450	398	8.6	4.5	0.60	13.8	220	38	44
25...	0730	390	8.6	4.0	1.00	14.1	210	39	44
25...	1535	408	8.3	3.5	0.80	14.0	220	41	45
26...	0830	402	8.4	3.5	0.70	13.7	220	45	45
26...	1720	398	8.5	4.5	0.60	13.5	210	40	43
27...	1050	397	8.3	3.5	0.80	13.6	210	40	44
27...	1500	399	8.3	4.0	0.90	13.8	210	44	44
28...	0830	432	8.2	6.0	0.90	14.1	220	49	47
28...	1435	404	8.3	4.5	1.10	14.3	200	31	41
29...	0810	404	8.2	5.5	1.00	14.4	200	35	42
30...	0810	427	8.2	6.5	0.90	13.2	210	35	43
30...	1445	417	8.3	6.5	0.80	13.5	200	31	41
31...	0730	428	8.3	7.0	1.00	13.9	210	36	44
APR									
01...	0730	418	8.3	7.0	0.90	13.7	210	34	43
01...	1455	413	8.4	8.0	0.70	14.0	200	31	42
03...	0820	426	8.3	6.0	0.60	12.6	220	--	46
11...	1405	376	8.6	8.0	0.50	12.8	190	32	40
18...	0840	418	8.5	9.5	0.50	12.0	210	40	44
24...	1520	415	8.6	14.0	0.40	13.1	200	39	44
MAY									
01...	1340	390	8.4	15.5	0.30	9.0	170	26	40

STREAMS TRIBUTARY TO LAKE MICHIGAN

04085139 FOX RIVER AT MOUTH AT GREEN BAY, WI--CONTINUED

WATER-QUALITY DATA, OCTOBER 1989 TO SEPTEMBER 1990

DATE	MAGNE- SIUM, TOTAL RECOV- ERABLE (MG/L AS MG) (00927)	ALKA- LITY WAT WH TOT FET LAB MG/L AS CACO3 (00417)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDED (MG/L) (00530)	RESIDUE FIXED NON FILTER- ABLE (MG/L) (00540)	RESIDUE VOLA- TILE, SUS- PENDED (MG/L) (00535)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)
OCT 1989									
04...	21	162	29	9.0	42	23	19	<0.020	<0.020
12...	23	172	36	8.3	50	28	22	<0.020	0.050
18...	20	162	57	3.8	63	41	22	0.110	1.00
24...	21	168	34	9.3	33	18	15	0.110	0.320
30...	20	168	38	9.8	77	56	21	0.080	1.10
31...	21	166	22	13	43	29	14	0.080	0.150
31...	21	167	20	13	53	37	16	0.100	0.220
NOV									
01...	21	169	27	14	40	25	15	0.090	0.800
01...	20	168	19	13	42	26	16	0.090	0.180
02...	21	166	19	13	39	25	14	0.100	0.180
02...	20	164	19	14	36	23	13	0.100	0.220
03...	21	168	28	13	28	18	10	0.110	0.800
03...	19	163	19	13	33	20	13	0.120	0.150
04...	21	164	19	12	33	21	12	0.110	0.130
06...	21	164	19	12	36	23	13	0.080	0.100
07...	21	165	36	12	26	15	11	0.070	0.090
07...	22	165	43	11	50	34	16	0.060	0.190
08...	21	165	23	11	29	18	11	0.060	0.260
08...	21	166	22	12	33	20	13	0.050	0.230
09...	21	164	17	12	40	22	18	0.040	0.100
09...	21	167	17	12	56	36	20	0.040	0.120
10...	21	167	20	11	36	20	16	0.040	0.170
10...	20	169	17	11	48	30	18	0.030	0.180
11...	21	169	21	9.8	53	34	19	0.040	0.200
11...	22	171	22	11	59	37	22	0.050	0.290
12...	21	175	35	11	42	25	17	0.060	0.780
12...	22	168	20	10	36	21	15	0.060	0.160
13...	20	171	20	9.8	42	25	17	0.050	0.160
30...	22	171	29	7.3	46	28	18	0.100	0.330
DEC									
13...	24	178	21	12	12	6	6	0.100	0.220
JAN 1990									
11...	23	180	25	11	6	1	5	0.090	0.290
29...	24	186	32	11	8	4	4	0.120	0.350
FEB									
06...	24	186	33	10	5	1	4	0.120	0.380
21...	25	189	33	11	14	10	4	0.140	0.420
MAR									
06...	24	180	29	8.8	11	6	5	0.190	0.300
19...	26	176	18	12	20	14	6	0.290	0.120
20...	26	178	17	11	14	8	6	0.180	0.110
20...	26	178	17	12	19	11	8	0.180	0.100
21...	14	179	16	11	15	7	8	0.140	0.090
21...	26	179	16	11	20	10	10	0.150	0.090
22...	26	177	16	11	24	13	11	0.140	0.100
22...	26	174	16	11	20	11	9	0.140	0.100
23...	26	175	18	11	21	12	9	0.200	0.120
23...	23	174	16	11	23	12	11	0.140	0.100
24...	26	170	17	11	15	7	8	0.160	0.110
24...	25	175	16	10	18	12	6	0.140	0.110
25...	25	174	16	10	12	7	5	0.130	0.100
25...	25	174	17	11	15	9	6	0.140	0.100
26...	26	174	16	10	28	17	11	0.120	0.100
26...	25	170	16	10	29	18	11	0.120	0.090
27...	25	173	16	10	14	6	8	0.130	0.100
27...	25	169	17	10	12	5	7	0.140	0.110
28...	25	171	24	9.9	17	9	8	0.160	0.250
28...	24	170	17	9.5	16	7	9	0.170	0.110
29...	24	169	17	9.1	13	5	8	0.180	0.100
30...	24	171	20	8.9	22	13	9	0.160	0.170
30...	24	170	17	8.8	14	7	7	0.140	0.070
31...	24	173	22	8.9	22	14	8	0.150	0.250
APR									
01...	24	172	20	8.2	20	11	9	0.150	0.110
01...	24	173	21	7.8	73	56	17	0.150	0.100
03...	26	--	--	7.3	--	--	--	0.170	0.110
11...	22	159	19	4.4	32	21	11	0.300	0.100
18...	24	169	24	3.2	36	23	13	0.180	0.100
24...	21	157	26	<0.20	390	368	22	0.090	0.140
MAY									
01...	18	148	23	<0.20	37	24	13	0.090	0.090

04085139 FOX RIVER AT MOUTH AT GREEN BAY, WI--CONTINUED

WATER-QUALITY DATA, OCTOBER 1989 TO SEPTEMBER 1990

DATE	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS NH ₄) (71846)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO ₄) (00660)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)	CHLORO- PHYLL A TRICHR. UNCORR. WHOLE TOTAL (UG/L) (32210)
OCT 1989								
04...	--	1.7	0.140	0.005	0.02	13	9.8	100
12...	0.06	1.8	0.150	0.010	0.03	10	9.7	130
18...	1.3	3.1	0.180	0.009	0.03	16	13	110
24...	0.41	2.0	0.120	0.005	0.02	14	14	100
30...	1.4	3.2	0.200	0.007	0.02	16	12	98.0
31...	0.19	1.5	0.140	0.006	0.02	10	8.5	74.0
31...	0.28	1.6	0.160	0.009	0.03	8.8	8.6	83.0
NOV								
01...	1.0	2.2	0.140	0.009	0.03	13	10	71.0
01...	0.23	1.6	0.130	0.008	0.02	11	9.2	71.0
02...	0.23	2.9	0.235	0.006	0.02	13	8.9	73.0
02...	0.28	1.5	0.120	0.007	0.02	9.5	8.3	65.0
03...	1.0	2.3	0.120	--	--	12	9.7	60.0
03...	0.19	1.4	0.110	--	--	12	8.9	49.0
04...	0.17	1.2	0.100	--	--	11	8.9	59.0
06...	0.13	1.3	0.100	0.006	0.02	12	9.1	62.0
07...	0.12	1.1	0.080	0.005	0.02	10	9.5	60.0
07...	0.24	1.4	0.110	0.006	0.02	12	10	78.0
08...	0.33	1.5	0.090	0.004	0.01	13	10	68.0
08...	0.30	1.5	0.100	0.005	0.02	12	11	69.0
09...	0.13	1.3	0.100	0.005	0.02	11	8.0	66.0
09...	0.15	1.5	0.120	0.005	0.02	10	9.8	74.0
10...	0.22	1.1	0.090	--	--	9.3	8.3	64.0
10...	0.23	1.5	0.110	--	--	10	9.6	72.0
11...	0.26	1.6	0.110	--	--	13	8.5	75.0
11...	0.37	1.7	0.130	--	--	11	9.1	76.0
12...	1.0	2.3	0.130	0.007	0.02	12	12	63.0
12...	0.21	1.4	0.100	0.005	0.02	11	10	81.0
13...	0.21	1.5	0.100	0.004	0.01	15	9.0	62.0
30...	0.42	1.6	0.100	0.005	0.02	13	9.2	36.0
DEC								
13...	0.28	1.2	0.050	0.012	0.04	13	9.4	--
JAN 1990								
11...	0.37	1.1	0.050	0.019	0.06	11	7.9	6.00
29...	0.45	1.2	0.050	0.011	0.03	12	9.5	4.00
FEB								
06...	0.49	1.5	0.050	0.015	0.05	14	11	5.00
21...	0.54	1.5	0.070	0.018	0.05	12	9.1	4.00
MAR								
06...	0.39	1.4	0.110	0.040	0.12	13	8.9	7.00
19...	0.15	1.0	0.070	0.005	0.02	10	9.0	11.0
20...	0.14	0.80	0.050	0.010	0.03	9.5	8.7	8.00
20...	0.13	0.90	0.050	0.009	0.03	9.7	8.9	9.00
21...	0.12	0.80	0.050	0.003	0.01	9.5	8.2	10.0
21...	0.12	0.90	0.060	0.006	0.02	10	9.1	11.0
22...	0.13	1.1	0.060	0.004	0.01	9.8	8.5	11.0
22...	0.13	1.0	0.060	0.004	0.01	9.3	8.7	11.0
23...	0.15	1.0	0.060	0.004	0.01	10	8.6	9.00
23...	0.13	0.80	0.050	0.003	0.01	10	9.1	10.0
24...	0.14	1.0	0.050	0.005	0.02	9.2	8.9	7.00
24...	0.14	0.90	0.050	0.004	0.01	9.2	8.6	8.00
25...	0.13	0.90	0.040	0.003	0.01	9.6	8.6	8.00
25...	0.13	0.90	0.050	0.005	0.02	9.8	8.5	8.00
26...	0.13	1.0	0.060	0.005	0.02	9.8	8.9	8.00
26...	0.12	1.0	0.060	0.004	0.01	9.8	9.0	9.00
27...	0.13	1.0	0.060	0.003	0.01	10	9.5	8.00
27...	0.14	0.80	0.040	0.003	0.01	12	9.4	9.00
28...	0.32	1.2	0.060	0.003	0.01	13	10	11.0
28...	0.14	0.90	0.050	0.003	0.01	12	8.6	13.0
29...	0.13	0.90	0.050	0.004	0.01	12	10	15.0
30...	0.22	1.1	0.070	0.004	0.01	12	9.5	19.0
30...	0.09	1.0	0.060	0.003	0.01	11	9.0	14.0
31...	0.32	1.2	0.070	0.005	0.02	11	9.7	16.0
APR								
01...	0.14	1.1	0.070	0.004	0.01	11	9.0	16.0
01...	0.13	1.1	0.070	0.004	0.01	11	8.4	21.0
03...	0.14	1.2	0.120	0.007	0.02	10	7.9	28.0
11...	0.13	1.3	0.100	0.005	0.02	12	10	41.0
18...	0.13	1.4	0.112	0.006	0.02	13	9.7	43.0
24...	0.18	1.5	0.167	0.004	0.01	11	8.1	54.0
MAY								
01...	0.12	1.2	0.123	0.008	0.02	10	6.8	46.0

STREAMS TRIBUTARY TO LAKE MICHIGAN

04085139 FOX RIVER AT MOUTH AT GREEN BAY, WI--CONTINUED

SPECIFIC CONDUCTANCE, AT A DEPTH OF 5 FT, US/CM @ 25 DEGREES CENTIGRADE,
WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	580	432	486	500	373	429	---	---	---	---	---	---
2	584	467	500	---	---	---	465	387	404	---	---	---
3	689	440	468	---	---	---	455	390	407	---	---	---
4	524	420	444	---	---	---	444	380	397	---	---	---
5	537	414	454	---	---	---	442	377	390	---	---	---
6	---	---	---	---	---	---	435	362	388	---	---	---
7	---	---	---	---	---	---	444	379	398	---	---	---
8	---	---	---	---	---	---	450	385	407	---	---	---
9	---	---	---	---	---	---	472	391	417	---	---	---
10	---	---	---	---	---	---	474	404	427	---	---	---
11	---	---	---	---	---	---	462	409	431	---	---	---
12	---	---	---	---	---	---	491	415	439	---	---	---
13	754	395	425	---	---	---	500	421	450	---	---	---
14	660	393	440	---	---	---	516	419	446	---	---	---
15	675	394	422	---	---	---	486	425	442	---	---	---
16	634	395	432	---	---	---	481	417	446	---	---	---
17	616	402	441	---	---	---	482	421	441	---	---	---
18	618	406	449	---	---	---	513	423	448	---	---	---
19	606	426	464	---	---	---	492	426	448	---	---	---
20	730	409	452	---	---	---	---	---	---	488	403	419
21	659	415	438	---	---	---	---	---	---	472	400	414
22	579	414	467	---	---	---	---	---	---	450	399	417
23	595	431	467	---	---	---	---	---	---	456	397	413
24	566	408	438	---	---	---	---	---	---	504	408	434
25	543	403	433	---	---	---	---	---	---	492	402	425
26	714	412	459	---	---	---	---	---	---	439	398	409
27	589	354	438	---	---	---	---	---	---	476	405	427
28	747	377	425	---	---	---	---	---	---	484	406	426
29	772	418	460	---	---	---	---	---	---	539	402	425
30	714	422	459	---	---	---	---	---	---	454	407	425
31	645	375	445	---	---	---	---	---	---	488	412	433
FEBRUARY			MARCH			APRIL			MAY			
1	486	418	442	483	413	434	---	---	---	---	---	---
2	473	405	434	488	424	443	---	---	---	---	---	---
3	472	407	420	511	434	455	---	---	---	---	---	---
4	444	405	418	491	436	455	---	---	---	638	400	470
5	447	399	412	489	432	451	---	---	---	546	353	466
6	455	396	410	494	436	460	---	---	---	633	424	497
7	445	396	411	492	444	458	479	385	398	631	472	505
8	435	394	406	492	434	447	515	384	392	646	452	498
9	---	---	---	484	419	433	444	383	398	628	461	515
10	---	---	---	505	406	427	425	379	388	579	340	487
11	---	---	---	473	403	422	397	370	378	608	364	492
12	---	---	---	458	409	422	474	369	381	622	364	472
13	---	---	---	445	401	422	431	371	383	711	457	515
14	---	---	---	467	415	433	557	342	399	577	459	493
15	---	---	---	434	354	399	514	403	432	535	455	474
16	---	---	---	424	358	385	550	366	433	723	453	483
17	---	---	---	445	361	391	496	380	432	---	---	---
18	---	---	---	471	391	416	528	401	440	---	---	---
19	---	---	---	468	416	434	553	386	455	---	---	---
20	---	---	---	482	419	430	896	387	489	---	---	---
21	---	---	---	447	414	426	679	428	507	---	---	---
22	---	---	---	479	419	434	667	466	519	---	---	---
23	526	414	439	492	421	441	618	407	496	---	---	---
24	502	415	430	494	427	447	---	---	---	---	---	---
25	496	418	436	503	372	422	---	---	---	742	366	430
26	447	419	427	379	300	345	---	---	---	523	362	384
27	469	424	437	316	262	297	---	---	---	480	374	393
28	468	417	434	---	---	---	---	---	---	512	361	379
29	---	---	---	---	---	---	---	---	---	468	343	365
30	---	---	---	---	---	---	---	---	---	442	349	370
31	---	---	---	---	---	---	---	---	---	389	347	357

STREAMS TRIBUTARY TO LAKE MICHIGAN

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04085139 FOX RIVER AT MOUTH AT GREEN BAY, WI--CONTINUED

SPECIFIC CONDUCTANCE, AT A DEPTH OF 5 FT, US/CM @ 25 DEGREES CENTIGRADE,
WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	422	341	359	477	343	361	---	---	---	525	355	401
2	542	346	361	400	342	355	---	---	---	515	376	408
3	408	341	349	423	314	346	---	---	---	403	350	383
4	396	341	345	508	352	383	---	---	---	418	356	386
5	399	341	346	620	350	388	---	---	---	520	352	391
6	424	333	344	---	---	---	---	---	---	420	363	389
7	429	334	338	---	---	---	---	---	---	432	361	399
8	421	335	342	---	---	---	---	---	---	442	345	396
9	464	337	349	---	---	---	---	---	---	559	383	444
10	469	344	359	---	---	---	395	362	383	515	420	441
11	425	344	355	---	---	---	465	352	376	466	395	425
12	429	345	356	---	---	---	431	357	377	487	396	421
13	483	347	357	624	362	416	403	355	375	598	387	438
14	422	351	361	500	350	410	420	337	364	441	388	409
15	486	353	376	773	355	445	528	359	400	458	372	405
16	514	359	389	880	373	409	404	375	383	421	386	402
17	597	361	384	529	366	412	512	369	403	417	373	396
18	617	356	376	459	355	385	426	383	390	495	375	405
19	553	358	372	774	365	421	392	370	383	429	375	400
20	442	359	370	793	346	420	388	355	377	441	362	401
21	425	357	370	742	366	427	455	367	386	450	376	408
22	574	349	384	596	320	420	456	369	393	483	380	423
23	415	350	365	477	399	411	527	387	418	615	393	447
24	580	352	376	404	365	390	630	367	417	477	395	431
25	535	360	369	391	332	371	434	372	391	454	360	412
26	411	356	361	430	335	361	484	380	403	574	401	447
27	568	355	373	747	354	407	494	376	395	590	413	446
28	516	344	384	607	372	421	418	367	389	550	392	428
29	534	346	363	604	367	402	448	351	374	539	380	447
30	526	335	363	532	399	432	389	345	364	472	370	421
31	---	---	---	---	---	---	438	346	366	---	---	---
MONTH	617	333	363	---	---	---	---	---	---	615	345	415

SPECIFIC CONDUCTANCE, AT A DEPTH OF 16 FT, US/CM @ 25 DEGREES CENTIGRADE,
WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

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	---	---	---	---	---	---	---	---	---	---	---	---
11	---	---	---	---	---	---	---	---	---	---	---	---
12	---	---	---	---	---	---	---	---	---	---	---	---
13	477	394	404	---	---	---	---	---	---	---	---	---
14	445	394	403	---	---	---	---	---	---	---	---	---
15	423	389	400	---	---	---	---	---	---	---	---	---
16	450	389	405	---	---	---	---	---	---	---	---	---
17	589	390	421	---	---	---	---	---	---	---	---	---
18	475	403	427	---	---	---	---	---	---	---	---	---
19	486	407	431	---	---	---	---	---	---	---	---	---
20	468	409	416	---	---	---	---	---	---	583	399	443
21	452	403	421	---	---	---	---	---	---	623	397	475
22	542	414	437	---	---	---	---	---	---	576	396	445
23	484	423	438	---	---	---	---	---	---	585	398	446
24	515	395	431	---	---	---	---	---	---	543	403	440
25	502	396	431	---	---	---	---	---	---	574	397	461
26	---	---	---	---	---	---	---	---	---	592	394	448
27	---	---	---	---	---	---	---	---	---	642	399	449
28	---	---	---	---	---	---	---	---	---	619	402	451
29	---	---	---	---	---	---	---	---	---	628	397	454
30	---	---	---	---	---	---	---	---	---	575	402	458
31	---	---	---	---	---	---	---	---	---	581	409	460

04085139 FOX RIVER AT MOUTH AT GREEN BAY, WI--CONTINUED

**SPECIFIC CONDUCTANCE, AT A DEPTH OF 16 FT, US/CM @ 25 DEGREES CENTIGRADE,
WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989**

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY				MARCH			APRIL			MAY		
1	654	415	453	532	407	442	---	---	---	---	---	---
2	620	408	448	640	429	462	---	---	---	---	---	---
3	581	413	455	547	433	465	---	---	---	---	---	---
4	623	409	459	552	434	466	---	---	---	564	372	459
5	553	404	449	544	434	462	---	---	---	543	347	461
6	607	404	442	588	440	471	---	---	---	612	414	489
7	535	402	450	513	444	464	586	387	405	648	465	505
8	525	397	428	549	433	452	707	386	399	590	450	497
9	564	398	430	509	419	445	579	385	413	666	432	518
10	473	405	424	554	408	438	527	380	400	573	361	487
11	472	404	421	526	403	429	685	371	395	561	379	482
12	452	406	425	530	409	429	656	370	398	733	361	477
13	462	405	423	470	405	429	629	374	398	697	462	493
14	472	404	418	538	414	443	558	340	417	564	458	474
15	445	398	408	576	351	405	609	411	446	509	456	466
16	---	---	---	501	354	391	599	361	442	567	447	470
17	---	---	---	458	357	390	534	383	437	---	---	---
18	---	---	---	496	388	418	644	403	444	---	---	---
19	---	---	---	483	411	436	600	383	449	---	---	---
20	---	---	---	524	414	432	651	374	485	---	---	---
21	---	---	---	574	409	435	637	432	503	---	---	---
22	---	---	---	550	414	437	760	473	526	---	---	---
23	595	405	461	592	416	450	584	410	491	---	---	---
24	610	402	465	675	421	460	592	415	482	---	---	---
25	629	405	467	642	368	426	584	438	506	869	389	466
26	510	406	434	445	296	343	---	---	---	692	345	429
27	579	412	455	349	256	294	---	---	---	656	395	440
28	548	405	453	---	---	---	---	---	---	685	355	396
29	---	---	---	---	---	---	---	---	---	619	320	373
30	---	---	---	---	---	---	---	---	---	541	368	409
31	---	---	---	---	---	---	---	---	---	501	370	384
JUNE				JULY			AUGUST			SEPTEMBER		
1	457	361	375	639	351	375	414	365	385	587	350	409
2	562	350	368	403	338	358	654	372	411	537	372	405
3	437	344	354	394	322	343	421	352	386	403	350	370
4	392	344	348	691	369	413	564	340	382	410	358	384
5	491	344	351	1070	334	428	570	357	419	414	353	378
6	443	345	358	---	---	---	595	369	419	413	362	384
7	491	352	359	---	---	---	544	374	417	417	352	387
8	502	354	363	---	---	---	509	377	406	428	338	376
9	604	356	378	---	---	---	408	347	372	623	362	432
10	568	3										

STREAMS TRIBUTARY TO LAKE MICHIGAN

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04085139 FOX RIVER AT MOUTH AT GREEN BAY, WI--CONTINUED

SPECIFIC CONDUCTANCE, AT A DEPTH OF 5 FT, US/CM @ 25 DEGREES CENTIGRADE,
WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	452	352	398	442	377	394	470	396	420	472	422	439
2	509	375	423	426	356	374	481	382	409	487	427	444
3	598	386	459	439	352	367	447	379	410	488	435	455
4	490	374	417	451	344	362	478	398	421	515	438	458
5	540	353	412	437	338	356	465	402	425	527	438	460
6	532	344	431	450	343	360	466	395	425	515	429	458
7	530	409	453	488	345	402	487	394	425	521	430	454
8	569	419	472	464	345	372	454	402	421	564	436	462
9	532	420	450	531	347	372	471	397	419	515	440	462
10	571	424	477	516	377	399	458	400	416	585	445	467
11	579	364	432	467	353	394	478	399	413	492	436	460
12	502	362	441	517	388	419	456	391	411	517	436	461
13	580	372	465	476	390	422	445	387	405	516	435	463
14	582	400	481	565	392	453	442	386	406	580	454	488
15	540	406	490	570	390	434	436	385	396	595	449	471
16	575	338	446	505	377	407	435	384	397	511	447	469
17	534	348	422	554	381	428	431	383	397	694	444	483
18	566	347	428	497	399	424	426	381	396	477	428	445
19	658	351	439	468	404	424	430	383	396	572	422	466
20	555	322	450	461	402	424	457	386	398	509	422	450
21	646	372	466	530	405	427	459	382	405	539	428	447
22	606	424	472	494	417	441	430	388	409	517	424	451
23	562	427	457	474	419	437	---	---	---	519	437	467
24	568	404	439	491	420	446	---	---	---	551	432	460
25	548	392	411	493	423	448	---	---	---	547	439	473
26	448	379	400	497	426	456	---	---	---	526	441	471
27	443	359	392	541	425	459	---	---	---	495	428	455
28	417	368	389	490	393	441	---	---	---	499	433	458
29	419	354	380	486	406	438	516	432	453	500	440	459
30	519	358	398	471	382	422	529	424	451	517	436	457
31	454	380	398	---	---	---	469	418	438	544	440	466
MONTH	658	322	435	570	338	413	---	---	---	694	422	461
FEBRUARY			MARCH			APRIL			MAY			
1	542	437	468	551	458	479	536	387	416	---	---	---
2	516	439	472	523	462	482	511	394	418	---	---	---
3	518	439	470	526	458	487	527	400	422	---	---	---
4	551	443	466	556	464	495	551	396	423	---	---	---
5	546	445	475	514	457	484	601	394	425	---	---	---
6	544	456	486	516	453	478	643	393	424	---	---	---
7	543	451	480	535	457	479	603	394	413	---	---	---
8	520	449	479	555	455	491	520	386	406	---	---	---
9	534	457	488	550	459	481	491	395	418	---	---	---
10	571	425	474	477	404	442	710	375	426	---	---	---
11	506	430	456	568	374	423	639	373	412	---	---	---
12	507	429	460	579	321	371	635	373	399	---	---	---
13	511	431	457	410	315	359	510	354	398	---	---	---
14	508	435	462	596	340	375	576	387	412	---	---	---
15	528	448	477	462	350	387	565	345	398	---	---	---
16	516	437	463	515	397	421	646	340	416	---	---	---
17	532	439	464	496	400	412	543	400	429	---	---	---
18	521	430	455	530	396	405	623	341	413	---	---	---
19	480	426	444	438	394	400	540	322	399	---	---	---
20	498	426	448	399	392	395	586	317	425	---	---	---
21	545	429	460	419	388	393	673	450	482	---	---	---
22	546	441	470	451	386	394	470	351	407	---	---	---
23	506	444	463	403	380	388	494	341	392	---	---	---
24	518	447	469	410	376	383	491	354	372	---	---	---
25	552	457	477	395	377	382	434	333	398	---	---	---
26	529	461	486	415	372	381	441	324	386	---	---	---
27	524	457	482	673	373	389	661	341	400	---	---	---
28	533	461	488	647	377	400	467	347	406	---	---	---
29	---	---	---	689	378	410	582	396	444	---	---	---
30	---	---	---	501	382	402	536	376	435	---	---	---
31	---	---	---	530	387	416	---	---	---	---	---	---
MONTH	571	425	469	689	315	422	710	317	414	---	---	---

STREAMS TRIBUTARY TO LAKE MICHIGAN

04085139 FOX RIVER AT MOUTH AT GREEN BAY, WI--CONTINUED

SPECIFIC CONDUCTANCE, AT A DEPTH OF 16 FT, US/CM @ 25 DEGREES CENTIGRADE,
WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	433	335	369	474	383	397	582	429	474	516	420	448
2	450	353	398	477	379	391	591	422	455	520	423	451
3	510	360	428	466	377	390	522	415	458	537	432	465
4	439	355	397	468	369	385	573	433	471	542	435	472
5	467	368	408	493	354	379	527	438	476	534	436	466
6	533	351	430	478	368	382	585	431	484	551	428	466
7	552	404	452	558	371	431	554	436	486	550	427	460
8	517	410	473	494	370	398	562	439	475	599	434	475
9	520	426	456	546	371	390	544	433	477	533	438	468
10	582	433	485	568	379	401	530	436	464	620	443	490
11	488	380	436	528	352	398	522	435	462	537	434	463
12	546	354	440	534	390	420	546	428	466	574	435	476
13	539	355	464	474	391	420	536	425	461	552	434	478
14	519	404	477	546	394	448	512	422	460	634	452	514
15	551	413	488	581	393	448	541	421	439	638	448	491
16	579	342	451	570	377	411	534	421	455	598	444	485
17	512	346	423	714	386	442	503	419	452	601	445	499
18	613	347	431	640	400	442	531	416	448	564	444	478
19	623	356	442	629	405	442	523	419	448	723	442	503
20	561	324	453	506	394	435	538	422	453	588	437	480
21	644	371	471	654	396	438	529	419	458	579	443	480
22	588	427	472	564	418	448	507	428	462	566	443	481
23	500	433	456	541	420	451	---	---	---	613	452	495
24	514	412	442	554	422	461	---	---	---	586	446	491
25	565	397	413	578	423	465	---	---	---	615	453	503
26	437	373	401	576	427	483	---	---	---	599	455	499
27	424	349	390	628	427	475	---	---	---	570	444	483
28	408	349	389	567	397	454	---	---	---	571	449	488
29	401	351	380	558	405	450	624	430	459	7540	453	742
30	468	355	396	545	411	450	550	422	463	579	439	479
31	480	386	403	---	---	---	541	416	451	706	444	502
MONTH	644	324	433	714	352	427	---	---	---	7540	420	489
FEBRUARY			MARCH			APRIL			MAY			
1	700	440	496	663	454	490	515	394	422	---	---	---
2	657	443	491	564	458	494	565	398	426	---	---	---
3	648	445	501	579	455	496	578	409	434	---	---	---
4	590	448	497	571	460	497	596	406	438	---	---	---
5	662	449	509	540	456	490	668	405	441	---	---	---
6	612	464	524	540	449	487	807	403	443	---	---	---
7	652	458	517	590	456	488	700	404	431	---	---	---
8	648	456	512	622	452	508	540	392	420	---	---	---
9	728	464	518	642	456	485	502	403	427	---	---	---
10	644	432	507	526	410	449	770	385	436	---	---	---
11	587	437	484	624	372	435	661	373	423	---	---	---
12	734	436	500	571	322	379	638	374	412	---	---	---
13	637	437	482	465	314	369	496	355	402	---	---	---
14	707	442	483	612	341	384	559	389	412	---	---	---
15	787	452	504	466	352	399	471	345	397	---	---	---
16	583	444	485	541	409	434	612	341	417	---	---	---
17	598	446	497	635	412	429	553	390	433	---	---	---
18	609	437	482	639	409	424	523	327	401	---	---	---
19	603	433	478	519	407	415	491	310	381	---	---	---
20	598	434	489	412	405	408	565	300	405	---	---	---
21	606	435	486	439	401	406	622	421	462	---	---	---
22	622	439	482	531	399	411	453	337	387	---	---	---
23	541	440	472	418	393	401	463	325	370	---	---	---
24	610	443	470	453	389	398	427	312	361	---	---	---
25	565	453	478	410	390	395	---	---	---	---	---	---
26	594	458	498	544	385	402	---	---	---	---	---	---
27	549	455	491	713	379	402	466	315	351	---	---	---
28	583	457	497	706	381	412	419	312	358	---	---	---
29	---	---	---	717	381	427	446	314	370	---	---	---
30	---	---	---	531	387	411	435	314	366	---	---	---
31	---	---	---	588	392	426	---	---	---	---	---	---
MONTH	787	432	494	717	314	434	---	---	---	---	---	---

STREAMS TRIBUTARY TO LAKE MICHIGAN

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04085139 FOX RIVER AT MOUTH AT GREEN BAY, WI--CONTINUED

PH (STANDARD UNITS), AT A DEPTH OF 5 FT, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	8.2	7.8	8.4	7.8	---	---	---	---	8.5	8.4	8.7	8.5
2	8.4	7.8	---	---	8.6	8.5	---	---	8.5	8.4	8.7	8.6
3	8.4	7.7	---	---	8.7	8.5	---	---	8.5	8.4	8.7	8.5
4	8.5	8.1	---	---	8.7	8.5	---	---	8.5	8.4	8.7	8.5
5	---	---	---	---	8.6	8.5	---	---	8.5	8.4	8.7	8.6
6	---	---	---	---	8.6	8.5	---	---	8.7	8.5	8.6	8.4
7	---	---	---	---	8.6	8.5	---	---	8.7	8.6	8.6	8.4
8	---	---	---	---	8.6	8.4	---	---	8.7	8.6	8.6	8.4
9	---	---	---	---	8.6	8.4	---	---	---	---	8.7	8.5
10	---	---	---	---	8.6	8.4	---	---	---	---	8.8	8.6
11	---	---	---	---	8.6	8.5	---	---	---	---	8.8	8.6
12	---	---	---	---	8.6	8.4	---	---	---	---	8.7	8.6
13	8.7	8.1	---	---	8.6	8.4	---	---	---	---	8.7	8.6
14	8.7	8.3	---	---	8.6	8.4	---	---	---	---	8.6	8.5
15	8.7	8.2	---	---	8.6	8.5	---	---	---	---	8.5	8.3
16	8.6	8.2	---	---	8.6	8.4	---	---	---	---	8.4	8.2
17	8.5	8.2	---	---	8.6	8.4	---	---	---	---	8.3	8.2
18	8.5	8.1	---	---	8.6	8.4	---	---	---	---	8.3	8.1
19	8.5	8.1	---	---	8.5	8.4	---	---	---	---	8.4	8.2
20	8.4	8.0	---	---	---	---	8.7	8.5	---	---	8.3	8.2
21	8.4	8.0	---	---	---	---	8.7	8.5	---	---	8.4	8.3
22	8.3	8.0	---	---	---	---	8.7	8.5	---	---	8.5	8.3
23	8.2	7.9	---	---	---	---	8.6	8.4	8.8	8.6	8.4	8.2
24	8.3	7.9	---	---	---	---	8.6	8.4	8.8	8.6	8.4	8.2
25	8.3	7.9	---	---	---	---	8.6	8.4	8.8	8.6	8.4	8.1
26	8.2	7.8	---	---	---	---	8.7	8.5	8.7	8.5	8.2	7.8
27	8.6	7.8	---	---	---	---	8.7	8.5	8.6	8.5	7.9	7.7
28	8.2	7.6	---	---	---	---	8.6	8.4	8.7	8.5	---	---
29	8.0	7.5	---	---	---	---	8.6	8.3	---	---	---	---
30	8.0	7.5	---	---	---	---	8.6	8.5	---	---	---	---
31	8.0	7.5	---	---	---	---	8.6	8.4	---	---	---	---
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	---	---	---	---	8.1	7.9	8.8	8.3	---	---	8.8	8.2
2	---	---	---	---	8.2	7.9	9.0	8.5	---	---	8.7	8.4
3	---	---	---	---	8.1	8.0	9.0	8.1	---	---	8.8	8.4
4	---	---	8.5	8.1	8.0	7.9	9.0	8.4	---	---	8.8	8.6
5	---	---	8.5	8.2	8.1	7.9	9.2	8.3	---	---	9.0	8.4
6	---	---	8.4	8.0	8.1	7.9	---	---	---	---	9.0	8.5
7	8.2	8.0	8.4	8.0	7.9	7.8	---	---	---	---	9.0	8.5
8	8.2	8.0	8.5	8.1	8.0	7.7	---	---	---	---	8.9	8.6
9	8.2	8.1	8.5	8.1	8.1	7.7	---	---	---	---	8.8	8.3
10	8.3	8.1	8.8	8.2	7.9	7.6	---	---	8.9	8.5	8.7	8.4
11	8.4	8.2	8.8	8.3	7.9	7.7	---	---	8.9	8.2	8.6	8.4
12	8.4	8.1	8.9	8.3	7.9	7.6	---	---	8.8	8.0	8.8	8.4
13	8.3	8.2	8.5	8.1	7.8	7.6	8.9	8.2	8.7	7.9	8.7	8.2
14	8.6	8.1	8.6	8.2	7.9	7.7	9.1	8.4	9.1	7.6	8.7	8.5
15	8.5	8.1	8.5	8.3	8.0	7.8	9.0	7.8	9.1	8.4	8.8	8.5
16	8.5	7.9	8.5	8.1	8.0	7.8	8.8	8.0	9.0	8.7	8.8	8.6
17	8.4	8.0	---	---	8.1	7.7	8.7	8.2	9.2	8.4	8.9	8.6
18	8.3	7.8	---	---	8.0	7.6	8.6	8.2	9.0	8.7	8.9	8.7
19	8.5	7.8	---	---	8.5	7.9	8.6	7.8	9.1	8.8	8.9	8.7
20	8.5	7.7	---	---	8.2	8.0	8.9	7.8	9.0	8.7	---	---
21	8.8	7.9	---	---	8.3	8.0	9.0	8.0	8.9	8.5	---	---
22	8.5	8.1	---	---	8.3	7.9	9.2	8.2	8.9	8.6	8.7	8.5
23	8.7	8.1	---	---	8.3	8.0	9.0	8.6	8.8	8.4	8.9	8.4
24	---	---	---	---	8.5	8.0	8.9	8.1	8.9	8.0	8.9	8.7
25	---	---	8.1	7.6	8.4	8.1	8.7	7.7	8.9	8.5	9.0	8.7
26	---	---	8.2	7.6	8.4	7.9	8.7	7.6	9.0	8.4	9.2	8.5
27	---	---	7.8	7.6	8.4	7.8	8.5	7.7	8.9	8.4	9.1	8.9
28	---	---	7.8	7.6	8.4	7.9	8.6	7.9	9.0	8.4	9.1	8.8
29	---	---	7.9	7.8	8.6	8.1	8.5	8.0	8.9	8.5	9.0	8.6
30	---	---	8.0	7.7	8.7	8.2	8.6	8.1	8.8	8.5	8.9	8.7
31	---	---	8.0	7.8	---	---	---	---	8.8	8.4	---	---
MONTH	---	---	---	---	8.7	7.6	---	---	---	---	---	---

STREAMS TRIBUTARY TO LAKE MICHIGAN

04085139 FOX RIVER AT MOUTH AT GREEN BAY, WI--CONTINUED

PH (STANDARD UNITS), AT A DEPTH OF 16 FT, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	---	---	---	---	---	---	---	---	8.5	8.2	8.7	8.3
2	---	---	---	---	---	---	---	---	8.5	8.2	8.8	8.4
3	---	---	---	---	---	---	---	---	8.5	8.3	8.7	8.6
4	---	---	---	---	---	---	---	---	8.5	8.2	8.7	8.5
5	---	---	---	---	---	---	---	---	8.6	8.3	8.7	8.5
6	---	---	---	---	---	---	---	---	8.6	8.3	8.7	8.4
7	---	---	---	---	---	---	---	---	8.6	8.4	8.6	8.4
8	---	---	---	---	---	---	---	---	8.6	8.4	8.6	8.4
9	---	---	---	---	---	---	---	---	8.6	8.3	8.7	8.5
10	---	---	---	---	---	---	---	---	8.4	8.2	8.7	8.5
11	---	---	---	---	---	---	---	---	8.5	8.3	8.7	8.5
12	---	---	---	---	---	---	---	---	8.5	8.4	8.7	8.4
13	8.8	8.5	---	---	---	---	---	---	8.6	8.4	8.7	8.5
14	8.8	8.6	---	---	---	---	---	---	8.6	8.4	8.6	8.3
15	8.7	8.6	---	---	---	---	---	---	8.6	8.5	8.5	8.0
16	8.7	8.5	---	---	---	---	---	---	---	---	8.4	8.1
17	8.6	8.3	---	---	---	---	---	---	---	---	8.2	8.0
18	8.6	8.4	---	---	---	---	---	---	---	---	8.3	8.1
19	8.6	8.2	---	---	---	---	---	---	---	---	8.3	8.1
20	8.5	8.3	---	---	---	---	8.7	8.4	---	---	8.3	8.1
21	8.5	8.3	---	---	---	---	8.7	8.4	---	---	8.3	8.1
22	8.3	8.1	---	---	---	---	8.7	8.4	---	---	8.4	8.1
23	8.5	8.1	---	---	---	---	8.7	8.4	8.8	8.5	8.4	8.0
24	8.7	8.0	---	---	---	---	8.7	8.4	8.8	8.4	8.3	8.0
25	8.4	8.0	---	---	---	---	8.7	8.3	8.7	8.3	8.3	7.9
26	---	---	---	---	---	---	8.7	8.3	8.7	8.5	8.1	7.7
27	---	---	---	---	---	---	8.6	8.3	8.7	8.3	7.8	7.6
28	---	---	---	---	---	---	8.6	8.2	8.6	8.3	---	---
29	---	---	---	---	---	---	8.6	8.2	---	---	---	---
30	---	---	---	---	---	---	8.6	8.3	---	---	---	---
31	---	---	---	---	---	---	8.6	8.3	---	---	---	---
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	---	---	---	---	8.0	7.8	8.8	8.2	8.4	7.7	8.7	8.0
2	---	---	---	---	8.1	7.9	8.8	8.2	8.5	7.8	8.6	8.2
3	---	---	---	---	8.1	7.9	8.8	8.0	8.6	8.3	8.7	8.4
4	---	---	8.6	8.3	8.1	7.9	9.0	8.2	8.5	7.9	8.8	8.5
5	---	---	8.5	8.2	8.1	7.9	8.7	8.0	8.6	8.0	8.8	8.6
6	---	---	8.5	8.0	8.0	7.9	---	---	8.9	8.2	8.8	8.2
7	8.1	7.8	8.4	8.0	8.0	7.8	---	---	8.8	8.2	8.8	8.3
8	8.1	7.7	8.5	8.1	8.0	7.7	---	---	8.6	8.2	8.8	8.5
9	8.1	7.8	8.5	8.1	8.1	7.7	---	---	9.0	8.3	8.7	8.1
10	8.1	7.9	8.7	8.2	7.9	7.6	---	---	8.9	8.5	8.6	8.3
11	8.3	7.7	8.7	8.2	7.9	7.7	---	---	8.9	8.3	8.7	8.2
12	8.3	7.8	8.8	8.1	7.8	7.5	---	---	8.7	8.0	8.7	8.4
13	8.2	7.8	8.4	8.0	7.8	7.5	8.8	7.8	8.7	7.7	8.6	8.1
14	8.4	7.9	8.5	8.2	7.8	7.6	8.7	8.1	---	---	8.7	8.5
15	8.3	7.8	8.5	8.3	8.0	7.6	8.5	7.7	---	---	8.8	8.6
16	8.6	7.9	8.6	8.3	8.2	7.7	8.7	7.7	---	---	8.7	8.6
17	8.4	8.0	---	---	8.2	7.6	8.5	7.9	---	---	8.8	8.6
18	8.4	7.7	---	---	8.1	7.7	8.5	7.7	---	---	8.9	8.7
19	8.4	7.7	---	---	8.3	8.0	8.5	7.7	---	---	8.9	8.7
20	8.4	7.7	---	---	8.2	7.8	---	---	---	---	8.7	8.5
21	8.6	7.8	---	---	8.2	7.9	---	---	---	---	8.8	8.4
22	8.4	7.8	---	---	8.3	7.8	---	---	---	---	9.0	8.5
23	8.6	8.0	---	---	8.2	7.8	---	---	---	---	8.9	8.4
24	8.5	8.1	---	---	8.5	7.8	---	---	9.0	8.4	8.9	8.7
25	8.6	8.2	8.0	7.4	8.4	7.7	7.9	7.1	8.9	8.5	8.9	8.7
26	---	---	8.2	7.5	8.4	7.5	7.8	7.1	8.8	8.5	9.1	8.5
27	---	---	7.7	7.5	8.4	7.7	8.2	7.2	8.8	8.5	9.0	8.8
28	---	---	7.9	7.5	8.5	7.7	8.4	7.6	8.8	8.3	9.1	8.7
29	---	---	8.0	7.7	8.5	8.0	8.3	7.7	8.8	8.3	9.0	8.7
30	---	---	7.9	7.6	8.7	8.0	8.4	7.8	8.8	8.4	8.9	8.6
31	---	---	7.9	7.7	---	---	8.3	7.9	8.7	8.4	---	---
MONTH	---	---	---	---	8.7	7.5	---	---	---	---	9.1	8.0

04085139 FOX RIVER AT MOUTH AT GREEN BAY, WI--CONTINUED

PH (STANDARD UNITS), AT A DEPTH OF 16 FT, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

[illegible]

STREAMS TRIBUTARY TO LAKE MICHIGAN

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04085139 FOX RIVER AT MOUTH AT GREEN BAY, WI--CONTINUED

WATER TEMPERATURE, AT A DEPTH OF 5 FT, DEGREES CELSIUS, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	19.0	16.5	18.0	7.0	3.0	4.5	---	---	---	---	---	---
2	21.0	17.0	18.5	---	---	---	2.5	.5	1.0	---	---	---
3	20.0	16.0	17.5	---	---	---	2.0	.5	1.0	---	---	---
4	18.0	13.5	16.0	---	---	---	2.0	.5	1.0	---	---	---
5	---	---	---	---	---	---	3.0	.5	1.0	---	---	---
6	---	---	---	---	---	---	3.5	.5	1.0	---	---	---
7	---	---	---	---	---	---	3.5	1.0	1.5	---	---	---
8	---	---	---	---	---	---	3.5	.5	1.0	---	---	---
9	---	---	---	---	---	---	3.5	.0	1.0	---	---	---
10	---	---	---	---	---	---	3.0	.0	1.0	---	---	---
11	---	---	---	---	---	---	2.5	.0	1.0	---	---	---
12	---	---	---	---	---	---	3.0	.0	.5	---	---	---
13	14.5	10.5	11.5	---	---	---	3.0	.0	.5	---	---	---
14	13.5	10.0	11.5	---	---	---	5.0	.0	1.0	---	---	---
15	14.0	10.5	11.5	---	---	---	3.0	.0	.5	---	---	---
16	14.5	11.0	12.5	---	---	---	3.5	.0	.5	---	---	---
17	15.0	11.5	13.0	---	---	---	3.0	.0	1.0	---	---	---
18	16.0	12.0	13.5	---	---	---	2.0	.0	.5	---	---	---
19	15.5	12.0	13.5	---	---	---	3.0	.0	1.0	---	---	---
20	15.5	11.5	13.0	---	---	---	---	---	---	3.5	.0	.5
21	14.5	11.0	12.5	---	---	---	---	---	---	1.0	.0	.5
22	14.5	10.5	12.0	---	---	---	---	---	---	1.5	.5	.5
23	13.5	10.5	11.5	---	---	---	---	---	---	3.5	.5	1.0
24	13.0	9.0	11.0	---	---	---	---	---	---	2.5	.5	1.0
25	11.0	7.5	9.0	---	---	---	---	---	---	2.5	.0	1.0
26	11.0	7.0	7.0	---	---	---	---	---	---	3.5	.0	.5
27	9.0	5.0	7.0	---	---	---	---	---	---	2.0	.0	.5
28	10.0	4.0	6.5	---	---	---	---	---	---	1.5	.5	1.0
29	9.5	5.0	7.0	---	---	---	---	---	---	2.5	.5	1.0
30	8.0	4.5	6.0	---	---	---	---	---	---	4.5	.5	1.5
31	8.0	3.5	5.5	---	---	---	---	---	---	4.5	1.0	1.5
FEBRUARY			MARCH			APRIL			MAY			
1	1.5	.0	1.0	2.0	.0	.5	---	---	---	---	---	---
2	1.0	-.5	.5	3.0	.5	1.0	---	---	---	---	---	---
3	2.5	.0	.5	3.0	.5	1.5	---	---	---	---	---	---
4	1.5	.5	.5	2.5	.5	1.5	---	---	---	13.5	11.0	12.5
5	1.5	.5	.5	2.0	.5	1.0	---	---	---	14.0	10.0	12.5
6	3.0	.5	.5	4.0	.5	1.5	---	---	---	13.0	9.5	12.0
7	2.0	.5	.5	3.0	.5	1.0	8.5	5.5	6.0	12.5	9.5	11.0
8	3.0	.5	.5	3.5	.0	.5	7.5	5.5	6.0	13.5	10.0	11.5
9	---	---	---	3.5	.0	.5	6.0	4.5	5.5	12.5	10.0	11.5
10	---	---	---	3.0	.5	1.0	5.5	3.0	4.0	13.5	11.0	12.0
11	---	---	---	3.0	.5	.5	5.5	3.0	3.5	16.0	12.0	13.0
12	---	---	---	2.0	.5	1.0	7.0	3.5	4.0	14.5	12.5	13.5
13	---	---	---	2.0	.5	.5	6.0	3.5	4.5	15.5	13.5	14.5
14	---	---	---	2.5	1.0	1.5	9.0	4.0	6.0	16.0	14.0	15.0
15	---	---	---	4.0	1.0	2.0	9.0	5.5	7.0	17.0	14.5	15.5
16	---	---	---	5.0	1.0	1.5	9.5	6.0	7.5	19.0	15.5	16.5
17	---	---	---	3.5	.0	1.0	11.0	7.0	9.0	---	---	---
18	---	---	---	3.0	.0	.5	11.0	8.5	9.5	---	---	---
19	---	---	---	3.0	.5	.5	11.0	7.5	10.0	---	---	---
20	---	---	---	3.5	.5	1.0	13.5	8.0	10.5	---	---	---
21	---	---	---	3.0	.0	.5	13.5	9.5	11.5	---	---	---
22	---	---	---	4.5	.5	1.5	14.0	11.0	12.0	---	---	---
23	3.0	.0	1.0	4.5	1.5	2.5	13.5	11.0	12.0	---	---	---
24	1.5	.0	.5	6.0	2.5	3.5	---	---	---	---	---	---
25	2.5	.0	.5	5.5	3.0	3.5	---	---	---	23.0	20.0	21.0
26	2.5	.5	.5	3.5	2.5	3.0	---	---	---	22.5	19.0	20.5
27	3.5	.5	1.0	5.0	2.0	3.0	---	---	---	20.0	19.0	19.5
28	2.5	.0	.5	---	---	---	---	---	---	19.5	19.0	19.5
29	---	---	---	---	---	---	---	---	---	19.5	18.0	19.0
30	---	---	---	---	---	---	---	---	---	20.5	18.0	19.0
31	---	---	---	---	---	---	---	---	---	18.0	17.0	17.5

STREAMS TRIBUTARY TO LAKE MICHIGAN

04085139 FOX RIVER AT MOUTH AT GREEN BAY, WI--CONTINUED

WATER TEMPERATURE, AT A DEPTH OF 5 FT, DEGREES CELSIUS, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	18.5	17.0	17.5	24.0	21.5	23.0	---	---	---	24.0	22.0	23.0
2	20.5	18.0	18.5	24.5	22.0	23.0	---	---	---	23.5	21.0	22.5
3	19.5	18.5	19.0	24.5	20.5	23.0	---	---	---	23.0	21.0	22.0
4	19.0	17.5	18.5	26.0	23.0	24.0	---	---	---	22.0	20.5	21.5
5	19.5	18.0	18.5	28.0	22.5	25.0	---	---	---	23.0	20.0	21.0
6	21.0	19.0	19.5	---	---	---	---	---	---	22.0	20.0	21.0
7	21.0	20.0	20.5	---	---	---	---	---	---	23.0	20.5	22.0
8	21.5	21.0	21.5	---	---	---	---	---	---	23.5	21.0	22.0
9	21.5	20.0	21.0	---	---	---	---	---	---	23.5	21.0	22.5
10	20.5	19.0	19.5	---	---	---	23.5	21.5	23.0	22.5	20.5	21.5
11	20.5	19.5	20.0	---	---	---	24.0	21.5	22.5	22.5	20.5	21.5
12	22.0	20.5	20.5	---	---	---	24.0	21.5	23.0	21.5	18.5	20.5
13	20.5	19.0	20.0	27.0	24.0	26.0	24.0	22.0	23.5	22.0	18.0	20.0
14	19.0	17.5	18.5	26.5	23.0	25.0	23.5	21.0	23.0	20.5	18.5	19.0
15	17.5	16.5	17.0	26.0	24.0	25.0	24.5	22.5	23.0	19.5	17.5	18.5
16	17.5	16.0	16.5	25.5	23.5	24.5	24.0	21.5	23.0	19.5	18.0	18.5
17	18.0	16.0	17.0	26.0	23.5	24.5	25.0	21.5	23.0	19.5	17.5	18.5
18	19.0	17.0	18.0	25.5	23.0	24.5	24.5	22.0	23.0	21.0	18.0	19.5
19	22.5	18.0	20.0	26.0	22.0	24.0	24.0	22.5	23.0	21.0	18.5	19.5
20	22.0	20.0	21.0	24.5	22.0	23.0	23.5	22.0	23.0	21.5	19.0	20.0
21	23.0	20.0	22.0	25.0	22.5	23.5	26.0	22.0	23.0	21.5	19.5	20.0
22	23.5	18.5	22.0	25.5	23.0	23.5	24.5	22.0	23.0	22.0	19.5	20.0
23	23.5	19.5	22.0	25.0	23.5	24.0	25.5	22.0	24.0	20.0	15.0	17.5
24	25.5	20.0	24.0	25.0	22.5	24.0	24.5	21.0	23.5	17.5	15.0	16.5
25	25.5	24.0	24.5	25.0	21.5	24.0	25.0	21.5	22.5	16.5	14.0	15.5
26	25.0	22.0	24.0	26.0	21.5	23.5	24.5	22.0	23.0	17.5	13.5	15.5
27	26.0	21.5	24.0	27.5	23.0	25.0	24.5	22.5	23.0	17.0	14.0	15.5
28	26.0	22.5	24.5	26.5	23.0	25.0	24.5	22.5	23.5	16.0	13.5	14.5
29	24.5	22.0	23.5	25.0	23.0	24.0	25.0	23.0	24.0	17.0	13.5	15.0
30	23.5	21.0	22.5	24.5	22.5	23.5	24.0	21.0	23.0	15.5	14.0	15.0
31	---	---	---	---	---	---	24.0	21.5	22.5	---	---	---
MONTH	26.0	16.0	20.5	---	---	---	---	---	---	24.0	13.5	19.3

WATER TEMPERATURE, AT A DEPTH OF 16 FT, DEGREES CELSIUS, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	---	---	---	---	---	---	---	---	---	---	---	---
2	---	---	---	---	---	---	---	---	---	---	---	---
3	---	---	---	---	---	---	---	---	---	---	---	---
4	---	---	---	---	---	---	---	---	---	---	---	---
5	---	---	---	---	---	---	---	---	---	---	---	---
6	---	---	---	---	---	---	---	---	---	---	---	---
7	---	---	---	---	---	---	---	---	---	---	---	---
8	---	---	---	---	---	---	---	---	---	---	---	---
9	---	---	---	---	---	---	---	---	---	---	---	---
10	---	---	---	---	---	---	---	---	---	---	---	---
11	---	---	---	---	---	---	---	---	---	---	---	---
12	---	---	---	---	---	---	---	---	---	---	---	---
13	12.0	10.5	11.0	---	---	---	---	---	---	---	---	---
14	11.0	9.5	10.5	---	---	---	---	---	---	---	---	---
15	11.5	10.0	10.5	---	---	---	---	---	---	---	---	---
16	12.5	10.5	11.5	---	---	---	---	---	---	---	---	---
17	13.5	10.5	11.5	---	---	---	---	---	---	---	---	---
18	13.0	10.5	12.0	---	---	---	---	---	---	---	---	---
19	13.0	11.0	12.0	---	---	---	---	---	---	---	---	---
20	12.5	10.5	11.5	---	---	---	---	---	---	4.0	.0	1.0
21	12.0	10.0	11.0	---	---	---	---	---	---	3.0	.5	1.5
22	12.0	10.0	11.0	---	---	---	---	---	---	2.5	.5	1.5
23	11.5	9.5	10.5	---	---	---	---	---	---	4.0	.5	1.5
24	11.0	6.5	9.5	---	---	---	---	---	---	3.5	.5	1.5
25	9.5	7.0	8.5	---	---	---	---	---	---	3.5	.5	1.5
26	---	---	---	---	---	---	---	---	---	4.0	.5	1.0
27	---	---	---	---	---	---	---	---	---	3.5	.0	1.5
28	---	---	---	---	---	---	---	---	---	3.0	.5	1.5
29	---	---	---	---	---	---	---	---	---	3.0	.5	1.5
30	---	---	---	---	---	---	---	---	---	4.0	.5	2.0
31	---	---	---	---	---	---	---	---	---	3.5	1.0	2.0

STREAMS TRIBUTARY TO LAKE MICHIGAN

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04085139 FOX RIVER AT MOUTH AT GREEN BAY, WI--CONTINUED

WATER TEMPERATURE, AT A DEPTH OF 16 FT, DEGREES CELSIUS, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY				MARCH			APRIL			MAY		
1	3.5	.5	1.5	3.0	.5	1.0	---	---	---	---	---	---
2	2.0	.0	.5	3.5	.5	1.5	---	---	---	---	---	---
3	3.5	.0	1.0	3.0	.5	2.0	---	---	---	---	---	---
4	3.5	.5	1.0	3.0	.5	1.5	---	---	---	13.0	11.0	12.0
5	3.0	.5	1.0	2.5	.5	1.0	---	---	---	13.5	10.0	12.5
6	3.0	.5	1.0	3.5	.5	2.0	---	---	---	13.0	9.0	11.5
7	2.5	.0	1.0	3.5	.5	1.0	8.0	5.5	6.0	12.5	9.0	11.0
8	3.0	.0	1.0	3.5	.0	.5	8.0	5.5	6.0	13.0	10.0	11.0
9	2.5	.0	1.0	3.5	.0	1.0	6.5	4.5	5.5	12.5	9.5	11.5
10	2.0	.0	.5	3.5	.0	1.0	5.5	3.0	4.0	13.5	11.0	12.0
11	1.5	.0	.5	3.0	.5	1.0	6.0	3.0	3.5	14.0	12.0	12.5
12	1.5	.0	.5	2.5	.5	1.0	8.0	3.5	4.5	14.0	12.0	13.0
13	3.5	.0	.5	2.5	.5	1.0	6.0	4.0	4.5	14.5	13.0	13.5
14	2.5	.0	.5	3.0	1.0	1.5	8.5	4.0	6.0	15.0	13.5	14.5
15	2.5	.0	.5	4.0	1.0	2.0	9.0	5.5	6.5	15.5	14.5	15.0
16	---	---	---	4.0	1.0	2.0	9.5	5.5	7.5	18.0	15.5	16.0
17	---	---	---	4.0	.0	1.0	11.0	7.0	8.5	---	---	---
18	---	---	---	3.0	.0	1.0	10.0	8.0	9.0	---	---	---
19	---	---	---	3.0	.5	1.0	11.0	7.5	9.0	---	---	---
20	---	---	---	3.5	.5	1.0	12.5	8.0	10.0	---	---	---
21	---	---	---	3.5	.5	1.0	13.0	10.0	11.0	---	---	---
22	---	---	---	4.5	.5	2.0	13.5	11.0	12.0	---	---	---
23	3.5	.5	1.5	6.0	1.5	3.0	12.5	11.0	11.5	---	---	---
24	2.5	.5	1.5	5.5	2.5	3.5	13.5	11.0	12.0	---	---	---
25	3.0	.5	1.5	5.0	3.0	4.0	14.5	11.5	13.0	22.0	19.5	20.5
26	3.5	.5	1.5	5.0	2.5	3.5	---	---	---	20.5	18.0	20.0
27	3.5	.5	1.5	5.0	2.0	3.5	---	---	---	20.0	18.0	19.5
28	3.0	.5	1.5	---	---	---	---	---	---	19.5	17.5	19.0
29	---	---	---	---	---	---	---	---	---	19.5	16.5	18.5
30	---	---	---	---	---	---	---	---	---	19.5	17.0	19.0
31	---	---	---	---	---	---	---	---	---	18.0	17.0	17.0
JUNE				JULY			AUGUST			SEPTEMBER		
1	18.5	17.0	17.5	23.5	21.0	22.0	23.0	21.0	22.0	23.5	22.0	23.0
2	20.0	18.0	19.0	23.0	20.5	22.0	25.0	22.0	23.5	23.5	21.0	22.0
3	20.0	18.5	19.0	23.5	20.0	21.5	25.5	23.5	24.5	22.0	21.0	21.0
4	19.0	18.0	18.5	25.5	23.0	24.0	26.5	23.5	24.5	22.0	20.5	21.0
5	19.5	18.5	19.0	25.5	21.0	23.0	27.0	25.0	26.0	22.0	19.5	20.5
6	20.5	19.0	19.5	---	---	---	26.5	22.5	24.5	21.5	20.0	20.5
7	21.0	20.0	20.5	---	---	---	25.0	21.0	23.0	22.0	20.5	21.5
8	21.5	21.0	21.0	---	---	---	23.5	21.5	22.5	23.0	21.0	21.5
9	21.5	20.0	21.0	---	---	---	24.0	21.5	22.0	23.0	20.5	22.0
10	20.0	19.0	19.5	---	---	---	23.0	21.5	22.0	22.5	20.0	21.0
11	20.5	19.5	20.0	---	---	---	23.0	21.5	22.0	22.0	20.0	20.5
12	21.0	20.0	20.5	---	---	---	23.5	21.5	22.0	21.0	18.5	20.0
13	20.5	19.0	20.0	26.5	24.0	25.5	23.5	21.5	22.0	21.0	18.0	19.5
14	19.0	17.5	18.5	26.0	22.5	24.0	---	---	---	19.5	17.5	19.0
15	17.5	16.0	17.0	25.0	23.0	24.5	---	---	---	19.5	17.5	18.0
16	17.5	15.5	16.5	25.5	23.5	24.0	---	---	---	19.0	17.5	18.0
17	18.5	15.5	17.0	25.5	23.0	24.5	---	---	---	19.5	17.5	18.5
18	18.5	15.5	17.5	25.0	23.0	24.0	---	---	---	19.5	18.0	18.5
19	21.5	17.0	19.5	25.5	22.0	24.0	---	---	---	20.0	18.5	19.0
20	21.5	16.0	20.5	---	---	---	---	---	---	20.5	18.5	19.0
21	22.0	16.0	20.0	---	---	---	---	---	---	20.5	19.0	19.5
22	22.5	16.0	20.5	---	---	---	---	---	---	21.5	16.5	19.5
23	22.0	16.0	19.0	---	---	---	---	---	---	19.5	15.0	17.0
24	25.0	16.5	22.5	---	---	---	24.0	20.5	22.5	17.0	14.5	15.5
25	25.0	20.0	23.5	24.0	21.5	22.0	23.0	20.5	21.5	16.5	13.5	15.0
26	24.0	18.0	21.5	25.0	21.5	22.0	23.5	21.5	22.5	16.5	13.5	15.0
27	25.5	20.0	22.5	27.0	22.5	25.0	23.5	22.0	22.5	16.0	13.5	15.0
28	25.5	21.0	24.0	26.5	22.5	24.5	23.5	22.0	22.5	15.5	13.0	14.5
29	24.5	21.0	23.0	25.0	22.5	23.5	24.0	22.5	23.0	15.5	13.5	14.5
30	23.0	20.5	22.0	24.5	21.5	23.0	23.5	21.0	22.5	15.5	14.0	15.0
31	---	---	---	23.5	21.5	22.5	23.5	21.0	22.0	---	---	---
MONTH	25.5	15.5	20.0	---	---	---	---	---	---	23.5	13.0	18.8

STREAMS TRIBUTARY TO LAKE MICHIGAN

04085139 FOX RIVER AT MOUTH AT GREEN BAY, WI--CONTINUED

WATER TEMPERATURE, AT A DEPTH OF 5 FT, DEGREES CELSIUS, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	16.5	14.5	15.0	12.5	10.0	11.0	4.0	.5	1.5	2.0	.0	.5
2	17.5	14.5	16.0	11.5	9.0	10.0	4.0	.0	1.0	3.5	.0	.5
3	17.0	13.5	15.5	10.0	7.5	8.5	2.5	.0	.5	3.5	.0	1.0
4	15.5	12.0	14.0	9.5	7.0	7.5	2.5	.5	1.0	2.5	.0	1.0
5	15.0	12.0	13.5	8.5	6.5	7.0	5.0	.5	1.5	2.0	.0	.5
6	15.5	11.5	13.5	8.5	7.0	7.0	5.0	.5	1.5	1.5	.0	.5
7	14.0	11.5	13.0	9.5	6.5	7.5	4.5	.5	1.5	1.5	.0	.5
8	14.0	10.5	12.5	9.5	7.0	7.5	3.5	.5	1.5	2.5	.0	.5
9	13.0	10.5	12.0	9.5	6.0	7.0	3.5	.5	1.0	2.5	.0	1.0
10	14.0	10.5	12.0	8.5	5.5	6.5	2.5	.5	1.0	2.0	.0	.5
11	13.0	10.5	11.5	7.5	4.5	5.5	4.0	.0	1.0	2.0	.0	.5
12	13.0	11.0	12.0	7.0	5.0	6.0	4.0	.5	1.0	2.5	.0	.5
13	14.5	11.5	12.5	8.5	5.0	6.0	4.5	.5	1.5	3.0	.0	1.0
14	16.5	12.5	13.5	8.0	5.0	6.0	4.0	.5	1.5	3.0	.0	1.0
15	15.5	13.5	14.0	8.0	4.5	6.0	4.0	.5	1.5	3.5	.0	1.0
16	15.5	10.5	13.5	7.5	2.0	5.0	3.5	.5	1.0	3.0	.0	1.0
17	13.5	8.5	11.0	7.0	1.0	4.0	2.5	.5	.5	16.0	.0	2.0
18	11.5	6.5	9.5	4.5	1.0	2.5	3.5	.5	1.0	4.0	.5	1.0
19	11.0	6.0	8.5	3.5	.5	1.5	4.0	.5	1.0	2.5	.5	1.0
20	9.0	5.5	8.0	3.0	.5	1.5	4.0	.5	1.0	2.5	.5	1.0
21	9.0	5.5	7.5	4.0	.0	1.0	3.5	.0	1.0	2.5	.0	.5
22	10.0	7.0	8.0	3.0	.5	1.5	3.5	.5	1.5	2.5	.5	1.0
23	10.0	7.5	8.5	2.0	.0	1.0	---	---	---	3.5	.5	1.5
24	11.0	8.5	9.0	1.5	.5	1.0	---	---	---	2.5	.5	1.0
25	12.0	9.0	9.5	3.0	.5	1.5	---	---	---	3.0	.5	1.0
26	12.0	10.0	10.5	3.0	1.0	2.0	---	---	---	2.0	.0	1.0
27	13.5	9.5	11.5	3.0	1.0	2.0	---	---	---	3.0	.5	1.0
28	14.0	11.5	12.5	3.5	.0	1.0	---	---	---	2.0	.0	.5
29	14.5	11.5	12.5	2.0	.0	.5	3.0	.0	1.0	3.0	.5	1.0
30	14.0	12.0	13.0	2.0	.0	.5	2.5	.0	1.0	2.5	.0	.5
31	13.5	11.0	12.5	---	---	---	2.5	.0	1.0	2.5	.0	1.0
MONTH	17.5	5.5	11.8	12.5	.0	4.5	---	---	---	16.0	.0	.9
FEBRUARY			MARCH			APRIL			MAY			
1	2.5	.5	1.0	5.5	.5	1.5	10.0	6.0	7.0	---	---	---
2	1.5	-.5	.0	5.0	.5	2.0	9.0	5.5	7.0	---	---	---
3	3.5	.0	1.0	3.5	.5	1.5	7.5	5.5	6.0	---	---	---
4	2.5	.0	1.0	3.0	1.0	1.5	9.0	5.5	6.5	---	---	---
5	2.5	.5	1.0	3.0	.0	1.0	9.5	6.0	7.0	---	---	---
6	3.5	.5	1.0	4.5	.0	1.5	8.0	5.0	6.5	---	---	---
7	2.0	.5	1.0	4.0	.5	2.0	8.0	5.0	6.0	---	---	---
8	4.0	.5	1.5	5.5	1.0	2.0	8.5	5.5	6.0	---	---	---
9	3.0	.5	1.5	5.0	1.5	2.5	10.0	6.0	7.5	---	---	---
10	3.5	.5	1.5	4.5	1.5	2.0	10.5	6.5	7.5	---	---	---
11	4.5	.5	2.0	5.0	1.5	2.5	9.5	6.5	7.5	---	---	---
12	3.5	1.0	2.0	7.5	1.5	2.5	9.5	6.5	7.5	---	---	---
13	3.5	1.0	1.5	5.5	2.0	3.5	9.0	6.0	7.5	---	---	---
14	2.5	.0	1.0	8.5	4.0	6.0	10.0	7.5	8.0	---	---	---
15	1.5	.0	.5	10.0	7.5	8.5	10.5	7.0	9.0	---	---	---
16	2.0	.0	.5	9.5	7.0	8.0	11.5	8.0	9.5	---	---	---
17	3.0	.0	.5	7.5	5.0	6.0	10.5	6.0	9.0	---	---	---
18	1.5	.5	1.0	6.0	4.0	4.5	10.0	6.5	8.5	---	---	---
19	2.5	.5	1.0	4.5	3.0	3.5	11.0	6.5	8.5	---	---	---
20	2.0	.5	1.0	4.0	3.0	3.5	10.5	6.5	9.0	---	---	---
21	3.0	.5	1.0	4.5	3.5	4.0	12.5	9.5	10.5	---	---	---
22	3.0	.5	1.0	8.0	4.0	4.5	12.0	8.5	10.5	---	---	---
23	3.5	.0	1.0	4.5	3.5	4.0	12.5	9.5	11.0	---	---	---
24	2.0	.0	.5	3.5	3.0	3.5	16.0	11.0	13.5	---	---	---
25	3.0	.0	1.0	4.0	2.5	3.0	19.0	11.5	15.0	---	---	---
26	4.0	.5	1.5	5.0	3.0	3.5	17.5	12.5	15.0	---	---	---
27	4.0	.5	2.0	7.5	3.0	3.5	19.5	13.0	16.5	---	---	---
28	5.0	.5	2.0	7.0	3.0	4.5	19.5	14.5	17.0	---	---	---
29	---	---	---	7.5	4.0	4.5	21.5	15.5	18.0	---	---	---
30	---	---	---	8.5	4.5	5.5	20.0	15.5	18.0	---	---	---
31	---	---	---	8.5	5.5	6.5	---	---	---	---	---	---
MONTH	5.0	-.5	1.1	10.0	.0	3.6	21.5	5.0	9.9	---	---	---

STREAMS TRIBUTARY TO LAKE MICHIGAN

219

04085139 FOX RIVER AT MOUTH AT GREEN BAY, WI--CONTINUED

WATER TEMPERATURE, AT A DEPTH OF 16 FT, DEGREES CELSIUS, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	15.5	14.5	15.0	11.5	10.0	11.0	4.0	.5	1.5	2.5	.0	1.0
2	16.5	14.5	15.5	11.5	9.0	9.5	3.0	.0	1.0	3.5	.0	1.0
3	17.0	13.0	15.0	9.5	7.5	8.0	3.0	.0	1.0	4.0	.0	1.0
4	15.5	11.0	13.0	8.5	6.5	7.0	3.0	.5	1.0	3.5	.5	1.5
5	14.0	11.5	12.5	8.5	6.5	7.0	5.0	.5	2.0	2.5	.0	.5
6	15.0	11.5	13.0	8.5	7.0	7.0	4.5	.5	2.0	2.0	.0	1.0
7	14.0	10.5	12.5	9.5	6.5	7.0	4.0	.5	2.0	2.0	.0	.5
8	13.0	9.5	12.0	9.0	7.0	7.5	3.5	.5	1.5	2.5	.0	1.0
9	12.5	10.5	11.5	9.0	6.0	7.0	3.0	.5	1.0	3.0	.0	1.0
10	13.5	10.5	11.5	8.5	5.5	6.5	2.5	.5	1.0	2.5	.0	1.0
11	12.0	10.0	11.0	7.5	4.5	6.0	4.0	.0	1.0	2.5	.0	.5
12	12.5	11.0	12.0	7.0	5.0	6.0	4.0	.5	1.5	2.5	.0	1.0
13	14.0	11.0	12.5	7.5	5.0	6.0	4.5	.5	1.5	3.5	.0	1.5
14	14.5	12.5	13.5	7.5	5.0	6.0	4.0	.5	1.5	3.5	.5	1.5
15	15.0	13.5	14.0	7.5	5.0	6.0	4.0	.5	1.5	3.5	.5	1.5
16	15.0	11.0	13.0	7.0	3.0	5.0	4.0	.5	1.5	3.0	.5	1.5
17	13.0	8.0	11.0	6.5	1.5	4.0	3.0	.5	1.0	3.5	.5	1.5
18	12.0	6.5	9.0	4.5	1.0	2.5	3.5	.5	1.0	3.5	.0	1.0
19	10.5	5.5	8.0	4.0	1.0	2.0	4.5	.5	1.5	3.0	.5	1.0
20	9.0	5.0	7.5	3.5	.5	1.5	4.0	.5	1.0	2.5	.0	1.0
21	9.0	5.5	7.5	4.5	.0	1.5	4.0	.5	1.5	2.5	.0	1.0
22	9.5	7.0	7.5	3.0	.5	1.5	4.0	.5	1.5	2.5	.0	1.0
23	9.0	7.5	8.0	2.5	.0	1.0	---	---	---	3.0	.5	1.5
24	11.5	8.0	9.0	2.5	.5	1.0	---	---	---	3.0	.0	1.0
25	12.0	9.0	9.5	3.0	1.0	1.5	---	---	---	3.0	.0	1.0
26	11.5	9.5	10.5	3.5	1.0	2.5	---	---	---	2.0	.0	1.0
27	12.5	9.5	11.5	4.5	1.0	2.0	---	---	---	3.0	.0	1.0
28	13.5	10.5	12.0	4.0	.5	1.5	---	---	---	2.0	.0	.5
29	13.0	10.5	12.5	2.5	.0	1.0	2.5	.5	1.0	7.5	.0	1.5
30	14.0	11.5	12.5	3.0	.0	.5	3.0	.0	1.0	2.5	.5	1.0
31	13.5	11.0	12.0	---	---	---	3.0	.0	1.0	3.0	.0	1.0
MONTH	17.0	5.0	11.5	11.5	.0	4.5	---	---	---	7.5	.0	1.1
FEBRUARY			MARCH			APRIL			MAY			
1	3.0	.5	1.0	4.5	1.0	2.0	8.5	6.5	7.5	---	---	---
2	2.0	.0	.5	5.0	1.0	2.5	8.5	6.0	7.0	---	---	---
3	4.0	.0	1.5	4.0	1.0	2.0	7.0	5.0	6.0	---	---	---
4	3.0	.5	1.5	3.0	1.0	2.0	8.5	5.0	6.5	---	---	---
5	3.0	.5	1.5	3.0	.0	1.5	9.0	6.0	7.0	---	---	---
6	3.5	.5	1.5	4.0	.5	2.0	8.5	5.0	6.0	---	---	---
7	3.0	.5	1.5	4.5	1.0	2.5	8.0	5.0	6.0	---	---	---
8	4.0	.5	2.0	5.0	1.0	2.5	8.5	5.5	6.0	---	---	---
9	4.0	.5	1.5	6.0	1.5	2.5	9.5	6.0	7.0	---	---	---
10	3.5	.5	1.5	4.5	1.5	2.5	10.5	6.0	7.5	---	---	---
11	4.0	.5	2.0	6.5	2.0	3.0	9.5	6.5	7.5	---	---	---
12	5.0	1.0	2.0	7.0	1.5	3.0	9.5	6.5	7.5	---	---	---
13	3.5	1.0	2.0	5.5	2.5	4.0	9.5	6.0	7.5	---	---	---
14	3.5	.0	1.0	8.0	4.0	6.0	9.5	7.5	8.0	---	---	---
15	3.5	.0	.5	9.5	7.5	8.0	10.0	7.5	9.0	---	---	---
16	2.5	.0	.5	9.5	7.0	7.5	11.5	8.0	9.5	---	---	---
17	2.5	.0	1.0	8.0	5.0	6.0	10.5	6.0	9.0	---	---	---
18	2.5	.5	1.0	7.0	4.0	4.5	10.0	6.5	8.5	---	---	---
19	3.0	.5	1.0	5.5	3.0	3.5	9.5	6.5	8.0	---	---	---
20	2.5	.5	1.0	4.0	3.0	3.5	10.0	6.5	8.5	---	---	---
21	3.5	.5	1.5	4.5	3.5	4.0	11.5	9.5	10.0	---	---	---
22	3.5	.5	1.5	7.0	4.0	4.5	11.5	8.5	10.0	---	---	---
23	3.5	.5	1.5	4.5	3.5	3.5	12.0	9.0	10.5	---	---	---
24	2.5	.0	.5	3.5	3.0	3.0	14.5	9.5	11.5	---	---	---
25	3.0	.0	1.0	4.0	2.5	3.0	---	---	---	---	---	---
26	4.0	.5	2.0	5.0	2.5	3.0	---	---	---	---	---	---
27	5.0	1.0	2.0	7.0	3.0	4.0	16.0	10.5	13.0	---	---	---
28	4.5	1.0	2.5	7.5	3.5	4.5	17.0	11.0	14.0	---	---	---
29	---	---	---	8.0	4.5	5.0	17.5	11.5	14.5	---	---	---
30	---	---	---	8.0	5.0	6.0	17.0	12.0	14.5	---	---	---
31	---	---	---	8.5	5.5	6.5	---	---	---	---	---	---
MONTH	5.0	.0	1.4	9.5	.0	3.8	---	---	---	---	---	---

STREAMS TRIBUTARY TO LAKE MICHIGAN

04085139 FOX RIVER AT MOUTH AT GREEN BAY, WI--CONTINUED

OXYGEN DISSOLVED (MG/L), AT A DEPTH OF 5 FT, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	8.7	7.2	8.0	13.4	12.0	12.6	---	---	---	---	---	---
2	10.0	6.9	7.9	---	---	---	15.7	14.4	15.3	---	---	---
3	9.0	7.1	8.0	---	---	---	16.0	15.1	15.6	---	---	---
4	10.1	8.0	8.6	---	---	---	16.2	14.9	15.8	---	---	---
5	---	---	---	---	---	---	16.3	14.8	15.9	---	---	---
6	---	---	---	---	---	---	16.1	14.8	15.7	---	---	---
7	---	---	---	---	---	---	15.8	14.7	15.4	---	---	---
8	---	---	---	---	---	---	15.6	14.1	15.0	---	---	---
9	---	---	---	---	---	---	15.9	14.2	15.3	---	---	---
10	---	---	---	---	---	---	16.1	14.3	15.5	---	---	---
11	---	---	---	---	---	---	16.3	15.1	15.7	---	---	---
12	---	---	---	---	---	---	16.5	15.0	16.0	---	---	---
13	11.0	9.8	10.5	---	---	---	16.4	14.8	15.8	---	---	---
14	11.4	10.2	10.8	---	---	---	16.0	13.8	15.3	---	---	---
15	11.2	10.0	10.7	---	---	---	15.8	14.2	15.5	---	---	---
16	10.9	9.6	10.4	---	---	---	15.9	14.3	15.2	---	---	---
17	10.5	9.4	9.9	---	---	---	15.8	14.2	15.3	---	---	---
18	10.1	8.9	9.4	---	---	---	15.8	14.5	15.4	---	---	---
19	9.5	8.6	9.0	---	---	---	15.7	14.4	15.2	---	---	---
20	9.4	8.4	8.9	---	---	---	---	---	---	15.2	13.2	14.6
21	9.9	8.8	9.2	---	---	---	---	---	---	15.1	14.3	14.7
22	9.7	8.6	9.0	---	---	---	---	---	---	15.0	14.0	14.5
23	9.4	8.6	8.9	---	---	---	---	---	---	14.9	13.3	14.3
24	10.4	8.5	9.2	---	---	---	---	---	---	14.9	13.7	14.3
25	10.0	9.3	9.7	---	---	---	---	---	---	15.0	13.4	14.3
26	10.3	9.3	9.9	---	---	---	---	---	---	15.1	13.3	14.5
27	11.6	9.6	10.4	---	---	---	---	---	---	14.7	13.5	14.3
28	12.7	10.2	11.2	---	---	---	---	---	---	14.4	13.4	14.0
29	11.7	10.5	11.1	---	---	---	---	---	---	14.7	13.0	14.1
30	12.3	10.4	11.3	---	---	---	---	---	---	14.9	13.2	14.1
31	12.8	11.1	12.0	---	---	---	---	---	---	14.4	12.7	13.9
FEBRUARY			MARCH			APRIL			MAY			
1	14.6	13.6	14.0	15.9	14.2	15.2	---	---	---	---	---	---
2	15.4	14.1	14.8	15.9	14.6	15.5	---	---	---	---	---	---
3	15.2	14.1	14.9	15.7	14.4	15.1	---	---	---	---	---	---
4	15.2	14.3	14.9	16.0	14.7	15.4	---	---	---	11.0	10.2	10.6
5	15.7	14.6	15.3	16.2	15.1	15.7	---	---	---	10.6	9.6	10.1
6	16.1	14.4	15.6	15.9	14.3	15.2	---	---	---	10.8	9.1	9.5
7	16.0	15.1	15.8	16.1	14.2	15.6	12.5	11.7	12.2	10.0	9.2	9.4
8	16.0	14.6	15.7	16.7	14.8	16.2	12.5	11.8	12.2	11.4	9.2	10.2
9	---	---	---	17.0	15.2	16.6	12.5	11.6	12.1	11.5	9.9	10.8
10	---	---	---	17.1	15.5	16.6	13.3	12.3	12.8	12.0	10.5	11.1
11	---	---	---	17.0	15.4	16.7	13.9	13.0	13.5	12.0	10.3	10.9
12	---	---	---	16.7	15.5	16.3	13.7	12.9	13.4	13.0	10.2	11.1
13	---	---	---	16.3	15.0	15.9	13.5	12.5	13.2	11.5	9.8	10.6
14	---	---	---	15.1	13.9	14.7	14.3	12.3	13.0	11.8	9.9	10.5
15	---	---	---	14.6	13.2	14.2	13.4	11.7	12.5	11.7	9.9	10.6
16	---	---	---	14.5	11.9	13.7	13.6	11.2	12.1	13.2	10.3	11.0
17	---	---	---	14.6	12.0	13.8	12.4	10.6	11.2	---	---	---
18	---	---	---	15.1	13.1	14.4	11.6	9.8	10.5	---	---	---
19	---	---	---	15.8	13.9	15.1	12.4	9.9	10.6	---	---	---
20	---	---	---	16.1	14.4	15.6	11.9	10.3	11.0	---	---	---
21	---	---	---	16.6	14.6	16.0	12.5	10.5	11.2	---	---	---
22	---	---	---	16.5	14.4	15.6	12.1	10.8	11.4	---	---	---
23	16.8	14.7	16.1	15.7	14.3	15.1	13.3	11.0	11.9	---	---	---
24	16.7	15.1	16.0	15.1	13.8	14.6	---	---	---	---	---	---
25	16.5	14.5	15.7	14.5	13.2	14.2	---	---	---	9.4	6.8	7.8
26	16.0	14.9	15.7	14.6	13.3	13.9	---	---	---	8.3	5.9	6.9
27	16.0	13.9	15.4	13.7	11.6	12.8	---	---	---	6.9	6.0	6.4
28	16.1	14.1	15.5	---	---	---	---	---	---	7.9	6.5	7.3
29	---	---	---	---	---	---	---	---	---	8.3	7.7	7.9
30	---	---	---	---	---	---	---	---	---	8.1	6.7	7.2
31	---	---	---	---	---	---	---	---	---	8.6	7.2	8.0

04085139 FOX RIVER AT MOUTH AT GREEN BAY, WI--CONTINUED

OXYGEN DISSOLVED (MG/L), AT A DEPTH OF 5 FT, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	9.4	8.1	8.7	10.9	8.6	9.8	---	---	---	9.1	5.8	7.1
2	9.4	8.6	8.8	11.3	9.0	10.1	---	---	---	7.8	5.3	6.1
3	8.7	8.2	8.3	11.2	5.7	9.2	---	---	---	8.2	5.8	6.9
4	9.1	7.9	8.6	11.9	7.3	8.8	---	---	---	9.1	6.8	7.6
5	8.9	8.3	8.6	12.5	6.6	9.4	---	---	---	8.8	6.5	7.1
6	8.5	7.7	8.2	---	---	---	---	---	---	9.8	5.2	6.3
7	8.2	7.9	8.0	---	---	---	---	---	---	8.4	5.4	6.5
8	8.0	7.2	7.7	---	---	---	---	---	---	7.7	5.8	6.5
9	8.0	7.1	7.4	---	---	---	---	---	---	8.1	5.2	6.3
10	8.5	7.2	7.9	---	---	---	10.8	7.3	9.2	6.7	4.9	5.6
11	8.8	7.9	8.3	---	---	---	11.5	6.4	9.0	8.5	5.3	6.9
12	8.8	7.5	8.2	---	---	---	10.0	5.9	8.0	9.8	7.2	8.6
13	8.0	7.5	7.7	11.3	5.2	7.4	10.1	4.9	7.7	9.5	7.3	8.3
14	8.4	7.7	8.0	14.0	6.2	7.3	8.6	4.1	6.3	9.0	7.5	8.1
15	8.8	8.1	8.4	11.9	6.2	8.0	9.3	4.5	6.3	10.6	8.1	8.9
16	9.2	8.5	8.9	11.6	5.1	8.3	8.1	6.1	6.7	9.7	7.8	8.7
17	9.5	8.8	9.1	9.8	5.2	7.1	10.1	5.8	7.1	11.8	8.5	9.5
18	9.5	8.9	9.3	8.9	5.1	7.4	8.7	6.8	7.9	12.6	8.4	10.6
19	11.2	9.2	9.6	8.7	6.0	6.9	10.0	7.4	8.8	11.6	9.4	10.4
20	9.9	8.5	9.3	10.8	5.7	7.4	9.8	7.4	8.3	10.7	8.1	9.4
21	9.4	7.8	8.8	12.5	6.4	8.3	10.5	6.1	7.5	10.8	7.8	8.8
22	9.3	7.5	8.2	17.2	8.6	10.5	9.9	6.7	7.7	9.0	7.6	8.2
23	7.9	6.1	7.2	13.6	10.2	11.7	8.6	5.7	7.2	10.2	7.7	8.8
24	8.3	6.4	7.6	14.2	7.4	10.4	9.7	5.4	6.9	9.9	7.7	8.9
25	8.2	6.7	7.5	8.7	2.0	6.3	8.9	6.2	7.1	10.9	8.1	9.3
26	7.4	4.6	6.4	8.0	1.3	4.4	10.8	5.8	7.3	11.9	8.3	9.8
27	7.4	4.7	6.3	9.5	2.6	5.6	9.8	7.2	8.3	11.4	9.1	10.0
28	9.8	5.3	8.0	9.2	5.6	7.1	10.6	6.5	7.9	11.6	9.4	10.5
29	10.9	8.1	9.1	9.1	6.5	7.5	9.4	6.3	7.9	10.6	8.5	9.6
30	11.2	7.5	9.5	10.3	5.4	6.3	7.8	5.9	6.6	11.9	8.4	9.8
31	---	---	---	---	---	---	8.9	5.9	7.3	---	---	---
MONTH	11.2	4.6	8.3	---	---	---	---	---	---	12.6	4.9	8.3

OXYGEN DISSOLVED (MG/L), AT A DEPTH OF 16 FT, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

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	---	---	---	---	---	---	---	---	---	---	---	---
11	---	---	---	---	---	---	---	---	---	---	---	---
12	---	---	---	---	---	---	---	---	---	---	---	---
13	11.1	9.8	10.4	---	---	---	---	---	---	---	---	---
14	11.4	10.1	10.8	---	---	---	---	---	---	---	---	---
15	11.4	10.3	10.8	---	---	---	---	---	---	---	---	---
16	11.5	9.7	10.5	---	---	---	---	---	---	---	---	---
17	10.9	9.4	10.1	---	---	---	---	---	---	---	---	---
18	10.4	9.1	9.5	---	---	---	---	---	---	---	---	---
19	10.6	8.9	9.4	---	---	---	---	---	---	---	---	---
20	10.0	8.9	9.4	---	---	---	---	---	---	15.9	12.9	14.1
21	10.9	9.1	9.6	---	---	---	---	---	---	15.5	13.0	13.7
22	9.5	8.6	9.1	---	---	---	---	---	---	15.0	12.9	13.6
23	10.3	8.5	9.1	---	---	---	---	---	---	15.2	12.5	13.5
24	11.9	8.4	9.3	---	---	---	---	---	---	15.4	13.0	13.7
25	10.8	8.8	9.5	---	---	---	---	---	---	15.3	12.7	13.5
26	---	---	---	---	---	---	---	---	---	15.5	12.8	13.7
27	---	---	---	---	---	---	---	---	---	15.2	12.7	13.5
28	---	---	---	---	---	---	---	---	---	14.9	12.5	13.4
29	---	---	---	---	---	---	---	---	---	15.2	12.5	13.4
30	---	---	---	---	---	---	---	---	---	15.5	12.8	13.5
31	---	---	---	---	---	---	---	---	---	14.8	12.6	13.5

STREAMS TRIBUTARY TO LAKE MICHIGAN

04085139 FOX RIVER AT MOUTH AT GREEN BAY, WI--CONTINUED

OXYGEN DISSOLVED (MG/L), AT A DEPTH OF 16 FT, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY				MARCH			APRIL			MAY		
1	15.2	12.8	13.7	15.9	13.5	14.8	---	---	---	---	---	---
2	16.0	13.1	14.1	15.8	14.5	15.3	---	---	---	---	---	---
3	14.7	12.4	13.7	15.6	14.5	15.0	---	---	---	---	---	---
4	15.3	12.7	14.3	15.7	14.3	15.1	---	---	---	11.3	10.4	10.7
5	16.5	13.5	15.2	15.8	14.7	15.3	---	---	---	10.7	9.6	10.1
6	17.2	14.8	16.2	15.3	14.1	14.8	---	---	---	10.9	9.1	9.6
7	17.6	15.6	16.8	15.6	14.3	15.1	12.5	11.5	12.1	10.2	9.1	9.5
8	18.0	14.7	16.6	16.2	14.7	15.6	12.4	11.3	11.9	11.4	9.3	10.2
9	16.0	13.8	14.8	16.4	14.8	15.9	12.2	11.2	11.8	11.6	9.9	10.7
10	15.0	13.9	14.6	16.5	15.0	15.9	13.2	11.8	12.6	11.7	10.3	10.9
11	14.9	13.9	14.5	16.3	14.9	15.9	13.9	12.3	13.3	11.6	10.2	10.7
12	14.7	14.0	14.3	16.1	14.8	15.7	13.6	12.4	13.1	12.6	10.1	10.8
13	14.6	13.0	14.2	15.7	14.4	15.3	13.3	12.1	12.9	10.8	9.5	10.3
14	14.7	13.5	14.4	14.5	13.4	14.1	14.2	12.0	12.8	10.4	9.5	10.0
15	14.8	13.5	14.5	14.1	12.9	13.8	12.6	11.5	12.1	10.6	9.3	9.9
16	---	---	---	14.0	11.6	13.3	13.8	11.2	12.0	11.6	9.3	10.2
17	---	---	---	14.0	11.7	13.3	12.7	10.6	11.3	---	---	---
18	---	---	---	14.6	12.9	13.9	12.0	9.7	10.7	---	---	---
19	---	---	---	15.3	13.2	14.6	11.9	10.0	10.8	---	---	---
20	---	---	---	15.9	14.3	15.3	12.1	10.2	10.8	---	---	---
21	---	---	---	16.7	14.3	15.8	12.1	10.3	10.9	---	---	---
22	---	---	---	16.5	14.4	15.4	12.1	10.6	11.2	---	---	---
23	17.0	15.3	16.1	15.7	14.2	15.1	12.7	10.4	11.5	---	---	---
24	17.4	15.0	15.9	15.3	13.6	14.6	12.5	11.0	11.8	---	---	---
25	17.0	14.7	15.6	14.9	13.2	14.2	12.3	11.2	11.7	9.1	6.3	7.5
26	16.0	14.5	15.3	14.9	12.8	14.0	---	---	---	8.4	5.8	6.9
27	15.8	14.0	14.9	14.0	11.6	12.8	---	---	---	6.7	6.1	6.3
28	15.7	14.0	14.9	---	---	---	---	---	---	8.0	6.3	7.2
29	---	---	---	---	---	---	---	---	---	8.3	7.4	7.8
30	---	---	---	---	---	---	---	---	---	7.8	6.5	7.0
31	---	---	---	---	---	---	---	---	---	8.3	7.0	7.7
JUNE				JULY			AUGUST			SEPTEMBER		
1	9.4	7.6	8.4	9.7	6.9	8.5	6.5	3.0	4.6	11.3	8.1	9.4
2	9.3	8.4	8.7	9.7	5.9	7.5	8.5	5.2	6.8	10.1	7.0	8.2
3	8.6	7.9	8.2	8.5	4.7	6.5	9.0	6.8	7.8	9.0	6.9	8.0
4	9.3	7.7	8.4	10.2	6.2	7.8	8.4	5.7	6.9	9.9	7.7	8.7
5	9.0	8.2	8.5	9.2	4.6	6.5	10.0	5.9	7.5	8.9	6.6	7.6
6	8.6	7.4	8.2	---	---	---	10.5	6.8	8.3	8.7	4.5	5.7
7	8.2	7.7	8.0	---	---	---	10.2	6.6	8.3	7.2	4.6	5.6
8	7.9	7.0	7.6	---	---	---	9.3	7.0	7.9	6.2	5.1	5.8
9	8.3	7.0	7.3	---	---	---	8.9	6.4	7.4	7.2	4.3	5.7
10	8.5	7.0	7.8	---	---	---	7.4	6.5	7.0	6.5	4.1	5.0
11	8.8	7.7	8.2	---	---	---	7.0	4.6	5.5	7.7	4.1	5.9
12	8.7	7.1	8.0	---	---	---	5.7	3.2	4.3	8.7	6.2	7.4
13	8.2	7.2	7.5	11.6	5.3	7.6	5.1	2.1	3.1	8.4	6.1	7.2
14	8.9	7.7	8.1	12.1	6.2	7.2	---	---	---	7.8	6.5	7.2
15	9.4	8.4	8.8	8.1	3.5	6.2	---	---	---	8.6	7.1	7.9
16	10.4	9.1	9.5	10.7	3.4	6.8	---	---	---	8.6	7.0	7.7
17	10.4	9.3	9.8	8.3	4.8	6.5	---	---	---	10.2	7.5	8.5
18	10.3	9.1	10.1	7.3	3.7	5.6	---	---	---	10.6	7.7	9.1
19	10.8	9.5	10.2	8.6	5.3	6.8	---	---	---	10.5	8.5	9.4
20	10.6	5.8	9.4	---	---	---	---	---	---	10.5	7.9	8.7
21	9.7	4.8	7.5	---	---	---	---	---	---	9.3	7.5	8.3
22	8.7	5.0	7.1	---	---	---	---	---	---	8.9	7.3	8.0
23	6.9	3.9	5.4	---	---	---	---	---	---	9.8	7.5	8.6
24	8.0	3.9	6.5	---	---	---	10.3	7.3	8.4	9.7	7.7	8.7
25	7.7	3.6	6.3	3.9	.3	1.3	9.8	7.8	8.7	10.6	7.9	9.1
26	6.2	1.4	4.1	3.7	-.2	.4	10.1	7.9	8.8	11.9	8.2	9.6
27	6.6	2.8	4.9	7.7	.3	3.6	10.3	8.9	9.4	12.0	8.8	10.2
28	9.4	4.2	7.6	7.7	3.7	5.5	10.3	8.7	9.3	12.1	10.5	11.2
29	9.9	7.0	8.5	7.7	4.4	5.6	12.1	8.8	10.2	11.0	9.0	10.0
30	9.9	6.1	7.8	6.7	2.8	3.9	11.4	8.8	9.8	11.7	8.9	10.1
31	---	---	---	8.7	2.6	4.8	11.5	8.3	9.8	---	---	---
MONTH	10.8	1.4	7.9	---	---	---	---	---	---	12.1	4.1	8.1

STREAMS TRIBUTARY TO LAKE MICHIGAN

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04085139 FOX RIVER AT MOUTH AT GREEN BAY, WI--CONTINUED

OXYGEN DISSOLVED (MG/L), AT A DEPTH OF 5 FT, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

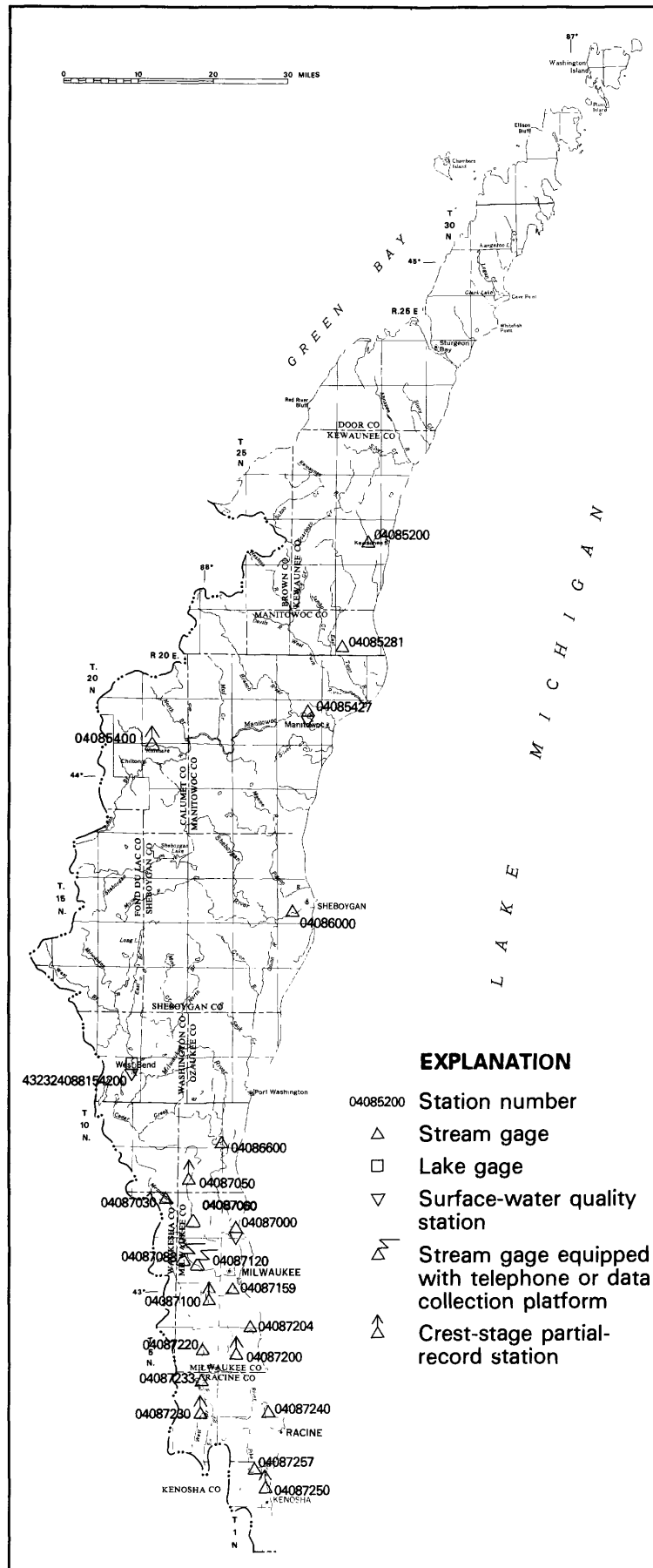
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	11.1	9.1	10.2	9.7	7.5	8.7	15.2	13.4	14.6	16.3	15.1	15.9
2	11.3	9.5	10.2	10.7	9.5	10.4	16.2	14.0	15.3	16.3	14.6	15.7
3	11.3	9.5	10.3	12.0	10.5	11.4	16.2	13.8	15.3	16.1	14.2	15.5
4	12.5	9.7	10.7	12.7	11.6	12.4	15.5	13.7	14.8	15.9	14.5	15.4
5	12.0	10.3	10.8	12.6	11.7	12.3	15.4	13.4	14.4	16.0	14.6	15.6
6	11.8	9.9	10.6	12.6	11.5	12.2	15.5	12.9	14.4	16.0	14.8	15.4
7	11.9	9.8	10.6	12.5	11.2	12.1	15.4	13.1	14.5	16.2	14.8	15.6
8	11.8	9.8	10.6	12.4	11.0	11.9	15.3	13.5	14.6	15.9	14.4	15.4
9	12.1	10.2	11.1	12.8	10.6	11.7	15.8	13.5	15.3	15.8	14.3	15.2
10	12.0	10.0	11.0	12.8	10.5	11.8	16.0	14.2	15.4	15.6	14.2	14.9
11	13.0	11.3	12.0	13.6	11.7	12.5	15.9	14.0	15.5	15.7	13.8	15.1
12	12.9	11.3	12.0	12.6	11.3	12.0	16.0	13.9	15.4	15.5	13.5	14.8
13	12.7	10.8	11.5	12.8	11.4	12.1	16.1	13.7	15.4	15.1	13.4	14.3
14	12.2	10.4	11.1	13.6	10.9	12.4	16.3	13.9	15.4	14.9	13.1	14.1
15	12.4	10.6	11.3	13.1	11.8	12.5	16.2	13.8	15.5	15.0	13.3	14.3
16	11.6	10.1	11.0	14.4	12.3	12.9	16.1	13.8	15.3	15.1	12.9	14.1
17	12.0	10.5	11.2	14.3	11.4	12.7	15.9	13.9	15.4	15.7	13.1	14.5
18	12.9	10.5	11.5	14.9	11.8	13.7	16.0	13.7	15.3	16.1	14.6	15.7
19	13.0	10.3	11.8	15.3	13.2	14.6	15.9	13.7	15.2	15.8	14.6	15.2
20	13.0	11.2	12.0	15.8	13.9	14.9	16.2	13.7	15.4	15.5	13.9	15.1
21	12.8	10.7	12.0	15.9	13.6	15.1	16.4	14.2	15.4	15.3	14.1	14.8
22	13.4	10.8	12.2	15.0	13.4	14.5	16.3	13.7	15.4	14.9	13.9	14.4
23	13.1	11.6	12.3	15.5	13.0	14.8	---	---	---	14.6	13.0	13.9
24	13.5	11.7	12.5	15.5	14.1	15.0	---	---	---	14.5	13.4	14.0
25	13.5	12.0	12.7	15.3	13.6	14.5	---	---	---	14.5	12.8	14.0
26	12.6	11.2	11.9	14.6	12.9	13.7	---	---	---	14.4	13.3	13.9
27	12.4	10.5	11.1	14.6	12.7	13.7	---	---	---	14.3	13.0	13.8
28	10.9	9.8	10.3	14.4	12.3	13.5	---	---	---	14.4	13.4	14.0
29	11.7	9.1	9.9	14.6	12.4	13.9	16.2	14.8	15.6	14.3	13.0	13.8
30	10.4	8.9	9.4	16.3	13.2	14.8	16.2	14.9	15.6	14.9	13.6	14.4
31	9.0	7.5	8.2	---	---	---	16.3	14.9	15.7	14.9	13.6	14.4
MONTH	13.5	7.5	11.1	16.3	7.5	13.0	---	---	---	16.3	12.8	14.7
FEBRUARY			MARCH			APRIL			MAY			
1	14.9	13.6	14.4	15.5	13.8	14.8	14.0	12.5	13.3	---	---	---
2	15.2	14.1	14.8	15.6	13.3	14.7	13.4	12.4	12.8	---	---	---
3	14.7	13.2	14.3	15.1	13.6	14.5	13.2	12.4	12.8	---	---	---
4	14.6	13.2	14.1	14.6	13.1	13.9	14.0	12.7	13.4	---	---	---
5	14.7	13.3	14.1	15.2	13.3	14.1	13.9	12.9	13.5	---	---	---
6	15.3	13.2	14.2	14.7	12.7	13.8	13.9	12.9	13.6	---	---	---
7	15.8	14.7	15.4	14.2	12.7	13.6	14.3	13.2	14.0	---	---	---
8	15.9	14.3	15.3	14.5	12.5	13.6	14.4	13.5	14.1	---	---	---
9	15.6	14.3	15.1	14.6	13.1	14.0	14.1	12.8	13.6	---	---	---
10	15.3	13.8	14.7	14.9	12.6	14.1	13.6	11.9	12.9	---	---	---
11	14.7	12.7	13.8	14.5	12.5	13.5	13.0	11.6	12.4	---	---	---
12	13.5	11.9	12.5	13.6	11.3	12.9	13.1	11.4	12.4	---	---	---
13	13.1	11.7	12.4	12.6	10.2	11.2	14.3	12.1	12.9	---	---	---
14	14.1	12.7	13.4	11.6	10.2	10.9	13.9	12.3	13.3	---	---	---
15	15.1	13.5	14.4	11.0	10.2	10.7	14.2	13.1	13.7	---	---	---
16	15.6	14.1	15.1	12.0	10.4	11.3	13.8	12.5	13.2	---	---	---
17	15.6	14.0	15.1	13.2	11.6	12.5	14.8	11.9	12.8	---	---	---
18	15.4	14.3	15.0	14.1	12.6	13.6	13.6	11.5	12.5	---	---	---
19	15.4	14.0	15.0	14.9	13.9	14.5	13.6	12.1	12.8	---	---	---
20	15.3	14.1	14.8	15.0	14.7	14.9	13.1	11.9	12.5	---	---	---
21	16.2	14.0	15.2	14.9	14.2	14.6	12.9	11.1	11.8	---	---	---
22	16.2	14.6	15.5	14.3	13.0	13.9	14.3	11.9	13.2	---	---	---
23	16.0	14.5	15.4	14.5	13.6	14.0	13.8	12.7	13.3	---	---	---
24	16.1	14.8	15.6	14.9	13.7	14.5	13.5	12.0	13.0	---	---	---
25	15.9	14.1	15.2	15.2	14.1	14.8	13.4	11.5	12.4	---	---	---
26	15.4	13.9	14.7	14.8	13.5	14.5	13.1	11.4	12.2	---	---	---
27	15.5	13.9	14.8	14.7	13.8	14.3	12.2	10.7	11.4	---	---	---
28	15.3	13.3	14.4	14.7	13.1	14.3	11.0	9.1	9.9	---	---	---
29	---	---	---	14.7	13.0	14.2	9.8	7.2	8.1	---	---	---
30	---	---	---	14.5	13.3	13.9	9.4	6.5	7.8	---	---	---
31	---	---	---	14.0	12.7	13.6	---	---	---	---	---	---
MONTH	16.2	11.7	14.6	15.6	10.2	13.7	14.8	6.5	12.5	---	---	---

STREAMS TRIBUTARY TO LAKE MICHIGAN

04085139 FOX RIVER AT MOUTH AT GREEN BAY, WI--CONTINUED

OXYGEN DISSOLVED (MG/L), AT A DEPTH OF 16 FT, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	11.0	9.6	10.2	10.6	8.2	9.3	---	---	---	15.8	14.1	15.1
2	11.2	9.4	10.0	11.7	9.9	11.1	---	---	---	15.7	13.6	14.8
3	11.2	9.1	9.9	13.0	11.5	12.4	---	---	---	15.5	13.5	14.6
4	10.9	9.2	10.0	13.6	12.6	13.3	---	---	---	15.2	13.6	14.4
5	10.6	9.3	9.8	13.5	12.3	13.2	---	---	---	15.3	13.8	14.7
6	10.6	8.9	9.6	13.2	12.1	12.8	---	---	---	15.3	13.7	14.5
7	10.8	9.2	9.8	13.1	11.6	12.6	---	---	---	15.3	13.8	14.7
8	11.0	9.0	10.0	12.9	11.2	12.3	---	---	---	15.1	13.4	14.4
9	11.2	9.5	10.5	12.8	10.5	11.9	---	---	---	15.0	13.4	14.3
10	11.5	9.6	10.6	12.7	10.1	11.6	---	---	---	14.8	13.1	13.9
11	12.4	10.9	11.6	13.1	11.1	12.1	---	---	---	14.9	13.0	14.3
12	12.7	10.9	11.6	12.3	10.7	11.6	---	---	---	14.9	12.8	14.0
13	12.3	10.5	11.1	12.5	11.0	11.7	---	---	---	14.5	12.4	13.5
14	12.3	10.1	10.8	13.5	10.2	12.0	---	---	---	14.4	12.2	13.2
15	12.0	10.1	10.9	12.7	11.0	12.0	---	---	---	14.4	12.4	13.5
16	11.4	9.7	10.6	13.3	11.8	12.4	---	---	---	14.5	12.0	13.4
17	11.9	10.0	10.8	13.5	10.6	12.1	---	---	---	15.5	11.9	13.9
18	12.8	10.1	11.5	14.5	11.3	13.1	---	---	---	16.0	14.5	15.4
19	13.0	10.8	12.0	14.9	12.3	13.9	---	---	---	15.6	14.1	14.9
20	13.0	11.4	12.1	15.4	13.1	14.4	---	---	---	15.5	14.2	14.8
21	12.9	11.1	12.1	15.6	12.5	14.6	---	---	---	15.4	13.5	14.5
22	13.4	11.4	12.4	14.7	13.0	14.2	---	---	---	14.7	13.4	14.1
23	13.0	11.9	12.5	15.9	12.4	14.5	---	---	---	14.6	12.7	13.6
24	13.2	11.9	12.6	15.4	13.2	14.6	---	---	---	14.7	12.9	13.7
25	13.4	11.9	12.6	15.2	12.8	14.2	---	---	---	14.5	12.7	13.7
26	12.7	10.9	11.8	14.6	12.2	13.4	---	---	---	14.3	13.0	13.7
27	12.2	10.4	11.2	14.3	12.2	13.4	---	---	---	14.2	12.6	13.5
28	11.8	9.7	10.6	14.3	11.8	13.4	---	---	---	14.2	12.9	13.6
29	11.8	9.4	10.2	15.4	12.0	13.9	16.0	14.7	15.4	14.2	12.8	13.6
30	11.0	9.1	10.0	---	---	---	15.9	14.1	15.1	15.0	13.3	14.3
31	9.8	8.4	9.0	---	---	---	15.8	14.1	15.1	15.0	13.3	14.2
MONTH	13.4	8.4	10.9	---	---	---	---	---	---	16.0	11.9	14.2
FEBRUARY			MARCH			APRIL			MAY			
1	14.8	13.4	14.3	15.4	13.6	14.5	13.6	12.6	13.2	---	---	---
2	15.1	13.9	14.7	15.4	13.4	14.3	12.9	12.2	12.5	---	---	---
3	14.7	13.1	14.1	14.9	13.2	14.2	13.2	12.2	12.6	---	---	---
4	14.7	13.2	13.8	14.2	12.9	13.5	13.8	11.9	13.1	---	---	---
5	14.7	13.0	13.9	14.7	12.5	13.6	13.7	12.2	13.0	---	---	---
6	14.8	13.2	13.9	14.2	12.3	13.2	13.6	12.3	13.1	---	---	---
7	14.9	13.6	14.4	13.7	12.2	12.9	13.9	12.2	13.3	---	---	---
8	15.1	13.6	14.4	13.8	12.2	12.9	14.5	12.3	13.4	---	---	---
9	15.0	11.4	14.3	13.9	12.0	13.1	13.7	12.2	13.1	---	---	---
10	14.9	13.3	14.1	13.9	12.1	13.2	13.0	11.6	12.4	---	---	---
11	14.2	12.5	13.3	13.6	11.2	12.5	12.9	11.2	12.2	---	---	---
12	13.2	11.2	12.2	12.5	9.5	11.6	13.0	10.9	12.2	---	---	---
13	13.0	11.7	12.4	11.4	8.9	9.9	14.0	11.8	12.7	---	---	---
14	14.0	12.5	13.3	10.1	8.6	9.6	13.6	12.2	13.0	---	---	---
15	15.1	13.3	14.3	9.9	9.0	9.6	14.0	12.8	13.3	---	---	---
16	15.8	14.2	15.2	10.8	9.2	10.2	13.6	12.2	12.9	---	---	---
17	15.7	14.0	15.1	12.0	10.2	11.2	14.6	11.6	12.7	---	---	---
18	15.8	13.6	15.2	12.7	11.1	12.2	13.9	11.4	12.6	---	---	---
19	15.9	14.2	15.2	13.5	12.2	13.0	13.9	12.1	13.0	---	---	---
20	16.1	14.4	15.2	13.7	13.3	13.4	13.4	11.9	12.6	---	---	---
21	17.1	14.6	15.7	13.6	12.9	13.2	13.2	11.2	11.9	---	---	---
22	17.1	14.7	16.0	13.1	12.0	12.7	14.4	11.8	13.2	---	---	---
23	16.7	14.9	15.9	13.3	12.5	12.9	14.0	12.6	13.5	---	---	---
24	16.6	14.9	16.1	13.9	12.9	13.5	14.0	12.5	13.2	---	---	---
25	16.3	14.4	15.5	14.1	13.4	13.8	---	---	---	---	---	---
26	15.3	13.9	14.6	13.9	12.6	13.6	---	---	---	---	---	---
27	15.5	13.7	14.6	14.8	13.1	14.1	13.6	12.0	12.8	---	---	---
28	15.6	13.4	14.4	14.9	13.4	14.5	13.2	10.2	11.9	---	---	---
29	---	---	---	14.6	12.8	14.2	12.5	9.0	10.6	---	---	---
30	---	---	---	14.3	13.4	13.8	12.4	8.9	11.0	---	---	---
31	---	---	---	13.7	12.8	13.4	---	---	---	---	---	---
MONTH	17.1	11.2	14.5	15.4	8.6	12.8	---	---	---	---	---	---



Base from U.S. Geological Survey
State base map, 1968

LAKE MICHIGAN BASIN

STREAMS TRIBUTARY TO LAKE MICHIGAN

04085200 KEWAUNEE RIVER NEAR KEWAUNEE, WI

LOCATION.--Lat 44°27'30", long 87°33'23", in SW 1/4 sec.14, T.23 N., R.24 E., Kewaunee County, Hydrologic Unit 04030102, on left bank just downstream from bridge on County Trunk Highway F, 2.3 mi west of Kewaunee, and about 7.0 mi upstream from mouth.

DRAINAGE AREA.--127 mi².

PERIOD OF RECORD.--Annual maximum, water years 1958-65, and occasional low-flow measurements, water years 1963-64. September 1964 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 and crest-stage gage. Datum of gage is 579.64 ft above National Geodetic Vertical Datum of 1929 (Wisconsin State Highway Commission benchmark). Apr. 3, 1957, to Sept. 2, 1964, crest-stage gage only at same site and datum.

REMARKS.--Estimated daily discharges: Ice period listed in rating table below. Records good except those for ice period, which is poor.

AVERAGE DISCHARGE.--24 years, 86.0 ft³/s, 9.20 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,570 ft³/s, June 23, 1990, gage height, 15.53 ft in gage well, 16.00 ft from crest-stage gage; maximum gage height, 16.03 ft, Mar. 30, 1960 (backwater from ice); minimum recorded, 4.0 ft³/s, Nov. 22, 1977, gage height, 8.06 ft, result of freezeup.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 800 ft³/s and maximum (*):

DATE	TIME	DISCHARGE (ft ³ /s)	GAGE HEIGHT (ft)	DATE	TIME	DISCHARGE (ft ³ /s)	GAGE HEIGHT (ft)
Mar. 13	0230	3,840	13.48	June 14	1015	1,030	11.49
Mar. 14	2030	4,140	13.58	June 17	0715	1,260	11.78
				June 23	0845	*8,570	*15.53

Minimum discharge, 5.6 ft³/s, Nov. 14, gage height, 8.18 ft, caused by regulation from dam construction upstream of gage.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Shifting-control method used Apr. 12 to May 9, May 29 to June 11, June 23 to Sept. 30; stage-discharge relation affected by ice Dec. 14 to Mar. 12.)

8.3	9.0	9.1	71	11.0	701
8.5	18	9.5	137	12.0	1,460
8.7	31	10.0	263	13.0	2,680
8.9	48	10.5	448	14.0	5,390
				15.0	9,360

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10	27	22	13	11	25	64	34	47	110	63	31
2	11	25	20	13	11	23	78	33	48	99	52	30
3	11	24	17	12	11	20	83	32	55	89	48	29
4	10	26	19	12	11	19	77	31	56	80	68	29
5	11	28	19	12	12	19	71	31	52	73	66	29
6	12	31	18	12	12	19	69	31	49	68	58	59
7	12	30	15	12	13	25	65	31	46	65	48	246
8	13	29	16	12	15	30	64	30	43	70	43	194
9	12	28	16	13	19	45	63	34	40	67	40	139
10	15	26	16	13	20	60	65	90	37	61	37	104
11	16	25	16	13	19	300	65	158	34	56	37	74
12	15	24	15	12	25	1500	62	197	73	52	36	59
13	13	23	15	12	25	2520	59	147	431	49	35	50
14	12	20	14	13	20	2500	57	109	924	48	33	235
15	12	19	14	13	19	1870	55	120	377	48	33	579
16	37	19	14	13	19	534	53	234	185	51	33	292
17	41	18	14	15	18	297	53	282	683	97	32	183
18	29	17	13	16	18	201	50	185	651	108	34	129
19	24	18	13	15	18	144	48	144	291	77	82	126
20	23	18	13	14	18	118	48	467	161	74	74	122
21	26	21	13	14	18	107	56	470	114	69	62	100
22	28	17	13	13	18	104	53	230	584	54	52	85
23	27	15	13	13	18	100	49	145	5950	49	45	73
24	24	16	13	13	17	87	46	110	2140	45	41	63
25	23	17	14	12	16	79	44	91	545	43	39	57
26	22	16	14	12	16	75	42	80	271	41	39	52
27	20	21	14	13	16	69	41	71	189	39	41	49
28	19	31	13	12	18	67	39	63	154	49	38	46
29	19	24	13	13	---	65	37	58	140	97	35	44
30	19	25	13	12	---	65	36	53	125	108	33	43
31	24	---	13	12	---	64	---	49	---	80	32	---
TOTAL	590	678	465	399	471	11151	1692	3840	14495	2116	1409	3351
MEAN	19.0	22.6	15.0	12.9	16.8	360	56.4	124	483	68.3	45.5	112
MAX	41	31	22	16	25	2520	83	470	5950	110	82	579
MIN	10	15	13	12	11	19	36	30	34	39	32	29
CFSM	.15	.18	.12	.10	.13	2.83	.44	.98	3.80	.54	.36	.88
IN.	.17	.20	.14	.12	.14	3.27	.50	1.12	4.25	.62	.41	.98
CAL YR 1989	TOTAL	22360.9	MEAN	61.3	MAX	3350	MIN	8.1	CFSM	.48	IN.	6.55
WTR YR 1990	TOTAL	40657	MEAN	111	MAX	5950	MIN	10	CFSM	.88	IN.	11.91

STREAMS TRIBUTARY TO LAKE MICHIGAN

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04085281 EAST TWIN RIVER AT MISHICOT, WI

LOCATION.--Lat 44°14'16", long 87°38'11", in NW 1/4 NW 1/4 sec.4, T.20 N., R.24 E., Manitowoc County, Hydrologic Unit 04030101, on right bank 500 ft downstream from bridge on State Highway 147, at Mishicot, 0.8 mi upstream from Johnson Creek, and 9.8 mi upstream from mouth.

DRAINAGE AREA.--110 mi².

PERIOD OF RECORD.--July 1972 to current year.

REVISED RECORDS.--WDR WI-79-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 584.72 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Estimated daily discharges: May 21, 22, and ice periods listed in rating tables below. Records good except those for estimated discharges, which are poor. Occasional regulation caused by recreation dam 0.3 mi upstream.

AVERAGE DISCHARGE.--18 years, 78.7 ft³/s, 9.72 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,380 ft³/s, June 24, 1990, gage height, 13.35 ft; maximum gage height, 13.75 ft, Mar. 31, 1979; minimum, 1.7 ft³/s, July 20, 1979, gage height, 3.69 ft.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 500 ft³/s and maximum (*):

DATE	TIME	DISCHARGE (ft ³ /s)	GAGE HEIGHT (ft)	DATE	TIME	DISCHARGE (ft ³ /s)	GAGE HEIGHT (ft)
Mar. 14	2345	1,450	10.32	June 24	0500	*3,380	*13.35
June 17	2400	1,530	10.47				

Minimum discharge, 6.7 ft³/s, Oct. 1-5, Nov. 21; minimum gage height, 3.98 ft, Nov. 21.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Nov. 22, Dec. 3, 6, 7, 12, and Dec. 14 to Mar. 14.)

3.9	4.1	6.0	236
4.0	7.5	7.0	406
4.1	12	8.0	610
4.2	17	9.0	905
4.3	23	10.0	1,300
4.5	41	11.0	1,800
5.0	99	13.0	3,110

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.7	20	17	11	10	16	57	23	30	143	63	24
2	6.7	20	16	11	10	19	76	22	29	113	46	24
3	6.7	18	15	11	10	21	90	22	31	90	43	23
4	7.3	19	14	11	10	19	85	21	32	75	88	22
5	10	22	13	11	10	17	76	21	30	62	98	21
6	13	23	13	11	10	16	70	21	27	52	75	23
7	12	23	12	11	11	15	64	20	26	47	59	103
8	10	21	9.6	10	13	28	58	19	23	70	48	170
9	9.3	19	9.1	10	14	72	51	19	22	66	39	152
10	13	18	9.4	10	18	160	61	62	20	55	33	102
11	14	16	9.5	10	17	300	65	138	19	46	31	69
12	15	16	9.3	10	20	660	64	140	34	39	31	64
13	14	15	7.7	10	22	1000	57	118	91	35	30	42
14	13	15	8.0	10	19	1100	56	95	146	31	27	83
15	10	15	7.8	10	18	1280	56	86	114	30	27	242
16	19	15	7.8	11	17	775	53	115	84	31	28	292
17	25	13	7.8	12	16	445	51	156	642	31	27	220
18	23	13	8.0	14	16	275	48	147	1350	55	26	124
19	20	12	8.0	15	15	193	44	121	948	82	53	108
20	18	13	8.0	14	14	148	45	252	538	62	69	93
21	18	12	8.2	14	14	125	47	240	247	49	60	76
22	20	12	8.4	13	14	115	46	200	249	44	50	61
23	19	11	9.0	12	14	111	43	151	2300	34	41	51
24	17	11	11	12	14	95	40	102	2930	31	36	43
25	16	11	14	11	13	83	37	77	1440	28	35	43
26	14	12	16	11	13	75	36	65	763	27	36	31
27	14	14	14	11	14	67	35	58	415	24	40	27
28	14	27	13	10	14	63	32	51	254	31	37	25
29	14	32	12	10	---	61	30	44	191	55	32	23
30	14	21	11	10	---	58	27	37	172	122	29	22
31	17	---	11	10	---	57	---	33	---	101	26	---
TOTAL	442.7	509	337.6	347	400	7469	1600	2676	13197	1761	1363	2403
MEAN	14.3	17.0	10.9	11.2	14.3	241	53.3	86.3	440	56.8	44.0	80.1
MAX	25	32	17	15	22	1280	90	252	2930	143	98	292
MIN	6.7	11	7.7	10	10	15	27	19	19	24	26	21
CFSM	.13	.15	.10	.10	.13	2.19	.48	.78	4.00	.52	.40	.73
IN.	.15	.17	.11	.12	.14	2.53	.54	.90	4.46	.60	.46	.81

CAL YR 1989 TOTAL 14872.2 MEAN 40.7 MAX 1400 MIN 6.0 CFSM .37 IN. 5.03
WTR YR 1990 TOTAL 32505.3 MEAN 89.1 MAX 2930 MIN 6.7 CFSM .81 IN. 10.99

STREAMS TRIBUTARY TO LAKE MICHIGAN

04085427 MANITOWOC RIVER AT MANITOWOC, WI
(NATIONAL STREAM-QUALITY ACCOUNTING NETWORK STATION)

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 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1972 to current year.

REVISED RECORDS.--WDR WI-79-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 610.12 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Estimated daily discharges: Apr. 16 to May 21 and ice period listed in rating table below. Records good except those for periods of estimated record, which are poor.

AVERAGE DISCHARGE.--18 years, 334 ft³/s, 8.62 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,280 ft³/s, Mar. 31, 1979, gage height, 13.24 ft, from floodmarks; maximum gage height, 13.30 ft, Mar. 25, 1986, from floodmarks; minimum discharge, 6.8 ft³/s, July 8, 1988, and Oct. 3-5, 1989; minimum gage height, 3.61 ft, July 8, 1988.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 800 ft³/s and maximum (*):

DATE	TIME	DISCHARGE (ft ³ /s)	GAGE HEIGHT (ft)	DATE	TIME	DISCHARGE (ft ³ /s)	GAGE HEIGHT (ft)
Mar. 13	2345	ice jam	*10.74	June 24	0600	*3,300	9.97
Mar. 14	1330	1,790	8.29				

Minimum discharge, 6.8 ft³/s, Oct. 3-5, gage height, 3.62 ft.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Nov. 28 to Mar. 14.)

3.6	5.0	5.0	220
3.8	17	6.0	540
4.0	33	7.0	981
4.2	57	8.0	1,570
4.5	108	10.0	3,330

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.7	33	44	12	40	43	460	110	323	963	56	128
2	7.6	38	42	13	37	52	432	100	292	901	49	126
3	7.0	39	36	14	37	58	408	92	272	846	52	119
4	7.0	41	39	14	36	56	370	94	256	796	70	108
5	13	38	45	13	37	50	336	84	228	742	127	101
6	22	35	50	13	36	47	307	74	199	694	142	97
7	19	37	35	13	36	45	278	68	181	651	132	101
8	17	43	40	13	50	62	253	66	155	610	114	91
9	20	39	43	13	80	110	221	70	130	577	97	92
10	24	36	43	13	80	200	221	150	115	541	82	94
11	19	44	36	13	72	300	220	330	98	498	69	84
12	16	47	32	13	70	500	224	340	94	457	58	73
13	17	42	28	11	68	800	224	340	102	418	51	67
14	16	34	25	11	66	1500	216	280	118	379	48	105
15	17	29	21	11	64	1340	215	250	125	334	45	175
16	26	26	19	11	60	1270	214	300	143	287	43	226
17	27	27	17	12	58	1170	190	350	361	231	40	249
18	21	28	15	32	54	1140	180	360	475	173	40	259
19	26	35	14	28	50	1100	170	370	645	126	46	290
20	28	35	14	54	46	1040	150	700	586	95	47	296
21	32	36	13	50	45	984	170	630	506	74	74	285
22	35	31	13	45	45	935	150	626	566	63	113	267
23	38	26	12	44	42	911	150	622	1940	70	131	247
24	35	35	12	44	42	862	140	590	2970	64	140	222
25	31	37	14	40	37	809	140	553	1900	55	145	201
26	32	35	14	42	41	753	130	517	1370	47	152	176
27	30	42	13	41	40	688	130	489	1190	39	152	153
28	29	38	13	40	36	631	120	457	1110	46	148	137
29	29	33	12	40	---	577	120	418	1060	58	141	120
30	30	40	12	40	---	530	110	384	1030	64	137	114
31	34	---	12	36	---	494	---	353	---	63	132	---
TOTAL	712.3	1079	778	789	1405	19057	6649	10167	18540	10962	2873	4803
MEAN	23.0	36.0	25.1	25.5	50.2	615	222	328	618	354	92.7	160
MAX	38	47	50	54	80	1500	460	700	2970	963	152	296
MIN	7.0	26	12	11	36	43	110	66	94	39	40	67
CFSM	.04	.07	.05	.05	.10	1.17	.42	.62	1.17	.67	.18	.30
IN.	.05	.08	.06	.06	.10	1.35	.47	.72	1.31	.78	.20	.34

CAL YR 1989 TOTAL 66707.5 MEAN 183 MAX 3270 MIN 7.0 CFSM .35 IN. 4.72
WTR YR 1990 TOTAL 77814.3 MEAN 213 MAX 2970 MIN 7.0 CFSM .41 IN. 5.50

STREAMS TRIBUTARY TO LAKE MICHIGAN

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04085427 MANITOWOC RIVER AT MANITOWOC, WI--CONTINUED
(NATIONAL STREAM-QUALITY ACCOUNTING NETWORK STATION)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--March 1979 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCHI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	
NOV 1989													
08...	1335	43	791	8.2	7.0	5.9	14.8	736	127	46	34	340	
MAR 1990													
28...	1130	639	470	8.2	5.0	3.0	12.9	762	101	K14	50	210	
JUN													
19...	1415	685	494	7.9	20.5	23	8.2	753	92	320	180	230	
AUG													
21...	1430	79	711	8.4	20.0	14	10.9	755	121	410	75	340	
DATE		CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE WATER DIS IT FIELD MG/L AS HCO3 (00453)	CAR-BONATE WATER DIS IT FIELD MG/L AS CO3 (00452)	ALKA-LINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)
NOV 1989													
08...	68	41	39	20	0.9	5.3	311	--	255	51	72	0.20	
MAR 1990													
28...	46	23	13	12	0.4	2.9	167	--	137	62	27	0.10	
JUN													
19...	54	24	13	11	0.4	5.6	209	--	171	40	24	0.20	
AUG													
21...	73	39	20	11	0.5	4.2	334	14	298	49	42	1.1	
DATE		SILICA, DIS-SOLVED (MG/L AS SiO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)
NOV 1989													
08...	0.11	481	430	0.65	55.8	<0.100	0.030	0.020	2.1	0.170	0.010	<0.010	
MAR 1990													
28...	8.6	315	271	0.43	543	1.40	0.060	0.020	1.9	0.120	0.070	0.030	
JUN													
19...	9.8	346	278	0.47	640	0.800	0.040	0.050	2.0	0.350	0.200	0.170	
AUG													
21...	7.6	440	419	0.60	93.9	0.800	0.030	0.050	1.7	0.330	0.220	0.190	

K RESULTS BASED ON COUNT OUTSIDE OF THE ACCEPTABLE RANGE (NON-IDEAL COLONY COUNT).

STREAMS TRIBUTARY TO LAKE MICHIGAN

04085427 MANITOWOC RIVER AT MANITOWOC, WI--CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	ALUM- INUM, DIS- SOLVED (UG/L AS AL) (01106)	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE) (01010)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	COBALT, DIS- SOLVED (UG/L AS CO) (01035)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, DIS- SOLVED (UG/L AS FE) (01046)
NOV 1989											
08...	1335	43	<10	<1	37	<0.5	<1.0	<1	<3	2	10
MAR 1990											
28...	1130	639	<10	<1	20	<0.5	<1.0	<5	<1	3	120
JUN											
19...	1415	685	<10	<1	27	<0.5	<1.0	<1	<3	4	97
AUG											
21...	1430	79	<10	1	37	<0.5	<1.0	<1	<3	2	14

DATE	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	LITHIUM DIS- SOLVED (UG/L AS LI) (01130)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	MERCURY DIS- SOLVED (UG/L AS HG) (71890)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO) (01060)	NICKEL, DIS- SOLVED (UG/L AS NI) (01065)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	STRON- TIUM, DIS- SOLVED (UG/L AS SR) (01080)	VANA- DIUM, DIS- SOLVED (UG/L AS V) (01085)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)
NOV 1989										
08...	<1	7	4	<0.1	10	3	<1	420	<6	7
MAR 1990										
28...	<1	<4	11	<0.1	<10	1	<1	88	<6	10
JUN										
19...	<1	<4	9	<0.1	<10	3	<1	100	<6	<3
AUG										
21...	<1	7	10	0.1	<10	2	<2	340	<6	<3

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
NOV 1989							
08...	1335	43	791	7.0	16	1.9	98
MAR 1990							
28...	1130	639	470	5.0	14	24	90
JUN							
19...	1415	685	494	20.5	85	157	95
AUG							
21...	1430	79	711	20.0	32	6.8	94

04086000 SHEBOYGAN RIVER AT SHEBOYGAN, WI

LOCATION.--Lat 43°44'25", long 87°45'35", in SE 1/4 NE 1/4 sec.29, T.15 N., R.23 E., Sheboygan County, Hydrologic Unit 04030101, on left bank 400 ft upstream from bridge on State Highway 141, near west city limits of Sheboygan, and 4.2 mi upstream from mouth.

DRAINAGE AREA.--418 mi².

PERIOD OF RECORD.--June 1916 to September 1924 (published as "near Sheboygan"), October 1950 to current year. Monthly discharge only for some periods, published in WSP 1307, 1727.

REVISED RECORDS.--WSP 1307: 1917(M), 1919(M), 1921(M), 1923(M). WDR WI-79-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 584.00 ft above National Geodetic Vertical Datum of 1929. June 1916 to June 1924, nonrecording gage at site 0.7 mi downstream at different datum. November 1950 to June 1951, nonrecording gage at site 0.3 mi downstream at datum 3.15 ft lower.

REMARKS.--Estimated daily discharges: Ice periods listed in rating table below. Records good except those for ice-affected periods, which are poor. Diurnal fluctuation caused by numerous powerplants above station.

AVERAGE DISCHARGE.--48 years (water years 1917-24, 1951-90), 258 ft³/s, 8.38 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,680 ft³/s, Mar. 22, 1975, gage height, 11.64 ft; minimum observed, about 1 ft³/s, Aug. 27, 1922, gage height, 1.48 ft datum then in use, caused by shutdown of powerplants.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,500 ft³/s and maximum (*):

DATE	TIME	DISCHARGE (ft ³ /s)	GAGE HEIGHT (ft)	DATE	TIME	DISCHARGE (ft ³ /s)	GAGE HEIGHT (ft)
Mar. 14	0915	*3,400	*8.11	No other peak greater than base discharge.			
Minimum discharge, 24 ft ³ /s, Oct. 3, gage height, 1.60 ft.							

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Nov. 22, 24, and Nov. 28 to Mar. 13.)

1.6	30	4.0	596
1.8	50	5.0	1,060
2.0	80	6.0	1,680
2.5	165	7.0	2,440
3.0	270	8.0	3,300

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	39	100	96	72	60	70	262	159	200	225	43	157
2	37	98	86	80	64	90	369	148	195	241	42	149
3	37	92	82	92	56	150	466	137	151	190	128	138
4	37	95	88	110	52	120	398	139	134	123	128	134
5	53	97	92	100	50	90	319	128	125	98	130	129
6	50	102	88	92	50	84	234	114	127	130	119	135
7	57	106	80	86	50	110	221	100	134	162	95	213
8	51	100	70	84	70	100	237	97	136	139	84	169
9	43	101	68	90	150	200	242	99	128	135	77	150
10	50	96	66	94	200	400	336	244	122	133	76	143
11	48	96	62	100	180	700	408	490	112	121	68	139
12	50	93	62	90	130	900	363	498	114	114	65	131
13	45	94	60	84	120	1300	326	505	117	106	69	127
14	48	97	58	80	110	3010	341	399	127	106	65	365
15	42	95	56	84	100	2380	354	370	111	103	64	627
16	70	93	54	100	98	1950	321	449	113	103	63	419
17	75	62	54	110	94	1450	295	519	156	105	60	311
18	83	80	52	210	92	1260	268	461	206	97	95	242
19	76	91	52	150	92	1130	249	472	161	95	450	238
20	83	99	50	110	90	992	219	1140	134	91	718	245
21	85	68	48	94	70	850	249	958	136	92	587	254
22	93	68	47	74	64	810	220	713	163	84	407	254
23	85	65	46	66	60	775	215	554	885	84	293	253
24	85	74	49	120	54	656	205	484	772	86	231	247
25	86	90	54	120	50	530	207	433	533	71	214	242
26	84	90	60	100	56	438	199	386	319	80	214	257
27	83	94	66	76	66	376	191	339	184	67	218	254
28	83	88	64	66	60	336	184	300	184	79	210	226
29	81	66	60	64	---	311	175	264	192	61	196	202
30	84	110	62	60	---	243	166	240	208	54	182	173
31	93	---	66	58	---	273	---	185	---	48	171	---
TOTAL	2016	2700	1998	2916	2388	22084	8239	11524	6379	3423	5562	6723
MEAN	65.0	90.0	64.5	94.1	85.3	712	275	372	213	110	179	224
MAX	93	110	96	210	200	3010	466	1140	885	241	718	627
MIN	37	62	46	58	50	70	166	97	111	48	42	127
CFSM	.16	.22	.15	.23	.20	1.70	.66	.89	.51	.26	.43	.54
IN.	.18	.24	.18	.26	.21	1.97	.73	1.03	.57	.30	.49	.60

CAL YR 1989 TOTAL 88714 MEAN 243 MAX 4240 MIN 36 CFSM .58 IN. 7.90
WTR YR 1990 TOTAL 75952 MEAN 208 MAX 3010 MIN 37 CFSM .50 IN. 6.76

STREAMS TRIBUTARY TO LAKE MICHIGAN

432324088154200 BIG CEDAR LAKE NEAR WEST BEND, WI

LAKE-STAGE RECORDS

LOCATION.--Lat 43°23'24", long 88°15'42", in SE 1/4 sec. 30, T.11 N., R.19 E., Washington County, Hydrologic Unit 04040003, 4.6 mi southwest of West Bend.

PERIOD OF RECORD.--October 1984 to current year.

GAGE.--Staff gage read by Louis Ottmer, Jr. Elevation of gage is 1031 ft, from topographic map.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height observed, 8.42 ft, Sept. 12, 1986; minimum observed, 7.32 ft, Aug. 29, 1988.

EXTREMES FOR CURRENT YEAR.--Maximum gage height observed, 7.77 ft, June 25 and Aug. 27; minimum observed, 7.65 ft, July 22 and Sept. 1.

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	GAGE HEIGHT	DATE	GAGE HEIGHT	DATE	GAGE HEIGHT	DATE	GAGE HEIGHT
APR. 23	7.74	JULY 5	7.67	JULY 22	7.65	AUG. 20	7.75
MAY 28	7.71	9	7.67	31	7.67	27	7.77
JUNE 15	7.71	17	7.67	AUG. 4	7.73	SEPT. 1	7.65
25	7.77						

WATER-QUALITY RECORDS

LOCATION.--Lat 43°24'01", long 88°15'22", in SW 1/4 sec. 20, T.11 N., R.19 E., Washington County, Hydrologic Unit 04040003, at north end of lake, and 4.1 mi southwest of West Bend.

PERIOD OF RECORD.--June 1985 to current year.

REMARKS.--Secchi disc readings made by Louis Ottmer, Jr.

SECCHI DISC TRANSPARENCY (IN METERS) WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	SECCHI DISC (M) (00078)	DATE	TIME	SECCHI DISC (M) (00078)
MAY 1990			JUL 1990		
18...	0640	3.1	05...	1130	2.7
26...	1330	4.0	09...	1230	2.3
JUN			17...	1130	2.1
15...	1200	4.3	AUG		
25...	1130	3.4	04...	1200	1.8
			27...	0900	2.6

STREAMS TRIBUTARY TO LAKE MICHIGAN

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04086600 MILWAUKEE RIVER NEAR CEDARBURG, WI

LOCATION.--Lat 43°16'49", long 87°56'30", in NW 1/4 NW 1/4 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 mi².

PERIOD OF RECORD.--November 1981 to current year.

GAGE.--Water-stage recorder. Datum of gage is 653.558 ft above National Geodetic Vertical Datum of 1929 (South-eastern Wisconsin Regional Planning Commission bench mark).

REMARKS.--Estimated daily discharges: Ice period listed in rating tables below. Records good except those for ice-affected period, which is poor.

AVERAGE DISCHARGE.--8 years, 494 ft³/s, 11.05 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,860 ft³/s, Mar. 27, 1989, gage height, 12.21 ft; maximum gage height, 12.85 ft, Mar. 1, 1985, backwater from ice; minimum daily, 42 ft³/s, July 9, 1988.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,500 ft³/s and maximum (*):

DATE	TIME	DISCHARGE (ft ³ /s)	GAGE HEIGHT (ft)	DATE	TIME	DISCHARGE (ft ³ /s)	GAGE HEIGHT (ft)
Mar. 16	1015	*3,910	*11.14	No other peak greater than base discharge.			
Minimum daily, 78 ft ³ /s, July 28.							

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Nov. 18-20, 22-25, and Nov. 29 to Mar. 13.)

5.4	75	7.0	923
5.5	105	8.0	1,520
6.0	350	10.0	2,960
		12.0	4,670

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	117	204	170	150	250	220	452	255	414	280	87	175
2	114	209	170	170	270	240	566	235	405	251	83	153
3	106	209	160	220	250	280	761	219	404	227	86	134
4	105	209	160	280	240	320	731	296	388	204	117	126
5	129	205	150	200	240	300	670	424	376	172	168	118
6	141	205	140	180	250	280	621	413	368	153	180	119
7	185	209	130	170	290	350	552	368	348	135	158	152
8	181	214	120	170	400	400	483	330	334	126	134	149
9	170	214	110	240	640	600	455	317	307	122	118	133
10	168	211	100	270	720	900	495	675	278	118	104	140
11	161	205	94	280	660	1400	526	1220	254	108	104	145
12	161	193	94	260	540	1800	512	1410	239	98	106	143
13	148	190	92	240	470	2500	497	1410	230	88	109	121
14	145	185	92	220	400	2740	557	1290	245	81	105	205
15	139	184	92	220	360	3200	601	1050	239	78	105	283
16	137	181	94	280	330	3850	552	921	229	81	107	347
17	153	150	94	340	290	3450	501	717	279	81	96	344
18	198	160	98	400	260	2710	466	557	306	80	143	298
19	221	170	96	360	240	2060	425	568	286	90	204	280
20	229	150	94	320	230	1540	451	771	306	98	254	258
21	223	138	94	300	220	1220	480	746	341	109	342	239
22	219	130	94	290	260	1030	482	808	308	92	398	234
23	217	120	96	350	240	921	439	901	477	104	409	206
24	214	130	100	450	220	797	406	841	535	129	402	188
25	214	140	120	450	220	695	385	761	464	92	372	173
26	210	149	140	400	210	603	355	736	419	97	334	158
27	202	157	160	360	210	541	325	665	408	88	303	148
28	192	157	150	340	210	512	305	592	425	78	281	140
29	186	150	140	320	---	481	288	533	407	89	253	132
30	179	180	140	280	---	480	270	471	330	90	222	128
31	185	---	140	250	---	471	---	435	---	97	197	---
TOTAL	5349	5308	3724	8760	9120	36891	14609	20935	10349	3736	6081	5569
MEAN	173	177	120	283	326	1190	487	675	345	121	196	186
MAX	229	214	170	450	720	3850	761	1410	535	280	409	347
MIN	105	120	92	150	210	220	270	219	229	78	83	118
CFSM	.28	.29	.20	.47	.54	1.96	.80	1.11	.57	.20	.32	.31
IN.	.33	.33	.23	.54	.56	2.26	.90	1.28	.63	.23	.37	.34

CAL YR 1989 TOTAL 126594 MEAN 347 MAX 4430 MIN 92 CFSM .57 IN. 7.76
WTR YR 1990 TOTAL 130431 MEAN 357 MAX 3850 MIN 78 CFSM .59 IN. 7.99

STREAMS TRIBUTARY TO LAKE MICHIGAN

04087000 MILWAUKEE RIVER AT MILWAUKEE, WI
(NATIONAL STREAM-QUALITY ACCOUNTING NETWORK STATION)

LOCATION.--Lat 43°06'00", long 87°54'32", in NE 1/4 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 mi².

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 National Geodetic Vertical Datum 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.--Estimated daily discharge: Ice periods listed in rating table below. Records good except those for ice-affected periods, which are poor. Occasional regulation caused by recreation dam approximately 1,200 ft upstream.

AVERAGE DISCHARGE.--76 years, 426 ft³/s, 8.31 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 15,100 ft³/s, Mar. 20, 1918, Aug. 6, 1924, gage height, 9.00 ft datum then in use, from floodmark for 1918, from graph based on gage reading for 1924, no flow Sept. 8, 1943.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,000 ft³/s and maximum (*):

DATE	TIME	DISCHARGE (ft ³ /s)	GAGE HEIGHT (ft)	DATE	TIME	DISCHARGE (ft ³ /s)	GAGE HEIGHT (ft)
Mar. 13	1800	*4,490	*5.65	No other peak greater than base discharge.			

Minimum discharge, 3.1 ft³/s, June 7, gage height, 1.21 ft, result of regulation.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Nov. 29 to Feb. 6, Feb. 14, 17-21, and Feb. 26 to Mar. 6.)

1.8	81	4.0	1,830
2.0	156	5.0	3,320
2.5	412	6.0	5,180
3.0	756		

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DAY	MEAN VALUES											
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	143	474	200	170	280	240	531	330	393	387	119	198
2	138	239	200	180	310	260	664	322	381	337	109	181
3	135	236	190	230	280	300	768	306	367	303	218	163
4	129	237	180	320	270	360	814	661	363	279	200	153
5	204	228	180	230	270	350	764	557	358	252	163	151
6	181	229	170	200	280	320	718	551	350	221	175	183
7	188	233	160	200	300	321	659	471	227	204	177	268
8	201	233	140	190	413	441	597	415	183	189	157	154
9	191	247	130	290	700	683	546	493	309	183	142	159
10	218	246	130	310	919	1140	614	1810	292	171	128	245
11	185	228	110	320	844	1850	567	1460	263	162	115	163
12	189	221	110	310	684	2490	571	1520	239	149	117	172
13	180	209	110	300	531	3170	562	1520	240	138	112	153
14	174	210	110	250	500	3190	755	1420	418	125	115	441
15	167	240	110	250	450	3190	682	1290	241	203	117	453
16	178	210	110	320	374	3820	650	1450	243	132	130	527
17	174	201	110	380	350	3910	607	1320	338	120	128	399
18	195	154	110	470	300	3230	566	1140	300	136	381	350
19	259	172	110	420	270	2450	523	1260	306	188	312	342
20	370	200	110	370	260	1840	713	1730	405	200	320	302
21	273	195	110	350	270	1430	589	1390	350	144	336	355
22	242	173	110	330	308	1270	576	1180	422	148	364	268
23	242	148	110	400	286	1070	540	998	730	154	378	255
24	243	155	110	500	254	932	500	882	586	156	382	227
25	240	180	130	520	240	812	469	818	563	146	368	215
26	235	184	150	480	240	727	440	730	417	125	341	204
27	227	183	180	420	240	659	414	640	464	132	311	190
28	220	185	170	370	240	600	387	570	637	124	294	202
29	212	170	160	330	---	578	364	504	796	277	266	181
30	213	200	160	290	---	566	345	450	461	136	241	170
31	233	---	170	270	---	541	---	400	---	117	217	---
TOTAL	6379	6420	4340	9970	10663	42740	17495	28588	11642	5738	6933	7424
MEAN	206	214	140	322	381	1379	583	922	388	185	224	247
MAX	370	474	200	520	919	3910	814	1810	796	387	382	527
MIN	129	148	110	170	240	240	345	306	183	117	109	151
CFSM	.30	.31	.20	.46	.55	1.98	.84	1.32	.56	.27	.32	.36
IN.	.34	.34	.23	.53	.57	2.28	.94	1.53	.62	.31	.37	.40

CAL YR 1989 TOTAL 150631.2 MEAN 413 MAX 4940 MIN 8.2 CFSM .59 IN. 8.05
WTR YR 1990 TOTAL 158332 MEAN 434 MAX 3910 MIN 109 CFSM .62 IN. 8.46

04087000 MILWAUKEE RIVER AT MILWAUKEE, WI--CONTINUED
(NATIONAL STREAM-QUALITY ACCOUNTING NETWORK 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 begin in January 1973.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	STREP-TOCOCCHI, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS TOTAL (MG/L AS CaCO3) (00900)
NOV 1989												
03...	1045	253	770	8.6	6.0	15	11.6	754	94	160	49	350
MAR 1990												
27...	1145	626	598	8.3	4.5	2.8	13.2	755	103	K27	K25	290
JUN												
19...	0920	300	711	8.2	23.0	3.4	8.2	757	97	190	87	330
AUG												
21...	1030	316	590	7.9	20.5	11	6.2	755	70	1100	990	210

DATE	CALCIUM DIS-SOLVED (MG/L AS Ca) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS Mg) (00925)	SODIUM, DIS-SOLVED (MG/L AS Na) (00930)	SODIUM AD-SORP-TION RATIO (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE WATER DIS IT FIELD (MG/L AS HCO3) (00453)	CAR-BONATE WATER DIS IT FIELD (MG/L AS CO3) (00452)	ALKA-LINITY WAT DIS TOT IT FIELD (MG/L AS CaCO3) (39086)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS Cl) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)
NOV 1989												
03...	74	40	30	16	0.7	3.5	383	4	320	37	53	0.20
MAR 1990												
27...	63	31	20	13	0.5	4.1	361	10	312	31	41	0.10
JUN												
19...	69	37	32	18	0.8	2.6	307	2	256	28	58	0.20
AUG												
21...	43	26	34	25	1	2.7	233	--	191	30	58	1.1

DATE	SILICA, DIS-SOLVED (MG/L AS SiO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)
NOV 1989												
03...	0.91	439	433	0.60	300	0.320	0.100	0.090	1.3	0.110	0.040	0.040
MAR 1990												
27...	8.5	396	392	0.54	669	1.10	0.100	0.090	0.90	0.080	0.050	0.050
JUN												
19...	9.2	428	393	0.58	347	0.700	0.020	0.020	1.8	0.140	0.060	0.030
AUG												
21...	3.6	315	315	0.43	269	0.300	0.100	0.130	1.3	0.170	0.050	0.030

K RESULTS BASED ON COUNT OUTSIDE OF THE ACCEPTABLE RANGE (NON-IDEAL COLONY COUNT).

STREAMS TRIBUTARY TO LAKE MICHIGAN

04087000 MILWAUKEE RIVER AT MILWAUKEE, WI--CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	ALUM- INUM, DIS- SOLVED (UG/L AS AL) (01106)	ARSENIC, DIS- SOLVED (UG/L AS AS) (01000)	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE) (01010)	CADMIUM, DIS- SOLVED (UG/L AS CD) (01025)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	COBALT, DIS- SOLVED (UG/L AS CO) (01035)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, DIS- SOLVED (UG/L AS FE) (01046)
NOV 1989 03...	1045	253	<10	<1	38	<0.5	<1.0	<1	<3	2	25
MAR 1990 27...	1145	626	<10	1	32	<0.5	<1.0	<5	<1	2	47
JUN 19...	0920	300	<10	2	43	0.6	1.0	<1	<3	3	13
AUG 21...	1030	316	10	1	34	<0.5	<1.0	1	<3	2	14

DATE	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	LITHIUM, DIS- SOLVED (UG/L AS LI) (01130)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	MERCURY, DIS- SOLVED (UG/L AS HG) (71890)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO) (01060)	NICKEL, DIS- SOLVED (UG/L AS NI) (01065)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	STRON- TIUM, DIS- SOLVED (UG/L AS SR) (01080)	VANA- DIUM, DIS- SOLVED (UG/L AS V) (01085)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)
NOV 1989 03...	<1	10	15	<0.1	<10	2	<1	340	<6	36
MAR 1990 27...	1	<4	21	<0.1	<10	2	<1	200	<6	8
JUN 19...	<1	8	3	<0.1	<10	1	<1	300	<6	4
AUG 21...	<1	6	4	0.1	<10	1	<2	260	<6	7

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
NOV 1989 03...	1045	253	770	6.0	68	46	96
MAR 1990 27...	1145	626	598	4.5	12	20	86
JUN 19...	0920	300	711	23.0	30	24	90
AUG 21...	1030	316	590	20.5	31	26	95

STREAMS TRIBUTARY TO LAKE MICHIGAN

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04087030 MENOMONEE RIVER AT MENOMONEE FALLS, WI

LOCATION.--Lat 43°10'22", long 88°06'14", in SE 1/4 NE 1/4 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 mi².

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. Datum of gage is 753.50 ft above National Geodetic Vertical Datum of 1929 (University of Wisconsin bench mark).

REMARKS.--Estimated discharges: July 31 to Aug. 9 and ice periods listed in rating table below. Records good except those for ice-affected periods, which are poor. Occasional regulation caused by dam in Menomonee Falls, about 1.0 mi upstream.

AVERAGE DISCHARGE.--13 years (1976-77, 1980-90) 29.4 ft³/s, 11.51 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,440 ft³/s, Sept. 11, 1986, gage height, 6.49 ft; maximum gage height, 6.57 ft, July 13, 1981; minimum discharge, 0.52 ft³/s, Aug. 18, 1988, gage height, 2.47 ft.

EXTREMES FOR CURRENT YEAR.--Peak discharge greater than base discharge of 380 ft³/s and maximum (*):

DATE	TIME	DISCHARGE (ft ³ /s)	GAGE HEIGHT (ft)	DATE	TIME	DISCHARGE (ft ³ /s)	GAGE HEIGHT (ft)
Feb. 9	0025	(a)	*5.73	May 10	0450	*324	4.67

(a) Backwater from ice.

Minimum, 3.5 ft³/s Aug. 10, 11, gage height, 2.68 ft.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Nov. 17, 18, 22-25, and Nov. 27 to Mar. 11.)

2.6	2.0	3.4	45
2.8	6.4	3.7	81
2.9	9.6	4.0	131
3.0	14	4.5	264
3.2	28	5.0	456

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.9	8.8	6.4	6.0	21	15	26	9.9	16	14	5.0	4.3
2	7.5	8.0	6.2	7.0	17	17	47	10	18	11	4.5	4.0
3	6.8	7.6	6.2	18	15	19	44	10	19	9.7	4.2	4.2
4	6.8	7.8	6.0	15	14	17	34	48	17	8.5	5.0	4.0
5	14	8.0	6.0	13	16	17	30	58	16	7.0	4.5	4.0
6	13	8.2	5.6	11	17	17	25	38	15	6.6	4.3	10
7	11	8.5	5.4	9.8	15	18	22	28	14	6.3	4.2	9.5
8	9.4	8.4	5.2	10	24	20	22	20	16	6.3	4.2	6.0
9	8.6	8.4	4.8	15	28	40	22	28	14	6.1	4.1	5.3
10	10	8.1	4.5	14	25	70	31	233	12	5.6	3.8	21
11	9.5	8.2	4.3	11	19	130	29	283	10	5.6	3.6	14
12	9.2	7.4	4.2	9.2	18	212	25	222	9.0	5.2	4.3	8.9
13	8.4	7.5	4.2	8.0	17	213	23	152	8.9	5.4	4.2	7.0
14	7.9	7.7	4.1	7.2	16	199	44	79	12	4.9	4.0	46
15	7.4	8.9	4.0	7.0	15	170	38	51	8.1	5.6	4.6	60
16	8.4	8.1	4.0	6.8	14	124	30	108	7.2	5.0	4.2	69
17	7.8	7.8	4.0	16	13	83	27	94	16	6.0	5.6	46
18	7.6	7.6	3.9	13	12	56	24	60	9.7	6.9	39	28
19	7.8	7.6	3.9	11	12	41	22	76	9.1	13	62	24
20	8.4	7.4	3.8	10	11	33	34	138	20	8.2	41	20
21	8.6	7.2	3.8	10	11	31	35	114	12	5.5	33	22
22	8.5	7.0	3.8	12	14	34	29	73	20	7.7	24	20
23	7.9	7.0	3.9	20	14	35	25	50	36	7.6	16	15
24	8.3	7.2	3.9	25	13	30	22	41	23	6.7	12	12
25	8.6	7.2	4.0	16	12	26	20	36	16	5.2	9.6	11
26	8.7	7.3	4.0	14	13	25	12	36	18	4.4	8.2	10
27	8.1	7.2	4.1	18	14	23	9.3	32	12	4.1	8.2	9.0
28	7.6	7.0	4.3	16	15	22	7.3	26	22	11	6.7	8.6
29	7.6	6.8	4.5	14	---	23	8.0	22	31	12	5.7	8.2
30	8.1	6.6	4.8	13	---	28	9.5	19	20	7.7	5.2	7.9
31	9.6	---	5.4	15	---	27	---	17	---	6.0	4.5	---
TOTAL	269.0	230.5	143.2	391.0	445	1815	776.1	2211.9	477.0	224.8	349.4	518.9
MEAN	8.68	7.68	4.62	12.6	15.9	58.5	25.9	71.4	15.9	7.25	11.3	17.3
MAX	14	8.9	6.4	25	28	213	47	283	36	14	62	69
MIN	6.8	6.6	3.8	6.0	11	15	7.3	9.9	7.2	4.1	3.6	4.0
CFSM	.25	.22	.13	.36	.46	1.69	.75	2.06	.46	.21	.32	.50
IN.	.29	.25	.15	.42	.48	1.95	.83	2.37	.51	.24	.37	.56

CAL YR 1989 TOTAL 6553.9 MEAN 18.0 MAX 140 MIN 3.4 CFSM .52 IN. 7.03
WTR YR 1990 TOTAL 7851.8 MEAN 21.5 MAX 283 MIN 3.6 CFSM .62 IN. 8.42

STREAMS TRIBUTARY TO LAKE MICHIGAN

04087060 NOYES CREEK AT MILWAUKEE, WI

LOCATION.--Lat 43°08'27", long 88°01'30", in NW 1/4 SW 1/4 sec.21, T.8 N., R.21 E., Milwaukee County, Hydrologic Unit 04040003, on right bank, 200 ft west of 91st Street near the intersection of 91st Street and W. Denver Street in Milwaukee, and 1,000 ft upstream from mouth.

DRAINAGE AREA.--1.94 mi².

PERIOD OF RECORD.--December 1974 to November 1979, February 1990 to September 1990 (discontinued).

REVISED RECORDS.--WDR WI-77-1: Drainage area.

GAGE.--Water-stage recorder and concrete weir control. Altitude of gage is 710 ft from topographic map. Prior to February 1990, gage at different datum.

REMARKS.--Estimated discharges: Ice periods listed in rating table below. Records good except those for ice-affected periods, which are poor.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 322 ft³/s, July 2, 1978, gage height, 7.52 ft, datum then in use, from rating curve extended above 90 ft³/s; no flow on all or part of many days during 1978 winter period.

EXTREMES FOR CURRENT PERIOD.--FEBRUARY TO SEPTEMBER 1990: Maximum discharge, 259 ft³/s, Mar. 10, gage height, 11.10 ft, from rating curve extended above 90 ft³/s; minimum discharge, 0.04 ft³/s, Mar. 5, 6, gage height, 7.17 ft.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Feb. 1, 2, 5-9, 16, 22, 23, and Mar. 2.)

7.1	0.01	7.9	10
7.2	.06	8.1	17
7.3	.44	8.5	36
7.4	1.1	9.0	67
7.5	2.1	9.5	105
7.7	5.2		

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	15	1.0	1.4	.35	.52	.52	.16	.06
2	---	---	---	---	1.5	2.7	6.1	.38	1.8	.56	.26	.06
3	---	---	---	---	.65	.84	.86	.31	.45	.44	9.9	.05
4	---	---	---	---	.70	.40	.67	20	.27	.46	5.6	.05
5	---	---	---	---	2.0	.20	.52	3.9	1.2	.44	.44	.06
6	---	---	---	---	1.3	.24	.43	2.0	.30	.60	.50	3.1
7	---	---	---	---	1.2	.23	.32	1.1	1.0	.52	.45	4.7
8	---	---	---	---	5.6	13	.26	.80	1.2	.47	.46	.13
9	---	---	---	---	1.2	6.4	1.6	16	.18	.80	.25	.06
10	---	---	---	---	.68	2.8	3.6	83	.09	.61	.14	4.2
11	---	---	---	---	.33	21	.50	5.9	.08	.70	.14	.12
12	---	---	---	---	.61	5.5	.37	3.1	.13	.63	.18	.17
13	---	---	---	---	.90	6.9	1.6	1.9	1.6	.78	.10	.12
14	---	---	---	---	.15	6.2	9.0	1.4	17	.48	.06	15
15	---	---	---	---	.56	1.9	1.2	1.2	.34	4.5	.12	8.6
16	---	---	---	---	1.3	1.2	.82	8.2	2.3	1.3	.50	6.4
17	---	---	---	---	1.1	.80	.61	1.3	4.0	.41	.86	.65
18	---	---	---	---	.62	.60	.47	.87	.32	1.8	23	.30
19	---	---	---	---	.40	.43	.51	33	.62	4.9	6.1	.73
20	---	---	---	---	.24	.41	.60	12	4.6	2.6	3.8	.11
21	---	---	---	---	.53	.40	.60	2.5	.59	.27	6.2	3.8
22	---	---	---	---	4.6	4.3	.63	1.6	7.0	.94	.65	.30
23	---	---	---	---	1.5	.52	.74	1.2	11	1.2	.39	.10
24	---	---	---	---	.65	.36	.77	1.1	.76	.44	.29	.10
25	---	---	---	---	.42	.31	.77	3.2	.60	.45	.20	.12
26	---	---	---	---	.38	.26	.58	1.3	1.7	.49	.15	.26
27	---	---	---	---	.56	.24	.49	.77	.58	.47	.11	.34
28	---	---	---	---	.37	.23	.49	.65	4.0	.62	.16	2.5
29	---	---	---	---	---	2.2	.46	.61	12	5.8	.10	.42
30	---	---	---	---	---	.93	.37	.55	.72	2.1	.06	.30
31	---	---	---	---	---	.36	---	.53	---	.34	.09	---
TOTAL	---	---	---	---	45.05	82.86	37.34	210.72	76.95	36.64	61.42	52.91
MEAN	---	---	---	---	1.61	2.67	1.24	6.80	2.56	1.18	1.98	1.76
MAX	---	---	---	---	15	21	9.0	83	17	5.8	23	15
MIN	---	---	---	---	.15	.20	.26	.31	.08	.27	.06	.05

STREAMS TRIBUTARY TO LAKE MICHIGAN

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04087088 UNDERWOOD CREEK AT WAUWATOSA, WI

LOCATION.--Lat 43°03'17", long 88°02'46", in SW 1/4 NW 1/4 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 mi².

PERIOD OF RECORD.--December 1974 to November 1979, July 1980 to current year.

REVISED RECORDS.--WDR WI-77-1: Drainage area. WRD WI-85-1: 1984.

GAGE.--Water-stage recorder, crest-stage gage, and steel plate weir. Elevation of gage is 690 ft, from topographic map.

REMARKS.--Estimated daily discharges: Mar. 7-11, 16-22, and ice periods listed in rating table below. Records good, except those for discharges greater than 600 ft³/s and the periods of estimated record, which are poor. Gage-height telemeter at station.

AVERAGE DISCHARGE.--14 years (1976-79, 1981-90), 13.8 ft³/s, 10.30 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,100 ft³/s, July 13, 1981, gage height, 5.55 ft; maximum gage height, 6.58 ft, Feb. 29, 1984, backwater from ice; no flow on all or part of many days during 1977 winter period.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,170 ft³/s (observed), Mar. 13, gage height, 5.00 ft; minimum daily discharge, 2.6 ft³/s, Dec. 21-24.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Nov. 22-24, Dec. 3, Dec. 7 to Feb. 4, Feb. 10-21, Feb. 25 to Mar. 1, and Mar. 3-6.)

2.6	2.1	3.1	28
2.7	4.5	3.4	64
2.8	7.3	3.7	142
2.9	12	4.0	268
		4.3	453

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.1	5.2	3.6	3.2	20	7.6	15	6.3	10	22	5.8	5.0
2	6.2	5.0	3.0	3.5	9.0	17	37	6.3	13	15	5.3	4.6
3	5.4	5.2	4.2	5.0	7.6	10	17	6.1	9.2	13	6.0	4.5
4	5.3	6.0	4.2	25	7.4	13	13	83	8.4	11	7.9	5.1
5	18	4.9	4.0	8.0	13	6.6	11	29	9.6	9.5	5.7	4.5
6	7.8	4.6	3.7	7.0	10	6.4	9.6	16	8.2	8.6	4.9	7.7
7	6.4	6.5	3.7	7.4	9.2	9.0	8.5	12	8.8	8.2	4.4	6.0
8	6.2	5.1	3.6	8.0	44	50	8.0	9.8	10	8.2	4.8	4.3
9	5.9	13	3.5	20	32	110	15	78	7.4	8.0	4.2	4.2
10	11	8.7	3.4	9.0	12	90	25	348	6.5	7.2	4.1	5.7
11	6.4	5.7	3.3	6.0	9.4	150	12	173	6.5	6.7	4.7	4.1
12	6.3	5.1	3.1	4.7	9.6	85	9.2	65	6.1	6.0	7.3	4.0
13	6.8	5.3	3.0	4.2	12	146	14	43	6.4	6.0	4.5	4.1
14	5.9	5.0	3.0	4.1	6.6	103	45	29	16	5.9	4.2	36
15	6.0	11	2.9	4.1	6.6	46	17	26	7.9	7.4	4.4	8.3
16	7.7	5.7	2.9	4.5	6.4	28	13	56	7.2	6.1	4.0	5.5
17	5.6	4.7	2.8	15	6.2	23	11	28	22	9.0	8.7	4.7
18	5.3	4.6	2.8	8.0	5.8	20	9.8	20	11	6.2	126	4.5
19	10	4.4	2.7	5.6	5.4	18	9.2	83	7.4	9.9	57	8.7
20	22	5.4	2.7	5.0	5.2	16	76	114	36	8.1	53	4.8
21	9.1	5.0	2.6	5.4	6.0	15	34	47	10	5.9	33	30
22	6.5	4.7	2.6	5.6	23	26	21	29	18	23	17	6.7
23	6.5	4.3	2.6	15	17	16	16	23	35	17	11	4.4
24	6.0	4.0	2.6	30	9.7	12	13	19	10	8.2	9.0	4.4
25	6.2	3.7	2.7	18	7.0	10	11	24	8.4	5.8	8.1	4.3
26	5.9	3.6	2.7	11	6.2	9.7	10	20	17	5.1	7.2	4.0
27	5.9	4.8	2.7	12	6.0	8.9	8.8	15	9.0	5.2	7.0	4.2
28	5.4	3.7	2.8	8.0	6.4	8.6	8.2	13	114	5.2	7.0	4.1
29	5.5	3.3	2.8	7.4	---	17	7.4	12	171	37	5.9	3.8
30	7.8	4.5	2.9	7.6	---	14	6.9	10	47	8.6	5.5	3.4
31	8.3	---	3.0	6.0	---	10	---	9.6	---	6.5	5.1	---
TOTAL	233.4	162.7	96.1	283.3	318.7	1096.6	511.6	1453.1	657.0	309.5	442.7	205.6
MEAN	7.53	5.42	3.10	9.14	11.4	35.4	17.1	46.9	21.9	9.98	14.3	6.85
MAX	22	13	4.2	30	44	150	76	348	171	37	126	36
MIN	5.3	3.3	2.6	3.2	5.2	6.4	6.9	6.1	6.1	5.1	4.0	3.4
CFSM	.41	.30	.17	.50	.63	1.94	.94	2.58	1.20	.55	.78	.38
IN.	.48	.33	.20	.58	.65	2.24	1.05	2.97	1.34	.63	.90	.42
CAL YR 1989	TOTAL 4384.9	MEAN 12.0	MAX 159	MIN 2.6	CFSM .66	IN. 8.96						
WTR YR 1990	TOTAL 5770.3	MEAN 15.8	MAX 348	MIN 2.6	CFSM .87	IN. 11.79						

STREAMS TRIBUTARY TO LAKE MICHIGAN

04087120 MENOMONEE RIVER AT WAUWATOSA, WI

LOCATION.--Lat 43°02'44", long 87°59'59", in NE 1/4 NW 1/4 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 mi².

PERIOD OF RECORD.--October 1961 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 630.86 ft above National Geodetic Vertical Datum of 1929. Prior to Nov. 1, 1974, nonrecording gage at present site and datum.

REMARKS.--Estimated daily discharges: Ice periods listed in rating table below. Records good except those for ice-affected periods, which are poor. Low flow affected by three sewage treatment plants upstream. Gage-height telemeter at station.

AVERAGE DISCHARGE.--29 years, 97.9 ft³/s, 10.81 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,500 ft³/s, Apr. 21, 1973, gage height, 13.92 ft from rating curve extended above 6,000 ft³/s on basis of slope-area measurement of peak flow; minimum daily, 2.8 ft³/s, Jan. 18, 1964.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,000 ft³/s and maximum (*):

DATE	TIME	DISCHARGE (ft ³ /s)	GAGE HEIGHT (ft)	DATE	TIME	DISCHARGE (ft ³ /s)	GAGE HEIGHT (ft)
Mar. 13	1715	2,750	6.44	June 28	0440	3,200	7.07
May 10	0530	*3,480	*7.42	June 29	0225	2,610	6.24
May 19	2305	2,040	5.43	Aug. 18	0205	3,050	6.87

Minimum daily discharge, 11 ft³/s, Dec. 19-26.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Shifting-control method used Mar. 21, 24-28, 30, 31, Apr. 5-8, 11-13, 16-19, Apr. 23 to May 3, and May 7, 8; stage-discharge relation affected by ice Nov. 22-26, Nov. 29 to Jan. 19, Jan. 24-30, Feb. 3-5, and Feb. 11 to Mar. 8.)

0.1	8.8	1.0	80	3.0	630
0.3	15	1.5	166	4.0	1,140
0.5	24	2.0	260	6.0	2,440
0.7	38	2.5	402		

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	25	28	20	16	140	52	90	33	63	85	21	22
2	25	25	20	17	97	100	252	30	94	58	19	21
3	24	25	19	35	60	110	153	29	84	45	61	19
4	24	31	19	150	50	80	117	465	56	35	150	21
5	101	27	18	90	72	60	98	227	63	30	51	20
6	60	26	18	60	89	48	80	146	52	26	29	27
7	36	31	17	45	73	48	65	106	50	24	22	94
8	32	27	17	50	216	250	58	80	76	23	20	29
9	29	60	16	130	266	521	79	319	43	32	18	23
10	65	57	15	60	173	401	171	2150	37	22	17	77
11	31	28	14	35	90	785	93	1150	33	21	16	43
12	28	25	14	33	84	675	74	599	31	19	20	31
13	27	25	13	26	110	757	79	387	34	18	17	25
14	25	25	13	22	68	647	313	253	181	18	16	235
15	23	73	12	21	64	465	147	193	42	45	16	150
16	40	36	12	21	56	317	111	382	43	27	21	200
17	30	26	12	70	52	243	92	262	160	30	41	137
18	24	24	12	50	45	181	76	198	53	44	649	90
19	46	23	11	35	43	143	65	479	34	68	425	91
20	144	25	11	31	43	120	360	830	182	107	300	53
21	57	24	11	32	45	108	175	377	55	26	196	139
22	31	23	11	35	110	204	119	270	103	67	107	52
23	28	22	11	90	100	132	98	204	270	70	71	38
24	27	21	11	200	70	100	84	163	89	27	53	33
25	28	21	11	110	60	83	71	167	56	22	44	29
26	27	22	11	78	52	76	61	154	83	21	36	28
27	26	31	12	100	49	69	52	122	47	19	33	26
28	25	28	12	70	50	64	46	103	599	20	32	47
29	24	22	13	48	---	99	40	88	653	179	27	28
30	28	21	14	49	---	106	36	73	160	53	25	24
31	56	---	15	48	---	78	---	64	---	26	24	---
TOTAL	1196	882	435	1857	2427	7122	3355	10103	3526	1307	2577	1852
MEAN	38.6	29.4	14.0	59.9	86.7	230	112	326	118	42.2	83.1	61.7
MAX	144	73	20	200	266	785	360	2150	653	179	649	235
MIN	23	21	11	16	43	48	36	29	31	18	16	19
CFSM	.31	.24	.11	.49	.70	1.87	.91	2.65	.96	.34	.68	.50
IN.	.36	.27	.13	.56	.73	2.15	1.01	3.06	1.07	.40	.78	.56

CAL YR 1989 TOTAL 30007 MEAN 82.2 MAX 737 MIN 11 CFSM .67 IN. 9.08
WTR YR 1990 TOTAL 36639 MEAN 100 MAX 2150 MIN 11 CFSM .82 IN. 11.08

04087159 KINNICKINNIC RIVER AT SOUTH 11TH STREET AT MILWAUKEE, WI

LOCATION.--Lat 42°59'51", long 87°55'35", in SW 1/4 NW 1/4 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.--20.2 mi².

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.

GAGE.--Water-stage recorder and steel plate weir. Elevation of gage is 590 ft from river-profile map.

REMARKS.--Estimated daily discharge: Dec. 17 to Jan. 23 and ice periods listed in rating table below. Records good except those for estimated periods, which are poor, and those for discharges greater than 500 ft³/s, which are fair.

AVERAGE DISCHARGE.--8 years, 25.9 ft³/s, 17.41 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,600 ft³/s, Aug. 6, 1986, from rating curve extended above 600 ft³/s on basis of step-backwater analysis at peak gage height, gage height, 14.41 ft from inside gage, 16.01 ft, from floodmarks; minimum discharge, 1.3 ft³/s, Jan. 26 and 27, 1986, gage height, 5.80 ft, result of freezeup.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,260 ft³/s, Aug. 18, gage height, 12.38 ft; minimum discharge, 2.7 ft³/s, Dec. 7 and 12, gage height, 5.94 ft, result of freezeup.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Shifting-control method used June 1 and 2; stage-discharge relation affected by ice Nov. 20-24, Nov. 29 to Dec. 16, Jan. 25-31, Feb. 2, 3, 12, Feb. 14 to Mar. 1, and Mar. 5-7.)

5.9	2.1	6.4	18	7.5	179
6.0	3.7	6.5	25	8.0	315
6.1	5.8	6.6	33	8.5	499
6.2	8.7	6.8	55	9.0	736
6.3	12	7.0	83	10.0	1,390

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.5	8.3	5.6	3.8	54	12	21	7.0	11	15	7.9	9.1
2	7.1	7.7	5.2	5.0	7.0	41	84	7.1	43	12	8.0	8.5
3	7.1	7.1	5.0	10	5.0	17	18	7.1	11	12	12	8.0
4	7.2	9.0	4.8	80	4.9	9.5	14	235	8.4	11	32	9.1
5	52	6.7	5.2	30	13	8.0	12	33	16	9.8	7.7	9.8
6	9.5	6.9	5.0	10	9.7	7.0	10	16	9.5	8.0	7.3	17
7	6.9	14	4.9	9.0	7.4	6.4	8.9	13	14	7.5	7.4	12
8	6.6	7.6	4.8	8.0	74	161	8.0	12	18	25	7.5	7.5
9	7.0	45	4.6	30	23	114	25	230	8.2	31	7.5	8.0
10	23	21	4.5	32	7.0	47	50	788	7.4	9.6	7.7	9.3
11	7.4	7.4	4.4	8.0	4.4	164	14	62	7.7	8.3	6.2	9.3
12	7.3	6.2	4.3	6.0	6.0	65	10	46	9.6	8.4	6.0	9.0
13	7.2	6.9	4.2	5.0	11	60	20	28	9.3	8.2	6.5	9.0
14	6.4	7.0	4.0	4.5	4.5	81	81	22	33	7.5	7.4	110
15	6.2	45	3.9	4.0	4.0	30	15	26	8.6	17	8.4	9.1
16	24	9.9	3.8	4.5	3.8	20	13	78	7.6	8.8	8.8	13
17	18	7.0	3.7	30	3.7	15	13	20	56	37	45	7.7
18	9.7	6.0	3.6	20	4.5	12	10	16	9.3	25	680	13
19	20	6.7	3.6	10	3.3	11	9.9	298	9.4	125	185	27
20	110	7.0	3.5	7.0	3.0	11	129	123	89	24	99	7.7
21	28	6.0	3.4	6.4	4.5	11	23	29	9.4	10	31	73
22	11	5.6	3.3	7.0	30	59	14	20	47	19	20	8.2
23	9.8	5.2	3.2	60	20	13	12	17	84	17	16	6.4
24	9.2	5.2	3.1	86	10	9.8	11	15	9.5	9.4	14	6.7
25	8.4	9.4	3.0	15	6.0	9.0	11	34	9.2	8.5	12	7.3
26	8.5	7.7	2.9	10	8.0	8.7	10	20	17	8.5	11	7.1
27	8.5	16	2.9	7.0	10	8.7	9.9	14	9.7	13	13	7.0
28	7.8	9.0	2.9	6.0	8.0	8.9	8.3	13	216	21	13	18
29	6.8	6.4	3.0	5.0	---	34	7.8	10	288	134	11	9.4
30	11	6.0	3.2	4.7	---	17	7.0	10	28	11	10	7.0
31	18	---	3.4	4.5	---	9.7	---	10	---	8.7	9.9	---
TOTAL	477.1	318.9	122.9	528.4	349.7	1080.7	679.8	2259.2	1103.8	670.2	1318.2	463.2
MEAN	15.4	10.6	3.96	17.0	12.5	34.9	22.7	72.9	36.8	21.6	42.5	15.4
MAX	110	45	5.6	86	74	164	129	788	288	134	680	110
MIN	6.2	5.2	2.9	3.8	3.0	6.4	7.0	7.0	7.4	7.5	6.0	6.4
CFSM	.76	.53	.20	.84	.62	1.73	1.12	3.61	1.82	1.07	2.11	.76
IN.	.88	.59	.23	.97	.64	1.99	1.25	4.16	2.03	1.23	2.43	.85

CAL YR 1989 TOTAL 7413.8 MEAN 20.3 MAX 456 MIN 2.9 CFSM 1.01 IN. 13.65
WTR YR 1990 TOTAL 9372.1 MEAN 25.7 MAX 788 MIN 2.9 CFSM 1.27 IN. 17.26

STREAMS TRIBUTARY TO LAKE MICHIGAN

04087204 OAK CREEK AT SOUTH MILWAUKEE, WI

LOCATION.--Lat 42°55'30", long 87°52'12", in NW 1/4 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 mi².

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 National Geodetic Vertical Datum of 1929.

REMARKS.--Estimated daily discharges: May 10 and ice periods listed in rating table below. Records good except for ice-affected periods, which are fair. Low flows may occasionally be affected by construction and activity at gravel pit upstream.

AVERAGE DISCHARGE.--27 years, 22.6 ft³/s, 12.28 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,140 ft³/s, Aug. 6, 1986, gage height, 9.88 ft; no flow Jan. 8-13, 15-18, 27-31, Feb. 6-8, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 350 ft³/s and maximum (*):

DATE	TIME	DISCHARGE (ft ³ /s)	GAGE HEIGHT (ft)	DATE	TIME	DISCHARGE (ft ³ /s)	GAGE HEIGHT (ft)
Mar. 11	1600	388	6.63	May 20	0415	453	7.03
May 10	Unknown	758	8.46	Aug. 18	Unknown	*817	*8.70

Minimum daily discharge, 1.7 ft³/s, Dec. 26, 27.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Dec. 3, Dec. 14 to Jan. 10, Jan. 20, Feb. 14-21, and Feb. 25, 26.)

2.28	1.6	4.0	117
2.4	3.8	5.0	208
2.6	14	6.0	308
3.0	39	7.0	448
		8.0	651

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.8	8.8	7.9	2.1	59	14	21	12	11	19	11	8.3
2	3.4	6.3	7.3	2.4	51	32	90	11	13	14	8.8	7.5
3	3.1	5.0	6.8	4.0	22	45	50	12	15	11	7.3	6.6
4	2.9	5.6	6.1	100	15	25	28	119	12	9.5	13	6.0
5	13	5.0	6.0	40	14	17	22	136	11	9.2	11	5.8
6	16	5.2	5.8	15	16	14	18	44	12	7.0	6.2	7.1
7	6.8	6.9	5.4	10	18	14	17	26	11	6.0	5.2	15
8	4.0	7.8	3.9	9.0	127	96	17	19	13	6.5	4.7	7.4
9	3.5	10	3.8	30	160	298	18	131	11	7.5	3.9	5.1
10	7.5	23	3.8	34	70	203	44	645	7.9	6.9	3.6	4.5
11	6.4	13	3.8	16	31	286	25	481	7.0	4.6	3.6	4.2
12	3.9	7.5	3.6	10	21	264	19	179	6.3	3.8	3.5	3.9
13	3.3	6.2	3.2	7.2	36	206	18	102	5.0	3.6	3.3	3.7
14	3.1	5.9	2.9	5.2	15	179	86	57	16	3.6	2.9	29
15	2.6	26	2.8	4.9	13	109	39	56	7.2	8.8	2.8	20
16	2.3	22	2.8	5.5	13	63	24	128	4.2	6.3	2.7	14
17	5.1	12	2.7	40	12	42	18	57	27	6.5	3.6	9.5
18	5.6	8.2	2.6	35	11	31	17	33	12	12	328	7.5
19	3.7	6.6	2.3	15	10	24	16	100	5.1	90	507	15
20	53	6.4	2.2	13	9.6	21	63	323	25	122	317	9.3
21	70	5.7	2.1	8.8	9.8	20	68	95	11	23	131	17
22	33	5.5	2.0	8.9	22	31	34	45	27	16	63	14
23	17	5.0	1.9	14	35	29	26	30	57	20	36	6.8
24	15	4.9	1.8	112	24	20	22	21	16	14	26	4.6
25	12	6.9	1.8	60	13	19	20	21	9.2	9.6	19	3.8
26	10	12	1.7	16	13	18	18	28	6.9	7.9	16	3.6
27	8.5	22	1.7	17	14	17	16	17	5.5	6.8	16	3.4
28	7.8	26	1.8	17	14	16	15	14	25	6.4	15	3.8
29	7.9	13	1.8	15	---	18	13	13	143	104	13	3.7
30	7.5	9.2	1.9	14	---	28	12	13	38	32	11	3.5
31	11	---	2.0	13	---	20	---	12	---	16	9.6	---
TOTAL	352.7	307.6	106.2	694.0	868.4	2219	894	2980	570.3	613.5	1604.7	253.6
MEAN	11.4	10.3	3.43	22.4	31.0	71.6	29.8	96.1	19.0	19.8	51.8	8.45
MAX	70	26	7.9	112	160	298	90	645	143	122	507	29
MIN	2.3	4.9	1.7	2.1	9.6	14	12	11	4.2	3.6	2.7	3.4
CFSM	.46	.41	.14	.90	1.24	2.86	1.19	3.85	.76	.79	2.07	.34
IN.	.52	.46	.16	1.03	1.29	3.30	1.33	4.43	.85	.91	2.39	.38

CAL YR 1989 TOTAL 6120.4 MEAN 16.8 MAX 262 MIN 1.1 CFSM .67 IN. 9.11
WTR YR 1990 TOTAL 11464.0 MEAN 31.4 MAX 645 MIN 1.7 CFSM 1.26 IN. 17.06

STREAMS TRIBUTARY TO LAKE MICHIGAN

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04087220 ROOT RIVER NEAR FRANKLIN, WI

LOCATION.--Lat 42°52'25", long 87°59'45", in SE 1/4 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 mi².

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 National Geodetic Vertical Datum of 1929.

REMARKS.--Estimated daily discharge: Ice period listed in rating table below. Records good except for ice-affected period, which is poor. Flow affected by urbanization in the drainage basin.

AVERAGE DISCHARGE.--27 years, 44.1 ft³/s, 12.17 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,700 ft³/s, Apr. 21, 1973, gage height, 9.31 ft; minimum, 0.38 ft³/s, Aug. 10, 1971, gage height, 1.45 ft.

EXTREMES OUTSIDE OF PERIOD OF RECORD.--Flood of Mar. 30, 1960, reached a stage of 9.57 ft, discharge, 5,130 ft³/s, from rating curve extended above 2,000 ft³/s on basis of contracted-opening measurement of peak flow.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 500 ft³/s and maximum (*):

DATE	TIME	DISCHARGE (ft ³ /s)	GAGE HEIGHT (ft)	DATE	TIME	DISCHARGE (ft ³ /s)	GAGE HEIGHT (ft)
Mar. 11	2315	536	7.22	Aug. 19	0230	852	8.18
May 11	0015	*880	*8.25				

Minimum daily discharge, 2.4 ft³/s, Dec. 24-29.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Nov. 18 to Mar. 10.)

1.5	1.8	1.9	8.5	4.0	119
1.6	2.5	2.0	12	5.0	186
1.7	3.5	2.5	47	6.0	292
1.8	5.5	3.0	69	7.0	480
				8.0	786

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.0	13	6.6	2.8	50	22	29	16	22	39	11	9.6
2	5.0	8.8	6.4	2.9	100	40	71	16	22	23	9.4	8.1
3	5.2	8.2	6.2	3.5	62	80	68	15	47	18	7.0	7.6
4	4.2	8.3	5.8	35	44	50	47	89	25	14	12	5.7
5	5.9	9.4	5.4	50	36	34	41	195	20	12	12	5.9
6	21	9.6	5.0	30	50	27	32	74	22	12	6.4	6.8
7	7.6	10	4.8	21	52	25	26	50	19	12	6.1	6.9
8	5.0	11	4.5	18	94	78	23	40	21	11	6.0	7.6
9	4.9	9.8	4.2	21	200	380	22	68	19	18	5.0	5.7
10	7.5	38	4.0	40	130	410	58	673	14	11	4.5	5.2
11	9.1	25	3.9	25	68	430	47	774	14	11	4.3	5.3
12	6.7	14	3.8	14	45	482	34	411	14	6.7	4.9	5.4
13	7.8	11	3.7	9.0	40	311	27	169	14	6.5	4.6	4.7
14	8.1	10	3.6	8.0	35	303	89	107	15	5.8	4.0	20
15	6.0	21	3.4	7.6	32	210	72	87	15	6.1	3.6	43
16	6.6	27	3.2	7.8	30	115	48	124	12	6.3	4.0	11
17	16	14	3.1	25	25	78	39	106	26	14	4.9	7.8
18	11	11	2.9	35	22	60	32	66	25	14	336	5.9
19	8.0	8.8	2.7	18	20	49	27	89	12	58	673	12
20	35	8.8	2.6	12	19	41	62	438	44	46	347	9.0
21	60	9.2	2.6	11	21	41	138	206	27	16	164	26
22	26	9.0	2.5	10	30	50	64	90	18	12	81	33
23	15	8.4	2.5	11	45	63	47	63	63	38	52	9.6
24	13	8.0	2.4	84	38	43	40	52	32	19	37	6.5
25	12	7.6	2.4	100	30	36	33	46	16	9.7	25	6.1
26	12	8.6	2.4	60	26	32	28	57	15	7.8	19	5.5
27	9.5	9.0	2.4	35	22	30	24	45	17	6.7	14	5.4
28	8.7	10	2.4	33	21	27	22	38	61	7.0	12	6.3
29	8.1	8.6	2.4	23	---	26	21	33	214	98	10	8.8
30	8.1	7.2	2.5	21	---	44	17	30	134	41	9.5	5.8
31	11	---	2.6	18	---	33	---	26	---	16	9.7	---
TOTAL	369.0	362.3	112.9	791.6	1387	3650	1328	4293	1019	615.6	1898.9	306.2
MEAN	11.9	12.1	3.64	25.5	49.5	118	44.3	138	34.0	19.9	61.3	10.2
MAX	60	38	6.6	100	200	482	138	774	214	98	673	43
MIN	4.2	7.2	2.4	2.8	19	22	17	15	12	5.8	3.6	4.7
CFSM	.24	.25	.07	.52	1.01	2.39	.90	2.81	.69	.40	1.25	.21
IN.	.28	.27	.09	.60	1.05	2.76	1.00	3.25	.77	.47	1.44	.23

CAL YR 1989	TOTAL	9545.2	MEAN	26.2	MAX	393	MIN	1.6	CFSM	.53	IN.	7.22
WTR YR 1990	TOTAL	16133.5	MEAN	44.2	MAX	774	MIN	2.4	CFSM	.90	IN.	12.20

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 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 mi².

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, from topographic map.

REMARKS.--Estimated daily discharge: Ice periods listed in rating table below. Records are good except for ice-affected periods, which are poor.

AVERAGE DISCHARGE.--27 years, 48.2 ft³/s, 11.48 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,440 ft³/s Mar. 4, 1974, gage height, 9.88 ft; minimum daily, 0.40 ft³/s Dec. 19, 1963, result of freezeup.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 500 ft³/s and maximum (*):

DATE	TIME	DISCHARGE (ft ³ /s)	GAGE HEIGHT (ft)	DATE	TIME	DISCHARGE (ft ³ /s)	GAGE HEIGHT (ft)
Mar. 12	1030	700	9.26	May 16	1800	532	8.60
May 11	0045	*1,080	*10.11				

Minimum daily discharge, 3.4 ft³/s Dec. 25.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Nov. 30 to Feb. 4 and Feb. 12 to Mar. 8.)

1.9	3.1	6.0	223
2.0	5.4	7.0	306
2.4	19	8.0	422
3.0	46	9.0	620
4.0	99	10.0	1,030
5.0	159		

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	16	11	4.4	80	35	41	23	35	63	49	11
2	12	14	11	4.9	150	70	105	21	32	46	33	10
3	11	12	10	5.2	110	120	104	20	33	37	25	9.1
4	10	13	10	50	74	80	78	70	27	28	22	8.6
5	11	13	9.8	70	61	45	62	202	24	24	18	7.7
6	16	13	9.4	42	97	38	50	122	25	20	16	7.5
7	12	16	8.0	30	113	35	42	80	22	17	15	7.3
8	10	19	7.6	25	229	90	38	58	22	17	13	6.8
9	9.7	17	7.6	30	319	506	37	80	21	14	10	6.3
10	11	19	7.4	60	186	566	59	784	17	12	9.3	5.8
11	11	18	7.0	35	108	594	54	1010	15	12	8.9	5.8
12	9.7	16	6.2	20	60	679	45	623	15	11	8.5	5.5
13	9.2	15	5.8	14	80	624	39	347	14	9.5	10	5.1
14	9.0	15	5.4	12	56	576	95	218	167	9.0	7.9	6.2
15	8.8	23	5.0	11	54	370	92	170	200	9.9	6.1	8.1
16	11	29	4.7	11	45	218	67	412	93	10	5.4	20
17	12	23	4.5	32	36	160	53	373	105	9.2	5.5	11
18	12	19	4.3	50	33	126	43	182	84	7.9	44	8.2
19	12	16	4.1	25	31	100	38	166	48	26	238	8.7
20	27	17	3.9	21	29	84	72	462	45	150	305	7.3
21	64	16	3.8	17	27	78	141	278	50	105	188	8.1
22	44	14	3.8	15	40	80	97	165	87	56	113	8.8
23	32	13	3.7	14	60	81	72	123	277	61	79	6.7
24	26	13	3.5	78	49	66	58	101	167	38	55	5.6
25	23	13	3.4	74	45	58	47	87	86	27	40	5.3
26	20	15	3.5	54	39	51	40	86	59	20	31	4.9
27	19	15	3.6	47	35	46	35	72	45	17	27	4.8
28	17	17	3.7	44	35	42	32	61	39	16	22	5.2
29	16	13	3.9	35	---	41	28	51	140	214	18	6.1
30	16	12	4.0	28	---	48	26	45	114	147	15	5.7
31	17	---	4.2	26	---	43	---	40	---	83	13	---
TOTAL	530.4	484	183.8	984.5	2281	5750	1790	6532	2108	1316.5	1450.6	227.2
MEAN	17.1	16.1	5.93	31.8	81.5	185	59.7	211	70.3	42.5	46.8	7.57
MAX	64	29	11	78	319	679	141	1010	277	214	305	20
MIN	8.8	12	3.4	4.4	27	35	26	20	14	7.9	5.4	4.8
CFSM	.30	.28	.10	.56	1.43	3.25	1.05	3.70	1.23	.75	.82	.13
IN.	.35	.32	.12	.64	1.49	3.75	1.17	4.26	1.38	.86	.95	.15

CAL YR 1989 TOTAL 12796.6 MEAN 35.1 MAX 742 MIN 1.9 CFSM .62 IN. 8.35
WTR YR 1990 TOTAL 23638.0 MEAN 64.8 MAX 1010 MIN 3.4 CFSM 1.14 IN. 15.43

STREAMS TRIBUTARY TO LAKE MICHIGAN

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04087240 ROOT RIVER AT RACINE, WI

LOCATION.--Lat 42°45'05", long 87°49'25", in NE 1/4 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 mi², of which 1.24 mi² 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, from topographic map. Prior to Feb. 5, 1964, nonrecording gage on bridge 30 ft upstream.

REMARKS.--Estimated daily discharge: Ice-affected periods listed in rating table below. Records good except those for periods of ice affect, which are fair.

AVERAGE DISCHARGE.--27 years, 154 ft³/s, 11.07 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,500 ft³/s, Mar. 5, 1974, gage height, 8.54 ft; minimum, 0.90 ft³/s Jan. 17, 1977; minimum daily, no flow, July 9-15, 1988.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 900 ft³/s, and maximum (*):

DATE	TIME	DISCHARGE (ft ³ /s)	GAGE HEIGHT (ft)	DATE	TIME	DISCHARGE (ft ³ /s)	GAGE HEIGHT (ft)
Mar. 13	2145	1,800	5.76	May 21	1945	1,050	4.83
May 12	0400	*2,530	*6.59	Aug. 20	2215	1,170	4.96
May 16	0800	1,050	4.81				

Minimum daily, 7.0 ft³/s, Dec. 25, 26.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Nov. 29 to Dec. 1, Dec. 8-30, and Feb. 17-21.)

2.2	6.0	3.2	155
2.3	10	3.5	260
2.4	16	4.0	500
2.6	34	5.0	1,200
2.8	64	7.0	2,900
3.0	105		

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	27	41	42	11	100	90	152	87	133	349	138	41
2	26	43	40	11	207	112	224	81	122	177	91	37
3	24	38	27	12	268	204	344	78	118	133	67	32
4	22	35	38	51	227	274	299	167	131	115	53	29
5	23	35	34	86	146	201	237	465	107	94	52	23
6	26	35	32	142	138	141	197	547	97	75	48	23
7	39	39	25	121	182	113	164	393	94	59	35	24
8	34	44	24	80	329	163	141	238	91	53	30	23
9	26	49	22	81	567	722	130	261	89	47	28	22
10	24	51	21	99	681	1320	150	1560	83	42	24	21
11	22	72	19	130	608	1510	200	2120	70	40	22	18
12	28	68	18	100	349	1670	170	2340	64	37	23	17
13	25	54	17	59	244	1720	147	1760	62	34	23	17
14	22	47	16	43	225	1570	206	1090	157	32	23	19
15	22	50	15	33	128	1280	330	750	283	32	22	30
16	22	74	13	30	110	1000	266	874	292	31	22	67
17	19	89	12	47	100	671	193	787	200	31	21	44
18	19	63	11	101	90	461	159	811	216	31	116	34
19	24	53	10	145	82	339	137	613	169	40	690	27
20	37	49	9.4	88	76	277	165	765	132	288	1060	28
21	107	46	8.8	59	70	238	330	977	145	328	1080	34
22	161	44	8.0	47	85	234	392	931	184	185	787	39
23	118	35	7.4	44	117	263	272	570	349	137	447	55
24	88	39	7.2	104	160	242	207	354	432	149	239	32
25	73	39	7.0	222	165	200	173	289	310	97	164	24
26	64	41	7.0	211	123	178	144	263	183	66	124	19
27	58	48	7.2	151	104	161	124	254	145	50	102	17
28	51	56	7.8	114	93	153	111	211	128	42	82	16
29	46	45	8.6	104	---	146	103	179	280	183	66	16
30	44	43	9.4	93	---	149	96	161	398	383	54	18
31	43	---	10	78	---	173	---	147	---	276	46	---
TOTAL	1364	1465	533.8	2697	5774	15975	5963	20123	5264	3636	5779	846
MEAN	44.0	48.8	17.2	87.0	206	515	199	649	175	117	186	28.2
MAX	161	89	42	222	681	1720	392	2340	432	383	1080	67
MIN	19	35	7.0	11	70	90	96	78	62	31	21	16
CFSM	.23	.26	.09	.46	1.09	2.73	1.05	3.43	.93	.62	.99	.15
IN.	.27	.29	.11	.53	1.14	3.14	1.17	3.96	1.04	.72	1.14	.17

CAL YR 1989	TOTAL 34720.2	MEAN 95.1	MAX 813	MIN 3.0	CFSM .50	IN. 6.83
WTR YR 1990	TOTAL 69419.8	MEAN 190	MAX 2340	MIN 7.0	CFSM 1.01	IN. 13.66

STREAMS TRIBUTARY TO LAKE MICHIGAN

04087257 PIKE RIVER NEAR RACINE, WI

LOCATION.--Lat 42°38'49", long 87°51'38", in SE 1/4 NE 1/4 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 mi².

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 mean sea level (Southeastern Wisconsin Regional Planning Commission).

REMARKS.--Estimated daily discharge: Ice periods listed in rating table below. Records good except those for periods of ice effect, which are fair. Low flows considerably affected by effluent discharge in upper portion of basin, and by occasional regulation of small recreation dam 1.1 mi upstream.

AVERAGE DISCHARGE.--19 years, 36.4 ft³/s, 12.84 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,480 ft³/s, Mar. 4, 1976, gage height, 8.15 ft; minimum daily, 0.35 ft³/s, Sept. 28, 1976.

EXTREMES FOR CURRENT YEAR.--Peak discharge greater than base discharge of 600 ft³/s and maximum (*):

DATE	TIME	DISCHARGE (ft ³ /s)	GAGE HEIGHT (ft)	DATE	TIME	DISCHARGE (ft ³ /s)	GAGE HEIGHT (ft)
Mar. 11	2100	828	6.53	May 10	1445	*1,040	*7.29
Mar. 13	1945	857	6.64				

Minimum daily, 6.9 ft³/s, Oct. 10.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Dec. 11 to Jan. 4, Jan. 12, 13, 26-31, Feb. 15-21, and Feb. 25 to Mar. 1.)

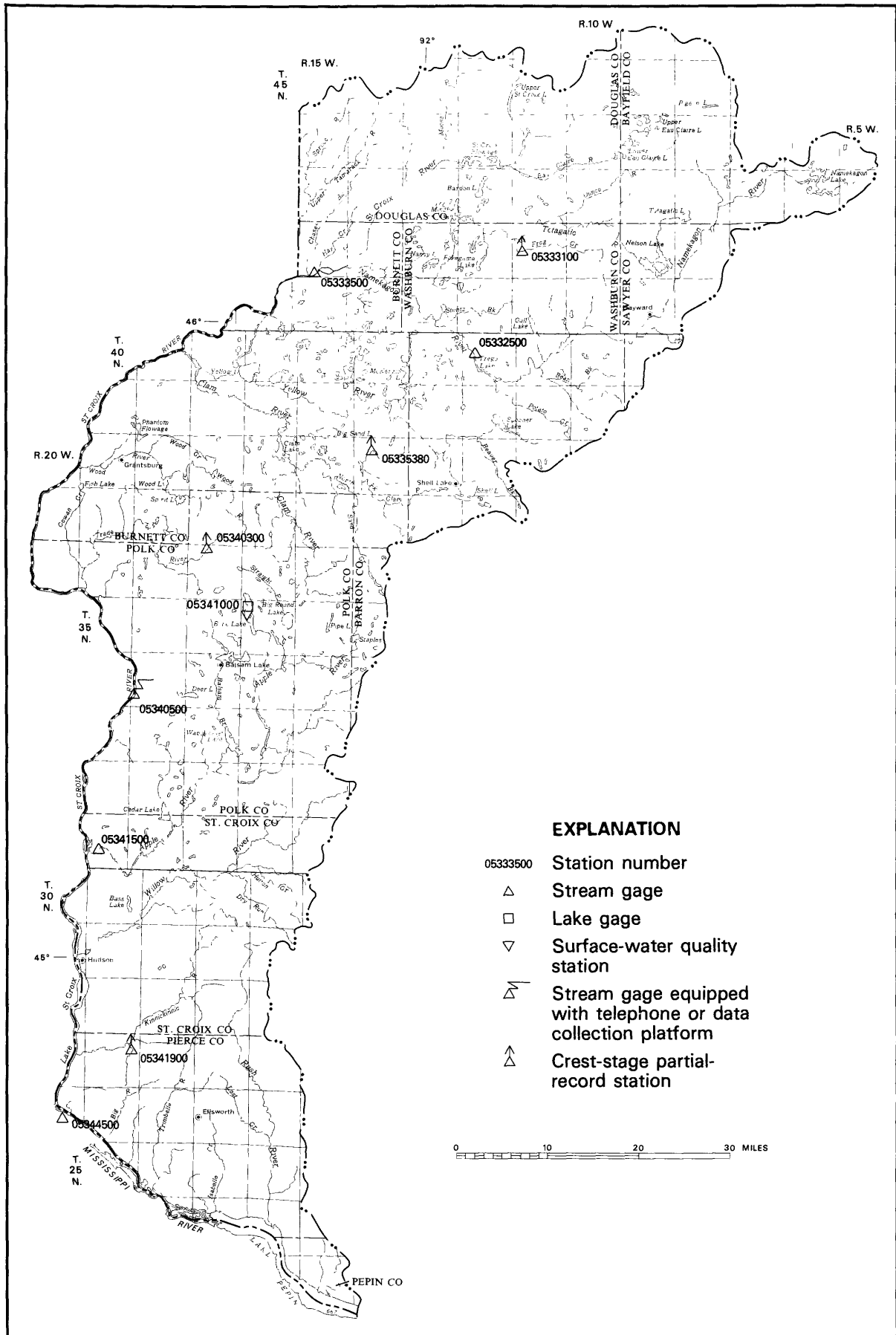
1.8	6.4	3.0	93
2.0	14	4.0	242
2.2	24	5.0	440
2.5	44	7.0	958

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.0	12	12	9.0	86	29	27	22	24	42	17	13
2	8.4	11	12	12	92	56	71	22	24	33	15	12
3	9.0	10	9.9	15	48	70	56	21	23	29	14	10
4	8.5	8.8	9.6	100	36	45	45	137	19	25	13	11
5	13	8.6	10	91	43	35	39	165	20	21	13	11
6	14	11	10	67	74	28	33	80	20	19	12	11
7	11	16	10	40	65	26	28	59	18	17	12	11
8	8.7	14	8.9	30	123	89	26	48	21	17	11	10
9	7.0	12	8.0	80	133	275	26	126	18	16	11	9.9
10	6.9	13	8.0	38	76	341	49	869	15	15	11	10
11	11	11	8.0	18	50	486	38	390	15	15	11	11
12	13	9.7	8.0	13	39	479	33	242	16	15	13	11
13	11	9.9	8.0	10	41	584	29	290	16	13	11	11
14	10	11	7.8	9.1	31	381	61	164	272	13	11	18
15	9.8	14	7.8	8.7	27	212	48	114	135	16	11	14
16	9.8	17	7.8	9.4	25	139	40	358	61	15	10	28
17	10	14	7.6	22	22	94	34	249	52	14	11	15
18	11	11	7.6	24	20	68	30	129	38	15	100	11
19	12	9.8	7.6	14	20	53	28	123	30	37	226	12
20	39	12	7.4	13	19	45	44	280	45	57	188	12
21	35	14	7.4	12	19	41	49	151	70	31	105	14
22	21	14	7.2	12	44	46	40	95	213	22	62	15
23	18	11	7.2	15	54	41	36	68	291	21	38	12
24	17	9.7	7.2	67	37	34	33	55	121	18	32	10
25	16	12	7.0	47	37	31	31	52	61	14	28	9.7
26	14	15	7.0	35	31	29	29	50	45	14	23	9.7
27	15	18	7.0	27	29	26	27	39	36	13	20	9.4
28	12	19	7.2	25	28	26	26	33	33	12	18	9.5
29	12	14	7.4	24	---	29	23	30	165	45	16	10
30	12	13	7.8	22	---	33	23	28	72	22	13	9.5
31	14	---	8.4	22	---	28	---	25	---	19	14	---
TOTAL	417.1	375.5	256.8	931.2	1349	3899	1102	4514	1989	675	1090	360.7
MEAN	13.5	12.5	8.28	30.0	48.2	126	36.7	146	66.3	21.8	35.2	12.0
MAX	39	19	12	100	133	584	71	869	291	57	226	28
MIN	6.9	8.6	7.0	8.7	19	26	23	21	15	12	10	9.4
CFSM	.35	.33	.22	.78	1.25	3.27	.95	3.78	1.72	.57	.91	.31
IN.	.40	.36	.25	.90	1.30	3.77	1.06	4.36	1.92	.65	1.05	.35

CAL YR 1989 TOTAL 6393.8 MEAN 17.5 MAX 399 MIN 4.5 CFSM .45 IN. 6.18
WTR YR 1990 TOTAL 16959.3 MEAN 46.5 MAX 869 MIN 6.9 CFSM 1.21 IN. 16.39

UPPER MISSISSIPPI RIVER BASIN RECORDS



Base from U.S. Geological Survey
State base map, 1968

ST. CROIX RIVER BASIN

ST. CROIX RIVER BASIN

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05332500 NAMEKAGON RIVER NEAR TREGO, WI

LOCATION.--Lat 45°56'53", long 91°53'17", in SW 1/4 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 mi².

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. April 1914 to September 1927, nonrecording gage at railroad bridge in Trego, 5 mi upstream at different datum.

REMARKS.--No estimated daily discharges. Diurnal fluctuation caused by Trego powerplant.

COOPERATION.--Records of daily discharge furnished by Northern States Power Co.

AVERAGE DISCHARGE.--46 years (water years 1928-70, 1988-90), 465 ft³/s, 12.94 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 5,200 ft³/s, Sept. 2, 1941; minimum daily, 113 ft³/s, Aug. 17, Sept. 7, 1930.

EXTREMES FOR CURRENT YEAR. Maximum daily discharge, 1,320 ft³/s, Mar. 16; minimum daily, 236 ft³/s, Aug. 3.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	288	323	288	288	288	273	437	660	356	556	250	258
2	382	382	288	288	288	288	477	660	356	477	251	258
3	323	382	288	288	288	288	437	477	382	396	236	258
4	288	382	288	310	288	288	437	556	556	396	280	288
5	288	382	288	310	288	288	437	437	556	323	280	288
6	288	382	288	310	288	288	437	556	382	382	251	437
7	288	382	288	310	288	288	396	556	382	382	251	323
8	288	382	266	266	288	288	396	396	477	382	251	512
9	288	382	288	273	288	288	382	396	400	382	273	660
10	316	382	288	288	288	288	382	437	400	382	266	660
11	316	382	273	340	288	340	382	396	400	382	251	359
12	288	382	273	266	288	472	340	356	382	382	251	437
13	288	288	266	266	273	573	340	356	323	382	251	660
14	288	288	266	266	273	639	340	382	260	382	251	660
15	288	323	266	370	288	899	356	382	356	382	251	660
16	288	323	266	273	288	1320	356	472	356	251	251	660
17	288	288	266	273	288	1050	356	382	382	300	243	512
18	273	288	266	273	251	639	356	382	382	288	288	512
19	288	251	251	288	266	650	382	448	382	288	323	477
20	288	282	251	288	266	911	356	472	472	280	288	437
21	288	302	251	288	266	561	356	382	382	280	288	477
22	288	356	251	288	280	561	356	382	382	280	310	477
23	302	382	251	288	288	561	356	382	382	280	288	477
24	288	382	251	288	288	362	382	382	382	288	288	382
25	288	382	251	288	288	477	472	382	382	288	251	382
26	288	382	251	288	266	477	472	382	382	302	382	382
27	288	382	288	288	266	477	472	382	356	323	382	382
28	288	323	280	288	280	437	512	382	512	323	382	382
29	288	251	273	288	---	437	660	382	660	288	323	382
30	382	288	273	288	---	400	660	251	660	288	288	382
31	382	---	273	288	---	437	---	356	---	273	288	---
TOTAL	9300	10286	8395	9002	7871	15545	12480	13204	12422	10588	8707	13421
MEAN	300	343	271	290	281	501	416	426	414	342	281	447
MAX	382	382	288	370	288	1320	660	660	660	556	382	660
MIN	273	251	251	266	251	273	340	251	260	251	236	258
CFSM	.61	.70	.55	.60	.58	1.03	.85	.87	.85	.70	.58	.92
IN.	.71	.78	.64	.69	.60	1.18	.95	1.01	.95	.81	.66	1.02

CAL YR 1989 TOTAL 133876 MEAN 367 MAX 1130 MIN 249 CFSM .75 IN. 10.21
WTR YR 1990 TOTAL 131221 MEAN 360 MAX 1320 MIN 236 CFSM .74 IN. 10.00

ST. CROIX RIVER BASIN

05333500 ST. CROIX RIVER NEAR DANBURY, WI

LOCATION.--Lat 46°04'28", long 92°14'50", in SW 1/4 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 mi².

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 National Geodetic Vertical Datum 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.--Estimated daily discharges: Ice period listed in rating table below. Records good except those for ice-affected period, which is fair.

AVERAGE DISCHARGE.--73 years (water years 1915-81, 1985-90), 1,304 ft³/s, 11.21 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,200 ft³/s, May 6, 1950, gage height, 8.22 ft; minimum observed, 393 ft³/s, Aug. 6, 13, 1934, gage height, -0.20 ft, site then in use.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,000 ft³/s and maximum (*):

DATE	TIME	DISCHARGE (ft ³ /s)	GAGE HEIGHT (ft)	DATE	TIME	DISCHARGE (ft ³ /s)	GAGE HEIGHT (ft)
Mar. 17	1900	(a)*6,000	(b)*6.33	Apr. 30	1600	3,260	3.33

(a) Estimated daily mean.

(b) Ice jam.

Minimum discharge, 579 ft³/s, Aug. 8-10, 16, 17, gage height, 0.33 ft.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Nov. 16 to Mar. 22.)

0.3	560	2.0	1,900
0.4	620	4.0	4,050
1.0	1,020	6.0	6,760

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	682	912	780	760	740	820	1280	3080	893	1840	662	789
2	767	886	760	760	720	840	1560	2940	930	1710	645	778
3	918	861	740	760	720	860	1490	2740	1020	1480	670	752
4	802	863	760	780	720	860	1580	2210	1110	1260	729	715
5	739	910	800	780	720	880	1320	2030	1140	1070	656	758
6	743	924	780	780	760	900	1290	1860	1160	971	657	1240
7	763	950	740	780	780	900	1280	1720	1010	983	630	1500
8	714	983	740	780	800	960	1190	1640	1020	1280	603	1470
9	714	962	760	760	760	1000	1290	1530	1120	1430	579	1740
10	788	995	740	760	740	1100	1400	1440	1100	1260	596	1750
11	828	1030	720	780	720	1200	1190	1310	946	1090	636	1700
12	808	912	700	780	720	1500	1160	1170	981	1040	610	1540
13	742	930	700	760	720	2200	1110	1160	1010	1000	594	1410
14	754	875	700	740	720	2900	1060	1170	904	941	592	1590
15	774	873	700	740	740	4000	1020	1210	802	902	626	1650
16	768	840	700	740	740	5200	1060	1290	1000	930	588	1620
17	841	780	700	740	740	6000	1030	1270	1200	847	639	1570
18	772	780	680	740	740	5800	1020	1140	1200	883	748	1610
19	737	780	680	760	760	5000	1040	1070	1340	766	780	1530
20	742	820	660	740	780	4400	1090	1280	1290	759	808	1380
21	721	800	660	740	800	3800	1080	1250	1260	743	708	1380
22	732	800	660	740	800	3500	1010	1060	1220	721	682	1330
23	707	820	680	740	800	3370	1080	1160	1120	712	725	1260
24	707	920	700	740	780	3120	1060	1200	957	708	702	1230
25	709	980	720	720	780	1920	1250	1110	937	736	754	1050
26	701	920	720	740	780	1600	1430	1170	1160	824	922	1110
27	759	880	740	740	780	1580	1650	1130	1070	870	1090	1080
28	792	800	740	720	800	1580	2390	1120	1160	962	907	1070
29	826	760	740	720	---	1400	2930	1140	1590	823	858	1050
30	874	780	740	740	---	1260	3200	1010	1680	755	782	1000
31	889	---	740	740	---	1300	---	862	---	703	734	---
TOTAL	23813	26326	22380	23300	21160	71750	41540	45472	33330	30999	21912	38652
MEAN	768	878	722	752	756	2315	1385	1467	1111	1000	707	1288
MAX	918	1030	800	780	800	6000	3200	3080	1680	1840	1090	1750
MIN	682	760	660	720	720	820	1010	862	802	703	579	715
CFSM	.49	.56	.46	.48	.48	1.46	.88	.93	.70	.63	.45	.82
IN.	.56	.62	.53	.55	.50	1.69	.98	1.07	.78	.73	.52	.91

CAL YR 1989 TOTAL 397624 MEAN 1089 MAX 3380 MIN 562 CFSM .69 IN. 9.36
WTR YR 1990 TOTAL 400634 MEAN 1098 MAX 6000 MIN 579 CFSM .69 IN. 9.43

05340500 ST. CROIX RIVER AT ST. CROIX FALLS, WI

LOCATION.--Lat 45°24'25", long 92°38'49", in SW 1/4 NW 1/4 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 mi².

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 National Geodetic Vertical Datum 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.--No estimated daily discharges. Records good. Diurnal fluctuation caused by St. Croix Falls Powerplant 1,500 ft upstream. Data-collection platform at station.

AVERAGE DISCHARGE.--88 years, 4,298 ft³/s, 9.35 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 54,900 ft³/s, May 8, 1950, gage height, 25.19 ft; minimum daily, 75 ft³/s, July 17, 1910.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 15,900 ft³/s, May 2, gage height, 8.09 ft; minimum daily, 1,040 ft³/s, Dec. 21.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).

2.2	964	4.0	4,950
2.5	1,400	6.0	10,700
3.0	2,350	8.0	15,700

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1650	2210	1790	1200	1630	1560	3870	14800	3810	4150	3730	3130
2	1710	2140	1930	1590	1640	1260	4020	15700	3800	4420	3360	2700
3	1620	2470	1630	1720	1390	1660	4130	15100	4680	4060	3040	2560
4	1750	1960	1540	1430	1820	1710	4560	13700	5310	3380	2720	2800
5	2020	2370	2040	1790	1530	1590	4420	11800	5200	3310	2670	2720
6	1750	2280	1380	1460	1600	1630	3970	10200	6220	3130	2230	2290
7	1630	2500	1580	1720	1560	1640	3930	9100	6560	2370	2480	3090
8	1640	2560	1980	1380	1510	1730	3520	7620	6360	3410	2020	4080
9	1690	2570	1230	1830	1950	1720	3720	6810	6030	3570	1930	4200
10	1690	2560	1670	1640	1630	1800	3280	6330	5840	4760	2100	4150
11	1700	2650	1550	1540	1630	3380	3070	5620	5540	4480	1790	4400
12	1720	2670	1640	1670	1540	4160	3460	5510	6040	3860	1750	4520
13	2040	2410	1470	1600	1720	5290	3060	4660	5120	3660	1640	3590
14	1750	2420	1510	1470	1610	6550	2890	4480	5300	2880	1590	3730
15	1700	2220	1560	1710	1580	7990	2660	4630	5260	3030	1570	4050
16	1690	2400	1260	1640	1690	9640	2640	4990	5070	2580	1440	4450
17	1680	1530	1450	1490	1750	11000	2630	4830	6450	2940	1510	4040
18	1690	1140	1530	1640	1500	12200	2610	5220	8200	2660	2440	4140
19	1710	1460	1430	1970	1820	12900	2520	5030	8050	2390	2640	3900
20	1710	1910	1730	1540	1660	12700	2630	5120	7900	2450	2610	4000
21	1640	2050	1040	1410	1490	12300	2540	5160	7420	1860	2160	3600
22	1690	2260	1520	1670	1650	10900	2610	4930	7060	1950	2660	3560
23	1730	1240	1270	1570	1590	8910	2960	5110	6410	2290	1690	3210
24	1730	1710	1330	1580	1710	8140	2720	4790	5740	1810	2070	3220
25	1730	1970	1320	1600	1650	7530	4010	5040	5510	1850	2050	3160
26	1730	2080	1650	1620	1680	6830	3920	5080	4700	2260	2350	2840
27	1730	2260	1270	1730	1640	6180	5280	5040	4820	3410	4000	2690
28	1860	1910	1330	1650	1790	5890	8180	4970	4570	3900	4440	2680
29	1930	1880	1480	1630	---	5280	10100	4900	4360	4610	4200	2670
30	1940	1860	1500	1660	---	4460	12700	4550	4400	4230	4060	2190
31	2440	---	1590	1650	---	4070	---	4080	---	4140	3480	---
TOTAL	54690	63650	47200	49800	45960	182600	122610	214900	171730	99800	78420	102360
MEAN	1764	2122	1523	1606	1641	5890	4087	6932	5724	3219	2530	3412
MAX	2440	2670	2040	1970	1950	12900	12700	15700	8200	4760	4440	4520
MIN	1620	1140	1040	1200	1390	1260	2520	4080	3800	1810	1440	2190
CFSM	.28	.34	.24	.26	.26	.94	.65	1.11	.92	.52	.41	.55
IN.	.33	.38	.28	.30	.27	1.09	.73	1.28	1.02	.59	.47	.61

CAL YR 1989 TOTAL 1243500 MEAN 3407 MAX 17900 MIN 1040 CFSM .55 IN. 7.41
WTR YR 1990 TOTAL 1233720 MEAN 3380 MAX 15700 MIN 1040 CFSM .54 IN. 7.35

ST. CROIX RIVER BASIN
05341000 BONE LAKE NEAR LUCK, WI

LAKE-STAGE RECORDS

LOCATION.--Lat 45°33'21", long 92°23'16", in SE 1/4 sec.31, T.36 N., R.16 W., Polk County, Hydrologic Unit 07030005, 4.9 mi southeast of Luck.

PERIOD OF RECORD.--September 1936 to September 1940 (fragmentary), October 1940 to September 1964 (fragmentary), in files of district office, October 1984 to September 1986, May to September 1989.

GAGE.--Staff gage read by T. W. Lindsay. Elevation of gage is 1,152 ft, from topographic map. Prior to 1964, staff gage 0.2 mi south at different datum.

EXTREMES FOR PERIOD OF RECORD (OCTOBER 1984 TO CURRENT YEAR).--Maximum gage height observed, 6.83 ft, July 29, 1986; minimum observed, 5.65 ft, Oct. 27, 1989.

EXTREMES FOR CURRENT YEAR.--Maximum gage height observed, 6.31 ft, June 11; minimum observed, 5.65 ft, Oct. 27.

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	GAGE HEIGHT	DATE	GAGE HEIGHT	DATE	GAGE HEIGHT	DATE	GAGE HEIGHT
OCT. 6	5.80	OCT. 27	5.65	JULY 15	6.14	AUG. 8	5.97
13	5.70	JUNE 11	6.31	28	6.07	15	5.97
19	5.68						

WATER-QUALITY RECORDS

LOCATION.--Lat 45°32'00", long 92°23'31", in NE 1/4 sec.7, T.35 N., R.16 W., Polk County, Hydrologic Unit 07030005, near center of lake, and 5.3 mi southeast of Luck.

PERIOD OF RECORD.--May 1985 to September 1986, October 1989 to September 1990.

REMARKS.--Secchi disc readings made by Gerald Berg.

SECCHI DISC TRANSPARENCY (IN METERS) WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	SECCHI DISC (M) (00078)	DATE	TIME	SECCHI DISC (M) (00078)
MAY 1990			JUL 1990		
20...	1130	5.2	08...	1000	2.7
26...	1055	5.5	15...	1045	2.0
JUN			22...	1125	1.8
10...	1030	5.2	29...	1115	2.0
24...	1025	3.8	AUG		
			11...	1115	2.0
			19...	1015	1.4

ST. CROIX RIVER BASIN

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05341500 APPLE RIVER NEAR SOMERSET, WI

LOCATION.--Lat 45°09'27", long 92°42'59", in 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 mi².

PERIOD OF RECORD.--January 1901 to September 1914 (monthly discharge only), October 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.--No estimated daily discharges. 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 Co.

AVERAGE DISCHARGE.--73 years (water years 1902-70, 1987-90), 304 ft³/s, 7.13 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 2,510 ft³/s, Apr. 13, 1965; minimum daily, 7 ft³/s, Aug. 21, 1927, Sept. 30, 1929, July 19, 1932, Aug. 2, 3, 1933.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 1,370 ft³/s, June 28; minimum daily, 111 ft³/s, Dec. 19.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	176	184	272	193	192	241	309	728	408	419	281	507
2	192	166	244	194	174	202	293	732	331	483	309	479
3	206	203	199	137	195	192	261	675	523	340	262	416
4	188	195	208	269	187	173	471	624	701	380	245	375
5	162	216	217	190	219	200	295	562	722	339	216	392
6	177	216	129	190	196	206	298	448	718	292	230	323
7	168	242	136	175	167	227	299	390	636	318	180	248
8	172	297	218	206	244	268	364	408	609	254	199	186
9	164	278	246	276	204	267	229	286	609	318	182	259
10	148	243	191	143	208	266	265	324	517	439	215	264
11	150	252	181	208	182	390	261	386	492	364	195	246
12	162	220	128	213	185	716	224	353	513	366	195	239
13	157	258	150	198	199	609	218	308	515	238	281	219
14	183	230	163	196	167	872	214	273	482	344	250	236
15	179	241	163	209	186	933	210	333	514	333	204	230
16	190	281	176	182	167	914	233	356	500	236	171	196
17	184	224	201	175	192	995	206	361	596	236	170	161
18	188	152	189	267	219	928	256	378	600	251	176	183
19	166	171	111	196	216	820	255	339	616	329	393	216
20	166	273	116	196	201	833	261	435	642	325	585	217
21	146	248	147	196	191	952	253	404	608	285	1080	228
22	180	218	153	178	255	575	230	401	580	246	1200	311
23	168	145	164	218	210	405	256	469	532	236	1100	290
24	170	151	163	212	184	447	249	432	488	218	715	276
25	149	211	190	199	128	458	335	438	357	218	682	219
26	150	235	196	169	169	375	375	367	403	264	621	223
27	144	337	177	250	262	371	430	506	353	257	666	164
28	144	177	190	190	172	368	539	568	1370	291	734	223
29	155	136	137	199	---	329	587	445	447	395	828	228
30	175	231	191	224	---	328	632	449	457	304	598	169
31	220	---	192	139	---	343	---	427	---	314	566	---
TOTAL	5279	6631	5538	6187	5471	15203	9308	13605	16839	9632	13729	7923
MEAN	170	221	179	200	195	490	310	439	561	311	443	264
MAX	220	337	272	276	262	995	632	732	1370	483	1200	507
MIN	144	136	111	137	128	173	206	273	331	218	170	161
CFSM	.29	.38	.31	.34	.34	.85	.54	.76	.97	.54	.76	.46
IN.	.34	.43	.36	.40	.35	.98	.60	.87	1.08	.62	.88	.51

CAL YR 1989 TOTAL 90545 MEAN 248 MAX 971 MIN 111 CFSM .43 IN. 5.82
WTR YR 1990 TOTAL 115345 MEAN 316 MAX 1370 MIN 111 CFSM .55 IN. 7.41

MISSISSIPPI RIVER MAIN STEM

05344500 MISSISSIPPI RIVER AT PRESCOTT, WI

LOCATION.--Lat 44°44'45", long 92°48'00", in sec.9, T.26 N., R.20 W., Pierce County, Hydrologic Unit 07040001, on left bank at Prescott, 200 ft downstream from St. Croix River, 300 ft south of Chicago, Burlington & Quincy Railroad bridge, 800 ft south of bridge on U.S. Highway 10, and at mile 811.4 upstream from Ohio River.

DRAINAGE AREA.--44,800 mi², approximately.

PERIOD OF RECORD.--June 1928 to current year.

REVISED RECORDS.--WSP 1508: 1941. WRD MN-74: 1973.

GAGE.--Water-stage recorder. Datum of gage is 649.50 ft above National Geodetic Vertical Datum of 1929. Prior to Aug. 2, 1932, nonrecording gage at railroad bridge 300 ft upstream at following datums: June 3, 1928, to Sept. 30, 1929, 19.27 ft higher; Oct. 1, 1929, to Sept. 30, 1930, 17.68 ft higher; Oct. 1, 1930, to Aug. 1, 1932, 19.28 ft higher. Aug. 2, 1932, to Oct. 30, 1938, water-stage recorder at present site at datum 19.28 ft higher; Nov. 1, 1938, to Sept. 7, 1971, water-stage recorder at present site at datum 50.00 ft lower.

REMARKS.--Records good. Some regulation by reservoirs, navigation dams, and powerplants at low and medium stages. Flood flow not materially affected by artificial storage.

AVERAGE DISCHARGE.--62 years, 17,090 ft³/s, 5.18 in/yr; median of yearly mean discharges, 15,300 ft³/s, 4.64 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 228,000 ft³/s, Apr. 18, 1965, gage height, 43.11 ft; minimum daily, 1,380 ft³/s, July 13, 1940; minimum gage height, 15.08 ft, Aug. 29, 1934, present datum.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 42,900 ft³/s, June 26; maximum gage height, 29.84 ft, June 20; minimum daily discharge, 3,830 ft³/s, Dec. 22; minimum gage height, 24.49 ft, Nov. 19, result of freezeup.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7690	7090	5900	5350	4980	4860	15600	23700	20000	38400	28800	14300
2	7590	7000	6290	4950	5220	4730	14700	28000	19100	35400	29800	12700
3	7090	6580	6310	5260	5500	4630	14300	31000	18600	32600	30500	11800
4	7220	7190	5870	5290	5230	4900	14500	32900	18700	29500	30700	11600
5	7300	6910	5840	5240	5380	4730	15000	32100	20700	26700	30100	11700
6	7400	6940	7290	5640	4880	4910	14500	30600	21300	24600	28500	11100
7	6990	6860	6470	5060	4750	4880	14900	28800	25300	22600	24800	10400
8	7150	7710	6260	5040	4690	4850	15000	27200	29000	20000	20400	10800
9	6860	7850	5950	4990	4680	5160	14900	24900	31100	20500	17900	11600
10	6640	7940	5060	5990	5180	5170	14300	23200	31000	20400	15800	11500
11	6790	8000	5910	5290	4770	5370	14100	22000	30200	22000	14400	11900
12	6460	8170	6120	5210	4770	7370	14000	20400	29600	20700	12900	10900
13	6360	7740	5400	5340	4830	9270	13200	19100	30800	19400	11600	12600
14	6770	7560	4720	4950	5110	11300	12500	17500	30700	19200	11200	11800
15	6690	7360	5490	4750	4850	16500	11800	16300	31800	18200	9980	11000
16	6460	7500	5030	5430	4790	21100	11400	16800	33200	17800	9350	11600
17	5970	7520	3850	5550	5700	23400	11000	16800	31700	16700	8980	10900
18	6240	6200	4900	5060	5370	28200	10800	17300	32800	16700	8750	10100
19	6210	5210	5080	5110	5370	29600	10900	17900	37700	15900	8890	9740
20	6220	5420	5060	5180	5730	31200	9900	17600	40200	14900	10200	9320
21	6030	5900	4810	4800	4910	31400	9910	17700	41400	14600	10900	9690
22	6090	5910	3830	4630	4810	32200	9740	18000	41500	13200	11400	9010
23	6190	6220	4880	4860	4850	30700	9690	18200	42000	12400	13100	9060
24	6070	5340	3840	4820	4900	27400	9950	19300	41600	12400	13500	9050
25	6520	5800	3900	4690	4940	24200	9940	20300	42600	13000	13300	8530
26	6600	5620	4290	4830	4750	23000	11000	21100	42900	13100	13200	8650
27	6980	5930	5390	4610	4950	21100	11600	20600	42400	13600	13000	7870
28	6110	6610	4740	5260	5310	19400	13200	20400	42200	16600	15400	7940
29	5970	7160	4550	4930	---	18600	17300	21200	41700	19400	15300	7400
30	6100	6400	4870	4860	---	17300	20100	20900	39600	23000	15700	7790
31	6130	---	5360	4920	---	15900	---	20500	---	26400	15300	---
TOTAL	204890	203640	163260	157890	141200	493330	389730	682300	981400	630600	513650	312350
MEAN	6609	6788	5266	5093	5043	15910	12990	22010	32710	20340	16570	10410
MAX	7690	8170	7290	5990	5730	32200	20100	32900	42900	38400	30700	14300
MIN	5970	5210	3830	4610	4680	4630	9690	16300	18600	12400	8750	7400
CFSM	.15	.15	.12	.11	.11	.36	.29	.49	.73	.45	.37	.23
IN.	.17	.17	.14	.13	.12	.41	.32	.57	.81	.52	.43	.26
CAL YR 1989	TOTAL 4177360	MEAN 11440	MAX 49000	MIN 3830	CFSM .26	IN. 3.47						
WTR YR 1990	TOTAL 4874240	MEAN 13350	MAX 42900	MIN 3830	CFSM .30	IN. 4.05						

CHIPPEWA RIVER BASIN

CHIPPEWA RIVER BASIN

05356000 CHIPPEWA RIVER AT BISHOPS BRIDGE, NEAR WINTER, WI

LOCATION.--Lat 45°50'57", long 91°04'44", in SW 1/4 NE 1/4 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 mi².

PERIOD OF RECORD.--February 1912 to current year. December to April 1913, monthly discharge only, published in WSP 1308.

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 National Geodetic Vertical Datum of 1929 (levels by Wilhelm Engineering Co.). See WSP 1708 or 1728 for history of changes prior to July 23, 1930.

REMARKS.--No estimated daily discharges. Records good. Flow regulated by Moose Lake and Lake Chippewa.

AVERAGE DISCHARGE.--78 years, 715 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,520 ft³/s, Sept. 4, 5, 1941, gage height, 11.05 ft; minimum, 14 ft³/s, Apr. 17-20, 1925, gage height, 3.25 ft.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,200 ft³/s, Sept. 14, gage height, 8.47 ft; minimum discharge, 90 ft³/s, Jan. 4, gage height 3.81 ft.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).

3.8	88	5.0	608
4.0	141	6.0	1,430
4.3	245	7.0	2,400
4.6	380	9.0	4,910

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	201	265	261	196	857	330	229	618	385	252	243	243
2	203	265	262	196	857	218	227	749	241	253	244	242
3	202	265	265	192	643	199	229	735	238	522	244	244
4	180	266	265	132	641	101	229	928	233	254	244	243
5	153	270	264	186	858	201	228	751	247	251	241	243
6	151	267	265	213	847	338	228	823	241	252	243	999
7	150	265	229	193	849	234	229	1020	233	255	243	1030
8	151	266	240	289	847	232	228	934	233	298	242	568
9	152	265	509	203	846	233	229	1170	233	267	259	572
10	151	266	203	201	654	233	229	1520	233	255	268	1050
11	151	265	205	203	633	235	229	1030	234	253	238	1340
12	150	265	248	205	836	248	229	597	237	251	237	2550
13	150	265	205	207	836	269	230	597	866	251	237	2790
14	150	265	200	197	828	365	230	952	1000	251	240	3630
15	150	265	209	206	488	322	230	951	622	250	247	4080
16	150	265	199	203	227	274	230	930	625	246	237	4010
17	152	265	231	200	213	255	227	927	629	252	237	3550
18	153	282	448	200	218	248	229	984	621	243	266	2980
19	152	264	221	200	225	233	230	610	388	244	275	2970
20	150	261	638	198	304	239	227	570	264	243	242	2550
21	147	261	704	200	350	245	222	786	261	243	241	2070
22	147	262	636	460	213	245	222	571	260	244	241	2060
23	147	265	552	875	214	264	224	570	259	243	241	2050
24	147	277	570	868	213	231	226	569	259	243	241	1730
25	147	261	585	857	214	236	234	564	260	244	241	1390
26	148	261	348	879	203	231	232	566	282	244	270	1390
27	149	261	196	652	207	213	242	568	253	246	568	1380
28	149	265	195	652	192	225	276	570	259	244	753	1290
29	150	270	194	860	---	226	280	597	255	243	368	1230
30	214	261	197	871	---	226	409	615	269	241	242	1230
31	266	---	196	856	---	226	---	617	---	243	250	---
TOTAL	5013	7966	9940	12050	14513	7575	7143	23989	10620	8021	8583	51704
MEAN	162	266	321	389	518	244	238	774	354	259	277	1723
MAX	266	282	704	879	858	365	409	1520	1000	522	753	4080
MIN	147	261	194	132	192	101	222	564	233	241	237	242

CAL YR 1989 TOTAL 169093 MEAN 463 MAX 1320 MIN 147
WTR YR 1990 TOTAL 167117 MEAN 458 MAX 4080 MIN 101

454724091303600 BIG SISSABAGAMA LAKE NEAR STONE LAKE, WI

LOCATION.--Lat 45°47'24", long 91°30'36", in NW 1/4 SE 1/4 sec.6, T.38 N., R.9 W., Sawyer County, Hydrologic Unit 07050001, near Stone Lake.

DRAINAGE AREA.--9.47 mi².

LAKE-STAGE RECORDS

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

GAGE.--Staff gage read on south side of lake by Harold Kissinger. Elevation of gage is 1,320 ft, from topographic map.

EXTREMES FOR PERIOD OF RECORD: Maximum gage-height observed, 6.03 ft, Apr. 21, May 25, 1989; minimum observed, 4.78 ft, Sept. 15, 16, 1988.

EXTREMES FOR CURRENT YEAR.--Maximum gage-height observed, 5.77 ft, July 8; minimum observed, 5.21 ft, Oct. 20-28, and Aug. 17.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.25	5.25	---	---	---	---	---	5.57	5.47	5.69	5.41	5.35
2	5.29	5.25	---	---	---	---	---	5.55	5.45	5.67	5.39	5.35
3	---	5.25	---	---	---	---	---	5.55	5.57	5.63	5.37	5.33
4	5.29	5.25	---	---	---	---	---	5.53	5.59	5.61	5.35	5.37
5	5.31	5.27	---	---	---	---	---	5.53	5.59	5.59	5.33	5.35
6	5.29	5.29	---	---	---	---	---	5.53	5.59	5.57	5.33	5.45
7	5.29	5.29	---	---	---	---	---	5.51	5.57	5.55	5.33	5.43
8	5.27	---	---	---	---	---	---	5.51	5.57	5.77	5.31	5.43
9	5.27	5.27	---	---	---	---	---	5.53	5.55	5.75	5.27	5.41
10	5.29	5.27	---	---	---	---	---	5.53	5.53	5.75	5.31	5.43
11	5.29	5.27	---	---	---	---	---	5.51	5.53	5.71	5.29	5.41
12	5.27	5.27	---	---	---	---	---	5.49	5.53	5.67	5.29	5.53
13	5.27	5.27	---	---	---	---	---	5.49	5.57	5.65	5.27	5.53
14	5.27	5.27	---	---	---	---	---	5.51	5.55	5.63	5.25	5.63
15	5.27	5.27	---	---	---	---	---	5.51	5.53	5.61	5.25	5.61
16	5.27	5.27	---	---	---	---	---	5.51	5.55	5.59	5.23	5.59
17	5.25	5.27	---	---	---	---	---	5.51	5.59	5.59	5.21	5.57
18	5.23	5.27	---	---	---	---	---	5.49	5.57	5.57	5.33	5.55
19	5.23	---	---	---	---	---	---	5.47	5.55	5.55	5.35	5.57
20	5.21	---	---	---	---	---	---	5.53	5.55	5.53	5.33	5.55
21	5.21	---	---	---	---	---	---	5.53	5.53	5.53	5.31	5.55
22	5.21	---	---	---	---	---	---	5.51	5.53	5.53	5.31	5.53
23	5.21	---	---	---	---	---	---	5.53	5.51	5.51	5.31	5.51
24	5.21	---	---	---	---	---	5.49	5.53	5.51	5.49	5.31	5.47
25	5.21	---	---	---	---	---	5.51	5.51	5.51	5.47	5.31	5.45
26	5.21	---	---	---	---	---	5.51	5.51	5.55	5.45	5.43	5.41
27	5.21	---	---	---	---	---	5.53	5.53	5.53	5.49	5.41	5.39
28	5.21	---	---	---	---	---	5.59	5.53	5.63	5.47	5.41	5.37
29	5.23	---	---	---	---	---	5.61	5.53	5.63	5.49	5.41	5.41
30	5.25	---	---	---	---	---	5.59	5.51	5.71	5.45	5.39	5.45
31	5.27	---	---	---	---	---	---	5.49	---	5.41	5.37	---
MAX	5.31	5.29	---	---	---	---	5.61	5.57	5.71	5.77	5.43	5.63
MIN	5.21	5.25	---	---	---	---	5.49	5.47	5.45	5.41	5.21	5.33

WATER-QUALITY RECORDS

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

REMARKS.--Lake sampled near center at a lake depth of about 48 ft. Lake ice-covered during February 27 sampling. Water-quality analyses by Wisconsin State Laboratory of Hygiene. Additional water-quality data for Big Sissabagama Lake on page 526.

WATER-QUALITY DATA, FEBRUARY 27 TO AUGUST 14, 1990
(Milligrams per liter unless otherwise indicated)

	Feb. 27		Apr. 23		June 18		July 18		Aug. 14	
Depth of sample (ft)	3.0	47	1.5	48	1.5	45	1.5	47	1.5	46
Lake stage (ft)	---		5.46		5.57		5.59		5.24	
Specific conductance ($\mu\text{S}/\text{cm}$)	84	150	75	75	75	111	74	124	78	142
pH (units)	7.4	6.9	7.4	7.1	7.2	6.8	7.1	6.88	7.4	7.0
Water temperature ($^{\circ}\text{C}$)	1.3	5.0	9.6	5.7	19.8	10.4	23.8	11.5	22.7	11.6
Color (Pt-Co. scale)	---		10		---		---		---	
Turbidity (NTU)	---		1.6		---		---		---	
Secchi-depth (meters)	---		2.00		2.44		2.70		2.70	
Dissolved oxygen	13.7	0.2	13.1	10.7	9.0	0.04	9.4	0.0	8.3	0.1
Hardness, as CaCO_3	---		36		---		---		---	
Calcium, dissolved (Ca)	---		9.3		---		---		---	
Magnesium, dissolved (Mg)	---		3.0		---		---		---	
Sodium, dissolved (Na)	---		2.0		---		---		---	
Potassium, dissolved (K)	---		0.75		---		---		---	
Alkalinity, as CaCO_3	---		36		---		---		---	
Fluoride, dissolved (F)	---		<0.1		---		---		---	
Chloride, dissolved (Cl)	---		0.7		---		---		---	
Silica, dissolved (SiO_2)	---		4.3		---		---		---	
Nitrogen, $\text{NO}_2 + \text{NO}_3$, diss. (as N)	---		<0.02		---		---		---	
Nitrogen, ammonia, dissolved (as N)	---		<0.02		---		---		---	
Nitrogen, amm. + org., total (as N)	---		0.50		---		---		---	
Phosphorus, total (as P)	---		0.019		0.029		0.022		0.015	
Phosphorus, ortho, dissolved (as P)	---		0.009		0.005		0.005		0.005	
Iron, dissolved (Fe) $\mu\text{g}/\text{L}$	---		70		---		---		---	
Manganese, dissolved (Mn) $\mu\text{g}/\text{L}$	---		56		---		---		---	
Chlorophyll a, phytoplankton ($\mu\text{g}/\text{L}$)	---		12		11		6.0		7.0	

2-27-90

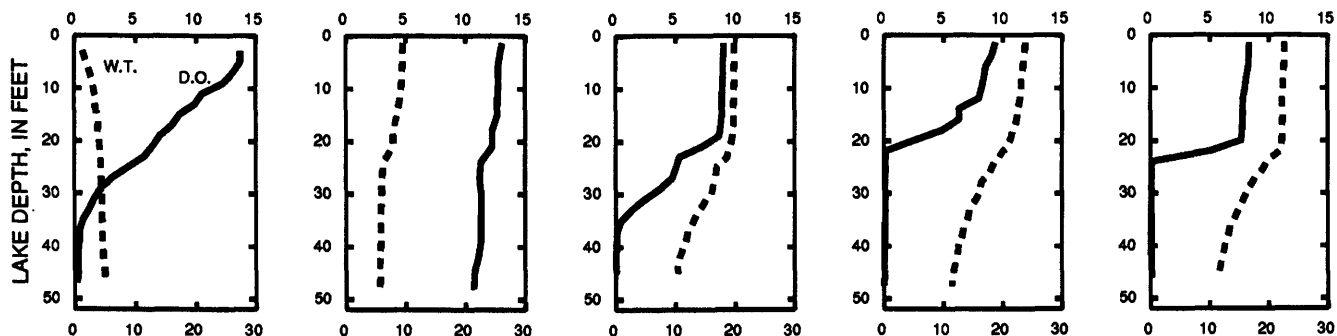
4-23-90

6-18-90

7-18-90

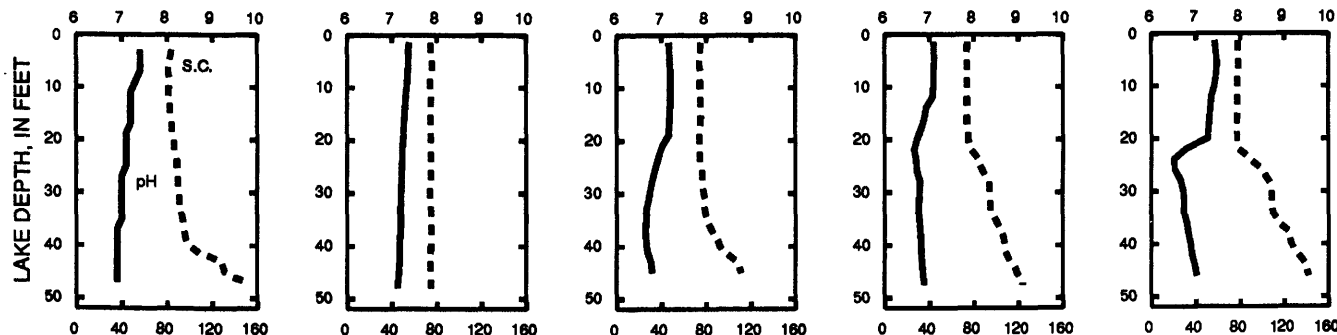
8-14-90

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

CHIPPEWA RIVER BASIN

259

05356500 CHIPPEWA RIVER NEAR BRUCE, WI

LOCATION.--Lat 45°27'08", long 91°15'39", in SE 1/4 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 mi².

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 National Geodetic Vertical Datum of 1929. Prior to May 28, 1935, nonrecording gage at railroad bridge 0.8 mi upstream at datum 2.30 ft higher.

REMARKS.--Estimated daily discharges: Oct. 7-27 and ice period listed in rating table below. Records good except those for estimated daily discharges, which are fair. Flow from 48 percent of the drainage area regulated by Moose Lake and Lake Chippewa.

AVERAGE DISCHARGE.--76 years, 1,462 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 25,800 ft³/s, Sept. 1, 1941, gage height, 20.46 ft, from floodmarks, from rating curve extended above 20,000 ft³/s; minimum, 155 ft³/s, June 10, 1932, gage height, 0.9 ft, site and datum then in use.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 12,000 ft³/s (estimated, backwater from ice), Mar. 16; maximum gage height, 13.94 ft, Mar. 15 (backwater from ice); maximum discharge during open-water period, 11,800 ft³/s, Mar. 17, gage height, 11.74 ft; minimum, 205 ft³/s, Oct. 27, 28, gage height, 1.12 ft, but may have been less during period of faulty record, Oct. 7-27.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Shifting-control method used July 22 to Aug. 18, Aug. 21-26, and Aug. 30 to Sept. 6; stage-discharge relation affected by ice Nov. 17 to Mar. 16.)

1.2	246	6.0	4,300
1.4	360	8.0	6,620
2.0	761	10.0	9,270
4.0	2,380	12.0	12,200

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	322	431	370	350	1100	360	693	3200	1010	1370	500	526
2	312	516	350	350	1100	580	749	2710	870	966	459	498
3	324	416	330	360	1000	460	759	2210	1050	816	432	479
4	292	526	330	360	900	430	773	1830	1270	961	434	473
5	292	452	370	340	860	380	769	1850	1200	683	420	457
6	289	576	350	330	920	340	721	1480	1220	658	404	817
7	290	585	340	360	940	450	683	1500	1150	628	405	2340
8	290	597	330	450	960	580	648	1600	881	890	391	2280
9	290	491	350	450	960	580	644	1480	778	2610	448	1580
10	300	526	620	430	920	600	636	2430	674	1790	543	1490
11	300	453	420	390	820	660	626	2180	690	1490	486	2050
12	290	492	290	350	780	1200	610	1790	732	1090	449	3210
13	290	432	300	340	1000	2300	594	1300	697	970	428	5690
14	290	492	310	340	980	4500	590	1390	1390	851	415	6470
15	290	446	320	360	960	10000	593	2090	1360	765	404	8150
16	290	447	320	360	600	12000	603	2160	1070	717	392	7420
17	300	450	320	360	300	9320	610	2250	1260	688	405	6330
18	290	450	320	370	300	5810	610	2050	1300	685	584	4880
19	290	560	560	370	320	4320	600	1920	1200	653	1230	4340
20	280	520	330	370	380	3400	583	2070	822	564	1190	4260
21	280	460	430	370	440	2970	609	2090	618	525	804	3520
22	280	430	780	370	390	2590	629	1880	598	537	646	3190
23	280	400	880	580	320	2040	648	1540	592	529	559	2890
24	280	370	840	840	310	1480	707	1430	620	510	519	2760
25	290	400	760	980	310	1140	859	1340	532	523	482	2140
26	290	390	800	1100	310	849	921	1210	646	497	621	1950
27	290	370	540	1000	310	755	1030	1330	889	523	1050	1920
28	302	350	380	940	330	712	1900	1340	917	564	1190	1860
29	328	370	360	900	---	684	3710	1260	1440	554	1170	1660
30	319	380	350	1000	---	684	3940	1120	1130	529	691	1570
31	379	---	350	1100	---	684	---	1130	---	532	540	---
TOTAL	9229	13778	13700	16570	18820	72858	28047	55160	28606	25668	18691	87200
MEAN	298	459	442	535	672	2350	935	1779	954	828	603	2907
MAX	379	597	880	1100	1100	12000	3940	3200	1440	2610	1230	8150
MIN	280	350	290	330	300	340	583	1120	532	497	391	457
CAL YR 1989	TOTAL 346795	MEAN 950	MAX 5000	MIN 280								
WTR YR 1990	TOTAL 388327	MEAN 1064	MAX 12000	MIN 280								

LOCATION.--Lat 45°59'46", long 89°41'57", in NW 1/4 NW 1/4 sec.36, T.41 N., R.6 E., Vilas County, Hydrologic Unit 07070001, 7 mi north of Woodruff, 800 ft west of U.S. Highway 57, and 200 ft southeast of boat landing.

EXTREMES FOR CURRENT YEAR.--Maximum observed gage height, 25.63 ft, Sept. 14; minimum observed gage height, 25.06 ft, Aug. 8.

CAL YR 1989	MEAN 25.76	MAX 26.18	MIN 25.12
WTR YR 1990	MEAN 25.28	MAX 25.63	MIN 25.06

CHIPPEWA RIVER BASIN

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05360500 FLAMBEAU RIVER NEAR BRUCE, WI

LOCATION.--Lat 45°22'21", long 91°12'34", in Lot 7 of 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 mi².

PERIOD OF RECORD.--August 1951 to current year.

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

GAGE.--Water-stage recorder. Datum of gage is 1,056.34 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Estimated daily discharges: Ice period listed in rating table below. Records good except those for ice-affected period, which is fair. Flow regulated by several powerplants above station and by Rest Lake and Flambeau Flowage Reservoirs.

AVERAGE DISCHARGE.--39 years, 1,798 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 17,600 ft³/s, Apr. 2, 1986, gage height, 10.45 ft; maximum gage height, 10.90 ft, May 1, 1954; minimum, about 100 ft³/s, Aug. 7, 9, 1957, gage height, 2.06 ft.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 7,710 ft³/s, Sept. 17, gage height, 7.02 ft; minimum, 343 ft³/s, Oct. 15-17, gage height, 2.30 ft.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Nov. 24 to Mar. 15.)

2.3	343	5.0	3,480
3.0	833	7.0	7,660
4.0	1,920		

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	442	594	490	490	500	470	872	2410	923	1090	827	1040
2	443	636	490	480	470	460	1020	2270	962	1020	630	935
3	443	612	460	470	480	480	936	1560	1080	1000	757	740
4	446	547	470	470	500	520	941	1380	1170	958	1150	707
5	448	723	480	450	500	540	1040	1400	1280	837	924	780
6	444	810	540	470	490	520	918	1060	1380	728	765	1370
7	412	921	500	500	490	470	905	1030	1390	804	672	3440
8	357	948	440	500	500	430	944	923	1280	1340	628	4590
9	357	913	370	540	520	580	867	1100	1100	2370	674	3920
10	354	791	360	680	560	500	833	1430	824	2750	792	2690
11	355	737	520	380	540	600	789	1660	1090	1760	645	2590
12	354	782	540	440	560	1200	835	1430	1070	1490	593	2930
13	349	647	440	470	520	2000	651	1240	1160	1180	472	4130
14	349	679	430	520	500	3000	589	1520	1830	1110	540	5450
15	348	653	460	500	490	4500	741	1800	1730	1030	548	6930
16	344	633	500	490	490	5260	753	2250	2170	889	599	6730
17	348	603	560	480	500	5680	807	3320	1750	943	503	6000
18	349	506	420	480	500	4310	797	3900	2090	786	1380	4650
19	356	425	540	480	540	3740	690	3750	1730	995	1480	3520
20	413	429	490	500	560	2110	726	3270	1470	764	1300	4050
21	444	611	440	500	640	2270	734	3480	1620	806	857	3180
22	438	608	410	480	500	1740	724	2730	1580	701	894	3130
23	574	580	440	480	490	1800	691	2720	1440	707	1050	2900
24	417	450	400	500	490	1100	855	2220	955	840	948	2640
25	434	440	410	500	500	1100	1010	2530	1170	812	696	2460
26	434	460	440	490	500	1120	1020	2170	1240	782	825	2270
27	432	500	400	500	490	944	1200	1820	1330	895	1110	2090
28	442	520	480	500	470	1030	2040	1990	1230	1040	1620	1890
29	491	500	540	560	---	963	2750	1670	1400	655	1060	1950
30	620	500	420	660	---	814	2710	1390	1330	829	1250	1820
31	564	---	470	410	---	861	---	1280	---	805	1330	---
TOTAL	13001	18758	14350	15370	14290	51112	30388	62703	40774	32716	27519	91522
MEAN	419	625	463	496	510	1649	1013	2023	1359	1055	888	3051
MAX	620	948	560	680	640	5680	2750	3900	2170	2750	1620	6930
MIN	344	425	360	380	470	430	589	923	824	655	472	707

CAL YR 1989 TOTAL 396357 MEAN 1086 MAX 4900 MIN 344
WTR YR 1990 TOTAL 412503 MEAN 1130 MAX 6930 MIN 344

CHIPPEWA RIVER BASIN

05362000 JUMP RIVER AT SHELDON, WI

LOCATION.--Lat 45°18'29", long 90°57'23", in 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 mi².

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. Datum of gage is 1,092.75 ft above National Geodetic Vertical Datum of 1929. Prior to Feb. 9, 1939, and Sept. 1, 1941, to Apr. 1, 1953, 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.--Estimated daily discharge: Ice period listed in rating table below. Records good except for ice-affected period, which is poor. Data-collection platform at station.

AVERAGE DISCHARGE.--75 years, 515 ft³/s, 12.14 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge observed, 46,000 ft³/s, Aug. 31, 1941, gage height, 18.8 ft from floodmark, from rating curve extended above 13,000 ft³/s on basis of contracted-opening measurement of peak flow; minimum observed, 11 ft³/s, Dec. 18, 1943, gage height, 3.99 ft.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,500 ft³/s and maximum (*):

DATE	TIME	DISCHARGE (ft ³ /s)	GAGE HEIGHT (ft)	DATE	TIME	DISCHARGE (ft ³ /s)	GAGE HEIGHT (ft)
Mar. 14	0500	ice jam	*13.18	June 14	0400	4,560	8.80
Mar. 15	1700	*6,430	9.83	Aug. 20	0200	3,940	8.36
May 17	0800	5,170	9.18	Sept. 15	0700	3,910	8.34

Minimum discharge, 30 ft³/s, Oct. 4, gage height 2.95 ft.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Nov. 16 to Mar. 14.)

2.8	24	3.5	142	6.0	1,410
2.9	33	4.0	291	7.0	2,290
3.0	45	4.5	475	8.0	3,460
3.2	72	5.0	727	9.0	4,850
				10.0	6,780

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	32	88	60	45	54	66	198	1620	305	445	386	341
2	35	110	58	46	54	62	243	1140	276	320	284	284
3	32	115	56	47	54	60	301	825	371	252	220	245
4	31	115	60	46	52	58	316	646	610	210	179	218
5	32	118	62	48	54	58	315	528	614	178	149	198
6	34	155	58	50	54	58	304	451	956	152	126	853
7	34	226	56	54	54	60	292	389	991	135	109	2440
8	35	238	52	52	54	62	271	344	729	149	93	2000
9	39	232	49	52	54	66	262	339	539	242	82	1380
10	42	210	47	50	54	100	268	1050	428	294	72	976
11	43	194	46	50	54	230	282	1590	364	237	68	727
12	45	180	45	50	54	560	277	1310	393	186	61	805
13	42	159	44	50	52	1500	254	977	3500	154	57	1170
14	44	149	43	50	54	4000	236	876	4280	130	53	2720
15	44	143	42	52	54	5100	228	1680	2780	111	58	3830
16	46	120	43	54	54	4070	240	3430	1740	100	76	3070
17	44	82	45	54	54	2860	269	4940	1980	98	77	2120
18	43	100	41	54	54	1850	290	3670	1810	101	354	1450
19	42	120	38	52	56	1250	304	2450	1270	106	3630	1340
20	45	120	36	52	58	978	305	2450	909	100	3750	1320
21	45	100	36	52	60	827	310	2320	652	90	2830	1110
22	45	84	38	52	62	667	338	1790	497	83	1770	1100
23	46	70	40	54	62	523	337	1320	417	76	1070	939
24	48	64	42	54	60	465	466	1040	344	72	661	766
25	51	66	40	52	58	429	863	831	273	70	555	629
26	52	64	39	52	58	360	928	641	298	65	647	521
27	54	62	40	52	58	305	976	556	355	74	1140	423
28	57	60	41	52	58	272	1680	527	344	81	1100	356
29	63	60	41	52	---	243	2620	478	385	123	806	316
30	67	60	42	52	---	224	2210	416	395	557	565	291
31	78	---	43	52	---	203	---	356	---	533	424	---
TOTAL	1390	3664	1423	1584	1558	27566	16183	40980	28805	5524	21452	33938
MEAN	44.8	122	45.9	51.1	55.6	889	539	1322	960	178	692	1131
MAX	78	238	62	54	62	5100	2620	4940	4280	557	3750	3830
MIN	31	60	36	45	52	58	198	339	273	65	53	198
CFSM	.08	.21	.08	.09	.10	1.54	.94	2.30	1.67	.31	1.20	1.96
IN.	.09	.24	.09	.10	.10	1.78	1.05	2.65	1.86	.36	1.39	2.19

CAL YR 1989 TOTAL 97967 MEAN 268 MAX 3240 MIN 31 CFSM .47 IN. 6.33
WTR YR 1990 TOTAL 184067 MEAN 504 MAX 5100 MIN 31 CFSM .88 IN. 11.89

05365500 CHIPPEWA RIVER AT CHIPPEWA FALLS, WI

LOCATION.--Lat 44°55'37", long 91°24'33", in Lot 1, 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 mi².

PERIOD OF RECORD.--June 1888 to September 1983, October 1986 to current year. Monthly discharge only 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 National Geodetic Vertical Datum 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.--Estimated daily discharges: Aug. 19 to 24. Records good except those for estimated daily discharges, which are fair. 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.

AVERAGE DISCHARGE.--99 years (1889-1983, 1987-90), 5,063 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 102,000 ft³/s, Sept. 1, 1941, gage height, 24.8 ft; minimum 22 ft³/s, Apr. 2, 1934, gage height, 0.63 ft; minimum daily, 40 ft³/s, Feb. 4, 1917.

EXTREMES OUTSIDE OF PERIOD OF RECORD.--A stage of 26.94 ft occurred Sept. 10, 1884, site and datum in use June 1932.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 31,900 ft³/s, Mar. 14, gage height, 13.74 ft; minimum daily, 234 ft³/s, Feb. 16.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).

1.2	223	6.0	6,400
1.5	325	8.0	11,200
2.0	585	10.0	17,200
3.0	1,440	12.0	24,600
4.0	2,800	14.0	33,000

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	463	1260	1060	564	1800	606	2860	13300	3500	2630	3690	1290
2	1280	1260	2910	2540	695	763	3090	9850	1590	5110	1200	3450
3	1040	2720	776	2720	600	636	3040	8220	6290	3600	2790	1620
4	733	1010	1420	1920	782	624	3470	8120	7940	1020	1960	3480
5	1170	2120	1030	2250	1090	974	3480	4780	6740	4170	1330	3210
6	1210	1720	1300	2810	1330	747	3380	3770	6940	3160	1620	4800
7	506	2030	1360	2040	1400	609	1300	3920	7460	620	1410	6920
8	501	2340	1480	2930	952	668	763	4060	4290	2350	1670	9790
9	536	3440	612	2660	893	1030	2290	5910	3850	4150	2230	8520
10	1270	3170	637	592	417	1540	2580	7460	2490	7120	2890	6210
11	782	497	1960	1420	586	5150	2070	7700	4680	3830	2300	5520
12	1350	901	1950	936	1150	9350	2190	8180	7790	5000	332	9150
13	1890	2710	429	489	1460	12200	2000	5310	20100	2630	735	8790
14	311	1030	1770	539	1380	20700	1930	5300	22400	772	1710	13400
15	384	2200	2790	1410	1330	29000	1530	7470	15200	1930	1620	19500
16	1130	1270	2910	722	234	29500	3210	13000	11100	3610	1890	22600
17	763	1290	2400	997	620	25500	1120	17900	13700	2070	2290	20100
18	583	651	2950	1520	699	16600	2350	18500	11000	2120	7030	13300
19	815	962	2410	946	1260	12400	3040	16400	8950	1880	14200	10800
20	1050	1660	2830	682	503	8410	2590	14700	6730	2850	21200	13500
21	595	2990	2040	959	1010	7490	1500	12200	4760	339	19400	11200
22	606	2570	747	749	534	7100	1520	9140	6120	764	9600	9400
23	1630	727	1260	753	887	6380	3880	8350	1470	2130	6260	8670
24	925	931	1310	1670	720	2710	3700	8350	2180	1910	6400	7940
25	1400	353	1280	2710	684	3680	5080	8190	3340	1780	2990	6630
26	785	997	1890	1450	893	3260	5330	5360	6250	2980	5780	5830
27	804	2580	1750	426	1150	3640	4740	5510	4100	2420	5910	5500
28	829	1150	876	1010	1180	2460	7720	5300	5850	1700	8860	5980
29	518	1760	1530	1550	---	2590	11700	5680	6500	1790	4960	3920
30	2510	778	741	1710	---	2630	13800	6280	3320	3680	5520	4400
31	1590	---	902	1440	---	2240	---	5200	---	4230	4380	---
TOTAL	29959	49077	49310	45114	26239	221187	107253	263410	216630	84345	154157	255420
MEAN	966	1636	1591	1455	937	7135	3575	8497	7221	2721	4973	8514
MAX	2510	3440	2950	2930	1800	29500	13800	18500	22400	7120	21200	22600
MIN	311	353	429	426	234	606	763	3770	1470	339	332	1290

CAL YR 1989 TOTAL 1140616 MEAN 3125 MAX 16600 MIN 311
WTR YR 1990 TOTAL 1502101 MEAN 4115 MAX 29500 MIN 234

CHIPPEWA RIVER BASIN

05365707 NORTH FORK EAU CLAIRE RIVER NEAR THORP, WI

LOCATION.--Lat 44°58'25", long 90°50'57", in NW 1/4 NE 1/4 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 mi².

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

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 1,115 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Ice period listed in rating table below. Records good except those for estimated daily discharges and those below 1.0 ft³/s, which are poor.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,050 ft³/s, Sept. 22, 1986, gage height, 10.13 ft, from rating curve extended above 2,500 ft³/s on basis of step-backwater measurement of peak flow; minimum, 0.02 ft³/s, July 30, 31, 1988, gage height, 1.11 ft.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,600 ft³/s, June 13, gage height, 8.80 ft; minimum discharge, 0.12 ft³/s, Oct. 4, but may have been less during period of ice effect, gage height, 1.14 ft.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Nov. 16 to Mar. 12.)

1.06	0.12	1.5	11	3.5	246
1.08	.30	1.8	27	4.0	380
1.10	.61	2.0	40	5.0	800
1.18	1.8	2.5	87	6.0	1,430
1.3	4.6	3.0	155	7.0	2,520
				8.0	4,030

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.36	5.6	1.5	0.20	0.33	0.66	7.1	98	19	26	27	26
2	.22	5.9	1.4	.21	.35	.66	9.7	53	19	18	17	18
3	.20	5.6	1.5	.21	.36	1.3	9.2	39	267	14	229	14
4	.19	6.5	1.5	.21	.37	2.6	8.8	30	250	11	194	14
5	.79	7.9	1.3	.20	.38	5.4	9.5	23	148	9.0	75	13
6	1.0	10	1.2	.21	.39	10	10	18	144	7.5	31	12
7	.90	7.1	1.0	.24	.43	20	9.4	14	83	7.7	18	11
8	.94	7.6	1.1	.30	.50	45	8.1	11	48	11	13	10
9	1.1	5.7	1.2	.25	.50	100	7.1	89	29	15	32	9.6
10	1.5	4.5	1.0	.25	.48	240	7.0	261	20	11	72	9.6
11	1.6	3.8	.52	.28	.48	500	7.0	173	189	8.1	23	9.1
12	1.2	3.1	.35	.27	.50	1000	6.4	74	1030	7.0	14	11
13	1.0	2.8	.26	.26	.46	777	5.8	46	3330	5.9	10	13
14	1.1	2.7	.21	.27	.41	944	5.6	125	1100	5.1	8.2	72
15	1.0	2.6	.22	.30	.43	518	6.3	221	288	4.3	7.0	73
16	1.1	2.2	.22	.29	.42	265	7.5	851	134	3.8	6.0	44
17	1.1	2.0	.23	.29	.43	131	9.3	486	297	4.3	5.2	28
18	1.0	1.8	.20	.30	.46	72	9.7	200	165	5.0	173	22
19	1.7	1.8	.19	.31	.45	50	9.1	240	75	7.1	586	67
20	2.8	1.7	.17	.29	.48	35	8.5	398	46	12	370	55
21	4.0	1.7	.15	.30	.50	30	9.5	214	37	8.5	172	41
22	4.9	1.7	.16	.31	.47	26	10	96	23	5.8	63	38
23	4.3	1.6	.16	.32	.45	20	12	56	19	4.7	37	27
24	4.1	1.5	.17	.36	.44	16	157	39	16	4.0	31	23
25	3.6	1.5	.21	.39	.44	14	152	28	12	3.6	58	18
26	3.8	1.5	.20	.33	.45	12	100	24	23	3.3	338	16
27	4.2	1.6	.19	.32	.54	8.7	125	119	31	4.5	194	14
28	3.8	1.8	.21	.31	.60	7.8	271	115	116	17	88	11
29	3.7	1.8	.21	.31	---	7.5	327	75	81	35	49	11
30	3.7	1.6	.20	.31	---	7.0	212	46	40	79	33	10
31	6.5	---	.20	.31	---	6.9	---	27	---	51	26	---
TOTAL	67.40	107.2	17.33	8.71	12.50	4873.52	1536.6	4289	8079	409.2	2999.4	740.3
MEAN	2.17	3.57	.56	.28	.45	157	51.2	138	269	13.2	96.8	24.7
MAX	6.5	10	1.5	.39	.60	1000	327	851	3330	79	586	73
MIN	.19	1.5	.15	.20	.33	.66	5.6	11	12	3.3	5.2	9.1
CFSM	.04	.07	.01	.01	.01	3.08	1.00	2.71	5.28	.26	1.90	.48
IN.	.05	.08	.01	.01	.01	3.55	1.12	3.13	5.89	.30	2.19	.54
CAL YR 1989	TOTAL 11884.06	MEAN 32.6	MAX 1750	MIN .15	CFSM .64	IN. 8.67						
WTR YR 1990	TOTAL 23140.16	MEAN 63.4	MAX 3330	MIN .15	CFSM 1.24	IN. 16.88						

CHIPPEWA RIVER BASIN

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05367500 RED CEDAR RIVER NEAR COLFAX, WI

LOCATION.--Lat 45°03'11", long 91°42'43", in SW 1/4 NW 1/4 sec.27, T.30 N., R.11 W., Dunn County, Hydrologic Unit 07050007, on right bank 15 ft downstream from town road, 3.5 mi north of Colfax.

DRAINAGE AREA.--1,100 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1914 to September 1980, October 1989 to September 1990 (discontinued). Monthly discharges only for January through March 1914, published in WSP 1308.

GAGE.--Water-stage recorder. Elevation of gage is 940 ft, from topographic map. Mar. 19, 1914 to September 1925, chain gage, and September 1925 to Sept. 9, 1937, water-stage recorder at present site, different datum. Sept. 10, 1937 to Sept. 30, 1961, water-stage recorder, 1 mi upstream at different datum. Oct. 1, 1961 to Sept. 30, 1980, nonrecording gage (peak-stage indicator) 1 mi upstream at different datum.

REMARKS.--Estimated daily discharges: Ice period listed in rating table below. Records good except for ice-affected period, which is fair.

AVERAGE DISCHARGE.--48 years (water years 1915-61, 1990), 754 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 22,800 ft³/s, Mar. 31, 1967, gage height, 9.08 ft, site and datum then in use; minimum discharge, 128 ft³/s, Mar. 13, 1954, gage height, 1.15 ft, site and datum then in use, result of freezeup.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 8,870 ft³/s, Mar. 13, gage height, 8.79 ft; minimum discharge, 284 ft³/s, Nov. 18, gage height, 1.68 ft.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Nov. 19 to Mar. 13.)

1.7	293	5.0	2,480
2.0	440	7.0	4,900
3.0	996	9.0	9,560
4.0	1,650		

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	457	613	560	430	460	520	710	1320	681	925	502	751
2	477	656	470	440	460	520	745	1290	789	813	468	710
3	484	689	450	440	470	540	720	993	1710	767	445	689
4	470	677	490	440	470	540	706	781	1900	738	434	686
5	478	720	540	450	470	540	651	662	1660	730	418	673
6	480	743	500	450	470	540	594	655	1710	694	393	642
7	511	751	450	460	470	560	594	694	1530	659	367	614
8	518	705	470	460	470	560	604	631	1250	802	371	589
9	511	673	490	450	470	580	608	689	1120	893	350	591
10	510	659	450	450	450	640	945	1120	988	939	340	611
11	531	642	490	440	440	800	679	1030	803	877	338	622
12	501	629	480	430	430	2400	583	669	1220	814	330	929
13	494	601	470	420	420	6200	523	612	1890	753	363	1980
14	495	582	470	440	410	6670	508	607	1580	683	367	1800
15	510	571	460	450	410	7440	473	934	973	608	390	1690
16	503	541	460	460	430	5400	479	767	913	660	367	1510
17	514	463	450	470	460	3740	492	1060	1090	704	361	1120
18	513	397	450	470	480	2980	479	1020	1150	661	1030	949
19	487	450	450	460	500	2230	470	795	1340	567	3180	964
20	477	540	440	440	520	2070	470	1370	1010	526	3560	919
21	480	480	440	440	540	1980	479	1350	891	514	1880	877
22	483	440	440	450	540	1350	482	1280	753	503	1280	835
23	491	410	440	460	500	1060	484	1240	774	505	824	784
24	496	430	440	470	490	1020	589	1190	1070	489	729	763
25	489	470	430	480	480	993	1030	897	754	484	689	746
26	489	560	420	470	490	971	840	861	1140	500	1100	763
27	507	540	420	460	520	903	800	875	1490	534	1590	738
28	510	470	420	470	520	876	1330	865	1820	585	1590	697
29	528	450	420	480	---	862	1400	758	1620	613	1090	683
30	554	520	420	490	---	853	1080	1070	1160	567	843	670
31	612	---	430	470	---	755	---	998	---	529	778	---
TOTAL	15560	17072	14210	14090	13240	57093	20547	29083	36779	20636	26767	26595
MEAN	502	569	458	455	473	1842	685	938	1226	666	863	886
MAX	612	751	560	490	540	7440	1400	1370	1900	939	3560	1980
MIN	457	397	420	420	410	520	470	607	681	484	330	589

WTR YR 1990 TOTAL 291672 MEAN 799 MAX 7440 MIN 330

CHIPPEWA RIVER BASIN

05367500 RED CEDAR RIVER NEAR COLFAX, WI--CONTINUED

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1989 to September 1990 (discontinued).

PERIOD OF DAILY RECORD.--

SUSPENDED-SEDIMENT DISCHARGE: October 1989 to September 1990 (discontinued).

TOTAL-PHOSPHORUS DISCHARGE: October 1989 to September 1990 (discontinued).

INSTRUMENTATION.--Hand operated D-49 sampler at fixed location.

REMARKS.--Records good except for the period of ice effect, Nov. 19 to Mar. 13, which is fair. Samples are single vertical samples unless otherwise indicated. Chemical analyses by Wisconsin State Laboratory of Hygiene.

COOPERATION.--Wisconsin Department of Natural Resources.

EXTREMES FOR CURRENT YEAR.--

SUSPENDED-SEDIMENT CONCENTRATIONS: Maximum observed, 136 mg/L, Mar. 12; minimum observed, less than 2 mg/L, Dec. 18.

SUSPENDED-SEDIMENT DISCHARGE: Maximum daily, 2,110 tons, Mar. 15; minimum daily, 3.34 tons, Dec. 18.

TOTAL-PHOSPHORUS CONCENTRATIONS: Maximum observed, 2.13 mg/L, Mar. 12; minimum observed, 0.07 mg/L, Oct. 23, and Nov. 13.

TOTAL-PHOSPHORUS DISCHARGE: Maximum daily, 48,900 lb, Mar. 13; minimum daily, 192 lb, Oct. 22.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)	OXYGEN, DIS- SOLVED (MG/L) (00300)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDE (MG/L) (00530)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4) (00660)
OCT 1989										
02...	1105	--	475	--	14.5	--	5	0.080	--	--
*02...	1106	--	475	--	14.0	--	5	0.090	--	--
09...	0945	--	514	--	6.5	10.0	4	0.080	--	--
16...	1000	--	500	--	9.5	8.1	10	0.090	--	--
23...	0915	--	487	--	7.0	9.7	6	0.070	--	--
30...	0915	--	545	--	10.5	8.0	11	0.120	--	--
NOV										
06...	1030	--	750	--	5.0	10.0	7	0.110	--	--
13...	0920	--	607	--	2.0	12.8	4	0.070	--	--
13...	1355	--	597	198	4.5	4.5	3	0.090	--	--
*13...	1410	--	597	198	4.5	--	4	0.070	--	--
21...	0930	480	--	--	0.0	13.2	6	0.170	--	--
27...	0845	540	--	--	0.0	12.2	8	0.180	--	--
DEC										
04...	1130	490	--	--	0.0	13.2	10	0.110	--	--
11...	1430	490	--	--	0.0	12.4	4	0.090	--	--
18...	1000	450	--	--	0.0	10.2	<2	0.172	--	--
27...	1510	420	--	--	0.0	9.0	23	0.220	--	--
28...	1100	420	--	221	0.0	--	12	0.140	--	--
*28...	1101	420	--	221	0.0	--	19	0.170	--	--
JAN 1990										
02...	1300	440	--	--	--	--	8	0.130	--	--
08...	1315	460	--	--	0.5	10.0	6	0.110	--	--
16...	0950	460	--	--	0.5	11.0	4	0.100	--	--
22...	1010	450	--	--	0.5	10.8	4	0.110	--	--
25...	0915	--	480	210	0.5	--	--	--	--	--
29...	0945	480	--	--	0.5	10.5	4	0.100	0.071	0.22
FEB										
05...	0950	470	--	--	0.0	10.4	4	0.100	0.071	0.22
12...	1030	430	--	--	0.5	11.0	4	0.110	0.030	0.09
19...	0940	500	--	--	0.0	10.0	4	0.100	--	--
26...	0945	490	--	--	0.0	10.2	4	0.110	--	--
MAR										
05...	1310	540	--	--	0.0	10.8	8	0.140	--	--
08...	1455	560	--	--	0.0	11.2	4	0.150	--	--
09...	1710	580	--	--	0.0	--	6	0.150	--	--
10...	1125	640	--	--	0.5	--	10	0.280	--	--
11...	0850	800	--	--	0.0	10.3	68	1.83	--	--
12...	0930	2400	--	--	0.0	10.3	68	2.12	--	--
12...	1245	2400	--	254	1.5	--	128	2.13	--	--
*12...	1310	2400	--	254	1.5	--	136	2.11	--	--
13...	1540	6200	--	--	2.5	11.8	42	1.32	--	--
14...	0910	--	6570	170	1.5	1.5	76	1.11	--	--
14...	1000	--	6760	170	1.5	1.5	110	1.10	--	--
16...	1445	--	5230	--	1.0	--	15	0.380	--	--
16...	1515	--	5190	180	1.0	--	20	0.380	--	--
19...	0930	--	2280	--	0.5	11.2	7	0.220	--	--
26...	0915	--	977	--	2.0	--	4	0.140	--	--
APR										
02...	1550	--	748	--	4.0	--	3	0.120	--	--
09...	0955	--	597	--	9.0	--	6	0.110	--	--
16...	0930	--	470	--	8.0	--	5	0.110	--	--
23...	0955	--	485	--	15.0	--	6	0.101	--	--
*25...	1350	--	1150	155	19.0	19.0	29	0.164	--	--
25...	1410	--	1160	--	--	19.0	25	0.172	--	--

05367500 RED CEDAR RIVER NEAR COLFAX, WI--CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)	OXYGEN, DIS- SOLVED (MG/L) (00300)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDE (MG/L) (00530)	PHOS- PHORUS TOTAL (MG/L) AS P) (00665)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L) AS P) (00671)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L) AS PO4) (00660)
MAY 1990									
01...	0915	1320	--	9.5	--	12	0.110	--	--
03...	0930	996	--	11.5	--	6	0.100	--	--
04...	0930	810	--	12.5	--	6	0.103	--	--
07...	0945	699	--	16.0	--	5	0.111	--	--
10...	0950	1160	--	9.5	--	15	0.159	--	--
11...	1200	1060	--	12.0	--	9	<0.200	--	--
12...	1415	648	--	--	--	6	0.110	--	--
14...	1150	605	--	14.0	9.1	6	0.110	--	--
21...	1130	1350	--	12.5	11.0	20	0.190	--	--
22...	1015	1290	--	13.0	10.3	18	0.140	--	--
23...	1150	1230	--	16.0	10.4	14	0.140	--	--
24...	1300	1220	--	16.5	9.9	16	0.120	--	--
25...	0930	891	--	16.0	8.2	10	0.110	--	--
29...	1035	694	--	16.0	7.4	10	0.110	--	--
JUN									
04...	0950	1990	--	13.0	8.6	31	0.230	--	--
05...	1730	1620	--	16.5	9.4	17	0.180	--	--
06...	1500	1720	--	16.5	--	19	0.180	--	--
07...	1030	1570	--	17.0	8.7	22	0.140	--	--
08...	1310	1210	--	18.0	9.8	16	0.150	--	--
11...	1105	753	--	19.5	8.3	9	0.130	--	--
12...	1415	1250	--	18.0	9.3	23	0.220	--	--
13...	1340	1780	--	20.5	7.5	45	0.330	--	--
14...	1045	1620	--	22.0	7.1	23	0.290	--	--
14...	1320	1540	125	22.0	--	26	0.270	--	--
*14...	1340	1540	125	22.0	--	22	0.270	--	--
18...	1045	1150	--	20.0	8.3	15	0.210	--	--
19...	1625	1360	--	20.0	8.9	19	0.200	--	--
20...	1405	1000	--	21.0	10.2	13	0.200	--	--
25...	1025	748	--	21.0	9.3	12	0.170	--	--
26...	1055	1200	--	22.0	7.3	60	0.340	--	--
27...	1105	1580	--	23.0	6.7	40	0.300	--	--
28...	1115	1960	--	20.5	6.7	60	0.370	--	--
29...	0930	1650	--	21.5	7.1	32	0.280	--	--
JUL									
02...	0950	818	--	22.5	7.0	14	0.240	--	--
09...	1420	889	--	23.0	8.6	10	0.200	--	--
16...	0935	657	--	20.0	8.0	8	0.140	--	--
23...	0930	508	--	20.0	8.2	6	0.150	--	--
30...	1300	571	--	23.0	8.8	4	0.170	--	--
AUG									
06...	1105	400	--	19.0	8.8	6	0.150	--	--
13...	1020	365	--	18.0	8.8	5	0.120	--	--
20...	1300	3730	--	16.0	6.6	16	0.330	--	--
21...	1035	1900	--	18.0	7.4	14	0.280	--	--
22...	1055	1300	--	19.5	8.7	14	0.260	--	--
22...	1155	1290	130	21.0	--	--	--	--	--
22...	1230	1280	130	21.0	--	20	0.240	--	--
*22...	1240	1280	130	21.0	--	17	0.250	--	--
23...	1330	789	--	20.0	8.2	8	0.220	0.154	0.47
24...	1305	724	--	21.0	8.8	6	0.200	--	--
27...	1035	1620	--	20.0	7.1	20	0.300	--	--
28...	1045	1610	--	20.0	7.1	16	0.280	--	--
29...	0800	1130	--	18.0	6.6	12	0.230	--	--
30...	1250	832	--	20.0	8.4	8	0.240	--	--
SEP									
04...	1100	685	--	18.0	8.5	6	0.180	--	--
10...	0830	612	--	16.0	8.8	6	0.160	--	--
12...	1325	743	--	19.0	10.3	8	0.150	--	--
13...	1025	2240	--	19.0	7.5	39	0.220	--	--
14...	1005	1810	--	18.0	7.3	22	0.190	--	--
17...	0945	1150	--	13.5	9.7	10	0.140	--	--
24...	1500	759	--	12.0	10.8	8	0.130	--	--
*25...	1320	748	170	17.0	--	11	0.140	--	--

* EQUAL-WIDTH INCREMENT (EWI) SAMPLES.

DATE	TIME	DIS-CHARGE INST. CUBIC FEET PER SECOND (00061)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)
JUN 1990					
07...	1030	1570	0.400	<0.020	0.70

05367500 RED CEDAR RIVER NEAR COLFAX. WI--CONTINUED

SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED(TONS PER DAY), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

[illegible]

PHOSPHORUS TOTAL, POUNDS PER DAY, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

[illegible]

05368000 HAY RIVER AT WHEELER, WI

LOCATION.--Lat. 45°02'52", long 91°54'39", in SW 1/4 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 mi².

WATER-DISCHARGE RECORDS

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 National Geodetic Vertical Datum of 1929. Prior to Mar. 25, 1951, nonrecording gage.

REMARKS.--Estimated daily discharges: Ice period listed in rating table below. Records good except those for ice-affected period, which is fair.

AVERAGE DISCHARGE.--40 years, 309 ft³/s, 10.04 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,600 ft³/s, Mar. 31, 1967, gage height, 15.04 ft, from rating curve extended above 9,000 ft³/s; minimum, 55 ft³/s, Mar. 13, 1954, gage height, 2.32 ft, result of freezeup.

EXTREMES OUTSIDE OF PERIOD OF RECORD.--Maximum stage since 1915, 16.6 ft April 1934, from floodmarks.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,500 ft³/s and maximum (*):

DATE	TIME	DISCHARGE (ft ³ /s)	GAGE HEIGHT (ft)	DATE	TIME	DISCHARGE (ft ³ /s)	GAGE HEIGHT (ft)
Mar. 14	1900	*5,960	*12.68	Aug. 27	1200	1,520	7.51
Aug. 20	0700	3,180	10.30				

Minimum daily discharge, 130 ft³/s, Dec. 20-22, result of freezeup.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Shifting-control method used Mar. 12-19, Apr. 29 to May 1, May 20, 21, June 3-6, 12-15, 17-19, Aug. 19-21, 27, 28; stage-discharge relation affected ice Nov. 16 to Mar. 9.)

2.5	120	7.0	1,400
2.7	151	9.0	2,560
3.0	202	11.0	4,480
4.0	410	12.0	6,100
5.0	690		

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DAY	MEAN VALUES											
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	170	189	170	150	180	170	259	602	259	336	256	390
2	170	185	160	150	180	170	266	477	256	323	230	375
3	170	182	150	160	180	170	260	411	543	313	220	361
4	169	183	160	160	190	160	253	371	1290	302	214	355
5	170	199	170	160	190	160	250	344	1020	290	206	335
6	173	218	160	150	200	160	243	321	622	281	200	318
7	173	209	160	150	200	160	238	302	504	279	196	304
8	171	202	160	160	190	160	233	284	444	308	194	295
9	170	197	170	170	180	170	231	289	401	353	191	285
10	175	196	160	170	170	225	231	372	369	300	187	277
11	179	197	160	170	170	718	228	346	365	273	185	270
12	176	195	150	160	170	2100	225	302	565	264	184	260
13	174	192	150	160	160	4030	222	281	751	247	182	254
14	172	191	140	170	150	4500	220	291	746	231	181	276
15	172	191	140	180	140	4240	222	335	526	231	183	282
16	173	180	140	180	140	2560	223	358	465	229	181	256
17	172	170	140	180	140	1160	226	385	546	229	177	247
18	172	180	140	180	140	725	222	328	717	236	322	255
19	170	190	140	180	140	549	217	321	561	228	1480	266
20	173	180	130	170	150	489	218	634	496	224	2590	241
21	174	180	130	170	160	438	218	746	457	218	968	253
22	173	170	130	170	160	404	219	469	416	211	630	253
23	172	160	140	170	150	367	222	401	396	206	523	239
24	172	170	140	170	150	336	277	368	377	204	439	233
25	172	180	140	170	150	319	309	340	356	206	398	230
26	173	190	140	170	150	303	332	324	356	237	572	227
27	174	180	140	170	160	294	335	323	386	253	1330	220
28	174	160	150	170	160	287	507	327	408	285	819	212
29	176	170	150	170	---	278	871	312	481	345	535	207
30	181	170	150	170	---	267	757	290	351	461	460	204
31	187	---	150	170	---	264	---	269	---	340	415	---
TOTAL	5372	5556	4610	5180	4600	26333	8734	11523	15430	8443	14848	8180
MEAN	173	185	149	167	164	849	291	372	514	272	479	273
MAX	187	218	170	180	200	4500	871	746	1290	461	2590	390
MIN	169	160	130	150	140	160	217	269	256	204	177	204
CFSM	.41	.44	.36	.40	.39	2.03	.70	.89	1.23	.65	1.15	.65
IN.	.48	.49	.41	.46	.41	2.34	.78	1.03	1.37	.75	1.32	.73
CAL YR 1989	TOTAL 104386	MEAN 286	MAX 7640	MIN 130	CFSM .68	IN. 9.29						
WTR YR 1990	TOTAL 118809	MEAN 326	MAX 4500	MIN 130	CFSM .78	IN. 10.57						

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1989 to September 1990 (discontinued).

PERIOD OF DAILY RECORD.--

SUSPENDED-SEDIMENT DISCHARGE: October 1989 to September 1990 (discontinued).

TOTAL-PHOSPHORUS DISCHARGE: October 1989 to September 1990 (discontinued).

INSTRUMENTATION.--Hand operated D-49 sampler at fixed location.

REMARKS.--Records good except for period of ice effect, Nov. 16 to Mar. 9, which is fair. Samples are single vertical samples unless otherwise indicated. Chemical analyses by Wisconsin State Laboratory of Hygiene.

COOPERATION.--Wisconsin Department of Natural Resources.

EXTREMES FOR CURRENT YEAR.--

SUSPENDED-SEDIMENT CONCENTRATIONS: Maximum observed, 292 mg/L, Mar. 12; minimum observed, less than 2 mg/L, Dec. 18.

SUSPENDED-SEDIMENT DISCHARGE: Maximum daily, 2,350 tons, Mar. 14; minimum daily, 0.70 ton, Dec. 20-22.

TOTAL-PHOSPHORUS CONCENTRATIONS: Maximum observed, 1.82 mg/L, Mar. 12; minimum observed, 0.04 mg/L, Oct. 9, 16, 23, Nov. 13, and Dec. 11, 18, 27.

TOTAL-PHOSPHORUS DISCHARGE: Maximum daily, 33,700 lb, Mar. 14; minimum daily, 28.6 lb, Dec. 20-22.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)	OXYGEN, DIS- SOLVED (MG/L) (00300)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDE (MG/L) (00530)	PHOS- PHORUS TOTAL (MG/L) AS P (00665)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L) AS P (00671)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L) AS PO4 (00660)
OCT 1989										
02...	1205	--	172	--	--	--	6	0.060	--	--
*02...	1219	--	172	--	12.5	--	5	0.060	--	--
09...	1030	--	170	--	5.5	11.0	2	0.040	--	--
16...	1030	--	174	--	9.0	9.7	5	0.040	--	--
23...	1000	--	172	--	6.0	10.9	6	0.040	--	--
30...	1000	--	179	--	9.5	9.8	6	0.050	--	--
NOV										
06...	0945	--	220	--	4.5	11.8	4	0.050	--	--
13...	1000	--	193	--	2.5	12.8	4	0.040	--	--
*13...	1045	--	192	396	3.0	3.0	4	0.050	--	--
13...	1050	--	191	396	3.0	3.0	8	0.040	--	--
21...	1030	180	--	--	0.5	13.0	4	0.070	--	--
27...	0930	180	--	--	0.5	12.3	6	0.080	--	--
DEC										
04...	1030	160	--	--	0.0	13.4	4	0.060	--	--
11...	1500	160	--	--	0.0	12.4	4	0.040	--	--
18...	1030	140	--	--	0.0	10.6	<2	0.040	--	--
27...	1540	140	--	--	0.0	9.3	2	0.040	--	--
*28...	1300	150	--	398	0.0	--	4	0.050	--	--
28...	1301	150	--	398	0.0	--	4	0.050	--	--
JAN 1990										
02...	1330	150	--	--	--	--	4	0.050	--	--
08...	1345	160	--	--	--	--	3	0.050	--	--
16...	1015	180	--	--	0.0	12.2	4	0.110	--	--
22...	1040	170	--	--	0.5	12.4	5	0.060	--	--
*24...	1350	170	--	405	0.5	--	8	0.060	--	--
24...	1400	170	--	405	0.5	--	8	0.050	--	--
29...	1015	170	--	--	0.0	12.2	4	0.050	0.028	0.09
FEB										
05...	1020	190	--	--	0.0	9.9	4	0.050	0.028	0.09
12...	1120	170	--	--	1.0	12.6	8	0.070	0.074	0.23
19...	1050	140	--	--	0.0	12.1	2	0.050	--	--
26...	1040	150	--	--	0.0	12.0	2	0.050	--	--
MAR										
05...	1350	160	--	--	1.0	11.3	8	0.310	--	--
08...	1545	160	--	--	1.5	11.9	4	0.120	--	--
09...	1755	170	--	--	2.5	11.2	8	0.210	--	--
10...	1200	--	219	--	3.0	10.8	16	0.300	--	--
11...	0930	--	589	--	0.5	10.7	174	1.79	--	--
12...	1025	--	1800	--	0.5	10.8	124	1.82	--	--
12...	1430	--	2290	--	1.5	--	112	1.75	--	--
*12...	1500	--	2330	218	1.5	--	292	1.79	--	--
13...	1640	--	4220	--	1.5	10.4	36	1.17	--	--
*14...	1135	--	3610	180	1.5	--	124	1.01	--	--
14...	1150	--	3660	180	1.5	--	126	1.00	--	--
16...	1300	--	2460	--	2.0	--	41	0.520	--	--
*16...	1320	--	2440	198	2.0	--	70	0.560	--	--
19...	1015	--	547	--	0.5	10.6	13	0.260	--	--
26...	1025	--	303	--	2.5	--	8	0.120	--	--
APR										
02...	0315	--	262	--	5.0	--	5	0.090	--	--
09...	1100	--	231	--	8.0	--	5	0.060	--	--
16...	1015	--	222	--	8.0	11.4	4	0.060	--	--
23...	1045	--	220	--	14.5	10.0	7	0.060	--	--
*25...	0900	--	306	374	16.0	--	17	0.095	--	--
25...	0930	--	306	--	--	16.0	16	0.091	--	--

CHIPPEWA RIVER BASIN

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05368000 HAY RIVER AT WHEELER, WI--CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)	OXYGEN, DIS- SOLVED (MG/L) (00300)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDE (MG/L) (00530)	PHOS- PHORUS TOTAL (MG/L) AS P (00665)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L) AS P (00671)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L) AS PO4 (00660)
MAY 1990									
01...	0945	622	--	8.0	9.7	33	0.206	--	--
03...	1000	415	--	10.0	--	14	0.142	--	--
04...	1000	373	--	11.0	--	16	0.128	--	--
07...	1015	304	--	14.0	--	12	0.111	--	--
10...	1025	380	--	9.0	--	16	0.218	--	--
11...	1245	344	--	11.0	11.0	10	0.112	--	--
14...	1225	288	--	12.5	9.1	8	0.090	--	--
21...	1200	803	--	11.0	8.8	55	0.230	--	--
22...	1100	467	--	11.0	9.7	21	0.170	--	--
29...	1115	311	--	16.0	8.0	9	0.100	--	--
JUN									
04...	1035	1300	--	11.5	8.4	108	0.400	--	--
05...	1710	820	--	14.5	8.9	40	0.260	--	--
06...	1535	599	--	14.5	9.8	32	0.200	--	--
07...	1105	506	--	14.0	8.3	28	0.170	--	--
08...	1335	438	--	15.5	9.1	18	0.160	--	--
11...	1140	348	--	16.0	9.1	14	0.140	--	--
12...	1500	603	--	17.0	8.9	101	0.330	--	--
13...	1420	773	--	20.0	7.8	76	0.330	--	--
*14...	1000	778	150	--	20.0	69	0.240	--	--
14...	1020	778	150	--	20.0	66	0.250	--	--
14...	1130	778	--	21.0	7.0	46	0.230	--	--
15...	1555	488	--	19.0	8.0	26	0.170	--	--
18...	1130	733	--	19.0	7.9	77	0.320	--	--
19...	1555	525	--	18.0	8.2	32	0.220	--	--
20...	1314	495	--	18.0	8.9	27	0.200	--	--
25...	1100	357	--	18.0	9.2	16	0.140	--	--
29...	1020	488	--	19.0	7.9	52	0.280	--	--
JUL									
02...	1022	325	--	19.0	8.2	24	0.170	--	--
09...	1500	357	--	20.0	8.5	24	0.170	--	--
16...	1010	229	--	17.0	9.2	8	0.090	--	--
23...	1000	207	--	17.0	8.9	12	0.080	--	--
30...	1315	469	--	21.0	7.4	59	0.220	--	--
31...	0950	345	--	18.0	7.9	30	0.160	--	--
AUG									
06...	1140	200	--	16.0	8.9	11	0.100	--	--
13...	1055	182	--	15.0	9.3	9	0.090	--	--
20...	1340	2760	--	15.5	6.6	29	0.340	--	--
21...	1110	935	--	17.0	7.4	35	0.300	--	--
22...	1020	629	240	18.0	--	34	0.248	--	--
*22...	1030	629	240	18.0	--	35	0.252	--	--
22...	1130	627	--	17.0	8.4	23	0.241	--	--
23...	1400	511	--	17.0	7.7	21	0.200	0.130	0.40
24...	1335	432	--	18.0	8.2	22	0.179	--	--
27...	1115	1510	--	19.0	6.7	64	0.398	--	--
28...	1120	808	--	18.0	6.9	37	0.321	--	--
29...	0830	550	--	16.0	7.1	26	0.271	--	--
30...	1330	458	--	16.0	8.0	23	0.265	--	--
SEP									
04...	1120	358	--	16.0	8.6	16	0.157	--	--
10...	0900	279	--	14.0	9.4	14	0.108	--	--
17...	1008	246	--	11.0	10.9	6	0.083	--	--
24...	1528	233	--	11.0	11.6	4	0.062	--	--
*25...	1015	228	335	12.5	--	8	0.069	--	--
25...	1045	230	335	12.5	--	4	0.065	--	--

* EQUAL-WIDTH INCREMENT (EWI) SAMPLE.

DATE	TIME	DIS-CHARGE INST. CUBIC FEET PER SECOND (00061)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L) AS N (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L) AS N (00608)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L) AS NH4 (71846)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L) AS N (00625)
JUN 1990						
07...	1105	506	0.940	0.050	0.06	0.90

CHIPPEWA RIVER BASIN

05368000 HAY RIVER AT WHEELER, WI--CONTINUED

SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED(TONS PER DAY), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.75	2.72	2.18	1.62	1.94	1.67	4.03	51.6	4.66	16.2	17.4	21.0
2	2.50	2.51	1.93	1.61	1.94	2.03	3.96	27.1	4.95	20.0	13.2	18.7
3	2.01	2.33	1.71	1.65	1.94	2.46	3.86	16.5	47.1	18.3	10.7	16.8
4	1.75	2.21	1.74	1.58	2.05	2.82	3.76	15.6	346	16.1	8.82	15.4
5	1.55	2.26	1.84	1.50	2.09	3.28	3.71	13.4	168	14.1	7.23	14.1
6	1.38	2.37	1.73	1.34	2.40	2.83	3.61	11.4	56.3	12.4	6.04	13.1
7	1.21	2.26	1.73	1.28	2.65	2.26	3.53	9.65	36.9	12.2	5.65	12.3
8	1.05	2.19	1.73	1.31	2.78	1.89	3.47	7.90	23.0	18.5	5.44	11.6
9	.95	2.13	1.84	1.42	2.91	3.28	3.41	7.91	18.0	24.8	5.19	11.0
10	1.09	2.12	1.73	1.48	3.03	15.3	3.32	16.3	15.2	16.9	4.96	10.2
11	1.27	2.13	1.72	1.53	3.34	332	3.18	10.4	18.6	13.1	4.76	8.91
12	1.42	2.10	1.48	1.50	3.54	1210	3.03	6.75	118	10.8	4.60	7.63
13	1.60	3.16	1.34	1.55	2.83	905	2.90	5.13	161	8.57	4.43	6.59
14	1.80	3.77	1.13	1.71	2.18	2350	2.78	6.13	110	6.82	4.28	6.34
15	2.06	3.46	1.02	1.88	1.67	2080	2.71	10.5	41.0	5.81	4.22	5.76
16	2.31	2.99	.92	1.95	1.37	570	2.69	16.3	30.6	5.06	4.07	4.64
17	2.39	2.59	.83	2.02	1.12	149	2.92	20.5	64.7	5.26	3.89	4.01
18	2.45	2.51	.76	2.10	.92	58.9	3.11	12.5	127	5.74	9.66	3.89
19	2.49	2.43	.76	2.18	.77	29.8	3.30	10.9	58.2	5.89	78.3	3.83
20	2.60	2.11	.70	2.14	.81	22.8	3.58	55.6	36.9	6.14	202	3.29
21	2.68	1.98	.70	2.22	.86	18.3	3.89	102	30.1	6.31	88.6	3.26
22	2.74	1.97	.70	2.37	.86	15.0	4.22	29.7	24.6	6.47	47.9	3.08
23	2.79	1.99	.76	2.91	.81	12.2	4.89	20.1	21.1	6.60	30.2	2.75
24	2.79	2.26	.76	3.50	.81	9.96	9.00	16.3	18.1	6.32	25.4	2.70
25	2.79	2.56	.76	3.23	.81	8.45	14.2	13.4	15.6	6.37	19.6	3.22
26	2.80	2.90	.76	2.80	.84	7.20	16.3	11.3	16.0	9.18	42.0	2.45
27	2.81	2.87	.80	2.43	1.07	6.49	17.1	9.95	18.0	12.7	194	2.38
28	2.82	2.43	1.47	2.10	1.29	5.90	37.0	8.95	23.1	18.5	85.2	2.29
29	2.86	2.44	1.62	1.86	---	5.32	98.2	7.60	59.0	33.3	37.9	2.24
30	2.90	2.30	1.62	1.84	---	4.77	87.8	6.37	18.7	67.6	28.8	2.21
31	2.85	---	1.62	1.84	---	4.40	---	5.36	---	29.2	24.1	---
TOTAL	67.46	74.05	40.39	60.45	49.63	7843.31	359.46	563.10	1730.41	445.24	1028.54	225.67

WTR YR 1990 TOTAL 12487.71

PHOSPHORUS TOTAL, POUNDS PER DAY, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	56.1	52.1	63.4	41.3	49.6	103	132	692	132	315	208	463
2	55.4	51.1	57.2	41.3	49.6	133	129	444	136	298	172	400
3	52.0	50.3	51.5	44.1	49.6	172	119	322	618	261	153	347
4	48.9	50.5	52.6	44.1	52.3	209	110	262	2520	227	137	308
5	46.8	54.7	52.9	44.1	52.7	255	103	231	1610	196	123	271
6	44.8	59.7	47.1	41.3	58.0	208	94.8	205	724	170	111	242
7	42.4	55.7	44.5	41.3	60.8	153	87.5	184	480	162	106	217
8	39.7	52.2	42.1	44.1	60.6	117	81.4	164	393	223	104	198
9	37.7	49.2	42.2	46.8	60.2	176	76.7	186	339	314	100	179
10	38.5	47.4	37.6	46.8	59.7	515	76.3	380	298	259	97.2	164
11	39.5	46.1	35.6	46.8	62.6	6640	75.5	234	317	215	94.6	154
12	38.9	44.1	33.0	44.1	64.8	20500	74.4	174	914	189	92.6	143
13	38.4	43.0	33.0	44.1	58.7	32700	73.4	150	1320	161	90.5	134
14	37.9	45.3	30.8	56.4	52.5	33700	72.6	152	965	137	89.5	141
15	37.9	48.6	30.8	82.1	46.7	25900	73.3	239	531	125	90.6	138
16	38.0	49.1	30.8	106	44.5	8340	73.7	371	527	114	89.5	121
17	37.9	49.8	30.8	109	42.4	2800	74.7	395	778	111	87.9	113
18	37.8	56.5	30.8	109	40.4	1340	73.2	244	1180	113	225	112
19	37.5	64.0	30.8	109	38.7	795	71.9	220	731	107	1870	112
20	38.1	65.0	28.6	90.9	41.3	623	71.9	906	551	104	4740	97.5
21	38.3	69.2	28.6	71.3	44.1	500	72.2	955	470	99.1	1600	98.2
22	38.2	67.1	28.6	57.5	44.1	413	72.3	451	398	94.3	847	94.3
23	38.2	64.6	30.8	55.6	41.3	336	75.9	347	352	91.0	589	85.3
24	39.2	70.2	30.8	51.7	41.3	275	117	295	312	89.9	438	80.7
25	40.5	76.0	30.8	46.8	41.3	234	163	253	284	93.4	367	82.9
26	42.0	82.1	30.8	46.8	43.1	201	234	224	330	128	708	80.0
27	43.6	78.6	31.3	46.8	58.2	186	322	206	426	167	2650	76.6
28	45.0	67.4	39.6	46.8	75.2	174	698	194	536	230	1460	72.7
29	47.2	68.8	41.3	46.8	---	161	1670	173	689	341	807	70.0
30	49.7	66.0	41.3	46.8	---	148	1310	156	371	523	666	68.0
31	51.6	---	41.3	46.8	---	140	---	141	---	307	549	---
TOTAL	1317.7	1744.4	1181.3	1796.3	1434.3	138147	6478.7	9550	19232	5964.7	19462.4	4863.2

WTR YR 1990 TOTAL 211172.0

CHIPPEWA RIVER BASIN

273

05369000 RED CEDAR RIVER AT MENOMONIE, WI

LOCATION.--Lat 44°53'02", long 91°55'57", in NW 1/4 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 mi².

PERIOD OF RECORD.--June 1907 to September 1908, May 1913 to current year. Monthly discharge only for some periods, published in WSP 1308.

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

GAGE.--Water-stage recorder. Datum of gage is 780 ft above National Geodetic Vertical Datum 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.--Estimated daily discharges: July 10 to Aug. 9. Records good except those for estimated daily discharges, which are fair. Flow regulated by powerplants at Menomonie and Cedar Falls.

AVERAGE DISCHARGE.--78 years, 1,276 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 40,000 ft³/s, Apr. 4, 1934, gage height, 16.0 ft, from floodmarks, from rating curve extended above 27,000 ft³/s on basis of computed flow over Cedar Falls Dam 6 mi upstream; minimum, less than 10 ft³/s, July 3, 1985, gage height, 0.46 ft, result of temporary power-plant shutdown at request of Dunn County Sheriff's Department.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 15,500 ft³/s, Mar. 15, gage height, 7.87 ft; minimum, 457 ft³/s, Oct. 27, gage height, 1.45 ft, but may have been less during period of estimated daily discharges; minimum daily, 560 ft³/s, Aug. 5.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).

1.5	500	3.0	2,350
2.0	987	4.0	4,220
2.5	1,600	6.0	9,400
		8.0	15,900

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	784	965	873	781	857	775	717	2010	1150	1600	740	634
2	856	989	997	834	793	1040	604	2060	1200	1200	700	644
3	790	1330	840	882	882	885	607	1600	2470	1250	740	620
4	782	957	674	858	720	922	1130	1510	3290	1230	720	834
5	818	1060	1010	830	802	908	1090	1200	3470	1270	560	1130
6	809	1240	825	804	849	807	1000	1140	2440	1190	666	1070
7	860	1240	685	773	781	927	1040	1210	2480	1180	580	1100
8	876	1100	719	876	864	870	1020	1170	2040	1400	580	1030
9	872	1030	782	916	900	937	1070	1410	1650	1440	600	1070
10	879	986	849	831	839	1120	1150	1660	1610	1440	934	1030
11	854	1060	829	848	836	2260	1220	1610	1800	1140	623	1080
12	767	955	801	850	757	4270	956	1370	2130	940	615	1300
13	848	1040	765	807	875	8760	973	1080	5050	970	842	1920
14	829	989	677	672	726	12000	877	1250	3540	984	709	2130
15	829	963	685	930	739	14100	996	1530	1950	840	839	2090
16	930	904	682	760	869	10800	975	1490	1760	860	684	1760
17	816	748	736	862	666	7280	880	1610	2050	900	778	1550
18	872	691	788	824	667	5140	889	1590	2260	875	1380	1220
19	788	773	781	826	800	3830	944	1710	2170	940	2950	1350
20	834	1010	754	819	779	2960	953	2010	1950	740	5900	1390
21	846	1160	635	828	835	2770	858	2390	1640	800	5080	1260
22	790	960	630	842	829	2470	905	2210	1400	740	3240	1260
23	838	658	627	975	882	1950	954	1800	1410	600	2250	1320
24	862	633	664	727	787	1600	1190	1840	1550	801	1660	1040
25	911	794	750	876	675	1550	1400	1530	1330	580	1460	1190
26	810	940	733	756	748	1570	1620	1370	1570	700	1630	1170
27	811	1150	712	825	857	1330	1370	1410	1830	800	2050	1110
28	941	875	731	794	795	1390	1770	1410	2380	990	2780	1040
29	857	774	797	895	---	1340	2320	1250	2420	970	2530	1080
30	998	697	772	802	---	1040	2320	1470	1880	920	1820	1070
31	956	---	810	752	---	610	---	1500	---	1220	1240	---
TOTAL	26313	28671	23613	25655	22409	98211	33798	48400	63870	31510	47880	36492
MEAN	849	956	762	828	800	3168	1127	1561	2129	1016	1545	1216
MAX	998	1330	1010	975	900	14100	2320	2390	5050	1600	5900	2130
MIN	767	633	627	672	666	610	604	1080	1150	580	560	620

CAL YR 1989 TOTAL 451021 MEAN 1236 MAX 15500 MIN 601
WTR YR 1990 TOTAL 486822 MEAN 1334 MAX 14100 MIN 560

CHIPPEWA RIVER BASIN

05369500 CHIPPEWA RIVER AT DURAND, WI
(NATIONAL STREAM-QUALITY ACCOUNTING NETWORK STATION)
(NATIONAL RADIOCHEMICAL SURVEILLANCE NETWORK STATION)

LOCATION.--Lat 44°37'40", long 91°58'10", in SW 1/4 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 mi².

WATER-DISCHARGE RECORDS

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.

GAGE.--Water-stage recorder. Datum of gage is 694.59 ft above National Geodetic Vertical Datum of 1929. Prior to Dec. 9, 1930, nonrecording gage at bridge 400 ft downstream at same datum.

REMARKS.--Estimated daily discharges: Ice periods listed in rating table below. Records good except those for ice-affected periods, which are fair. 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.

AVERAGE DISCHARGE.--62 years, 7,605 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 123,000 ft³/s, Apr. 2, 1967, gage height, 16.93 ft; minimum observed, 1,020 ft³/s, Nov. 24, 1950, gage height, 0.12 ft.

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.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 45,200 ft³/s, Mar. 16, gage height, 12.02 ft; minimum, 1,840 ft³/s, Oct. 18, gage height, 0.50 ft.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Nov. 17-19, and Nov. 23 to Mar. 11.)

0.5	1,840	6.0	15,100
1.0	2,650	8.0	22,400
2.0	4,360	10.0	31,800
4.0	9,150	12.0	45,000

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2230	3420	2000	2900	3000	2600	4040	16900	7420	6630	5820	6010
2	2080	3080	2100	2800	3300	2600	4250	16000	6030	5940	5810	4340
3	2160	3190	3600	4000	2400	2600	4900	12200	6150	7070	3890	4720
4	2400	3940	2600	4400	2200	2500	4520	10400	11400	5820	4460	3910
5	2310	3090	2500	4200	2100	2500	5350	9710	13100	4100	3780	5180
6	2150	3620	2500	4400	2300	2500	5140	7470	11600	5860	3230	5340
7	2590	3480	2500	4500	2600	2300	5030	5150	12000	5340	3540	7040
8	2210	3520	2600	4200	2700	2500	3590	6080	10800	3710	3210	8910
9	2170	3740	2800	4400	2700	2700	3320	6680	7370	4730	3400	10300
10	2210	4580	2100	4400	2500	3000	3370	9430	6960	6770	4060	8660
11	2210	4370	2000	2900	2300	3500	4700	10700	5520	8110	4570	7980
12	2150	2730	3500	2800	2300	12200	3770	12400	9540	5700	3760	8090
13	2280	2560	2900	2600	2300	21000	4020	10800	16400	6870	2970	10400
14	3030	3890	2200	2400	2700	28900	3470	8250	30700	4570	2980	11900
15	2340	2930	3400	2500	2500	39400	3310	8490	32600	3240	2970	15700
16	2270	3520	4300	2500	2300	44900	3360	12900	25500	4100	3170	20500
17	2110	2700	4500	2400	2200	41200	4430	17200	20500	4930	3160	21600
18	2100	2500	4200	2700	2000	32100	3460	22200	19100	4260	5070	19200
19	2260	2100	4200	2900	1900	20300	2950	22500	15800	4240	14700	13400
20	2000	2510	4500	2900	2500	17000	4120	20400	14000	3800	23900	13800
21	2090	3060	4300	2600	2300	12100	4020	18800	10700	4350	28000	14600
22	2080	3890	4000	2400	2300	11800	3270	16700	8720	2860	20300	12100
23	2160	3500	2600	2300	2300	9920	3370	13700	8630	2740	14400	10800
24	2680	2200	2600	2900	2300	8760	6010	12600	5130	3280	11400	10600
25	2430	1900	2700	3800	2100	5920	6830	11500	5990	3630	9150	9770
26	2830	2000	2900	4400	2200	6910	9790	10200	6620	3610	6770	8290
27	2410	2300	3400	3200	2400	5590	10100	8400	9410	4840	10200	7800
28	2350	2900	3200	2400	2600	6180	9360	8340	8180	4900	12500	7500
29	2290	2500	3000	2800	---	5100	12300	8290	9460	4380	13100	7560
30	2230	2700	3100	3200	---	5070	16600	8900	10200	4490	9740	6000
31	3430	---	3000	3200	---	3980	---	9040	---	5630	8480	---
TOTAL	72240	92420	95800	100000	67300	367630	162750	372330	365530	150500	252490	302000
MEAN	2330	3081	3090	3226	2404	11860	5425	12010	12180	4855	8145	10070
MAX	3430	4580	4500	4500	3300	44900	16600	22500	32600	8110	28000	21600
MIN	2000	1900	2000	2300	1900	2300	2950	5150	5130	2740	2970	3910

CAL YR 1989 TOTAL 1961990 MEAN 5375 MAX 37300 MIN 1900
WTR YR 1990 TOTAL 2400990 MEAN 6578 MAX 44900 MIN 1900

05369500 CHIPPEWA RIVER AT DURAND, WI--CONTINUED
(NATIONAL STREAM-QUALITY ACCOUNTING NETWORK STATION)
(NATIONAL RADIOCHEMICAL SURVEILLANCE NETWORK STATION)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1964-65, 1967, 1973 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	BARO-METRIC PRES-SURE (MM HG) (00025)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	STREP-TOCOCCI, FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS TOTAL (MG/L AS CaCO3) (00900)
OCT 1989 09...	1030	1970	208	7.8	8.0	2.5	12.9	760	109	45	K28	87
JAN 1990 10...	1220	4820	190	7.1	0.0	1.5	12.3	762	84	110	61	70
MAR 27...	1100	5430	153	6.7	3.5	3.0	13.6	779	100	K16	47	53
MAY 23...	1030	13700	110	6.8	14.0	3.1	9.4	770	90	140	85	44
JUL 11...	1130	9060	110	7.8	22.0	4.5	8.0	773	90	280	290	49
SEP 05...	1100	6320	130	7.6	23.0	1.4	8.4	775	96	K340	260	51

DATE	CALCIUM DIS-SOLVED (MG/L AS Ca) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS Mg) (00925)	SODIUM, DIS-SOLVED (MG/L AS Na) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE WATER DIS IT FIELD (MG/L AS HCO3) (00453)	ALKA-LINITY WAT DIS TOT IT FIELD (MG/L AS CaCO3) (39086)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS Cl) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SiO2) (00955)
OCT 1989 09...	21	8.3	5.4	12	0.3	1.5	87	71	9.0	7.0	0.10	6.4
JAN 1990 10...	18	6.1	7.3	18	0.4	1.4	75	62	8.0	8.8	0.10	8.3
MAR 27...	13	4.9	4.1	13	0.2	4.7	56	46	7.3	6.7	<0.10	9.1
MAY 23...	10	4.5	3.4	14	0.2	1.8	32	26	6.7	4.8	<0.10	6.3
JUL 11...	12	4.7	3.2	12	0.2	1.6	47	38	4.1	4.1	0.20	7.6
SEP 05...	12	5.0	3.5	12	0.2	2.2	51	42	4.8	5.4	<0.10	9.8

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)
OCT 1989 09...	121	104	0.16	644	0.430	0.020	0.010	0.60	0.080	0.040	0.030
JAN 1990 10...	110	98	0.15	1430	0.650	0.120	0.120	0.70	0.080	0.040	0.040
MAR 27...	96	82	0.13	1410	0.800	0.410	0.410	1.1	0.150	0.090	0.080
MAY 23...	81	55	0.11	3000	0.300	0.030	0.040	1.0	0.090	0.050	0.040
JUL 11...	85	61	0.12	2080	<0.100	0.020	<0.010	0.80	0.100	0.070	<0.010
SEP 05...	73	71	0.10	1250	0.500	<0.010	0.020	0.80	0.090	0.080	0.060

K RESULTS BASED ON COUNT OUTSIDE OF THE ACCEPTABLE RANGE (NON-IDEAL COLONY COUNT).

CHIPPEWA RIVER BASIN

05369500 CHIPPEWA RIVER AT DURAND, WI--CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	ALUM- INUM, DIS- SOLVED (UG/L AS AL) (01106)	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE) (01010)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	COBALT, DIS- SOLVED (UG/L AS CO) (01035)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, DIS- SOLVED (UG/L AS FE) (01046)
OCT 1989 09...	1030	1970	<10	<1	13	<0.5	<1.0	<1	<3	<1	130
MAR 1990 27...	1100	5430	40	<1	22	<0.5	<1.0	<5	<3	<10	320
MAY 23...	1030	13700	40	<1	16	0.7	2.0	<1	<3	3	270
SEP 05...	1100	6320	30	<1	17	<0.5	1.0	<1	<3	3	310

DATE	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	LITHIUM DIS- SOLVED (UG/L AS LI) (01130)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	MERCURY DIS- SOLVED (UG/L AS HG) (71890)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO) (01060)	NICKEL, DIS- SOLVED (UG/L AS NI) (01065)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	STRON- TIUM, DIS- SOLVED (UG/L AS SR) (01080)	VANA- DIUM, DIS- SOLVED (UG/L AS V) (01085)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)
OCT 1989 09...	<1	<4	150	0.2	<10	1	<1	42	<6	5
MAR 1990 27...	<10	<4	71	<0.1	<10	<10	<1	29	<6	<3
MAY 23...	1	<4	17	<0.1	<10	<1	<1	29	<6	8
SEP 05...	<1	<4	7	<0.1	<10	<1	<1	33	<6	4

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)	SEDI- MENT, DIS- SOLVED (MG/L) (80154)	SEDI- MENT, DIS- SOLVED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT 1989 09...	1030	1970	208	8.0	6	32	88
JAN 1990 10...	1220	4820	190	0.0	7	91	76
MAR 27...	1100	5430	153	3.5	28	411	30
MAY 23...	1030	13700	110	14.0	28	1040	31
JUL 11...	1130	9060	110	22.0	35	856	43

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	GROSS ALPHA, DIS- SOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DIS- SOLVED (PCI/L AS CS-137) (03515)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)	GROSS BETA, DIS- SOLVED (PCI/L AS SR/ YT-90) (80050)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/ YT-90) (80060)	RADIUM 226, DIS- SOLVED, RADON METHOD (PCI/L) (09511)
JUN 1990 13...	0810	14900	<0.4	16	3.6	11	2.9	8.6	0.05
SEP 05...	1100	6320	<0.4	<0.4	2.5	<0.4	2.1	<0.4	0.05

05369945 EAU GALLE RIVER AT LOW-WATER BRIDGE AT SPRING VALLEY, WI

LOCATION.--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 Coulee Road, approximately 550 ft upstream from French Creek and at Spring Valley.

DRAINAGE AREA.--47.9 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--November 1981 to September 1983, May 1986 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 960 ft, from topographic map.

REMARKS.--Estimated daily discharges: Apr. 25 and period of ice effect listed below. Records good below 300 ft³/s and poor above 300 ft³/s, except for estimated periods, which are fair.AVERAGE DISCHARGE.--5 years (1983, 1987-90), 27.9 ft³/s, 7.91 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge observed, 6,000 ft³/s, Sept. 21, 1986, gage height, 8.80 ft, from rating curve extended above 140 ft³/s on basis of indirect measurement of peak flow but may have been exceeded on Mar. 27, 1989; maximum gage height, 13.80 ft, Mar. 27, 1989, backwater from reservoir; minimum discharge, 4.7 ft³/s, Feb. 1, 1989, gage height, 1.10 ft.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,850 ft³/s, June 13, gage height, 7.36 ft; minimum daily discharge, 6.0 ft³/s, Dec. 19-24, Feb. 1.

RATING TABLES (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Dec. 7 to Feb. 28.)

Oct. 1 to Mar. 11 (1400)				Mar. 11 (1500) to Sept. 30			
1.1	4.8	2.9	148	1.2	9.0	3.0	215
1.4	11	3.5	311	1.3	13	3.5	345
1.8	26	4.0	510	1.6	28	4.0	530
2.1	43	5.0	1,110	1.9	50	4.5	772
2.5	79			2.4	107	5.0	1,110
						6.0	2,020

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.1	7.7	7.6	6.4	6.0	7.3	13	33	15	18	16	12
2	8.0	7.5	7.7	6.4	6.2	15	13	21	23	18	15	12
3	7.9	7.3	7.6	6.6	6.4	22	13	17	1110	18	15	12
4	7.8	7.5	7.8	6.4	6.6	14	12	16	112	17	15	13
5	8.0	8.4	7.9	6.6	6.8	10	12	15	49	17	14	12
6	8.0	8.3	7.8	6.6	6.8	8.5	12	14	46	16	14	12
7	7.9	8.1	7.4	6.6	7.0	7.5	12	14	27	18	13	12
8	7.7	7.8	7.2	6.6	7.0	7.3	12	14	22	18	13	12
9	7.8	7.7	7.0	6.6	6.8	7.3	12	29	20	24	13	13
10	7.9	7.7	6.8	6.6	6.6	143	12	109	18	18	13	13
11	7.9	7.8	6.4	6.6	6.6	896	11	30	162	16	13	12
12	7.9	7.4	6.4	6.4	6.8	1120	11	19	336	16	13	12
13	7.7	7.3	6.4	6.4	7.4	497	11	16	1640	15	13	12
14	7.7	7.5	6.2	6.4	6.8	1200	11	48	127	15	12	13
15	7.7	7.9	6.2	6.4	6.8	436	11	49	36	15	12	11
16	7.9	7.6	6.2	6.4	6.8	80	11	225	57	15	12	11
17	7.5	7.4	6.2	6.4	6.8	33	11	60	453	15	12	11
18	7.5	7.4	6.2	6.4	6.8	24	11	28	94	14	15	11
19	7.5	7.6	6.0	6.4	6.8	19	11	317	55	15	14	12
20	7.6	7.7	6.0	6.4	6.8	17	11	379	77	14	13	11
21	7.7	7.5	6.0	6.4	6.8	17	10	49	31	14	12	11
22	7.7	7.7	6.0	6.4	6.8	16	10	27	26	14	12	11
23	7.4	7.7	6.0	6.4	6.8	15	27	22	23	14	12	11
24	7.2	7.6	6.0	6.4	6.8	15	62	19	22	13	12	10
25	7.6	7.7	6.4	6.4	6.6	14	56	18	21	15	12	10
26	7.6	7.7	6.2	6.4	6.6	14	18	17	20	14	14	10
27	7.5	8.2	6.2	6.4	6.6	14	46	17	19	15	14	10
28	7.6	7.7	6.2	6.4	6.8	14	423	18	20	79	15	10
29	7.8	7.5	6.2	6.4	---	13	82	17	24	373	13	10
30	7.8	7.5	6.2	6.4	---	13	75	15	20	35	12	12
31	7.7	---	6.4	6.2	---	13	---	15	---	20	12	---
TOTAL	239.6	230.4	204.8	199.8	188.4	4721.9	1042	1687	4705	938	410	344
MEAN	7.73	7.68	6.61	6.45	6.73	152	34.7	54.4	157	30.3	13.2	11.5
MAX	8.1	8.4	7.9	6.6	7.4	1200	423	379	1640	373	16	13
MIN	7.2	7.3	6.0	6.2	6.0	7.3	10	14	15	13	12	10
CFSM	.16	.16	.14	.13	.14	3.18	.73	1.14	3.27	.63	.28	.24
IN.	.19	.18	.16	.16	.15	3.67	.81	1.31	3.65	.73	.32	.27

CAL YR 1989 TOTAL 9027.9 MEAN 24.7 MAX 2460 MIN 6.0 CFSM .52 IN. 7.01
WTR YR 1990 TOTAL 14910.9 MEAN 40.9 MAX 1640 MIN 6.0 CFSM .85 IN. 11.58

05369945 EAU GALLE RIVER AT LOW-WATER BRIDGE AT SPRING VALLEY, WI--CONTINUED

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: March 1987 to current year.

INSTRUMENTATION.--Water-quality monitor since March 24, 1987.

REMARKS.--Record was rated good.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum temperature, 27.5°C June 19, 20, 1988; minimum, 0.0°C for several days in 1988, 1989, and 1990 water years.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum temperature, 23.5°C, July 3; minimum, 0.0°C for several days November through, March.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)	DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)
OCT 1989					MAR 1990				
24...	1005	7.2	472	8.5	20...	1244	17	470	2.5
DEC 12...	1120	6.4	538	1.0	APR 24...	1540	85	316	18.5
JAN 1990 22...	1405	6.5	460	1.5	JUN 12...	0720	210	135	15.5
MAR 13...	1355	80	240	2.5	AUG 21...	1006	12	440	15.0

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	13.5	11.5	12.5	7.0	5.5	6.5	1.0	.5	.5	1.0	1.0	1.0
2	13.5	9.5	11.5	6.5	4.0	5.0	1.0	.5	.5	1.5	1.0	1.0
3	9.5	7.5	8.5	3.5	2.5	3.0	.5	.0	.5	1.5	1.0	1.0
4	8.5	6.5	7.5	6.0	3.0	4.5	1.0	.5	.5	1.5	1.0	1.0
5	10.0	8.5	9.5	6.5	5.5	6.0	1.0	.5	1.0	1.5	1.0	1.0
6	9.5	8.5	9.0	6.5	5.5	6.0	1.0	.5	.5	1.5	1.0	1.5
7	8.5	7.0	8.0	7.5	6.5	7.0	.5	.0	.5	1.5	1.0	1.5
8	8.0	6.5	7.0	7.0	5.5	6.5	.0	.0	.0	1.5	1.5	1.5
9	8.0	6.5	7.5	5.5	4.0	5.0	.5	.0	.5	1.5	1.0	1.5
10	9.5	7.0	8.0	5.0	4.0	4.5	.5	.0	.5	1.5	1.0	1.5
11	10.5	8.0	9.0	6.5	4.5	5.0	.5	.0	.0	1.5	1.0	1.0
12	10.5	8.5	9.5	4.5	3.5	4.0	1.0	.0	.5	1.5	1.0	1.0
13	10.5	8.5	9.5	5.5	3.0	4.0	1.0	.5	1.0	1.5	1.0	1.5
14	11.0	9.0	10.0	4.5	3.5	4.0	1.0	1.0	1.0	2.0	1.5	1.5
15	11.0	9.5	10.0	4.5	3.5	4.0	1.5	1.0	1.0	1.5	1.5	1.5
16	10.5	8.0	9.5	3.5	.5	1.5	1.5	1.0	1.5	2.0	1.5	1.5
17	8.0	6.5	7.5	1.0	.5	1.0	1.5	1.0	1.5	2.0	1.5	1.5
18	7.0	5.0	6.0	1.0	.5	.5	1.5	1.0	1.5	2.0	1.0	1.5
19	6.5	4.5	5.5	1.5	.5	1.0	1.5	1.0	1.0	1.5	1.0	1.5
20	7.5	4.0	5.5	2.5	1.5	2.0	1.5	1.0	1.0	2.0	1.0	1.5
21	7.0	5.0	6.0	2.0	1.0	1.5	1.0	.5	1.0	---	---	---
22	7.5	5.5	6.5	1.5	.5	1.0	.5	.0	.5	---	---	---
23	9.5	7.0	8.0	1.5	.5	.5	.0	.0	.0	1.3	.5	1.0
24	9.5	7.5	8.5	1.0	.5	.5	.5	.0	.5	1.5	.5	1.0
25	11.0	8.5	10.0	1.5	.5	1.0	1.0	.5	1.0	1.0	.5	1.0
26	12.5	10.5	11.5	1.5	.5	1.0	1.0	.5	1.0	.5	.5	.5
27	12.5	11.0	11.5	1.5	1.0	1.0	1.0	.5	1.0	1.0	.5	.5
28	11.0	10.5	11.0	1.0	.0	.5	1.5	.5	1.0	1.0	.0	.5
29	12.0	11.0	11.5	1.0	.0	.5	1.0	.5	1.0	1.0	.5	.5
30	11.0	7.5	9.5	1.0	.5	.5	1.0	1.0	1.0	1.0	.0	.5
31	8.0	6.5	7.0	---	---	---	1.0	1.0	1.0	.5	.0	.5
MONTH	13.5	4.0	8.8	7.5	.0	3.0	1.5	.0	.8	---	---	---

WATER TEMPERATURE. DEGREES CELSIUS. WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	.5	.5	.5	1.5	.5	1.0	7.5	4.5	6.5	10.5	7.0	8.5
2	1.0	.5	.5	1.5	.0	1.0	4.5	3.5	4.0	12.5	7.0	9.5
3	1.0	.5	.5	1.0	.0	.5	7.0	3.0	4.5	14.0	8.5	11.0
4	1.0	.5	.5	2.0	.5	1.0	8.5	5.5	7.0	14.5	10.5	12.5
5	1.0	.5	.5	2.0	.5	1.0	7.0	5.0	6.0	15.0	11.5	13.5
6	1.0	.5	.5	2.0	.5	1.0	5.0	3.0	4.0	15.5	10.5	13.0
7	1.0	.5	.5	1.5	.5	1.0	6.0	2.5	4.5	17.0	12.0	14.5
8	2.0	1.0	1.5	1.5	1.0	1.5	8.0	4.0	6.0	16.5	13.5	15.0
9	1.5	.5	1.0	2.5	1.5	2.0	8.0	7.0	7.5	15.0	10.5	12.5
10	1.0	.5	.5	3.5	.0	2.0	7.5	5.5	6.5	11.5	8.5	10.0
11	1.0	.5	1.0	.5	.0	.0	6.0	4.0	5.0	13.5	8.0	10.5
12	2.0	.5	1.0	1.5	.0	1.0	7.0	3.5	5.0	13.0	11.5	12.0
13	1.5	.5	1.0	3.5	1.0	2.0	7.5	4.5	6.0	14.5	9.5	12.0
14	1.0	.0	.5	5.5	2.5	4.0	9.5	5.5	7.5	13.5	12.0	12.5
15	.5	.5	.5	5.0	3.5	4.0	9.5	7.0	8.5	12.5	11.0	12.0
16	1.0	.5	.5	3.0	2.5	2.5	8.0	5.5	7.0	12.5	11.0	12.0
17	1.0	.0	.5	3.0	1.5	2.5	7.5	4.0	5.5	12.0	10.0	11.0
18	1.0	.5	.5	2.5	1.5	2.0	9.0	5.0	7.0	13.5	9.0	11.0
19	1.0	.5	.5	3.5	.5	2.0	8.5	7.5	8.0	12.0	8.0	10.0
20	1.0	.0	.5	5.0	1.0	3.0	12.0	7.5	9.5	11.5	7.5	9.5
21	1.0	.5	.5	7.5	3.5	5.5	13.5	9.5	11.5	13.0	10.0	11.5
22	1.5	.5	1.0	7.0	4.0	6.0	15.5	11.5	13.5	15.5	10.5	13.0
23	1.0	.5	.5	3.5	1.0	2.0	16.0	13.0	14.5	16.5	12.0	14.0
24	1.0	.0	.5	3.5	.5	2.0	19.0	14.5	17.0	17.0	13.0	15.0
25	.5	.0	.0	4.5	1.5	3.0	19.5	15.5	17.5	15.5	13.0	13.5
26	1.0	.0	.5	4.5	1.5	3.0	17.5	16.5	17.0	14.0	12.5	13.0
27	1.5	.5	.5	5.0	2.0	3.5	16.0	14.5	15.0	15.0	12.0	13.5
28	1.0	.0	.5	7.0	3.5	5.0	15.5	11.0	13.0	18.0	12.5	15.0
29	---	---	---	8.0	5.0	6.5	12.0	10.0	11.0	17.5	13.5	15.5
30	---	---	---	8.5	5.5	7.0	11.0	8.0	9.5	17.5	12.5	15.0
31	---	---	---	7.5	5.5	6.5	---	---	---	18.0	13.0	15.5
MONTH	2.0	.0	.6	8.5	.0	2.7	19.5	2.5	8.8	18.0	7.0	12.5
	JUNE			JULY			AUGUST			SEPTEMBER		
1	19.0	15.5	17.0	21.0	18.0	19.5	19.5	16.0	17.5	19.0	17.0	18.0
2	18.0	15.0	17.0	21.5	17.5	19.5	19.5	16.5	18.0	18.5	16.5	17.5
3	15.0	10.0	11.0	23.5	18.5	21.0	20.0	17.5	19.0	17.5	16.0	16.5
4	14.5	9.5	12.0	22.0	20.0	21.0	20.0	17.5	18.5	19.0	17.0	18.0
5	13.5	12.0	12.5	21.0	17.5	19.0	18.5	16.0	17.			

CHIPPEWA RIVER BASIN

05370000 EAU GALLE RIVER AT SPRING VALLEY, WI

LOCATION.--Lat 44°51'10", long 92°14'17", in SE 1/4 NE 1/4 sec.6, T.27 N., R.15 W., Pierce County, Hydrologic Unit 07050005, on right bank 770 ft downstream from flood control dam, 1,500 ft upstream from Mines Creek, at Spring Valley.

DRAINAGE AREA.--64.1 mi².

WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WDR WI-67-1: 1966. WDR WI-81-1: Drainage area.

GAGE.--Water-stage recorder, crest-stage gage, and v-notch sharp-crested weir. Datum of gage is 900.00 ft above National Geodetic Vertical Datum 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 National Geodetic Vertical Datum of 1929. Aug. 1, 1957, to June 6, 1966, nonrecording gage at downstream site at datum of 910.45 ft above National Geodetic Vertical Datum of 1929. June 7, 1966, to Oct. 31, 1968, nonrecording gage at downstream site at datum of 909.45 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Estimated daily discharges: Dec. 1-5 and Mar. 11-13. Records good except those for estimated periods, which are fair. Low flow slightly regulated and high flow completely regulated by flood-control dam 770 ft upstream. Data-collection platform at station.

AVERAGE DISCHARGE.--22 years (1969-90), 33.8 ft³/s, since operation of flood-control reservoir.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,000 ft³/s, Apr. 15, 1954, gage height, 12.50 ft, datum then in use; no flow Aug. 11-15, 1971, 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; minimum observed prior to dam construction period, 5.8 ft³/s, Sept. 25, 27, 28, 30, 1949.

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 National Geodetic Vertical Datum of 1929, from floodmarks, discharge, 33,000 ft³/s estimated by U.S. Army Corps of Engineers on basis of slope-area measurement by Geological Survey of peak discharge of 39,000 ft³/s at Elmwood, drainage area, 91.9 mi².

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,190 ft³/s, Mar. 14, gage height, 18.67 ft; minimum discharge, 1.3 ft³/s, Mar. 28, gage height, 12.39 ft.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).

12.9	4.9	13.9	27	15.4	394
13.1	7.4	14.1	40	16.0	660
13.3	10	14.3	62	17.0	1,150
13.5	13	14.6	120	18.0	1,750
13.7	18	15.0	240		

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	9.9	7.0	13	12	11	11	56	6.8	26	31	16
2	14	9.9	7.0	12	12	17	16	37	9.7	26	25	16
3	13	9.9	7.0	12	12	34	16	28	951	25	24	16
4	13	10	7.0	12	12	30	16	24	267	25	22	17
5	14	15	11	12	12	22	15	21	76	24	20	17
6	14	16	13	12	12	18	14	19	53	23	19	16
7	13	16	12	12	12	15	14	18	39	24	19	16
8	13	15	12	12	12	15	14	17	31	27	30	16
9	14	14	12	12	12	15	15	23	24	29	20	18
10	12	14	12	12	12	18	15	83	22	29	12	19
11	12	14	12	12	12	453	15	54	31	27	16	17
12	15	13	12	11	12	647	14	33	272	25	17	16
13	16	13	12	12	13	638	14	25	835	23	18	16
14	14	13	12	12	13	1520	14	29	268	22	17	17
15	14	14	12	12	12	587	15	55	80	22	32	16
16	14	33	11	12	13	155	15	154	51	22	27	15
17	13	38	12	12	12	53	15	113	197	22	6.8	15
18	13	13	12	12	12	34	14	49	179	22	9.1	16
19	13	13	12	12	12	27	13	90	77	22	16	18
20	13	13	11	12	12	24	14	411	85	22	17	16
21	13	13	11	12	12	22	14	104	79	20	17	17
22	14	13	11	12	12	20	13	53	51	20	17	16
23	33	13	11	12	12	19	23	34	35	21	17	15
24	44	13	11	17	11	19	50	28	31	20	17	15
25	10	13	12	5.8	11	18	49	25	30	23	17	15
26	10	13	13	5.8	11	46	32	24	30	25	21	15
27	10	12	12	5.8	11	37	30	25	30	27	20	15
28	10	7.0	12	6.7	11	5.0	319	24	33	62	19	15
29	10	7.0	13	15	---	4.9	172	52	31	236	18	15
30	9.8	7.0	13	16	---	4.9	83	31	30	110	17	15
31	9.9	---	13	14	---	5.0	---	7.0	---	43	16	---
TOTAL	443.7	417.7	350.0	362.1	334	4533.8	1074	1746.0	3934.5	1094	593.9	482
MEAN	14.3	13.9	11.3	11.7	11.9	146	35.8	56.3	131	35.3	19.2	16.1
MAX	44	38	13	17	13	1520	319	411	951	236	32	19
MIN	9.8	7.0	7.0	5.8	11	4.9	11	7.0	6.8	20	6.8	15

CAL YR 1989 TOTAL 11903.1 MEAN 32.6 MAX 2190 MIN 7.0
WTR YR 1990 TOTAL 15365.7 MEAN 42.1 MAX 1520 MIN 4.9

05370000 EAU GALLE RIVER AT SPRING VALLEY, WI--CONTINUED

WATER-QUALITY RECORDS

PERIOD OF RECORD.--June 1978 to September 1990 (discontinued).

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: June 1978 to September 1990 (discontinued).

INSTRUMENTATION.--Water-quality monitor since June 20, 1978.

REMARKS.--The water-quality monitor is located 170 ft downstream from dam. The monitor was located 100 ft downstream from dam for July 2 to Oct. 30, 1986 period. Prior to July 2, 1986, the monitor was located 770 ft downstream from dam, but poor water circulation due to aquatic macrophytes, and ground-water seepage from the streambed, caused local water temperature and specific conductance differences. Records for water temperature were collected for the 1990 water year but were suspect and not published. Temperature data for the 1990 water year is on file at the Wisconsin District office. Collection of temperature data was discontinued Sept. 30, 1990. Conductance records for the 1990 water year are poor.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 837 microsiemens/cm, Oct. 27, 1985; minimum, 138 microsiemens/cm, Sept. 22, 1986, but may have been lower during period Jan. 16 to June 30, 1986, when there were relatively large differences between recorded values and field measurements.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum observed, 544 microsiemens/cm, Dec. 14, but may have been higher during period of missing record; minimum, 149 microsiemens/cm, June 13, but may have been lower during period of missing record.

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

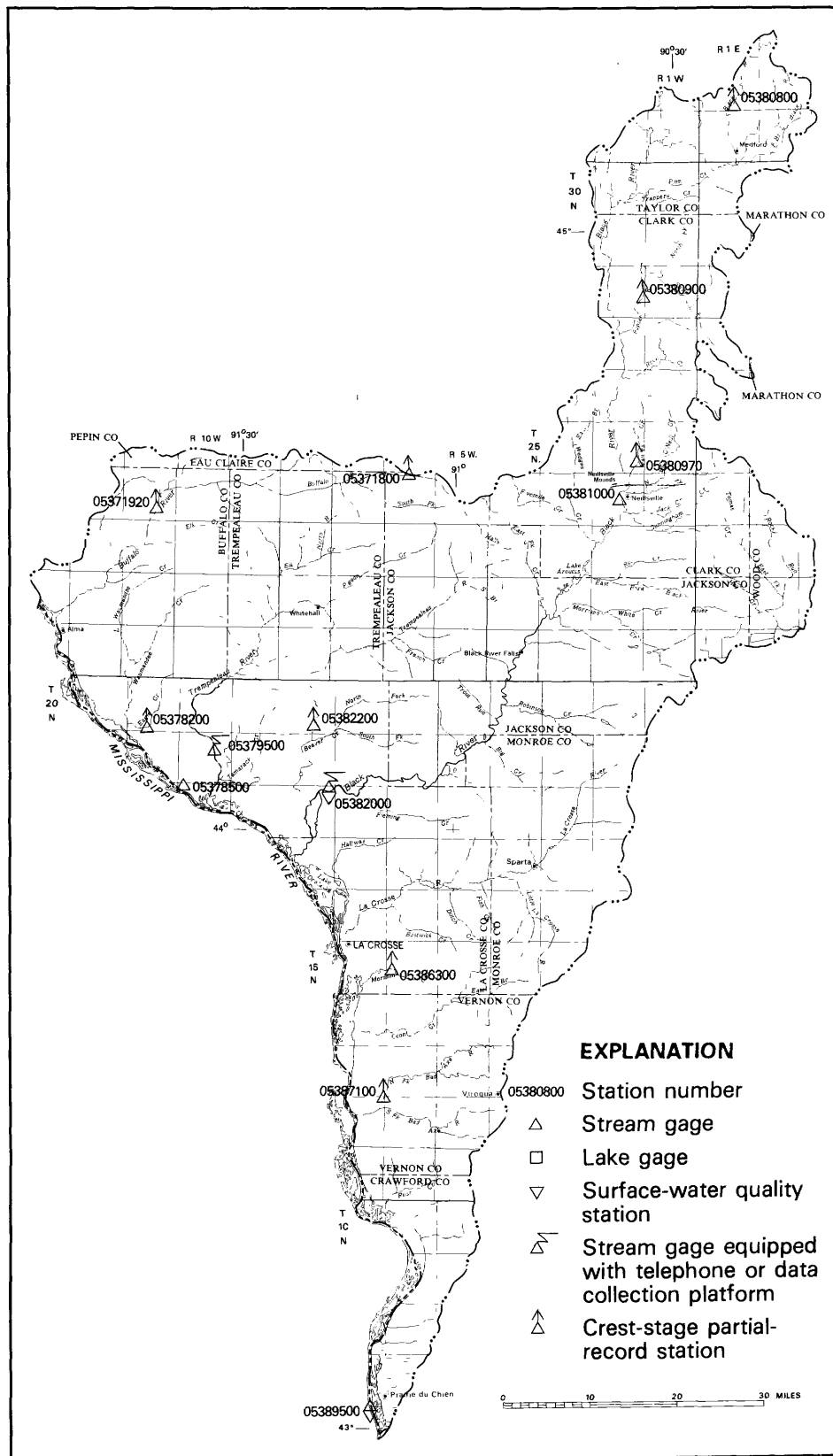
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	377	365	374	391	386	388	428	416	424	---	---	---
2	376	358	366	394	386	389	424	412	420	---	---	---
3	371	364	368	394	388	392	416	409	413	---	---	---
4	376	364	371	392	389	391	426	318	414	---	---	---
5	379	368	374	392	388	390	432	418	427	---	---	---
6	394	371	377	391	387	389	433	418	428	---	---	---
7	377	370	373	391	387	389	425	421	423	---	---	---
8	380	371	375	391	389	390	433	424	428	---	---	---
9	390	373	381	392	389	390	440	429	435	---	---	---
10	385	373	376	392	389	391	440	432	436	---	---	---
11	---	---	---	394	389	392	460	439	450	---	---	---
12	---	---	---	394	391	392	449	439	444	---	---	---
13	---	---	---	395	391	393	460	439	448	---	---	---
14	---	---	---	395	392	393	544	446	477	---	---	---
15	---	---	---	400	392	395	524	473	493	---	---	---
16	---	---	---	400	398	399	472	440	464	---	---	---
17	---	---	---	404	395	399	---	---	---	---	---	---
18	---	---	---	404	395	398	---	---	---	---	---	---
19	---	---	---	412	391	396	---	---	---	---	---	---
20	---	---	---	403	397	399	---	---	---	---	---	---
21	---	---	---	405	402	404	---	---	---	---	---	---
22	---	---	---	418	402	411	---	---	---	---	---	---
23	---	---	---	420	404	411	---	---	---	---	---	---
24	---	---	---	412	402	406	---	---	---	---	---	---
25	391	383	387	415	400	406	---	---	---	---	---	---
26	391	387	389	422	404	412	---	---	---	---	---	---
27	392	387	390	424	407	419	---	---	---	---	---	---
28	393	387	391	420	407	413	---	---	---	---	---	---
29	393	387	391	422	409	416	---	---	---	---	---	---
30	392	387	389	424	409	416	---	---	---	---	---	---
31	391	385	387	---	---	---	---	---	---	---	---	---
MONTH	---	---	---	424	386	399	---	---	---	---	---	---

CHIPPEWA RIVER BASIN

05370000 EAU GALLE RIVER AT SPRING VALLEY, WI--CONTINUED

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY				MARCH			APRIL			MAY		
1	---	---	---	---	---	---	305	264	282	278	269	272
2	---	---	---	---	---	---	279	271	275	278	274	276
3	---	---	---	---	---	---	281	274	278	279	275	277
4	---	---	---	---	---	---	283	277	280	280	277	279
5	---	---	---	---	---	---	295	279	287	285	277	281
6	---	---	---	---	---	---	298	285	291	292	281	286
7	---	---	---	---	---	---	289	286	288	294	287	290
8	---	---	---	---	---	---	291	286	287	296	288	293
9	---	---	---	---	---	---	293	290	292	296	288	292
10	---	---	---	---	---	---	307	291	296	299	280	290
11	---	---	---	---	---	---	305	298	300	294	286	290
12	---	---	---	---	---	---	302	296	298	292	286	289
13	---	---	---	---	---	---	298	294	296	293	286	288
14	---	---	---	---	---	---	298	289	295	295	285	290
15	---	---	---	---	---	---	300	293	296	303	285	292
16	---	---	---	---	---	---	311	293	300	304	248	287
17	---	---	---	---	---	---	311	300	304	288	259	277
18	---	---	---	---	---	---	301	296	299	273	269	272
19	---	---	---	---	---	---	303	299	301	276	263	273
20	---	---	---	---	---	---	303	295	300	267	222	238
21	---	---	---	254	250	252	298	294	296	242	222	231
22	---	---	---	258	251	255	298	291	296	234	224	229
23	---	---	---	262	257	260	305	291	298	236	227	232
24	---	---	---	273	257	266	301	291	296	244	230	237
25	---	---	---	275	270	272	300	292	296	247	238	241
26	---	---	---	274	261	269	312	297	305	247	240	242
27	---	---	---	336	264	289	318	308	314	245	239	241
28	---	---	---	351	336	343	320	262	290	243	239	241
29	---	---	---	351	347	350	275	226	262	255	218	233
30	---	---	---	353	348	351	271	263	268	230	215	223
31	---	---	---	355	308	344	---	---	---	223	214	218
MONTH	---	---	---	---	---	---	320	226	292	304	214	265
JUNE				JULY			AUGUST			SEPTEMBER		
1	223	217	220	268	251	259	273	257	263	335	329	332
2	281	219	235	284	255	266	287	268	275	335	330	333
3	289	154	218	284	260	265	274	268	272	352	331	338
4	182	157	171	265	254	260	280	270	273	355	332	337
5	181	164	174	262	253	257	290	280	284	342	336	339
6	203	173	191	285	258	266	294	286	289	342	336	339
7	198	193	197	303	263	284	297	288	294	342	338	340
8	205	197	199	282	267	276	348	295	312	354	342	347
9	218	204	210	279	267	273	359	328	348	348	338	343
10	215	211	213	275	262	268	340	319	327	343	337	339
11	232	215	221	278	263	271	319	305	313	355	343	348
12	234	173	203	290	272	279	321	314	317	354	337	352
13	190	149	164	293	280	287	323	318	321	362	353	355
14	168	161	164	292	281	286	325	316	322	359	352	355
15	187	166	171	285	277	280	366	319	334	364	358	361
16	201	183	191	290	277	280	370	359	365	369	361	366
17	211	186	197	289	273	283	371	367	368	370	365	367
18	193	186	190	295	282	289	368	323	350	372	363	366
19	212	193	199	287	282	284	327	320	324	366	355	362
20	207	201	204	286	276	283	333	326	330	367	355	360
21	214	206	209	292	287	290	332	317	326	365	350	358
22	215	210	212	293	289	291	321	314	319	364	352	356
23	224	215	218	317	291	299	328	320	324	370	355	358
24	228	220	224	331	319	327	324	321	322	367	364	366
25	237	227	231	329	316	323	328	322	325	369	360	366
26	240	231	235	321	312	316	327	314	323	372	366	368
27	251	235	241	328	313	321	327	322	325	377	369	373
28	255	243	249	315	290	298	326	314	320	381	370	374
29	253	243	249	299	234	273	322	315	319	384	371	379
30	253	242	247	249	231	238	335	319	326	390	378	383
31	---	---	---	259	247	253	342	326	333	---	---	---
MONTH	289	149	208	331	231	281	371	257	318	390	329	355



TREMPEALEAU-BLACK RIVER BASIN

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 mi², 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 National Geodetic Vertical Datum 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.--No estimated daily discharges. Records good. Some regulation by reservoirs, navigation dams, and powerplants at low and medium stages. Flood flow not materially affected by artificial storage.

AVERAGE DISCHARGE.--62 years, 27,670 ft³/s, 6.35 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 268,000 ft³/s, Apr. 19, 1965, gage height, 20.77 ft, from floodmark; minimum, 1,940 ft³/s, Dec. 12, 1980, gage height, 3.96 ft, result of ice jam; 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.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 18, 1880, reached an elevation of 657.14 ft, discharge, 172,000 ft³/s, from information by U.S. Army Corps of Engineers.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 74,700 ft³/s, Mar. 19, gage height, 9.43 ft; minimum daily discharge, 8,900 ft³/s, Feb. 10-12; minimum gage height, 4.93 ft, Aug. 18.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12500	12300	12100	9400	10800	10000	26900	38800	34000	60000	43900	33700
2	12600	12200	12300	9400	10700	10000	25900	41100	33600	57600	43000	32400
3	12400	13000	11400	9400	10200	10000	24800	43000	33300	53300	40900	27200
4	11200	12500	11100	9500	10200	10000	22000	45700	33200	49200	41100	19900
5	11200	13400	10600	9500	10200	9900	20600	47700	34900	46200	42300	19200
6	10700	14800	10400	9500	9800	9900	21400	46500	38600	42600	43500	18400
7	11000	15500	10500	9600	9700	9800	23300	45500	40300	40500	41700	19400
8	11500	15400	10600	9700	9600	9900	24900	43000	41600	42600	36400	19700
9	11300	15700	10400	10200	9300	10300	24700	41900	42600	43900	34000	19500
10	11200	15800	10500	11300	8900	12300	23900	42800	43100	43100	30200	21400
11	11500	14600	10500	11500	8900	16400	22800	41500	42300	41900	29300	23200
12	10900	14300	10500	11900	8900	31700	23600	40100	42100	35600	25200	27400
13	11500	12900	10000	11500	9100	45000	22500	39700	44300	35000	20400	27100
14	11000	12600	9300	10500	9100	53900	21400	39000	55000	35200	19200	25000
15	11500	11900	9300	10300	9100	61300	21400	37300	61300	35200	16700	26700
16	11200	11600	9300	9600	9200	64900	20300	35600	66300	31900	15600	29500
17	11000	12800	9300	9500	10200	69300	18200	34600	71500	28600	16600	29400
18	11000	12900	9300	9500	10900	73200	16200	36900	71100	27100	12600	29200
19	10800	11700	9400	9600	10600	74300	15200	40800	68500	30200	12600	32100
20	10500	10900	9300	9600	10900	70400	15100	43700	66200	29400	19000	34700
21	11200	11800	9300	9600	10100	63300	17400	47800	65000	26400	31700	32100
22	11400	10500	9400	9500	10100	57500	19000	49000	64000	23800	38000	31900
23	11000	9500	9400	9600	10100	55100	18700	47300	60900	24100	42900	30300
24	11400	9100	9500	9800	10300	52200	23700	45300	58200	20400	43700	26200
25	11900	9800	9400	11100	10000	47400	25900	43700	56200	17400	37000	21100
26	11800	10000	9400	10800	10000	41000	28400	41900	54400	16100	38300	20400
27	11300	10700	9500	10900	10200	36200	31100	40500	53700	21200	31400	21600
28	11800	11900	9400	10800	10000	34300	32800	38700	55800	26700	31200	21500
29	11800	13300	9300	10800	---	33200	33800	36000	58400	37600	31200	21700
30	11800	12600	9300	10800	---	31300	36300	34400	60100	39200	34200	20200
31	11500	---	9300	10700	---	28800	---	33900	---	42100	34800	---
TOTAL	353400	376000	309300	315400	277100	1142800	703200	1283700	1550500	1104100	978600	762100
MEAN	11400	12530	9977	10170	8986	36860	23440	41410	51680	35620	31570	25400
MAX	12600	15800	12300	11900	10900	74300	36300	49000	71500	60000	43900	34700
MIN	10500	9100	9300	9400	8900	9800	15100	33900	33200	16100	12600	18400
CFSM	.19	.21	.17	.17	.17	.62	.40	.70	.87	.60	.53	.43
IN.	.22	.24	.19	.20	.17	.72	.44	.81	.97	.69	.61	.48
CAL YR 1989	TOTAL 7416620	MEAN 20320	MAX 78800	MIN 5950	CFSM .34	IN. 4.66						
WTR YR 1990	TOTAL 9156200	MEAN 25090	MAX 74300	MIN 8900	CFSM .42	IN. 5.75						

TREMPEALEAU RIVER BASIN

285

05379500 TREMPEALEAU RIVER AT DODGE, WI

LOCATION.--Lat 44°07'55", long 91°33'14", in SE 1/4 sec.10, T.19 N., R.10 W., Trempealeau County, Hydrologic Unit 07040005, near left bank on downstream side of highway bridge in Dodge, 9.0 mi upstream from mouth.

DRAINAGE AREA.--643 mi².

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 National Geodetic Vertical Datum of 1929. Prior to July 14, 1977, nonrecording gage at same site and datum. Prior to Oct. 1, 1966, datum 2.00 ft higher.

REMARKS.--Estimated daily discharges: June 15-19 and ice-affected period, Nov. 17 to Mar. 12. Records good except those for estimated daily discharges, which are fair. Gage-height telemeter and data-collection platform at station.

AVERAGE DISCHARGE.--61 years (1915-19, 1935-90), 432 ft³/s, 9.12 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 17,400 ft³/s, Apr. 4, 1956, gage height, 10.35 ft; minimum daily, 98 ft³/s, Jan. 10, 1938.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,300 ft³/s and maximum (*):

DATE	TIME	DISCHARGE (ft ³ /s)	GAGE HEIGHT (ft)	DATE	TIME	DISCHARGE (ft ³ /s)	GAGE HEIGHT (ft)
Mar. 15	0900	*6,440	*11.12	June 16	Unknown	2,790	9.03
Apr. 26	1400	1,960	7.86	Aug. 28	0900	1,670	7.36

Minimum daily discharge, 190 ft³/s, Nov. 24.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	241	365	290	230	240	290	390	692	307	599	463	448
2	239	359	290	240	250	450	418	567	306	479	398	419
3	237	326	280	240	250	680	425	500	357	428	544	397
4	237	316	270	240	250	740	419	458	388	397	456	385
5	262	319	280	240	240	600	417	428	377	374	396	367
6	273	349	300	240	240	460	398	405	382	356	367	359
7	272	365	260	240	250	410	371	384	372	695	350	352
8	266	350	230	250	260	380	358	363	339	726	341	346
9	261	333	240	250	270	480	351	417	305	515	337	338
10	268	332	250	250	280	720	356	742	287	426	340	571
11	271	314	260	250	270	1000	355	774	281	384	433	411
12	268	305	250	250	270	2000	344	598	316	367	378	354
13	262	302	240	240	380	4230	333	511	565	350	342	332
14	261	297	230	240	370	4920	325	459	862	337	324	374
15	260	294	220	240	320	5810	328	537	1120	332	342	441
16	289	292	220	240	280	4890	338	765	2160	326	361	390
17	336	260	220	250	240	2350	365	873	1930	324	356	358
18	335	200	220	250	250	1320	360	630	1210	323	415	344
19	319	240	210	250	260	880	337	553	741	332	932	356
20	302	330	210	250	250	667	336	702	651	345	799	360
21	292	320	200	240	250	602	352	732	544	328	602	350
22	286	250	200	240	260	567	364	603	507	315	467	332
23	280	210	200	240	280	523	388	501	476	314	414	325
24	275	190	200	240	270	471	1640	447	449	308	400	319
25	273	200	200	240	260	457	1860	419	417	302	442	313
26	271	250	210	230	250	449	1920	403	510	299	878	306
27	267	290	210	220	270	429	1610	384	964	316	1470	302
28	268	320	220	230	270	414	1220	373	965	385	1590	297
29	284	290	220	240	---	407	1060	355	1100	561	943	290
30	283	280	230	240	---	399	881	334	861	939	605	290
31	332	---	230	250	---	392	---	318	---	654	495	---
TOTAL	8570	8848	7290	7490	7530	38387	18619	16227	20049	13136	16980	10826
MEAN	276	295	235	242	269	1238	621	523	668	424	548	361
MAX	336	365	300	250	380	5810	1920	873	2160	939	1590	571
MIN	237	190	200	220	240	290	325	318	281	299	324	290
CFSM	.43	.46	.37	.38	.42	1.93	.97	.81	1.04	.66	.85	.56
IN.	.50	.51	.42	.43	.44	2.22	1.08	.94	1.16	.76	.98	.63

CAL YR 1989 TOTAL 156543 MEAN 429 MAX 6550 MIN 190 CFSM .67 IN. 9.06
WTR YR 1990 TOTAL 173952 MEAN 477 MAX 5810 MIN 190 CFSM .74 IN. 10.06

BLACK RIVER BASIN

05381000 BLACK RIVER AT NEILLSVILLE, WI

LOCATION.--Lat 44°33'34", long 90°36'52", in sec.15, T.24 N., R.2 W., Clark County, Hydrologic Unit 07040007, on right bank at downstream side of bridge on 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 mi².

PERIOD OF RECORD.--April 1905 to March 1909, October 1913 to current year. Monthly discharge only for some periods, published in WSP 1308.

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. Datum of gage is 962.34 ft above National Geodetic Vertical Datum 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.--Estimated daily discharges: Ice period listed in rating table below. Records good except those for ice-affected period, which is fair.

AVERAGE DISCHARGE.--80 years (1906-8, 1914-90), 596 ft³/s, 10.81 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 48,800 ft³/s, Sept. 10, 1938, gage height, 23.8 ft; minimum, 0.6 ft³/s, Aug. 15, 1936, gage height, 1.84 ft.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 5,000 ft³/s and maximum (*):

DATE	TIME	DISCHARGE (ft ³ /s)	GAGE HEIGHT (ft)	DATE	TIME	DISCHARGE (ft ³ /s)	GAGE HEIGHT (ft)
Mar. 14	1300	11,700	12.87	Aug. 20	2400	6,220	9.99
June 14	0430	*15,300	*14.40				

Minimum, 25 ft³/s, Oct. 4, 5, gage height, 2.45 ft.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Nov. 17 to Mar. 13.)

2.4	20	4.0	392	9.0	4,740
2.6	41	5.0	850	11.0	7,940
3.0	104	6.0	1,500	13.0	12,000
3.5	224	7.0	2,370	15.0	16,900

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	28	93	50	37	35	45	196	1570	477	441	251	525
2	27	90	48	37	34	62	255	1070	388	331	328	413
3	26	85	46	37	33	80	262	763	575	261	309	350
4	25	89	46	39	34	72	265	580	1710	222	481	297
5	28	105	48	37	37	66	276	461	1480	191	447	261
6	31	121	46	35	37	60	262	381	1310	162	282	240
7	30	129	45	36	37	54	245	324	1230	160	207	231
8	37	145	43	37	38	60	227	285	928	172	162	302
9	46	167	42	39	38	84	217	420	653	178	163	541
10	45	170	43	37	36	200	216	2320	477	188	241	910
11	44	159	45	36	35	900	209	2420	379	223	123	435
12	44	144	43	35	36	4000	199	1850	1470	209	99	336
13	43	135	42	33	37	7000	191	1330	11100	174	90	284
14	42	125	40	32	34	10200	188	993	12800	146	83	1060
15	45	117	40	34	33	9070	201	1180	6290	128	81	1430
16	65	107	40	36	35	5370	214	3000	3400	113	91	1810
17	57	100	41	35	36	3330	239	4310	3460	102	81	1630
18	50	90	42	33	36	2090	242	3080	2470	102	314	1110
19	50	84	40	31	36	1290	236	2330	1330	121	2030	844
20	51	84	38	31	37	830	245	4110	842	121	5100	735
21	48	90	37	32	39	633	262	3290	603	116	5520	725
22	50	82	36	33	41	545	254	2040	459	115	3490	616
23	52	76	36	34	39	443	267	1350	374	107	1970	515
24	53	70	36	33	37	366	2720	929	317	93	1180	444
25	51	66	39	32	36	310	2530	700	268	87	1000	387
26	57	66	40	32	38	278	1900	580	259	80	2290	331
27	57	66	40	31	42	254	1550	550	353	76	2710	285
28	55	70	39	32	40	228	2130	991	414	92	2190	253
29	70	60	41	33	---	210	3040	1120	720	113	1560	222
30	85	56	38	34	---	194	2240	915	608	148	1060	206
31	100	---	38	33	---	187	---	651	---	162	723	---
TOTAL	1492	3041	1288	1066	1026	48511	21478	45893	57144	4934	34656	17728
MEAN	48.1	101	41.5	34.4	36.6	1565	716	1480	1905	159	1118	591
MAX	100	170	50	39	42	10200	3040	4310	12800	441	5520	1810
MIN	25	56	36	31	33	45	188	285	259	76	81	206
CFSM	.06	.14	.06	.05	.05	2.09	.96	1.98	2.54	.21	1.49	.79
IN.	.07	.15	.06	.05	.05	2.41	1.07	2.28	2.84	.25	1.72	.88

CAL YR 1989 TOTAL 141636 MEAN 388 MAX 13300 MIN 25 CFSM .52 IN. 7.03
WTR YR 1990 TOTAL 238257 MEAN 653 MAX 12800 MIN 25 CFSM .87 IN. 11.83

05382000 BLACK RIVER NEAR GALESVILLE, WI
(NATIONAL STREAM-QUALITY ACCOUNTING NETWORK STATION)

LOCATION.--Lat 44°04'22", long 91°17'41", in SW 1/4 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, 4.5 mi southeast of Galesville, and 4.8 mi downstream from Fleming Creek.

DRAINAGE AREA.--2,080 mi².

WATER-DISCHARGE RECORDS

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 National Geodetic Vertical Datum 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 1,100 ft downstream at same datum.

REMARKS.--Estimated daily discharges: Ice-affected period, Nov. 18 to Mar. 13. Records good except for ice-affected period, which is poor. Flow partly regulated by Hatfield Dam Powerplant where drainage area is 1,290 mi² and storage capacity is 272,000,000 ft³. Water diverted periodically from basin into Lemonweir River basin for cranberry culture. Gage-height telemeter and data-collection platform at station.

AVERAGE DISCHARGE.--58 years, 1,741 ft³/s, 11.37 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 65,500 ft³/s, Apr. 1, 1967, gage height, 14.63 ft; maximum gage height, 15.46 ft, Sept. 23, 1980; minimum observed, 180 ft³/s, Dec. 20, 1931.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 12,500 ft³/s and maximum (*):

DATE	TIME	DISCHARGE (ft ³ /s)	GAGE HEIGHT (ft)	DATE	TIME	DISCHARGE (ft ³ /s)	GAGE HEIGHT (ft)
Mar. 16	2400	*19,300	*13.02	June 16	0800	18,600	12.85

Minimum discharge, 347 ft³/s, Nov. 24, gage height, 1.57 ft, result of freezeup.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	378	556	560	440	400	600	1360	6320	1840	2150	649	2590
2	375	611	600	440	410	680	1350	5250	1630	1890	661	1950
3	373	616	680	450	410	740	1400	3760	1560	1610	808	1720
4	368	638	540	430	420	700	1580	2790	1450	1350	1140	1540
5	395	604	560	410	430	640	1700	2220	1840	1240	1120	1410
6	426	610	520	420	440	600	1690	1830	2670	1140	1050	1130
7	412	646	480	430	430	620	1600	1670	2690	1070	1060	1060
8	393	691	450	440	440	660	1490	1510	2550	1120	965	1050
9	388	724	470	440	470	760	1410	1450	2210	1080	723	1010
10	393	731	500	450	470	880	1360	1570	1760	1050	701	1160
11	403	689	470	450	470	1200	1330	3470	1370	1010	745	1630
12	406	707	460	430	490	1600	1300	5230	1310	944	905	1640
13	398	675	460	410	580	3600	1270	5680	1560	915	669	1220
14	397	649	440	400	520	8060	1260	4780	4210	882	626	1230
15	398	643	450	390	490	12500	1250	3720	8680	827	645	1230
16	449	615	470	390	490	17400	1180	3430	16800	782	618	2120
17	511	609	490	390	490	17800	1220	3800	11700	770	605	2360
18	540	500	460	390	500	12400	1230	5140	7990	701	616	2500
19	526	460	440	390	520	8250	1290	6280	6970	705	2400	2270
20	519	490	420	390	500	4890	1300	5680	5780	685	4500	1870
21	467	500	400	390	520	3420	1280	5480	3630	662	5950	1690
22	486	460	380	390	560	2940	1300	6980	2820	634	7530	1560
23	465	410	390	390	560	2130	1360	7030	2350	642	7830	1430
24	434	380	380	400	540	2050	1560	5130	1880	622	5820	1270
25	449	400	400	400	520	1980	3110	3750	1780	599	3950	1220
26	439	440	400	390	540	1830	5650	2710	1810	564	4240	1160
27	435	430	400	380	600	1700	6270	2350	1670	568	4670	1110
28	425	400	410	390	580	1440	4550	1960	1810	707	5700	990
29	430	480	420	390	---	1440	4060	1930	2060	673	6680	966
30	466	540	430	410	---	1360	5300	2120	2140	693	5150	850
31	512	---	440	400	---	1330	---	2110	---	693	3430	---
TOTAL	13456	16904	14370	12710	13790	116200	62010	117130	108520	28978	82156	44936
MEAN	434	563	464	410	492	3748	2067	3778	3617	935	2650	1498
MAX	540	731	680	450	600	17800	6270	7030	16800	2150	7830	2590
MIN	368	380	380	380	400	600	1180	1450	1310	564	605	850
CFSM	.21	.27	.22	.20	.24	1.80	.99	1.82	1.74	.45	1.27	.72
IN.	.24	.30	.26	.23	.25	2.08	1.11	2.09	1.94	.52	1.47	.80

CAL YR 1989 TOTAL 485339 MEAN 1330 MAX 21900 MIN 368 CFSM .64 IN. 8.68
WTR YR 1990 TOTAL 631160 MEAN 1729 MAX 17800 MIN 368 CFSM .83 IN. 11.29

BLACK RIVER BASIN

05382000 BLACK RIVER NEAR GALESVILLE, WI--CONTINUED
(NATIONAL STREAM-QUALITY ACCOUNTING NETWORK STATION)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1954 to current year. National Stream-Quality Accounting Network data collection began in March 1979.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS-CHARGE, IN CUBIC FEET PER SECOND (00060)	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	STREP-TOCOCCHI, FECAL, KF AGAR (COLS. PER 100 ML) (31673)
OCT 1989												
18...	0945	--	539	155	7.6	6.0	2.3	11.4	785	89	K1700	K2000
DEC 05...	1355	560	--	164	7.4	0.0	2.6	13.6	758	94	51	37
MAR 1990												
27...	1645	--	1670	115	6.7	5.0	1.5	13.0	777	100	K16	29
MAY 01...	1135	--	6320	98	--	13.0	1.5	8.8	774	82	190	160
JUN 12...	1745	--	1300	111	7.6	19.0	5.1	8.6	763	93	K730	620
AUG 22...	0955	--	7480	72	7.2	23.0	15	6.6	758	77	K660	630

DATE	HARD-NESS TOTAL (MG/L AS CaCO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS Ca) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS Mg) (00925)	SODIUM, DIS-SOLVED (MG/L AS Na) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE WATER DIS IT FIELD HCO3 (MG/L AS HCO3) (00453)	ALKA-LINITY WAT DIS TOT IT FIELD CACO3 (MG/L AS CACO3) (39086)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)
OCT 1989												
18...	56	13	5.7	3.7	12	0.2	2.8	54	44	11	5.8	0.10
DEC 05...	60	14	6.1	4.1	12	0.2	2.2	57	46	11	5.4	0.10
MAR 1990												
27...	40	9.7	3.9	2.7	11	0.2	4.5	32	26	8.7	6.1	<0.10
MAY 01...	34	8.2	3.2	3.4	16	0.3	3.9	--	--	11	6.2	0.10
JUN 12...	46	11	4.6	2.9	11	0.2	2.3	46	38	6.4	5.5	0.20
AUG 22...	29	7.3	2.6	2.3	13	0.2	3.0	24	20	3.7	5.0	<0.10

DATE	SILICA, DIS-SOLVED (MG/L AS SiO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)
OCT 1989												
18...	7.3	85	78	0.12	124	0.460	0.020	0.010	0.50	0.110	0.050	0.040
DEC 05...	9.9	90	85	0.12	136	0.800	0.070	0.050	0.40	0.090	0.030	0.050
MAR 1990												
27...	8.0	74	63	0.10	334	0.700	0.310	0.300	0.90	0.130	0.050	0.040
MAY 01...	6.5	86	57	0.12	1470	0.300	0.040	<0.010	1.0	0.170	0.090	0.070
JUN 12...	7.7	89	66	0.12	312	0.500	0.040	0.020	1.0	0.160	0.090	0.070
AUG 22...	5.7	72	43	0.10	1450	0.200	0.070	0.090	1.0	0.250	0.120	0.060

K RESULTS BASED ON COUNT OUTSIDE OF THE ACCEPTABLE RANGE (NON-IDEAL COLONY COUNT).

BLACK RIVER BASIN

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05382000 BLACK RIVER NEAR GALESVILLE, WI--CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	ALUM- INUM, DIS- SOLVED (UG/L AS AL) (01106)	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE) (01010)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	COBALT, DIS- SOLVED (UG/L AS CO) (01035)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, DIS- SOLVED (UG/L AS FE) (01046)
OCT 1989 18...	0945	539	20	<1	17	<0.5	<1.0	<1	<3	5	250
MAR 1990 27...	1645	1670	60	<1	24	<0.5	<1.0	<5	<3	<10	370
MAY 01...	1135	6320	80	<1	25	<0.5	1.0	<1	<3	6	380
AUG 22...	0955	7480	120	<1	25	<0.5	1.0	<1	<3	3	550

DATE	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	LITHIUM DIS- SOLVED (UG/L AS LI) (01130)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	MERCURY DIS- SOLVED (UG/L AS HG) (71890)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO) (01060)	NICKEL, DIS- SOLVED (UG/L AS NI) (01065)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	STRON- TIUM, DIS- SOLVED (UG/L AS SR) (01080)	VANA- DIUM, DIS- SOLVED (UG/L AS V) (01085)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)
OCT 1989 18...	<1	<4	37	0.1	<10	2	<1	31	<6	<3
MAR 1990 27...	<10	<4	59	<0.1	<10	<10	<1	25	<6	12
MAY 01...	1	<4	28	<0.1	<10	2	<1	27	<6	<3
AUG 22...	3	<4	58	<0.1	<10	2	<1	22	<6	26

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (MG/L) (80154)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT 1989 18...	0945	539	155	6.0	9	13
MAR 1990 27...	1645	1670	115	5.0	18	81
MAY 01...	1135	6320	98	13.0	49	836
JUN 12...	1745	1300	111	19.0	34	119
AUG 22...	0955	7480	72	23.0	70	1410

MISSISSIPPI RIVER MAIN STEM

05389500 MISSISSIPPI RIVER AT MCGREGOR, IA

LOCATION.--Lat 43°01'29", long 91°10'21", in SE 1/4 SE 1/4 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 mi², 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 National Geodetic Vertical Datum. 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.--Estimated daily discharges: Nov. 21 to Mar. 8, and July 30 to Aug. 2. Records good except those for estimated daily discharges and for discharges less than 10,000 ft³/s, which are fair. Stage-discharge relation affected by backwater from Wisconsin River and Lock and Dam No. 10. Minor flow regulation caused by navigation dams. U.S. Army Corps of Engineers data collection platform at station.

AVERAGE DISCHARGE.--54 years, 35,200 ft³/s, 7.08 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 276,000 ft³/s, Apr. 24, 1965; maximum gage height, 25.38 ft, Apr. 24, 1965; minimum daily discharge, 6,200 ft³/s, Dec. 9, 1936; minimum gage height, -0.86 ft, Aug. 18, 1936.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1828, that of Apr. 24, 1965.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 98,800 ft³/s, Mar. 20; maximum gage height, 14.17 ft, June 21; minimum daily discharge, 10,300 ft³/s, Dec. 23, 24; minimum gage height, 5.48 ft, Mar. 7, 8.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16700	17400	14100	11000	12600	12300	33600	48100	37000	75100	46400	42500
2	16100	17500	16000	11300	12600	12400	31900	47300	36300	76500	48200	42000
3	16100	17300	16900	11400	12500	12700	31400	46900	37000	75900	48400	40000
4	15800	17100	15300	11600	12300	12700	29400	48000	38100	72800	48400	34400
5	15600	17100	14900	11700	12400	13100	26300	49900	38400	65200	48100	25100
6	14700	17800	15400	11700	12500	13200	23300	51000	39800	56200	46800	21100
7	14800	19200	14900	11800	12400	13300	22200	50800	40800	48100	44400	17300
8	14800	20600	13800	11800	12400	14000	22800	49500	42300	45500	43200	17700
9	15300	20400	12900	14400	12500	17400	25900	49300	44600	45100	40200	22600
10	14500	20200	12500	14200	12500	20200	29000	50500	45700	45800	38200	27500
11	15500	19900	12200	14100	12400	24200	30100	47200	45900	46100	34500	29100
12	13900	19300	11900	14100	12200	33400	29600	45200	45700	45100	29400	30100
13	13700	18700	11900	12400	12900	44600	28100	44000	46800	40900	24500	31900
14	13600	18000	11800	12600	12700	55400	26600	43100	49700	37900	22300	32300
15	14100	17400	11800	12700	12400	66100	25100	44000	52600	35400	17800	32500
16	14300	17700	11800	12900	12900	81400	24700	45600	61100	33800	17100	31900
17	16000	17100	11400	13400	13300	90500	23000	45900	71500	32400	17000	31600
18	15400	16400	11300	13900	13000	94200	20200	44900	78400	30900	18600	31600
19	13400	15100	10900	13300	12800	97600	16500	44600	84400	30500	21900	34700
20	13700	12500	10800	13000	12700	98800	14100	46900	87000	30300	28000	37100
21	13800	11700	10800	12800	12700	96400	14100	49900	89500	30500	36600	38500
22	14200	11700	10700	12800	12900	91900	15600	54400	91200	30300	43000	38900
23	14200	13800	10300	12700	12400	86200	18100	59000	89400	28200	48800	36500
24	14200	13700	10300	12700	12700	77800	23500	61900	84500	24100	52700	30200
25	14900	11300	10400	12900	12100	67800	30500	61300	79800	19100	59700	24800
26	15000	11600	10500	12200	12200	59700	37500	61000	75500	16800	65300	21600
27	14800	11400	10600	12400	12500	49600	42300	58700	70900	20100	65900	20800
28	14200	12000	10600	12300	12400	41100	44700	54500	67800	25200	59500	23000
29	14000	13600	10700	12400	---	36400	45800	45300	71500	35300	50200	25000
30	13800	13500	10900	12500	---	35200	47600	39400	73500	45100	45300	24200
31	16500	---	11000	12400	---	32100	---	38300	---	47900	42900	---
TOTAL	457600	481000	379300	391400	351900	1501700	833500	1526400	1816700	1292100	1253300	896500
MEAN	14760	16030	12240	12630	12570	48440	27780	49240	60560	41680	40430	29880
MAX	16700	20600	16900	14400	13300	98800	47600	61900	91200	76500	65900	42500
MIN	13400	11300	10300	11000	12100	12300	14100	38300	36300	16800	17000	17300
CFSM	.22	.24	.18	.19	.19	.72	.41	.73	.90	.62	.60	.44
IN.	.25	.27	.21	.22	.19	.83	.46	.84	1.00	.71	.69	.49

CAL YR 1989 TOTAL 9078260 MEAN 24870 MAX 103000 MIN 9310 CFSM .37 IN. 5.00
WTR YR 1990 TOTAL 11181400 MEAN 30630 MAX 98800 MIN 10300 CFSM .45 IN. 6.16

05389500 MISSISSIPPI RIVER AT MCGREGOR, IA--Continued

WATER-QUALITY RECORDS

LOCATION.--Samples collected by boat 1.5 mi downstream from discharge station. Prior to April 1981, at bridge on U.S. Highway 18, 1.2 mi upstream from gage.

PERIOD OF RECORD.--Water years 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.--

SEDIMENT CONCENTRATIONS: Maximum daily mean, 2350 mg/L, Mar. 19, 1986; minimum daily mean, 1 mg/L, Dec. 23-25, 1976, Dec. 20, 28, 1977, Feb. 13-17, 23, Mar. 5-9, 1986, Dec. 2, 6, 8-11, 1987, Dec. 26, 1988 to Jan. 4, 1989, Jan. 9-11, and Feb. 20, 21, 1989, Jan. 5, 6, 1990.

SEDIMENT LOADS: Maximum daily, 363,000 tons, Mar. 19, 1986; minimum daily, 31 tons, Dec. 25, 1976.

EXTREMES FOR CURRENT YEAR.--

SEDIMENT CONCENTRATIONS: Maximum daily mean, 336 mg/L, Mar. 12; minimum daily mean, 1 mg/L, Jan. 5, 6.

SEDIMENT LOADS: Maximum daily, 36,000 tons, Mar. 16; minimum daily, 32 tons Jan. 5, 6.

SPECIFIC CONDUCTANCE MICROSIEMENS/CM AT 25 DEG C, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
INSTANTANEOUS VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	383	459	---	---	---	---	---	400	---	---
2	394	---	---	---	457	431	376	298	321	428	---	---
3	---	383	---	---	---	---	---	361	---	---	---	---
4	---	---	410	---	---	---	---	---	---	447	468	426
5	403	---	---	426	467	426	384	---	418	---	---	---
6	---	---	---	---	---	---	---	---	---	454	---	---
7	---	398	---	---	---	---	---	---	---	---	471	427
8	---	---	410	450	---	---	---	---	396	468	---	---
9	413	---	---	---	414	383	368	---	---	---	---	---
10	---	394	---	---	---	404	---	349	---	465	494	---
11	---	---	435	446	411	---	---	---	---	---	---	433
12	416	---	---	---	---	381	361	---	389	470	---	---
13	---	---	---	---	449	---	---	---	---	440	492	---
14	---	399	---	---	---	---	---	367	---	---	---	476
15	418	---	435	444	---	---	---	---	351	---	---	---
16	---	---	---	---	443	473	348	---	---	450	---	---
17	---	---	---	---	---	---	---	378	---	---	514	---
18	---	389	417	---	---	329	---	---	---	---	---	448
19	429	---	---	436	460	---	341	---	354	---	---	---
20	---	378	---	---	---	---	---	---	---	464	---	---
21	---	---	---	---	---	---	---	345	---	---	479	432
22	429	352	414	438	---	---	---	---	399	---	---	---
23	432	368	---	---	463	318	337	---	---	467	---	---
24	---	---	---	---	---	---	---	---	---	---	---	327
25	---	---	459	411	---	---	---	308	---	---	---	---
26	---	373	---	---	467	376	355	---	415	---	---	---
27	---	---	---	---	---	---	---	---	---	464	349	---
28	---	---	---	---	---	---	---	312	---	---	---	350
29	---	400	399	430	---	---	---	---	394	---	460	---
30	335	---	---	---	---	371	343	---	416	---	338	---
31	---	---	---	---	---	---	---	338	---	468	---	---

MISSISSIPPI RIVER MAIN STEM

05389500 MISSISSIPPI RIVER AT MCGREGOR, IA--Continued

WATER-QUALITY RECORDS

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
INSTANTANEOUS VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	.0	.0	---	---	---	---	---	26.0	---	---
2	15.0	---	---	---	.0	2.0	6.0	16.0	20.0	26.0	---	---
3	---	12.0	---	---	---	---	---	14.0	---	---	---	---
4	---	---	1.0	---	---	---	---	---	---	24.0	22.0	24.0
5	12.0	---	---	.0	.0	2.0	---	---	18.0	---	---	---
6	---	---	---	---	---	---	---	---	---	28.0	---	---
7	---	6.0	---	---	---	---	---	---	---	---	22.0	24.0
8	---	---	.0	.0	---	---	---	---	20.0	27.0	---	---
9	10.0	---	---	---	2.0	---	10.0	---	---	---	---	---
10	---	6.0	---	---	---	4.0	---	16.0	---	28.0	24.0	---
11	---	---	.0	.0	2.0	---	---	---	---	---	---	24.0
12	10.0	---	---	---	---	5.0	8.0	---	20.0	26.0	---	---
13	---	---	---	---	4.0	---	---	---	---	24.0	24.0	---
14	---	11.0	---	---	---	---	---	18.0	---	---	---	24.0
15	9.0	---	.0	.0	---	---	---	---	24.0	---	---	---
16	---	---	---	---	.0	5.0	8.0	---	---	26.0	---	---
17	---	---	---	---	---	---	---	18.0	---	---	26.0	---
18	---	7.0	.0	---	---	5.0	---	---	---	---	---	11.0
19	8.0	---	---	.0	---	---	8.0	---	24.0	---	---	---
20	---	4.0	---	---	---	---	---	---	---	26.0	---	---
21	---	---	---	---	---	---	---	18.0	---	---	21.0	14.0
22	12.0	4.0	.0	1.0	---	---	---	---	26.0	---	---	---
23	8.0	4.0	---	---	.0	5.0	16.0	---	---	27.0	---	---
24	---	---	---	---	---	---	---	---	---	---	---	14.0
25	---	---	.0	1.0	---	---	---	18.0	---	---	---	---
26	---	2.0	---	---	.0	5.0	18.0	---	26.0	---	---	---
27	---	---	---	---	---	---	---	---	---	24.0	24.0	---
28	---	---	---	---	---	---	---	18.0	---	---	---	---
29	---	2.0	.0	.0	---	---	---	---	26.0	---	26.0	---
30	12.0	---	---	---	---	6.0	15.0	---	25.0	---	20.0	---
31	---	---	---	---	---	---	---	18.0	---	26.0	---	---

SUSPENDED-SEDIMENT, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DAY	MEAN CONCEN- TRATION (MG/L)	LOAD (TONS/ DAY)	MEAN CONCEN- TRATION (MG/L)	LOAD (TONS/ DAY)	MEAN CONCEN- TRATION (MG/L)	LOAD (TONS/ DAY)	MEAN CONCEN- TRATION (MG/L)	LOAD (TONS/ DAY)	MEAN CONCEN- TRATION (MG/L)	LOAD (TONS/ DAY)	MEAN CONCEN- TRATION (MG/L)	LOAD (TONS/ DAY)
OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH		
1	74	3340	59	2770	5	190	4	119	3	102	4	133
2	25	1090	54	2550	4	173	4	122	4	136	5	167
3	25	1090	54	2520	6	274	3	92	4	135	6	206
4	24	1020	60	2770	3	124	2	63	4	133	7	240
5	35	1470	55	2540	4	161	1	32	4	134	7	248
6	31	1230	46	2210	7	291	1	32	3	101	7	249
7	23	919	36	1870	5	201	2	64	3	100	6	215
8	23	919	30	1670	4	149	2	64	15	502	113	4270
9	23	950	26	1430	4	139	4	156	67	2260	59	2770
10	24	940	24	1310	3	101	5	192	55	1860	110	6000
11	25	1050	23	1240	3	99	7	266	31	1040	323	21100
12	24	901	23	1200	3	96	9	343	17	560	336	30300
13	21	777	24	1210	3	96	8	268	10	348	254	30600
14	22	808	24	1170	2	64	6	204	9	309	214	32000
15	33	1260	24	1130	2	64	5	171	9	301	189	33700
16	36	1390	24	1150	2	64	15	522	9	313	164	36000
17	31	1340	34	1570	3	92	24	868	9	323	110	26900
18	29	1210	71	3140	3	92	26	976	8	281	58	14800
19	27	977	40	1630	3	88	25	898	8	276	47	12400
20	25	925	23	776	3	87	18	632	8	274	42	11200
21	22	820	22	695	3	87	6	207	7	240	39	10200
22	19	728	119	3760	4	116	2	69	7	244	36	8930
23	12	460	274	10200	4	111	2	69	7	234	32	7450
24	12	460	337	12500	3	83	3	103	7	240	28	5880
25	22	885	166	5060	2	56	3	104	6	196	23	4210
26	26	1050	54	1690	2	57	3	99	5	165	20	3220
27	28	1120	23	708	3	86	3	100	4	135	19	2540
28	29	1110	10	324	4	114	3	100	4	134	19	2110
29	45	1700	5	184	4	116	3	100	---	---	19	1870
30	87	3240	7	255	4	118	4	135	---	---	21	2000
31	77	3430	---	---	4	119	3	100	---	---	27	2340
TOTAL	---	38609	---	71232	---	3708	---	7270	---	11076	---	314248

05389500 MISSISSIPPI RIVER AT MCGREGOR, IA--Continued

WATER-QUALITY RECORDS

SUSPENDED-SEDIMENT, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

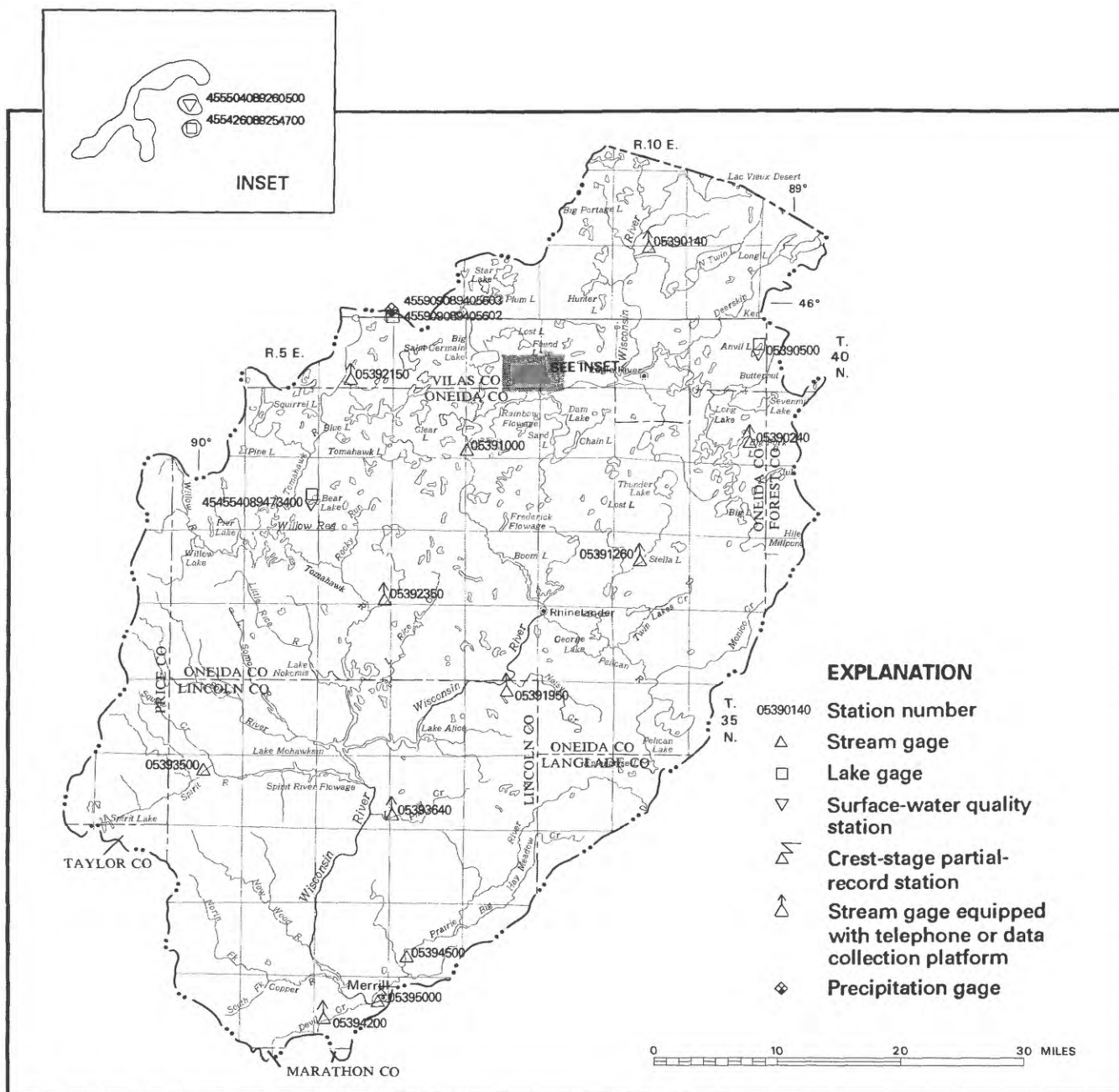
DAY	MEAN CONCEN- TRATION (MG/L)	LOAD (TONS/ DAY)	MEAN CONCEN- TRATION (MG/L)	LOAD (TONS/ DAY)	MEAN CONCEN- TRATION (MG/L)	LOAD (TONS/ DAY)	MEAN CONCEN- TRATION (MG/L)	LOAD (TONS/ DAY)	MEAN CONCEN- TRATION (MG/L)	LOAD (TONS/ DAY)	MEAN CONCEN- TRATION (MG/L)	LOAD (TONS/ DAY)
APRIL			MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	28	2540	134	17400	34	3400	62	12600	47	5890	50	5740
2	27	2330	133	17000	46	4510	65	13400	49	6380	45	5100
3	26	2200	125	15800	55	5490	62	12700	50	6530	43	4640
4	26	2060	107	13900	51	5250	55	10800	51	6660	42	3900
5	25	1780	82	11000	44	4560	54	9510	49	6360	41	2780
6	25	1570	55	7570	45	4940	53	8040	48	6070	40	2280
7	24	1440	41	5620	46	5070	52	6750	46	5510	40	1870
8	25	1540	40	5350	46	5250	54	6630	46	5370	40	1910
9	28	1960	48	6390	48	5780	64	7790	44	4780	53	3230
10	31	2430	61	8320	52	6420	68	8410	42	4330	70	5200
11	34	2760	57	7260	55	6820	64	7970	36	3350	86	6760
12	32	2560	53	6470	54	6660	53	6450	30	2380	82	6990
13	29	2200	50	5940	47	5940	57	6290	25	1650	61	5250
14	25	1800	48	5590	40	5370	57	5830	20	1200	45	3920
15	23	1560	45	5350	44	6250	55	5260	17	817	37	3250
16	28	1870	42	5170	51	8410	53	4840	16	739	33	2840
17	34	2110	40	4960	44	8490	52	4550	23	1060	32	2730
18	50	2730	40	4850	32	6770	52	4340	48	2410	64	5460
19	84	3740	41	4940	27	6150	51	4200	98	5790	54	5060
20	81	3080	46	5820	40	9400	50	4090	161	12200	40	4010
21	59	2250	51	6870	42	10100	46	3790	226	22300	36	3740
22	53	2230	50	7340	36	8860	39	3190	167	19400	38	3990
23	50	2440	43	6850	36	8690	35	2660	70	9220	42	4140
24	48	3050	35	5850	36	8210	34	2210	61	8680	53	4320
25	47	3870	29	4800	37	7970	33	1700	61	9830	53	3550
26	46	4660	26	4280	37	7540	32	1450	60	10600	48	2800
27	58	6620	30	4750	36	6890	32	1740	59	10500	44	2470
28	85	10300	37	5440	36	6590	32	2180	54	8680	150	9310
29	103	12700	35	4280	56	10800	34	3240	49	6640	94	6340
30	125	16100	36	3830	71	14100	40	4870	55	6730	65	4250
31	---	---	33	3410	---	---	45	5820	54	6250	---	---
TOTAL YEAR	---	108480 1507139	---	222400	---	210680	---	183300	---	208306	---	127830

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	TEMPER- ATURE WATER (DEG C) (00010)	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT 1989						
25...	1240	18.0	10600	22	629	93
APR 1990						
11...	1300	8.5	31300	39	3200	97
MAY						
23...	1230	16.0	56300	42	6380	97
JUL						
11...	1245	21.0	49000	70	9260	99
AUG						
23...	1245	24.0	45300	71	8680	97
SEP						
27...	1400	17.0	19500	46	2420	98

PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	NUMBER OF SAM- PLING POINTS (COUNT) (00063)	BED MAT. SIEVE DIAM. % FINER THAN .062 MM (80164)	BED MAT. SIEVE DIAM. % FINER THAN .125 MM (80165)	BED MAT. SIEVE DIAM. % FINER THAN .250 MM (80166)	BED MAT. SIEVE DIAM. % FINER THAN .500 MM (80167)	BED MAT. SIEVE DIAM. % FINER THAN 1.00 MM (80168)	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM (80169)	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM (80170)
OCT 1989									
25...	1220	3	1	4	20	80	92	97	100
APR 1990									
11...	1300	2	0	1	8	80	99	100	--
MAY									
23...	1230	2	0	1	17	92	99	100	--
AUG									
23...	1245	4	2	10	47	92	99	99	100
SEP									
27...	1400	4	1	2	23	90	97	99	100



Base from U.S. Geological Survey
State base map, 1968

UPPER WISCONSIN RIVER BASIN

05390500 ANVIL LAKE NEAR EAGLE RIVER, WI

LAKE-STAGE RECORDS

LOCATION.--Lat 45°57'07", long 89°03'26", in NW 1/4 NE 1/4 sec.13, T.40 N., R.11 E., Vilas County, Hydrologic Unit 07070001, 9.6 mi east of Eagle River.

DRAINAGE AREA.--4.11 mi². Area of Anvil Lake, 380 acres.

PERIOD OF RECORD.--August 1936 to September 1981 (fragmentary), June 1985 to current year.

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

GAGE.--Nonrecording gage. Datum of gage is 90.00 ft above datum assumed by Wisconsin Department of Natural Resources: gage readings have been reduced to elevations above this datum. Prior to Aug. 13, 1950, staff gage 0.3 mi southeast at same datum; Aug. 14 to Sept. 30, 1981, staff gage 0.2 mi east at same datum. Gage read by James Sachse through October 1988, and Albert Korecky thereafter.

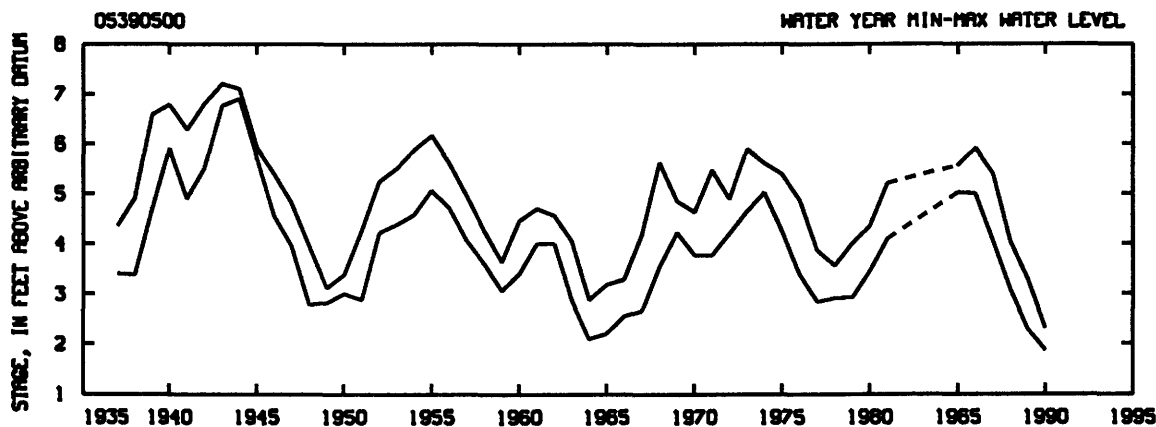
REMARKS.--Add 90 ft to obtain elevation above datum assumed for this lake by Wisconsin Department of Natural Resources. Lake has no surface outlet.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height observed, 7.20 ft, May 3, 7, 17, 21, 24, 28, June 20 and 24, 1943; minimum observed, 1.87 ft Sept. 1, 1990.

EXTREMES FOR CURRENT YEAR.--Maximum gage height observed, 2.31 ft, June 19; minimum observed, 1.87 ft, Sept. 1.

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	GAGE HEIGHT	DATE	GAGE HEIGHT	DATE	GAGE HEIGHT	DATE	GAGE HEIGHT
MAY 29	2.28	JUNE 29	2.25	JULY 25	2.05	SEPT. 1	1.87
JUNE 6	2.27	JULY 4	2.25	31	2.09	7	1.99
13	2.29	11	2.19	AUG. 9	1.95	20	2.03
19	2.31	18	2.11	21	1.89	27	1.95



WATER-QUALITY RECORDS

LOCATION.--Lat 45°56'39", long 89°03'44", in NE 1/4 SW 1/4 sec.13, T.40 N., R.11 E., Vilas County, Hydrologic Unit 07070001, near center of lake, and 9.2 mi east of Eagle River.

PERIOD OF RECORD.--June 1985 to current year.

REMARKS.--Secchi disc readings made by Albert Korecky.

SECCHI DISC TRANSPARENCY (IN METERS) WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	SECCHI DISC (M) (00078)	DATE	TIME	SECCHI DISC (M) (00078)
OCT 1989			JUL 1990		
04...	1000	2.6	18...	1001	3.7
MAY 1990			25...	1036	4.5
29...	0954	5.6	31...	1023	3.1
JUN			AUG		
06...	0956	4.2	09...	1114	3.1
13...	1030	3.9	21...	1209	2.3
19...	0935	3.7	SEP		
29...	1000	5.8	01...	1405	2.4
JUL			07...	1040	2.1
04...	0930	5.2	20...	1108	1.3
11...	1039	4.5	27...	1104	1.0

WISCONSIN RIVER BASIN

455426089254700 ALMA LAKE NEAR ST. GERMAIN, WI

LOCATION.--Lat 45°54'26", long 89°25'47", in NE 1/4 sec.36, T.40 N., R.8 E., Vilas County, Hydrologic Unit 07070001, 3 mi east of St. Germain.

PERIOD OF RECORD.--October 1984 to current year.

GAGE.--Staff gage read by John P. Seibel. Elevation of gage is 1,617 ft, from topographic map.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height observed, 12.35 ft, Apr. 11, 12, 1986; minimum observed, 8.98 ft, Oct. 26, 27, 1989.

EXTREMES FOR CURRENT YEAR.--Maximum gage height observed, 9.52 ft, Sept. 14-15, 20; minimum observed, 8.98 ft, Oct. 26, 27.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.14	9.01	---	---	---	---	---	9.15	9.20	9.29	9.28	9.30
2	9.13	9.02	---	---	---	---	---	9.14	9.22	9.28	9.27	9.30
3	9.12	9.04	---	---	---	---	---	9.13	9.23	9.26	9.26	9.29
4	9.10	9.04	---	---	---	---	---	9.12	9.24	9.25	9.25	9.28
5	9.09	9.06	---	---	---	---	---	9.11	9.27	9.24	9.24	9.28
6	9.10	9.06	---	---	---	---	---	9.10	9.26	9.21	9.23	9.48
7	9.10	9.07	---	---	---	---	---	9.10	9.26	9.22	9.22	9.48
8	9.09	9.08	---	---	---	---	---	9.10	9.26	9.32	9.20	9.48
9	9.08	9.07	---	---	---	---	---	9.11	9.26	9.32	9.18	9.46
10	9.08	9.07	---	---	---	---	---	9.12	9.26	9.31	9.20	9.46
11	9.07	9.06	---	---	---	---	---	9.12	9.32	9.30	9.20	9.48
12	9.06	9.05	---	---	---	---	---	9.12	9.34	9.29	9.19	9.48
13	9.06	9.04	---	---	---	---	---	9.12	9.32	9.29	9.18	9.48
14	9.05	9.04	---	---	---	---	9.14	9.18	9.32	9.28	9.16	9.52
15	9.05	9.04	---	---	---	---	9.15	9.20	9.32	9.28	9.18	9.52
16	9.04	---	---	---	---	---	9.16	9.24	9.34	9.28	9.17	9.51
17	9.03	---	---	---	---	---	9.16	9.25	9.34	9.29	9.16	9.51
18	9.03	---	---	---	---	---	9.15	9.26	9.33	9.30	9.26	9.51
19	9.02	---	---	---	---	---	9.14	9.26	9.32	9.30	9.30	9.51
20	9.02	---	---	---	---	---	9.13	9.26	9.32	9.29	9.30	9.52
21	9.01	---	---	---	---	---	9.12	9.26	9.32	9.28	9.30	9.51
22	9.01	---	---	---	---	---	9.12	9.26	9.31	9.28	9.29	9.51
23	9.00	---	---	---	---	---	9.14	9.26	9.31	9.29	9.28	9.50
24	9.00	---	---	---	---	---	9.16	9.26	9.30	9.29	9.30	9.48
25	8.99	---	---	---	---	---	9.16	9.26	9.30	9.28	9.30	9.47
26	8.98	---	---	---	---	---	9.16	9.26	9.31	9.28	9.32	9.46
27	8.98	---	---	---	---	---	9.16	9.28	9.31	9.28	9.32	9.46
28	8.99	---	---	---	---	---	9.17	9.27	9.30	9.28	9.32	9.45
29	9.00	---	---	---	---	---	9.17	9.26	9.30	9.30	9.32	9.45
30	9.00	---	---	---	---	---	9.16	9.24	9.30	9.30	9.31	9.46
31	9.01	---	---	---	---	---	---	9.22	---	9.29	9.31	---
MAX	9.14	9.08	---	---	---	---	9.17	9.28	9.34	9.32	9.32	9.52
MIN	8.98	9.01	---	---	---	---	9.12	9.10	9.20	9.21	9.16	9.28

455504089260500 MOON LAKE NEAR ST. GERMAIN, WI

LOCATION.--Lat 45°55'04", long 89°26'05", in SE 1/4 SE 1/4 sec.25, T.40 N., R.8 E., Vilas County, Hydrologic Unit 07070001, near center of lake, and 3 mi east of St. Germain.

PERIOD OF RECORD.--May 1985 to September 1988, October 1989 to September 1990.

REMARKS.--Secchi disc readings made by John Schunk.

SECCHI DISC TRANSPARENCY (IN METERS) WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	SECCHI DISC (M) (00078)	DATE	TIME	SECCHI DISC (M) (00078)
JUN 1990			AUG 1990		
08...	1100	5.2	10...	0930	5.0
14...	1030	5.3	16...	1000	5.2
23...	1100	5.3	24...	1100	5.0
29...	1030	5.5	30...	1130	5.3
JUL			SEP		
27...	1100	5.0	07...	1100	5.2
AUG			13...	0930	5.3
02...	1000	5.2	20...	1100	5.2

WISCONSIN RIVER BASIN

05391000 WISCONSIN RIVER AT RAINBOW LAKE, NEAR LAKE TOMAHAWK, WI

LOCATION.--Lat 45°49'50", long 89°33'08", in NE 1/4 NE 1/4 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 mi².

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 National Geodetic Vertical Datum of 1929 (levels by Wisconsin Valley Improvement Co.).

REMARKS.--No estimated daily discharges. Record good. Flow regulated by Rainbow Lake and 12 smaller reservoirs upstream from station.

AVERAGE DISCHARGE.--54 years, 686 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,570 ft³/s, Sept. 5, 1941, gage height, 7.59 ft; minimum, 17 ft³/s, Oct. 10-12, 1940; minimum daily, 35 ft³/s, Apr. 6, 1955.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 740 ft³/s, Aug. 16, gage height, 2.63 ft; minimum daily, 200 ft³/s, May 10.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).

0.7	196	2.0	515
1.0	261	3.0	889

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	302	250	336	353	421	409	309	202	302	467	504	385
2	299	251	331	352	421	409	303	239	294	466	525	367
3	299	270	336	350	423	413	305	297	293	453	450	366
4	297	297	339	348	423	412	303	317	311	442	401	404
5	296	331	336	349	445	409	299	316	334	453	362	428
6	290	288	332	349	460	402	298	319	298	460	414	336
7	288	234	337	349	447	399	298	319	283	446	448	345
8	287	217	341	349	438	395	299	310	276	445	435	420
9	284	218	342	346	435	394	297	242	266	381	436	418
10	282	258	341	346	434	395	295	200	266	340	407	395
11	279	281	342	343	434	397	295	224	329	408	379	355
12	278	273	346	343	432	294	294	235	342	457	369	316
13	275	273	348	346	427	211	294	238	341	457	413	299
14	272	275	348	348	427	227	294	298	336	457	398	345
15	270	274	349	348	426	233	290	285	329	457	335	506
16	264	275	351	346	425	225	289	295	331	459	659	655
17	260	293	352	343	427	217	285	313	332	461	479	683
18	260	288	352	342	426	216	285	311	398	461	478	653
19	258	281	349	346	424	263	288	311	496	395	361	688
20	254	262	348	347	424	303	290	311	531	338	281	725
21	250	261	358	350	416	305	292	300	530	393	312	724
22	251	278	360	389	408	302	291	289	522	433	434	644
23	250	298	362	427	409	303	291	295	509	426	499	542
24	231	308	359	427	407	306	293	286	475	422	493	507
25	218	316	355	426	411	305	294	332	447	424	392	497
26	218	320	354	428	412	302	293	356	443	439	296	490
27	235	327	354	428	408	300	300	355	443	452	272	482
28	246	332	354	429	409	301	254	353	445	450	400	513
29	247	336	354	425	---	304	214	340	444	439	482	534
30	243	336	355	421	---	312	212	336	457	368	481	532
31	247	---	355	423	---	311	---	326	---	330	436	---
TOTAL	8230	8501	10776	11516	11899	9974	8644	9150	11403	13279	13031	14554
MEAN	265	283	348	371	425	322	288	295	380	428	420	485
MAX	302	336	362	429	460	413	309	356	531	467	659	725
MIN	218	217	331	342	407	211	212	200	266	330	272	299
CAL YR 1989	TOTAL 150783	MEAN 413	MAX 817	MIN 195								
WTR YR 1990	TOTAL 130957	MEAN 359	MAX 725	MIN 200								

455909089405602 VANDERCOOK LAKE NEAR WOODRUFF, WI

LOCATION.--Lat 45°59'09", long 89°40'56", in SW 1/4 NE 1/4 SE 1/4 sec.36, T.41 N., R.6 E., Vilas County, Hydrologic Unit 07070001, at north end of lake on dirt road off County Trunk Highway M, 6.1 mi north of Woodruff.

DRAINAGE AREA.--1.11 mi². Area of lake, 0.17 mi².

PERIOD OF RECORD.--November 1980 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,600.00 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except for periods of missing record, Nov. 15 to Dec. 12, Dec. 14 to Jan. 3, Jan. 5 to Feb. 6, Feb. 8-27, and Mar. 1 to Apr. 2. Lake does not have surface inlet or outlet.

EXTREMES FOR PERIOD OF RECORD.--Maximum observed gage height, 32.26 ft, Apr. 8-10, 1986; minimum observed gage height, 28.97 ft, Oct. 28, 1989.

EXTREMES FOR CURRENT YEAR.--Maximum observed gage height, 29.39 ft, Sept. 30; minimum observed gage height, 28.97 ft, Oct. 28.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	29.11	29.04	---	---	---	---	---	29.29	29.31	29.27	29.13	29.22
2	29.12	29.03	---	---	---	---	---	29.25	29.30	29.26	29.11	29.20
3	29.09	29.03	---	---	---	---	29.27	29.22	29.33	29.25	29.10	29.19
4	29.08	29.04	---	29.11	---	---	29.27	29.21	29.32	29.23	29.08	29.18
5	29.09	29.06	---	---	---	---	29.27	29.20	29.32	29.20	29.06	29.17
6	29.09	29.07	---	---	---	---	29.27	29.19	29.31	29.18	29.04	29.29
7	29.08	29.07	---	---	29.15	---	29.27	29.18	29.28	29.15	29.02	29.33
8	29.07	29.07	---	---	---	---	29.27	29.18	29.28	29.25	29.01	29.32
9	29.06	29.06	---	---	---	---	29.27	29.20	29.27	29.28	29.07	29.32
10	29.07	29.06	---	---	---	---	29.27	29.25	29.27	29.27	29.17	29.31
11	29.07	29.06	---	---	---	---	29.27	29.24	29.26	29.25	29.16	29.30
12	29.06	29.04	---	---	---	---	29.27	29.23	29.29	29.22	29.15	29.34
13	29.05	29.04	29.05	---	---	---	29.27	29.23	29.31	29.20	29.13	29.34
14	29.05	29.04	---	---	---	---	29.27	29.24	29.31	29.19	29.14	29.35
15	29.05	---	---	---	---	---	29.27	29.25	29.30	29.20	29.18	29.35
16	29.04	---	---	---	---	---	29.26	29.35	29.30	29.20	29.17	29.35
17	29.03	---	---	---	---	---	29.26	29.36	29.34	29.21	29.16	29.35
18	29.01	---	---	---	---	---	29.25	29.35	29.32	29.21	29.23	29.36
19	29.01	---	---	---	---	---	29.25	29.34	29.31	29.20	29.26	29.37
20	29.00	---	---	---	---	---	29.24	29.36	29.30	29.20	29.25	29.37
21	29.00	---	---	---	---	---	29.24	29.35	29.28	29.18	29.25	29.37
22	28.99	---	---	---	---	---	29.24	29.35	29.27	29.17	29.24	29.37
23	28.99	---	---	---	---	---	29.24	29.36	29.26	29.18	29.22	29.37
24	28.99	---	---	---	---	---	29.26	29.37	29.25	29.17	29.21	29.37
25	28.98	---	---	---	---	---	29.26	29.36	29.24	29.16	29.21	29.38
26	28.98	---	---	---	---	---	29.26	29.35	29.25	29.15	29.25	29.38
27	28.98	---	---	---	---	---	29.29	29.36	29.24	29.15	29.26	29.38
28	28.97	---	---	---	29.15	---	29.34	29.36	29.23	29.14	29.25	29.38
29	29.01	---	---	---	---	---	29.33	29.34	29.23	29.15	29.25	29.38
30	29.01	---	---	---	---	---	29.32	29.32	29.28	29.16	29.24	29.39
31	29.04	---	---	---	---	---	---	29.32	---	29.14	29.23	---
MEAN	29.04	---	---	---	---	---	---	29.29	29.29	29.20	29.17	29.33
MAX	29.12	---	---	---	---	---	---	29.37	29.34	29.28	29.26	29.39
MIN	28.97	---	---	---	---	---	---	29.18	29.23	29.14	29.01	29.17

WISCONSIN RIVER BASIN

455909089405603 VANDERCOOK LAKE RAIN GAGE NEAR WOODRUFF, WI

LOCATION.--Lat 45°59'09", long 89°40'56", in SW 1/4 NE 1/4 SE 1/4 sec.36, T.41 N., R.6 E., Vilas County,
Hydrologic Unit 07070001, at north end of lake on dirt road off County Trunk Highway M, 6.1 mi north of
Woodruff.

PERIOD OF RECORD.--March 1981 to current year.

GAGE.--Water-stage recorder.

REMARKS.--Records good.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily rainfall, 2.98 in., Aug. 10, 1983.

EXTREMES FOR CURRENT YEAR.--Maximum daily rainfall, 2.64 in., Aug. 9.

RAINFALL ACCUMULATED (INCHES), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	---	---	---	---	---	---	---	.00	.00	.00	.01
2	.32	---	---	---	---	---	---	.00	.17	.00	.00	.00
3	---	---	---	---	---	---	---	.00	.30	.00	.00	.06
4	---	---	---	---	---	---	---	.00	.01	.00	.00	.01
5	---	---	---	---	---	---	---	.00	.17	.00	.00	.44
6	---	---	---	---	---	---	---	.00	.01	.00	.00	1.81
7	---	---	---	---	---	---	---	.00	.00	.00	.00	.01
8	---	---	---	---	---	---	---	.00	.03	1.50	.00	.00
9	---	---	---	---	---	---	---	.95	.07	.00	2.64	.00
10	---	---	---	---	---	---	---	.31	.00	.00	.01	.01
11	---	---	---	---	---	---	---	.00	.04	.00	.00	.00
12	---	---	---	---	---	---	---	.00	.61	.00	.00	.63
13	---	---	---	---	---	---	---	.00	.02	.00	.01	.88
14	---	---	---	---	---	---	---	.45	.00	.00	1.00	.25
15	---	---	---	---	---	---	---	.08	.00	.41	.01	.17
16	---	---	---	---	---	---	---	1.42	.59	.13	.00	.01
17	---	---	---	---	---	---	---	.07	.06	.16	.00	.00
18	---	---	---	---	---	---	---	.00	.02	.04	1.57	.21
19	---	---	---	---	---	---	---	.28	.00	.23	.08	.01
20	---	---	---	---	---	---	---	.00	.00	.00	.00	.09
21	---	---	---	---	---	---	---	.00	.03	.00	.01	.22
22	---	---	---	---	---	---	---	.01	.04	.35	.00	.09
23	---	---	---	---	---	---	---	.31	.02	.06	.00	.02
24	---	---	---	---	---	---	---	.02	.00	.00	.00	.01
25	---	---	---	---	---	---	---	.07	.00	.00	.05	.00
26	---	---	---	---	---	---	---	.01	.24	.00	.85	.00
27	---	---	---	---	---	---	---	.24	.00	.22	.00	.00
28	---	---	---	---	---	---	---	.01	.10	.01	.00	.00
29	---	---	---	---	---	---	---	.00	.81	.67	.21	.12
30	---	---	---	---	---	---	---	.00	.01	.00	.00	.05
31	---	---	---	---	---	---	---	.00	---	.00	.07	---
TOTAL	---	---	---	---	---	---	---	---	3.35	3.78	6.51	5.11

454554089473400 BEAR LAKE NEAR HAZELHURST, WI

LAKE-STAGE RECORDS

LOCATION.--Lat 45°45'54", long 89°47'34", in SW 1/4 sec. 19, T.38 N., R.6 E., Oneida County, Hydrologic Unit 07070001, 4.5 mi southwest of Hazelhurst.

PERIOD OF RECORD.--October 1984 to current year.

GAGE.--Staff gage read by Ruth Van Prooien. Elevation of gage is 1,562 ft, from topographic map.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height observed, 8.85 ft, Sept. 14, 1990; minimum observed, 7.50 ft, May 17, 1987.

EXTREMES FOR CURRENT YEAR.--Maximum gage height observed, 8.85 ft, Sept. 14; minimum observed, 8.16 ft, Apr. 27.

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	HEIGHT	DATE	HEIGHT	DATE	HEIGHT	DATE	HEIGHT
APR. 27	8.16	MAY 16	8.38	JULY 3	8.28	AUG. 26	8.56
28	8.20	24	8.34	8	8.32	SEPT. 4	8.52
29	8.24	31	8.18	19	8.23	6	8.64
MAY 3	8.20	JUNE 1	8.22	29	8.34	12	8.71
10	8.24	6	8.26	AUG. 9	8.23	14	8.85
14	8.26	13	8.34	21	8.32	23	8.64
		27	8.32	25	8.34	30	8.42

WATER-QUALITY RECORDS

LOCATION.--Lat 45°45'56", long 89°48'04", in SE 1/4 sec. 24, T.38 N., R.5 E., Oneida County, Hydrologic Unit 07070001, near center of lake, and 4.8 mi southwest of Hazelhurst.

PERIOD OF RECORD.--April 1985 to current year.

REMARKS.--Secchi disc readings made by Dale Jalinski.

SECCHI DISC TRANSPARENCY (IN METERS) WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	SECCHI DISC (M) (00078)	DATE	TIME	SECCHI DISC (M) (00078)
OCT 1989			JUN 1990		
08...	1520	4.8	24...	1000	3.4
19...	1510	4.6	JUL		
NOV			14...	0910	3.1
05...	1145	5.1	21...	1030	3.7
APR 1990			31...	1030	2.7
18...	0900	3.8	AUG		
MAY			04...	0915	2.7
06...	1500	4.7	24...	0630	2.9
25...	1400	4.3	SEP		
JUN			03...	1100	2.7
01...	0600	4.6	12...	1400	2.4
10...	1500	3.5	29...	1330	3.7

WISCONSIN RIVER BASIN

05393500 SPIRIT RIVER AT SPIRIT FALLS, WI

LOCATION.--Lat 45°26'58", long 89°58'47", in NW 1/4 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 National Geodetic Vertical Datum of 1929. Prior to Oct. 4, 1982, nonrecording gage 40 ft upstream at same datum.

REMARKS.--Estimated daily discharges: Mar. 16 to Apr. 15, and ice periods listed in rating table below. Records good except those for estimated daily discharges and period of backwater from beaver dam, Oct. 1 to Nov. 16 and Nov. 21-24, which are poor.

AVERAGE DISCHARGE.--48 years, 85.8 ft³/s, 14.28 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,180 ft³/s, Sept. 18, 1942, gage height, 10.00 ft, from rating curve extended above 2,500 ft³/s; minimum observed, 1.0 ft³/s, Aug. 11, 1964, gage height, 0.85 ft.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 800 ft³/s and maximum (*):

DATE	TIME	DISCHARGE (ft ³ /s)	GAGE HEIGHT (ft)	DATE	TIME	DISCHARGE (ft ³ /s)	GAGE HEIGHT (ft)
Mar. 15	----	(a)1,000	ice jam	June 13	1700	*1,650	*6.10
May 16	2000	1,220	5.43	Aug. 20	0500	1,160	5.32
				Sept. 14	2300	1,160	5.33

(a) Estimated daily mean.

Minimum daily discharge, 4.8 ft³/s, Oct. 3, 4, occurred during a period of backwater from beaver dam.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Shifting-control method used Oct. 1 to Nov. 16, Nov. 21-24; stage-discharge relation affected by ice Nov. 17-20 and Nov. 25 to Mar. 15.)

1.1	4.8	2.5	126
1.2	7.0	3.0	225
1.4	14.0	4.0	531
1.7	31.0	5.0	980
2.0	58.0	6.0	1,580

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.3	20	11	8.4	10	12	32	223	51	32	50	65
2	4.9	18	11	8.8	9.6	12	38	154	54	27	36	53
3	4.8	16	10	9.2	9.6	12	45	117	177	23	32	43
4	4.8	15	10	9.4	10	11	58	94	164	20	29	40
5	5.4	23	11	9.0	10	11	52	79	138	18	28	36
6	6.0	36	10	9.2	11	11	60	69	252	16	22	263
7	6.5	34	9.2	9.4	11	12	72	59	174	15	19	418
8	6.9	32	8.4	9.8	11	12	66	52	111	37	17	226
9	7.4	28	8.8	10	11	13	56	33	86	77	18	135
10	8.2	26	9.0	10	10	20	48	437	69	40	23	106
11	8.6	25	8.8	10	10	40	56	406	56	28	23	83
12	9.1	24	8.2	9.8	10	100	48	244	715	22	23	136
13	9.2	21	7.6	9.6	10	250	43	170	1460	18	21	191
14	9.2	20	7.8	9.8	10	500	39	205	1060	16	21	755
15	8.9	20	8.0	10	10	1000	40	420	448	14	30	882
16	12	18	8.0	10	10	820	49	913	257	15	33	461
17	9.8	15	8.2	10	10	460	54	930	275	18	30	262
18	8.3	13	8.4	10	10	250	52	516	256	21	89	178
19	9.1	12	7.8	10	11	190	51	355	175	17	689	239
20	9.8	15	7.4	9.8	11	160	51	478	125	23	1010	214
21	9.8	17	7.2	10	12	140	53	410	99	20	516	189
22	7.5	15	7.2	10	12	110	53	266	82	14	259	181
23	7.4	12	7.2	11	12	94	52	200	71	14	153	144
24	9.1	12	7.2	10	12	84	144	162	56	13	119	114
25	10	10	7.4	9.8	11	70	202	131	45	14	159	91
26	11	11	7.6	9.4	11	60	149	110	69	14	255	75
27	11	12	7.4	9.6	11	50	155	106	44	20	373	63
28	11	11	7.6	10	11	44	348	119	41	27	229	55
29	13	10	7.8	10	---	38	470	94	47	70	141	48
30	13	11	7.8	11	---	35	343	74	39	123	102	52
31	17	---	8.0	10	---	32	---	59	---	74	77	---
TOTAL	274.0	552	261.0	303.0	297.2	4653	2979	7745	6696	900	4626	5798
MEAN	8.84	18.4	8.42	9.77	10.6	150	99.3	250	223	29.0	149	193
MAX	17	36	11	11	12	1000	470	930	1460	123	1010	882
MIN	4.8	10	7.2	8.4	9.6	11	32	52	39	13	17	36
CFSM	.11	.23	.10	.12	.13	1.84	1.22	3.06	2.74	.36	1.83	2.37
IN.	.12	.25	.12	.14	.14	2.12	1.36	3.53	3.05	.41	2.11	2.64
CAL YR 1989	TOTAL 22319.6	MEAN 61.1	MAX 1270	MIN 4.8	CFSM .75	IN. 10.18						
WTR YR 1990	TOTAL 35084.2	MEAN 96.1	MAX 1460	MIN 4.8	CFSM 1.18	IN. 15.99						

05394500 PRAIRIE RIVER NEAR MERRILL, WI

LOCATION.--Lat 45°14'09", long 89°38'59", on line between secs.20 and 29, 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 mi².

PERIOD OF RECORD.--January 1914 to September 1931, August 1939 to current year. Monthly discharge only 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 National Geodetic Vertical Datum of 1929. Prior to Oct. 9, 1968, nonrecording gage 40 ft downstream at same datum.

REMARKS.--Estimated daily discharges: Ice periods listed in table below. Records good except those for ice-affected periods, which are fair.

AVERAGE DISCHARGE.--66 years (1915-31, 1940-90), 179 ft³/s, 13.21 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,800 ft³/s, Aug. 31, 1941, gage height, 9.45 ft, from flood marks, based on rating curve extended above 2,200 ft³/s; minimum observed, 34 ft³/s, Oct. 26, 1947, gage height, 1.39 ft.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 710 ft³/s and maximum (*):

DATE	TIME	DISCHARGE (ft ³ /s)	GAGE HEIGHT (ft)	DATE	TIME	DISCHARGE (ft ³ /s)	GAGE HEIGHT (ft)
Mar. 15	1745	784	4.38	Aug. 20	0345	1,100	5.04
June 13	1930	*1,950	*6.40	Sept. 16	0345	875	4.58

Minimum daily, 57 ft³/s, Oct. 3.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Nov. 18-20, Dec. 9-30, Jan. 14, 15, 20-23, 25-28, 30, Feb. 1, 3, 4, 9, 10, 12, 14-24, 26-28, Mar. 1, 4, 5, 12-14.)

1.8	54	3.0	296
2.0	81	4.0	626
2.5	171	5.0	1,080
		6.0	1,670

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	59	115	76	69	70	68	86	148	112	104	90	159
2	58	105	78	69	69	73	100	125	111	94	84	138
3	57	91	67	69	66	70	103	110	138	89	98	127
4	61	89	73	71	66	66	100	100	161	84	110	119
5	70	95	79	70	67	64	96	93	167	78	97	112
6	73	116	76	69	72	66	89	88	214	75	88	271
7	71	116	63	68	70	67	82	84	200	80	83	509
8	69	115	62	70	70	70	80	81	170	145	78	469
9	69	105	64	70	68	72	80	132	144	215	77	356
10	76	99	68	70	64	73	83	375	131	168	100	278
11	70	95	64	70	61	81	84	424	120	125	155	219
12	69	91	62	66	66	230	80	342	271	105	144	194
13	68	86	64	58	72	460	79	282	1660	93	119	195
14	66	83	68	66	62	640	80	233	1590	88	103	534
15	67	84	66	68	64	773	81	252	1030	88	111	801
16	68	78	62	70	66	674	87	384	641	123	141	835
17	76	63	64	68	64	526	92	451	502	254	125	621
18	68	62	62	69	64	321	88	412	397	216	175	431
19	68	66	60	64	64	230	86	367	285	149	727	367
20	69	74	60	60	62	200	89	434	222	129	979	309
21	73	73	60	62	64	176	95	421	175	107	599	264
22	73	72	58	64	70	150	100	343	151	99	350	254
23	73	61	60	66	68	130	106	277	147	108	230	243
24	72	63	62	70	64	120	141	240	135	111	174	204
25	71	77	64	68	59	111	163	210	123	99	235	185
26	70	77	68	64	66	99	152	180	128	94	391	169
27	70	80	66	64	68	92	146	171	135	92	508	154
28	70	73	68	66	66	90	160	164	134	91	403	142
29	76	66	68	68	---	86	186	149	128	105	289	134
30	86	73	68	70	---	85	176	126	117	123	225	131
31	110	---	70	68	---	84	---	115	---	106	183	---
TOTAL	2196	2543	2050	2084	1852	6047	3170	7313	9639	3637	7271	8924
MEAN	70.8	84.8	66.1	67.2	66.1	195	106	236	321	117	235	297
MAX	110	116	79	71	72	773	186	451	1660	254	979	835
MIN	57	61	58	58	59	64	79	81	111	75	77	112
CFSM	.38	.46	.36	.37	.36	1.06	.57	1.28	1.75	.64	1.27	1.62
IN.	.44	.51	.41	.42	.37	1.22	.64	1.48	1.95	.74	1.47	1.80

CAL YR 1989 TOTAL 41048 MEAN 112 MAX 970 MIN 57 CFSM .61 IN. 8.30
WTR YR 1990 TOTAL 56726 MEAN 155 MAX 1660 MIN 57 CFSM .84 IN. 11.47

WISCONSIN RIVER BASIN

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 mi².

PERIOD OF RECORD.--November 1902 to current year.

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 National Geodetic Vertical Datum of 1929. Prior to June 18, 1903, nonrecording gage at different datum. June 18, 1903, to Sept. 10, 1914, nonrecording gage at present datum.

REMARKS.--Estimated daily discharges: Mar. 14-19 and ice period listed in rating table below. Records good. Flow regulated by 20 reservoirs and 9 powerplants upstream from station. Gage-height telemeter at station.

AVERAGE DISCHARGE.--87 years, 2,652 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 49,400 ft³/s, Aug. 31, 1941, gage height, 18.26 ft from rating curve extended above 20,000 ft³/s; minimum, about 90 ft³/s, Sept. 26, 1908, gage height, 2.45 ft.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 18,400 ft³/s, June 13, gage height, 11.71 ft; minimum daily, 499 ft³/s, Oct. 25.

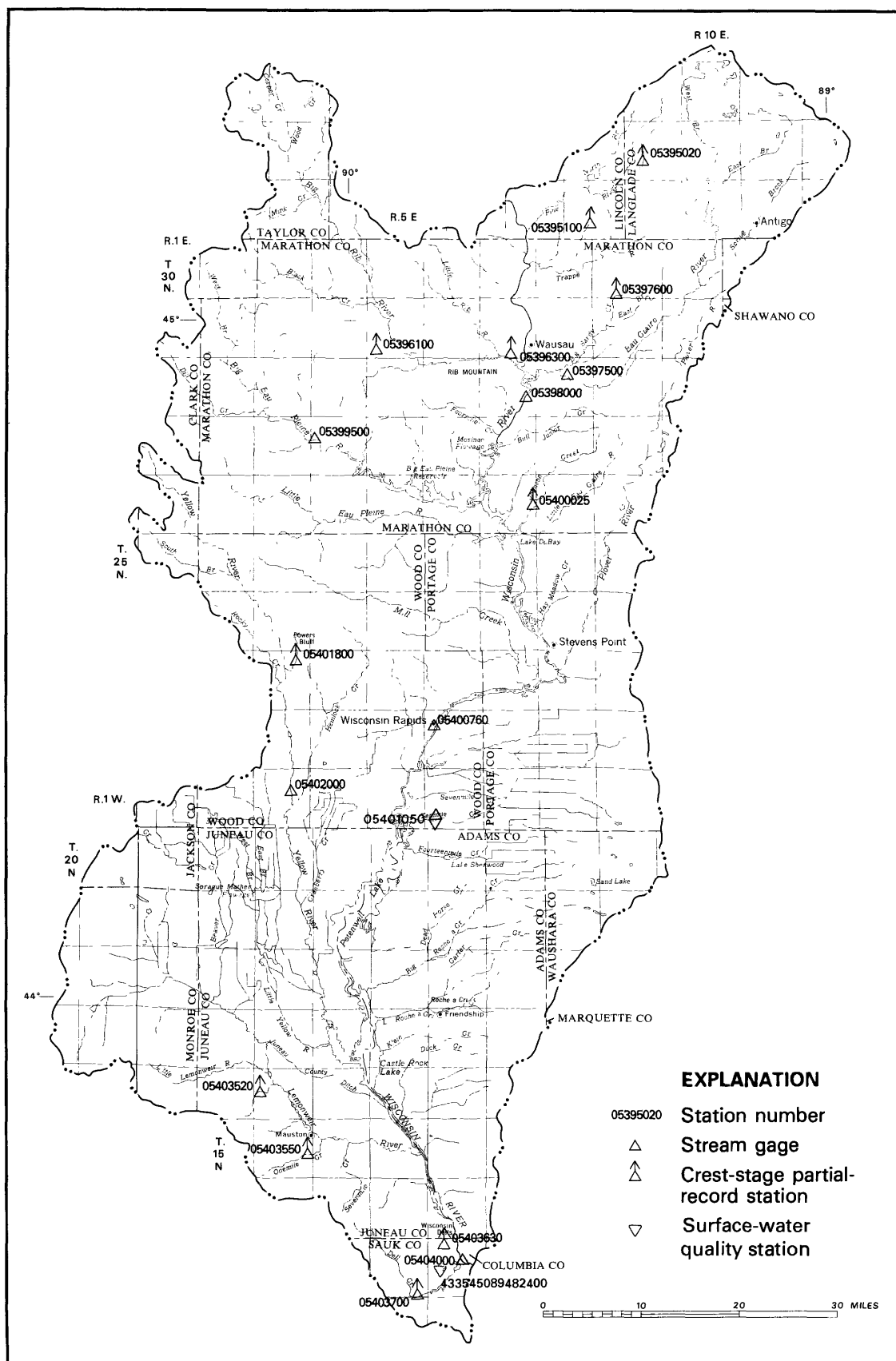
RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Dec. 12 to Mar. 13.)

3.3	460	6.0	3,640
3.6	680	8.0	7,640
4.0	1,040	11.0	15,900
5.0	2,120		

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	750	945	782	1000	900	1100	990	2950	1670	1320	1050	1990
2	819	702	784	960	980	1300	960	2030	1680	1530	909	2040
3	794	600	1020	980	1100	1000	970	1610	1980	1500	1560	1930
4	831	665	826	1200	1100	800	1060	1500	2110	1510	1620	1820
5	802	1000	1250	1100	1000	1000	977	1390	1970	1460	1750	1620
6	787	1320	1300	940	900	1000	1060	1130	3420	1290	1480	3040
7	774	863	679	760	960	920	1020	1110	2690	1360	984	4970
8	817	932	624	900	900	1300	940	979	2100	1850	1240	3470
9	795	1040	888	1200	1000	1100	968	1720	2040	2070	1090	2580
10	911	810	1010	940	1000	1100	939	4290	1810	1770	1510	3120
11	899	726	1250	800	960	1100	959	4680	1660	1490	1650	2420
12	752	901	940	740	920	2500	929	4180	4030	1260	1260	2850
13	750	777	900	900	940	3500	800	2940	14400	1120	1190	3570
14	763	737	960	960	920	4800	939	2610	13900	1120	1290	7120
15	823	940	1000	980	900	5400	1120	3730	7970	1400	1640	8560
16	996	858	1100	1200	900	5000	1010	5600	5310	1270	1540	7980
17	834	826	960	1000	1000	3900	1020	8270	4770	1730	1350	5680
18	683	786	840	920	1000	2800	828	6300	4560	1550	2140	4880
19	881	682	840	900	1000	1800	816	4880	3060	1670	5100	4260
20	867	682	900	760	1000	1580	920	5940	3170	1360	6030	4700
21	921	646	940	780	900	1950	996	5320	2030	1290	3760	4010
22	825	905	1000	880	880	1680	944	4290	2140	1090	2210	3850
23	642	886	920	840	940	1330	1110	3510	2690	1300	2290	3580
24	593	776	880	1000	820	1160	2030	3420	1790	1820	2010	2990
25	499	891	940	1300	1000	1270	2350	3090	2030	1400	2580	3000
26	627	783	1000	960	1000	1160	2320	2630	1140	1200	3910	2750
27	824	886	1000	960	1000	1130	2090	2930	1930	1260	4620	2670
28	837	1020	900	960	1000	1190	2400	2150	1770	1420	4010	1990
29	924	776	800	1000	---	1070	3770	1850	1720	1550	2750	2130
30	954	929	740	980	---	957	3210	1790	1710	2230	1840	2190
31	996	---	1000	880	---	1110	---	1770	---	1750	2080	---
TOTAL	24970	25290	28973	29680	26920	57007	40445	100589	103250	45940	68443	107760
MEAN	805	843	935	957	961	1839	1348	3245	3442	1482	2208	3592
MAX	996	1320	1300	1300	1100	5400	3770	8270	14400	2230	6030	8560
MIN	499	600	624	740	820	800	800	979	1140	1090	909	1620

CAL YR 1989 TOTAL 538203 MEAN 1475 MAX 7150 MIN 499
WTR YR 1990 TOTAL 659267 MEAN 1806 MAX 14400 MIN 499



Base from U.S. Geological Survey
State base map, 1966

CENTRAL WISCONSIN RIVER BASIN

WISCONSIN RIVER BASIN

05397500 EAU CLAIRE RIVER AT KELLY, WI

LOCATION.--Lat 44°55'06", long 89°33'00", on line between secs.9 and 10, T.28 N., R.8 E., Marathon County, Hydrologic Unit 07070002, on right bank 50 ft downstream from County Highway SS bridge, 0.7 mi northeast of Kelly, 1.3 mi upstream from Big Sandy Creek, 4.5 mi upstream from mouth, and 5.0 mi southeast of Wausau.

DRAINAGE AREA.--375 mi².

PERIOD OF RECORD.--January 1914 to November 1926, August 1939 to current year.

REVISED RECORDS.--WSP 1508: 1915, 1916-17(M), 1919-26(M), 1940(M), 1945(M), 1950(M). WDR WI-76-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,177.88 ft above National Geodetic Vertical Datum of 1929. Prior to Sept. 17, 1953, nonrecording gage at same site at datum 1.00 ft higher.

REMARKS.--Estimated daily discharges: Ice period listed in rating table below. Records good except those for ice-affected period, which is fair.

AVERAGE DISCHARGE.--61 years (water years 1915-26, 1940-90), 250 ft³/s, 9.05 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,300 ft³/s, Aug. 21, 1926, gage height, 8.4 ft from graph based on gage readings, from rating curve extended above 6,000 ft³/s; maximum gage height, 9.49 ft Mar. 29, 1988, ice jam; minimum observed, 8.0 ft³/s, July 17, 1944, gage height, 0.17 ft, probably result of temporary regulation.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,500 ft³/s and maximum (*):

DATE	TIME	DISCHARGE (ft ³ /s)	GAGE HEIGHT (ft)	DATE	TIME	DISCHARGE (ft ³ /s)	GAGE HEIGHT (ft)
Mar. 14	1000	*5,200	*8.52	Aug. 21	1400	1,560	4.15
June 14	2000	4,590	7.89	Sept. 16	1700	1,600	4.21

Minimum daily discharge, 39 ft³/s, Oct. 1, 4.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Nov. 16 to Mar. 15.)

0.7	33	3.0	880
0.9	63	4.0	1,470
1.2	127	6.0	2,920
2.0	404	8.0	4,690

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	39	138	54	50	52	60	135	245	130	163	105	214
2	41	116	52	50	54	56	149	202	126	146	90	186
3	40	94	50	52	52	54	162	167	165	130	97	164
4	39	83	52	54	50	54	169	142	213	116	116	150
5	45	82	56	52	52	52	157	125	215	105	135	140
6	52	92	54	50	52	52	147	113	231	98	120	162
7	50	102	50	50	52	52	133	104	232	100	100	384
8	51	106	48	52	54	52	124	96	211	123	86	496
9	50	97	48	50	52	58	120	115	170	151	78	380
10	53	92	50	50	50	84	125	377	144	163	73	296
11	62	85	49	52	52	300	124	686	131	134	78	243
12	54	78	47	50	56	1000	118	668	295	110	128	214
13	48	75	46	47	52	1700	113	511	2480	96	137	196
14	46	72	46	49	49	3600	108	383	3880	87	119	515
15	47	70	45	52	50	3200	111	338	3230	85	101	1220
16	55	60	45	54	50	2210	118	479	1360	88	115	1470
17	55	52	45	50	50	1370	132	764	729	88	178	1110
18	53	64	45	49	50	757	136	744	569	153	155	598
19	50	66	45	50	52	454	134	595	445	193	244	460
20	53	60	45	50	54	376	130	897	356	172	695	446
21	55	56	45	50	56	343	129	735	285	137	1440	396
22	57	54	45	50	54	290	131	565	247	116	972	358
23	60	52	46	50	52	256	130	416	368	102	446	309
24	62	50	47	50	52	214	139	348	317	94	302	269
25	61	50	50	49	50	201	161	303	241	104	321	239
26	59	56	46	50	52	183	177	261	216	96	470	219
27	56	54	48	54	54	157	179	224	220	92	801	197
28	60	50	50	52	56	153	206	201	210	86	792	171
29	69	49	52	54	---	135	278	182	196	114	513	170
30	85	54	52	54	---	134	286	163	178	150	335	174
31	133	---	50	54	---	131	---	143	---	123	258	---
TOTAL	1740	2209	1503	1580	1461	17738	4461	11292	17790	3715	9600	11546
MEAN	56.1	73.6	48.5	51.0	52.2	572	149	364	593	120	310	385
MAX	133	138	56	54	56	3600	286	897	3880	193	1440	1470
MIN	39	49	45	47	49	52	108	96	126	85	73	140
CFSM	.15	.20	.13	.14	.14	1.53	.40	.97	1.58	.32	.83	1.03
IN.	.17	.22	.15	.16	.14	1.76	.44	1.12	1.76	.37	.95	1.15

CAL YR 1989	TOTAL 62509	MEAN 171	MAX 3500	MIN 38	CFSM .46	IN. 6.20
WTR YR 1990	TOTAL 84635	MEAN 232	MAX 3880	MIN 39	CFSM .62	IN. 8.40

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DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	920	1240	1000	1120	1000	995	1550	4730	2480	2290	2040	3160
2	860	1030	900	935	960	1110	1280	3690	2370	1950	1490	2930
3	900	1040	1000	992	1070	1130	1430	2740	3080	2070	2280	2760
4	960	951	938	1050	1300	856	1720	2300	3680	1790	3340	2600
5	1100	1100	1090	1100	1100	805	1500	1990	3530	1820	2580	2330
6	940	1510	1630	1000	1200	1180	1430	1790	4750	1680	2180	3340
7	863	1490	957	980	952	1040	1480	1600	4680	1700	1610	7040
8	905	1130	680	1060	1000	1160	1350	1410	3680	2300	1360	5550
9	1040	1420	624	1040	1000	1340	1290	1780	3000	2780	1710	4350
10	1370	1230	926	1290	1000	970	1330	7280	2660	2520	1500	4170
11	1470	1040	1280	912	1300	1720	1310	9250	2590	2170	2060	3880
12	1360	1050	1150	820	1100	7340	1320	7450	4350	1700	1870	3440
13	1060	1120	860	780	941	13700	1270	5760	29100	1310	1460	5470
14	875	994	900	1100	1240	17600	1230	4220	40000	1450	1680	9650
15	799	1000	920	1000	1100	19400	1320	5280	20600	1470	1790	15800
16	1090	1100	1100	980	1000	14300	1550	7700	10400	1770	2020	13000
17	1030	980	1000	1100	900	9280	1340	12700	8180	1990	1970	9940
18	917	900	880	1080	1000	5850	1410	10600	7500	2330	2120	7670
19	861	980	940	1040	1100	4300	1280	8230	5730	2280	8470	6500
20	1140	900	939	1000	1100	3260	1260	11600	5140	2030	13200	6850
21	1010	860	991	980	1000	3350	1420	10500	3770	1800	9460	5910
22	1040	920	1040	940	900	2660	1420	8190	3200	1380	5630	5310
23	1040	1000	1250	880	920	2280	1350	5410	4000	1500	4090	5030
24	838	900	956	859	900	1880	2460	5220	3340	2000	3640	4440
25	767	1100	1010	1160	900	2070	4560	4810	3290	1880	4490	4280
26	832	1000	1100	1300	1280	1660	4130	3970	1900	1440	7580	3610
27	994	1000	1290	1080	899	1610	3490	4010	2390	1380	10600	3840
28	1010	1000	1110	1100	1020	1480	4130	3790	2750	1840	8100	2990
29	1160	920	913	1100	---	1570	6360	3100	2590	3440	5430	3020
30	1300	960	887	1000	---	1380	5470	2870	2680	5030	3530	2990
31	1270	---	695	1000	---	1450	---	2560	---	3640	3160	---
TOTAL	31721	31865	30956	31778	29182	128726	62440	166530	197410	64730	122440	161850
MEAN	1023	1062	999	1025	1042	4152	2081	5372	6580	2088	3950	5395
MAX	1470	1510	1630	1300	1300	19400	6360	12700	40000	5030	13200	15800
MIN	767	860	624	780	899	805	1230	1410	1900	1310	1360	2330
CAL YR 1989	TOTAL 777192		MEAN 2129	MAX 25500	MIN 624							
WTR YR 1990	TOTAL 1059628		MEAN 2903	MAX 40000	MIN 624							

WISCONSIN RIVER BASIN

05399500 BIG EAU PLEINE RIVER NEAR STRATFORD, WI

LOCATION.--Lat 44°49'19", long 90°04'46", on line between sec.13, T.27 N., R.3 E., and sec.18, T.27 N., R.4 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 mi².

PERIOD OF RECORD.--July 1914 to December 1925, April 1937 to current year. Monthly discharge only for some periods, published in WSP 1308.

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 and crest-stage gage. Datum of gage is 1,154.24 ft above National Geodetic Vertical Datum 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.--Estimated daily discharges: Mar. 16-20, May 9-17, and ice period listed in rating table below. Records good except those for estimated daily discharges, which are fair.

AVERAGE DISCHARGE.--64 years (water years 1915-25, 1938-90), 174 ft³/s, 10.55 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 41,000 ft³/s, Sept. 9, 1938, gage height, 24.5 ft, from flood-marks, based on rating curve extended above 24,000 ft³/s; no flow Aug. 17, 1947, Jan. 22 to Feb. 5, 1961.

EXTREMES OUTSIDE OF PERIOD OF RECORD.--Flood of June 5, 1914, reached a stage of 20.7 ft, from floodmarks; discharge, 40,000 ft³/s, former site and datum.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,500 ft³/s and maximum (*):

DATE	TIME	DISCHARGE (ft ³ /s)	GAGE HEIGHT (ft)	DATE	TIME	DISCHARGE (ft ³ /s)	GAGE HEIGHT (ft)
Mar. 14	1445	5,070	12.37	June 13	1715	*11,900	*17.25
May 20	0230	3,050	10.24	Aug. 26	1500	3,280	10.48

Minimum discharge, 1.2 ft³/s, Oct. 2.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Shifting-control method used Oct. 2-30; rate of change of stage used as factor Mar. 15, Apr. 24, 25, May 19, 21, June 12, 14, 15, and Aug. 19-21, 26, 27; stage-discharge relation affected by ice Nov. 16 to Mar. 13.)

2.1	1.1	2.8	30	6.0	670
2.2	2.6	3.0	48	8.0	1,540
2.3	5.0	3.5	104	10.0	2,850
2.4	8.0	4.0	175	13.0	5,710
2.6	17	5.0	375	16.0	9,780

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DAY	MEAN VALUES											
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.6	24	4.8	2.2	2.4	2.9	25	235	54	78	63	73
2	1.7	22	4.4	2.2	2.3	2.8	38	163	52	56	46	64
3	1.4	21	4.0	2.3	2.2	2.7	48	113	215	43	107	52
4	1.3	19	3.7	2.2	2.3	2.7	44	76	351	36	138	46
5	2.1	18	3.4	2.2	2.3	2.6	38	60	211	32	105	40
6	3.4	25	3.2	2.2	2.4	2.6	34	48	287	29	70	39
7	3.7	36	3.1	2.2	2.4	2.8	31	36	216	33	48	36
8	3.9	35	2.9	2.3	2.4	3.1	28	29	137	46	28	41
9	3.9	33	2.7	2.4	2.4	3.4	26	160	90	49	16	41
10	4.7	27	2.6	2.4	2.4	4.0	27	800	62	39	13	27
11	6.1	22	2.5	2.3	2.4	35	28	560	79	34	11	23
12	5.1	18	2.4	2.3	2.4	200	26	330	1600	30	10	28
13	5.5	16	2.3	2.2	2.4	2100	23	200	9270	25	9.3	27
14	8.5	15	2.2	2.2	2.4	4040	22	130	2660	22	7.7	318
15	8.6	14	2.1	2.3	2.4	2070	25	200	715	20	25	610
16	7.4	12	2.1	2.4	2.3	1000	31	470	339	19	21	391
17	5.1	11	2.0	2.5	2.3	600	38	670	667	21	16	206
18	4.1	11	2.0	2.4	2.3	380	38	358	498	30	35	133
19	2.9	10	1.9	2.3	2.4	240	35	804	221	60	1030	149
20	3.3	10	1.9	2.3	2.5	150	34	2290	147	72	1070	171
21	4.0	11	1.9	2.3	2.6	89	34	692	108	42	453	111
22	3.9	9.6	1.9	2.3	2.7	69	33	349	87	29	237	84
23	2.3	8.4	1.8	2.4	2.6	56	33	206	76	23	135	68
24	2.1	7.6	1.8	2.4	2.5	45	744	151	61	20	120	53
25	3.0	7.2	1.9	2.4	2.4	38	650	110	51	18	254	44
26	4.9	7.2	1.9	2.3	2.4	35	332	87	61	16	1780	37
27	6.9	7.8	2.0	2.3	2.6	30	254	116	79	16	1300	31
28	8.8	6.4	2.0	2.4	2.7	27	610	242	93	19	517	27
29	8.8	6.0	2.0	2.5	---	25	790	151	160	46	256	23
30	9.4	5.2	2.1	2.5	---	24	368	93	126	92	145	22
31	16	---	2.1	2.4	---	24	---	65	---	63	93	---
TOTAL	154.4	475.4	77.6	72.0	67.8	11306.6	4487	9994	18773	1158	8159.0	3015
MEAN	4.98	15.8	2.50	2.32	2.42	365	150	322	626	37.4	263	100
MAX	16	36	4.8	2.5	2.7	4040	790	2290	9270	92	1780	610
MIN	1.3	5.2	1.8	2.2	2.2	2.6	22	29	51	16	7.7	22
CFSM	.02	.07	.01	.01	.01	1.63	.67	1.44	2.79	.17	1.17	.45
IN.	.03	.08	.01	.01	.01	1.88	.75	1.66	3.12	.19	1.35	.50
CAL YR 1989	TOTAL 39791.0	MEAN 109	MAX 7850	MIN 1.3	CFSM .49	IN. 6.61						
WTR YR 1990	TOTAL 57739.8	MEAN 158	MAX 9270	MIN 1.3	CFSM .71	IN. 9.59						

LOCATION.--Lat 44°23'41", long 89°49'31", in SW 1/4 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.

REVISÉD 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 National Geodetic Vertical Datum 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 National Geodetic Vertical Datum. Jan. 1, 1974, changed to present datum.

REMARKS.--No estimated daily discharges. Records good for discharges greater than 2,500 ft³/s, and fair to poor for discharges less than 2,500 ft³/s. 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 20 reservoirs and many powerplants upstream from station. Water diverted periodically from pond of Wisconsin Rapids powerplant into Cranberry Creek, a tributary of Yellow River, for cranberry culture. These diversions, in cubic feet per second, for water year October 1989 to September 1990, were as follows:

Oct. 2	49	Dec. 3	9
Oct. 3-9	50	Dec. 4-22	100
Oct. 10	49	Dec. 23	28
Nov. 30	17		

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 70,400 ft³/s, Sept. 12, 1938, gage height, 19.10 ft, from rating curve extended above 58,000 ft³/s; minimum, 26 ft³/s, Sept. 7, 1942; minimum daily, 165 ft³/s, Aug. 12, 1934.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 55,900 ft³/s, June 15; minimum daily, 654 ft³/s, Dec. 25.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	982	2230	1560	1100	1660	1520	1720	4910	3330	2880	2240	3390
2	939	1940	1490	1240	1420	1410	2650	4710	3360	2860	2120	3760
3	918	2060	1290	1190	1190	1420	1850	4280	3930	2800	3750	3360
4	832	1310	1230	1190	1130	1170	1530	3560	4550	2430	4600	2740
5	746	1280	1180	1170	1350	1090	1760	2620	4560	2460	3380	2920
6	1400	1380	1210	1300	1490	1050	1970	2390	5780	2940	2540	5450
7	1190	1390	1130	1500	1650	1050	1960	2710	7110	2140	2490	6550
8	664	2380	1060	1460	1660	1270	1780	2710	5050	2260	2130	6150
9	1180	2140	1070	842	1460	2000	1690	3010	3560	3480	2050	4960
10	1510	1420	832	1190	1110	1920	1630	10400	3070	3410	2190	4400
11	1560	1230	820	1860	1200	3140	1660	11600	3660	2980	2180	4580
12	1140	1310	948	1120	1540	6740	1580	10400	8390	2620	2800	4360
13	1490	1280	1140	1140	1620	15500	1580	7950	28800	1780	2450	4200
14	1440	874	1200	1150	1410	25300	1400	6470	52200	1460	2090	11800
15	1120	1170	1150	940	1450	29000	1580	6860	39200	1420	2130	15200
16	1940	1350	1110	939	1520	24900	1670	9280	19400	1460	2240	14600
17	1520	1340	1090	1340	1490	17300	1720	14400	12800	2380	2500	12300
18	1260	1180	1120	1390	1480	11000	1670	12700	10800	2810	3940	8640
19	1120	1070	1060	1390	1110	6420	1720	13600	9610	2590	11100	8740
20	1100	789	1040	1310	1400	5280	1990	19700	7240	2720	11800	6980
21	1080	1130	1080	1360	1240	5000	2310	15400	5520	2600	12000	6440
22	1110	1180	1090	911	1480	5030	2120	11100	6960	2700	7390	6980
23	1090	918	1040	1050	1460	5670	1870	6610	4260	2070	3940	5640
24	1090	1360	1030	1570	1440	4230	3230	6300	4450	1680	4420	5200
25	1120	1170	654	1530	1460	3200	4450	6800	5820	2150	5160	5100
26	1150	1270	1270	1470	1430	3750	5010	6490	5540	2540	9510	3850
27	1130	1510	1280	1350	1460	2500	4850	6330	2340	2390	12100	3550
28	1150	1930	1490	1550	1550	2430	4930	4900	2730	2260	10300	3620
29	1380	1970	1500	1250	---	2330	5800	3460	3450	3820	6250	3620
30	2120	1580	1110	1100	---	2580	7680	3340	3800	5460	4500	3850
31	2540	---	1110	1530	---	1960	---	3330	---	4580	3680	---
TOTAL	39011	43141	35384	39432	39860	197160	77360	228320	281270	82130	149970	182930
MEAN	1258	1438	1141	1272	1424	6360	2579	7365	9376	2649	4838	6098
MAX	2540	2380	1560	1860	1660	29000	7680	19700	52200	5460	12100	15200
MIN	664	789	654	842	1110	1050	1400	2390	2340	1420	2050	2740

CAL YR 1989	TOTAL 1062125	MEAN 2910	MAX 30500	MIN 654
WTR YR 1990	TOTAL 1395968	MEAN 3825	MAX 52200	MIN 654

LOCATION.--Lat 44°15'44", long 89°48'38", in NE 1/4 sec.32, T.21 N., R.6 E., Wood County, Hydrologic Unit 07070003, on left bank upstream from bridge on State Highway 13. 5.8 mi southeast of Nekoosa.

WATER-DISCHARGE RECORDS

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 144 ft³/s, Mar. 15, gage height, 5.55 ft; minimum, 19 ft³/s, Oct. 5, but may have been less during period of no gage-height record, Nov. 29 to Apr. 4, gage height, 4.26 ft.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22	37	31	27	22	29	70	56	70	92	85	96
2	21	41	33	27	21	29	74	54	70	86	79	91
3	21	40	30	27	22	29	74	55	71	82	80	87
4	23	40	32	26	23	29	72	52	70	78	97	85
5	25	40	34	25	25	28	71	55	70	73	116	81
6	24	41	33	25	26	27	66	51	71	70	107	81
7	23	41	31	24	26	29	64	50	69	71	98	81
8	23	41	30	25	27	30	63	50	66	74	92	79
9	23	41	31	25	27	32	63	56	64	71	87	80
10	23	41	30	25	26	35	59	72	63	68	82	83
11	22	40	29	25	26	45	59	87	61	66	78	77
12	22	40	27	24	27	70	58	82	62	65	76	75
13	22	39	28	22	28	90	58	78	69	63	73	72
14	22	39	29	23	27	110	57	77	74	61	73	86
15	22	39	29	24	27	140	58	87	71	61	71	96
16	29	37	27	24	27	120	58	90	69	59	69	94
17	27	30	28	23	28	110	57	86	80	58	67	88
18	27	34	29	23	29	110	58	82	90	56	75	84
19	26	36	29	23	27	100	60	85	85	57	106	86
20	26	37	28	22	27	94	60	102	80	58	130	86
21	26	35	27	22	28	88	60	109	76	57	130	84
22	25	35	26	23	29	84	59	101	82	56	122	85
23	25	30	25	22	29	78	58	97	105	54	114	80
24	25	30	25	22	28	74	58	94	116	53	110	77
25	25	31	26	21	27	70	58	89	104	52	116	75
26	25	31	25	21	28	68	57	86	101	50	126	72
27	25	33	26	22	30	66	58	83	101	50	131	70
28	25	32	26	22	29	66	60	80	103	79	127	69
29	26	26	25	22	---	66	60	77	105	91	117	70
30	32	28	26	23	---	68	58	74	99	97	108	71
31	34	---	26	23	---	68	---	72	---	91	100	---
TOTAL	766	1085	881	732	746	2082	1845	2369	2417	2099	3042	2441
MEAN	24.7	36.2	28.4	23.6	26.6	67.2	61.5	76.4	80.6	67.7	98.1	81.4
MAX	34	41	34	27	30	140	74	109	116	97	131	96
MIN	21	26	25	21	21	27	57	50	61	50	67	69
CAL YR 1989	TOTAL	14659	MEAN	40.2	MAX	174	MIN	12				
WTR YR 1990	TOTAL	20505	MEAN	56.2	MAX	140	MIN	21				

05401050 TENMILE CREEK NEAR NEKOOSA, WI--CONTINUED
(NATIONAL STREAM-QUALITY ACCOUNTING NETWORK STATION)

WATER-QUALITY RECORDS

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS-CHARGE, IN CUBIC FEET PER SECOND (00060)	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOC CI KF AGAR (COLS. PER 100 ML) (31673)	
OCT 1989	18...	1647	--	27	262	7.9	7.0	2.4	10.7	775	87	K18	37
DEC	06...	1615	33	--	313	8.0	1.0	3.5	12.8	762	90	K9	K12
MAR 1990	28...	0930	66	--	362	8.0	4.0	4.0	13.4	770	101	K4	K23
MAY	01...	1800	--	56	334	--	12.5	4.3	10.0	765	94	35	55
JUN	13...	1310	--	70	304	8.1	18.5	6.5	8.6	759	92	K850	K1500
AUG	21...	1200	--	131	332	7.9	14.0	5.0	9.5	751	94	K920	320
DATE		HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE WATER DIS IT FIELD MG/L AS HCO3 (00453)	ALKA-LINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	
OCT 1989	18...	130	30	13	2.3	4	0.1	1.3	119	98	13	6.0	0.10
DEC	06...	150	34	15	2.3	3	0.1	0.90	130	106	16	5.9	0.10
MAR 1990	28...	170	40	18	2.3	3	0.1	1.2	150	123	18	11	<0.10
MAY	01...	170	39	17	2.3	3	0.1	1.0	--	--	24	9.4	0.20
JUN	13...	160	38	16	2.1	3	0.1	0.90	148	122	18	5.1	0.30
AUG	21...	170	41	17	2.4	3	0.1	1.7	151	124	24	12	0.30
DATE		SILICA, DIS-SOLVED (MG/L AS SiO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, AM-MONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)
OCT 1989	18...	12	154	142	0.21	11.1	1.20	0.030	0.020	0.40	0.030	<0.010	0.010
DEC	06...	12	169	162	0.23	15.1	2.60	0.060	0.040	0.80	0.030	<0.010	0.010
MAR 1990	28...	9.0	204	188	0.28	36.4	3.10	0.020	0.020	0.50	0.030	<0.010	<0.010
MAY	01...	8.1	191	188	0.26	28.9	2.00	0.020	<0.010	0.60	0.030	0.020	<0.010
JUN	13...	10	193	172	0.26	36.5	2.00	0.040	0.030	0.80	0.050	0.020	<0.010
AUG	21...	12	223	197	0.30	78.9	2.60	0.070	0.040	0.80	0.040	0.020	<0.010

K RESULTS BASED ON COUNT OUTSIDE OF THE ACCEPTABLE RANGE (NON-IDEAL COLONY COUNT).

WISCONSIN RIVER BASIN

05401050 TENMILE CREEK NEAR NEKOOSA, WI--CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS-CHARGE, IN CUBIC FEET PER SECOND (00060)	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	ALUM- INUM, DIS- SOLVED (UG/L AS AL) (01106)	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE) (01010)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	COBALT, DIS- SOLVED (UG/L AS CO) (01035)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)
OCT 1989 18...	1647	--	27	<10	<1	17	<0.5	<1.0	<1	<3	1
MAR 1990 28...	0930	66	--	<10	<1	17	<0.5	<1.0	<5	<3	<10
MAY 01...	1800	--	56	<10	<1	17	<0.5	2.0	<1	<3	2
AUG 21...	1200	--	131	20	<1	22	0.5	2.0	<1	<3	6

DATE	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	LITHIUM DIS- SOLVED (UG/L AS LI) (01130)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	MERCURY DIS- SOLVED (UG/L AS HG) (71890)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO) (01060)	NICKEL, DIS- SOLVED (UG/L AS NI) (01065)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	STRON- TIUM, DIS- SOLVED (UG/L AS SR) (01080)	VANA- DIUM, DIS- SOLVED (UG/L AS V) (01085)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)
OCT 1989 18...	610	<1	<4	81	0.3	<10	<1	<1	34	<6	4
MAR 1990 28...	450	<10	<4	39	<0.1	<10	<10	<1	41	<6	7
MAY 01...	330	<1	<4	34	<0.1	<10	<1	<1	42	<6	13
AUG 21...	630	15	<4	34	<0.1	<10	3	<1	38	<6	<3

DATE	TIME	DIS-CHARGE, IN CUBIC FEET PER SECOND (00060)	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT 1989 18...	1647	--	27	262	7.0	3	0.22	96
DEC 06...	1615	33	--	313	1.0	7	0.62	45
MAR 1990 28...	0930	66	--	362	4.0	14	2.5	25
MAY 01...	1800	--	56	334	12.5	10	1.5	65
JUN 13...	1310	--	70	304	18.5	18	3.4	50
AUG 21...	1200	--	131	332	14.0	57	20	14

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	ALA- CHLOR TOTAL RECOVER (UG/L) (77825)	AME- TRYNE TOTAL (82184)	ATRA- ZINE, TOTAL (UG/L) (39630)	CYAN- AZINE TOTAL (UG/L) (81757)	METOLA- CHLOR WATER WHOLE TOT.REC (UG/L) (82612)
JUN 1990 13...	1310	70	<0.10	<0.10	0.10	<0.10	<0.1
AUG 21...	1200	131	<0.10	<0.10	<0.10	<0.10	<0.1

DATE	METRI- BUZIN WATER WHOLE TOT.REC (UG/L) (82611)	PROME- TONE TOTAL (UG/L) (39056)	PROME- TRYNE TOTAL (UG/L) (39057)	PRO- PAZINE TOTAL (UG/L) (39024)	SIMA- ZINE TOTAL (UG/L) (39055)	SIME- TRYNE TOTAL (UG/L) (39054)	TRI- FLURA- LIN TOTAL RECOVER (UG/L) (39030)
JUN 1990 13...	<0.1	<0.1	<0.1	<0.10	<0.10	<0.1	<0.10
AUG 21...	<0.1	<0.1	<0.1	<0.10	<0.10	<0.1	<0.10

WISCONSIN RIVER BASIN

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05402000 YELLOW RIVER AT BABCOCK, WI

LOCATION.--Lat 44°18'05", long 90°07'15", in NW 1/4 sec.14, T.21 N., R.3 E., Wood County, Hydrologic Unit 07070003, on right bank at downstream side of bridge on State Highway 80 at Babcock, 1.9 mi upstream from Hemlock Creek.

DRAINAGE AREA.--215 mi².

PERIOD OF RECORD.--March 1944 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. Datum of gage is 954.75 ft above National Geodetic Vertical Datum of 1929. Prior to Oct. 28, 1948, nonrecording gage at same site and datum.

REMARKS.--Estimated daily discharges: Oct. 1 to Mar. 13. Records fair. There is a large recreation dam about 5.0 mi upstream.

AVERAGE DISCHARGE.--46 years, 157 ft³/s, 9.92 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,600 ft³/s, Apr. 2, 1952, gage height, 17.38 ft; minimum observed, 0.94 ft³/s, Aug. 11, 1985, gage height, 1.84 ft.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,200 ft³/s and maximum (*):

DATE	TIME	DISCHARGE (ft ³ /s)	GAGE HEIGHT (ft)	DATE	TIME	DISCHARGE (ft ³ /s)	GAGE HEIGHT (ft)
Mar. 14	1815	*6,740	*14.84	June 15	0645	1,310	8.78

Minimum daily discharge, 3.5 ft³/s, Oct. 3.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.8	24	14	7.2	7.8	8.4	81	468	66	102	26	143
2	4.5	22	12	7.4	7.6	8.6	103	200	58	83	23	109
3	3.5	21	11	7.8	7.6	8.4	137	159	56	68	24	83
4	4.0	19	12	7.4	7.8	8.2	149	129	61	58	44	70
5	4.9	20	13	7.2	7.8	7.8	141	99	95	49	83	62
6	5.4	24	12	7.2	8.0	7.6	126	81	110	41	116	56
7	6.0	29	11	7.4	8.0	7.6	113	68	124	37	97	54
8	6.6	33	11	7.6	7.8	9.0	104	58	116	47	71	49
9	7.2	35	10	8.0	7.8	12	99	62	91	44	58	48
10	6.8	37	9.6	8.2	7.8	25	102	293	71	36	50	54
11	7.8	37	9.2	8.0	8.2	150	111	542	55	31	42	52
12	7.2	35	9.0	7.6	8.6	600	115	545	47	27	34	50
13	8.2	32	8.6	7.2	8.0	3000	110	343	76	24	30	49
14	9.8	30	8.2	7.2	7.6	4550	103	201	904	21	29	56
15	9.4	27	8.0	7.6	7.6	4250	103	218	1200	20	30	69
16	7.8	24	7.6	7.8	7.4	2180	106	255	754	18	31	106
17	6.8	21	7.4	8.2	6.8	1180	116	421	354	16	33	113
18	6.4	18	7.2	8.2	6.6	671	120	341	351	16	38	105
19	6.2	20	7.0	7.6	7.8	422	121	356	244	16	71	98
20	5.8	18	6.6	7.2	8.0	262	118	512	178	15	321	90
21	6.4	17	6.6	7.4	8.4	203	123	842	143	15	316	85
22	6.0	18	6.4	7.6	8.6	177	132	643	130	14	219	77
23	5.0	17	6.4	7.8	8.2	154	131	369	160	13	170	64
24	4.8	16	6.2	8.0	7.6	138	122	263	138	11	131	50
25	5.8	15	6.0	8.2	7.0	122	148	202	105	10	129	42
26	7.0	14	6.2	7.4	7.4	112	401	119	95	9.6	149	34
27	9.0	16	6.4	7.8	8.0	101	337	95	107	10	377	31
28	12	14	6.6	8.2	8.2	95	216	92	113	16	460	29
29	11	13	6.8	8.6	---	90	410	84	135	33	344	29
30	12	15	6.8	8.4	---	84	524	78	123	47	295	27
31	16	---	6.8	8.0	---	81	---	74	---	35	179	---
TOTAL	225.1	681	265.6	239.4	218.0	18724.6	4822	8212	6260	982.6	4020	1984
MEAN	7.26	22.7	8.57	7.72	7.79	604	161	265	209	31.7	130	66.1
MAX	16	37	14	8.6	8.6	4550	524	842	1200	102	460	143
MIN	3.5	13	6.0	7.2	6.6	7.6	81	58	47	9.6	23	27
CFSM	.03	.11	.04	.04	.04	2.81	.75	1.23	.97	.15	.60	.31
IN.	.04	.12	.05	.04	.04	3.24	.83	1.42	1.08	.17	.70	.34
CAL YR 1989	TOTAL 42518.3	MEAN 116	MAX 5640	MIN 3.5	CFSM .54	IN. 7.36						
WTR YR 1990	TOTAL 46634.3	MEAN 128	MAX 4550	MIN 3.5	CFSM .59	IN. 8.07						

433545089482400 Lake Blass at Lake Delton, WI

LOCATION.--Lat 43°35'45", long 89°48'24", in NE 1/4 NE 1/4 sec.20, T.13 N., R.6 E., Sauk County, Hydrologic Unit 07070003, at Lake Delton.

DRAINAGE AREA.--5.88 mi².

PERIOD OF RECORD.--March 1989 to September 1990 (discontinued).

REMARKS.--Lake sampled near dam outlet at lake depth of about 14 ft. Lake ice-covered during February 14 sampling. Water-quality analyses by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, FEBRUARY 14 TO AUGUST 16, 1990
(Milligrams per liter unless otherwise indicated)

	Feb. 14		Apr. 10		June 13		July 18		Aug. 16	
Depth of sample (ft)	2.0	11	1.5	13	1.5	12	1.5	11	1.5	11
Lake stage (ft)	4.90		7.87		8.15		7.77		7.76	
Specific conductance (μS/cm)	304	354	243	244	248	258	217	282	221	310
pH (units)	6.4	6.4	6.4	6.8	7.0	6.5	7.5	6.7	8.3	6.5
Water temperature (°C)	5.3	5.1	8.8	8.6	22.2	14.5	23.8	14.9	23.8	16.5
Color (Pt-Co. scale)	---	---	55	55	---	---	---	---	---	---
Turbidity (NTU)	---	---	2.0	2.1	---	---	---	---	---	---
Secchi-depth (meters)	2.1		1.2		2.2		0.9		1.0	
Dissolved oxygen	4.8	2.5	10.1	9.5	7.8	0.0	8.3	0.0	9.3	0.0
Hardness, as CaCO ₃	---	---	52	52	---	---	---	---	---	---
Calcium, dissolved (Ca)	---	---	11	11	---	---	---	---	---	---
Magnesium, dissolved (Mg)	---	---	6.0	6.0	---	---	---	---	---	---
Sodium, dissolved (Na)	---	---	22	22	---	---	---	---	---	---
Potassium, dissolved (K)	---	---	4.7	4.9	---	---	---	---	---	---
Alkalinity, as CaCO ₃	---	---	39	39	---	---	---	---	---	---
Sulfate, dissolved (SO ₄)	---	---	13.4	13.3	---	---	---	---	---	---
Fluoride, dissolved (F)	---	---	0.02	0.02	---	---	---	---	---	---
Chloride, dissolved (Cl)	---	---	38	38	---	---	---	---	---	---
Silica, dissolved (SiO ₂)	---	---	1.9	1.8	---	---	---	---	---	---
Solids, dissolved, at 180°C	---	---	142	144	---	---	---	---	---	---
Nitrogen, NO ₂ + NO ₃ , diss. (as N)	---	---	0.07	0.07	---	---	---	---	---	---
Nitrogen, ammonia, dissolved (as N)	---	---	0.12	0.13	---	---	---	---	---	---
Nitrogen, amm. + org., total (as N)	---	---	1.2	1.2	---	---	---	---	---	---
Phosphorus, total (as P)	---	---	0.062	0.064	0.038	0.188	0.072	1.070	0.055	1.370
Phosphorus, ortho, dissolved (as P)	---	---	0.009	0.007	---	0.017	---	0.880	---	1.190
Iron, dissolved (Fe) μg/L	---	---	160	170	---	---	---	---	---	---
Manganese, dissolved (Mn) μg/L	---	---	<40	<40	---	---	---	---	---	---
Chlorophyll a, phytoplankton (μg/L)	---	---	26	---	7.0	---	38	---	35	---

2-14-90

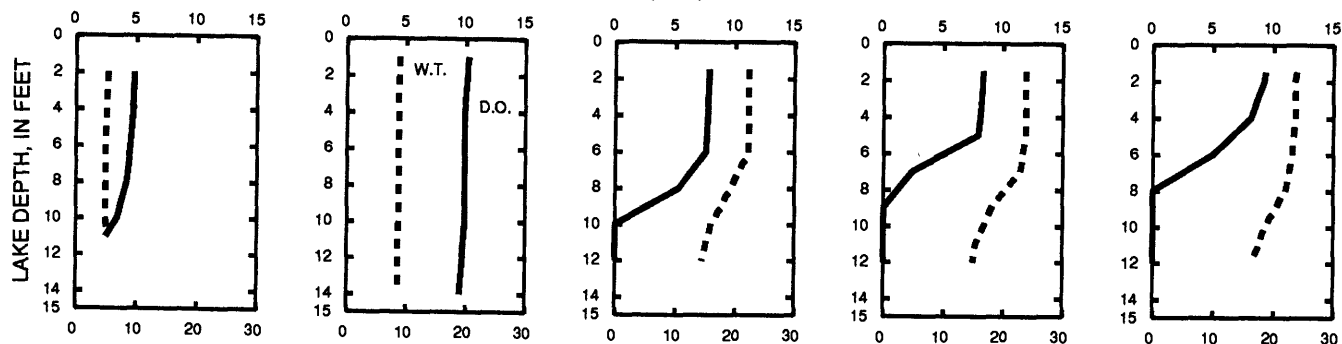
4-10-90

6-13-90

7-18-90

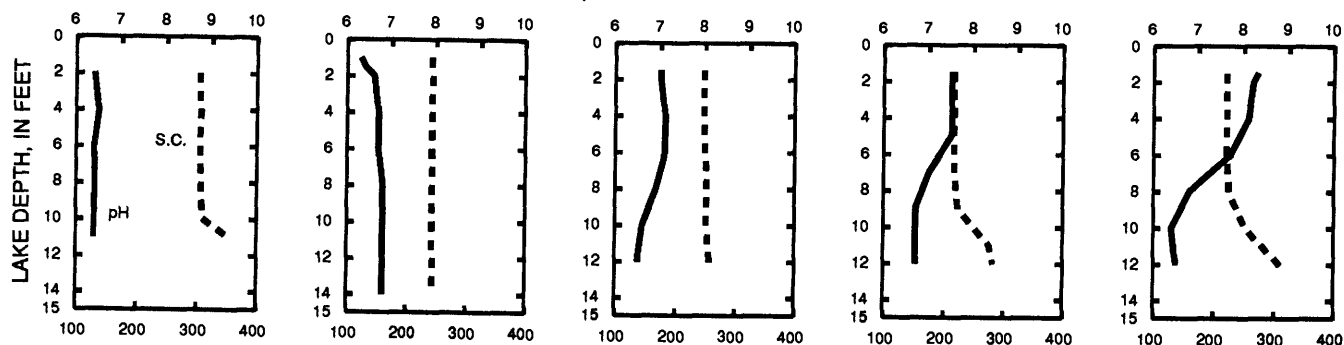
8-16-90

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

05404000 WISCONSIN RIVER NEAR WISCONSIN DELLS, WI

LOCATION.--Lat 43°36'22", long 89°45'25", in NW 1/4 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 mi².

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 National Geodetic Vertical Datum 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.--Estimated daily discharges: Ice period listed in rating table below. Records good, except those for ice-affected period, which is fair. Flow regulated by 24 reservoirs above station. In 1938, when the maximum of record occurred, there were 22 reservoirs above station, the two large reservoirs, Petenwell and Castle Rock, were not in existence. Diurnal fluctuation is caused by powerplant of Wisconsin Power and Light Co. at Wisconsin Dells.

AVERAGE DISCHARGE.--56 years, 6,758 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 72,200 ft³/s, Sept. 14, 1938, gage height, 23.83 ft, present datum; minimum daily, 1,060 ft³/s, Aug. 19, 1936.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 44,700 ft³/s, June 15, gage height, 16.31 ft; minimum daily, 1,200 ft³/s Dec. 21, 22, 24.

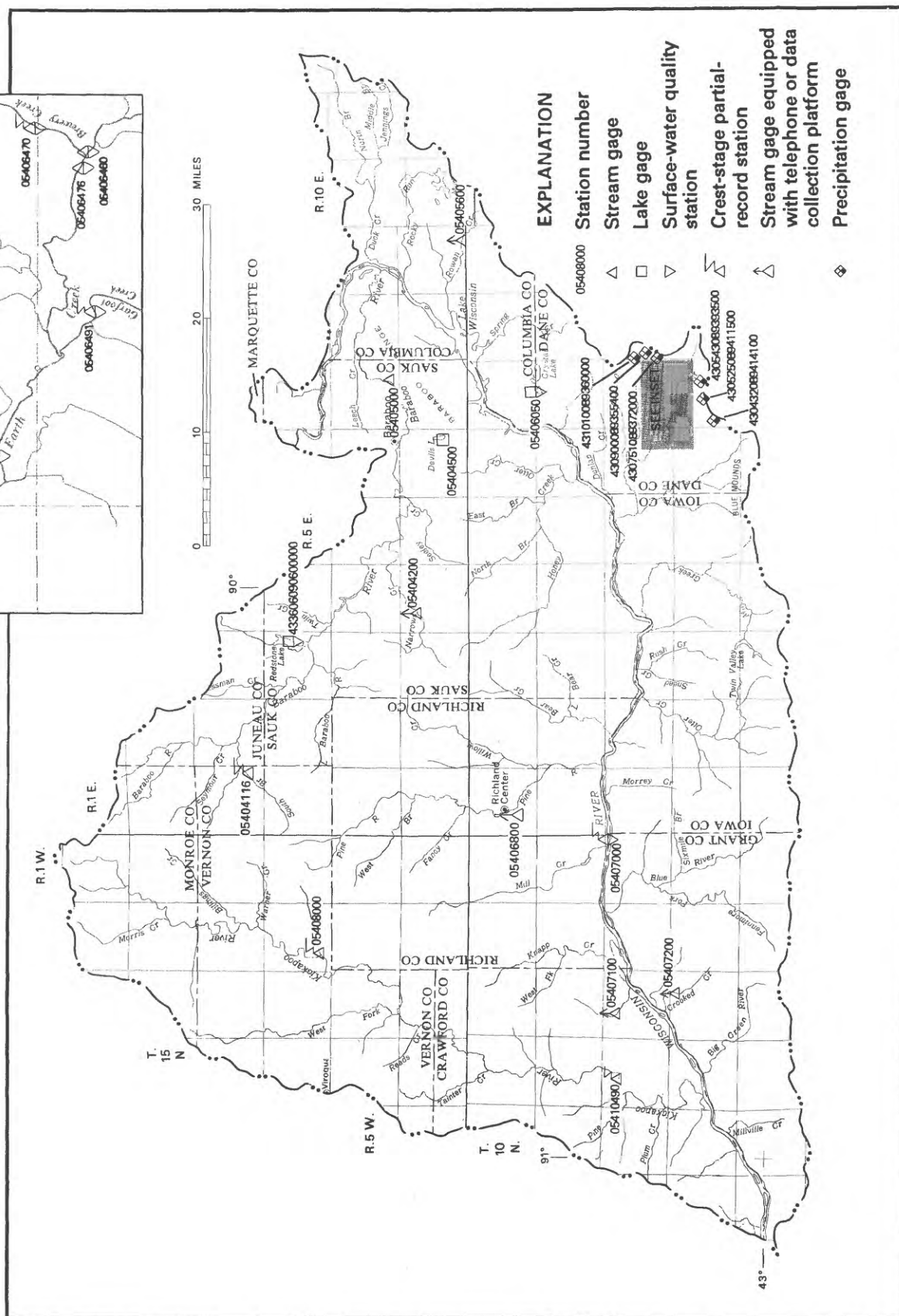
RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Shifting-control method used June 22, June 24 to Aug. 18, Aug. 24-26, Aug. 31 to Sept. 15, and Sept. 19-30; stage-discharge relation affected by ice Dec. 4 to Jan. 13.)

3.0	1,180	12.0	25,600
4.0	3,070	17.0	48,300
7.0	10,200		

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1280	3810	3000	1400	4020	3540	4260	7090	6130	6330	5790	7230
2	1360	3400	2780	1900	4010	3830	4210	7140	5870	5470	3300	7010
3	1280	3950	2750	2500	3720	3800	5780	6700	4730	6310	3800	7140
4	1320	3130	2700	2800	2670	2950	4780	6670	5490	6340	8670	6700
5	1430	2930	2500	3000	3020	3110	4050	6410	6810	6220	10800	6260
6	1790	2990	2000	2900	4390	4700	3900	4200	7250	5040	7090	5860
7	2090	3090	1900	2900	4120	3840	3320	3640	7320	4590	3730	7070
8	1880	2800	2100	3500	4080	3610	2890	3730	7850	4300	3950	7800
9	1810	2930	1800	3600	4300	3840	3070	4090	8040	4320	4180	7380
10	1790	2860	1600	3700	3970	3710	2920	4880	6450	5570	4750	6390
11	1960	2700	1300	3300	3640	4200	3110	7300	5030	4940	4140	6810
12	2100	2340	1600	3300	3650	5450	3060	8250	5590	5370	4140	7280
13	2100	2630	1500	3000	3840	6740	2660	8480	10300	4610	3980	7560
14	2240	2360	1500	1960	3390	7790	2660	8660	34800	3010	3670	7750
15	2260	2280	1300	2080	3790	8600	2650	11800	43600	2710	3460	10700
16	2600	2490	1400	3050	3230	13000	2690	12700	43300	2330	3930	16700
17	2690	2760	1700	3270	3190	15700	3140	12700	23700	1920	4050	17800
18	2940	2390	1700	3200	2900	19000	3340	12600	14500	2030	4840	11300
19	3140	2220	1600	3370	3060	11900	3380	12900	14700	3010	11300	8560
20	2890	2200	1500	2930	3390	7840	3340	17700	12600	3270	19200	8540
21	2330	2220	1200	2230	2800	7600	3420	23900	12700	3700	16800	9050
22	2390	2100	1200	2530	2870	7450	3150	19100	10400	4020	14800	9340
23	2340	1720	1500	2820	2830	7270	3280	14600	12300	4080	11600	7920
24	2090	1830	1200	2810	2610	7110	3500	11200	10300	3470	10900	7610
25	2050	2320	1400	3690	2590	6860	3890	8810	6810	3210	10400	7450
26	2070	2120	1500	3630	3320	6780	4610	9560	8400	3140	9630	7440
27	2130	2250	1700	2850	3390	6790	5170	9070	9260	3150	12600	7000
28	1970	2180	1700	2000	3230	6840	6070	8730	9270	3730	14700	6420
29	1900	2230	1700	2260	---	6680	6370	8180	8180	6260	15300	5970
30	2540	3090	1500	3320	---	6590	6280	7130	6500	7350	12300	4830
31	2940	---	1300	3700	---	6100	---	6440	---	7280	10100	---
TOTAL	65700	78320	54130	89500	96020	213220	114950	294360	368180	137080	257900	244870
MEAN	2119	2611	1746	2887	3429	6878	3832	9495	12270	4422	8319	8162
MAX	3140	3950	3000	3700	4390	19000	6370	23900	43600	7350	19200	17800
MIN	1280	1720	1200	1400	2590	2950	2650	3640	4730	1920	3300	4830

CAL YR 1989 TOTAL 1519400 MEAN 4163 MAX 25500 MIN 1190
WTR YR 1990 TOTAL 2014230 MEAN 5518 MAX 43600 MIN 1200



LOWER WISCONSIN RIVER BASIN

Base from U.S. Geological Survey
State base map, 1968

05404116 SOUTH BRANCH BARABOO RIVER AT HILLSBORO, WI

LOCATION.--Lat 43°39'10", long 90°20'09", in NE 1/4 NE 1/4 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 mi².

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

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 927.28 ft above National Geodetic Vertical Datum of 1929 (levels by Mid-State Associates, Baraboo, WI).

REMARKS.--Estimated daily discharges: Nov. 5-14, and ice periods listed in rating table below. Records are fair. Gage-height telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,010 ft³/s, June 29, 1990, gage height, 15.26 ft; inside gage height, 15.60 ft from floodmark on gage house, from rating curve extended above 1,100 ft³/s, on basis of contracted-area measurement at gage height 15.60 ft; minimum daily, 3.3 ft³/s, Dec. 22, 23, 1989.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,010 ft³/s, June 29, gage height, 15.26 ft; inside gage height, 15.60 ft from floodmark on gage house, from rating curve extended above 1,100 ft³/s, on basis of contracted measurement at gage height 15.60 ft; minimum daily, 3.3 ft³/s, Dec. 22, 23.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Shifting-control method used Oct. 1-29, Dec. 16 to Jan. 16, Feb. 10-12, Feb. 14 to Mar. 8, Mar. 13, Mar. 16 to Apr. 9, Apr. 11, 12, July 1-7, and Aug. 29, 30; stage-discharge relation affected by ice Dec. 9-11, 14, 15.)

4.1	3.2	5.5	38	10.0	412
4.3	4.2	6.0	61	11.0	543
4.5	7.5	7.0	122	12.0	720
4.7	12	8.0	202	13.0	1,080
5.0	20	9.0	298	14.0	1,630

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.3	12	6.8	4.1	8.5	8.6	8.0	6.6	7.6	35	5.4	5.2
2	4.2	10	6.5	4.1	7.8	32	11	6.2	10	25	5.3	5.1
3	4.0	9.5	5.1	4.2	8.2	21	8.2	6.0	14	21	7.8	5.0
4	4.0	10	5.9	4.2	7.9	5.0	9.1	5.9	9.7	17	100	4.7
5	7.8	11	6.3	4.1	9.5	4.1	7.8	6.0	9.5	14	10	4.6
6	6.4	12	6.2	4.0	13	4.2	6.7	5.7	9.7	13	7.2	4.9
7	4.4	11	4.8	4.0	12	4.2	6.3	5.4	8.5	19	6.3	5.8
8	4.2	9.8	4.7	4.1	75	86	6.4	5.1	8.4	18	5.9	4.9
9	4.4	9.4	4.7	32	75	142	7.4	24	7.7	13	5.4	5.0
10	5.0	8.8	4.6	16	21	79	16	39	7.3	12	5.6	8.4
11	4.6	8.6	4.5	5.4	6.2	271	8.9	14	7.5	12	5.3	5.0
12	4.3	8.4	4.2	4.3	25	182	7.3	9.4	8.7	10	5.1	4.9
13	4.2	8.4	4.1	4.1	78	34	7.3	8.5	183	9.1	4.9	4.7
14	4.3	8.2	4.1	4.1	6.0	277	8.5	8.1	31	8.9	4.9	13
15	4.4	8.1	4.1	4.1	4.2	164	9.4	8.4	15	8.7	4.9	7.5
16	6.7	7.6	4.0	4.2	4.1	23	8.8	13	17	8.3	5.6	5.7
17	5.3	6.8	4.0	119	3.9	13	8.8	9.3	113	7.8	4.9	5.4
18	4.5	6.9	4.0	16	4.0	10	7.3	7.8	22	7.7	8.3	6.4
19	4.4	7.1	4.0	8.9	3.9	8.5	8.0	50	15	10	58	12
20	4.9	7.6	3.7	8.6	3.8	7.8	11	62	26	12	24	7.1
21	4.6	7.1	3.5	8.3	4.3	8.2	9.5	18	13	8.8	9.2	6.8
22	4.7	7.0	3.3	8.2	6.3	13	8.1	13	203	7.5	7.1	6.1
23	4.7	6.2	3.3	8.7	4.9	9.6	7.5	12	100	7.0	5.9	6.3
24	4.7	6.3	3.4	8.7	4.9	7.2	7.4	11	23	6.6	8.4	5.8
25	4.7	6.9	3.6	8.6	3.9	6.9	6.9	11	16	6.4	46	5.6
26	4.6	7.0	3.6	8.0	3.9	6.5	6.7	11	22	6.1	62	5.5
27	4.4	9.9	3.9	8.4	4.0	6.2	7.4	9.4	16	6.4	26	5.4
28	4.9	11	4.0	8.0	3.9	6.3	11	9.1	86	7.2	10	5.5
29	8.0	6.7	4.0	8.2	---	6.4	9.7	8.0	1180	6.7	11	5.5
30	41	6.7	4.0	8.0	---	6.4	7.7	7.5	69	6.2	10	5.9
31	28	---	4.1	7.6	---	6.5	---	7.3	---	5.6	7.0	---
TOTAL	210.6	256.0	137.0	350.2	413.1	1459.6	254.1	417.7	2258.6	356.0	487.4	183.7
MEAN	6.79	8.53	4.42	11.3	14.8	47.1	8.47	13.5	75.3	11.5	15.7	6.12
MAX	41	12	6.8	119	78	277	16	62	1180	35	100	13
MIN	4.0	6.2	3.3	4.0	3.8	4.1	6.3	5.1	7.3	5.6	4.9	4.6
CFSM	.17	.22	.11	.29	.38	1.20	.22	.34	1.93	.29	.40	.16
IN.	.20	.24	.13	.33	.39	1.39	.24	.40	2.15	.34	.46	.17

CAL YR 1989 TOTAL 4412.4 MEAN 12.1 MAX 234 MIN 3.3 CFSM .31 IN. 4.20
WTR YR 1990 TOTAL 6784.0 MEAN 18.6 MAX 1180 MIN 3.3 CFSM .48 IN. 6.45

WISCONSIN RIVER BASIN

433606090060000 REDSTONE LAKE NEAR LA VALLE, WI

LAKE-STAGE RECORDS

LOCATION.--Lat 43°36'06", long 90°06'00", in SE 1/4 sec.14, T.13 N., R.3 E., Sauk County, Hydrologic Unit 07070004, 1.8 mi northeast of LaValle.

PERIOD OF RECORD.--October 1984 to current year.

GAGE.--Staff gage read by Tom Meronek. Elevation of gage is 916 ft, from topographic map.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height observed, 8.49 ft, Sept. 7, 1985; minimum observed, 7.00 ft, June 18 and 26, 1988, and Aug. 19-21, 1989.

EXTREMES FOR CURRENT YEAR.--Maximum gage height observed, 7.75 ft, June 24, 29; minimum observed, 7.02 ft, Oct. 1.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.02	---	---	---	---	---	7.20	7.28	7.29	---	7.11	7.31
2	---	---	---	---	---	---	7.20	7.26	7.27	---	7.09	7.27
3	---	---	---	---	---	---	7.25	7.24	7.25	7.57	7.17	7.19
4	---	---	---	---	---	---	7.30	7.22	7.25	7.41	7.23	7.17
5	---	7.22	---	---	---	---	7.25	7.20	7.25	7.47	7.25	7.17
6	---	---	---	---	---	---	7.22	7.18	7.25	7.41	7.21	7.17
7	7.08	---	---	---	---	---	7.20	7.18	7.25	7.37	7.19	7.17
8	---	---	---	---	---	---	7.20	7.18	7.23	7.31	7.17	7.15
9	---	---	---	---	---	---	7.20	7.18	7.21	7.27	7.15	7.13
10	---	---	---	---	---	---	7.30	7.40	7.21	7.25	7.11	7.19
11	---	---	---	---	---	---	7.30	7.42	7.19	7.23	7.09	7.17
12	---	7.18	---	---	---	---	7.30	7.40	7.19	7.21	7.07	7.17
13	---	---	---	---	---	---	7.28	7.38	7.29	7.19	7.07	7.17
14	7.08	---	---	---	---	---	7.26	7.36	7.57	7.17	7.07	7.19
15	---	---	---	---	---	---	7.26	7.34	7.51	7.15	7.07	7.19
16	---	---	---	---	---	---	7.26	7.32	7.51	7.15	7.07	7.17
17	---	---	---	---	---	---	7.26	7.33	7.57	7.13	7.11	7.15
18	---	7.14	---	---	---	---	7.26	7.29	7.55	7.11	7.11	7.15
19	---	---	---	---	---	---	7.26	7.29	7.53	7.11	7.33	7.15
20	---	---	---	---	---	---	7.26	7.57	7.51	7.17	7.47	7.15
21	7.10	---	---	---	---	---	7.26	7.57	7.47	7.17	7.43	7.15
22	---	---	---	---	---	---	7.26	7.55	7.47	7.17	7.39	7.15
23	---	7.10	---	---	---	---	7.26	7.55	7.71	7.13	7.33	7.15
24	---	---	---	---	---	---	7.22	7.49	7.75	7.09	7.29	7.13
25	---	---	---	---	---	7.32	7.22	7.49	7.68	7.07	7.41	7.13
26	---	---	---	---	---	7.30	7.20	7.44	7.57	7.07	7.39	7.13
27	---	---	---	---	---	7.30	7.20	7.43	7.53	7.15	7.57	7.11
28	---	---	---	---	---	7.26	7.28	7.41	7.57	7.13	7.49	7.09
29	---	---	---	---	---	7.22	7.30	7.37	7.75	7.13	7.47	7.09
30	---	---	---	---	---	7.20	7.30	7.33	7.67	7.11	7.41	7.09
31	---	---	---	---	---	---	---	7.31	---	7.09	7.37	---
MAX	7.10	7.22	---	---	---	7.32	7.30	7.57	7.75	7.57	7.57	7.31
MIN	7.02	7.10	---	---	---	7.20	7.20	7.18	7.19	7.07	7.07	7.09

WATER-QUALITY RECORDS

LOCATION.--Lat 43°36'27", long 90°05'25", in NE 1/4 sec.14, T.13 N., R.3 E., Sauk County, Hydrologic Unit 07070004, near center of lake, and 2.3 mi northeast of LaValle.

PERIOD OF RECORD.--April 1985 to current year.

REMARKS.--Secchi disc readings made by Tom Meronek.

SECCHI DISC TRANSPARENCY (IN METERS) WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	(SECCHI DISC) (M) (00078)	DATE	TIME	(SECCHI DISC) (M) (00078)	DATE	TIME	(SECCHI DISC) (M) (00078)
OCT 1989			APR 1990			JUL 1990		
01...	1300	0.8	21...	1200	1.5	08...	1200	0.7
07...	1100	1.1	29...	1200	1.8	22...	1500	0.8
14...	1500	1.1	MAY			29...	1500	0.7
21...	1300	1.4	03...	1300	2.7	AUG		
NOV			20...	1300	1.7	05...	1500	0.7
05...	1530	1.2	26...	1200	2.7	12...	1600	0.6
12...	1300	1.5	JUNE			22...	0800	0.8
18...	1030	1.6	02...	0800	2.1	26...	1500	0.8
APR 1990			10...	0900	2.7	SEP		
01...	1400	0.8	17...	1500	1.5	02...	1500	0.7
08...	1200	1.1	24...	1300	0.8	15...	1200	1.0
15...	1200	1.2	30...	1500	0.7	23...	1200	0.9

05404500 DEVILS LAKE NEAR BARABOO, WI

LOCATION.--Lat 43°25'18", long 89°43'38", in NW 1/4 NE 1/4 sec.24, 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 mi². Area of Devils Lake, 361 acres.

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.--Nonrecording gage. Datum of gage is 955.00 ft, National Geodetic Vertical Datum of 1929.

REMARKS.--Lake has no surface outlet.

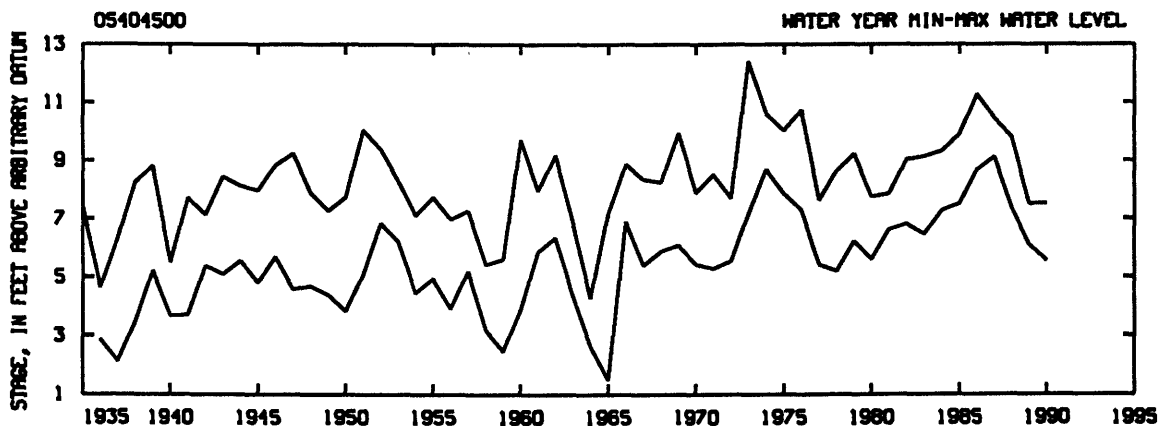
COOPERATION.--Gage readings furnished by Kenneth Lange of Devils Lake State Park October through November 1988 and Sept. 21, 1989; other readings furnished by P. S. Druckenmil.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height observed, 12.40 ft, May 31, June 1, 1973; minimum observed, 1.49 ft Feb. 8, 1965.

EXTREMES FOR CURRENT YEAR.--Maximum gage height observed, 7.53 ft, July 9; minimum observed, 5.56 ft, Nov. 13.

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	GAGE HEIGHT	DATE	GAGE HEIGHT	DATE	GAGE HEIGHT	DATE	GAGE HEIGHT
NOV. 13	5.56	MAY 11	6.20	JUNE 25	6.93	JULY 30	7.05
APR. 9	5.76	17	6.31	JULY 9	7.53	AUG. 15	6.69
20	5.90	22	6.59	19	7.25	30	6.67
25	5.96	JUNE 14	6.45				



WISCONSIN RIVER BASIN

05405000 BARABOO RIVER NEAR BARABOO, WI

LOCATION.--Lat 43°28'51", long 89°38'09", in NW 1/4 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 mi².

PERIOD OF RECORD.--December 1913 to March 1922. September 1942 to current year.

REVISED RECORDS.--WSP 455: 1915. WSP 505: 1917(M). WSP 1438: 1914-15(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 National Geodetic Vertical Datum 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.--Estimated daily discharges: Ice periods listed in rating table below. Records good except those for ice-affected periods, which are poor. Apparent occasional regulation at low flow by dams upstream.

AVERAGE DISCHARGE.--55 (water years 1915-21, 1943-90), 378 ft³/s, 8.43 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge observed, 7,900 ft³/s, Mar. 26, 1917, gage height, 17.5 ft, estimated, site and datum then in use, from rating curve extended above 6,000 ft³/s; minimum observed, 9.0 ft³/s, Feb. 17, 1944, gage height, 5.08 ft; minimum daily, 26 ft³/s, Oct. 6, 1950.

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 ft³/s.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,810 ft³/s, June 30, gage height, 16.72 ft; minimum daily discharge, 120 ft³/s, Dec. 22-26.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Shifting-control method used Feb. 19-22 and Mar. 12-24; stage-discharge relation affected by ice Nov. 23 to Jan. 7, Jan. 11 to Feb. 18, and Feb. 23 to Mar. 11.)

6.4	103	13.0	1,650
7.0	235	17.0	2,900
10.0	933		

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	136	424	190	140	170	180	272	376	237	2740	176	285
2	135	506	200	150	170	200	288	336	218	2570	156	241
3	140	460	200	150	170	230	307	278	225	2320	155	217
4	122	345	180	150	170	300	345	242	212	1910	169	204
5	148	277	170	150	170	350	357	224	210	1370	179	199
6	164	255	180	160	180	270	339	211	222	695	351	188
7	176	264	190	160	200	230	311	198	218	366	494	184
8	184	271	180	172	250	350	284	193	208	299	383	179
9	191	273	160	191	350	700	258	281	201	282	237	164
10	185	270	160	176	450	1000	319	770	193	282	183	198
11	170	262	150	190	480	1400	392	842	169	277	172	193
12	170	244	150	210	450	1740	417	745	159	245	172	211
13	163	232	140	190	370	1680	387	651	203	212	174	230
14	169	220	130	180	300	1760	343	479	281	215	173	245
15	170	215	130	170	340	1990	311	354	434	208	202	211
16	208	209	130	160	320	2270	297	346	571	190	178	210
17	235	207	130	190	300	2520	299	347	796	192	167	265
18	270	187	130	240	280	2440	299	342	633	188	173	249
19	246	149	130	280	236	1980	290	410	538	190	297	225
20	228	191	130	260	222	1330	292	822	552	190	435	208
21	205	189	130	230	188	718	295	916	451	189	613	207
22	192	187	120	200	186	467	298	875	521	206	694	229
23	186	170	120	190	180	428	305	823	928	207	663	243
24	187	160	120	190	170	418	294	693	987	200	474	226
25	175	170	120	190	170	401	268	541	891	196	343	187
26	179	180	120	180	170	351	252	515	897	173	365	140
27	176	190	130	180	170	307	261	474	837	173	480	142
28	174	200	140	180	180	288	358	398	628	173	582	165
29	176	190	140	170	---	276	406	344	1720	177	616	163
30	216	190	140	170	---	271	407	297	2670	175	544	161
31	272	---	140	170	---	268	---	263	---	168	388	---
TOTAL	5748	7287	4580	5719	6992	27113	9551	14586	17010	16978	10388	6169
MEAN	185	243	148	184	250	875	318	471	567	548	335	206
MAX	272	506	200	280	480	2520	417	916	2670	2740	694	285
MIN	122	149	120	140	170	180	252	193	159	168	155	140
CFSM	.30	.40	.24	.30	.41	1.44	.52	.77	.93	.90	.55	.34
IN.	.35	.45	.28	.35	.43	1.66	.58	.89	1.04	1.04	.63	.38

CAL YR 1989 TOTAL 100063 MEAN 274 MAX 2000 MIN 115 CFSM .45 IN. 6.11
WTR YR 1990 TOTAL 132121 MEAN 362 MAX 2740 MIN 120 CFSM .59 IN. 8.07

05406050 FISH LAKE NEAR SAUK CITY, WI

LAKE-STAGE RECORDS

LOCATION.--Lat 43°17'02", long 89°39'15", in NE 1/4 SW 1/4 sec.3, T.9 N., R.7 E., Dane County, Hydrologic Unit 07070005, on south side of lake near Ganser's Tavern and Dance Hall, 0.4 mi southwest of Crystal Lake, and 3.1 mi east of Sauk City.

DRAINAGE AREA.--8.97 mi², includes 7.11 mi² without surface drainage. Area of Fish Lake, 252 acres.

PERIOD OF RECORD.--November 1966 to September 1981 (fragmentary), April 1985 to September 1987, April to September 1989.

REVISED RECORDS.--WDR WI-77-1: Drainage area. WDR WI-87-1: All published readings in the 1987 water year are invalid because the observer read the wrong staff gage. In the 1987 water year only one reading by the USGS is valid: May 7, 1987, water surface 10.52 ft. In the 1988 water year only one reading by the USGS is valid: May 16, 1988, water surface 10.83 ft.

GAGE.--Nonrecording gage in lake bed. Datum of gage is 848.07 ft above National Geodetic Vertical Datum of 1919. Staff gage read by James Vennie.

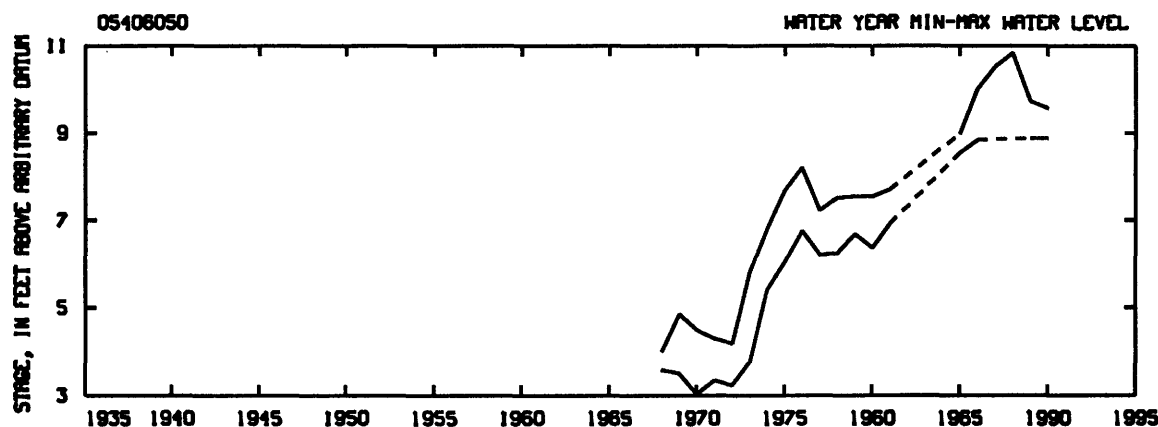
REMARKS.--Lake has no surface outlet.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height observed, 10.83 ft, May 16, 1988; minimum observed, 3.02 ft, Aug. 29, 1970.

EXTREMES FOR CURRENT YEAR.--Maximum gage height observed, 9.56 ft, July 10; minimum observed, 8.88 ft, Oct. 14.

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	GAGE HEIGHT	DATE	GAGE HEIGHT	DATE	GAGE HEIGHT	DATE	GAGE HEIGHT
OCT. 14	8.88	MAY 28	9.43	JULY 24	9.36	SEPT. 8	9.09
NOV. 4	8.89	JUNE 11	9.26	AUG. 1	9.27	11	9.17
APR. 9	9.36	JULY 10	9.56	16	9.11		



WATER-QUALITY RECORDS

LOCATION.--Lat 43°17'14", long 89°39'08", in NW 1/4 sec.3, T.9 N., R.7 E., Dane County, Hydrologic Unit 07070005, near center of lake, and 3.6 mi east of Sauk City.

PERIOD OF RECORD.--May 1985 to current year.

REMARKS.--Secchi disc readings made by James Vennie.

SECCHI DISC TRANSPARENCY (IN METERS) WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	SECCHI DISC (M) (00078)	DATE	TIME	SECCHI DISC (M) (00078)
OCT 1989			JUN 1990		
14...	1600	4.0	11...	1030	4.0
NOV 04...	1545	3.6	JUL 10...	1400	2.3
APR 1990			24...	1245	1.5
09...	1000	1.8	AUG 01...	1000	1.5
MAY 28...	1550	2.9	16...	1400	1.7
			SEP 11...	1045	2.0

WISCONSIN RIVER BASIN

05406460 BLACK EARTH CREEK AT CROSS PLAINS, WI

LOCATION.--Lat 43°06'38", long 89°38'44", in NW 1/4 SE 1/4 sec.3, T.7 N., R.7 E., Dane County, Hydrologic Unit 07070005, on left bank at bridge at County Trunk KP at Cross Plains.

DRAINAGE AREA.--12.8 mi², revised.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1984 to September 1986, October 1989 to September 1990.

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

REMARKS.--Estimated daily discharges: Nov. 10-15, May 26-31, and Sept. 26-29. Records fair.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 123 ft³/s, Mar. 8, 1990, gage height, 11.29 ft; maximum gage height, 12.80 ft, July 25, 1985; minimum, 4.8 ft³/s, July 13, 16, and 17, 1990; minimum gage height, 8.94 ft Sept. 18, 1990.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 123 ft³/s, Mar. 8, gage height, 11.29 ft; maximum gage height, 11.37 ft, June 29 (backwater from vegetation); minimum, 4.8 ft³/s, July 13, 16, and 17; minimum gage height, 8.94 ft, Sept. 18.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second.
(Shifting-control method used Oct. 1 to Jan. 17, May 10-23, June 2, 3, and
June 29 to July 5.)

8.9	3.7	10.0	56
9.0	6.1	10.5	82
9.5	31		

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.7	7.1	6.8	6.0	7.2	8.8	8.2	7.3	7.1	21	5.7	5.9
2	6.7	7.1	6.7	6.0	6.8	13	8.4	7.2	14	18	5.6	6.1
3	6.5	6.9	6.3	6.1	6.4	12	8.2	7.2	16	16	5.9	6.0
4	6.7	7.1	6.6	6.2	6.2	9.2	8.3	7.6	14	15	6.0	6.0
5	7.5	7.3	6.8	6.0	7.9	8.7	8.1	7.5	11	13	6.1	6.7
6	6.9	7.4	6.7	5.9	8.8	8.6	8.0	7.4	10	11	5.6	6.0
7	6.4	7.4	6.3	5.9	7.6	8.3	7.8	7.1	9.8	9.9	5.7	5.9
8	6.6	7.1	6.5	5.9	12	50	7.9	7.1	9.6	8.9	5.8	6.1
9	6.7	7.1	6.4	6.5	8.6	33	8.3	7.9	9.2	7.7	5.9	6.0
10	6.8	7.1	6.7	6.5	7.3	20	8.8	10	8.9	6.7	5.8	6.2
11	6.7	8.6	6.6	6.2	7.2	45	8.3	9.8	8.2	6.1	5.9	6.1
12	6.7	8.0	6.8	5.7	7.2	23	8.1	9.6	7.7	5.4	5.9	6.1
13	6.5	7.6	6.8	5.5	7.5	22	8.2	9.5	7.5	5.2	6.1	6.3
14	6.6	7.4	6.8	5.5	6.9	25	8.0	9.2	7.4	5.6	6.0	6.4
15	6.5	7.2	6.6	5.3	6.9	23	7.8	9.1	7.3	5.6	6.1	6.0
16	8.4	7.1	6.1	6.4	7.3	18	8.3	10	8.0	5.2	6.6	5.8
17	6.9	6.8	6.2	23	7.2	16	7.9	8.8	9.2	5.2	6.8	5.7
18	6.6	7.0	6.1	8.7	7.3	15	7.5	8.1	8.3	5.5	8.6	5.7
19	6.6	7.1	6.1	6.9	7.2	13	7.6	10	7.0	5.6	11	5.7
20	6.8	7.3	5.9	6.8	7.1	12	8.0	12	7.3	5.6	12	5.7
21	6.8	7.1	5.8	7.1	7.5	12	7.8	10	7.9	5.4	8.7	6.2
22	6.6	7.1	5.7	7.0	7.7	12	7.6	8.6	9.1	5.7	7.7	5.9
23	6.6	6.7	5.6	7.2	8.0	11	7.7	7.4	8.9	5.3	7.4	6.0
24	6.5	6.8	5.6	13	7.8	11	7.4	7.8	7.9	5.4	7.9	6.1
25	6.7	6.9	5.8	9.5	7.4	10	7.4	8.2	8.1	5.4	7.0	6.9
26	6.8	6.8	5.9	6.9	7.8	10	7.6	7.8	8.1	5.6	6.7	6.0
27	6.5	7.1	5.9	6.8	8.1	10	7.7	7.6	7.9	5.7	6.6	6.0
28	6.5	7.1	6.0	6.8	8.1	9.1	8.6	7.4	8.3	5.7	6.6	6.0
29	6.5	6.5	6.0	6.6	---	7.8	8.1	7.2	61	5.9	6.5	6.0
30	6.9	6.8	6.0	6.6	---	8.0	7.7	7.0	26	6.1	6.3	6.0
31	7.4	---	6.1	6.5	---	8.1	---	7.4	---	5.9	5.9	---
TOTAL	209.6	214.6	194.2	225.0	213.0	492.6	239.3	258.8	340.7	244.3	210.4	181.5
MEAN	6.76	7.15	6.26	7.26	7.61	15.9	7.98	8.35	11.4	7.88	6.79	6.05
MAX	8.4	8.6	6.8	23	12	50	8.8	12	61	21	12	6.9
MIN	6.4	6.5	5.6	5.3	6.2	7.8	7.4	7.0	7.0	5.2	5.6	5.7
CFSM	.53	.56	.49	.57	.59	1.24	.62	.65	.89	.62	.53	.47
IN.	.61	.62	.56	.65	.62	1.43	.70	.75	.99	.71	.61	.53

WTR YR 1990 TOTAL 3024.0 MEAN 8.28 MAX 61 MIN 5.2 CFSM .65 IN. 8.79

05406460 BLACK EARTH CREEK AT CROSS PLAINS, WI--CONTINUED

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1984 to September 1986, October 1989 to September 1990.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: January 1985 to September 1986, October 1989 to September 1990.

DISSOLVED OXYGEN: April 1984 to September 1986, April 1989 to September 1990.

INSTRUMENTATION.--Continuous water temperature recorder January 1985 to September 1986, October 1989 to September 1990. Dissolved oxygen recorder April 1984 to September 1986, April 1989 to September 1990.

REMARKS.--Suspended-sediment, total phosphorus, and total nitrogen discharge were calculated for the period October 1984 to June 1986.

EXTREMES FOR PERIOD OF RECORD.--

WATER TEMPERATURE: Maximum observed, 23.0°C, July 25, 1985; minimum observed, 0.5°C, Mar. 8, 1990.

DISSOLVED OXYGEN: Maximum observed, 16.5 mg/L, May 8, 1990; minimum observed, 3.0 mg/L, July 25, 1985.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum observed, 22.5°C, July 4; minimum observed, 0.5°C, Mar. 8.

DISSOLVED OXYGEN: Maximum observed, 16.5 mg/L, May 8; minimum observed, 4.5 mg/L, Aug. 20.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)	DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)
OCT 1989					JAN 1990				
05...	1404	8.0	580	9.0	18...	1130	8.5	520	6.0
NOV					MAR				
08...	0820	7.2	590	8.5	09...	1350	25	305	4.0
DEC									
12...	0923	6.6	575	4.0					

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	---	---	---	10.0	7.5	8.5	9.0	6.0	7.0	7.5	5.0	6.5
2	---	---	---	9.5	7.0	8.0	7.0	4.0	5.5	8.0	5.0	6.0
3	---	---	---	9.0	6.0	7.0	7.0	4.0	5.5	8.5	6.0	7.0
4	---	---	---	10.5	7.5	8.5	8.0	5.0	6.5	8.0	5.0	6.5
5	---	---	---	10.5	8.5	9.5	9.5	7.0	7.5	8.0	4.5	6.0
6	---	---	---	10.0	8.0	9.0	7.0	4.5	6.0	7.5	5.0	6.0
7	---	---	---	11.0	8.5	9.5	7.0	4.5	5.5	9.0	5.0	6.5
8	---	---	---	9.5	8.0	8.5	7.5	5.0	6.0	8.5	5.5	7.0
9	---	---	---	---	---	---	7.5	5.0	6.0	8.5	6.0	7.0
10	---	---	---	---	---	---	7.5	5.5	6.5	8.0	6.0	6.5
11	---	---	---	---	---	---	6.5	4.0	5.0	6.5	5.0	6.0
12	---	---	---	---	---	---	6.5	4.0	5.0	6.5	3.5	5.0
13	---	---	---	---	---	---	6.5	4.5	5.5	7.0	4.5	5.5
14	---	---	---	---	---	---	5.5	3.5	4.0	8.5	5.0	6.0
15	---	---	---	---	---	---	6.0	3.0	4.0	9.5	5.5	7.0
16	---	---	---	---	---	---	6.0	3.5	4.5	8.0	5.0	7.0
17	---	---	---	7.5	5.0	6.0	6.5	4.5	5.5	5.0	1.5	3.0
18	---	---	---	7.5	5.0	6.0	5.5	4.0	4.5	7.0	4.0	5.0
19	---	---	---	9.5	5.5	7.5	5.5	3.5	4.5	8.0	5.0	6.0
20	---	---	---	10.0	6.0	7.5	5.0	2.0	3.5	6.5	5.5	6.0
21	---	---	---	8.0	5.5	6.5	3.5	1.5	2.5	7.5	5.5	6.0
22	---	---	---	8.0	5.0	6.5	4.5	2.5	3.5	9.0	6.0	7.0
23	---	---	---	8.0	4.5	5.5	6.0	3.0	4.0	7.5	5.5	6.5
24	---	---	---	8.0	4.5	6.5	6.0	3.5	5.0	8.0	2.5	5.0
25	---	---	---	9.0	6.5	7.5	8.0	4.5	6.0	5.5	3.0	4.0
26	---	---	---	9.5	6.0	7.5	6.5	4.0	5.0	8.0	4.0	5.5
27	---	---	---	8.5	6.5	7.5	7.0	4.5	6.0	9.0	4.0	6.0
28	12.5	10.0	11.0	7.5	5.0	6.0	8.5	5.0	6.5	9.0	4.5	6.0
29	13.5	10.0	11.0	7.0	4.5	5.5	7.0	5.5	6.0	9.5	5.0	6.5
30	11.5	10.0	10.5	9.0	5.5	7.0	7.0	5.5	6.5	9.5	4.5	6.5
31	10.5	7.5	9.0	---	---	---	7.5	6.0	6.5	8.5	4.5	6.5
MONTH	---	---	---	---	---	---	9.5	1.5	5.3	9.5	1.5	6.0

05406460 BLACK EARTH CREEK AT CROSS PLAINS, WI--CONTINUED

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY				MARCH			APRIL			MAY		
1	8.0	5.5	7.0	11.0	5.5	7.0	11.0	7.0	9.0	---	---	---
2	7.5	5.0	6.0	11.5	2.0	6.0	8.0	6.0	6.5	---	---	---
3	9.0	5.0	6.5	8.5	3.0	5.5	13.5	6.0	8.5	---	---	---
4	9.5	5.0	6.5	8.5	5.5	6.5	13.0	6.5	9.0	---	---	---
5	10.0	4.0	6.5	8.0	6.0	6.5	11.0	5.5	7.5	---	---	---
6	7.0	4.0	5.5	11.0	5.5	7.5	9.5	5.0	6.5	---	---	---
7	9.5	5.5	7.0	10.0	5.5	7.0	12.5	5.0	8.0	---	---	---
8	8.5	4.5	6.0	7.0	.5	4.0	13.5	5.5	9.0	---	---	---
9	9.0	4.5	6.0	3.5	1.0	2.0	10.5	8.0	9.0	---	---	---
10	8.0	5.0	6.0	5.0	2.5	3.5	11.0	7.0	8.5	---	---	---
11	7.5	5.0	6.0	4.0	1.5	3.0	10.0	5.5	7.5	---	---	---
12	9.5	5.0	7.0	10.5	4.0	7.0	12.0	5.0	7.5	---	---	---
13	7.0	5.0	6.5	10.5	5.5	8.0	12.0	6.0	8.0	---	---	---
14	6.0	4.5	5.5	11.5	8.5	10.0	14.0	7.0	9.5	---	---	---
15	7.0	4.5	6.0	11.0	8.0	9.5	14.0	7.5	9.5	---	---	---
16	7.5	5.5	6.5	11.0	7.0	8.5	9.5	6.5	7.5	---	---	---
17	9.5	4.0	6.0	7.5	6.0	7.0	12.5	5.5	8.0	---	---	---
18	10.0	4.5	6.5	9.0	5.5	6.5	14.0	5.5	9.0	---	---	---
19	9.5	5.0	6.5	9.0	4.5	6.5	11.0	7.0	8.5	---	---	---
20	10.5	4.5	6.5	11.0	5.0	7.5	12.0	8.5	10.0	---	---	---
21	10.5	5.5	7.5	10.5	6.5	8.0	16.0	8.5	11.5	---	---	---
22	8.0	6.5	7.5	9.0	6.0	8.0	16.5	8.0	11.5	---	---	---
23	10.5	6.0	7.5	9.5	4.0	6.0	---	---	---	---	---	---
24	8.0	3.5	5.0	10.5	5.0	7.0	---	---	---	---	---	---
25	9.5	3.5	5.5	11.0	5.0	7.5	---	---	---	---	---	---
26	9.5	4.5	6.5	11.5	5.5	7.5	---	---	---	---	---	---
27	10.5	5.0	7.0	12.0	5.0	8.0	---	---	---	---	---	---
28	11.0	4.5	7.0	11.5	6.0	8.5	---	---	---	---	---	---
29	---	---	---	9.0	7.5	8.0	---	---	---	---	---	---
30	---	---	---	9.0	6.5	8.0	---	---	---	---	---	---
31	---	---	---	12.5	6.5	9.0	---	---	---	---	---	---
MONTH	11.0	3.5	6.4	12.5	.5	6.9	---	---	---	---	---	---
JUNE				JULY			AUGUST			SEPTEMBER		
1	---	---	---	21.5	17.5	19.0	16.5	9.5	12.5	15.5	11.0	13.0
2	17.5	12.5	14.5	21.0	16.0	18.5	17.0	9.5	13.0	14.5	11.0	12.5
3	15.5	12.0	13.5	22.0	16.5	19.0	16.5	11.0	13.5	15.0	10.5	12.5
4	16.5	10.5	13.0	22.5	17.5	19.5	17.0	11.5	13.5	18.0	11.5	14.0
5	13.0	11.0	12.0	21.0	16.0	18.0	15.5	11.5	13.0	16.0	12.0	14.0
6	17.0	11.5	13.5	17.0	14.0	15.5	15.5	9.5	12.5	18.0	12.5	14.5
7	17.5	11.0	13.5	16.5	13.0	14.0	16.0	9.0	12.5	15.0	12.0	13.0
8	17.5	12.0	14.5	20.5	14.5	17.0	16.5	10.0	13.0	15.0	11.5	13.0
9	18.5	12.0	15.0	17.0	12.0	14.5	16.5	10.0	13.0	16.0	11.0	13.0
10	18.5	11.5	14.5	15.5	11.5	13.0	16.5	11.0	13.5	16.0	11.5	13.0
11	15.0	11.5	13.0	17.5	11.0	14.0	16.0	11.0	12.5	15.0	11.0	12.5
12	20.5	12.0	15.5	15.0	11.0	12.5	14.0	11.0	12.5	16.0	11.0	13.0
13	16.5	13.0	14.0	16.0	10.0	12.5	16.0	10.5	13.0	16.5	10.5	13.5
14	18.5	11.5	14.0	13.5	10.5	12.0	16.5	10.0	13.0	14.5	11.5	13.0
15	15.5	10.5	12.5	15.0	11.5	12.5	17.0	11.5	14.0	15.0	10.0	12.0
16	15.0	11.0	12.5	17.0	10.5	13.5	17.0	12.0	14.5	13.0	10.5	11.5
17	19.5	13.0	15.5	18.0	11.5	14.5	19.5	12.0	13.5	13.5	9.5	11.0
18	19.0	12.0	15.0	15.0	12.0	13.5	19.5	13.5	16.5	11.5	10.0	10.5
19	15.5	10.0	12.5	14.0	11.0	12.5	17.0	15.0	16.0	13.5	10.5	11.5
20	19.0	11.0	14.5	16.5	12.0	13.5	16.5	14.0	15.5	14.0	9.5	11.5
21	17.0	12.0	14.5	15.0	11.0	13.0	14.0	13.0	14.0	14.0	10.5	12.0
22	14.5	13.0	14.0	16.5	11.5	13.5	16.5	12.5	14.0	11.5	9.5	10.5
23	18.0	12.5	14.5	16.5	10.0	13.0	16.5	12.0	14.0	13.0	9.0	10.5
24	18.5	11.5	14.5	16.0	10.5	13.0	17.5	13.5	15.0	14.0	8.5	11.0
25	19.5	13.0	15.5	18.0	11.0	14.0	18.0	13.0	15.0	15.0	10.0	12.0
26	20.5	13.5	16.0	17.0	11.0	13.5	16.0	12.5	14.0	---	---	---
27	20.0	13.0	16.0	15.0	12.0	13.0	18.5	12.0	15.0	---	---	---
28	17.5	13.5	15.0	17.5	11.5	14.0	17.5	12.0	14.5	---	---	---
29	20.5	17.5	19.0	16.5	12.5	14.0	17.0	11.0	13.5	---	---	---
30	22.0	18.0	20.0	16.5	11.5	13.5	16.5	10.5	13.0	---	---	---
31	---	---	---	16.5	10.0	12.5	16.0	10.5	13.0	---	---	---
MONTH	---	---	---	22.5	10.0	14.4	19.5	9.0	13.7	---	---	---

05406460 BLACK EARTH CREEK AT CROSS PLAINS, WI--CONTINUED

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY				MARCH			APRIL			MAY		
1	---	---	---	---	---	---	12.1	8.3	9.4	14.7	8.1	10.9
2	---	---	---	---	---	---	12.6	8.6	10.1	15.2	8.0	11.1
3	---	---	---	---	---	---	12.9	8.5	10.3	15.4	8.1	10.9
4	---	---	---	---	---	---	12.7	8.3	9.7	12.3	8.1	10.0
5	---	---	---	---	---	---	12.6	8.4	10.2	15.9	8.2	11.3
6	---	---	---	---	---	---	13.5	9.3	10.9	15.8	8.0	11.4
7	---	---	---	---	---	---	14.2	9.3	11.3	16.0	7.6	11.3
8	---	---	---	---	---	---	14.3	8.7	11.0	16.5	7.5	11.0
9	---	---	---	---	---	---	13.4	8.4	10.3	11.4	7.6	9.0
10	---	---	---	---	---	---	13.6	8.4	10.3	14.0	8.3	10.6
11	---	---	---	---	---	---	13.7	8.9	10.7	15.2	8.1	11.3
12	---	---	---	---	---	---	13.4	9.1	10.8	13.3	8.1	10.2
13	---	---	---	---	---	---	13.4	8.6	10.5	15.3	7.8	11.2
14	---	---	---	---	---	---	13.7	8.4	10.4	13.1	7.9	9.9
15	---	---	---	---	---	---	13.2	8.3	10.3	11.7	7.6	9.2
16	---	---	---	---	---	---	12.9	8.5	9.8	12.7	7.0	9.2
17	---	---	---	---	---	---	13.1	8.6	10.5	12.1	7.2	9.4
18	---	---	---	---	---	---	12.8	8.7	10.3	13.6	7.3	10.1
19	---	---	---	---	---	---	12.4	8.2	9.7	9.5	7.3	8.1
20	---	---	---	---	---	---	12.2	7.9	9.4	10.5	7.6	8.8
21	---	---	---	---	---	---	12.6	7.9	9.7	12.7	7.8	10.0
22	---	---	---	---	---	---	12.4	7.6	9.7	13.2	7.6	10.1
23	---	---	---	---	---	---	12.4	7.2	9.5	12.2	7.4	9.7
24	---	---	---	---	---	---	12.7	7.2	9.5	13.9	7.5	10.1
25	---	---	---	---	---	---	13.7	7.3	10.0	---	---	---
26	---	---	---	---	---	---	14.4	7.3	9.8	---	---	---
27	---	---	---	---	---	---	14.8	7.1	10.1	---	---	---
28	---	---	---	---	---	---	12.8	6.9	9.1	---	---	---
29	---	---	---	---	---	---	14.9	7.7	10.6	---	---	---
30	---	---	---	---	---	---	14.6	7.7	10.6	---	---	---
31	---	---	---	---	---	---	---	---	---	---	---	---
MONTH	---	---	---	---	---	---	14.9	6.9	10.1	---	---	---
JUNE				JULY			AUGUST			SEPTEMBER		
1	---	---	---	8.1	6.2	7.0	13.7	7.5	10.0	12.2	7.6	9.4
2	12.0	5.8	8.5	10.0	6.6	7.9	13.8	7.3	10.0	12.7	7.8	9.8
3	9.6	6.9	8.3	11.7	5.7	8.0	13.7	6.9	9.6	13.1	8.3	10.0
4	9.6	8.1	8.8	10.1	5.7	7.2	13.1	6.8	9.1	13.1	8.0	10.0
5	10.5	8.2	9.0	11.2	5.8	7.9	13.0	6.7	9.2	12.9	7.4	9.6
6	12.0	8.1	9.8	11.4	6.2	8.6	13.0	7.2	9.5	13.6	8.0	10.1
7	12.6	8.0	9.8	11.7	7.0	8.6	12.9	7.3	9.4	13.6	8.1	10.5
8	12.7	7.7	9.8	12.3	6.9	9.0	13.2	7.1	9.5	13.9	8.9	10.7
9	12.7	7.6	9.7	11.9	6.9	9.3	13.3	7.1	9.6	13.8	8.7	10.7
10	13.1	7.6	10.0	13.1	7.6	9.6	13.0	6.9	9.3	13.5	8.1	10.2
11	12.9	7.6	10.0	13.3	7.7	10.1	12.9	6.8	8.8	13.0	8.5	10.2
12	13.9	7.1	10.1	13.4	7.7	10.1	11.8	6.8	8.8	13.4	8.4	10.3
13	13.5	7.0	9.3	13.4	7.9	10.3	12.6	7.1	9.3	13.1	7.7	10.1
14	14.2	7.4	10.3	12.4	7.7	9.4	12.3	7.0	9.2	11.2	7.3	8.9
15	13.6	7.6	10.2	13.9	7.3	9.7	12.2	6.7	8.9	12.8	8.3	10.0
16	12.2	7.2	8.8	13.8	7.6	10.3	12.1	6.1	8.5	12.3	8.2	9.9
17	12.9	6.7	9.4	14.1	7.3	10.2	11.2	6.4	8.1	13.1	8.5	10.3
18	12.4	6.7	9.2	12.6	7.1	9.4	9.8	5.5	7.1	11.1	8.3	9.3
19	12.9	7.3	9.8	11.9	7.0	9.1	7.7	4.7	5.8	12.0	8.2	9.6
20	13.5	7.7	10.2	13.1	6.9	9.4	7.3	4.5	5.8	12.3	8.2	9.9
21	12.9	7.6	9.8	13.7	7.1	9.8	9.0	6.2	7.3	12.1	7.7	9.4
22	11.1	7.3	8.9	13.3	6.9	9.6	10.9	6.7	8.5	11.4	8.6	9.8
23	12.6	7.5	9.6	13.7	7.3	9.9	11.4	6.6	8.9	12.4	8.8	10.2
24	12.4	7.6	9.6	13.2	7.2	9.9	11.8	6.2	8.4	12.4	8.5	10.2
25	12.6	7.1	9.6	14.5	7.5	10.3	11.8	6.8	8.7	12.2	8.2	9.7
26	12.8	7.2	9.2	14.5	7.3	10.0	11.2	7.3	8.7	---	---	---
27	13.0	7.2	9.7	12.8	6.9	9.2	11.6	6.9	8.8	---	---	---
28	12.4	7.0	9.4	13.9	7.0	9.9	11.4	6.8	8.7	---	---	---
29	8.1	4.8	5.7	13.1	6.6	9.1	11.7	7.3	9.0	---	---	---
30	6.6	5.6	6.2	13.4	6.9	9.6	11.7	7.4	9.1	---	---	---
31	---	---	---	13.9	7.2	10.0	12.1	7.4	9.2	---	---	---
MONTH	---	---	---	14.5	5.7	9.3	13.8	4.5	8.7	---	---	---

431010089360000 BREWERY CREEK RAIN GAGE #1 NEAR CROSS PLAINS, WI

LOCATION.--Lat 43°10'10", long 89°36'00", in NE 1/4 SE 1/4 sec.13, T.8 N., R.7 E., Dane County, Hydrologic Unit 07070005, on Whipporwill Road, 0.5 mi south of intersection with County Trunk K.

PERIOD OF RECORD.--October 1989 to September 1990 (non-frozen precipitation).

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

REMARKS.--Gage established October 27, 1989. Records good. Recorded precipitation interpreted as collector snowmelt, and rainfall estimated to be 0.00 in. for Nov. 3-4, 9, 27, and 30; Dec. 25 and 28; Jan. 2, 4, 7, 22-24, and 26; Feb. 3-4, 18, 22, and 25; and Apr. 2.

EXTREMES FOR CURRENT YEAR.--Maximum daily rainfall, 2.09 in., June 28, 1990.

RAINFALL ACCUMULATED (INCHES), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	.00	.00	.00	.00	.00	.20	.00	.05	.00	.00	.00
2	---	.00	.00	.00	.00	.00	.00	.00	1.49	.00	.00	.00
3	---	.00	.00	.04	.00	.00	.00	.00	.01	.00	.00	.00
4	---	.00	.00	.00	.00	.00	.07	.39	.00	.00	.05	.00
5	---	.08	.00	.00	.00	.00	.00	.00	.12	.01	.00	.00
6	---	.02	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	---	.26	.00	.00	.00	.00	.00	.00	.10	.16	.00	.00
8	---	.01	.00	.02	.00	.62	.00	.01	.00	.00	.00	.00
9	---	.00	.00	.07	.00	.00	.42	1.03	.00	.00	.04	.02
10	---	.00	.00	.00	.00	.01	.02	.50	.00	.01	.00	.42
11	---	.00	.00	.00	.00	.50	.00	.00	.00	.00	.15	.00
12	---	.00	.00	.00	.00	.04	.00	.01	.00	.00	.00	.00
13	---	.00	.00	.00	.00	1.10	.24	.00	.17	.00	.00	.00
14	---	.00	.00	.00	.00	.67	.03	.00	.00	.11	.00	.60
15	---	.00	.00	.00	.00	.04	.02	.43	.00	.00	.04	.00
16	---	.00	.00	.02	.00	.00	.05	.06	.27	.00	.00	.00
17	---	.00	.00	.06	.00	.00	.00	.01	.22	.00	.44	.00
18	---	.00	.00	.00	.00	.00	.00	.04	.00	.00	.60	.05
19	---	.00	.00	.00	.00	.01	.06	1.00	.00	.45	1.54	.00
20	---	.00	.00	.00	.00	.00	.21	.00	.00	.00	.13	.01
21	---	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01	.10
22	---	.00	.00	.00	.00	.13	.00	.00	1.69	.00	.00	.04
23	---	.00	.00	.00	.00	.00	.00	.25	.01	.00	.00	.00
24	---	.00	.00	.00	.00	.00	.00	.00	.00	.00	.16	.00
25	---	.00	.00	.00	.00	.00	.00	.14	.00	.00	.29	.00
26	---	.00	.00	.00	.00	.00	.23	.00	.29	.00	.04	.00
27	.00	.00	.00	.00	.00	.00	.42	.00	.02	.19	.16	.00
28	.01	.00	.00	.00	.00	.00	.26	.00	2.09	.00	.00	.00
29	.00	.00	.00	.00	---	.00	.00	.00	.06	.26	.00	.00
30	.37	.00	.00	.00	---	.00	.03	.00	.00	.00	.00	.00
31	.07	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	---	0.37	0.00	0.21	0.00	3.12	2.26	3.87	6.59	1.19	3.65	1.24

WISCONSIN RIVER BASIN

327

430900089355400 BREWERY CREEK RAIN GAGE #2 NEAR CROSS PLAINS, WI

LOCATION.--Lat 43°09'00", long 89°35'54", in SW 1/4 SW 1/4 sec.19, T.8 N., R.8 E., Dane County, Hydrologic Unit 07070005, at the intersection of County Trunk P and County Trunk K.

PERIOD OF RECORD.--October 1989 to September 1990 (non-frozen precipitation).

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

REMARKS.--Gage established October 28, 1989. Records good. Recorded precipitation interpreted as collector snowmelt, and rainfall estimated to be 0.00 in. for Nov. 3, 9, 24, 27, and 30; Dec. 28; Jan. 2, 4, 7, and 21-23; Feb. 3-4, 17-18, and 22; and Apr. 2. Unpublished rainfall data collected at this site during 1985-86 water years is available for inspection at the District Office.

EXTREMES FOR CURRENT YEAR.--Maximum daily rainfall, 2.35 in., June 28, 1990.

RAINFALL ACCUMULATED (INCHES), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	.00	.00	.00	.00	.00	.19	.00	.04	.00	.00	.00
2	---	.00	.00	.00	.00	.00	.00	.00	1.65	.00	.00	.00
3	---	.00	.00	.05	.00	.00	.00	.02	.02	.00	.00	.00
4	---	.00	.00	.00	.00	.00	.08	.43	.00	.00	.04	.00
5	---	.08	.00	.00	.00	.00	.00	.01	.10	.00	.00	.00
6	---	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	---	.26	.00	.00	.00	.00	.00	.00	.12	.16	.00	.00
8	---	.00	.00	.03	.00	.72	.00	.01	.00	.00	.00	.00
9	---	.00	.00	.08	.00	.00	.46	1.05	.00	.00	.03	.07
10	---	.00	.00	.00	.00	.02	.02	.64	.00	.01	.00	.14
11	---	.00	.00	.00	.00	.50	.00	.00	.00	.00	.16	.00
12	---	.00	.00	.00	.00	.03	.00	.01	.00	.00	.00	.00
13	---	.00	.00	.00	.00	1.09	.31	.00	.27	.02	.00	.00
14	---	.00	.00	.00	.00	.61	.05	.00	.00	.09	.00	.59
15	---	.00	.00	.00	.00	.04	.03	.53	.00	.00	.00	.01
16	---	.00	.00	.02	.00	.00	.06	.06	.28	.00	.00	.00
17	---	.00	.00	.06	.00	.00	.00	.01	.27	.00	1.23	.00
18	---	.00	.00	.00	.00	.00	.00	.04	.00	.00	.79	.03
19	---	.00	.00	.00	.00	.01	.05	1.10	.01	.41	1.52	.00
20	---	.00	.00	.00	.00	.00	.23	.01	.00	.01	.13	.09
21	---	.00	.00	.00	.00	.00	.00	.00	.00	.00	.02	.08
22	---	.00	.00	.00	.00	.13	.00	.00	1.71	.00	.00	.04
23	---	.00	.00	.00	.00	.00	.00	.23	.02	.00	.00	.00
24	---	.00	.00	.00	.00	.00	.00	.00	.00	.00	.13	.00
25	---	.00	.00	.00	.00	.00	.00	.17	.00	.00	.22	.00
26	---	.00	.00	.00	.00	.00	.19	.00	.22	.00	.05	.00
27	---	.00	.00	.00	.00	.00	.41	.00	.22	.15	.23	.00
28	.01	.00	.00	.00	.00	.00	.23	.00	2.35	.00	.00	.00
29	.00	.00	.00	.00	---	.00	.00	.00	.04	.27	.00	.00
30	.38	.00	.00	.00	---	.00	.00	.00	.00	.01	.00	.01
31	.05	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	---	0.35	0.00	0.24	0.00	3.15	2.31	4.32	7.32	1.13	4.55	1.06

WISCONSIN RIVER BASIN

430751089372000 BREWERY CREEK RAIN GAGE #3 NEAR CROSS PLAINS, WI

LOCATION.--Lat 43°07'51", long 89°37'20", in NE 1/4 NE 1/4 sec.35, T.8 N., R.7 E., Dane County, Hydrologic Unit 07070005, on County Trunk P, 1.9 mi north of intersection with U.S. Highway 14.

PERIOD OF RECORD.--October 1989 to September 1990 (non-frozen precipitation).

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

REMARKS.--Gage established October 28, 1989. Records good. Recorded precipitation interpreted as collector snowmelt, and rainfall estimated to be 0.00 in. for Nov. 3, 9, 24, 27, and 30; Dec. 25 and 28; Jan. 2, 4, 7, 22-24, and 27; Feb. 3-4, 17-18, and 22; and Apr. 2 and 4.

EXTREMES FOR CURRENT YEAR.--Maximum daily rainfall, 2.86 in., June 28, 1990.

RAINFALL ACCUMULATED (INCHES), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	.00	.00	.00	.00	.00	.17	.00	.04	.00	.00	.00
2	---	.00	.00	.00	.00	.00	.00	.00	1.49	---	.00	.00
3	---	.00	.00	.05	.00	.00	.00	.01	.01	---	.00	.00
4	---	.00	.00	.00	.00	.00	.08	.44	.00	.00	.06	.00
5	---	.06	.00	.01	.00	.00	.00	.00	.09	.00	.00	.00
6	---	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	---	.27	.00	.00	.00	.00	.00	.00	.12	.20	.00	.00
8	---	.00	.00	.03	.00	.68	.00	.00	.00	.00	.00	.00
9	---	.00	.00	.07	.00	.01	.50	.88	.00	.00	.00	.00
10	---	.00	.00	.00	.00	.01	.03	.57	.00	.01	.00	.28
11	---	.00	.00	.00	.00	.51	.00	.00	.00	.01	.31	.00
12	---	.00	.00	.00	.00	.04	.00	.00	.00	.00	.00	.00
13	---	.00	.00	.00	.00	.97	.29	.00	.19	.04	.00	.00
14	---	.00	.00	.00	.00	.71	.05	.00	.00	.15	.00	.57
15	---	.00	.00	.00	.00	.05	.01	.51	.00	.00	.02	.00
16	---	.00	.00	.03	.00	.00	.06	.09	.33	.00	.00	.00
17	---	.00	.00	.04	.00	.00	.00	.00	.29	.00	1.61	.00
18	---	.00	.00	.00	.00	.00	.00	.05	.00	.23	.88	.03
19	---	.00	.00	.00	.00	.01	.06	1.01	.05	.37	1.51	.00
20	---	.00	.00	.00	.00	.00	.26	.00	.00	.01	.55	.00
21	---	.00	.00	.00	.00	.00	.00	.00	.00	.00	.05	.22
22	---	.00	.00	.00	.00	.15	.00	.00	1.16	.00	.00	.03
23	---	.00	.00	.00	.00	.00	.00	.27	.02	.00	.00	.01
24	---	.00	.00	.00	.00	.00	.00	.00	.00	.00	.20	.00
25	---	.00	.00	.00	.00	.00	.00	.14	.00	.00	.23	.00
26	---	.00	.00	.00	.00	.00	.23	.00	.25	.00	.06	.00
27	---	.00	.00	.00	.00	.00	.41	.00	.13	.16	.08	.00
28	.00	.00	.00	.00	.00	.00	.32	.00	2.86	.01	.00	.00
29	.01	.00	.00	.00	---	.00	.00	.00	.06	.30	.00	.00
30	.35	.00	.00	.00	---	.00	.00	.00	.00	.01	.00	.00
31	.08	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	---	0.34	0.00	0.23	0.00	3.14	2.47	3.97	7.09	---	5.56	1.14

05406470 BREWERY CREEK AT CROSS PLAINS, WI

LOCATION.--Lat 43°38'40", long 89°38'44", in SW 1/4 SW 1/4 sec.35, T.8 N., R.7 E., Dane County, Hydrologic Unit 07070005, on left bank at culvert on Brewery Road, 0.75 mi upstream from Black Earth Creek.

DRAINAGE AREA.--10.5 mi², of which 2.80 mi² is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1984 to September 1986, October 1989 to September 1990.

GAGE.--Water-stage recorder. Elevation of gage is 900 ft, from topographic map.

REMARKS.--Estimated daily discharges: Mar. 23-30 and ice periods, Nov. 17 to Mar. 11. Records fair except those for estimated daily discharges, which are poor.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 231 ft³/s, July 25, 1985, gage height, 13.51 ft; minimum discharge, 0.00 ft³/s, Aug. 9, 1990.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 143 ft³/s, June 29, gage height, 12.30 ft; maximum gage height, 12.69 ft, Mar. 8 (backwater from ice); minimum discharge, 0.00 ft³/s, Aug. 9.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.43	.66	.47	.35	1.6	1.0	.62	.49	.24	.88	.06	.13
2	.43	.64	.44	.37	1.3	5.0	.65	.46	6.1	.56	.06	.12
3	.43	.64	.43	.40	1.2	1.5	.59	.45	1.3	.44	.05	.12
4	.45	.64	.42	.45	1.1	.90	.60	.56	.46	.39	.06	.11
5	.74	.63	.40	.43	5.0	.50	.60	.48	.40	.37	.04	.10
6	.78	.62	.35	.40	2.5	.46	.62	.46	.35	.31	.03	.09
7	.63	.73	.32	.42	2.8	.45	.58	.43	.31	.28	.03	.08
8	.57	.70	.30	.45	7.0	30	.55	.42	.30	.26	.03	.10
9	.58	.70	.28	.50	2.0	15	.67	.66	.28	.24	.03	.09
10	.57	.72	.27	2.0	1.5	10	.85	1.9	.25	.23	.02	.13
11	.57	.70	.26	1.5	1.1	38	.74	.87	.24	.22	.06	.10
12	.60	.65	.25	1.4	1.1	3.9	.61	.57	.24	.19	.07	.08
13	.58	.66	.25	1.4	1.3	9.3	.58	.46	.25	.18	.06	.08
14	.60	.68	.24	1.4	1.1	7.0	.67	.43	.27	.17	.06	.16
15	.57	.68	.23	2.5	1.0	4.7	.64	.41	.25	.15	.06	.11
16	1.4	.67	.22	4.0	.80	2.5	.63	.72	.34	.15	.07	.09
17	1.1	.66	.21	20	.76	1.9	.62	.45	.40	.14	.39	.09
18	.84	.64	.21	2.0	.72	1.6	.62	.39	.34	.22	.64	.10
19	.80	.66	.21	1.3	.70	1.4	.63	1.4	.28	.14	.90	.10
20	.78	.70	.20	1.0	.70	1.3	.76	1.4	.30	.13	2.1	.10
21	.81	.66	.20	.80	.70	1.2	.66	.65	.27	.12	.35	.14
22	.72	.62	.20	.70	.72	1.2	.65	.47	1.3	.12	.27	.11
23	.70	.60	.20	.90	.80	1.3	.58	.46	.67	.10	.20	.10
24	.68	.58	.20	10	.80	1.3	.57	.45	.45	.09	.18	.10
25	.65	.56	.25	2.5	.60	1.2	.59	.44	.38	.09	.21	.11
26	.64	.54	.25	1.8	.45	1.0	.60	.40	.39	.08	.17	.11
27	.58	.58	.27	1.5	.40	.90	.61	.35	.37	.10	.17	.11
28	.59	.62	.30	1.2	.40	.80	.86	.32	1.4	.10	.17	.12
29	.60	.54	.35	1.2	---	.70	.65	.28	47	.14	.15	.10
30	.66	.50	.35	1.1	---	.64	.55	.25	2.1	.12	.14	.10
31	.68	---	.35	1.1	---	.60	---	.23	---	.09	.14	---
TOTAL	20.76	19.18	8.88	65.07	40.15	147.25	19.15	17.71	67.23	6.80	6.97	3.18
MEAN	.67	.64	.29	2.10	1.43	4.75	.64	.57	2.24	.22	.22	.11
MAX	1.4	.73	.47	20	7.0	38	.86	1.9	.47	.88	2.1	.16
MIN	.43	.50	.20	.35	.40	.45	.55	.23	.24	.08	.02	.08

WTR YR 1990 TOTAL 422.33 MEAN 1.16 MAX 47 MIN .02

WISCONSIN RIVER BASIN

05406470 BREWERY CREEK AT CROSS PLAINS, WI--CONTINUED

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1984 to September 1986, October 1989 to September 1990.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: November 1984 to September 1986, October 1989 to September 1990.

DISSOLVED OXYGEN: April 1990 to September 1990.

SUSPENDED-SOLIDS DISCHARGE: October 1989 to September 1990.

TOTAL-PHOSPHORUS DISCHARGE: October 1984 to June 1986, October 1989 to September 1990.

INSTRUMENTATION.--Water-quality sampler December 1984 to June 1986, October 1989 to September 1990; continuous water temperature recorder November 1984 to September 1986, October 1989 to September 1990; dissolved oxygen recorder April 1990 to September 1990.

REMARKS.--Suspended-sediment and total-nitrogen discharge was calculated for the period October 1984 to June 1986. Dissolved-oxygen concentrations greater than 20.0 mg/L out of calibration range of meter. Chemical analyses by the Wisconsin State Laboratory of Hygiene. Samples are point samples unless otherwise indicated. Water temperature probe frozen in ice Nov. 24 to Mar. 10.

EXTREMES FOR PERIOD OF RECORD.--

WATER TEMPERATURE: Maximum observed, 32.5°C, July 4, 1990; minimum observed, 0.0°C, on many days during 1985, 1986, and 1990 winter periods.

DISSOLVED OXYGEN: Maximum observed, 21.8 mg/L, Apr. 5, 1990; minimum observed, 0.0 mg/L, Aug. 19, 1990.

SUSPENDED-SOLIDS DISCHARGE: Maximum daily, 243 tons, June 29, 1990; minimum daily, 0.00 ton, Aug. 23 to Sept. 9, 1990.

TOTAL-PHOSPHORUS DISCHARGE: Maximum daily, 1,830 lb, July 25, 1985; minimum daily, 0.08 lb, Aug. 10, 1990.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum observed, 32.5°C, July 4; minimum observed, 0.0°C, on many days.

DISSOLVED OXYGEN: Maximum observed, 21.8 mg/L, Apr. 5; minimum observed, 0.0 mg/L, Aug. 19.

SUSPENDED-SOLIDS DISCHARGE: Maximum daily, 243 tons, June 29; minimum daily, 0.00 ton, Aug. 23 to Sept. 9.

TOTAL-PHOSPHORUS DISCHARGE: Maximum daily, 1,070 lb, June 29; minimum daily, 0.08 lb, Aug. 10.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH (STAND- ARD UNITS) (00400)	PH LAB (STAND- ARD UNITS) (00403)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L) (00310)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDE (MG/L) (00530)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)
OCT 1989										
05...	1230	--	1.1	--	8.1	--	38	1.55	0.270	0.480
05...	1231	--	1.1	--	8.0	--	234	1.62	0.320	0.640
05...	1430	--	0.81	--	7.8	--	50	2.20	0.410	1.04
06...	1300	--	0.72	--	8.3	--	31	1.59	0.040	0.140
*23...	1012	--	0.69	--	--	--	41	--	--	--
*30...	0953	--	0.64	--	--	--	48	--	--	--
NOV										
*06...	1020	--	0.64	--	8.3	2.2	102	1.80	0.120	0.210
*13...	0940	--	0.64	--	--	--	46	--	--	--
*20...	0945	0.70	--	--	--	--	152	--	--	--
*27...	1015	0.58	--	--	--	--	121	--	--	--
DEC										
*04...	1023	0.42	--	--	--	--	30	--	--	--
*11...	1115	0.26	--	--	8.2	--	39	2.30	0.240	0.080
*19...	1243	0.20	--	--	--	--	43	--	--	--
JAN 1990										
*10...	1041	2.0	--	--	8.0	--	11	2.04	2.30	1.30
*16...	1237	4.0	--	--	8.0	--	33	1.60	2.10	1.21
17...	0930	20	--	--	7.1	62	202	1.20	3.60	2.76
*17...	0931	20	--	--	7.0	--	120	1.20	3.60	2.60
17...	1127	20	--	7.0	7.2	59	184	1.20	3.50	2.70
*17...	1130	20	--	--	7.3	--	116	1.20	3.50	2.53
*17...	1415	20	--	--	7.2	--	78	1.30	3.30	1.21
*18...	1113	2.0	--	--	7.6	--	28	1.80	2.00	2.69
FEB										
*06...	0939	2.5	--	--	7.6	--	18	1.10	2.30	1.62
*13...	1009	1.3	--	--	7.9	--	35	--	--	--
MAR										
*06...	1031	0.46	--	--	8.1	--	17	2.00	0.610	0.200
08...	1400	30	--	--	6.9	--	368	1.60	2.60	2.43
08...	1415	30	--	--	6.9	--	536	1.60	2.60	2.42
08...	1430	30	--	--	6.8	--	680	1.50	2.60	2.55
08...	1500	30	--	--	6.8	--	636	1.40	2.30	2.38
08...	1545	30	--	--	6.8	--	480	1.50	2.10	2.17
08...	2245	30	--	--	6.9	--	488	1.50	2.10	2.48
*10...	1044	10	--	--	7.6	--	48	1.70	1.60	1.14
11...	0900	38	--	--	7.5	40	3370	1.90	1.70	6.09
11...	0915	38	--	--	7.6	--	3390	2.20	1.70	5.74
11...	0945	38	--	--	7.5	40	3410	2.50	1.80	6.16
11...	1215	38	--	--	7.6	--	2290	2.40	2.00	4.32
11...	1550	38	--	--	7.7	--	1870	3.00	1.80	3.44
*11...	1551	38	--	--	7.8	--	980	3.00	1.70	2.58
11...	1615	38	--	--	7.7	--	1290	3.00	1.70	2.80
11...	1700	38	--	--	--	--	1290	--	--	--
*12...	1411	--	3.5	--	8.1	--	78	3.70	0.700	0.500

05406470 BREWERY CREEK AT CROSS PLAINS, WI--CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS-CHARGE, IN CUBIC FEET PER SECOND (00060)	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH (STAND-ARD UNITS) (00400)	PH LAB (STAND-ARD UNITS) (00403)	OXYGEN DEMAND, BIO-CHEMICAL, 5 DAY (MG/L) (00310)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)
MAR 1990										
13...	2100	--	23	--	7.6	69	3880	3.00	2.40	8.46
13...	2130	--	49	--	7.7	--	7210	2.10	1.40	10.4
13...	2200	--	57	--	7.6	30	3970	1.50	1.30	8.38
13...	2345	--	38	--	7.7	26	2150	2.40	1.20	5.63
14...	0100	--	22	--	7.9	12	748	5.50	0.600	1.63
*27...	0938	0.90	--	--	8.2	--	48	--	--	--
APR										
*03...	1005	--	0.60	--	8.4	--	20	1.70	0.200	0.090
*10...	0857	--	0.85	--	--	--	21	--	--	--
*17...	0939	--	0.76	--	8.6	--	12	1.52	0.050	0.060
*24...	1013	--	0.57	--	--	--	4	--	--	--
MAY										
*03...	1230	--	0.44	--	8.7	--	13	0.560	<0.020	0.074
*08...	0911	--	0.44	--	--	--	8	--	--	--
*15...	0955	--	0.41	--	8.3	--	6	1.66	0.110	0.100
*25...	1115	--	0.44	--	8.2	--	4	2.10	<0.100	0.120

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH LAB (STAND-ARD UNITS) (00403)	OXYGEN DEMAND, BIO-CHEMICAL, 5 DAY (MG/L) (00310)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	RESIDUE FIXED NON-FILTER-ABLE (MG/L) (00540)	RESIDUE VOLA-TILE, SUS-PENDED (MG/L) (00535)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)
JUN 1990										
02...	1515	4.4	7.7	17	2930	--	--	0.570	0.240	2.74
02...	1530	15	7.7	27	4100	--	--	0.690	0.710	4.70
02...	1700	8.9	7.7	42	1800	--	--	1.70	1.30	3.97
02...	1830	25	7.6	21	3600	--	--	5.80	0.800	5.13
03...	0030	3.9	7.8	10	642	--	--	7.00	0.400	1.82
*04...	1245	0.45	8.5	--	10	--	--	5.30	0.200	0.170
*12...	0950	0.24	--	--	19	--	--	--	--	--
*19...	1018	0.28	8.1	--	22	--	--	0.560	0.080	0.520
*26...	1058	0.35	--	--	64	--	--	--	--	--
29...	0001	97	7.6	6.1	11900	--	--	0.620	0.240	7.27
29...	0100	120	7.5	46	14600	--	--	1.00	1.60	18.9
29...	0115	134	7.3	11	2760	--	--	2.20	0.200	5.21
29...	0615	105	7.3	--	1580	--	--	2.30	0.200	3.75
*29...	0840	55	7.3	--	890	--	--	2.70	0.200	2.81
29...	0845	53	7.3	7.7	1150	--	--	2.80	0.200	2.91
29...	1245	18	7.5	4.1	232	--	--	6.80	<0.100	1.39
29...	1441	13	7.5	--	312	--	--	7.60	<0.100	1.23
*29...	1444	13	7.5	--	288	--	--	7.70	0.100	1.24
*30...	0715	2.5	7.9	<3.0	41	--	--	8.90	0.200	0.650
JUL										
*03...	1147	0.42	8.3	--	50	--	--	3.60	<0.100	0.610
*10...	1008	0.23	--	--	59	--	--	--	--	--
*17...	1105	0.12	--	--	18	--	--	--	--	--
*24...	1118	0.09	8.2	--	142	--	--	0.080	0.120	--
*31...	1140	0.10	--	--	58	--	--	--	--	--
AUG										
*19...	1700	1.4	7.9	11	136	112	24	0.600	1.10	1.95
*23...	1300	0.19	8.1	1.2	7	5	2	1.30	0.500	0.635
SEP										
*06...	0938	0.10	8.0	<3.0	11	7	4	0.460	0.180	0.874
*21...	1455	0.12	8.1	--	78	72	6	0.900	0.110	0.391

* EQUAL-WIDTH INCREMENT (EWI) SAMPLE.

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE WATER (DEG C) (00010)	DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE WATER (DEG C) (00010)
OCT 1989									
05...	1248	1.1	485	9.0	JAN 1990				
NOV					18...	1115	0.90	430	0.0
08...	0920	0.70	640	6.0	MAR				
DEC					09...	1012	10	320	0.5
12...	0845	0.20	730	0.0					

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER				NOVEMBER			DECEMBER			JANUARY		
1	---	---	---	8.0	3.5	5.5	---	---	---	---	---	---
2	---	---	---	7.0	1.5	4.5	---	---	---	---	---	---
3	---	---	---	3.5	.00	1.5	---	---	---	---	---	---
4	---	---	---	8.5	2.5	5.0	---	---	---	---	---	---
5	---	---	---	10.0	6.5	8.0	---	---	---	---	---	---
6	---	---	---	8.5	5.5	7.0	---	---	---	---	---	---
7	---	---	---	10.0	6.0	7.5	---	---	---	---	---	---
8	---	---	---	8.0	4.5	6.5	---	---	---	---	---	---
9	---	---	---	6.5	2.5	4.5	---	---	---	---	---	---
10	---	---	---	7.0	2.5	4.0	---	---	---	---	---	---
11	---	---	---	9.5	3.0	5.5	---	---	---	---	---	---
12	---	---	---	7.0	1.5	3.5	---	---	---	---	---	---
13	---	---	---	11.5	2.5	7.0	---	---	---	---	---	---
14	---	---	---	7.0	5.0	5.5	---	---	---	---	---	---
15	---	---	---	5.0	2.0	4.0	---	---	---	---	---	---
16	---	---	---	2.0	.00	.50	---	---	---	---	---	---
17	---	---	---	.00	.00	.00	---	---	---	---	---	---
18	---	---	---	.00	.00	.00	---	---	---	---	---	---
19	---	---	---	.00	.00	.00	---	---	---	---	---	---
20	---	---	---	2.0	.00	.50	---	---	---	---	---	---
21	---	---	---	.00	.00	.00	---	---	---	---	---	---
22	---	---	---	.00	.00	.00	---	---	---	---	---	---
23	---	---	---	.50	.00	.00	---	---	---	---	---	---
24	17.0	7.0	11.5	---	---	---	---	---	---	---	---	---
25	19.0	10.0	14.0	---	---	---	---	---	---	---	---	---
26	18.5	10.5	14.0	---	---	---	---	---	---	---	---	---
27	16.0	9.0	12.5	---	---	---	---	---	---	---	---	---
28	15.0	11.5	13.0	---	---	---	---	---	---	---	---	---
29	16.0	11.5	13.5	---	---	---	---	---	---	---	---	---
30	13.5	10.5	12.5	---	---	---	---	---	---	---	---	---
31	10.5	4.5	8.0	---	---	---	---	---	---	---	---	---
MONTH	---	---	---	11.5	.00	2.7	---	---	---	---	---	---
FEBRUARY				MARCH			APRIL			MAY		
1	---	---	---	---	---	---	11.5	4.5	8.0	17.0	4.0	9.5
2	---	---	---	---	---	---	4.5	.50	2.0	20.0	3.5	10.5
3	---	---	---	---	---	---	14.5	.00	5.5	16.0	6.0	10.0
4	---	---	---	---	---	---	14.5	3.5	7.0	10.5	6.5	9.0
5	---	---	---	---	---	---	8.5	.00	3.0	20.5	4.5	11.5
6	---	---	---	---	---	---	3.0	.00	.50	21.0	7.0	13.0
7	---	---	---	---	---	---	8.0	.00	2.0	20.0	9.0	14.5
8	---	---	---	---	---	---	17.0	.00	7.5	20.0	13.0	16.5
9	---	---	---	---	---	---	13.5	7.0	10.0	15.0	8.0	12.0
10	---	---	---	---	---	---	12.5	4.0	7.5	10.0	4.0	7.0
11	---	---	---	2.5	.00	.50	9.5	1.0	4.5	21.0	3.0	11.5
12	---	---	---	15.5	2.5	8.0	12.0	.00	4.5	12.5	9.0	10.5
13	---	---	---	12.5	4.0	8.0	12.0	.00	6.0	22.5	5.5	13.0
14	---	---	---	12.0	7.5	9.5	18.0	4.0	10.0	16.5	10.5	12.5
15	---	---	---	10.0	4.0	7.5	20.0	5.5	11.0	13.0	11.0	12.0
16	---	---	---	11.5	2.5	6.0	10.0	3.0	6.0	20.5	11.5	14.5
17	---	---	---	5.0	1.0	3.0	15.0	.00	6.0	14.0	8.5	11.0
18	---	---	---	9.5	.00	3.0	17.5	.00	7.0	21.0	6.0	12.5
19	---	---	---	7.5	.00	2.0	12.0	4.0	7.5	13.5	8.5	10.0
20	---	---	---	12.0	.00	4.5	18.5	8.5	12.5	10.0	8.0	9.0
21	---	---	---	12.5	1.0	6.0	25.5	10.0	16.0	16.5	7.0	11.5
22	---	---	---	8.5	1.5	5.0	25.0	7.0	15.0	24.0	6.5	14.0
23	---	---	---	6.5	.00	2.0	26.5	10.0	17.5	17.5	10.5	14.0
24	---	---	---	10.0	.00	3.0	24.0	15.0	19.5	20.5	11.5	15.5
25	---	---	---	11.5	.00	3.5	25.5	14.0	19.5	16.0	13.0	14.0
26	---	---	---	13.0	.00	4.5	25.0	15.0	19.5	19.5	12.5	15.0
27	---	---	---	13.5	.00	5.0	25.0	14.5	19.5	25.0	13.0	17.5
28	---	---	---	13.5	.00	6.5	17.5	11.5	15.0	31.0	12.0	19.0
29	---	---	---	7.0	3.5	5.5	23.5	9.0	15.0	25.0	10.5	16.0
30	---	---	---	6.5	.50	4.0	18.0	8.5	13.0	26.5	6.0	14.5
31	---	---	---	13.0	.00	6.0	---	---	---	26.0	6.0	15.5
MONTH	---	---	---	15.5	.00	3.3	26.5	.00	9.9	31.0	3.0	12.8

05406470 BREWERY CREEK AT CROSS PLAINS, WI--CONTINUED

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	29.5	14.5	20.5	26.0	19.5	22.5	26.5	10.0	17.0	26.0	18.5	22.0
2	21.0	15.0	19.0	27.5	18.5	22.5	28.0	10.5	18.5	25.0	19.0	22.0
3	15.0	11.0	13.0	30.0	20.5	24.5	28.0	19.0	23.0	23.5	17.5	20.5
4	22.0	8.0	14.5	32.5	24.0	27.0	27.5	18.0	22.0	28.5	19.0	23.5
5	15.5	11.0	13.0	27.5	21.0	24.0	25.0	13.0	18.0	27.5	22.5	24.5
6	23.5	13.0	17.0	21.0	15.5	18.5	22.5	10.0	15.5	29.5	22.0	25.0
7	24.0	13.0	18.5	22.0	14.0	17.5	28.5	8.0	16.5	27.0	20.0	23.0
8	26.0	16.5	20.5	29.5	20.0	24.0	30.0	10.5	18.0	25.0	19.0	21.0
9	24.5	16.5	20.0	24.0	19.0	22.0	30.5	10.0	19.0	27.0	18.0	22.0
10	25.5	14.0	19.5	24.0	18.0	21.0	32.0	16.0	21.5	27.0	19.5	22.5
11	21.0	14.0	18.5	24.0	15.0	19.0	26.5	16.0	20.0	25.0	19.0	21.5
12	28.0	17.5	22.0	20.5	12.5	16.0	22.5	16.0	19.5	26.5	19.0	22.0
13	25.5	20.5	22.5	21.5	10.0	16.0	25.0	12.0	17.0	25.5	18.0	21.5
14	28.0	20.5	24.0	18.5	13.5	15.5	28.5	10.5	19.0	21.5	16.5	19.5
15	24.0	17.0	21.0	21.0	14.5	16.5	27.0	18.5	22.0	21.5	14.0	17.5
16	22.0	18.5	20.0	24.5	12.5	18.5	26.5	16.0	21.0	18.5	14.5	16.5
17	28.0	19.5	23.0	25.5	17.0	21.0	24.0	19.5	22.0	17.5	14.0	16.0
18	27.5	19.5	23.0	24.0	17.5	20.5	28.0	21.5	23.5	16.0	15.0	15.5
19	22.5	17.0	19.5	21.5	15.5	18.5	23.5	20.5	22.0	18.5	15.5	16.5
20	26.0	18.0	21.5	24.0	14.5	19.0	20.0	18.5	19.0	18.5	14.5	16.5
21	22.5	17.0	20.5	21.5	12.0	16.5	19.0	17.5	18.5	19.5	13.5	17.5
22	20.0	16.5	18.5	24.0	11.0	15.5	23.5	16.5	19.5	13.5	11.0	12.0
23	24.0	16.0	19.0	21.5	7.5	14.0	24.5	14.5	20.5	15.0	8.5	11.5
24	26.5	16.0	20.5	21.5	8.0	13.5	26.5	19.5	22.5	16.5	7.5	11.5
25	27.5	17.5	22.5	22.5	11.5	17.0	28.0	21.0	24.0	20.0	11.0	15.0
26	29.5	19.0	23.5	23.0	14.0	17.5	26.0	21.5	23.5	20.0	10.5	15.0
27	29.5	21.0	25.0	20.5	16.0	18.0	31.0	22.5	25.5	21.0	11.0	15.5
28	25.5	19.5	23.0	25.5	17.0	21.0	30.0	23.5	26.0	19.5	13.5	16.5
29	22.5	19.0	20.5	25.5	19.5	21.5	27.5	20.0	23.0	14.0	11.0	12.5
30	26.5	19.0	22.5	24.5	14.0	19.5	26.5	17.5	21.5	17.0	10.0	12.5
31	---	---	---	23.5	11.0	16.5	25.0	17.5	21.0	---	---	---
MONTH	29.5	8.0	20.2	32.5	7.5	19.2	32.0	8.0	20.6	29.5	7.5	18.3

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	---	---	---	---	---	---	---	---	---	20.3	6.3	12.1
2	---	---	---	---	---	---	16.3	9.4	12.8	20.6	5.4	11.9
3	---	---	---	---	---	---	16.6	8.8	12.8	20.9	5.5	11.8
4	---	---	---	---	---	---	18.2	9.0	12.4	16.3	6.3	11.3
5	---	---	---	---	---	---	19.4	9.3	13.5	21.8	5.6	13.0
6	---	---	---	---	---	---	18.4	10.5	14.2	20.9	4.3	11.4
7	---	---	---	---	---	---	19.5	5.4	13.9	20.5	3.0	10.7
8	---	---	---	---	---	---	21.0	8.2	14.2	18.9	3.2	8.4
9	---	---	---	---	---	---	20.6	8.2	13.0	10.8	3.3	6.2
10	---	---	---	---	---	---	19.5	8.6	13.0	13.3	6.2	10.0
11	---	---	---	---	---	---	---	---	---	14.6	6.8	11.1
12	---	---	---	---	---	---	---	---	---	14.8	6.9	10.4
13	---	---	---	---	---	---	---	---	---	16.0	5.3	10.8
14	---	---	---	---	---	---	---	---	---	15.6	5.3	9.6
15	---	---	---	---	---	---	---	---	---	14.8	6.7	9.9
16	---	---	---	---	---	---	---	---	---	16.2	2.6	9.3
17	---	---	---	---	---	---	---	---	---	15.9	5.9	10.7
18	---	---	---	---	---	---	---	---	---	16.7	5.3	11.0
19	---	---	---	---	---	---	---	---	---	10.2	5.1	7.2
20	---	---	---	---	---	---	---	---	---	12.1	6.9	9.7
21	---	---	---	---	---	---	---	---	---	14.7	7.7	11.1
22	---	---	---	---	---	---	---	---	---	15.7	5.7	10.5
23	---	---	---	---	---	---	---	---	---	14.8	5.7	9.8
24	---	---	---	---	---	---	---	---	---	16.6	5.0	9.6
25	---	---	---	---	---	---	17.5	3.1	9.1	12.6	5.7	8.4
26	---	---	---	---	---	---	18.1	3.1	8.5	15.0	5.8	9.2
27	---	---	---	---	---	---	17.3	3.5	8.7	16.0	5.0	9.7
28	---	---	---	---	---	---	14.5	.9	8.0	15.3	4.3	8.7
29	---	---	---	---	---	---	19.7	4.6	11.2	15.1	4.3	8.6
30	---	---	---	---	---	---	21.1	4.6	11.5	14.8	4.0	8.9
31	---	---	---	---	---	---	---	---	---	15.1	3.6	9.2
MONTH	---	---	---	---	---	---	---	---	---	21.8	2.6	10.0

WISCONSIN RIVER BASIN

05406470 BREWERY CREEK AT CROSS PLAINS, WI--CONTINUED

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	15.4	2.5	8.1	---	---	---	9.3	4.4	6.4	9.2	3.9	5.9
2	9.9	2.6	5.3	---	---	---	9.8	4.4	6.6	9.2	4.2	6.1
3	11.3	6.1	9.1	11.6	2.7	6.9	8.6	4.3	6.0	10.1	4.9	6.9
4	13.6	6.5	10.4	10.7	2.4	5.7	8.5	4.1	5.8	9.5	4.4	6.7
5	13.8	6.5	9.2	11.3	2.5	6.2	10.4	4.7	7.5	9.9	4.4	6.6
6	14.8	5.5	9.9	13.6	2.4	7.2	10.6	6.7	8.6	9.2	5.2	6.8
7	14.9	4.2	8.6	13.3	3.4	6.9	9.7	6.1	8.4	10.4	5.4	8.3
8	14.4	4.1	8.2	12.9	1.5	6.8	9.1	6.3	8.0	10.8	8.3	9.3
9	13.6	3.5	7.7	11.6	1.5	6.1	9.0	6.1	8.1	10.8	8.4	9.3
10	13.7	3.0	7.8	14.9	2.1	6.5	9.1	5.5	6.8	9.9	3.8	6.8
11	14.0	2.9	8.0	13.9	2.3	7.1	8.2	3.4	6.0	10.6	6.9	9.0
12	14.3	1.6	7.3	13.9	2.5	7.7	8.5	3.8	5.9	10.7	8.0	9.3
13	11.1	1.6	4.6	14.2	4.2	8.5	9.5	4.7	6.8	11.0	7.9	9.7
14	13.3	1.4	6.3	13.0	3.4	7.2	9.6	4.2	6.9	10.2	4.5	7.3
15	13.5	1.4	6.5	15.2	3.9	7.8	9.6	3.1	6.1	9.8	5.9	8.0
16	10.5	1.7	4.5	14.5	3.4	8.1	8.9	3.4	5.7	11.1	9.0	10.3
17	11.1	.7	5.1	11.7	3.5	7.8	8.1	3.2	5.1	12.0	10.3	11.1
18	11.9	1.2	5.8	10.0	4.8	7.6	6.8	1.6	3.9	11.8	10.0	11.0
19	12.4	1.2	6.0	10.2	3.7	8.6	5.2	.0	1.8	10.9	8.3	10.0
20	13.2	1.5	6.4	9.3	7.3	8.3	3.9	.2	2.9	11.8	9.8	10.6
21	14.1	1.4	6.8	---	---	---	6.4	3.8	5.2	10.0	6.2	8.3
22	---	---	---	---	---	---	7.3	4.1	5.6	10.9	9.0	10.0
23	---	---	---	---	---	---	9.4	4.2	6.0	11.5	9.9	10.6
24	11.0	2.6	6.6	---	---	---	9.6	4.0	6.2	11.1	8.7	10.1
25	12.1	1.3	6.5	10.4	2.7	5.4	8.4	.9	4.4	9.9	7.7	9.0
26	11.5	1.3	5.2	8.8	2.7	4.9	9.2	2.4	4.7	9.9	7.9	8.9
27	13.2	1.3	6.3	8.1	2.3	4.4	9.3	2.6	5.1	10.2	7.7	9.2
28	12.4	.0	4.4	8.8	2.7	5.1	8.9	2.5	4.8	10.3	8.2	9.1
29	---	---	---	7.2	2.5	4.4	8.4	3.1	5.0	10.4	9.2	10.0
30	---	---	---	8.4	3.1	5.3	9.0	3.4	5.6	10.9	8.9	9.9
31	---	---	---	9.5	3.8	6.0	9.9	3.9	6.2	---	---	---
MONTH	---	---	---	---	---	---	10.6	.0	5.9	12.0	3.8	8.8

SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED(TONS PER DAY), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.02	.10	.07	.02	.09	.05	.04	.01	.00	.11	.01	.00
2	.02	.10	.05	.02	.07	.26	.04	.01	35	.07	.01	.00
3	.02	.10	.04	.02	.06	.08	.03	.02	.67	.06	.01	.00
4	.02	.11	.03	.02	.05	.04	.03	.02	.02	.05	.01	.00
5	.06	.11	.03	.02	.25	.02	.03	.01	.01	.05	.01	.00
6	.04	.12	.03	.02	.12	.02	.03	.01	.01	.04	.01	.00
7	.04	.13	.03	.01	.15	.02	.03	.01	.01	.04	.01	.00
8	.04	.12	.03	.02	.42	33	.03	.01	.01	.04	.01	.00
9	.04	.11	.03	.02	.13	3.7	.04	.04	.01	.04	.01	.00
10	.04	.11	.03	.06	.11	1.2	.06	.34	.01	.03	.01	.01
11	.04	.10	.03	.05	.09	120	.04	.06	.01	.03	.01	.01
12	.04	.09	.03	.06	.10	.84	.03	.01	.01	.02	.02	.01
13	.04	.09	.03	.07	.12	44	.03	.01	.01	.02	.02	.01
14	.05	.10	.03	.09	.10	5.5	.03	.01	.01	.01	.02	.01
15	.05	.12	.03	.19	.09	.76	.02	.01	.01	.01	.02	.01
16	.16	.14	.02	.45	.07	.34	.02	.04	.02	.01	.02	.01
17	.09	.17	.02	4.8	.06	.26	.02	.01	.02	.01	.13	.01
18	.08	.19	.02	.18	.06	.22	.02	.01	.02	.01	.22	.01
19	.08	.23	.02	.10	.05	.19	.01	.18	.02	.01	.31	.02
20	.08	.28	.02	.07	.05	.18	.05	.18	.02	.02	.96	.02
21	.08	.26	.02	.06	.05	.16	.01	.01	.02	.02	.03	.03
22	.08	.24	.02	.05	.05	.16	.01	.01	.34	.03	.01	.02
23	.08	.22	.02	.06	.05	.17	.01	.01	.08	.03	.00	.02
24	.08	.21	.02	.66	.05	.17	.01	.01	.06	.03	.00	.02
25	.08	.19	.02	.16	.04	.16	.01	.00	.06	.03	.00	.02
26	.08	.18	.02	.11	.03	.13	.01	.00	.06	.02	.00	.02
27	.07	.18	.02	.09	.02	.11	.03	.00	.05	.03	.00	.01
28	.07	.16	.02	.08	.02	.09	.06	.00	6.9	.02	.00	.01
29	.08	.12	.02	.08	---	.07	.03	.00	243	.03	.00	.01
30	.09	.09	.02	.06	---	.06	.02	.00	.26	.02	.00	.01
31	.09	---	.02	.06	---	.05	---	.00	---	.01	.00	---
TOTAL	1.93	4.47	0.84	7.76	2.55	212.01	0.83	1.04	286.73	0.95	1.87	0.30

WTR YR 1990 TOTAL 521.28

PHOSPHORUS TOTAL, POUNDS PER DAY, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

[illegible]

WISCONSIN RIVER BASIN

05406476 BLACK EARTH CREEK AT MILLS STREET AT CROSS PLAINS, WI

LOCATION.--Lat 43°06'48", long 89°39'00", in SW 1/4 NE 1/4 sec.3, T.7 N., R.7 E., Dane County, Hydrologic Unit 07070005, on right bank, at Mills Street at Cross Plains.

DRAINAGE AREA.--25.5 mi², of which 2.8 mi² probably is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1989 to September 1990.

GAGE.--Water-stage recorder. Datum of gage is 870 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Oct. 1-2, 28-31, Nov. 1-4, and Aug. 24-31. Records are fair.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 238 ft³/s, June 29, gage height, 8.74 ft; minimum, 5.7 ft³/s, June 15, 19, 20, July 12, 13, Aug. 13, 14, and Sept. 7, gage height, 6.37 ft.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).

6.35	4.6	7.0	49
6.40	7.4	7.5	95
6.50	13	8.0	148

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.5	7.8	8.3	7.9	9.0	8.9	8.9	7.0	7.4	22	7.1	6.3
2	7.5	7.8	8.3	7.8	8.3	19	9.1	6.8	26	19	7.2	6.6
3	7.4	7.8	7.8	7.8	7.8	12	8.7	6.8	24	16	7.5	6.6
4	7.5	8.2	8.4	8.3	7.6	8.3	9.0	8.0	17	15	7.5	6.7
5	9.7	8.4	8.4	7.9	14	7.7	8.8	7.2	14	13	7.4	8.3
6	8.7	8.4	8.4	7.9	12	7.6	8.7	6.9	12	11	6.7	6.6
7	8.3	9.2	8.0	7.8	11	7.6	8.3	6.7	12	11	6.7	6.2
8	8.3	8.7	7.7	8.0	20	88	7.7	6.7	11	9.9	6.6	6.2
9	8.4	8.7	7.7	9.3	11	64	8.3	8.6	10	8.8	6.8	6.3
10	8.6	9.2	8.0	9.6	8.9	30	8.5	14	9.9	7.6	6.6	6.7
11	8.0	11	7.9	8.7	8.4	90	8.1	12	8.5	7.1	7.0	6.2
12	7.9	10	7.7	8.3	8.4	36	7.7	11	7.6	6.6	6.7	6.2
13	7.9	9.5	7.7	8.0	9.0	37	8.0	11	7.6	6.4	6.6	6.8
14	8.0	9.5	7.8	7.9	8.1	42	8.2	11	7.0	7.2	6.2	8.1
15	8.0	9.5	7.6	8.2	8.0	36	7.9	11	6.6	7.2	6.3	7.2
16	12	9.4	7.5	11	8.0	27	8.8	13	7.9	6.9	7.3	6.9
17	9.0	9.3	7.4	55	8.1	23	8.0	11	10	7.0	9.4	7.7
18	8.5	9.3	7.4	11	8.1	21	7.7	9.7	8.4	8.1	14	7.7
19	8.4	9.4	7.4	8.3	8.2	19	7.7	15	6.7	8.0	19	7.6
20	8.7	9.6	7.3	8.2	8.0	17	8.2	15	7.0	7.9	21	7.7
21	8.8	9.2	6.9	7.9	8.2	16	7.4	12	8.1	7.9	13	7.8
22	8.4	9.1	6.7	7.7	8.5	14	7.0	10	12	8.1	11	6.8
23	8.0	8.8	7.0	8.1	8.8	14	6.7	8.5	10	7.9	9.8	6.7
24	7.7	8.7	7.4	24	8.7	15	6.6	8.3	9.3	7.6	11	6.7
25	7.5	9.0	7.4	12	8.2	15	6.6	9.2	9.3	7.6	9.0	7.4
26	7.1	8.9	7.6	8.7	8.3	14	6.9	8.6	9.4	7.1	8.2	6.6
27	7.3	9.9	7.6	8.3	8.3	14	7.1	8.1	8.9	7.3	7.6	6.4
28	7.3	9.5	7.6	7.9	8.2	13	9.0	8.0	11	7.3	7.4	6.2
29	7.3	8.8	7.8	7.8	---	12	7.6	7.8	118	7.8	7.2	6.2
30	7.8	8.4	7.9	7.9	---	10	7.3	7.5	31	7.5	7.0	6.2
31	8.2	---	7.9	7.6	---	8.6	---	7.8	---	7.2	7.6	---
TOTAL	253.7	271.0	238.5	324.8	259.1	746.7	238.5	294.2	447.6	289.0	271.4	205.6
MEAN	8.18	9.03	7.69	10.5	9.25	24.1	7.95	9.49	14.9	9.32	8.75	6.85
MAX	12	11	8.4	55	20	90	9.1	15	118	22	21	8.3
MIN	7.1	7.8	6.7	7.6	7.6	7.6	6.6	6.7	6.6	6.4	6.2	6.2

WTR YR 1990 TOTAL 3840.1 MEAN 10.5 MAX 118 MIN 6.2

05406476 BLACK EARTH CREEK AT MILLS STREET AT CROSS PLAINS, WI--CONTINUED

WATER-QUALITY RECORDS

PERIOD OF RECORD.--November 1989 to September 1990.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: November 1989 to September 1990.

DISSOLVED OXYGEN: April 1990 to September 1990.

INSTRUMENTATION.--Continuous water temperature recorder since November 1989 and continuous dissolved oxygen recorder since April 1990.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum observed, 23.5°C, July 4; minimum observed, 0.0°C, Dec. 21, and Mar. 8-9.

DISSOLVED OXYGEN: Maximum observed, 17.3 mg/L, May 8; minimum observed, 3.8 mg/L, Aug. 20.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)	DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)
OCT 1989					JAN 1990				
05...	1506	9.4	570	9.5	18...	1250	9.2	510	6.0
NOV					MAR				
08...	1137	8.3	580	8.5	09...	1817	65	250	2.0
DEC									
12...	1140	7.2	575	5.0					

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	---	---	---	---	---	---	10.0	4.0	6.5	7.5	3.5	5.5
2	---	---	---	---	---	---	6.5	2.0	4.0	8.5	3.5	5.5
3	---	---	---	---	---	---	6.5	2.0	4.0	8.0	5.0	6.5
4	---	---	---	---	---	---	7.5	3.0	5.5	8.0	3.0	5.5
5	---	---	---	10.5	8.5	9.5	10.0	6.0	7.5	8.0	3.0	5.0
6	---	---	---	10.0	7.5	8.5	6.5	2.5	5.0	7.0	4.0	5.0
7	---	---	---	10.5	7.5	8.5	6.5	2.5	4.0	10.0	4.0	6.0
8	---	---	---	---	---	---	7.5	3.0	4.5	9.5	4.5	7.0
9	---	---	---	---	---	---	7.0	3.5	5.5	8.0	5.5	6.5
10	---	---	---	9.0	6.0	7.0	7.0	4.0	6.0	7.5	5.5	6.0
11	---	---	---	11.0	6.5	8.0	6.5	2.5	4.0	6.0	4.0	5.0
12	---	---	---	10.0	6.0	7.0	6.5	2.5	4.0	6.5	2.5	4.0
13	---	---	---	12.5	6.5	9.5	5.5	3.5	4.0	7.0	3.0	4.5
14	---	---	---	8.5	7.0	8.0	5.0	1.5	3.0	8.0	4.0	5.5
15	---	---	---	8.0	6.0	7.0	5.5	1.0	2.5	10.0	4.0	6.0
16	---	---	---	6.5	3.0	4.5	5.0	1.5	3.0	7.5	2.0	5.5
17	---	---	---	7.0	3.0	4.5	6.5	2.5	4.5	2.5	.5	1.0
18	---	---	---	8.0	3.0	5.0	5.0	2.0	3.0	6.5	2.5	4.0
19	---	---	---	10.5	4.0	7.0	5.0	1.5	3.0	8.0	3.5	5.0
20	---	---	---	10.5	5.0	7.0	3.5	.5	2.0	5.5	4.5	5.0
21	---	---	---	7.0	4.0	5.5	2.0	.0	.5	6.5	4.5	5.0
22	---	---	---	7.0	3.0	5.0	4.0	.5	2.0	9.0	4.5	6.0
23	---	---	---	7.5	2.5	4.0	6.0	1.5	3.0	7.0	4.5	5.5
24	---	---	---	8.0	2.5	5.0	5.5	2.0	4.0	7.5	.5	3.5
25	---	---	---	9.0	6.0	7.0	8.5	3.5	6.0	4.5	1.5	3.0
26	---	---	---	11.0	4.0	7.0	7.0	3.0	4.5	7.0	2.0	4.0
27	---	---	---	7.5	5.0	6.5	7.5	4.0	5.5	8.0	2.5	5.0
28	---	---	---	7.0	3.0	4.5	9.0	4.5	7.0	8.0	2.5	4.5
29	---	---	---	6.5	2.5	4.0	7.5	4.5	6.0	9.0	3.5	5.5
30	---	---	---	10.0	4.0	6.0	6.0	4.5	5.5	9.0	2.5	5.5
31	---	---	---	---	---	---	7.0	5.0	6.0	7.5	2.5	5.0
MONTH	---	---	---	---	---	---	10.0	.0	4.4	10.0	.5	5.0

05406476 BLACK EARTH CREEK AT MILLS STREET AT CROSS PLAINS, WI--CONTINUED

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY				MARCH			APRIL			MAY		
1	7.0	4.0	5.5	11.0	4.0	6.0	11.0	7.0	9.0	15.5	7.5	11.0
2	6.0	3.5	4.5	8.0	1.0	4.0	8.0	5.5	6.5	16.5	7.5	11.5
3	8.0	3.5	5.5	6.5	1.5	4.0	14.0	5.5	9.0	13.0	8.0	10.5
4	9.5	3.5	6.0	7.5	4.0	5.5	14.0	7.0	9.0	9.5	8.0	9.0
5	10.0	2.0	5.5	6.5	5.0	5.5	11.5	5.0	7.5	15.0	7.5	10.5
6	5.5	2.5	4.5	10.0	4.0	6.0	9.5	5.0	6.5	17.0	8.0	11.5
7	9.0	3.0	5.5	9.0	4.0	6.0	13.0	4.0	7.5	18.0	8.5	12.5
8	6.5	3.0	4.0	6.0	.0	3.0	14.5	5.5	9.0	17.5	10.0	13.0
9	9.0	3.5	5.5	2.5	.0	1.0	11.0	8.0	9.5	12.0	9.0	11.0
10	8.0	4.0	5.5	4.0	1.5	2.5	11.5	7.0	8.5	9.5	7.0	8.5
11	7.0	4.0	5.5	3.5	.5	2.0	10.0	5.5	7.5	16.0	7.0	11.0
12	9.5	4.0	6.5	12.0	3.5	7.5	12.5	4.5	7.5	12.0	10.0	11.0
13	6.5	4.0	5.5	12.5	5.5	8.5	12.0	5.5	8.0	18.0	9.0	13.0
14	5.0	3.5	4.0	12.0	8.5	10.0	15.0	7.0	10.0	14.0	10.5	12.0
15	6.0	3.5	5.0	11.0	7.5	9.5	15.0	7.5	10.0	12.0	11.0	11.5
16	7.0	4.5	5.5	11.0	6.5	8.0	10.0	6.0	8.0	15.5	11.0	13.0
17	9.0	3.0	5.0	7.0	5.0	6.0	13.5	5.0	8.0	12.0	9.5	11.0
18	10.0	3.5	6.0	9.0	4.5	6.0	15.0	5.0	9.0	17.5	9.0	12.5
19	9.0	3.5	5.5	9.5	3.5	5.5	11.5	7.0	8.5	11.5	9.5	10.5
20	10.0	3.0	5.5	11.5	4.0	7.0	13.0	9.0	10.5	10.5	9.5	10.0
21	10.0	4.5	6.5	11.0	6.0	8.0	18.0	9.0	12.0	13.5	9.0	11.0
22	7.5	6.0	6.5	9.0	5.5	7.5	18.0	7.5	12.0	17.0	9.0	12.5
23	10.5	4.5	6.5	9.5	3.0	5.5	18.5	9.0	13.0	13.5	10.0	12.0
24	7.0	2.0	4.0	10.5	4.0	6.5	19.5	11.0	14.5	16.5	10.5	12.5
25	9.0	2.0	4.5	11.0	4.5	7.0	20.0	10.5	14.5	13.0	11.5	12.0
26	9.5	3.0	5.5	12.0	4.5	7.5	19.0	10.5	14.0	14.5	11.0	12.0
27	10.0	3.5	6.0	13.0	4.0	7.5	18.5	11.0	14.0	17.0	7.5	13.0
28	10.5	3.0	6.0	12.0	5.5	8.0	13.5	10.0	12.0	18.5	7.5	13.0
29	---	---	---	9.0	7.0	7.5	17.0	9.0	12.0	18.0	10.0	13.0
30	---	---	---	8.5	6.0	7.5	14.5	9.0	11.5	17.5	8.0	12.0
31	---	---	---	12.5	5.5	8.5	---	---	---	18.0	8.5	12.5
MONTH	10.5	2.0	5.4	13.0	.0	6.3	20.0	4.0	9.9	18.5	7.0	11.6
JUNE				JULY			AUGUST			SEPTEMBER		
1	18.5	10.5	14.0	21.5	17.5	19.5	17.0	10.0	13.0	16.0	11.5	13.5
2	18.5	12.5	15.0	22.0	16.5	19.0	17.5	10.0	13.5	15.0	11.5	13.0
3	15.5	11.5	13.0	22.5	16.5	19.0	17.5	11.5	14.0	15.5	11.0	13.0
4	16.5	10.0	13.0	23.5	18.0	20.0	18.0	12.0	14.5	18.5	11.5	14.5
5	13.0	10.5	11.5	21.5	16.5	18.5	16.5	11.5	13.5	18.0	12.0	15.0
6	17.0	11.5	13.5	17.5	14.0	15.5	16.0	10.0	13.0	18.5	13.0	15.5
7	18.0	11.0	14.0	16.5	13.0	14.5	16.5	9.5	13.0	16.0	12.5	14.0
8	18.0	12.5	14.5	21.5	14.5	17.5	17.0	10.0	13.0	15.5	12.0	13.5
9	19.0	12.5	15.0	17.0	12.5	15.0	17.0	10.0	13.5	17.0	11.0	13.5
10	19.5	11.5	15.0	16.0	11.5	13.5	17.0	11.0	14.0	17.0	12.0	14.0
11	15.5	11.5	13.5	18.0	11.0	14.0	19.5	11.5	13.5	15.5	11.5	13.0
12	21.0	10.5	16.0	15.5	11.0	13.0	14.5	11.5	13.0	16.5	11.5	13.5
13	16.5	13.0	14.5	16.0	10.0	13.0	16.5	10.5	13.0	17.5	11.0	14.0
14	19.0	12.0	14.5	14.0	11.0	12.5	17.0	10.0	13.5	17.5	12.0	14.0
15	16.0	10.5	13.0	15.5	11.5	13.0	17.5	12.0	14.5	16.0	10.5	13.0
16	15.0	11.0	13.0	17.5	10.5	14.0	17.5	12.0	14.5	13.5	10.5	12.0
17	20.0	13.5	16.5	18.5	12.0	15.0	21.5	12.5	14.0	13.5	9.5	11.5
18	19.5	13.0	16.0	21.5	12.0	14.5	23.0	14.0	17.5	11.5	10.0	11.0
19	16.0	10.5	13.0	15.0	11.5	13.0	20.0	16.0	17.0	13.5	10.5	11.5
20	19.5	11.5	15.0	17.0	12.0	14.0	18.0	14.5	16.0	14.0	9.0	11.5
21	18.0	12.5	15.0	15.5	11.0	13.0	14.5	13.5	14.0	14.5	10.5	12.5
22	16.0	13.5	14.5	16.5	11.5	13.5	17.0	12.5	14.5	11.5	9.5	10.5
23	19.0	13.0	15.5	16.5	10.0	13.0	17.0	12.0	14.0	13.0	9.0	10.5
24	---	---	---	16.0	10.0	12.5	---	---	---	14.0	8.5	11.0
25	20.0	13.0	16.0	18.0	11.0	14.0	---	---	---	15.0	10.0	12.0
26	21.0	14.0	16.5	17.0	11.0	13.5	---	---	---	---	---	---
27	20.5	13.5	16.5	14.5	12.0	13.0	---	---	---	---	---	---
28	23.0	14.0	16.0	17.5	11.5	14.5	---	---	---	---	---	---
29	20.5	18.5	19.5	16.5	12.5	14.5	---	---	---	---	---	---
30	22.5	18.0	20.0	17.0	11.5	14.0	---	---	---	---	---	---
31	---	---	---	17.0	10.5	13.5	---	---	---	---	---	---
MONTH	---	---	---	23.5	10.0	14.7	---	---	---	---	---	---

05406476 BLACK EARTH CREEK AT MILLS STREET AT CROSS PLAINS, WI--CONTINUED

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	---	---	---	---	---	---	13.7	9.0	10.5	15.8	8.2	11.4
2	---	---	---	---	---	---	14.1	9.5	11.2	16.5	8.1	11.7
3	---	---	---	---	---	---	14.2	9.2	11.1	16.7	8.2	11.6
4	---	---	---	---	---	---	13.7	8.8	10.4	12.9	8.0	10.2
5	---	---	---	---	---	---	14.1	9.0	11.1	16.7	8.2	11.7
6	---	---	---	---	---	---	16.8	9.5	12.3	16.8	8.2	11.9
7	---	---	---	---	---	---	16.4	10.4	13.1	17.1	7.6	11.8
8	---	---	---	---	---	---	16.6	9.2	12.2	17.3	7.6	11.4
9	---	---	---	---	---	---	15.9	8.6	11.5	11.4	7.4	8.8
10	---	---	---	---	---	---	15.1	8.5	10.9	13.8	8.1	10.6
11	---	---	---	---	---	---	15.2	9.3	11.7	15.5	8.2	11.5
12	---	---	---	---	---	---	15.2	9.4	11.7	13.8	8.2	10.3
13	---	---	---	---	---	---	15.1	8.7	11.1	15.9	7.9	11.5
14	---	---	---	---	---	---	15.6	8.4	11.2	13.7	7.9	10.2
15	---	---	---	---	---	---	14.9	8.4	11.0	12.6	8.2	9.8
16	---	---	---	---	---	---	13.5	8.6	10.2	13.8	7.7	10.1
17	---	---	---	---	---	---	14.3	8.8	11.1	13.2	7.9	10.4
18	---	---	---	---	---	---	13.8	8.6	10.8	14.8	8.2	11.2
19	---	---	---	---	---	---	13.5	8.2	10.1	10.2	7.9	8.8
20	---	---	---	---	---	---	13.1	7.9	9.7	11.3	8.6	9.7
21	---	---	---	---	---	---	13.8	7.7	10.1	13.4	8.6	10.8
22	---	---	---	---	---	---	13.3	7.6	10.0	13.9	8.4	10.8
23	---	---	---	---	---	---	13.2	7.1	9.7	12.8	8.1	10.4
24	---	---	---	---	---	---	13.0	7.1	9.5	14.3	8.1	10.7
25	---	---	---	---	---	---	13.4	7.1	9.8	12.1	8.0	9.5
26	---	---	---	---	---	---	13.9	6.8	9.4	13.5	8.1	10.3
27	---	---	---	---	---	---	14.4	6.6	9.7	14.2	7.9	10.7
28	---	---	---	---	---	---	12.8	6.6	8.8	14.2	7.9	10.6
29	---	---	---	---	---	---	15.4	7.4	10.7	13.8	7.9	10.6
30	---	---	---	---	---	---	16.0	7.4	11.0	13.5	8.3	10.5
31	---	---	---	---	---	---	---	---	---	13.6	8.0	10.4
MONTH	---	---	---	---	---	---	16.8	6.6	10.7	17.3	7.4	10.6
	JUNE			JULY			AUGUST			SEPTEMBER		
1	14.1	7.5	10.3	8.2	6.2	7.1	14.4	7.5	10.3	12.3	7.7	9.5
2	10.9	5.4	7.7	10.3	6.5	8.0	14.7	7.3	10.4	12.9	8.0	10.0
3	9.0	6.4	7.8	11.5	5.9	8.2	15.1	6.9	10.0	13.1	8.4	10.2
4	9.1	7.7	8.4	10.9	5.9	7.7	14.4	6.5	9.5	13.1	8.2	10.2
5	10.0	7.8	8.5	12.0	6.1	8.5	14.4	7.0	9.8	12.3	7.7	9.7
6	11.4	7.7	9.3	12.2	6.7	9.2	14.6	7.4	10.3	13.5	8.1	10.1
7	12.0	7.3	9.3	12.5	7.4	9.2	14.7	7.3	10.2	13.7	8.3	10.6
8	12.3	7.3	9.2	13.1	7.1	9.5	14.9	7.4	10.3	14.0	9.1	10.9
9	12.4	7.3	9.4	12.2	7.1	9.6	14.8	7.1	10.2	14.3	9.3	11.1
10	13.1	7.6	9.9	13.4	7.9	9.9	14.5	6.9	10.0	14.1	8.1	10.6
11	13.0	7.6	10.1	13.5	7.9	10.2	14.0	6.9	9.1	13.8	9.0	10.9
12	14.0	7.0	10.0	13.5	7.9	10.3	12.7	6.9	9.2	14.4	9.0	11.1
13	13.2	6.9	9.1	13.8	8.1	10.5	13.2	7.5	9.8	14.0	8.7	11.0
14	14.2	7.3	10.2	12.6	7.6	9.6	13.1	6.9	9.7	11.4	7.7	9.4
15	13.9	7.7	10.3	14.2	7.5	9.9	12.6	6.6	9.3	13.1	8.7	10.3
16	12.1	7.0	8.7	14.0	7.6	10.4	12.5	6.6	9.0	12.8	8.7	10.3
17	13.1	6.4	9.2	13.9	7.1	10.1	11.7	5.8	8.5	13.4	9.1	10.7
18	13.0	6.7	9.4	12.2	6.9	9.0	9.3	4.7	6.6	11.7	8.9	9.9
19	12.9	7.1	9.7	11.6	6.9	8.8	6.8	4.0	5.2	12.4	8.8	10.0
20	13.6	7.3	10.0	13.0	6.7	9.2	6.5	3.8	5.1	12.8	8.7	10.4
21	13.0	7.3	9.7	13.5	7.1	9.7	8.4	5.6	6.8	12.7	8.0	9.8
22	10.5	6.7	8.2	13.1	6.9	9.5	10.8	6.3	8.2	11.9	9.0	10.3
23	13.0	7.0	9.5	13.6	7.2	9.9	11.3	6.7	8.9	11.3	8.0	9.7
24	13.0	7.4	9.7	13.0	7.1	9.7	---	---	---	12.7	8.4	10.5
25	13.5	7.2	9.8	14.3	7.2	10.0	---	---	---	12.6	8.7	10.1
26	13.5	6.8	9.4	14.6	7.0	10.0	---	---	---	---	---	---
27	13.9	7.0	9.9	13.2	6.1	9.1	---	---	---	---	---	---
28	13.5	6.5	9.2	14.5	7.0	10.0	---	---	---	---	---	---
29	8.2	5.6	6.0	13.7	6.1	9.1	---	---	---	---	---	---
30	6.6	5.7	6.2	14.1	6.7	9.9	---	---	---	---	---	---
31	---	---	---	14.5	7.4	10.3	---	---	---	---	---	---
MONTH	14.2	5.4	9.1	14.6	5.9	9.4	---	---	---	---	---	---

430432089414100 GARFOOT CREEK RAIN GAGE #1 NEAR CROSS PLAINS, WI

LOCATION.--Lat 43°04'32", long 89°41'41", in SW 1/4 SE 1/4 sec.17, T.7 N., R.7 E., Dane County, Hydrologic Unit 07070005, on Garfoot Road, 2.8 mi south of intersection with County Trunk KP.

PERIOD OF RECORD.--October 1989 to September 1990 (non-frozen precipitation).

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

REMARKS.--Gage established October 13, 1989. Records good. Recorded precipitation interpreted as collector snowmelt, and rainfall estimated to be 0.00 in. for Nov. 3, 9, 18, 22-24, 27, and 30; Dec. 15, 25 and 28; Jan. 1, 4-5, 7, 21, 23, and 26; Feb. 3-4, 17-18, 22, 24, and 27; and Apr. 2.

EXTREMES FOR CURRENT YEAR.--Maximum daily rainfall, 2.19 in., June 28, 1990.

RAINFALL ACCUMULATED (INCHES), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	.00	.00	.00	.00	.00	.18	.00	.05	.00	.00	.04
2	---	.00	.00	.06	.00	.00	.00	.00	1.51	.00	.00	.00
3	---	.00	.00	.06	.00	.00	.00	.00	.00	.00	.00	.01
4	---	.00	.00	.00	.00	.00	.16	.47	.00	.00	.51	.05
5	---	.04	.00	.00	.00	.00	.01	.00	.13	.02	.00	.10
6	---	.03	.00	.00	.00	.00	.00	.00	.00	.00	.00	.08
7	---	.27	.00	.00	.00	.00	.00	.00	.11	.14	.00	.02
8	---	.00	.00	.03	.00	.68	.01	.00	.00	.00	.00	.00
9	---	.00	.00	.05	.00	.01	.43	.74	.00	.00	.00	.01
10	---	.00	.00	.00	.00	.02	.04	.49	.00	.06	.00	.15
11	---	.00	.00	.00	.00	.49	.00	.00	.00	.00	.41	.03
12	---	.00	.00	.00	.00	.05	.00	.01	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.93	.30	.00	.16	.00	.00	.00
14	.00	.00	.00	.00	.00	1.34	.07	.00	.00	.50	.00	.11
15	.00	.00	.00	.00	.00	.06	.03	.40	.00	.00	.00	.01
16	1.00	.00	.00	.03	.00	.00	.05	.26	.34	.00	.00	.01
17	.00	.00	.00	.04	.00	.00	.00	.00	.30	.00	.20	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.22	1.38	.00
19	.00	.04	.00	.00	.00	.00	.07	1.06	.03	.32	.03	.00
20	.10	.00	.00	.00	.00	.00	.34	.01	.00	.01	.01	.01
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01	.01
22	.00	.00	.00	.16	.00	.15	.00	.00	.89	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.36	.03	.00	.01	.00
24	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.13	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.28	.00	.31	.00	.00	.00
27	.00	.00	.00	.11	.00	.00	.20	.00	.00	.18	.01	.00
28	.01	.00	.00	.00	.00	.00	.41	.00	2.19	.03	.00	.00
29	.02	.00	.00	.00	---	.00	.00	.00	.46	.33	.00	.00
30	.41	.00	.00	.00	---	.00	.02	.00	.00	.00	.00	.00
31	.10	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	---	0.38	0.00	0.54	0.00	3.73	2.60	3.94	6.51	1.81	2.57	0.64

WISCONSIN RIVER BASIN

341

430525089411500 GARFOOT CREEK RAIN GAGE #2 NEAR CROSS PLAINS, WI

LOCATION.--Lat 43°05'25", long 89°41'15", in SW 1/4 SW 1/4 sec.8, T.7 N., R.7 E., Dane County, Hydrologic Unit 07070005, on Garfoot Road, 1.6 mi south of intersection with County Trunk KP.

PERIOD OF RECORD.--October 1989 to September 1990 (non-frozen precipitation).

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

REMARKS.--Gage established October 12, 1989. Records good. Recorded precipitation interpreted as collector snowmelt, and rainfall estimated to be 0.00 in. for Nov. 3, 9, 22-24, 27, and 30; Dec. 25, 27-28, and 31; Jan. 1, 4, 7, 21, and 23; Feb. 3-4, 7, 17-18, 22, and 26; and Apr. 2. Unpublished rainfall data collected at this site during 1985-86 water years is available for inspection at the District office.

EXTREMES FOR CURRENT YEAR.--Maximum daily rainfall, 2.53 in., June 28, 1990.

RAINFALL ACCUMULATED (INCHES), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	.00	.00	.00	.00	.00	.18	.00	.03	.00	---	---
2	---	.00	.00	.04	.00	.00	.00	.00	1.42	.00	---	---
3	---	.00	.00	.06	.00	.00	.00	.02	.00	---	---	---
4	---	.00	.00	.00	.00	.00	.12	.43	.00	---	---	---
5	---	.05	.00	.00	.00	.00	.02	.00	.12	---	---	---
6	---	.02	.00	.00	.00	.00	.00	.00	.00	---	---	---
7	---	.26	.00	.00	.00	.00	.00	.00	.11	---	---	---
8	---	.00	.00	.03	.00	.69	.00	.00	.00	---	---	---
9	---	.00	.00	.06	.00	.01	.47	.87	.00	---	---	---
10	---	.00	.00	.00	.00	.02	.03	.43	.00	---	---	---
11	---	.00	.00	.00	.00	.50	.00	.00	.00	---	---	---
12	---	.00	.00	.00	.00	.05	.00	.01	.00	---	---	---
13	.00	.00	.00	.00	.00	.94	.31	.00	.16	---	---	---
14	.00	.00	.00	.00	.00	1.29	.06	.00	.00	---	---	---
15	.02	.00	.00	.00	.00	.06	.02	.55	.00	---	---	---
16	1.00	.00	.00	.02	.00	.00	.07	.07	.35	---	---	---
17	.00	.00	.00	.05	.00	.00	.00	.01	.22	---	---	---
18	.00	.00	.00	.00	.00	.00	.00	.03	.00	---	---	---
19	.00	.05	.00	.00	.00	.01	.06	1.07	.00	---	---	---
20	.09	.00	.00	.00	.00	.00	.29	.02	.00	---	---	---
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	---	---	---
22	.00	.00	.00	.09	.00	.13	.00	.00	.95	---	---	.00
23	.00	.00	.00	.00	.00	.00	.00	.39	.01	---	---	.00
24	.00	.00	.00	.00	.00	.00	.00	.01	.00	---	---	.00
25	.00	.00	.00	.00	.00	.00	.00	.14	.00	---	---	.00
26	.00	.00	.00	.00	.00	.00	.26	.00	.33	---	---	.00
27	.00	.00	.00	.05	.00	.00	.33	.00	.03	---	---	.00
28	.01	.00	.00	.00	.00	.00	.31	.00	2.53	---	---	.00
29	.02	.00	.00	.00	---	.00	.00	.00	.08	---	---	.00
30	.41	.00	.00	.00	---	.00	.01	.00	.00	---	---	.00
31	.08	---	.00	.00	---	.00	---	.00	---	---	---	---
TOTAL	---	0.38	0.00	0.40	0.00	3.70	2.54	4.05	6.34	---	---	---

430543089393500 GARFOOT CREEK RAIN GAGE #3 NEAR CROSS PLAINS, WI

LOCATION.--Lat 43°05'43", long 89°39'35", in NW 1/4 SW 1/4 sec.10, T.7 N., R.7 E., Dane County, Hydrologic Unit 07070005, on Stage Coach Road, 0.5 mi west of intersection with County Trunk P.

PERIOD OF RECORD.--October 1989 to September 1990 (non-frozen precipitation).

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

REMARKS.--Gage established October 27, 1989. Records good. Recorded precipitation interpreted as collector snowmelt, and rainfall estimated to be 0.00 in. for Nov. 3, 9, 23-24, 27, and 30; Dec. 1 and 25; Jan. 1, 4, 7, 21, 23, and 26; Feb. 3-4, 7, 18-19, 22, and 25; and Apr. 2 and 5.

EXTREMES FOR CURRENT YEAR.--Maximum daily rainfall, 1.92 in., June 28, 1990.

RAINFALL ACCUMULATED (INCHES), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	.00	.00	.00	.00	.00	.16	.00	.04	.00	---	---
2	---	.00	.00	.07	.00	.00	.00	.00	1.52	.00	---	---
3	---	.00	.00	.06	.00	.00	.00	.03	.00	---	---	---
4	---	.00	.00	.00	.00	.00	.10	.47	.00	---	---	---
5	---	.03	.00	.00	.00	.00	.00	.00	.12	---	---	---
6	---	.02	.00	.00	.00	.00	.00	.00	.00	---	---	---
7	---	.26	.00	.00	.00	.00	.00	.00	.12	---	---	---
8	---	.00	.00	.31	.00	.69	.00	.00	.00	---	---	---
9	---	.00	.00	.06	.00	.00	.48	.76	.00	---	---	---
10	---	.00	.00	.00	.00	.02	.03	.41	.00	---	---	---
11	---	.00	.00	.00	.00	.50	.00	.00	.00	---	---	---
12	---	.00	.00	.00	.00	.05	.00	.01	.00	---	---	---
13	---	.00	.00	.00	.00	.92	.31	.00	.15	---	---	---
14	---	.00	.00	.00	.00	1.16	.06	.00	.00	---	---	---
15	---	.00	.00	.00	.00	.06	.02	.65	.00	---	---	---
16	---	.00	.00	.03	.00	.00	.05	.09	.35	---	---	---
17	---	.00	.00	.03	.00	.00	.00	.01	.32	---	---	---
18	---	.00	.00	.00	.00	.00	.00	.07	.00	---	---	---
19	---	.01	.00	.00	.00	.01	.07	1.16	.02	---	---	---
20	---	.00	.00	.00	.00	.00	.30	.02	.00	---	---	---
21	---	.00	.00	.00	.00	.00	.00	.00	.00	---	---	---
22	---	.00	.00	.09	.00	.13	.00	.00	.96	---	---	.00
23	---	.00	.00	.00	.00	.00	.00	.34	.02	---	---	.00
24	---	.00	.00	.00	.00	.00	.00	.01	.00	---	---	.00
25	---	.00	.00	.00	.00	.00	.00	.15	.00	---	---	.00
26	---	.00	.00	.00	.00	.00	.21	.00	.39	---	---	.00
27	.00	.00	.00	.05	.00	.00	.49	.00	.03	---	---	.00
28	.01	.00	.00	.00	.00	.00	.27	.00	1.92	---	---	.00
29	.01	.00	.00	.00	---	.00	.00	.00	.61	---	---	.00
30	.38	.00	.00	.00	---	.00	.00	.00	.00	---	---	.00
31	.06	---	.00	.00	---	.00	---	.00	---	---	---	---
TOTAL	---	0.32	0.00	0.70	0.00	3.54	2.55	4.18	6.57	---	---	---

05406491 GARFOOT CREEK NEAR CROSS PLAINS, WI

LOCATION.--Lat 44°51'16", long 89°40'43", in NW 1/4 SW 1/4 sec.4, T.7 N., R.7 E., Dane County, Hydrologic Unit 07070005, on left bank at bridge on Garfoot Road, 0.5 mi upstream from Black Earth Creek.

DRAINAGE AREA.--5.39 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1984 to September 1986, October 1989 to September 1990.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 860 ft, from topographic map.

REMARKS.--Estimated daily discharges: Apr. 1, May 9, and ice periods listed in rating table below. Records are fair. Gage-height telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 128 ft³/s, July 25, 1985, gage height, 5.84 ft; minimum discharge, 1.6 ft³/s, Dec. 21, 1989, gage height, 3.26 ft; minimum gage height, 3.23 ft, Aug. 13, 14, 1990.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 84 ft³/s, Mar. 8, gage height, 5.54 ft; minimum discharge, 1.6 ft³/s, Dec 21; minimum gage height, 3.23 ft, Aug. 13 and 14.

RATING TABLE (gage height, in feet, and discharge in cubic feet per second).
(Stage-discharge relation affected by ice Dec. 15, 16, and 20-24.)

3.2	1.5	3.7	10
3.3	2.6	4.0	18
3.5	5.8	4.5	35

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.9	3.6	2.6	1.9	2.7	2.6	2.5	3.7	2.4	2.8	1.9	2.3
2	2.2	3.3	2.6	2.1	2.6	7.0	2.5	3.4	6.1	2.4	1.9	2.3
3	2.3	3.2	2.5	2.2	2.5	3.5	2.5	3.3	3.8	2.3	1.9	2.3
4	2.3	3.3	2.5	2.5	2.4	2.7	2.7	3.7	2.9	2.2	1.9	2.3
5	2.7	3.2	2.4	2.3	4.2	2.6	2.7	3.7	2.7	2.3	1.9	2.2
6	2.5	3.1	2.4	2.3	3.1	2.4	2.7	3.3	2.8	2.4	1.9	2.2
7	2.5	3.2	2.3	2.3	3.3	2.4	2.6	3.0	2.7	2.3	1.8	2.2
8	2.5	3.1	2.2	2.4	5.4	35	2.5	2.9	2.8	2.5	1.8	2.2
9	2.3	2.9	2.2	2.6	3.5	22	2.6	3.3	2.9	2.5	1.7	2.2
10	2.6	2.9	2.2	2.8	2.7	6.5	3.2	5.6	2.9	2.8	1.7	2.3
11	2.5	2.8	2.2	2.7	2.7	34	2.9	4.0	2.9	2.5	2.1	2.2
12	2.6	2.7	2.3	2.6	2.6	5.9	2.5	3.6	2.8	2.4	2.0	2.2
13	2.7	2.7	2.2	2.5	2.7	10	2.3	3.1	3.0	2.4	1.9	2.2
14	2.8	2.6	2.2	2.6	2.4	12	2.5	2.8	3.1	2.8	1.8	2.1
15	2.8	2.5	2.1	2.7	2.4	20	2.5	2.8	3.1	3.0	1.9	2.1
16	4.7	2.4	2.1	3.2	2.4	4.3	2.4	4.1	3.3	2.7	2.1	2.1
17	3.6	2.4	2.1	16	2.5	3.7	2.3	3.2	3.5	2.6	2.1	2.1
18	3.3	2.4	2.0	3.7	2.4	3.2	2.3	2.9	3.4	2.5	3.5	2.0
19	3.6	2.4	2.0	2.8	2.4	3.0	2.3	4.3	3.1	2.6	6.3	2.0
20	4.2	2.6	1.9	2.7	2.4	2.8	2.4	4.9	3.0	2.7	8.2	2.0
21	4.9	2.7	1.9	2.5	2.3	2.8	2.4	3.6	2.9	2.6	3.3	2.1
22	3.7	2.7	1.8	2.4	2.3	2.8	2.3	3.2	3.2	2.5	2.8	1.9
23	3.5	2.7	1.8	2.4	2.5	2.7	2.3	3.1	3.2	2.5	2.4	1.9
24	3.4	2.7	1.7	6.4	2.7	2.5	2.5	3.5	2.9	2.2	2.3	1.8
25	3.4	2.6	1.7	3.2	2.7	2.5	2.6	3.1	2.8	2.2	2.8	1.8
26	3.4	2.5	1.8	2.5	2.4	2.4	2.7	3.1	2.7	2.2	2.8	1.8
27	3.4	2.7	1.8	2.5	2.4	2.3	3.5	3.0	2.7	2.1	2.7	1.8
28	3.4	3.1	1.9	2.4	2.4	2.3	4.6	3.0	2.6	2.1	2.7	1.8
29	3.4	2.8	1.9	2.4	---	2.3	4.4	2.6	35	2.2	2.5	1.8
30	3.5	2.7	1.9	2.5	---	2.3	4.0	2.5	4.0	2.2	2.4	1.7
31	3.8	---	1.9	2.5	---	2.4	---	2.4	---	2.2	2.3	---
TOTAL	96.4	84.5	65.1	96.6	77.0	212.9	82.2	104.7	125.2	75.7	79.3	61.9
MEAN	3.11	2.82	2.10	3.12	2.75	6.87	2.74	3.38	4.17	2.44	2.56	2.06
MAX	4.9	3.6	2.6	16	5.4	35	4.6	5.6	35	3.0	8.2	2.3
MIN	1.9	2.4	1.7	1.9	2.3	2.3	2.3	2.4	2.4	2.1	1.7	1.7

WTR YR 1990 TOTAL 1161.5 MEAN 3.18 MAX 35 MIN 1.7

05406491 GARFOOT CREEK NEAR CROSS PLAINS, WI--CONTINUED

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1984 to September 1986, October 1989 to September 1990.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: November 1984 to September 1986, October 1989 to September 1990.

DISSOLVED OXYGEN: April 1984 to September 1985, April 1990 to September 1990.

SUSPENDED-SOLIDS DISCHARGE: October 1989 to September 1990.

TOTAL-PHOSPHORUS DISCHARGE: October 1984 to June 1986, October 1989 to September 1990.

INSTRUMENTATION.--Water-quality sampler December 1984 to June 1986, October 1989 to September 1990; continuous water temperature recorder November 1984 to September 1986, October 1989 to September 1990; dissolved oxygen recorder April 1984 to September 1985, April 1990 to September 1990.

REMARKS.--Suspended-sediment and total-nitrogen discharge were published for the period October 1984 to June 1986. Chemical analyses by the Wisconsin State Laboratory of Hygiene. Samples are point samples unless otherwise indicated.

EXTREMES FOR PERIOD OF RECORD.--

WATER TEMPERATURE: Maximum observed, 24.5°C, July 25, 1985; minimum observed, 0.0°C, on several days during 1985, 1986, and 1990.

DISSOLVED OXYGEN: Maximum observed, 17.4 mg/L, Apr. 11, 1990; minimum observed, 1.5 mg/L, Aug. 17, 1990.

SUSPENDED-SOLIDS DISCHARGE: Maximum daily, 77 tons, June 29, 1990; minimum daily, 0.04 ton, Feb. 26-27, and Aug. 7, 9-10, 1990.

TOTAL-PHOSPHORUS DISCHARGE: Maximum daily, 747 lb, July 25, 1985; minimum daily, 0.47 lb, Dec. 24, 1989.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum observed, 23.5°C, June 12; minimum observed, 0.0°C, Nov. 23, Dec. 12, 14-16, 18-24, Jan. 26, Feb. 17, 20, and 24-25.

DISSOLVED OXYGEN: Maximum observed, 17.4 mg/L, Apr. 14; minimum observed, 1.5 mg/L, Aug. 17.

SUSPENDED-SOLIDS DISCHARGE: Maximum daily, 77 tons, June 29; minimum daily, 0.04 ton, Feb. 26-27, and Aug. 7, 9-10.

TOTAL-PHOSPHORUS DISCHARGE: Maximum daily, 530 lb, June 29; minimum daily, 0.47 lb, Dec. 24.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH (STAND- ARD UNITS) (00400)	PH LAB (STAND- ARD UNITS) (00403)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L) (00310)	RESIDUE TOTAL AT 105 DEG. C, PENDE (MG/L) (00530)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)
OCT 1989									
05...	1145	2.8	--	8.2	--	80	2.40	0.820	0.740
05...	1800	3.1	--	8.2	--	32	2.60	0.060	0.860
06...	0600	2.5	--	8.2	--	49	2.08	0.060	0.160
*23...	0945	3.5	--	--	--	12	--	--	--
*30...	0916	3.4	--	--	--	19	--	--	--
NOV									
*06...	0938	3.1	--	8.2	--	21	2.00	0.050	0.160
*13...	0920	2.7	--	--	--	16	--	--	--
*20...	0926	2.4	--	--	--	8	--	--	--
*27...	0952	2.5	--	--	--	61	--	--	--
DEC									
*04...	0937	2.5	--	--	--	8	--	--	--
*11...	1023	2.2	--	8.4	--	8	2.20	0.030	0.040
*19...	1350	2.0	--	--	--	35	--	--	--
JAN 1990									
*02...	1022	2.0	--	8.2	--	32	2.20	0.050	0.060
*10...	1010	2.8	--	8.0	--	22	2.30	1.30	0.530
*16...	1203	2.7	--	8.2	--	12	2.20	0.120	0.140
17...	0015	11	--	7.3	--	644	1.70	3.30	2.94
17...	0130	18	--	7.3	--	1020	1.60	3.20	3.41
17...	0245	25	--	7.2	--	984	1.70	3.20	3.18
17...	0430	33	--	7.3	--	840	1.80	3.00	2.83
17...	0900	21	7.1	7.3	--	552	2.10	2.40	2.24
*17...	0901	21	--	7.2	--	268	2.10	2.40	2.07
17...	1348	10	6.8	7.3	--	200	2.90	2.20	1.71
*17...	1349	10	--	7.3	--	116	2.90	2.20	1.62
*18...	1308	3.3	--	7.6	--	16	4.90	0.400	0.280
*23...	1029	2.3	--	8.2	--	16	2.40	0.100	0.080
*30...	0957	2.5	--	--	--	31	--	--	--
FEB									
*06...	0913	2.8	--	8.0	--	25	2.10	0.400	0.290
*13...	0940	2.7	--	8.0	--	12	--	--	--
*20...	0916	2.4	--	8.2	--	14	--	--	--
*27...	0927	2.4	--	8.2	--	6	--	--	--
MAR									
*06...	0945	2.4	--	8.2	--	34	2.20	<0.100	0.090
*10...	1015	4.8	--	7.5	--	38	2.90	0.900	0.690
*10...	1016	--	--	7.6	--	62	2.80	0.900	0.720
11...	0815	32	--	8.0	24	1150	2.30	1.40	2.30

05406491 GARFOOT CREEK NEAR CROSS PLAINS, WI--CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH LAB (STAND- ARD UNITS) (00400)	PH LAB (STAND- ARD UNITS) (00403)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L) (00310)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDE (MG/L) (00530)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)
MAR 1990									
11...	0830	44	--	7.9	32	2470	1.80	1.80	4.04
11...	1030	69	--	7.7	27	1240	1.80	1.60	2.83
11...	1100	73	--	7.7	--	860	2.00	1.70	2.58
*11...	1101	74	--	7.6	--	860	1.90	1.60	2.47
11...	1150	77	--	7.6	--	620	2.10	1.40	2.04
*11...	1151	78	--	7.8	--	536	2.00	1.40	1.96
11...	1630	59	--	7.4	--	264	2.20	1.30	1.45
11...	1930	23	--	7.5	18	228	3.20	1.20	1.23
*12...	1354	5.4	--	7.7	--	49	5.70	0.700	0.520
13...	1915	13	--	7.9	17	696	5.20	0.700	2.31
13...	2045	31	--	7.8	19	1210	6.90	0.900	2.90
13...	2130	41	--	7.8	25	2760	5.30	1.30	5.89
13...	2359	23	--	7.8	15	760	6.50	0.900	2.21
14...	0915	9.8	--	7.9	12	152	8.50	0.800	0.970
14...	2145	14	--	8.0	22	408	7.40	1.60	2.64
14...	2245	32	--	8.0	13	496	5.80	0.800	1.63
14...	2315	42	--	8.2	11	648	5.80	0.800	1.70
15...	0145	62	--	8.0	16	1060	4.70	1.20	3.30
15...	0515	40	--	8.0	8.6	280	6.80	0.600	1.29
15...	1115	10	--	8.1	9.8	160	9.70	0.800	0.960
*27...	0913	2.3	--	8.2	--	28	--	--	--
APR									
*03...	0936	2.5	--	8.3	--	108	2.60	<0.100	0.080
*10...	0824	3.2	--	--	--	38	--	--	--
*17...	0856	2.3	--	8.0	--	16	2.50	<0.100	0.040
*24...	0858	2.2	--	--	--	23	--	--	--
MAY 1990									
*03...	1125	3.4	8.4	--	15	--	2.20	<0.100	0.086
*08...	0819	2.9	--	--	16	--	--	--	--
*15...	0858	2.8	8.1	--	58	--	2.50	<0.100	0.250
*25...	1010	3.1	8.0	--	33	--	2.80	<0.100	0.090
JUN									
02...	1645	9.3	8.0	28	1040	--	2.10	0.360	2.12
02...	1715	17	7.7	39	3760	--	5.90	3.20	5.86
02...	1800	24	7.6	21	3920	--	9.40	4.00	7.54
02...	2030	11	7.7	21	1440	--	8.40	2.00	3.57
*04...	1230	2.9	8.0	--	38	--	3.50	<0.100	0.130
*12...	1118	2.8	--	--	59	--	--	--	--
*19...	0902	3.1	8.1	--	24	--	2.20	<0.100	0.140
*26...	0947	2.6	--	--	20	--	--	--	--
29...	0015	10	7.8	--	1960	--	2.00	2.10	10.8
29...	0215	51	7.4	14	3200	--	4.70	0.300	5.90
*29...	0923	62	7.4	6.8	288	--	5.30	0.100	1.64
*29...	1359	34	7.5	--	160	--	5.00	0.100	1.78
29...	1400	34	7.5	6.4	176	--	5.10	<0.100	1.78
29...	1645	12	7.6	--	162	--	5.10	<0.100	1.74
*30...	0705	4.3	7.7	--	57	--	5.50	0.100	0.380
JUL									
*03...	1014	2.3	8.0	--	26	--	2.80	<0.100	0.200
*10...	0852	2.9	--	--	22	--	--	--	--
*17...	0945	2.7	--	--	26	--	--	--	--
*24...	0950	2.4	8.2	--	24	--	2.00	<0.100	0.230
*31...	1019	2.2	--	--	9	--	--	--	--
AUG									
06...	1000	1.9	--	--	--	--	--	--	--
19...	2015	10	8.1	12	212	160	52	1.96	1.08
19...	2115	16	8.0	12	286	228	58	2.80	1.43
20...	1000	6.1	7.9	6.8	80	56	24	3.20	0.980
*23...	1230	2.3	8.0	2.8	35	22	13	2.10	<0.100
SEP									
*06...	0911	2.2	7.9	9.5	63	38	25	2.00	0.555
*21...	1305	2.1	8.0	--	30	22	8	2.20	0.273

*EQUAL-WIDTH INCREMENT (EWI) SAMPLE.

WISCONSIN RIVER BASIN

05406491 GARFOOT CREEK NEAR CROSS PLAINS, WI--CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

		DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)		ALA-CHLOR TOTAL RECOVER (UG/L) (77825)		ATRA-ZINE, TOTAL (UG/L) (39630)		CARBO-FURAN WATER WHOLE TOT.REC (UG/L) (82615)		CHLOR-PYRIFOS TOTAL RECOVER (UG/L) (38932)		CYAN-AZINE TOTAL (UG/L) (81757)	
AUG 1990 06...		1000	1.9	<0.10	<0.10	<3.3	<1.0	<0.30					
DATE		DICAMBA (MED-IBEN) (BAN-VEL D) TOTAL (UG/L) (82052)		DIMETH-OATE WATER WHOLE TOTAL (UG/L) (39009)		MALA-THION, TOTAL (UG/L) (39530)		METOLA-CHLOR IN WHOLE WATER TOTAL (UG/L) (39356)		2,4-D, TOTAL (UG/L) (39730)		SEVIN, TOTAL (UG/L) (39750)	
AUG 1990 06...		<0.20	<1.0	<1.0	<0.20	<0.50	<1.4						
DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)	DATE		TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)			
NOV 1989 08...	1457	3.1	530	8.5	JAN 1990 18...		1340	3.2	500	4.5			
DEC 12...	1257	2.2	515	1.0	MAR 09...		1537	1.8	270	3.0			

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	---	---	---	9.0	6.5	7.5	6.5	3.0	4.5	5.0	3.0	4.0
2	---	---	---	8.0	5.0	7.0	5.0	1.0	3.0	5.0	2.5	3.5
3	---	---	---	6.5	3.5	5.0	3.5	.5	2.0	5.5	3.5	4.5
4	---	---	---	9.0	5.5	7.5	5.5	2.0	4.0	5.5	1.5	3.5
5	---	---	---	10.0	8.0	9.0	8.0	5.0	6.0	4.5	1.0	2.5
6	---	---	---	9.0	7.0	8.0	5.5	1.0	4.0	4.5	2.0	3.0
7	---	---	---	10.0	7.5	8.5	3.0	.5	1.5	6.0	2.5	4.0
8	---	---	---	9.0	7.0	8.0	4.0	1.0	2.5	6.0	2.5	4.5
9	---	---	---	8.0	6.0	7.0	4.5	1.5	3.5	6.0	4.0	5.0
10	---	---	---	8.0	6.0	7.0	4.5	2.5	4.0	5.5	3.5	4.5
11	---	---	---	9.5	6.0	7.5	2.5	.5	1.5	4.5	2.5	3.5
12	---	---	---	8.0	5.0	6.5	1.5	.0	.5	3.0	1.0	2.0
13	---	---	---	11.0	6.0	8.5	3.0	.5	1.5	3.5	.5	2.0
14	---	---	---	8.5	6.5	7.5	1.5	.0	.5	5.0	2.0	3.0
15	---	---	---	7.5	5.5	6.5	.5	.0	.0	6.0	2.5	4.0
16	---	---	---	5.5	2.0	4.0	1.0	.0	.5	6.0	2.5	4.5
17	---	---	---	4.5	2.0	3.0	3.0	1.0	2.0	2.5	1.0	2.0
18	---	---	---	4.0	2.0	3.0	1.5	.0	.5	4.5	2.0	3.0
19	---	---	---	7.0	2.5	4.5	1.0	.0	.5	5.0	1.5	3.0
20	---	---	---	8.0	4.0	6.0	.0	.0	.0	4.0	3.0	3.5
21	---	---	---	5.5	3.5	4.0	.0	.0	.0	5.0	3.0	3.5
22	---	---	---	4.5	1.5	4.0	.0	.0	.0	7.0	3.5	4.5
23	---	---	---	4.0	.0	2.0	.0	.0	.0	5.5	3.5	4.5
24	14.0	7.5	10.5	5.5	.5	3.0	2.5	.0	1.0	5.5	1.5	3.0
25	15.0	10.0	12.0	7.0	5.0	6.0	5.0	2.0	3.5	3.0	1.5	2.0
26	14.5	9.5	11.5	6.5	3.0	5.0	3.0	1.0	2.0	4.5	.0	2.0
27	13.0	8.5	11.0	7.0	4.5	6.0	4.5	2.0	3.0	6.0	1.5	3.5
28	12.5	10.5	11.5	4.5	1.5	3.5	5.5	2.5	4.0	5.5	1.0	3.0
29	13.0	10.5	11.5	3.5	1.0	2.0	5.0	2.5	4.0	6.0	1.5	3.5
30	11.5	10.0	11.0	6.0	2.5	4.0	4.5	2.5	3.5	6.5	1.0	4.0
31	10.0	7.0	8.5	---	---	---	4.5	4.0	4.0	5.5	.5	3.0
MONTH	---	---	---	11.0	.0	5.7	8.0	.0	2.2	7.0	.0	3.4

05406491 GARFOOT CREEK NEAR CROSS PLAINS, WI--CONTINUED

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY				MARCH			APRIL			MAY		
1	6.0	2.0	5.0	8.0	2.0	4.5	11.0	7.5	9.0	16.4	7.0	10.8
2	4.0	1.5	2.5	9.5	1.0	4.0	7.5	4.5	6.0	17.9	6.2	11.2
3	6.0	1.5	3.5	6.0	1.0	3.0	14.0	4.5	8.0	14.0	7.5	10.0
4	6.5	1.0	3.5	5.5	2.5	4.0	13.5	6.0	8.5	9.5	7.5	9.0
5	7.0	1.5	4.0	4.5	3.0	3.5	10.5	5.0	7.0	15.5	6.5	10.5
6	6.5	2.0	4.0	8.0	2.0	4.0	8.5	3.0	5.0	18.5	7.5	12.5
7	7.5	3.5	5.0	7.0	2.0	4.0	12.5	2.5	6.5	20.5	8.5	13.5
8	7.5	2.5	4.0	4.5	.5	2.5	14.5	4.0	8.5	19.5	11.0	14.5
9	7.5	2.5	4.0	4.0	.5	2.0	11.0	7.5	9.0	---	---	---
10	6.0	2.0	3.5	4.5	2.0	3.0	10.5	5.5	8.0	10.0	7.0	8.5
11	5.0	2.0	3.5	5.5	1.0	3.5	9.5	4.5	6.5	16.0	6.0	10.5
12	7.5	2.0	5.0	12.0	5.0	7.5	11.5	2.5	6.5	11.0	8.5	9.5
13	5.5	2.0	4.0	10.5	5.0	7.5	11.5	4.0	7.5	18.5	7.0	12.0
14	2.0	.5	1.5	11.0	7.5	9.0	14.5	6.0	9.5	---	---	---
15	3.0	.5	2.0	10.5	5.5	8.5	15.0	6.5	10.0	12.0	9.5	11.0
16	5.0	2.5	3.5	9.5	4.5	6.5	9.5	5.5	7.0	15.5	10.5	12.5
17	5.5	.0	2.0	6.0	4.0	5.0	13.5	4.0	7.5	11.0	9.0	10.5
18	7.5	1.0	3.5	8.5	3.5	5.0	15.5	3.5	8.5	18.5	8.0	12.5
19	6.0	1.0	3.0	8.5	2.5	5.0	11.0	6.0	8.0	11.0	9.5	10.0
20	7.0	.0	2.5	10.5	2.5	6.0	14.0	8.5	10.5	10.0	9.0	9.5
21	8.0	2.0	4.5	10.5	4.5	7.0	19.0	8.5	12.5	13.5	8.5	11.0
22	6.0	4.0	5.0	8.0	4.5	6.5	19.0	6.5	12.0	17.5	7.5	11.5
23	8.0	3.0	5.0	8.5	1.5	4.5	20.0	8.5	13.5	13.5	9.0	11.5
24	4.0	.0	2.0	10.0	2.5	5.5	22.0	11.5	16.0	16.0	10.0	12.5
25	5.0	.0	1.5	11.0	3.0	6.0	22.5	11.0	16.0	13.0	11.0	12.0
26	7.0	.5	3.0	11.5	3.5	6.5	21.5	11.3	15.7	14.5	11.0	12.5
27	8.0	2.0	4.5	12.5	2.5	6.5	20.3	11.3	15.1	17.5	10.5	13.0
28	8.0	.5	3.5	12.0	4.0	7.5	13.5	9.9	12.2	19.0	10.0	13.5
29	---	---	---	8.0	6.0	7.0	18.1	8.9	12.5	19.0	9.5	13.5
30	---	---	---	8.0	5.0	6.5	15.3	9.1	11.8	19.0	7.5	12.5
31	---	---	---	12.5	5.0	8.0	---	---	---	19.5	8.0	13.0
MONTH	8.0	.0	3.5	12.5	.5	5.5	22.5	2.5	9.8	---	---	---
JUNE				JULY			AUGUST			SEPTEMBER		
1	19.5	11.0	15.0	20.0	13.5	16.0	17.5	11.0	14.5	16.0	12.5	14.5
2	17.0	13.5	15.0	20.5	12.5	16.0	18.0	11.0	14.5	15.5	13.0	14.0
3	13.5	10.0	12.0	22.0	13.0	17.0	19.0	13.5	16.0	16.0	12.0	14.0
4	17.5	8.5	12.5	22.5	15.5	18.0	19.0	14.0	16.0	19.0	13.0	16.0
5	13.0	9.0	10.5	21.0	13.5	16.5	17.0	12.5	15.0	17.0	14.0	15.5
6	18.0	11.0	13.5	17.0	12.5	14.5	16.5	11.0	14.0	19.5	14.5	16.5
7	19.0	9.5	13.5	16.5	11.5	13.5	17.0	10.5	14.0	17.0	14.0	15.5
8	18.5	11.5	14.5	22.5	14.5	18.0	17.5	11.5	14.5	16.0	13.5	14.5
9	20.5	11.5	15.0	17.0	13.0	15.5	17.5	11.0	14.5	17.0	12.5	15.0
10	21.0	10.5	15.0	17.5	13.0	15.0	18.0	12.5	15.5	17.0	13.0	15.0
11	16.0	11.0	13.5	19.5	12.5	15.5	17.0	13.5	14.5	16.0	13.0	14.5
12	23.5	13.0	17.5	16.0	12.5	14.0	15.5	13.0	14.0	17.0	12.5	14.5
13	18.0	15.0	16.0	17.0	11.0	14.0	16.0	12.0	14.0	17.5	12.5	15.0
14	21.0	13.0	16.0	14.5	11.5	13.0	17.5	11.0	14.5	15.5	13.0	14.5
15	17.0	11.5	14.0	16.0	12.5	14.0	18.0	13.5	16.0	15.0	11.0	13.0
16	16.5	12.0	14.0	18.0	11.5	14.5	18.0	13.0	15.5	13.5	11.5	12.5
17	21.5	13.5	16.5	20.0	13.0	16.0	18.0	14.0	15.0	13.5	9.5	11.5
18	21.5	13.0	16.5	17.0	13.5	15.5	20.5	15.0	17.5	11.5	10.5	11.0
19	17.5	11.5	14.0	15.0	12.5	13.5	18.5	16.5	17.0	13.5	11.0	12.0
20	21.0	12.5	16.0	17.5	12.5	14.5	18.5	15.5	17.0	13.5	9.5	11.5
21	18.0	12.0	15.0	16.0	12.0	14.0	15.5	14.5	15.0	15.0	11.5	13.0
22	14.5	13.0	14.0	17.0	11.5	14.0	17.0	14.0	15.0	11.5	9.5	10.5
23	19.5	12.5	15.5	17.0	11.0	14.0	17.0	13.0	15.0	12.5	9.0	10.5
24	20.0	11.0	15.0	16.5	11.0	13.5	17.5	13.5	15.0	13.0	8.0	10.5
25	21.0	12.0	16.0	19.0	12.5	15.5	18.5	14.5	16.0	15.0	10.5	12.5
26	21.5	13.5	16.5	18.0	12.5	15.5	17.0	14.5	15.5	14.5	10.0	12.0
27	21.0	13.0	16.5	16.0	13.5	14.5	20.0	14.0	16.5	14.5	9.5	12.0
28	18.5	13.5	16.0	19.0	13.5	16.0	18.5	14.5	16.5	14.0	11.5	12.5
29	22.5	17.0	20.0	18.5	14.0	16.0	17.0	12.5	15.0	11.5	9.5	10.5
30	21.0	15.5	18.0	18.0	13.5	15.5	16.5	11.5	14.0	12.5	9.5	10.5
31	---	---	---	17.5	12.5	15.0	16.5	11.5	14.0	---	---	---
MONTH	23.5	8.5	15.1	22.5	11.0	15.1	20.5	10.5	15.2	19.5	8.0	13.2

WISCONSIN RIVER BASIN

05406491 GARFOOT CREEK NEAR CROSS PLAINS, WI--CONTINUED

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY				MARCH			APRIL			MAY		
1	---	---	---	---	---	---	13.5	9.8	11.0	12.8	8.7	10.4
2	---	---	---	---	---	---	14.4	10.0	11.9	13.2	8.4	10.6
3	---	---	---	---	---	---	14.6	9.6	11.9	13.8	9.1	10.9
4	---	---	---	---	---	---	14.7	9.5	11.3	11.6	9.4	10.5
5	---	---	---	---	---	---	15.2	10.3	11.9	14.4	9.0	11.0
6	---	---	---	---	---	---	15.0	10.9	12.5	12.8	8.6	10.5
7	---	---	---	---	---	---	16.7	10.0	12.7	12.9	7.6	10.0
8	---	---	---	---	---	---	16.3	9.3	12.2	11.5	8.0	9.4
9	---	---	---	---	---	---	15.1	9.1	11.5	---	---	---
10	---	---	---	---	---	---	14.8	9.2	11.2	10.7	9.1	9.8
11	---	---	---	---	---	---	16.2	10.5	12.7	11.5	8.9	10.2
12	---	---	---	---	---	---	16.9	11.0	13.2	10.8	9.5	10.1
13	---	---	---	---	---	---	16.7	10.8	13.0	11.4	8.4	10.0
14	---	---	---	---	---	---	17.4	9.9	12.6	---	---	---
15	---	---	---	---	---	---	16.8	10.2	12.7	10.3	9.3	9.8
16	---	---	---	---	---	---	16.4	10.9	12.9	9.8	8.6	9.1
17	---	---	---	---	---	---	17.0	11.3	13.6	10.5	9.1	10.0
18	---	---	---	---	---	---	16.7	10.5	13.2	10.8	8.3	9.7
19	---	---	---	---	---	---	15.8	10.2	12.4	10.1	8.9	9.5
20	---	---	---	---	---	---	14.3	9.1	11.3	10.0	8.9	9.6
21	---	---	---	---	---	---	14.2	8.7	10.8	10.7	9.8	10.2
22	---	---	---	---	---	---	14.2	8.3	10.9	11.0	9.0	10.0
23	---	---	---	---	---	---	13.3	7.4	10.2	10.6	9.1	9.9
24	---	---	---	---	---	---	12.9	7.3	9.4	10.3	9.0	9.5
25	---	---	---	---	---	---	12.9	7.3	9.5	10.1	9.3	9.7
26	---	---	---	---	---	---	12.3	6.9	9.1	10.3	9.5	9.8
27	---	---	---	---	---	---	11.5	7.2	9.1	10.4	8.8	9.7
28	---	---	---	---	---	---	10.1	7.5	8.5	10.3	8.2	9.3
29	---	---	---	---	---	---	12.7	8.1	9.8	10.5	8.5	9.5
30	---	---	---	---	---	---	12.5	8.5	10.1	11.0	8.2	9.7
31	---	---	---	---	---	---	---	---	---	10.7	7.8	9.5
MONTH	---	---	---	---	---	---	17.4	6.9	11.4	---	---	---
JUNE				JULY			AUGUST			SEPTEMBER		
1	9.8	7.6	8.9	10.1	7.7	8.8	10.7	7.1	9.0	9.9	7.6	8.7
2	9.1	5.9	7.9	10.4	7.6	9.1	10.3	7.0	8.7	10.5	7.5	9.0
3	9.5	7.2	8.8	9.8	6.8	8.7	9.9	6.5	8.2	10.9	8.0	9.5
4	10.7	8.4	9.6	9.4	7.1	8.2	9.9	6.2	7.9	10.4	7.2	9.0
5	10.6	9.2	10.0	10.0	7.1	8.5	10.1	6.5	8.2	10.8	7.5	9.4
6	10.2	8.5	9.5	10.4	7.8	9.2	10.6	6.9	8.7	10.4	7.4	9.1
7	10.5	8.5	9.5	10.5	7.8	9.3	10.7	6.7	8.7	11.4	8.2	9.8
8	10.3	8.2	9.2	9.9	6.8	8.3	10.4	6.3	8.4	11.1	8.6	9.9
9	10.1	8.4	9.2	10.4	7.4	9.0	10.1	6.5	8.3	10.7	7.9	9.5
10	10.5	7.8	9.3	10.7	8.1	9.2	10.0	6.2	7.9	10.5	7.9	9.2
11	10.7	8.7	9.6	10.7	7.9	9.2	9.6	5.6	7.7	10.9	8.2	9.5
12	9.6	6.7	8.6	10.9	8.1	9.4	9.6	6.6	8.0	10.7	7.8	9.3
13	9.4	7.3	8.4	10.9	8.3	9.5	10.0	6.6	8.2	10.3	7.2	9.1
14	9.5	6.9	8.4	10.6	7.7	9.1	9.9	6.0	8.0	9.5	7.6	8.5
15	9.9	7.9	8.9	10.9	7.8	9.1	9.4	5.6	7.5	10.8	7.9	9.4
16	9.3	7.7	8.8	10.6	7.3	9.1	8.9	5.7	7.5	10.8	8.3	9.6
17	9.4	7.1	8.3	10.1	6.7	8.6	9.0	1.5	7.3	11.3	8.9	10.1
18	9.5	7.2	8.5	9.6	7.4	8.5	7.0	3.1	6.0	10.8	9.1	9.9
19	10.5	8.2	9.4	10.0	7.5	8.7	7.8	5.0	6.3	10.8	8.6	9.7
20	10.1	7.3	8.9	10.3	7.1	8.6	6.7	5.0	5.9	11.2	8.4	9.9
21	10.1	8.1	9.0	10.6	7.6	9.0	7.8	6.4	7.2	10.5	8.6	9.3
22	9.3	7.8	8.7	10.5	7.4	8.9	8.8	7.1	7.8	11.4	9.2	10.4
23	10.2	7.6	8.9	10.7	7.6	9.0	9.7	7.2	8.2	12.1	10.1	11.0
24	10.4	8.0	9.2	10.1	7.5	9.0	8.8	6.5	7.9	12.0	9.5	11.0
25	10.4	7.6	9.0	9.8	7.1	8.5	8.3	6.0	7.1	11.5	9.3	10.4
26	10.2	7.3	8.8	10.0	7.1	8.4	8.5	6.3	7.4	12.1	9.5	10.8
27	10.4	7.3	8.9	10.2	7.2	8.4	8.6	5.7	7.3	12.2	9.6	10.9
28	10.2	5.8	8.8	9.7	6.7	8.3	8.9	6.1	7.5	12.7	9.9	11.0
29	6.9	4.0	5.1	9.7	6.4	8.0	9.4	6.7	8.0	12.7	10.5	11.7
30	8.9	6.3	7.7	10.4	7.0	8.6	9.5	7.2	8.3	12.9	10.8	11.7
31	---	---	---	10.8	7.3	8.9	9.5	7.4	8.5	---	---	---
MONTH	10.7	4.0	8.8	10.9	6.4	8.8	10.7	1.5	7.8	12.9	7.2	9.9

05406491 GARFOOT CREEK NEAR CROSS PLAINS, WI--CONTINUED

SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED(TONS PER DAY), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.05	.19	.13	.16	.22	.07	.51	.17	.19	.32	.05	.32
2	.07	.18	.10	.18	.20	2.33	.63	.14	23	.22	.05	.34
3	.09	.17	.07	.18	.18	.45	.71	.14	1.0	.17	.05	.35
4	.10	.18	.05	.19	.17	.16	.67	.15	.34	.15	.05	.36
5	.25	.18	.05	.17	.44	.19	.57	.15	.29	.15	.05	.36
6	.29	.18	.05	.17	.20	.22	.49	.14	.31	.16	.05	.37
7	.28	.18	.05	.16	.20	.23	.41	.13	.31	.15	.04	.36
8	.25	.16	.05	.15	.81	3.47	.35	.13	.35	.16	.05	.34
9	.22	.14	.05	.16	.17	2.22	.30	.18	.38	.15	.04	.32
10	.23	.14	.05	.16	.12	.65	.32	11.7	.39	.17	.04	.32
11	.21	.13	.05	.15	.11	53	.26	.31	.40	.15	.05	.30
12	.19	.12	.06	.13	.09	.84	.20	.33	.40	.15	.05	.28
13	.19	.11	.07	.11	.09	25	.16	.34	.39	.16	.05	.26
14	.18	.10	.08	.10	.08	12	.15	.37	.36	.19	.05	.24
15	.17	.09	.10	.10	.08	25	.14	.42	.31	.20	.05	.23
16	.79	.08	.11	.42	.08	.52	.12	2.35	.30	.19	.05	.22
17	.41	.07	.14	13	.09	.42	.10	.44	.28	.18	.05	.20
18	.16	.06	.16	.19	.09	.36	.11	.38	.24	.17	1.04	.19
19	.16	.06	.19	.12	.09	.32	.11	3.00	.20	.18	1.8	.18
20	.17	.06	.18	.12	.09	.28	.12	5.90	.19	.18	3.1	.17
21	.87	.08	.18	.11	.08	.27	.13	.40	.18	.17	.38	.17
22	.13	.11	.17	.11	.07	.26	.13	.33	.19	.17	.29	.15
23	.12	.14	.17	.11	.06	.24	.14	.31	.19	.17	.23	.14
24	.12	.19	.16	1.23	.06	.22	.15	.33	.16	.14	.23	.12
25	.12	.25	.16	.17	.05	.20	.16	.27	.15	.12	.29	.12
26	.13	.32	.16	.15	.04	.19	.15	.27	.15	.11	.30	.11
27	.14	.41	.17	.16	.04	.18	.19	.26	.14	.09	.30	.11
28	.15	.37	.17	.17	.05	.22	.23	.25	.17	.08	.31	.10
29	.16	.26	.17	.19	---	.26	.21	.21	77	.07	.30	.10
30	.18	.18	.17	.21	---	.32	.19	.20	.60	.06	.30	.09
31	.20	---	.17	.20	---	.41	---	.19	---	.05	.31	---
TOTAL	6.78	4.89	3.64	18.93	4.05	130.50	8.11	29.89	108.56	4.78	10.00	6.92

WTR YR 1990 TOTAL 337.05

PHOSPHORUS TOTAL, POUNDS PER DAY, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.58	3.12	.83	.60	2.75	1.58	1.21	1.57	1.79	4.45	2.25	5.27
2	1.82	2.87	.81	.70	2.89	21.2	1.16	1.51	102	3.11	2.21	5.58
3	1.86	2.76	.75	.96	2.99	4.80	1.10	1.55	9.62	2.46	2.19	5.91
4	1.85	2.82	.71	1.40	3.21	1.43	1.12	1.90	2.37	2.32	2.14	6.22
5	6.43	2.75	.67	1.74	10.7	1.29	1.04	2.07	1.82	2.44	2.17	6.31
6	2.23	2.68	.64	2.29	4.71	1.30	.99	2.02	1.92	2.59	2.12	6.56
7	2.12	2.67	.57	3.01	6.36	2.03	.91	2.01	1.85	2.50	2.02	6.30
8	2.07	2.44	.54	4.04	18.5	57.0	.86	2.14	1.98	2.73	2.06	6.02
9	1.94	2.20	.52	5.80	7.23	49.5	.83	2.63	2.06	2.79	1.94	5.74
10	2.16	2.16	.50	7.56	3.62	18.1	3.96	59.3	2.07	3.05	1.88	5.73
11	2.13	2.01	.48	6.17	3.38	332	.84	3.85	2.03	2.78	2.29	5.29
12	2.14	1.83	.50	4.82	3.12	17.4	.69	3.71	2.01	2.68	2.16	4.99
13	2.24	1.75	.50	3.73	3.19	135	.61	3.50	2.15	2.76	2.01	4.64
14	2.35	1.62	.50	3.06	2.73	84.6	.62	3.50	2.29	3.23	1.96	4.32
15	2.36	1.52	.49	2.52	2.62	187	.60	3.65	2.25	3.51	2.03	4.12
16	11.4	1.41	.50	10.8	2.51	6.27	.54	13.2	2.42	3.15	2.21	3.93
17	3.05	1.36	.51	185	2.42	4.49	.51	3.43	2.59	3.04	2.20	3.68
18	2.80	1.31	.50	6.47	2.30	3.71	.53	2.81	2.52	2.94	8.78	3.40
19	3.05	1.25	.51	3.34	2.21	3.29	.56	16.6	2.30	3.04	25.9	3.24
20	8.76	1.27	.49	2.45	2.05	2.85	.61	31.1	2.17	3.21	43.3	3.10
21	12.6	1.27	.49	1.78	1.92	2.66	.63	2.61	2.04	3.12	6.98	3.10
22	3.13	1.22	.48	1.35	1.85	2.52	.63	2.08	2.16	3.12	4.79	2.67
23	2.98	1.18	.49	1.10	1.92	2.29	.66	1.85	2.05	3.14	3.40	2.50
24	2.85	1.13	.47	26.8	1.95	2.02	.75	1.88	1.77	2.76	3.33	2.17
25	2.85	1.06	.48	5.95	1.89	1.85	.84	1.52	1.65	2.73	4.28	2.03
26	2.86	.99	.51	1.46	1.65	1.71	.91	1.58	1.54	2.67	4.49	1.89
27	2.86	1.02	.54	1.58	1.58	1.55	4.80	1.65	1.47	2.56	4.56	1.77
28	2.86	1.10	.56	1.68	1.52	1.44	8.61	1.74	1.98	2.54	4.78	1.65
29	2.87	.98	.57	1.84	---	1.36	7.83	1.62	530	2.61	4.76	1.55
30	2.97	.89	.58	2.09	---	1.29	1.61	1.63	8.71	2.61	4.76	1.40
31	3.28	---	.59	2.23	---	1.26	---	1.68	---	2.57	4.98	---
TOTAL	106.45	52.64	17.28	304.32	103.77	954.79	46.56	181.89	703.58	89.21	164.93	121.08

WTR YR 1990 TOTAL 2846.50

05406497 BLACK EARTH CREEK AT SOUTH VALLEY ROAD NEAR BLACK EARTH, WI

LOCATION.--Lat 43°07'30", long 89°42'35", in NE 1/4 SW 1/4 sec.31, T.8 N., R.7 E., Dane County, Hydrologic Unit 07070005, on right bank, at bridge on South Valley Road, 2.1 mi southeast of Black Earth.

DRAINAGE AREA.--40.6 mi², of which 2.8 mi² probably is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1989 to September 1990.

GAGE.--Water-stage recorder. Datum of gage is 820 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Oct. 1-23, July 25-31, Aug. 7-19, 22-31, and ice period, Dec. 14-25, Records are good.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 410 ft³/s, Mar. 9, gage height, 7.26 ft; maximum gage height, 7.35 ft, June 29, backwater from vegetation; minimum, 15 ft³/s, Aug 2, gage height, 3.90 ft.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20	21	19	19	22	19	24	23	18	42	18	17
2	21	21	19	19	21	33	24	23	35	36	17	17
3	21	21	18	19	20	28	23	23	37	33	18	17
4	21	22	19	19	20	20	23	25	28	31	17	18
5	26	21	19	19	25	19	22	24	25	29	18	19
6	23	21	19	19	29	18	22	23	23	27	18	18
7	22	23	19	20	23	18	21	23	22	26	18	18
8	21	22	19	20	35	125	21	23	21	25	18	17
9	21	22	19	21	28	166	22	26	20	24	18	18
10	22	23	19	22	22	63	25	35	19	23	18	19
11	22	21	19	22	20	168	22	29	19	22	19	18
12	22	21	19	21	20	69	22	26	18	21	19	18
13	21	21	19	20	22	64	21	25	20	21	19	19
14	22	22	18	20	20	98	24	24	20	23	19	22
15	22	22	18	20	19	102	23	24	20	23	20	18
16	34	22	18	23	19	50	22	30	21	22	21	18
17	25	22	18	104	18	42	21	26	23	22	21	18
18	23	21	18	35	18	37	21	24	22	24	30	18
19	22	21	18	25	18	34	21	31	21	23	40	18
20	23	22	18	24	18	31	22	35	21	23	52	18
21	22	22	18	23	18	30	21	29	22	22	30	19
22	21	22	18	23	18	30	21	26	28	22	22	18
23	21	20	18	23	18	29	21	24	26	21	22	17
24	22	19	18	42	18	27	20	24	24	20	22	19
25	21	19	18	35	18	27	20	24	24	19	22	18
26	21	19	18	23	18	26	21	22	25	19	20	18
27	21	21	19	22	18	26	22	21	25	19	20	18
28	21	22	19	21	18	25	26	20	27	19	19	18
29	21	19	19	21	---	24	24	20	218	19	18	17
30	22	19	19	21	---	24	23	19	61	19	18	17
31	23	---	19	20	---	23	---	19	---	18	17	---
TOTAL	690	634	575	785	581	1495	665	770	933	737	668	542
MEAN	22.3	21.1	18.5	25.3	20.7	48.2	22.2	24.8	31.1	23.8	21.5	18.1
MAX	34	23	19	104	35	168	26	35	218	42	52	22
MIN	20	19	18	19	18	18	20	19	18	18	17	17
CFSM	.55	.52	.46	.62	.51	1.19	.55	.61	.77	.59	.53	.44
IN.	.63	.58	.53	.72	.53	1.37	.61	.71	.85	.68	.61	.50

WTR YR 1990 TOTAL 9075 MEAN 24.9 MAX 218 MIN 17 CFSM .61 IN. 8.32

05406497 BLACK EARTH CREEK AT SOUTH VALLEY ROAD NEAR BLACK EARTH, WI--CONTINUED

WATER-QUALITY RECORDS

PERIOD OF RECORD.--November 1989 to September 1990.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: November 1989 to September 1990.

DISSOLVED OXYGEN: April 1990 to September 1990.

INSTRUMENTATION.--Continuous water temperature recorder since November 1989 and continuous dissolved oxygen recorder since April 1990.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum observed, 23.5°C, July 4; minimum observed, 0.0°C, Dec. 3, 12, 14-25 and Mar. 8-9.

DISSOLVED OXYGEN: Maximum observed, 17.1 mg/L, May 3; minimum observed, 4.8 mg/L, Apr. 27.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)	DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)
NOV 1989					JAN 1990				
08...	1350	22	530	9.0	18...	1403	28	510	4.5
DEC					MAR				
12...	1440	20	605	1.5	09...	1700	86	345	4.5

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	---	---	---	---	---	---	5.5	3.5	5.0	4.5	2.5	3.5
2	---	---	---	---	---	---	5.5	.5	3.0	4.0	2.0	3.0
3	---	---	---	---	---	---	2.5	.0	1.5	5.5	3.5	4.5
4	---	---	---	---	---	---	5.0	2.0	3.5	5.5	2.5	4.0
5	---	---	---	---	---	---	7.5	5.0	6.5	3.5	1.0	2.5
6	---	---	---	---	---	---	6.0	2.0	4.5	4.0	2.0	3.0
7	---	---	---	---	---	---	2.5	.5	1.5	5.0	2.5	3.5
8	---	---	---	---	---	---	3.5	1.5	2.5	5.5	3.0	4.5
9	---	---	---	---	---	---	4.5	2.0	3.0	6.5	4.5	5.5
10	---	---	---	---	---	---	4.5	3.0	4.0	5.5	4.0	4.5
11	---	---	---	---	---	---	3.0	.5	2.0	5.0	2.5	3.5
12	---	---	---	---	---	---	1.5	.0	.5	2.5	1.0	1.5
13	---	---	---	---	---	---	2.0	.5	1.5	2.5	.5	1.5
14	---	---	---	---	---	---	1.5	.0	.5	4.5	2.0	3.0
15	---	---	---	---	---	---	.0	.0	.0	5.5	2.5	4.0
16	---	---	---	---	---	---	.0	.0	.0	6.0	4.5	5.0
17	---	---	---	---	---	---	1.5	.0	1.0	6.0	1.0	2.5
18	---	---	---	---	---	---	1.0	.0	.5	4.0	1.5	3.0
19	---	---	---	---	---	---	.5	.0	.0	4.5	2.0	3.5
20	---	---	---	---	---	---	.0	.0	.0	4.5	3.5	4.0
21	---	---	---	---	---	---	.0	.0	.0	4.5	3.0	4.0
22	---	---	---	4.5	2.5	4.0	.0	.0	.0	6.0	3.5	4.5
23	---	---	---	3.0	.5	2.0	.0	.0	.0	5.5	4.0	4.5
24	---	---	---	4.5	.5	2.5	.0	.0	.0	5.5	1.5	4.0
25	---	---	---	6.5	4.5	5.5	1.5	.0	.5	2.5	1.5	2.0
26	---	---	---	6.0	4.0	5.0	1.5	.5	1.0	3.5	.5	2.5
27	---	---	---	6.5	5.0	6.0	3.0	1.0	2.0	5.5	2.5	4.0
28	---	---	---	5.0	2.0	3.5	4.5	2.5	3.5	4.5	1.5	3.0
29	---	---	---	3.0	1.0	2.0	4.5	2.5	3.5	5.5	2.0	4.0
30	---	---	---	5.0	2.5	4.0	3.5	2.5	3.0	6.5	3.0	4.5
31	---	---	---	---	---	---	4.0	3.0	3.5	5.5	1.5	3.5
MONTH	---	---	---	---	---	---	7.5	.0	1.9	6.5	.5	3.6

05406497 BLACK EARTH CREEK AT SOUTH VALLEY ROAD NEAR BLACK EARTH, WI---CONTINUED

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	6.5	4.5	5.5	7.5	3.0	5.0	10.5	8.0	9.0	14.5	9.0	11.5
2	4.0	2.5	3.5	8.5	1.5	5.5	8.0	5.5	6.0	15.5	8.5	12.0
3	5.5	2.5	3.5	4.5	.5	2.5	12.0	5.0	8.0	13.0	9.5	11.5
4	5.5	2.0	4.0	5.0	3.0	4.0	12.0	7.5	9.5	11.5	8.5	10.0
5	7.0	3.5	5.0	4.5	3.0	4.0	9.5	6.5	8.0	14.0	7.5	10.5
6	6.0	2.0	4.0	7.0	2.5	4.5	7.5	4.0	6.0	16.5	10.0	13.0
7	7.0	4.0	5.5	5.5	2.0	4.0	10.5	3.5	7.0	18.5	11.0	14.5
8	7.5	4.0	5.5	5.0	.0	3.0	12.5	5.5	9.0	18.0	13.5	15.5
9	6.5	3.0	4.5	3.5	.0	1.5	11.0	9.0	10.0	15.5	10.0	12.5
10	5.0	2.5	4.0	5.0	1.5	3.5	10.5	7.5	9.0	10.0	7.5	8.5
11	4.5	2.5	3.5	4.0	1.5	3.0	9.0	6.0	7.5	14.0	7.0	10.5
12	7.0	2.5	4.5	12.0	3.5	8.0	10.0	4.0	7.0	12.5	10.5	11.0
13	7.0	2.5	5.0	11.5	7.0	9.5	10.0	5.5	8.0	16.0	9.0	12.5
14	2.5	1.0	2.0	12.0	9.5	10.5	13.5	7.0	10.0	14.0	11.0	12.0
15	3.0	1.0	2.0	11.0	7.5	10.0	14.0	8.0	11.0	12.0	11.0	11.5
16	4.5	2.5	3.5	10.0	6.5	8.0	10.5	7.0	8.5	15.0	11.0	13.0
17	4.5	.5	2.5	7.0	5.0	6.0	11.5	5.0	8.0	13.5	10.0	11.5
18	6.0	1.5	4.0	7.5	4.5	6.0	13.0	5.5	9.0	16.5	8.5	12.5
19	5.5	2.0	3.5	8.0	3.5	5.5	10.5	7.5	9.0	14.0	9.5	11.0
20	5.5	1.0	3.5	9.5	3.5	7.0	14.0	9.5	11.5	10.0	9.0	9.5
21	7.0	3.5	5.5	10.0	6.0	8.0	17.0	10.5	13.5	13.0	9.0	11.0
22	6.5	5.0	5.5	8.5	6.0	7.5	17.0	10.0	13.5	16.0	9.5	12.5
23	7.5	4.0	5.5	7.0	2.5	5.0	18.5	11.0	15.0	13.5	11.0	12.5
24	5.0	.5	2.5	8.5	3.5	6.0	20.5	14.0	17.0	15.5	11.5	13.5
25	3.0	.5	1.5	9.5	3.5	6.5	20.5	14.0	17.5	14.5	12.0	13.0
26	5.5	1.5	3.5	10.0	4.5	7.0	20.0	14.5	17.0	14.0	12.0	13.0
27	7.0	3.5	5.0	10.5	4.0	7.5	19.0	14.0	16.5	17.0	12.0	14.0
28	6.0	1.5	4.0	10.5	5.5	8.5	16.5	12.0	14.0	18.0	12.5	15.5
29	---	---	---	9.0	7.0	8.0	16.5	10.5	13.0	18.0	13.0	15.5
30	---	---	---	8.0	6.5	7.0	14.5	11.5	13.0	17.5	11.0	14.5
31	---	---	---	10.5	5.5	8.0	---	---	---	18.0	11.5	15.0
MONTH	7.5	.5	4.0	12.0	.0	6.1	20.5	3.5	10.7	18.5	7.0	12.4
JUNE			JULY			AUGUST			SEPTEMBER			
1	19.5	14.0	16.5	21.0	17.5	19.5	19.5	14.0	16.5	---	---	---
2	18.0	16.5	17.0	21.0	16.0	18.5	19.5	14.5	17.0	21.0	17.5	19.0
3	16.5	12.0	14.0	22.0	17.0	19.5	20.5	16.5	18.5	20.0	16.5	18.0
4	17.0	10.5	13.5	23.5	19.0	21.0	21.0	17.0	18.5	22.5	16.5	18.5
5	14.5	11.0	12.5	22.0	18.0	20.0	19.0	15.5	17.0	20.0	17.5	18.0
6	17.5	12.0	14.5	19.0	16.0	17.5	18.0	13.5	16.0	22.5	17.0	19.0
7	18.0	13.0	15.5	16.5	14.0	15.0	19.0	13.0	16.0	20.0	16.5	18.5
8	18.5	14.0	16.0	22.5	16.0	19.0	19.5	14.0	16.5	18.5	15.5	16.5
9	19.5	14.5	17.0	20.0	16.5	18.0	19.5	14.0	16.5	---	---	---
10	19.5	14.0	17.0	18.0	15.5	16.5	20.5	16.0	18.0	---	---	---
11	17.5	14.5	16.0	19.5	14.5	17.0	19.0	16.0	17.0	---	---	---
12	22.0	15.0	18.5	17.0	15.0	16.0	17.5	15.5	16.5	---	---	---
13	20.5	17.5	18.5	17.5	13.0	15.0	18.5	14.0	16.0	---	---	---
14	21.0	16.5	18.5	15.5	14.0	15.0	19.5	14.0	17.0	---	---	---
15	18.0	15.5	16.5	16.5	13.5	15.0	21.0	16.5	18.5	---	---	---
16	16.0	14.5	15.5	18.5	14.0	16.0	20.0	16.5	18.0	---	---	---
17	21.0	15.5	18.0	21.0	16.0	18.5	18.5	17.0	17.5	---	---	---
18	21.0	16.5	18.5	18.5	17.0	18.0	22.5	17.0	19.5	15.0	13.0	14.0
19	18.0	15.0	16.0	17.5	15.5	16.0	20.0	18.0	19.0	19.5	13.0	15.0
20	20.5	15.0	17.5	19.0	15.0	16.5	18.5	16.5	17.5	15.5	11.0	13.0
21	18.0	15.5	17.0	17.0	14.5	16.0	16.5	15.5	16.0	16.0	12.0	14.0
22	17.0	15.0	16.0	18.0	14.0	16.0	19.0	15.0	16.5	12.5	10.0	11.0
23	19.5	14.5	16.5	18.0	13.5	16.0	---	---	---	14.0	9.0	10.5
24	19.5	14.5	17.0	18.0	13.5	16.0	19.5	15.5	17.5	14.5	8.5	11.0
25	20.5	15.5	18.0	20.0	15.0	17.5	20.5	16.5	18.5	16.5	11.0	13.0
26	22.0	17.0	19.5	20.0	16.0	18.0	19.5	16.5	18.0	16.5	11.0	13.5
27	21.5	17.5	19.5	18.0	16.5	17.0	22.0	16.5	19.0	16.0	11.0	13.0
28	19.5	17.5	19.0	20.5	16.0	18.0	21.5	17.5	19.5	16.0	12.0	13.5
29	21.5	18.5	20.0	20.5	17.5	18.5	20.5	16.0	18.0	12.0	10.5	11.0
30	22.5	18.0	20.0	19.5	16.5	18.0	19.5	15.0	17.0	14.0	9.5	11.0
31	---	---	---	19.5	15.0	17.0	---	---	---	---	---	---
MONTH	22.5	10.5	17.0	23.5	13.0	17.3	---	---	---	---	---	---

05406497 BLACK EARTH CREEK AT SOUTH VALLEY ROAD NEAR BLACK EARTH, WI--CONTINUED

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY				MARCH			APRIL			MAY		
1	---	---	---	---	---	---	13.5	8.3	10.2	15.5	7.5	11.0
2	---	---	---	---	---	---	14.8	8.8	11.3	16.8	7.5	11.5
3	---	---	---	---	---	---	15.1	8.0	11.2	17.1	7.1	11.3
4	---	---	---	---	---	---	14.1	7.7	9.9	12.9	7.2	9.6
5	---	---	---	---	---	---	14.5	7.3	10.5	16.2	7.6	11.4
6	---	---	---	---	---	---	14.9	8.4	11.2	17.0	7.0	11.3
7	---	---	---	---	---	---	15.2	8.4	11.5	17.1	6.7	11.1
8	---	---	---	---	---	---	15.1	7.5	10.8	15.9	6.2	10.0
9	---	---	---	---	---	---	14.9	6.9	10.2	9.8	6.3	7.9
10	---	---	---	---	---	---	16.2	7.9	11.0	11.9	7.9	9.8
11	---	---	---	---	---	---	16.0	8.9	11.8	13.8	7.7	10.8
12	---	---	---	---	---	---	15.7	9.1	12.0	12.2	7.5	9.5
13	---	---	---	---	---	---	15.2	8.6	11.3	13.6	7.3	10.4
14	---	---	---	---	---	---	16.3	7.9	11.3	12.0	7.1	9.3
15	---	---	---	---	---	---	15.6	7.6	10.8	10.9	7.5	8.8
16	---	---	---	---	---	---	13.9	7.6	10.3	10.3	6.8	8.2
17	---	---	---	---	---	---	15.4	8.4	11.4	10.4	6.7	8.6
18	---	---	---	---	---	---	15.5	8.0	11.2	11.9	6.7	9.4
19	---	---	---	---	---	---	14.5	7.5	10.2	9.0	6.6	7.9
20	---	---	---	---	---	---	15.2	7.5	10.2	9.5	7.8	8.6
21	---	---	---	---	---	---	15.1	7.0	10.2	11.5	8.0	9.7
22	---	---	---	---	---	---	15.0	6.6	10.1	12.7	7.3	9.8
23	---	---	---	---	---	---	14.3	6.2	9.6	11.8	7.4	9.5
24	---	---	---	---	---	---	14.2	5.6	9.1	13.0	7.4	9.6
25	---	---	---	---	---	---	13.8	5.7	9.1	11.5	7.4	9.1
26	---	---	---	---	---	---	13.3	5.6	8.5	13.0	8.0	10.0
27	---	---	---	---	---	---	13.3	4.8	8.5	14.0	7.6	10.5
28	---	---	---	---	---	---	11.2	5.3	7.7	14.6	6.9	10.3
29	---	---	---	---	---	---	14.7	7.0	10.1	14.4	6.8	10.3
30	---	---	---	---	---	---	15.4	6.5	10.5	14.6	7.4	10.6
31	---	---	---	---	---	---	---	---	---	14.5	6.9	10.5
MONTH	---	---	---	---	---	---	16.3	4.8	10.4	17.1	6.2	9.9
JUNE				JULY			AUGUST			SEPTEMBER		
1	13.7	6.4	9.7	9.3	6.5	7.7	13.0	7.0	9.4	12.9	7.5	9.7
2	10.0	5.3	7.5	11.0	6.9	8.6	12.6	6.9	9.3	14.0	7.8	10.2
3	8.6	5.4	7.5	11.1	6.3	8.5	11.9	6.6	8.7	14.9	8.3	10.7
4	9.6	7.1	8.6	10.7	6.0	7.9	11.4	6.3	8.3	15.3	7.7	10.8
5	10.8	7.1	8.6	11.9	6.1	8.5	11.8	6.5	8.8	14.6	7.4	10.1
6	12.8	7.1	9.8	12.2	6.5	9.0	12.2	7.2	9.3	15.3	7.4	10.3
7	13.6	6.5	9.4	12.5	7.5	9.3	12.2	7.4	9.4	14.4	7.5	10.0
8	13.2	6.5	9.1	12.8	6.5	9.3	12.0	7.1	9.1	15.4	8.3	10.6
9	12.8	6.2	9.1	12.0	6.2	9.1	12.3	7.0	9.2	15.7	8.2	11.1
10	13.3	6.2	9.4	12.7	7.2	9.3	12.2	6.7	9.0	15.5	7.5	10.7
11	13.1	6.2	9.6	13.8	7.3	10.0	12.1	6.6	8.4	15.3	7.9	10.8
12	14.4	5.4	9.7	13.5	7.1	9.9	11.5	6.1	8.3	15.8	8.3	11.2
13	13.1	5.2	8.1	14.5	7.8	10.6	12.2	7.4	9.4	16.0	8.3	11.1
14	14.7	5.9	9.7	12.2	7.4	9.2	12.8	6.9	9.4	10.8	7.1	9.0
15	14.0	5.8	9.6	14.3	7.4	9.9	12.3	6.7	8.8	13.8	7.0	10.0
16	12.4	6.3	8.4	14.3	7.5	10.4	12.5	6.6	8.9	13.1	8.3	10.2
17	14.2	5.7	9.6	14.7	6.8	10.0	11.5	6.6	8.3	14.2	9.1	11.0
18	14.9	5.5	9.7	11.7	6.3	8.5	10.1	6.2	7.7	12.6	9.1	10.1
19	15.1	5.8	9.7	11.8	6.0	8.4	7.9	5.9	6.7	13.8	8.8	10.4
20	15.6	6.4	10.5	13.3	6.9	9.3	7.4	6.1	6.8	13.8	8.7	10.6
21	15.1	6.2	10.2	13.4	6.8	9.6	9.4	7.4	8.3	13.1	8.4	10.0
22	10.7	6.4	8.4	13.3	6.9	9.6	11.3	7.8	9.2	12.6	8.6	10.3
23	14.6	6.7	10.0	13.6	6.8	9.8	---	---	---	14.4	9.6	11.4
24	15.0	6.5	10.2	13.0	6.9	9.5	10.7	6.9	8.6	14.2	9.3	11.2
25	15.1	6.0	10.2	13.8	6.7	9.7	10.6	6.7	8.1	13.8	8.7	10.6
26	15.3	5.7	9.4	13.9	6.4	9.4	10.9	6.6	8.1	14.1	8.6	10.6
27	15.3	5.5	9.7	12.3	6.3	8.6	11.6	6.5	8.5	14.3	8.5	10.7
28	13.7	5.6	9.2	13.8	6.5	9.6	11.8	6.4	8.4	13.6	7.6	9.8
29	7.7	5.1	5.7	12.4	6.0	8.5	11.9	6.8	8.9	12.2	9.1	10.3
30	7.3	6.1	6.8	12.7	6.5	9.1	12.1	7.2	9.2	14.1	9.6	11.1
31	---	---	---	13.0	7.0	9.4	---	---	---	---	---	---
MONTH	15.6	5.1	9.1	14.7	6.0	9.2	---	---	---	16.0	7.0	10.5

WISCONSIN RIVER BASIN

05406500 BLACK EARTH CREEK AT BLACK EARTH, WI

LOCATION.--Lat 43°08'03", long 89°43'56", in SW 1/4 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 mi², of which 2.8 mi² probably is noncontributing.

WATER-DISCHARGE RECORDS

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 National Geodetic Vertical Datum of 1929.

REMARKS.--Estimated daily discharges: Ice-affected periods, Dec. 2, 3, 12, 14-27, Jan. 4, and Feb. 24-25. Records good except those for estimated daily discharges, which are fair.

AVERAGE DISCHARGE.--36 years, 33.3 ft³/s, 10.57 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,750 ft³/s, July 3, 1954, gage height, 6.58 ft; minimum, 4.8 ft³/s, Nov. 29, 1958, gage height, 1.39 ft, result of freezeup.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 200 ft³/s and maximum (*):

DATE	TIME	DISCHARGE (ft ³ /s)	GAGE HEIGHT (ft)	DATE	TIME	DISCHARGE (ft ³ /s)	GAGE HEIGHT (ft)
Mar. 9	0215	*401	4.31	June 29	1245	366	*4.35
Mar. 11	1815	336	3.82				

Minimum daily discharge, 17 ft³/s, Sept. 27-30.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21	22	20	20	23	22	24	22	22	54	21	18
2	22	22	20	20	23	38	25	22	41	43	20	18
3	22	21	20	20	22	38	24	22	55	38	19	18
4	22	24	20	20	21	24	24	24	38	36	20	18
5	28	22	21	20	27	21	24	23	34	32	21	20
6	25	22	21	20	37	21	23	22	30	30	20	20
7	23	23	19	20	26	20	23	22	27	28	20	20
8	22	23	20	20	43	117	23	22	26	27	20	20
9	22	23	19	22	36	197	23	27	24	26	20	19
10	23	23	20	23	24	77	27	40	23	24	20	20
11	23	22	19	22	22	181	24	33	22	24	21	19
12	23	21	20	20	22	85	23	29	21	23	22	20
13	22	21	19	19	23	77	23	28	21	23	21	20
14	23	21	19	20	21	112	26	26	21	26	20	24
15	23	21	19	21	22	121	24	26	19	25	21	21
16	37	21	19	24	21	63	23	34	21	24	22	19
17	28	20	19	109	20	53	22	29	23	24	22	19
18	25	19	19	42	20	46	22	26	21	26	37	19
19	23	19	19	25	20	41	22	36	20	25	51	20
20	24	20	19	24	20	37	23	46	19	25	67	19
21	24	20	19	23	21	36	22	36	20	23	38	20
22	23	21	19	23	21	36	22	32	28	23	29	18
23	22	20	19	23	21	33	22	29	26	22	24	18
24	22	19	19	49	21	31	22	28	22	22	24	20
25	22	20	19	44	20	30	22	28	21	22	25	19
26	22	21	19	24	20	29	22	26	22	21	22	18
27	22	22	19	23	21	28	23	25	21	22	22	17
28	21	24	19	22	21	27	28	24	24	21	21	17
29	21	21	19	22	---	25	25	23	268	22	20	17
30	24	21	19	22	---	24	23	23	79	21	19	17
31	24	---	20	21	---	24	---	23	---	21	19	---
TOTAL	728	639	601	827	659	1714	703	856	1059	823	768	572
MEAN	23.5	21.3	19.4	26.7	23.5	55.3	23.4	27.6	35.3	26.5	24.8	19.1
MAX	37	24	21	109	43	197	28	46	268	54	67	24
MIN	21	19	19	19	20	20	22	22	19	21	19	17
CFSM	.55	.50	.45	.62	.55	1.29	.55	.65	.82	.62	.58	.45
IN.	.63	.56	.52	.72	.57	1.49	.61	.74	.92	.72	.67	.50
CAL YR 1989	TOTAL 10089	MEAN 27.6	MAX 194	MIN 19	CFSM .65	IN. 8.77						
WTR YR 1990	TOTAL 9949	MEAN 27.3	MAX 268	MIN 17	CFSM .64	IN. 8.65						

05406500 BLACK EARTH CREEK AT BLACK EARTH, WI--CONTINUED

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1975 to September 1977, October 1984 to September 1986, and October 1989 to September 1990.

REMARKS.--Bacteria analyses by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)	DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)			
OCT 1989					MAY 1990							
12...	1335	22	590	13.5	02...	1230	22	600	13.5			
NOV 16...	1355	20	620	4.5	JUN 06...	1620	29	570	17.5			
DEC 12...	1600	20	605	0.0	13...	1405	25	605	18.5			
29...	1220	19	670	3.0	JUL 11...	1400	42	596	19.5			
JAN 1990					AUG 01...	0827	20	610	14.5			
18...	1350	33	500	4.0	13...	1030	43	612	15.5			
MAR 01...	1515	22	590	7.5	SEP 21...	1245	21	620	14.5			
APR 09...	1000	22	578	10.0								
DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	TUR- BID- ITY (NTU) (00076)	OXYGEN, DIS- SOLVED (MG/L) (00300)	BARO- METRIC PRES- SURE (MM HG) (00025)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L) (00340)		
APR 1990												
09...	1000	22	578	8.3	10.0	2.4	12.2	749	110	13		
JUN 13...	1405	25	605	8.0	18.5	4.7	9.4	735	104	18		
JUL 11...	1400	42	596	8.4	19.5	6.5	14.2	734	161	18		
AUG 13...	1030	43	612	8.1	15.5	4.5	11.2	741	115	24		
DATE	TIME	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	ALKA- LINITY LAB (MG/L AS CACO3) (90410)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN,AM- MONIA + ORGANIC DIS- SOLVED (MG/L AS N) (00623)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00666)	SEDI- MENT, SUS- PENDED (MG/L) (80154)		
APR 1990												
09...		730	276	20	1.90	0.030	0.60	0.100	0.070	19		
JUN 13...		6900	288	21	2.10	0.070	0.50	0.150	0.120	85		
JUL 11...		140	290	24	2.40	0.010	0.70	0.180	0.130	34		
AUG 13...		2700	292	20	2.30	0.120	1.7	0.170	0.130	51		
DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	STREP- TOCOCCHI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD- NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	ARSENIC TOTAL (UG/L AS AS) (01002)	BORON, TOTAL RECOV- ERABLE (UG/L AS B) (01022)
JUL 1990												
11...	1400	42	30	320	68	36	10	1.4	15	11	<1	<10
DATE	TIME	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) (01034)	COBALT, TOTAL RECOV- ERABLE (UG/L AS CO) (01037)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) (01042)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE) (01045)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) (01051)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) (01055)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) (71900)	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI) (01067)	SELE- NIUM, TOTAL RECOV- ERABLE (UG/L AS SE) (01147)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) (01092)
JUL 1990												
11...	2	<1	5	410	2	40	<0.10	2	<1	<1	10	

WISCONSIN RIVER BASIN

05407000 WISCONSIN RIVER AT MUSCODA, WI
(NATIONAL STREAM-QUALITY ACCOUNTING NETWORK STATION)

LOCATION.--Lat 43°11'54", long 90°26'26", in NW 1/4 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 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--December 1902 to December 1903, October 1913 to current year. Monthly discharge only 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 National Geodetic Vertical Datum 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.--Estimated daily discharges: Nov. 9-14 and ice periods listed in rating tables below. Records good except those for estimated daily discharges, which are fair. Flow regulated by 23 reservoirs and many power-plants 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 less than 20 ft³/s was diverted out of basin through Portage Canal to Fox River throughout the year. Gage-height telemeter and data-collection platform at station.

AVERAGE DISCHARGE.--77 years (1914-90), 8,661 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 80,800 ft³/s, Sept. 16, 1938, gage height, 11.48 ft; minimum discharge, 1,240 ft³/s, July 4, 1988.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 42,600 ft³/s, June 18, gage height, 8.67 ft; minimum discharge, 2,050 ft³/s Oct. 1, gage height, 0.03 ft.

RATING TABLES (gage height, in feet, and discharge, in cubic feet per second).
(Shifting-control method used May 27 and May 29 to June 18; stage-discharge relation affected by ice Nov. 24-26, Nov. 30 to Feb. 10, Feb. 16-21, 26 and 27.)

Oct. 1 to June 18(1200)

June 18(1300) to Sept. 30

0.0	2,000	4.0	15,300	1.2	3,820	6.0	24,400
0.5	2,940	6.0	25,800	2.0	6,200	9.0	45,200
1.0	4,180	9.0	48,600	4.0	14,000		
2.0	7,260						

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2070	3730	2400	2900	4800	5560	8430	8400	8640	13900	7760	13200
2	2240	4670	3500	2500	5400	5360	8150	8060	8040	11900	7180	11500
3	2320	4890	4700	2600	5800	5930	6910	9360	7380	10600	6130	8250
4	2310	5380	3000	2700	5600	6140	6930	9230	7240	9500	4800	7930
5	2410	4990	2200	4000	5200	5450	8170	8690	7080	10300	5360	7930
6	2560	4620	3000	3600	4100	4610	6850	8090	7570	9540	9340	7950
7	2540	4400	4300	4300	4900	4920	6220	7920	8590	9000	10400	6800
8	2540	4510	3500	4500	6000	6970	6170	6000	9530	7180	6880	7000
9	3130	4300	2600	4000	6200	7800	5700	5680	8710	6470	5270	7590
10	3200	4300	3600	4300	6600	8700	5270	7660	9060	6200	4820	8550
11	2780	4300	3800	5400	6560	9180	6070	6710	9310	5940	4930	7900
12	2720	4300	3100	5000	6350	9960	5520	7840	7530	6910	5430	7330
13	3080	4300	2600	5200	5620	10300	4730	10600	6550	6060	5350	7170
14	3000	3470	2900	4800	5680	12700	5690	10600	8590	5900	4600	7710
15	2990	3740	2900	4500	5910	14700	5130	10900	13500	5670	4630	8530
16	3200	3620	2700	3300	4000	14800	5030	12300	21300	4390	5200	8930
17	3540	3340	2400	3100	4600	14500	5010	13500	29400	4210	4320	11200
18	3990	3670	2300	4500	4400	15500	4790	13600	40800	3990	5170	14100
19	4140	4270	3100	5200	4000	19400	5170	13900	38400	4070	5870	15900
20	4470	3700	3200	5200	5200	21000	5400	15600	24400	4160	7890	12600
21	3630	3370	2900	5400	5000	16200	5640	16900	17900	4330	11700	10100
22	3800	3340	2400	4600	5210	12600	5670	18800	16100	4540	16700	9150
23	3690	3480	3100	3600	5220	11100	5640	22800	17100	4660	17500	9480
24	3550	3000	2400	4200	4910	10200	5390	23300	14700	4720	15400	9700
25	3450	2400	2500	4700	4890	9960	5010	18700	15000	4970	13600	8130
26	3330	2300	2500	4800	3500	9300	5450	14300	12900	4540	13000	8500
27	3200	3440	2500	5200	3300	9470	5780	11400	10600	4190	12000	8160
28	3110	3950	3000	5000	5030	9220	6830	12200	11500	4140	11300	8040
29	3160	3680	3500	4400	---	8970	7640	11400	15100	4200	12600	7610
30	3370	2500	3400	3300	---	8940	8580	10800	16600	5010	14500	6830
31	3480	---	2900	3600	---	8520	---	9670	---	7030	14800	---
TOTAL	97000	115960	92900	130400	143980	317960	182970	364910	429120	198220	274430	273770
MEAN	3129	3865	2997	4206	5142	10260	6099	11770	14300	6394	8853	9126
MAX	4470	5380	4700	5400	6600	21000	8580	23300	40800	13900	17500	15900
MIN	2070	2300	2200	2500	3300	4610	4730	5680	6550	3990	4320	6800

CAL YR 1989 TOTAL 2117550 MEAN 5802 MAX 24000 MIN 2070
WTR YR 1990 TOTAL 2621620 MEAN 7183 MAX 40800 MIN 2070

05407000 WISCONSIN RIVER AT MUSCODA, WI--CONTINUED
(NATIONAL STREAM-QUALITY ACCOUNTING NETWORK STATION)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1964-67, 1971, 1975 to current year. National Stream-Quality Accounting Network data collection began in October 1974.

REMARKS.--Samples on May 7, 1990, were replicates collected to investigate the variation in reported values for selected water-quality constituents and properties caused by sample collection and processing.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	TUR- BID- ITY (NTU) (00076)	OXYGEN, DIS- SOLVED (MG/L) (00300)	BARO- METRIC PRES- SURE (MM OF HG) (00025)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)
OCT 1989										
05...	1230	--	2410	290	8.5	11.5	3.3	10.3	743	97
DEC										
28...	1300	3000	--	326	8.1	0.0	1.5	11.5	740	81
MAR 1990										
20...	1210	--	20700	280	7.7	4.0	12	11.6	758	89
MAY										
07...	1100*	--	8320	247	8.3	18.0	4.2	8.0	733	88
07...	1101*	--	8320	241	7.6	18.5	4.3	8.3	741	91
07...	1102*	--	8320	228	7.8	19.0	4.0	8.5	738	95
07...	1103*	--	8320	290	8.2	16.0	4.2	9.3	740	97
07...	1104*	--	8320	247	8.2	17.0	4.5	9.3	735	100
07...	1105*	--	8320	241	7.9	18.0	3.7	8.9	737	97
07...	1106*	--	8320	242	7.9	18.0	3.5	9.0	737	98
07...	1107*	--	8320	255	7.9	18.0	4.5	9.2	732	101
07...	1108*	--	8320	246	7.5	18.0	4.2	8.2	740	89
JUN										
22...	1000	--	15400	195	7.9	21.5	46	6.8	742	79
AUG										
15...	0930	--	4650	215	9.0	24.0	15	10.0	740	123

DATE	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP- TOCOCCHI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD- NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)
OCT 1989									
05...	49	68	140	31	14	8.3	12	0.3	2.3
DEC									
28...	K14	K7	150	34	16	11	13	0.4	2.2
MAR 1990									
20...	35	290	83	18	9.1	16	28	0.8	4.7
MAY									
07...	K9	9	95	22	9.7	11	19	0.5	3.3
07...	K8	K8	95	22	9.8	11	19	0.5	3.4
07...	K6	20	96	22	9.9	11	19	0.5	3.4
07...	K6	9	96	22	10	11	19	0.5	3.8
07...	K7	K10	96	22	9.9	11	19	0.5	3.3
07...	4	130	95	22	9.7	11	19	0.5	3.4
07...	K8	50	96	22	10	11	19	0.5	3.4
07...	K10	K15	96	22	9.9	11	19	0.5	3.4
07...	K9	K20	96	22	9.9	11	19	0.5	3.4
JUN									
22...	56	190	75	18	7.4	8.6	19	0.4	2.7
AUG									
15...	67	K15	82	17	9.5	7.1	15	0.3	2.3

* REPLICATE SAMPLES.

K RESULTS BASED ON COUNT OUTSIDE OF THE ACCEPTABLE RANGE (NON-IDEAL COLONY COUNT).

WISCONSIN RIVER BASIN

05407000 WISCONSIN RIVER AT MUSCODA, WI--CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	BICAR- BONATE WATER DIS IT FIELD MG/L AS HCO3 (00453)	CAR- BONATE WATER DIS IT FIELD MG/L AS CO3 (00452)	ALKA- LINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)
OCT 1989									
05...	129	6	116	13	11	0.10	1.6	158	152
DEC									
28...	156	--	128	18	16	0.10	5.9	203	184
MAR 1990									
20...	91	--	74	20	20	0.10	6.1	176	143
MAY									
07...	85	6	80	16	17	0.10	1.0	141	131
07...	99	--	81	16	17	0.10	1.1	144	132
07...	93	--	76	16	17	0.10	1.1	141	129
07...	--	--	82	16	17	0.10	1.1	139	132
07...	--	--	80	16	17	0.10	1.1	141	132
07...	91	--	75	16	17	0.20	1.0	140	128
07...	98	--	80	16	17	0.10	1.1	144	131
07...	93	--	76	16	17	0.10	1.0	146	129
07...	--	--	78	16	16	0.10	1.0	144	131
JUN									
22...	68	--	56	14	11	0.10	3.8	119	102
AUG									
15...	77	9	78	13	11	<0.10	5.4	138	112
DATE	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS- SOLVED (TONS PER DAY) (70302)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)
OCT 1989									
05...	0.21	1030	0.350	0.020	0.020	0.60	0.070	0.020	<0.010
DEC									
28...	0.28	1640	0.830	0.190	0.200	1.0	0.030	<0.010	0.020
MAR 1990									
20...	0.24	9840	0.800	0.350	0.340	1.4	0.100	0.090	0.050
MAY									
07...	0.19	3170	0.500	0.060	0.050	1.0	0.060	0.020	0.020
07...	0.20	3230	0.500	0.050	0.050	1.1	0.050	0.030	0.020
07...	0.19	3170	0.500	0.050	0.040	1.0	0.050	0.020	0.020
07...	0.19	3120	0.500	0.050	0.050	0.80	0.070	0.020	0.020
07...	0.19	3170	0.500	0.050	0.050	0.90	0.070	0.020	0.010
07...	0.19	3140	0.500	0.050	0.050	0.90	0.050	0.020	0.010
07...	0.20	3230	0.500	0.060	0.050	0.60	0.110	0.020	0.020
07...	0.20	3280	0.500	0.060	0.050	1.2	0.060	0.020	0.020
07...	0.20	3230	0.500	0.050	0.050	0.80	0.050	0.030	0.020
JUN									
22...	0.16	4950	0.700	0.100	0.070	1.3	0.120	0.050	0.010
AUG									
15...	0.19	1730	<0.100	0.030	0.010	1.2	0.160	0.040	0.020

WISCONSIN RIVER BASIN

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05407000 WISCONSIN RIVER AT MUSCODA, WI--CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	ALUM- INUM, DIS- SOLVED (UG/L AS AL) (01106)	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE) (01010)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	COBALT, DIS- SOLVED (UG/L AS CO) (01035)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, DIS- SOLVED (UG/L AS FE) (01046)
OCT 1989											
05...	1230	2410	20	<1	23	<0.5	<1.0	<1	<3	2	20
MAR 1990											
20...	1210	20700	<10	<1	33	<0.5	1.0	<5	<3	<10	250
MAY											
07...	1100*	8320	20	<1	30	<0.5	3.0	<1	<3	10	130
07...	1101*	8320	<10	<1	24	<0.5	<1.0	<1	<3	2	200
07...	1102*	8320	20	<1	22	<0.5	<1.0	<1	<3	4	180
07...	1103*	8320	<10	<1	24	<0.5	<1.0	<1	<3	2	170
07...	1104*	8320	<10	<1	28	<0.5	2.0	<1	<3	4	140
07...	1105*	8320	20	<1	26	<0.5	1.0	<1	<3	2	130
07...	1106*	8320	<10	<1	27	<0.5	<1.0	1	<3	2	150
07...	1107*	8320	10	<1	25	<0.5	<1.0	<1	<3	5	120
07...	1108*	8320	<10	<1	24	<0.5	<1.0	<1	<3	3	150
AUG											
15...	0930	4650	30	1	15	<0.5	<1.0	<1	<3	6	44

DATE	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	LITHIUM DIS- SOLVED (UG/L AS LI) (01130)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	MERCURY DIS- SOLVED (UG/L AS HG) (71890)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO) (01060)	NICKEL, DIS- SOLVED (UG/L AS NI) (01065)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	STRON- TIUM, DIS- SOLVED (UG/L AS SR) (01080)	VANA- DIUM, DIS- SOLVED (UG/L AS V) (01085)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)
OCT 1989										
05...	<1	<4	17	<0.1	<10	3	<1	44	<6	21
MAR 1990										
20...	20	<4	37	0.1	<10	<10	<1	44	<6	40
MAY										
07...	1	<4	21	<0.1	<10	1	<1	38	<6	15
07...	1	<4	17	<0.1	<10	1	<1	38	<6	8
07...	<1	<4	16	<0.1	<10	1	<1	38	<6	6
07...	1	<4	21	<0.1	<10	2	<1	38	<6	12
07...	1	<4	16	<0.1	<10	1	<1	38	<6	46
07...	1	<4	16	2.1	<10	1	<1	38	<6	14
07...	1	<4	18	<0.1	<10	1	<1	39	<6	15
07...	1	<4	16	<0.1	<10	1	<1	38	<6	13
07...	1	<4	16	<0.1	<10	1	<1	38	<6	6
AUG										
15...	1	<4	8	<0.1	<10	3	<1	32	<6	5

DATE	TIME	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT 1989								
05...	1230	--	2410		290	11.5	17	111
DEC								
28...	1300	3000	--		326	0.0	3	24
MAR 1990								
20...	1210	--	20700		280	4.0	114	6370
MAY								
07...	1100*	--	8320		247	18.0	10	225
07...	1101*	--	8320		241	18.5	7	157
07...	1102*	--	8320		228	19.0	11	247
07...	1103*	--	8320		290	16.0	11	247
07...	1104*	--	8320		247	17.0	13	292
07...	1105*	--	8320		241	18.0	23	517
07...	1106*	--	8320		242	18.0	20	449
07...	1107*	--	8320		255	18.0	--	--
07...	1108*	--	8320		246	18.0	12	270
JUN								
22...	1000	--	15400		195	21.5	18	748
AUG								
15...	0930	--	4650		215	24.0	15	188

* REPLICATE SAMPLES.

WISCONSIN RIVER BASIN

05408000 KICKAPOO RIVER AT LA FARGE, WI

LOCATION.--Lat 43°34'27", long 90°38'35", on east-west quarter section line in W 1/2 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 mi².

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 National Geodetic Vertical Datum of 1929. Prior to Dec. 4, 1939, nonrecording gage on highway bridge at same datum.

REMARKS.--Estimated daily discharge: Mar. 12, 15, Mar. 21 to Apr. 16, May 28 to June 7, Aug. 25-28, and ice period listed in rating table below. Records good except those for estimated daily discharges, which are poor. Gage-height telemeter at station.

AVERAGE DISCHARGE.--52 years, 177 ft³/s, 9.04 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,300 ft³/s, July 1, 1978, gage height, 14.92 ft; minimum, 1.8 ft³/s, Mar. 24, 1951; minimum daily, 36 ft³/s, Nov. 3, 1939.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,700 ft³/s and maximum (*):

DATE	TIME	DISCHARGE (ft ³ /s)	GAGE HEIGHT (ft)	DATE	TIME	DISCHARGE (ft ³ /s)	GAGE HEIGHT (ft)
(a)	----	1,950	10.09	June 29	1715	*2,340	*10.75
Mar. 14	1730	1,900	9.93	Aug. 5	0330	2,100	10.17

(a) Sometime during period Mar. 11-12.

Minimum daily discharge, 76 ft³/s, Dec. 22-27.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Shifting-control method used Oct. 1 to Nov. 21, Mar. 13, 14, 16-20, May 10, 20, and June 23; stage-discharge relation affected by ice Nov. 22 to Mar. 11.)

2.0	66	6.0	813
3.0	188	8.0	1,380
4.0	359	10.0	2,040

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	79	148	98	80	92	90	120	125	130	279	114	168
2	80	125	94	80	88	92	120	116	120	217	109	160
3	79	114	90	80	86	92	120	114	120	189	117	153
4	79	112	90	80	84	92	120	111	120	172	1550	149
5	92	121	88	82	84	96	120	110	130	158	1100	144
6	117	123	88	82	88	100	120	109	120	146	244	143
7	98	122	88	82	92	110	120	107	120	158	184	141
8	93	128	88	90	200	120	120	106	125	210	162	138
9	92	120	88	150	450	150	120	147	125	159	147	136
10	93	118	88	170	250	250	120	374	119	147	141	186
11	100	114	88	150	200	700	120	257	114	142	137	164
12	97	111	84	130	180	1600	120	178	120	135	132	140
13	92	107	84	100	340	430	120	161	250	129	127	136
14	91	107	84	82	200	1420	120	145	242	127	123	171
15	91	107	84	80	150	700	130	161	155	128	129	216
16	106	106	82	82	130	340	130	165	163	126	155	152
17	131	97	82	100	110	216	144	158	338	122	127	142
18	105	147	80	240	100	182	130	145	260	120	326	137
19	99	168	78	190	92	161	126	204	167	127	886	150
20	98	141	78	140	88	149	146	621	169	149	759	143
21	98	133	78	110	84	150	152	286	158	129	275	136
22	98	100	76	100	84	140	139	209	319	119	209	133
23	96	98	76	90	84	140	132	183	726	116	177	131
24	95	94	76	90	82	140	129	213	256	112	171	130
25	94	94	76	88	80	130	125	193	197	109	500	128
26	93	94	76	88	80	130	120	177	201	106	1000	127
27	92	94	76	92	82	130	120	167	211	106	600	124
28	93	90	78	92	84	130	143	160	247	113	345	123
29	102	84	78	90	---	120	158	150	1900	137	246	119
30	131	88	80	88	---	120	136	140	574	140	201	118
31	226	---	80	90	---	120	---	140	---	126	180	---
TOTAL	3130	3405	2574	3288	3764	8540	3840	5632	7996	4453	10673	4338
MEAN	101	113	83.0	106	134	275	128	182	267	144	344	145
MAX	226	168	98	240	450	1600	158	621	1900	279	1550	216
MIN	79	84	76	80	80	90	120	106	114	106	109	118
CFSM	.38	.43	.31	.40	.51	1.04	.48	.68	1.00	.54	1.29	.54
IN.	.44	.48	.36	.46	.53	1.19	.54	.79	1.12	.62	1.49	.61

CAL YR 1989 TOTAL 47644 MEAN 131 MAX 1330 MIN 76 CFSM .49 IN. 6.66
WTR YR 1990 TOTAL 61633 MEAN 169 MAX 1900 MIN 76 CFSM .63 IN. 8.62

WISCONSIN RIVER BASIN

361

05410490 KICKAPOO RIVER AT STEUBEN, WI

LOCATION.--Lat 43°10'58", long 90°51'30", in NE 1/4 SW 1/4 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 mi².

PERIOD OF RECORD.--May 1933 to current year.

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 National Geodetic Vertical Datum 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.--Estimated daily discharges: Ice-affected period, Nov. 24 to Mar. 10. Records good except for ice-affected period, which is poor. Data-collection platform and gage-height telemeter at station.

AVERAGE DISCHARGE.--57 years, 482 ft³/s, 9.53 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,500 ft³/s, July 3, 1978, gage height, 14.81 ft; minimum observed, 161 ft³/s, Aug. 9, 1936, gage height, 0.76 ft site and datum then in use.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,900 ft³/s and maximum (*):

DATE	TIME	DISCHARGE (ft ³ /s)	GAGE HEIGHT (ft)	DATE	TIME	DISCHARGE (ft ³ /s)	GAGE HEIGHT (ft)
June 30	0400	*2,180	*11.84	No other peak greater than base discharge.			
Minimum daily discharge, 230 ft ³ /s, Dec. 22-27.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	241	418	300	250	280	250	388	372	378	1890	419	514
2	240	412	280	250	270	280	395	347	368	1790	377	475
3	238	350	280	250	260	390	406	332	369	1260	365	454
4	242	331	270	250	260	420	416	326	382	772	373	435
5	253	324	270	250	260	360	406	321	397	638	881	419
6	273	326	270	250	270	290	412	316	376	564	1170	409
7	288	333	270	250	280	270	398	311	364	523	1160	400
8	291	334	270	250	330	310	381	306	362	519	697	393
9	271	334	270	260	600	540	372	316	348	557	511	388
10	265	331	270	280	680	820	409	356	335	536	460	380
11	266	320	270	300	540	1150	433	479	325	486	435	401
12	269	314	270	280	400	1350	434	535	320	465	425	433
13	271	309	260	260	470	1420	405	430	332	448	407	392
14	266	303	260	250	500	1550	393	388	479	433	397	373
15	262	301	250	250	440	1660	389	368	556	424	390	381
16	286	298	250	250	350	1750	388	375	448	420	381	443
17	288	292	250	290	350	1760	392	389	422	415	410	412
18	297	280	250	380	330	1420	388	380	471	407	430	374
19	302	258	240	430	310	737	385	387	581	412	474	373
20	281	290	240	400	300	575	378	476	449	430	932	383
21	275	302	240	310	300	513	386	765	404	437	1180	388
22	274	296	230	280	290	492	401	753	432	425	916	370
23	274	272	230	280	280	486	388	551	551	400	623	361
24	271	300	230	270	280	481	370	489	891	389	631	358
25	269	290	230	270	270	450	359	468	781	383	1020	356
26	267	290	230	270	260	428	351	491	537	376	1150	351
27	265	290	230	280	260	414	349	455	500	371	1240	345
28	266	290	240	280	250	403	362	454	533	371	1200	339
29	275	310	240	280	---	395	378	451	1520	375	1140	334
30	311	320	250	280	---	390	389	428	2110	391	766	332
31	367	---	250	280	---	384	---	395	---	472	595	---
TOTAL	8504	9418	7890	8710	9670	22138	11701	13210	16321	17779	21555	11766
MEAN	274	314	255	281	345	714	390	426	544	574	695	392
MAX	367	418	300	430	680	1760	434	765	2110	1890	1240	514
MIN	238	258	230	250	250	250	349	306	320	371	365	332
CFSM	.40	.46	.37	.41	.50	1.04	.57	.62	.79	.83	1.01	.57
IN.	.46	.51	.43	.47	.52	1.20	.63	.72	.88	.96	1.17	.64

CAL YR 1989 TOTAL 128735 MEAN 353 MAX 1900 MIN 230 CFSM .51 IN. 6.97
WTR YR 1990 TOTAL 158662 MEAN 435 MAX 2110 MIN 230 CFSM .63 IN. 8.59

RESERVOIRS IN WISCONSIN RIVER BASIN

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 Dubay 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 ft³. Drainage area, 34.4 mi².
- 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 ft³. Drainage area, 26 mi².
- 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 ft³. Drainage area, 16.9 mi².
- 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 ft³. Drainage area, 12.1 mi².
- 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 ft³. Drainage area, 28.8 mi².
- 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 ft³. This reservoir includes 18 lakes controlled by the same dam. Drainage area, 142 mi².
- 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 ft³. Drainage area, 22.9 mi².
- 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 ft³. Drainage area, 2.47 mi².
- 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 ft³. Drainage area, 48.4 mi².
- 05390700 Little St. Germain Lake on Little St. Germain Creek, lat 45°53'57", long 89°27'08", 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 ft³. Drainage area, 19 mi².
- 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 ft³. Drainage area, 73.1 mi².
- 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 ft³. Drainage area, 86.2 mi².
- 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 ft³. Drainage area, 744 mi².
- 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 ft³. Drainage area, 19.8 mi².
- 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 ft³. Drainage area, 95 mi².
- 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 ft³. Drainage area, 72.5 mi².
- 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 ft³. Drainage area, 15.2 mi².
- 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 ft³. Drainage area, 310 mi².
- 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 ft³. Drainage area, 544 mi².
- 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 ft³. Drainage area, 158 mi².

RESERVOIRS IN WISCONSIN RIVER BASIN--CONTINUED

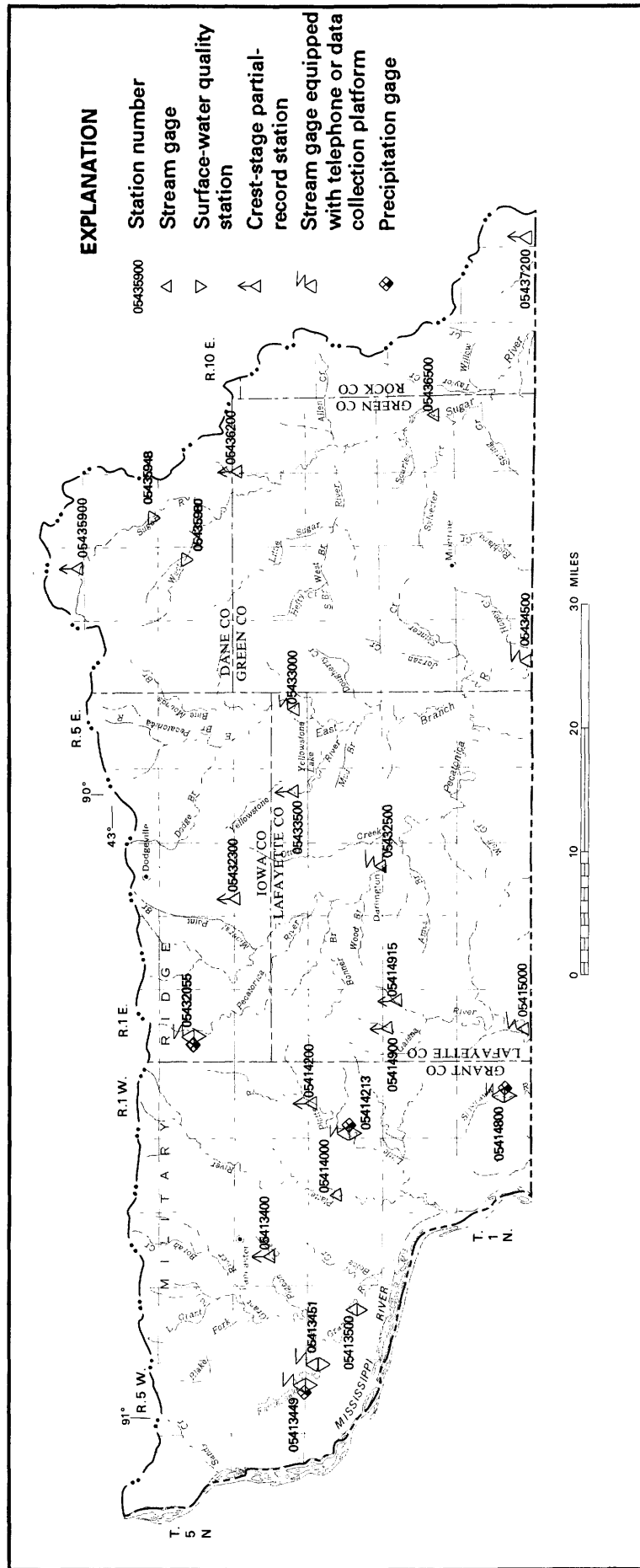
- 05399600 Big Eau Pleine Reservoir on Big Eau Pleine River, lat 44°43'52", long 89°45'35", in SW 1/4 sec.14, T.26 N., R.6 E., Marathon County, 3.0 mi northeast of Dancy, used as a reservoir since 1937, has a capacity of 4,457,000,000 ft³. Drainage area, 363 mi².
- 05400295 Lake Dubay on Wisconsin River, 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 ft³. Drainage area, 4,900 mi².
- 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 ft³. Drainage area, 5,970 mi².
- 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 ft³. Drainage area, 7,056 mi².

MONTH-END CONTENTS, IN MILLIONS OF CUBIC FEET, WATER YEAR OCTOBER 1989 to SEPTEMBER 1990

	LAC VIEUX DESERT	TWIN LAKES	BUCKATABON LAKE	SEVENMILE LAKE	LOWER NINEMILE LAKE	BURNT ROLLWAYS RESERVOIR	LONG LAKE	DEERSKIN LAKE
SEPT. 30.....	123	98	110	48	100	371	178	16
OCT. 31.....	111	92	115	56	103	383	165	18
NOV. 30.....	67	111	90	47	90	441	130	15
DEC. 31.....	54	126	39	34	39	304	78	15
JAN. 31.....	15	101	17	24	12	160	11	15
FEB. 28.....	48	101	14	16	36	19	0	14
MAR. 31.....	113	147	50	26	81	184	87	18
APR. 30.....	163	186	83	25	97	329	157	18
MAY 31.....	167	214	110	60	100	571	197	20
JUNE 30.....	207	251	114	64	103	558	207	21
JULY 31.....	185	239	115	61	100	555	198	22
AUG. 31.....	167	228	114	65	101	575	183	22
SEPT. 30.....	209	255	114	62	99	575	185	20

	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.....	352	36	151	249	465	172	89	277
OCT. 31.....	340	34	162	267	296	170	92	255
NOV. 30.....	293	39	106	256	625	179	104	288
DEC. 31.....	81	31	45	220	1,055	170	58	307
JAN. 31.....	132	23	32	206	1,222	155	18	367
FEB. 28.....	143	21	2	160	1,040	172	9	384
MAR. 31.....	263	40	82	250	1,397	219	72	459
APR. 30.....	316	45	153	266	1,274	244	145	488
MAY 31.....	395	59	156	264	1,706	277	148	496
JUNE 30.....	397	64	163	273	1,993	274	148	493
JULY 31.....	408	62	158	275	1,635	271	140	488
AUG. 31.....	399	56	156	264	1,424	292	143	511
SEPT. 30.....	396	69	155	265	2,088	266	142	493

	SQUIRREL LAKE	WILLOW RESERVOIR	LAKE NOKOMIS	SPIRIT RIVER FLOWAGE	BIG EAU PLEINE RESERVOIR	LAKE DUBAY	PETENWELL FLOWAGE	CASTLE ROCK FLOWAGE
SEPT. 30.....	126	1,346	696	126	2,274	4,113	17,474	5,780
OCT. 31.....	123	1,167	474	91	1,822	4,217	17,808	5,850
NOV. 30.....	125	1,195	520	147	1,661	4,163	17,703	5,760
DEC. 31.....	73	1,117	409	137	1,406	3,990	17,580	5,690
JAN. 31.....	34	919	453	172	1,330	3,798	16,142	5,431
FEB. 28.....	36	791	399	192	1,278	3,228	14,854	4,188
MAR. 31.....	74	1,207	952	690	3,747	3,792	17,588	5,748
APR. 30.....	108	1,442	1,374	729	4,232	4,439	18,002	5,844
MAY 31.....	139	2,189	1,714	697	4,376	4,490	18,204	6,438
JUNE 30.....	159	2,385	1,726	697	4,424	4,172	17,580	5,812
JULY 31.....	165	2,220	1,381	568	3,836	4,160	17,659	5,831
AUG. 31.....	166	2,240	1,600	715	4,193	4,150	17,544	5,735
SEPT. 30.....	170	3,175	1,712	708	4,319	4,088	17,624	5,696



PECATONICA-SUGAR RIVER BASIN

05413449 RATTLESNAKE CREEK NEAR NORTH ANDOVER, WI

LOCATION.--Lat 42°46'49", long 90°56'32", in SE 1/4 NE 1/4 sec.34, T.4 N., R.5 W., Grant County, Hydrologic Unit 07060003, on right bank 100 ft upstream of Atkinson Road, 2.7 mi southeast of North Andover.

DRAINAGE AREA.--42.4 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 5, 1987 to current year.

REVISED RECORD.--WDR WI-89-1: 1987-88.

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

REMARKS.--Estimated daily discharges: Ice periods listed in rating table below. Records good except those for ice-affected periods, which are poor. Gage-height telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,130 ft³/s, July 30, 1987, gage height, 6.20 ft; minimum daily, 5.0 ft³/s, Aug. 15, 16, 1990.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 384 ft³/s, Mar. 8, gage height, 4.19 ft; maximum gage height, 4.49 ft, Jan. 17, backwater from ice; minimum daily, 5.0 ft³/s, Aug. 15, 16.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Shifting-control method used May 27, 30, 31, June 1, 3-15, and 18-21; stage discharge relation affected by ice Nov. 17, 18, Nov. 22 to Feb. 11, and Feb. 16 to Mar. 6.)

1.7	4.1	2.3	37
1.8	6.8	2.6	69
1.9	11	3.0	125
2.0	16	3.5	216

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.3	11	6.4	6.2	13	15	10	8.2	9.9	11	5.9	12
2	6.9	9.0	6.4	6.2	9.0	21	11	7.8	17	10	5.8	11
3	6.8	8.4	6.4	6.2	8.6	14	9.4	7.8	14	9.8	6.1	11
4	6.8	8.6	6.4	6.2	12	10	9.6	9.1	10	8.9	6.2	11
5	11	8.6	6.4	6.2	50	8.8	8.7	8.7	10	8.5	5.6	10
6	8.9	8.4	6.4	6.2	40	8.4	8.2	7.8	10	7.9	5.4	10
7	7.3	9.8	6.4	6.2	33	9.1	8.2	7.5	9.9	7.9	5.4	10
8	6.9	9.4	6.4	6.8	40	159	8.5	7.3	12	8.1	5.4	9.7
9	6.9	8.7	6.4	8.2	17	44	9.1	37	11	7.6	5.4	9.6
10	7.2	8.5	6.4	7.8	10	19	12	22	9.3	7.4	5.7	9.4
11	7.3	8.2	6.2	7.2	9.4	48	9.5	13	9.0	7.4	5.7	8.6
12	7.2	7.9	6.2	6.8	11	26	8.6	11	9.2	8.1	5.6	8.8
13	7.1	8.3	6.2	6.4	13	20	9.1	10	11	7.5	5.5	8.9
14	7.3	8.2	6.2	6.4	15	28	11	9.5	13	7.5	5.4	9.0
15	7.3	8.2	6.0	7.0	9.7	31	10	9.8	9.4	7.5	5.0	8.6
16	14	7.6	6.0	10	9.0	18	9.4	20	18	7.1	5.0	8.4
17	8.5	7.6	5.8	100	8.8	15	9.5	12	32	6.9	14	8.1
18	7.3	7.4	5.8	20	8.6	13	8.5	9.7	15	7.8	8.9	7.8
19	6.8	7.4	5.8	13	8.4	11	8.9	32	11	13	39	8.5
20	7.0	8.3	5.8	10	8.4	11	12	39	13	17	30	8.0
21	7.1	7.5	5.6	10	8.6	11	11	18	10	11	16	8.3
22	6.9	7.2	5.6	9.6	8.6	12	9.4	14	51	8.0	11	7.8
23	7.0	7.0	5.6	9.6	12	9.5	9.0	12	30	7.1	9.0	7.5
24	7.0	6.8	5.6	30	9.6	9.6	8.8	10	19	6.7	9.3	7.4
25	7.1	7.4	5.6	20	9.4	9.4	8.1	10	15	6.8	91	7.8
26	7.0	7.6	5.6	14	9.0	9.2	8.6	11	26	6.6	70	7.6
27	6.8	8.0	5.8	12	9.4	9.2	11	9.3	21	7.2	32	7.7
28	8.2	7.4	5.8	14	11	9.2	12	17	14	7.9	20	7.9
29	9.5	6.8	6.2	11	---	9.5	10	15	14	10	16	7.6
30	18	6.6	6.2	10	---	9.5	9.0	10	13	7.6	14	7.9
31	16	---	6.2	11	---	9.6	---	9.7	---	6.6	13	---
TOTAL	256.4	241.8	187.8	404.2	411.5	637.0	288.1	425.2	466.7	262.4	482.3	265.9
MEAN	8.27	8.06	6.06	13.0	14.7	20.5	9.60	13.7	15.6	8.46	15.6	8.86
MAX	18	11	6.4	100	50	159	12	39	51	17	91	12
MIN	6.8	6.6	5.6	6.2	8.4	8.4	8.1	7.3	9.0	6.6	5.0	7.4
CFSM	.20	.19	.14	.31	.35	.48	.23	.32	.37	.20	.37	.21
IN.	.22	.21	.16	.35	.36	.56	.25	.37	.41	.23	.42	.23

CAL YR 1989 TOTAL 4821.7 MEAN 13.2 MAX 300 MIN 5.6 CFSM .31 IN. 4.23
WTR YR 1990 TOTAL 4329.3 MEAN 11.9 MAX 159 MIN 5.0 CFSM .28 IN. 3.80

WATER-QUALITY RECORDS

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

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: July 1987 to current year.

DISSOLVED OXYGEN: July 1987 to current year.

INSTRUMENTATION.--Continuous water temperature and dissolved oxygen recorder since July 17, 1987. Automatic pump sampler since July 17, 1987.

REMARKS.--Water-quality analyses by the Wisconsin State Laboratory of Hygiene. Samples are point samples unless otherwise indicated.

EXTREMES FOR PERIOD OF RECORD.--

WATER TEMPERATURE: Maximum observed, 32.0°C, July 10, 1989; minimum observed, 0.0°C, on many days.

DISSOLVED OXYGEN: Maximum observed, 18.3 mg/L, Apr. 29, 1988, May 7, 1989; minimum observed, 0.0 mg/L, Sept. 17, 1987.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum observed, 30.0°C, July 4; minimum observed, 0.0°C, on many days.

DISSOLVED OXYGEN: Maximum observed, 16.7 mg/L, Apr. 15, 17; minimum observed, 0.05 mg/L, Aug. 25.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH (STAND- ARD UNITS) (00400)	PH LAB (STAND- ARD UNITS) (00403)	TUR- BID- ITY (NTU) (00076)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN DEMAND, CHEM- ICAL (LOW LEVEL) (MG/L) (00335)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L) (00310)	HARD- NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM TOTAL RECOV- ERABLE (MG/L AS CA) (00916)	MAGNE- SIUM, TOTAL RECOV- ERABLE (MG/L AS MG) (00927)
NOV 1989												
*30...	1217	6.6	--	--	8.1	4.7	--	--	--	--	--	--
JAN 1990												
*04...	1010	6.2	--	--	8.2	1.7	--	--	--	--	--	--
17...	0015	100	--	--	7.5	79	--	--	--	--	--	--
17...	0115	100	--	--	7.5	140	--	--	--	--	--	--
17...	0215	100	--	--	7.2	140	--	--	--	--	--	--
17...	0445	100	--	--	7.3	200	--	--	--	--	--	--
17...	1215	100	--	--	7.4	160	--	--	--	--	--	--
*18...	0815	100	--	--	7.6	24	--	--	--	--	--	--
FEB												
*23...	1115	12	--	8.2	8.2	--	--	--	--	--	--	--
MAR												
08...	1000	--	111	--	8.2	--	--	--	--	--	--	--
08...	1045	--	194	--	7.6	--	--	--	--	--	--	--
08...	1145	--	303	--	7.4	--	--	--	--	--	--	--
08...	1245	--	362	--	7.3	--	--	--	--	--	--	--
08...	1945	--	240	--	--	--	--	--	--	--	--	--
09...	0130	--	94	--	7.1	--	--	--	--	--	--	--
11...	0930	--	61	--	7.7	140	--	--	--	--	--	--
11...	1315	--	91	--	7.5	160	--	--	--	--	--	--
*12...	1151	--	26	--	8.0	23	--	--	--	--	--	--
MAY												
*02...	1026	--	8.0	--	--	--	--	--	--	--	--	--
*02...	1030	--	8.2	--	8.4	1.5	--	--	1.8	--	--	--
09...	0415	--	45	--	8.2	7.2	--	--	4.3	--	--	--
09...	1000	--	36	--	8.0	400	--	--	8.4	--	--	--
19...	1045	--	36	--	8.4	69	--	--	11	--	--	--
19...	2215	--	62	--	8.0	320	--	--	26	--	--	--
JUN												
02...	1915	--	32	--	8.1	--	--	--	15	--	--	--
*04...	0940	--	10	--	--	--	--	--	--	--	--	--
22...	0625	--	39	--	8.1	290	--	--	--	--	--	--
22...	0650	--	66	--	8.2	120	--	--	--	--	--	--
22...	0730	--	117	--	8.1	120	--	--	--	--	--	--
JUL												
*20...	1325	--	16	--	--	--	--	--	--	--	--	--
AUG												
*01...	1015	--	6.2	--	8.2	7.4	--	13	1.8	--	--	--
*01...	1040	--	6.2	--	8.2	68	--	16	3.4	--	--	--
*01...	1106	--	6.2	--	8.1	320	--	120	10	--	--	--
20...	0950	--	27	--	7.7	--	--	130	>22	210	43	24
*20...	0951	--	27	--	7.8	--	--	--	--	--	--	--
*23...	0950	--	9.3	--	8.3	--	--	26	2.8	370	81	42
25...	0100	--	34	--	8.3	--	--	36	--	380	78	44
25...	0300	--	54	--	8.2	--	--	62	--	350	73	41
25...	0530	--	54	--	7.9	--	--	150	--	290	61	34
25...	0545	--	200	--	7.7	--	--	190	--	310	65	36
25...	0600	--	210	--	7.8	--	--	210	--	330	72	38
25...	1730	--	68	--	7.8	--	--	95	--	190	39	21
26...	0615	--	31	--	8.0	--	--	65	--	230	50	26
26...	1100	--	68	--	8.0	--	--	72	--	260	55	31
26...	1145	--	158	--	8.0	--	--	150	--	310	66	36
27...	0145	--	45	--	8.0	--	--	66	--	230	49	26
SEP												
*11...	1130	--	8.6	--	--	--	--	15	1.5	380	79	45
*23...	1325	--	7.5	--	8.3	--	--	16	1.5	380	79	44

* EQUAL-WIDTH INCREMENT (EWI) SAMPLE.

05413449 RATTLESNAKE CREEK NEAR NORTH ANDOVER, WI--CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	SODIUM, TOTAL RECOV- ERABLE (MG/L AS NA) (00929)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDED (MG/L) (00530)	RESIDUE FIXED NON FILTER- ABLE (MG/L) (00540)	RESIDUE VOLA- TILE, SUS- PENDED (MG/L) (00535)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA) (01007)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) (01042)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE) (01045)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) (01055)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) (01092)
NOV 1989												
30...	--	11	--	--	4.70	0.250	0.120	--	--	--	--	--
JAN 1990												
04...	--	12	--	--	4.50	0.160	0.070	--	--	--	--	--
17...	--	304	--	--	2.80	2.40	1.78	--	--	--	--	--
17...	--	620	--	--	2.60	2.90	2.40	--	--	--	--	--
17...	--	560	--	--	2.60	3.40	2.65	--	--	--	--	--
17...	--	860	--	--	2.10	3.70	3.16	--	--	--	--	--
17...	--	660	--	--	2.40	4.40	3.24	--	--	--	--	--
18...	--	58	--	--	3.10	3.80	1.73	--	--	--	--	--
FEB												
23...	--	6	4	2	4.20	--	0.320	--	--	--	--	--
MAR												
08...	--	290	244	46	3.90	0.300	0.620	--	--	--	--	--
08...	--	1410	1230	176	2.80	1.90	2.85	--	--	--	--	--
08...	--	1960	1740	216	2.40	1.80	3.44	--	--	--	--	--
08...	--	2040	1800	240	2.50	2.40	4.04	--	--	--	--	--
08...	--	3480	2970	510	2.50	3.50	--	--	--	--	--	--
09...	--	908	668	240	3.20	3.60	3.46	--	--	--	--	--
11...	--	648	544	104	2.40	2.40	2.28	--	--	--	--	--
11...	--	664	548	116	2.70	3.60	3.86	--	--	--	--	--
12...	--	42	31	11	3.80	2.20	0.870	--	--	--	--	--
MAY												
02...	--	--	--	--	--	--	--	--	--	--	--	--
02...	--	2	--	--	1.22	--	0.185	--	--	--	--	--
09...	--	20	15	5	0.900	0.100	0.322	--	--	--	--	--
09...	--	2340	2160	180	0.900	0.200	2.56	--	--	--	--	--
19...	--	208	176	32	2.30	0.100	0.710	--	--	--	--	--
19...	--	1010	870	140	3.00	1.40	3.02	--	--	--	--	--
JUN												
02...	--	379	334	45	2.60	0.400	1.25	--	--	--	--	--
04...	--	37	28	9	3.50	0.200	0.470	--	--	--	--	--
22...	--	708	624	84	2.70	<0.100	1.32	--	--	--	--	--
22...	--	544	480	64	2.80	<0.100	1.08	--	--	--	--	--
22...	--	736	656	80	2.80	<0.100	1.29	--	--	--	--	--
JUL												
20...	--	58	51	7	2.60	0.700	1.00	--	--	--	--	--
AUG												
01...	--	27	22	5	2.00	0.070	0.290	--	--	--	--	--
01...	--	194	168	26	2.00	0.160	0.500	--	--	--	--	--
01...	--	1360	1230	132	2.00	0.340	1.75	--	--	--	--	--
20...	7.3	136	80	56	1.10	2.40	3.58	100	<20	5500	460	70
20...	--	194	138	56	1.20	2.40	3.62	--	--	--	--	--
23...	8.4	43	32	11	2.90	<0.100	0.726	100	<20	1000	200	<10
25...	9.0	176	152	24	2.60	<0.100	0.860	100	<20	4300	370	40
25...	8.6	639	579	60	2.40	0.300	1.42	200	<20	15000	780	80
25...	9.1	1020	884	136	2.10	0.970	3.64	300	26	26000	1300	180
25...	7.5	1900	1670	230	1.70	1.20	4.58	400	35	40000	1900	200
25...	7.5	2240	1980	260	1.60	1.50	5.05	500	37	48000	2400	240
25...	5.7	300	235	65	1.50	1.60	2.36	200	<20	11000	560	80
26...	6.1	132	104	28	2.30	0.500	1.54	100	<20	5100	290	60
26...	6.3	838	762	76	2.10	0.300	1.78	300	<20	22000	920	100
26...	6.9	2020	1840	184	1.93	0.490	3.44	400	30	41000	1900	160
27...	5.4	192	156	36	2.60	0.500	1.61	200	<20	7900	390	50
SEP												
11...	9.4	16	8	8	3.00	<0.100	--	100	<20	440	87	<10
23...	7.4	4	2	2	3.30	<0.100	--	80	<20	150	47	<10

GRANT RIVER BASIN

05413449 RATTLESNAKE CREEK NEAR NORTH ANDOVER, WI--CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	ALA- CHLOR TOTAL RECOVER (UG/L) (77825)	ATRA- ZINE, TOTAL (UG/L) (39630)	CARBO- FURAN WHOLE TOT.REC (UG/L) (82615)	CHLOR- PYRIFOS TOTAL RECOVER (UG/L) (38932)	CYAN- AZINE TOTAL (UG/L) (81757)	FONOFOS (DY- FONATE) WATER WHOLE TOT.REC (UG/L) (82614)	METOLA- CHLOR IN WHOLE WATER (UG/L) (39356)	PHORATE TOTAL (UG/L) (39023)	TERBU- FOS (UG/L) (82088)
MAY 1990										
02...	1026	<0.10	<0.10	<4.0	<1.0	<0.90	<0.2	<0.20	<0.20	<0.20
09...	0415	<0.10	0.25	<13.0	<1.0	<0.90	<0.2	<0.20	<0.20	<0.20
19...	1045	0.70	16	<7.0	<1.0	1.9	<0.2	<0.20	<0.20	<0.20
JUN										
02...	1915	5.90	34	<20.0	<1.0	28.0	<0.2	<0.20	<0.20	<0.50

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)	DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)
OCT 1989					APR 1990				
11...	0855	7.1	670	7.5	23...	1030	9.0	660	15.0
NOV					JUN				
30...	1240	6.5	790	0.5	04...	1240	9.6	660	14.5
JAN 1990					JUL				
03...	0935	6.8	735	0.5	24...	1255	7.1	700	21.5
FEB					SEP				
23...	1215	10	670	2.0	05...	0944	10	720	21.5
MAR									
09...	1235	31	505	2.5					

05413449 RATTLESNAKE CREEK NEAR NORTH ANDOVER, WI--CONTINUED

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	16.0	11.0	13.5	8.0	6.5	7.5	1.5	.50	1.0	1.0	.50	.50
2	15.5	11.0	13.5	6.5	4.0	5.5	1.0	.00	.50	1.0	.50	.50
3	11.0	9.0	10.0	4.0	2.5	3.5	.50	.00	.50	1.5	.50	1.0
4	10.0	6.5	8.5	7.5	4.0	5.5	1.0	.50	.50	1.0	.50	.50
5	11.0	9.5	10.0	9.5	7.5	8.5	2.0	.50	1.0	.50	.50	.50
6	12.0	9.0	10.0	8.5	7.0	7.5	1.0	.00	.50	1.0	.50	.50
7	10.0	7.0	9.0	8.5	7.0	7.5	.50	.50	.50	1.0	.50	.50
8	10.0	6.5	8.0	8.5	6.5	7.5	1.0	.50	.50	1.0	.50	.50
9	10.0	6.5	8.5	6.5	4.5	5.5	1.0	.50	.50	1.5	.50	1.0
10	11.0	8.0	9.5	6.0	4.5	5.0	1.0	.00	.50	1.5	.50	1.0
11	13.0	8.0	10.5	7.0	5.0	6.0	.50	.00	.50	1.0	.50	.50
12	13.0	10.0	11.5	5.5	4.0	4.5	.50	.50	.50	.50	.50	.50
13	13.5	9.5	11.5	8.0	4.5	6.5	.50	.50	.50	1.0	.50	.50
14	15.0	12.0	13.5	7.0	5.5	6.5	.50	.50	.50	1.0	.50	.50
15	17.0	13.5	15.0	6.5	4.0	5.5	.50	.50	.50	1.5	.50	.50
16	16.5	11.5	14.0	4.0	.00	2.0	.50	.50	.50	1.0	.50	1.0
17	11.5	7.5	9.5	1.0	.00	.50	.50	.50	.50	.50	.50	.50
18	7.5	5.5	6.5	.50	.00	.50	.50	.50	.50	1.0	.50	.50
19	6.5	4.5	5.5	2.0	.00	1.0	.50	.50	.50	1.0	.50	.50
20	7.5	5.0	6.0	3.0	.50	1.5	.50	.50	.50	1.0	.50	.50
21	8.0	5.0	6.5	1.5	.50	1.0	.50	.50	.50	1.5	.50	1.0
22	8.0	4.5	6.5	1.5	.00	.50	.50	.50	.50	2.0	.50	1.0
23	11.0	7.0	9.0	.50	.00	.00	.50	.50	.50	1.5	.50	1.0
24	12.0	8.5	10.5	1.0	.00	.50	.50	.50	.50	2.0	.50	1.0
25	14.5	11.0	12.5	2.0	.50	1.0	.50	.50	.50	1.0	.50	.50
26	15.0	12.5	14.0	2.0	.00	1.0	.50	.50	.50	1.0	.50	.50
27	14.5	12.0	13.5	2.5	1.5	2.0	.50	.50	.50	1.5	.50	.50
28	15.0	13.5	14.5	2.0	.00	.50	.50	.50	.50	1.0	.50	.50
29	14.5	13.5	14.0	.50	.00	.50	.50	.50	.50	1.5	.50	1.0
30	13.5	11.0	12.5	1.5	.50	.50	.50	.50	.50	1.0	.50	1.0
31	10.5	7.5	9.0	---	---	---	1.0	.50	.50	1.0	.50	.50
MONTH	17.0	4.5	10.5	9.5	.00	3.5	2.0	.00	.53	2.0	.50	.66
FEBRUARY			MARCH			APRIL			MAY			
1	1.0	.50	1.0	2.5	.50	1.0	10.0	7.0	8.0	16.5	10.5	13.0
2	1.5	.50	1.0	2.5	.50	1.5	6.5	3.5	4.5	17.5	10.5	13.5
3	2.0	.50	1.0	2.0	.50	1.0	9.5	3.0	5.5	14.5	11.5	13.5
4	1.0	.50	.50	3.0	.50	1.5	12.0	6.0	8.5	13.0	10.5	11.5
5	2.5	.50	1.0	2.0	1.0	1.5	10.5	6.5	8.0	16.0	9.0	12.0
6	1.0	.50	.50	4.0	1.0	2.0	7.5	3.5	5.0	19.0	11.5	15.0
7	1.5	.50	1.0	2.0	.50	1.5	9.0	2.0	5.0	21.0	13.5	17.0
8	1.5	.50	1.0	1.5	1.0	1.5	12.0	5.0	8.5	20.0	16.0	18.0
9	2.0	.50	1.0	4.5	1.0	2.5	11.0	9.5	10.0	18.0	12.0	15.5
10	2.0	.50	1.0	5.5	3.5	5.0	11.0	8.0	9.5	12.0	9.5	11.0
11	2.0	.50	1.0	7.5	4.5	6.0	8.5	5.0	6.5	16.0	8.0	12.0
12	3.5	.50	2.0	14.0	7.5	10.5	9.5	3.5	6.0	14.5	11.5	13.0
13	2.5	.50	2.0	13.5	11.0	12.0	7.0	5.0	6.5	18.0	9.5	13.5
14	1.0	.50	.50	14.0	12.5	13.5	13.0	5.5	9.0	16.5	13.0	15.0
15	1.0	.50	.50	13.5	9.0	11.5	14.5	9.0	11.5	15.5	13.5	14.0
16	1.5	.50	1.0	9.5	7.0	8.0	11.0	7.0	9.0	16.5	13.0	14.5
17	1.5	.50	1.0	7.5	5.0	6.5	11.0	4.5	7.5	15.0	12.5	13.5
18	2.0	.50	1.0	6.5	3.5	5.0	13.0	5.0	9.0	19.0	10.5	14.5
19	1.5	.50	1.0	6.0	1.5	3.5	10.5	8.5	9.5	16.5	11.5	13.5
20	1.5	.50	1.0	8.0	1.5	4.5	12.5	9.5	11.0	11.5	10.5	11.0
21	2.5	.50	1.0	10.5	4.5	7.5	16.0	11.0	13.0	14.0	10.0	12.0
22	2.0	1.0	1.5	9.5	6.0	8.5	19.0	11.0	14.5	19.0	12.0	15.0
23	2.5	.50	1.0	5.5	1.5	3.5	21.0	14.0	17.0	19.0	14.0	16.5
24	1.5	.50	1.0	6.5	1.5	3.5	23.0	17.0	19.5	18.5	15.0	17.0
25	1.0	.50	1.0	7.5	2.0	4.5	24.0	17.5	20.5	16.5	15.0	15.5
26	1.5	.50	1.0	8.0	2.5	5.0	21.5	18.5	20.0	16.0	14.0	15.0
27	2.0	.50	1.0	9.0	2.5	5.5	20.5	17.5	19.0	19.5	13.0	16.0
28	2.0	.50	1.0	7.0	4.0	5.5	18.5	14.0	16.5	19.5	15.5	17.0
29	---	---	---	6.5	5.5	6.0	17.5	11.5	14.5	21.5	15.5	18.0
30	---	---	---	7.5	5.5	6.0	16.5	11.5	14.0	21.0	14.5	17.5
31	---	---	---	8.0	4.5	6.5	---	---	---	21.5	14.0	18.0
MONTH	3.5	.50	1.0	14.0	.50	5.2	24.0	2.0	10.9	21.5	8.0	14.6

05413449 RATTLESNAKE CREEK NEAR NORTH ANDOVER, WI--CONTINUED

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	23.0	17.5	20.0	27.0	21.5	24.0	24.0	18.0	21.0	25.5	20.0	22.5
2	22.0	18.5	20.5	26.5	20.5	23.5	24.0	18.5	21.0	23.0	21.0	22.0
3	17.5	13.0	15.5	29.0	21.5	25.0	25.0	20.5	23.0	22.5	19.0	20.5
4	19.0	11.5	15.0	30.0	24.5	27.0	27.0	22.0	24.0	26.0	19.5	22.5
5	16.5	13.5	14.5	27.5	23.0	25.0	24.5	20.0	22.0	26.5	21.5	24.0
6	19.0	13.5	15.5	25.5	20.5	22.5	22.5	17.5	20.0	28.0	22.5	25.0
7	18.5	15.0	17.0	23.5	19.5	21.5	23.0	17.0	20.0	26.0	22.5	24.5
8	21.5	16.5	18.5	28.5	21.5	25.0	24.0	18.0	21.0	23.5	20.5	22.0
9	24.0	17.5	20.5	25.5	22.5	23.5	24.0	18.0	21.0	23.0	19.5	21.5
10	25.0	18.0	21.5	24.0	21.5	22.5	25.0	20.0	22.0	24.5	20.0	22.0
11	22.5	19.0	20.5	25.5	20.0	22.5	25.0	20.5	22.5	23.0	20.0	21.5
12	26.0	19.5	22.5	22.0	18.0	20.0	24.0	20.5	22.0	24.0	19.0	21.5
13	24.5	21.5	23.0	22.0	16.5	19.5	24.0	19.5	21.0	24.0	19.5	21.5
14	27.0	22.0	24.0	20.5	18.0	19.5	24.5	18.5	21.0	22.5	18.0	20.5
15	23.5	20.0	21.5	23.5	18.0	20.5	26.5	20.5	23.0	20.0	15.5	17.5
16	21.0	19.0	20.0	25.5	19.0	22.0	25.5	21.0	23.0	18.0	15.0	16.5
17	25.0	18.5	21.0	26.0	21.0	23.5	24.5	21.5	23.0	16.5	12.5	14.5
18	26.0	20.0	22.5	25.0	22.0	23.0	28.5	22.0	25.0	15.0	13.5	14.0
19	23.0	18.5	20.5	22.5	20.5	21.5	25.5	22.0	23.0	17.5	13.5	15.0
20	24.5	18.5	21.0	25.5	20.0	22.5	22.0	20.0	21.0	17.0	13.5	15.5
21	21.5	18.5	20.0	23.0	20.5	21.5	20.0	19.0	19.5	18.5	15.5	16.5
22	20.0	17.5	18.5	25.5	19.5	22.0	24.5	19.0	21.0	15.5	12.5	13.5
23	22.0	16.0	19.0	24.5	19.0	21.5	24.5	20.0	22.0	14.0	10.5	12.0
24	23.5	17.0	20.5	24.0	19.0	21.5	25.5	21.0	23.0	14.5	9.5	12.0
25	25.5	18.5	22.0	25.5	20.5	22.5	24.5	20.5	22.5	17.5	12.0	14.5
26	25.5	20.0	22.5	24.0	21.0	22.5	24.5	21.0	23.0	17.5	13.0	15.0
27	26.0	21.5	23.5	23.0	20.5	22.0	27.5	22.0	24.5	17.0	13.0	15.0
28	24.0	21.5	23.0	26.0	21.0	23.0	27.5	24.0	25.5	17.5	15.5	16.5
29	24.0	21.5	22.5	27.0	22.5	24.0	25.5	22.0	23.5	15.5	13.0	14.0
30	28.0	20.5	24.0	26.0	21.5	23.5	24.5	19.5	22.0	14.5	11.0	12.5
31	---	---	---	25.0	19.0	21.5	24.5	19.5	22.0	---	---	---
MONTH	28.0	11.5	20.3	30.0	16.5	22.6	28.5	17.0	22.2	28.0	9.5	18.2

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DAY	MAX	MIN	MEAN		MAX	MIN	MEAN		MAX	MIN	MEAN		MAX	MIN	MEAN
	OCTOBER				NOVEMBER				DECEMBER				JANUARY		
1	14.5	8.2	10.5		12.2	8.8	10.2		---	---	---		---	---	---
2	14.5	7.6	10.2		13.1	9.7	11.2		---	---	---		---	---	---
3	14.2	9.0	11.2		13.5	10.8	11.9		---	---	---		---	---	---
4	14.7	9.9	11.6		13.1	10.0	11.4		---	---	---		---	---	---
5	10.9	8.8	9.7		12.4	9.2	10.4		---	---	---		---	---	---
6	12.5	8.4	10.0		13.5	9.3	11.0		---	---	---		---	---	---
7	13.7	9.0	10.9		13.1	9.6	11.0		---	---	---		---	---	---
8	13.1	9.6	11.0		13.5	9.2	10.7		---	---	---		---	---	---
9	13.9	9.4	11.2		13.9	8.9	11.5		---	---	---		---	---	---
10	13.7	8.9	10.7		14.5	10.0	12.0		---	---	---		---	---	---
11	13.1	8.4	10.4		14.8	10.5	12.0		---	---	---		---	---	---
12	13.4	7.9	10.1		---	---	---		---	---	---		---	---	---
13	14.5	8.3	10.5		---	---	---		---	---	---		---	---	---
14	14.4	7.7	10.1		---	---	---		---	---	---		---	---	---
15	13.8	7.1	9.4		---	---	---		---	---	---		---	---	---
16	8.6	6.0	7.4		---	---	---		---	---	---		---	---	---
17	11.9	6.7	9.3		---	---	---		---	---	---		---	---	---
18	12.9	9.4	10.8		---	---	---		---	---	---		---	---	---
19	14.5	10.1	11.8		---	---	---		---	---	---		---	---	---
20	14.0	10.4	11.7		---	---	---		---	---	---		---	---	---
21	14.0	10.2	11.6		---	---	---		---	---	---		---	---	---
22	14.3	9.8	11.7		---	---	---		---	---	---		---	---	---
23	13.9	9.1	10.9		---	---	---		---	---	---		---	---	---
24	14.2	8.7	10.6		---	---	---		---	---	---		---	---	---
25	14.3	7.9	10.2		---	---	---		---	---	---		---	---	---
26	13.9	7.4	9.7		---	---	---		---	---	---		---	---	---
27	14.3	7.4	9.8		---	---	---		---	---	---		---	---	---
28	13.3	7.5	9.3		---	---	---		---	---	---		---	---	---
29	11.6	7.5	8.9		---	---	---		---	---	---		---	---	---
30	8.4	7.1	7.7		---	---	---		---	---	---		---	---	---
31	10.9	7.1	8.9		---	---	---		---	---	---		---	---	---
MONTH	14.7	6.0	10.3		---	---	---		---	---	---		---	---	---

05413449 RATTLESNAKE CREEK NEAR NORTH ANDOVER, WI--CONTINUED

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	---	---	---	---	---	---	13.4	10.1	11.1	15.2	6.9	10.4
2	---	---	---	---	---	---	14.0	10.3	12.0	16.5	7.3	11.1
3	---	---	---	---	---	---	14.6	10.2	12.5	16.4	6.9	10.6
4	---	---	---	---	---	---	14.4	9.8	11.5	14.5	7.3	10.0
5	---	---	---	---	---	---	15.0	9.6	12.0	16.5	7.5	11.3
6	---	---	---	---	---	---	15.5	10.7	12.9	16.4	6.4	10.5
7	---	---	---	---	---	---	15.7	10.9	13.1	14.6	5.1	9.2
8	---	---	---	---	---	---	15.7	9.2	12.3	12.2	4.3	7.7
9	---	---	---	---	---	---	15.5	8.8	11.1	---	---	---
10	---	---	---	---	---	---	14.4	9.2	11.0	9.9	6.7	8.6
11	---	---	---	---	---	---	16.0	9.2	12.3	12.4	7.1	9.6
12	---	---	---	---	---	---	16.2	10.1	12.5	10.6	7.0	8.5
13	---	---	---	---	---	---	15.1	9.7	12.0	12.9	7.1	9.9
14	---	---	---	---	---	---	16.0	8.8	12.0	11.3	6.9	8.6
15	---	---	---	---	---	---	16.7	8.0	11.6	10.2	7.2	8.5
16	---	---	---	---	---	---	14.1	8.2	11.2	8.5	6.8	7.6
17	---	---	---	---	---	---	16.7	9.8	12.5	11.0	7.0	8.8
18	---	---	---	---	---	---	16.6	9.1	12.3	12.5	6.9	9.7
19	---	---	---	---	---	---	14.8	8.5	11.0	8.1	6.4	7.4
20	---	---	---	---	---	---	14.6	8.0	10.6	8.5	6.8	8.1
21	---	---	---	---	---	---	16.2	7.6	11.0	10.2	8.2	9.2
22	---	---	---	---	---	---	15.8	6.8	10.4	11.4	7.1	9.2
23	---	---	---	---	---	---	15.5	6.0	9.9	11.3	7.0	8.7
24	---	---	---	13.6	11.7	12.8	14.3	5.3	8.8	11.4	6.9	8.7
25	---	---	---	13.3	11.2	12.3	14.0	4.8	8.3	9.8	7.0	8.2
26	---	---	---	13.2	11.2	12.1	12.5	4.3	7.4	11.0	7.8	9.0
27	---	---	---	13.3	10.7	12.0	12.9	4.8	7.1	12.9	7.1	9.4
28	---	---	---	13.4	10.7	11.9	9.7	4.6	6.8	10.2	4.8	7.8
29	---	---	---	12.4	10.6	11.4	13.1	5.9	8.7	11.5	4.7	7.9
30	---	---	---	13.5	10.7	11.7	14.5	5.7	9.5	13.1	6.2	9.3
31	---	---	---	13.4	10.4	11.8	---	---	---	13.4	6.9	9.7
MONTH	---	---	---	---	---	---	16.7	4.3	10.8	---	---	---
JUNE			JULY			AUGUST			SEPTEMBER			
1	13.1	6.2	9.1	9.0	6.0	7.5	12.2	5.9	8.3	11.2	6.9	8.5
2	10.2	5.4	7.1	9.6	6.3	7.8	12.6	5.8	8.4	10.8	6.5	8.3
3	8.6	5.6	7.5	9.7	5.5	7.6	12.7	5.6	8.1	12.6	6.9	9.0
4	11.7	7.4	9.2	9.6	5.5	7.1	11.8	5.3	7.9	12.3	6.3	8.9
5	9.7	7.2	8.4	10.0	5.6	7.5	12.0	5.6	8.2	13.0	6.1	8.7
6	13.0	7.7	10.0	10.7	6.1	8.3	12.9	6.2	8.7	11.7	5.5	7.8
7	12.3	7.2	9.1	11.4	6.9	8.6	12.7	6.6	9.0	12.4	5.3	8.1
8	12.2	6.9	9.0	11.4	5.6	8.3	12.6	6.3	8.8	12.8	6.3	8.6
9	12.7	6.4	9.1	11.4	5.7	8.0	12.9	6.2	8.7	12.9	6.4	8.7
10	12.7	6.0	8.8	11.8	6.3	8.1	12.0	5.9	8.4	12.4	6.2	8.5
11	12.3	5.7	8.6	11.8	6.3	8.6	11.9	5.7	8.1	12.3	6.1	8.2
12	12.5	5.3	8.2	11.8	6.2	8.7	11.9	5.7	8.2	12.6	6.3	8.4
13	10.9	4.9	7.2	13.4	6.9	9.6	12.0	6.0	8.3	12.4	6.0	8.4
14	11.8	5.5	8.0	13.4	6.8	9.2	12.1	6.2	8.5	11.7	6.0	8.2
15	10.3	5.0	7.3	14.1	6.4	9.7	11.8	5.8	8.1	12.1	7.5	9.2
16	9.1	5.8	7.1	14.3	5.5	9.4	11.4	5.5	7.6	12.4	7.3	9.4
17	6.3	4.4	5.4	14.0	5.4	9.0	7.0	3.1	5.5	13.3	8.4	10.1
18	9.1	4.6	6.7	12.6	5.3	7.8	8.6	4.2	6.0	10.7	8.6	9.5
19	9.5	5.4	7.0	---	---	---	6.0	3.0	5.0	12.6	8.5	10.1
20	10.0	6.2	7.9	8.8	5.4	6.5	5.7	2.7	4.7	12.7	8.3	10.0
21	9.6	6.1	7.9	10.4	5.3	7.3	6.9	5.6	6.2	12.4	8.0	9.6
22	---	---	---	11.8	6.1	8.3	8.3	5.9	6.8	12.3	8.1	9.9
23	7.8	6.2	7.0	12.4	6.2	8.8	8.4	5.9	7.0	12.9	9.2	10.7
24	9.4	6.6	7.8	13.3	6.3	9.0	9.1	6.0	7.1	12.6	8.3	10.2
25	9.7	6.3	7.9	13.7	6.1	9.1	6.2	.05	3.8	11.0	7.6	9.0
26	7.3	5.2	6.1	12.9	5.7	8.3	6.9	3.0	4.8	11.1	7.4	8.9
27	6.9	5.7	6.2	11.9	6.0	8.2	6.2	4.6	5.4	12.1	7.5	9.1
28	7.8	5.9	6.7	12.0	5.7	8.2	7.2	4.9	6.0	11.5	7.2	8.9
29	---	---	---	10.7	4.8	7.2	8.3	5.7	6.9	10.9	7.8	9.2
30	8.7	6.0	7.4	11.3	4.7	7.3	9.3	6.4	7.8	12.6	8.8	10.3
31	---	---	---	11.8	5.6	8.0	10.4	6.9	8.3	---	---	---
MONTH	---	---	---	---	---	---	12.9	.05	7.2	13.3	5.3	9.1

05413449 RATTLESNAKE CREEK NEAR NORTH ANDOVER, WI--CONTINUED

PRECIPITATION QUANTITY

PERIOD OF RECORD.--July 1987 to current year (during non-freezing periods).

GAGE.--Micrologger.

REMARKS.--Records good.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily rainfall, 2.96 in., Aug. 8, 1987.

EXTREMES FOR CURRENT YEAR.--Maximum daily rainfall, 2.05 in., May 9.

RAINFALL ACCUMULATED (INCHES), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	---	---	---	---	.00	.00	.00	.00	.00	.00
2	.00	.08	---	---	---	---	.00	.00	.51	.00	.00	.00
3	.00	.00	---	---	---	---	.00	.04	.00	.00	.11	.00
4	.00	.00	---	---	---	---	.00	.33	.00	.18	.00	.00
5	.76	.00	---	---	---	---	.00	.00	.10	.00	.00	.00
6	.00	.13	---	---	---	---	.00	.00	.00	.00	.00	.00
7	.00	.18	---	---	---	---	.00	.00	.34	.00	.00	.00
8	.00	.00	---	---	---	---	.00	.00	.00	.00	.00	.00
9	.04	.00	---	---	---	---	.00	2.05	.00	.00	.05	.00
10	.00	.00	---	---	---	---	.00	.19	.00	.05	.00	.00
11	.01	.00	---	---	---	---	.00	.00	.00	.03	.06	.00
12	.00	.00	---	---	---	---	.00	.10	.02	.15	.00	.00
13	.00	.00	---	---	---	---	.00	.01	.13	.00	.00	.00
14	.00	.00	---	---	---	---	.00	.00	.00	.07	.00	.16
15	.16	.00	---	---	---	---	.00	1.03	.07	.00	.00	.00
16	.98	.00	---	---	---	---	.00	.05	.96	.00	.00	.00
17	.00	.00	---	---	---	---	.00	.00	.34	.00	2.00	.00
18	.00	.27	---	---	---	---	.00	.00	.01	.22	.30	.18
19	.00	.31	---	---	---	---	.00	1.15	.47	.76	1.59	.00
20	.00	.00	---	---	---	---	.00	.00	.00	.21	.20	.10
21	.00	.00	---	---	---	---	.00	.00	.02	.00	.08	.01
22	.00	.00	---	---	---	---	.00	.00	1.47	.00	.00	.00
23	.00	.23	---	---	---	---	.00	.00	.00	.00	.00	.00
24	.00	.08	---	---	---	---	.00	.03	.00	.00	.58	.00
25	.00	.13	---	---	---	---	.00	.25	.00	.00	.87	.00
26	.00	.00	---	---	---	---	.22	.00	.46	.00	1.12	.00
27	.00	.00	---	---	---	---	.22	.21	.02	.21	.01	.00
28	.30	.00	---	---	---	---	.17	.30	.00	.22	.00	.00
29	.34	.12	---	---	---	---	.02	.02	.11	.19	.00	.00
30	.99	.00	---	---	---	---	.00	.00	.01	.00	.00	.00
31	.03	---	---	---	---	---	---	.00	---	.00	.00	---
TOTAL	3.61	1.53	---	---	---	---	0.63	5.76	5.04	2.29	6.97	0.45

05413451 RATTLESNAKE CREEK NEAR BEETOWN, WI

LOCATION.--Lat 42°46'02", long 90°55'44", in SE 1/4 NW 1/4 sec.2, T.3 N., R.5 W., Grant County, Hydrologic Unit 07060003, on right bank 300 ft upstream of Rattlesnake Road, 2.9 mi southwest of Beetown.

DRAINAGE AREA.--45.2 mi².

PERIOD OF RECORD.--October 1989 to September 1990.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: October 1989 to September 1990.

DISSOLVED OXYGEN: April 1990 to September 1990.

INSTRUMENTATION.--Continuous water temperature recorder since Oct. 20, 1989, and dissolved oxygen recorder since Apr. 1, 1990. Automatic pumping sampler since Oct. 20, 1989.

REMARKS.--Water-quality analyses by the Wisconsin State Laboratory of Hygiene. Samples are point samples unless otherwise indicated.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum observed, 32.5°C, July 4; minimum observed, 0.0°C, on many days.

DISSOLVED OXYGEN: Maximum observed, 17.0 mg/L, Apr. 15; minimum observed, 4.5 mg/L, Aug. 18.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH (STAND- ARD UNITS) (00400)	PH LAB (STAND- ARD UNITS) (00403)	TUR- BID- ITY (NTU) (00076)	OXYGEN DEMAND, CHEM- ICAL (LOW LEVEL) (MG/L) (00335)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L) (00310)	HARD- NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM TOTAL RECOV- ERABLE (MG/L AS CA) (00916)	MAGNE- SIUM, TOTAL RECOV- ERABLE (MG/L AS MG) (00927)	SODIUM, TOTAL RECOV- ERABLE (MG/L AS NA) (00929)
NOV 1989											
*30...	1030	9.6	--	8.2	1.8	--	--	--	--	--	--
JAN 1990											
*03...	1120	17	--	8.2	--	--	--	--	--	--	--
FEB											
*23...	1345	14	8.2	8.3	--	--	--	--	--	--	--
MAR											
08...	1115	83	--	7.4	--	--	--	--	--	--	--
08...	1145	138	--	7.5	--	--	--	--	--	--	--
08...	1345	196	--	7.3	--	--	--	--	--	--	--
08...	1515	225	--	7.3	--	--	--	--	--	--	--
08...	2315	118	--	7.1	--	--	--	--	--	--	--
11...	1415	69	--	7.8	--	--	--	--	--	--	--
*12...	1137	26	--	8.0	--	--	--	--	--	--	--
MAY											
*02...	1110	8.4	--	8.6	1.6	--	2.5	--	--	--	--
*09...	1120	37	--	7.9	--	--	11	--	--	--	--
19...	1245	35	--	8.3	--	--	21	--	--	--	--
20...	0001	52	--	8.1	--	--	24	--	--	--	--
21...	0001	54	--	8.1	--	--	18	--	--	--	--
JUN											
*04...	0923	11	--	8.3	--	--	--	--	--	--	--
JUL											
*20...	1345	17	--	--	--	--	--	--	--	--	--
AUG											
19...	0245	18	--	8.1	--	92	14	340	74	38	7.6
19...	0330	48	--	7.8	--	150	14	270	55	32	6.6
19...	0615	72	--	7.8	--	120	15	260	53	32	8.2
19...	2015	39	--	7.9	--	97	18	240	51	28	6.6
20...	0415	60	--	8.0	--	--	--	--	--	--	--
20...	0915	36	--	7.8	--	110	19	--	--	--	--
*20...	0916	36	--	8.0	--	--	--	--	--	--	--
*23...	0850	11	--	8.3	--	33	3.7	370	78	42	8.5
SEP											
*11...	1215	7.7	--	8.6	--	11	0.9	370	76	44	7.7
*24...	1405	7.0	--	8.6	--	15	1.5	380	79	45	7.7

* EQUAL-WIDTH INCREMENT (EWI) SAMPLE.

GRANT RIVER BASIN

05413451 RATTLESNAKE CREEK NEAR BEETOWN, WI--CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDE (MG/L) (00530)	RESIDUE FIXED NON FILTER- ABLE (MG/L) (00540)	RESIDUE VOLATILE, SUS- PENDE (MG/L) (00535)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA) (01007)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) (01042)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE) (01045)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) (01055)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) (01092)
NOV 1989											
30...	6	--	--	4.20	0.070	0.110	--	--	--	--	--
JAN 1990											
03...	8	--	--	4.10	0.130	0.090	--	--	--	--	--
FEB											
23...	14	12	2	3.90	0.380	0.180	--	--	--	--	--
MAR											
08...	868	--	--	2.20	1.70	2.47	--	--	--	--	--
08...	1890	--	--	2.80	1.40	3.33	--	--	--	--	--
08...	2530	--	--	2.40	2.00	4.16	--	--	--	--	--
08...	2420	--	--	2.60	2.90	4.34	--	--	--	--	--
08...	2650	--	--	2.70	3.60	5.66	--	--	--	--	--
11...	810	--	--	2.60	2.20	2.33	--	--	--	--	--
12...	68	42	26	--	--	--	--	--	--	--	--
MAY											
02...	2	--	--	0.860	<0.020	0.224	--	--	--	--	--
09...	910	--	--	1.00	0.800	1.71	--	--	--	--	--
19...	--	--	--	2.30	0.400	--	--	--	--	--	--
20...	712	--	--	2.60	1.00	2.03	--	--	--	--	--
21...	560	--	--	3.30	0.700	1.91	--	--	--	--	--
JUN											
04...	67	56	11	3.20	<0.100	0.520	--	--	--	--	--
JUL											
20...	99	87	12	2.40	0.200	0.690	--	--	--	--	--
AUG											
19...	1100	--	--	2.04	0.340	1.90	300	<20	27000	1500	160
19...	1960	--	--	1.59	0.460	3.20	600	45	62000	2400	300
19...	1280	--	--	1.78	0.600	2.96	400	27	41000	1600	220
19...	652	--	--	1.76	0.730	1.84	300	<20	19000	970	120
20...	664	--	--	1.94	0.710	1.95	--	--	--	--	--
20...	660	--	--	1.30	1.10	2.19	--	--	--	--	--
20...	274	--	--	1.40	1.20	1.90	--	--	--	--	--
23...	36	--	--	2.80	<0.100	0.876	100	<20	1000	160	<10
SEP											
11...	10	--	--	2.40	<0.100	--	90	<20	290	41	<10
24...	14	--	--	10.2	<0.100	0.172	90	<20	280	49	<10

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)	DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)
OCT 1989					APR 1990				
20...	1424	8.3	700	8.5	23...	1147	10	660	17.5
NOV					JUN				
30...	1050	7.5	770	0.0	04...	1450	11	610	19.5
JAN 1990					JUL				
03...	1122	12	700	0.5	24...	0953	7.8	710	23.0
FEB					SEP				
23...	1325	12	660	2.0	05...	1130	9.7	710	23.0
MAR									
09...	1142	40	470	2.0					

05413451 RATTLESNAKE CREEK NEAR BEETOWN, WI--CONTINUED

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	---	---	---	8.5	6.5	7.5	.5	.0	.0	.0	.0	.0
2	---	---	---	6.5	4.0	5.5	.0	.0	.0	.0	.0	.0
3	---	---	---	4.0	2.5	3.5	.0	.0	.0	.0	.0	.0
4	---	---	---	7.5	3.5	5.5	.0	.0	.0	.0	.0	.0
5	---	---	---	9.5	6.5	8.0	.5	.0	.0	.0	.0	.0
6	---	---	---	8.5	6.5	7.5	.5	.0	.0	.0	.0	.0
7	---	---	---	8.5	7.0	7.5	.0	.0	.0	.0	.0	.0
8	---	---	---	9.0	6.5	7.5	.0	.0	.0	.0	.0	.0
9	---	---	---	6.5	4.5	5.5	.0	.0	.0	.0	.0	.0
10	---	---	---	6.5	4.5	5.0	.0	.0	.0	.0	.0	.0
11	---	---	---	8.0	4.5	6.0	.0	.0	.0	.0	.0	.0
12	---	---	---	6.0	3.5	4.5	.0	.0	.0	.0	.0	.0
13	---	---	---	8.5	4.0	6.5	.0	.0	.0	.0	.0	.0
14	---	---	---	6.5	5.0	6.0	.0	.0	.0	.0	.0	.0
15	---	---	---	6.0	4.0	5.5	.0	.0	.0	.0	.0	.0
16	---	---	---	4.0	.0	2.0	.0	.0	.0	.0	.0	.0
17	---	---	---	.5	.0	.0	.0	.0	.0	.0	.0	.0
18	---	---	---	.0	.0	.0	.0	.0	.0	.0	.0	.0
19	---	---	---	1.0	.0	.5	.0	.0	.0	.0	.0	.0
20	---	---	---	3.0	.5	1.5	.0	.0	.0	.0	.0	.0
21	10.0	4.5	7.0	1.5	.0	.5	.0	.0	.0	.0	.0	.0
22	9.5	4.5	7.0	1.5	.0	.5	.0	.0	.0	.5	.0	.0
23	12.0	7.0	9.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
24	13.5	8.0	10.5	.0	.0	.0	.0	.0	.0	.0	.0	.0
25	15.5	10.0	12.5	1.0	.0	.5	.0	.0	.0	.0	.0	.0
26	16.0	11.5	13.5	1.5	.0	.5	.0	.0	.0	.0	.0	.0
27	15.0	11.5	13.5	2.5	1.0	2.0	.0	.0	.0	.0	.0	.0
28	15.5	13.0	14.0	1.5	.0	.5	.0	.0	.0	.0	.0	.0
29	14.5	13.0	13.5	.0	.0	.0	.0	.0	.0	.0	.0	.0
30	13.5	11.0	12.5	.0	.0	.0	.0	.0	.0	.0	.0	.0
31	11.0	7.5	9.5	---	---	---	.0	.0	.0	.0	.0	.0
MONTH	---	---	---	9.5	.0	3.3	.5	.0	.0	.5	.0	.0
FEBRUARY			MARCH			APRIL			MAY			
1	.0	.0	.0	.5	.0	.0	10.5	6.5	8.0	18.5	10.5	14.0
2	.0	.0	.0	2.0	.0	.5	6.5	4.0	5.0	19.5	10.0	14.5
3	.5	.0	.0	1.5	.0	.5	10.5	3.0	6.0	16.0	11.5	13.5
4	.0	.0	.0	2.5	.0	.5	14.0	5.5	9.0	13.0	10.5	12.0
5	.5	.0	.0	1.5	.0	.5	12.0	6.0	8.5	17.5	9.0	13.0
6	.0	.0	.0	4.5	.0	1.5	9.0	3.0	6.0	21.0	11.0	15.5
7	.0	.0	.0	1.0	.0	.5	10.5	2.0	6.0	22.5	13.5	17.5
8	.0	.0	.0	1.0	.0	.5	13.5	4.5	9.0	21.0	16.0	18.5
9	.5	.0	.0	3.5	.5	2.0	11.0	8.5	9.5	---	---	---
10	.5	.0	.0	4.5	2.5	3.5	11.5	8.0	9.0	---	---	---
11	.5	.0	.0	6.0	4.0	5.0	9.5	5.0	7.0	---	---	---
12	1.5	.0	.5	12.5	6.0	9.0	11.0	3.0	6.5	13.5	11.5	13.0
13	1.5	.0	1.0	13.5	9.5	11.5	7.5	4.0	6.0	15.5	10.0	12.5
14	.0	.0	.0	13.5	12.0	12.5	13.5	5.5	9.0	17.0	13.5	14.5
15	.0	.0	.0	12.5	9.0	11.0	16.0	8.5	11.5	14.5	13.0	14.0
16	.0	.0	.0	9.5	6.5	8.0	10.5	7.0	9.0	16.0	13.0	14.0
17	.0	.0	.0	7.5	4.5	6.0	13.0	4.5	8.5	14.5	12.0	13.0
18	.0	.0	.0	7.5	3.0	4.5	14.5	5.0	9.5	19.5	10.5	14.5
19	.0	.0	.0	6.5	1.5	3.5	10.0	8.5	9.5	15.5	11.5	13.5
20	.0	.0	.0	7.5	.5	4.0	13.0	10.0	11.0	11.5	10.5	11.0
21	.5	.0	.0	10.0	3.5	6.5	17.0	10.5	13.0	13.5	10.0	12.0
22	.5	.0	.0	9.0	5.0	7.0	20.0	10.5	15.0	18.0	11.5	14.5
23	.5	.0	.0	6.0	1.5	3.5	22.5	14.0	18.0	18.5	14.5	16.0
24	.0	.0	.0	7.0	1.0	3.5	24.0	17.0	20.0	19.0	15.0	17.0
25	.0	.0	.0	8.0	1.0	4.0	25.0	17.5	21.0	16.5	15.0	15.5
26	.5	.0	.0	9.0	2.0	5.0	23.5	18.5	20.5	16.0	14.5	15.0
27	.5	.0	.0	9.5	1.5	5.5	22.5	18.0	19.5	20.0	13.5	16.5
28	.5	.0	.0	7.5	3.0	5.5	19.0	14.5	17.0	19.0	15.5	17.0
29	---	---	---	6.5	5.0	6.0	19.0	12.0	15.5	22.0	15.5	18.5
30	---	---	---	8.0	5.0	6.0	18.0	11.5	15.0	22.0	14.5	18.0
31	---	---	---	8.5	4.5	6.5	---	---	---	22.5	14.5	18.5
MONTH	1.5	.0	.1	13.5	.0	4.6	25.0	2.0	11.3	---	---	---

05413451 RATTLESNAKE CREEK NEAR BEETOWN, WI--CONTINUED

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	23.5	17.5	20.5	28.0	22.0	25.0	25.5	18.0	21.5	25.5	20.0	22.5
2	22.0	18.5	20.5	28.0	21.0	24.5	25.0	18.0	21.5	23.0	20.5	22.0
3	18.5	14.0	16.5	30.5	22.0	26.0	26.5	20.5	23.5	23.0	19.0	21.0
4	20.0	12.0	15.5	32.5	25.0	28.0	29.0	22.0	24.5	26.5	19.5	22.5
5	16.0	14.0	14.5	30.5	24.0	26.5	26.0	20.0	22.5	27.5	21.5	24.0
6	19.5	13.5	15.5	26.0	22.0	24.0	24.5	17.5	21.0	28.5	22.5	25.0
7	19.5	14.0	17.0	25.0	20.0	22.0	25.5	16.5	20.5	27.0	22.5	24.5
8	21.0	16.0	18.5	29.5	22.0	25.5	25.5	17.5	21.5	24.5	21.0	22.5
9	24.5	16.5	20.0	27.0	22.5	24.5	25.5	17.5	21.5	24.5	20.0	22.0
10	26.5	17.0	21.5	26.0	22.0	23.0	27.0	19.5	23.0	26.0	20.0	22.5
11	23.0	19.0	20.5	27.5	20.5	23.5	27.0	21.0	23.5	24.5	20.5	22.0
12	27.5	19.5	23.0	22.5	19.0	21.0	25.5	21.0	23.0	25.0	19.5	22.0
13	25.5	22.0	23.5	23.5	16.5	20.0	25.5	19.0	22.0	25.0	19.5	22.5
14	28.0	22.0	24.5	21.0	18.0	19.5	26.0	18.5	22.0	22.5	18.5	21.0
15	23.5	20.5	22.0	24.0	18.0	21.0	28.0	20.0	23.5	21.5	15.5	18.5
16	21.5	19.5	20.0	27.0	18.5	22.5	27.0	21.0	23.5	18.5	15.5	17.0
17	24.0	19.0	21.0	27.0	21.0	24.0	24.5	21.5	23.0	18.0	13.0	15.0
18	26.5	20.0	23.0	26.0	22.0	23.5	28.5	22.5	25.0	15.0	14.0	14.5
19	22.5	19.0	20.5	23.0	21.0	22.0	25.0	22.0	23.0	18.5	14.0	15.5
20	25.0	18.5	21.0	25.5	20.5	22.5	22.0	20.0	21.0	18.0	13.5	15.5
21	21.5	18.5	20.0	23.5	20.5	22.0	20.0	19.5	19.5	19.5	15.5	17.0
22	19.5	16.5	17.5	26.5	19.5	22.5	24.0	19.0	21.0	15.5	13.0	14.0
23	21.0	15.5	18.0	25.0	18.5	22.0	24.5	20.0	22.0	15.5	11.0	13.0
24	23.0	17.0	20.0	25.0	18.5	21.5	26.0	21.0	23.0	15.5	9.0	12.5
25	25.5	18.0	21.5	26.5	20.0	23.0	23.0	20.5	22.0	18.0	11.5	14.5
26	25.5	20.0	22.5	25.0	21.0	23.0	23.0	20.0	22.5	18.5	12.5	15.5
27	26.5	21.5	23.5	24.0	21.0	22.0	26.5	22.0	24.0	18.0	12.5	15.5
28	25.0	22.0	23.5	27.0	21.0	23.5	27.5	24.0	25.5	19.0	15.5	16.5
29	24.5	21.5	22.5	27.0	22.5	24.0	26.5	22.0	24.0	15.5	13.5	14.5
30	29.0	21.0	24.5	27.5	21.0	24.0	25.0	20.0	22.5	---	---	---
31	---	---	---	25.5	19.0	22.0	24.5	19.5	21.5	---	---	---
MONTH	29.0	12.0	20.4	32.5	16.5	23.2	29.0	16.5	22.5	---	---	---

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

[illegible]

OXYGEN DISSOLVED (MG/L). WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

[illegible]

GRANT RIVER BASIN

05413500 GRANT RIVER AT BURTON, WI
(NATIONAL STREAM-QUALITY ACCOUNTING NETWORK STATION)

LOCATION.--Lat 42°43'13", long 90°49'09", in NW 1/4 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 mi².

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 only, published in WSP 1308.

REVISED RECORDS.--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. Datum of gage is 606.43 ft above National Geodetic Vertical Datum of 1929. Oct. 17, 1934, to Sept. 30, 1947, nonrecording 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.--Estimated daily discharges: Ice periods listed in rating table below. Records good except those for ice-affected periods, which are poor. Data-collection platform at station.

AVERAGE DISCHARGE.--56 years, 166 ft³/s, 8.38 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 25,000 ft³/s, July 16, 1950, gage height, 24.82 ft, from rating curve extended above 18,000 ft³/s on basis of slope-area measurement of peak flow; minimum, 21 ft³/s, Mar. 4, 1954, result of freezeup.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,400 ft³/s and maximum (*):

DATE	TIME	DISCHARGE (ft ³ /s)	GAGE HEIGHT (ft)	DATE	TIME	DISCHARGE (ft ³ /s)	GAGE HEIGHT (ft)
Jan. 17	1745	Unknown	(a)*19.56	June 29	2015	*3,020	18.17
(a) Ice jam.							

Minimum discharge, 38 ft³/s, Feb. 15, result of freezeup.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Shifting-control method used June 30 to Aug. 27; stage-discharge relation affected by ice Nov. 19-21 and Nov. 24 to Mar. 8.)

4.1	39	8.0	442
5.0	120	10.0	721
6.0	220	12.0	1,040

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DAY	MEAN VALUES											
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	58	84	60	54	82	60	80	76	90	217	95	83
2	57	74	60	52	90	80	86	74	90	170	94	80
3	56	70	58	52	80	110	81	74	107	149	94	76
4	56	69	56	52	64	70	78	77	90	137	95	77
5	63	69	56	50	80	66	77	81	85	130	94	75
6	75	69	54	49	300	62	73	77	86	123	90	73
7	64	70	54	49	180	64	71	73	84	118	89	72
8	60	72	52	49	280	500	71	69	87	119	90	68
9	59	69	52	54	370	659	72	129	84	116	90	68
10	59	67	52	60	150	171	85	183	77	112	89	69
11	60	67	52	56	100	225	83	126	74	111	89	68
12	60	66	50	52	88	244	74	105	73	108	89	68
13	58	65	50	48	84	162	73	100	73	106	90	69
14	58	65	49	47	72	213	82	92	84	105	89	70
15	59	65	49	50	50	299	82	90	79	106	88	70
16	77	64	48	60	76	210	77	165	80	104	87	68
17	79	60	47	480	72	154	77	121	124	102	98	65
18	65	58	47	420	72	133	74	102	115	101	110	66
19	61	60	47	130	68	118	73	130	84	105	157	70
20	61	64	46	130	64	105	84	217	86	134	202	70
21	62	62	46	110	64	102	92	156	78	114	137	68
22	61	63	45	100	64	102	82	134	145	105	120	67
23	60	57	45	90	62	97	79	121	221	101	105	65
24	60	62	45	120	60	88	77	112	129	99	100	62
25	60	66	45	200	58	85	75	108	106	97	235	57
26	60	64	47	100	58	83	74	112	108	96	282	66
27	61	64	52	90	58	80	83	104	118	95	201	66
28	62	62	56	89	58	77	91	108	99	100	127	65
29	66	62	56	80	---	77	91	125	891	108	101	71
30	90	62	54	74	---	77	81	101	541	106	92	75
31	122	---	54	70	---	76	---	93	---	97	87	---
TOTAL	2009	1971	1584	3117	2904	4649	2378	3435	4188	3591	3606	2087
MEAN	64.8	65.7	51.1	101	104	150	79.3	111	140	116	116	69.6
MAX	122	84	60	480	370	659	92	217	891	217	282	83
MIN	56	57	45	47	50	60	71	69	73	95	87	57
CFSM	.24	.24	.19	.37	.39	.56	.29	.41	.52	.43	.43	.26
IN.	.28	.27	.22	.43	.40	.64	.33	.48	.58	.50	.50	.29

CAL YR 1989 TOTAL 37486 MEAN 103 MAX 1800 MIN 45 CFSM .38 IN. 5.18
WTR YR 1990 TOTAL 35519 MEAN 97.3 MAX 891 MIN 45 CFSM .36 IN. 4.91

05413500 GRANT RIVER AT BURTON, WI--CONTINUED
(NATIONAL STREAM-QUALITY ACCOUNTING NETWORK STATION)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1964-67, 1977 to current year. National Stream-Quality Accounting Network data collection began in October 1986.

PERIOD OF DAILY RECORD.--

SUSPENDED-SEDIMENT DISCHARGE: Water years 1977-82, October 1983 to current year.

REMARKS.--Sediment records for periods of no ice cover during considerable discharge (greater than 300 ft³/s) are good because sampling and analysis effort were concentrated on high-discharge periods. Records for most remaining periods are fair because of infrequent (about twice per week) sampling. Records for high-flow periods during ice cover are poor. Monthly load values are good. Sediment samples are taken in a single vertical, except for samples with an asterisk which are equal-width increment samples.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SUSPENDED-SEDIMENT CONCENTRATIONS: Maximum observed, 13,600 mg/L, July 13, 1979; minimum observed, 7 mg/L, Mar. 2, 1978.

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, 7,170 mg/L, June 29; minimum observed, 9 mg/L, Nov. 22.

SUSPENDED-SEDIMENT DISCHARGE: Maximum daily, 15,700 tons, June 29; minimum daily, 1.8 tons, Dec. 22-25.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SEDI- MENT, SUS- PEN- DED (MG/L) (80154)	DATE	TIME	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SEDI- MENT, SUS- PEN- DED (MG/L) (80154)
OCT 1989					MAY 1990				
02...	1100	--	58	35	20...	1000	--	246	740
06...	1635	--	74	30	23...	1105	--	121	230
09...	0935	--	59	13	26...	1130	--	114	192
*11...	1135	--	60	13	29...	0938	--	130	199
11...	1148	--	60	14	29...	1210	--	126	206
*11...	1150	--	60	14	30...	0900	--	102	156
13...	0740	--	58	19	JUN				
17...	0855	--	81	31	01...	0725	--	90	163
20...	1045	--	61	12	04...	1505	--	88	109
24...	1025	--	60	12	07...	1055	--	84	127
26...	1000	--	60	19	11...	0905	--	74	138
31...	0855	--	132	109	14...	0855	--	80	119
NOV					18...	1000	--	119	125
01...	1040	--	85	18	21...	0830	--	78	123
02...	1020	--	74	18	*21...	1230	--	78	179
03...	1000	--	70	16	21...	1245	--	78	116
06...	0920	--	68	21	25...	0815	--	106	155
10...	0815	--	67	24	28...	0710	--	99	174
13...	0920	--	65	19	29...	1015	--	103	252
17...	1015	--	60	29	29...	1755	--	2250	7170
20...	1050	64	--	17	30...	0835	--	484	1500
*22...	1310	--	63	10	30...	1020	--	426	1300
22...	1326	--	63	9	JUL				
22...	1329	--	63	15	02...	1310	--	167	287
FEB 1990					05...	0845	--	132	215
*12...	1350	88	--	190	09...	0815	--	116	106
12...	1412	88	--	53	12...	1635	--	108	110
MAR					16...	0900	--	105	104
08...	1330	500	--	1020	19...	0945	--	102	77
11...	1025	--	172	380	23...	0940	--	101	87
13...	0955	--	154	205	25...	1030	--	97	70
16...	0815	--	217	358	25...	1315	--	97	91
19...	1110	--	119	46	26...	0810	--	96	71
22...	1005	--	103	40	30...	1030	--	105	65
*22...	1020	--	103	65	AUG				
22...	1045	--	103	62	02...	0910	--	94	69
26...	1510	--	83	24	07...	0830	--	89	70
*27...	1405	--	80	35	10...	1320	--	89	42
27...	1415	--	80	37	13...	1050	--	91	70
30...	0900	--	77	22	16...	0915	--	87	66
APR					16...	0940	--	87	64
03...	1020	--	82	47	16...	1055	--	87	70
07...	0935	--	70	36	19...	0945	--	122	136
09...	1020	--	72	30	19...	1315	--	145	282
12...	1000	--	74	32	20...	1025	--	227	436
18...	0835	--	75	51	*20...	1642	--	189	366
21...	1635	--	90	39	23...	1045	--	105	83
23...	0910	--	79	32	26...	1735	--	309	797
26...	1100	--	73	51	29...	0850	--	103	124
30...	1055	--	81	35	30...	1655	--	90	270
MAY					31...	0740	--	87	112
03...	1055	--	74	37	SEP				
07...	0810	--	75	53	04...	0845	--	77	150
*08...	1307	--	68	46	06...	1005	--	73	130
08...	1317	--	68	69	10...	1315	--	70	56
08...	1320	--	68	58	13...	0915	--	68	57
09...	1120	--	161	253	17...	1145	--	64	35
11...	0900	--	130	168	20...	0945	--	70	49
14...	0830	--	93	183	24...	0845	--	66	46
16...	0810	--	186	692	27...	0945	--	66	54

GRANT RIVER BASIN

05413500 GRANT RIVER AT BURTON, WI--CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS-CHARGE, IN CUBIC FEET PER SECOND (000060)	DIS-CHARGE, INST. CUBIC FEET PER SECOND (000061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (000095)	PH (STAND-ARD UNITS) (000400)	TEMPER-ATURE WATER (DEG C) (000010)	TUR-BID-ITY (NTU) (000076)	OXYGEN, DIS-SOLVED (MG/L) (000300)	BARO-METRIC PRES-SURE (MM OF HG) (000025)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (000301)
NOV 1989										
02...	1030	--	72	630	8.4	6.5	5.4	11.6	754	96
DEC										
28...	0900	56	--	610	8.1	0.0	1.5	11.4	747	80
MAR 1990										
22...	1035	--	108	685	8.3	7.5	1.0	10.9	744	93
MAY										
29...	1035	--	129	643	8.4	18.0	4.7	7.7	744	84
JUL										
25...	1145	--	69	615	8.5	22.5	12	10.7	742	127
AUG										
16...	1030	--	60	635	8.4	22.0	15	7.2	743	85
DATE	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	STREP-TOCOC CI, FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00932)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE WATER DIS IT FIELD (MG/L AS HCO3) (00453)	
NOV 1989										
02...	--	--	320	72	33	9.6	6	0.2	11	334
DEC										
28...	33	64	340	78	35	6.8	4	0.2	1.8	356
MAR 1990										
22...	54	1900	340	80	34	8.8	5	0.2	4.5	350
MAY										
29...	1300	160	340	79	34	8.9	5	0.2	3.0	342
JUL										
25...	200	86	310	71	33	9.0	6	0.2	3.7	346
AUG										
16...	350	210	330	75	34	9.1	6	0.2	2.4	320
DATE	CAR-BONATE WATER DIS IT FIELD (MG/L AS CO3) (00452)	ALKA-LINITY WAT DIS TOT IT FIELD (MG/L AS CACO3) (39086)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)
NOV 1989										
02...	7	288	26	23	0.10	11	375	370	0.51	72.9
DEC										
28...	--	292	26	13	0.10	13	357	363	0.49	54.0
MAR 1990										
22...	8	300	28	19	0.20	12	396	381	0.54	115
MAY										
29...	2	284	24	22	0.10	10	380	363	0.52	132
JUL										
25...	14	308	25	21	0.20	2.1	343	356	0.47	64.2
AUG										
16...	10	278	24	19	0.10	8.7	361	347	0.49	58.8
DATE	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	
NOV 1989										
02...	2.50	0.380	0.370	1.7	0.480	0.350	0.300	21	96	
DEC										
28...	3.10	0.140	0.150	0.90	0.090	0.060	0.080	43	17	
MAR 1990										
22...	3.10	0.180	0.180	1.2	0.260	0.200	0.190	65	70	
MAY										
29...	2.50	0.080	0.070	1.1	0.340	0.180	0.170	195	95	
JUL										
25...	1.40	0.020	0.010	0.70	0.150	0.110	0.100	120	53	
AUG										
16...	1.50	0.060	0.030	0.70	0.240	0.150	0.110	112	59	

GRANT RIVER BASIN

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05413500 GRANT RIVER AT BURTON, WI--CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	ALUM- INUM, DIS- SOLVED (UG/L AS AL) (01106)	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE) (01010)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	COBALT, DIS- SOLVED (UG/L AS CO) (01035)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, DIS- SOLVED (UG/L AS FE) (01046)
NOV 1989 02...	1030	72	10	1	73	<0.5	<1.0	<1	<3	2	29
MAR 1990 22...	1035	108	10	<1	68	<0.5	<1.0	<5	1	3	7
MAY 29...	1035	129	<10	1	77	0.9	<1.0	<1	<3	3	6
AUG 16...	1030	60	<10	1	84	<0.5	<1.0	<1	<3	3	4

DATE	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	LITHIUM DIS- SOLVED (UG/L AS LI) (01130)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	MERCURY DIS- SOLVED (UG/L AS HG) (71890)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO) (01060)	NICKEL, DIS- SOLVED (UG/L AS NI) (01065)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	STRON- TIUM, DIS- SOLVED (UG/L AS SR) (01080)	VANA- DIUM, DIS- SOLVED (UG/L AS V) (01085)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)
NOV 1989 02...	<1	5	79	<0.1	<10	2	<1	75	<6	18
MAR 1990 22...	1	<4	110	<0.1	<10	2	<1	82	<6	10
MAY 29...	1	5	68	0.1	<10	12	<1	81	<6	4
AUG 16...	<1	7	57	<0.1	<10	2	<1	80	<6	4

DATE	TIME	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)
NOV 1989 02...	1030	--	72	630	6.5
22...	1310	--	63	610	0.5
DEC 28...	0900	56	--	610	0.0
FEB 1990 12...	1255	--	87	530	1.0
MAR 22...	1035	--	108	685	7.5
27...	1405	--	80	635	7.5
MAY 08...	1305	--	68	580	19.0
29...	1035	--	129	643	18.0
JUN 21...	1235	--	80	630	22.0
JUL 25...	1145	--	69	615	22.5
AUG 16...	1030	--	60	635	22.0
20...	1640	--	195	480	22.0

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

[illegible]

PLATTE RIVER BASIN

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05414000 PLATTE RIVER NEAR ROCKVILLE, WI

LOCATION.--Lat 42°43'52", long 90°38'25", in SW 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 mi².

PERIOD OF RECORD.--October 1934 to current year. Monthly discharge only for October and November 1934, published in WSP 1308.

REVISED RECORDS.--WSP 1438: 1935-36, 1937(M), 1939(M), 1941-43, 1946(M). WDR WI-76-1: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 642.50 ft above National Geodetic Vertical Datum 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.--Estimated daily discharges: Ice periods listed in rating table below. Records good except those for ice-affected periods, which are poor.

AVERAGE DISCHARGE.--56 years, 98.4 ft³/s, 9.41 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 43,500 ft³/s, July 16, 1950, gage height, 17.26 ft, from rating curve extended above 7,000 ft³/s on basis of slope-area measurement of peak flow; no flow Nov. 24, 1950.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,100 ft³/s and maximum (*):

DATE	TIME	DISCHARGE (ft ³ /s)	GAGE HEIGHT (ft)	DATE	TIME	DISCHARGE (ft ³ /s)	GAGE HEIGHT (ft)
June 29	1045	*19,000	*14.85	No other peak greater than base discharge.			

Minimum daily discharge, 21 ft³/s, Dec. 21-23, Aug. 8-11, 15, 16.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Shifting-control method used Apr. 29 to May 8, May 12-15, May 29 to June 16;
June 19-21, June 30 to July 3, Aug. 19, 20, and Aug. 23 to Sept. 30; stage-
discharge relation affected by ice Dec. 3 to Feb. 9, Feb. 15, 16, and Feb. 20
to Mar. 7.)

3.3	21	7.0	1,070
3.5	35	8.0	1,490
4.0	104	9.0	1,950
4.5	213	10.0	2,750
5.0	354	11.0	4,180
6.0	686	12.0	6,600

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DAY	MEAN VALUES											
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	32	44	33	26	39	35	42	39	39	230	24	50
2	32	37	29	26	52	64	44	38	39	143	23	48
3	32	34	29	27	37	80	43	38	38	113	23	45
4	32	34	30	27	34	40	42	42	36	95	26	45
5	37	34	31	27	90	33	40	41	36	83	23	44
6	39	33	29	27	150	32	36	39	38	71	22	43
7	35	35	28	27	74	33	35	36	38	63	22	42
8	33	36	27	27	230	416	36	36	40	67	21	41
9	33	35	26	30	170	265	38	45	38	56	21	41
10	33	34	25	38	63	97	45	62	34	49	21	41
11	33	33	25	34	47	280	43	49	33	46	21	40
12	33	33	24	30	44	127	39	45	33	42	38	39
13	32	33	23	29	74	107	39	44	33	38	24	39
14	32	33	23	28	38	357	44	42	42	36	22	40
15	32	33	23	28	37	421	44	42	37	39	21	40
16	43	33	23	33	36	128	41	74	40	37	21	39
17	44	32	23	500	35	91	41	56	50	33	24	38
18	35	31	22	70	38	74	39	47	52	33	27	38
19	33	33	22	50	35	64	39	58	39	33	107	41
20	33	33	22	45	34	58	48	79	39	48	162	40
21	33	33	21	40	34	56	53	68	36	41	87	40
22	33	33	21	38	34	55	46	62	106	32	73	39
23	33	31	21	37	34	52	44	57	150	32	59	36
24	33	35	22	80	33	47	43	53	86	27	54	35
25	33	33	22	100	32	45	40	53	70	26	123	35
26	33	33	23	45	32	43	39	53	66	25	125	35
27	33	33	23	38	33	42	42	49	60	26	99	34
28	33	36	24	36	34	42	48	47	55	33	75	34
29	34	34	25	34	---	41	46	45	4410	33	65	33
30	47	35	26	33	---	41	42	42	576	33	58	33
31	59	---	26	35	---	40	---	40	---	26	53	---
TOTAL	1092	1019	771	1645	1623	3306	1261	1521	6389	1689	1564	1188
MEAN	35.2	34.0	24.9	53.1	58.0	107	42.0	49.1	213	54.5	50.5	39.6
MAX	59	44	33	500	230	421	53	79	4410	230	162	50
MIN	32	31	21	26	32	32	35	36	33	25	21	33
CFSM	.25	.24	.18	.37	.41	.75	.30	.35	1.50	.38	.36	.28
IN.	.29	.27	.20	.43	.43	.87	.33	.40	1.67	.44	.41	.31

CAL YR 1989 TOTAL 18396 MEAN 50.4 MAX 1100 MIN 21 CFSM .35 IN. 4.82
WTR YR 1990 TOTAL 23068 MEAN 63.2 MAX 4410 MIN 21 CFSM .45 IN. 6.04

PLATTE RIVER BASIN

05414213 LITTLE PLATTE RIVER NEAR PLATTEVILLE, WI

LOCATION.--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 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 11, 1987 to June 30, 1990 (discontinued).

GAGE.--Water-stage recorder, data logger with telephone modem for daily retrieval, and crest-stage gage. Elevation of gage is 760 ft, from topographic map.

REMARKS.--Estimated daily discharges: June 22-30 and ice periods listed in rating table below. Records good except those for estimated daily discharges, which are fair.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,800 ft³/s, June 29, 1990, gage height, 15.35 ft; minimum daily, 6.8 ft³/s, Aug. 18, 1989.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,800 ft³/s, June 29, gage height, 15.35 ft; minimum daily, 8.8 ft³/s, Dec. 22-24.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Dec. 3, Dec. 6 to Jan. 17, Jan. 24 to Feb. 7, and Feb. 20, 24, 25.)

6.9	7.9	8.0	151
7.0	13	8.5	285
7.2	28	9.0	466
7.4	48	11.0	1,380
7.7	91		

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	16	12	10	16	16	18	13	15	---	---	---
2	11	13	12	11	20	40	18	13	17	---	---	---
3	11	12	12	11	18	53	16	13	16	---	---	---
4	11	13	12	11	16	20	16	16	14	---	---	---
5	21	14	13	11	35	15	16	15	16	---	---	---
6	16	13	12	11	80	13	14	14	16	---	---	---
7	13	16	12	11	37	14	13	13	16	---	---	---
8	11	15	11	13	113	351	14	13	18	---	---	---
9	11	14	11	17	64	159	16	30	16	---	---	---
10	12	14	11	15	24	49	21	27	13	---	---	---
11	13	13	10	14	18	258	16	20	13	---	---	---
12	12	12	10	13	20	70	14	18	13	---	---	---
13	12	13	10	12	25	84	15	17	16	---	---	---
14	13	12	9.8	12	19	121	19	16	70	---	---	---
15	13	12	9.8	13	18	154	16	16	17	---	---	---
16	34	11	9.6	30	17	57	15	73	27	---	---	---
17	18	10	9.4	300	15	40	15	33	31	---	---	---
18	13	10	9.4	56	14	32	14	26	21	---	---	---
19	12	11	9.2	26	13	26	14	39	16	---	---	---
20	13	12	9.2	20	13	24	21	45	17	---	---	---
21	13	12	9.0	16	13	23	19	33	15	---	---	---
22	12	11	8.8	15	14	24	16	28	50	---	---	---
23	13	10	8.8	15	15	21	15	25	70	---	---	---
24	13	11	8.8	90	14	18	15	23	40	---	---	---
25	13	12	9.0	70	12	17	14	24	36	---	---	---
26	12	12	9.2	20	13	17	16	23	34	---	---	---
27	12	13	9.4	16	13	16	18	21	33	---	---	---
28	13	12	9.6	18	15	16	21	19	32	---	---	---
29	13	13	9.8	14	---	16	17	18	1300	---	---	---
30	26	13	9.8	13	---	16	15	16	130	---	---	---
31	23	---	10	15	---	16	---	15	---	---	---	---
TOTAL	444	375	316.6	919	704	1796	487	715	2138	---	---	---
MEAN	14.3	12.5	10.2	29.6	25.1	57.9	16.2	23.1	71.3	---	---	---
MAX	34	16	13	300	113	351	21	73	1300	---	---	---
MIN	11	10	8.8	10	12	13	13	13	13	---	---	---
CFSM	.18	.16	.13	.37	.32	.73	.20	.29	.89	---	---	---
IN.	.21	.18	.15	.43	.33	.84	.23	.33	1.00	---	---	---

CAL YR 1989 TOTAL 8898.0 MEAN 24.4 MAX 1170 MIN 6.8 CFSM .31 IN. 4.15

05414213 LITTLE PLATTE RIVER NEAR PLATTEVILLE, WI--CONTINUED

WATER-QUALITY RECORDS

PERIOD OF RECORD.--July 1987 to June 1990 (discontinued).

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: July 1987 to June 1990 (discontinued).

DISSOLVED OXYGEN: July 1987 to June 1990 (discontinued).

INSTRUMENTATION.--Continuous water temperature and dissolved oxygen recorder since July 1987. Automatic pumping sampler since July 1987.

REMARKS.--Water-quality analyses by the Wisconsin State Laboratory of Hygiene. Samples are point samples unless otherwise indicated.

EXTREMES FOR PERIOD OF RECORD.--

WATER TEMPERATURE: Maximum observed, 32.0°C, July 15, 1988, July 10, 1989; minimum observed, 0.0°C, on many days.

DISSOLVED OXYGEN: Maximum observed, 20.0 mg/L, Apr. 8, 1990; minimum observed, 0.5 mg/L, Aug. 5, 1989.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum observed, 27.5°C, June 12; minimum observed, 0.0°C, on many days.

DISSOLVED OXYGEN: Maximum observed, 20.0 mg/L, Apr. 8; minimum observed, 4.6 mg/L, Apr. 25-26, June 13.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH LAB (STAND- ARD UNITS) (00403)	TUR- BID- ITY (NTU) (00076)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDED (MG/L) (00530)	RESIDUE FIXED NON FILTER- ABLE (MG/L) (00540)	RESIDUE VOLA- TILE, SUS- PENDED (MG/L) (00535)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)
NOV 1989											
*29...	1300	--	14	8.2	2.6	6	--	--	5.70	0.040	0.770
JAN 1990											
16...	2230	30	--	7.8	140	852	736	116	--	1.00	--
16...	2330	30	--	7.8	190	912	792	120	--	2.50	--
17...	0300	300	--	7.5	370	2720	2430	290	--	3.10	--
17...	0345	300	--	7.3	450	2890	2580	310	--	2.70	--
17...	1845	300	--	7.2	76	264	216	48	--	2.40	--
MAR											
08...	1230	--	223	7.8	140	684	588	96	--	0.750	--
08...	1415	--	381	7.5	150	940	804	136	--	1.60	--
08...	1615	--	763	7.4	320	2360	2080	280	--	1.70	--
08...	1800	--	1040	7.3	300	3810	3420	390	--	2.00	--
09...	0100	--	426	7.3	320	1400	1200	200	--	2.10	--
09...	0700	--	174	7.2	170	630	500	130	--	2.10	--
11...	0745	--	229	8.2	130	692	620	72	--	0.830	--
11...	1030	--	414	7.9	260	1460	1300	160	--	1.40	--
11...	1230	--	654	7.9	860	5100	4570	530	--	3.00	--
11...	1715	--	338	7.9	570	2640	2330	310	--	2.10	--
12...	1035	--	66	8.3	72	220	180	40	--	1.50	--
12...	1036	--	66	8.3	76	160	132	28	--	1.50	--
*12...	1040	--	66	8.2	74	148	116	32	--	1.50	--
*12...	1041	--	66	8.3	72	144	112	32	--	1.50	--
13...	1915	--	149	7.8	250	960	840	120	--	0.900	--
13...	2245	--	151	7.9	130	464	392	72	--	1.80	--
14...	1745	--	261	8.0	380	1750	1590	160	--	1.70	--
14...	1800	--	282	8.1	700	3510	3120	390	--	1.80	--
14...	2015	--	142	8.1	750	2560	2240	320	--	1.60	--
14...	2330	--	237	8.2	280	910	810	100	--	1.20	--
MAY											
*02...	0915	--	12	--	--	--	--	--	--	--	--
16...	0100	--	119	8.2	160	898	798	100	--	0.220	--
16...	0115	--	136	8.2	55	341	302	39	--	0.150	--
19...	1030	--	63	8.3	24	194	170	24	--	0.100	--
19...	1945	--	65	8.3	30	128	109	19	--	0.200	--
JUN											
14...	0145	--	345	7.9	210	2780	2510	272	--	0.200	--
14...	0530	--	136	7.7	800	2380	2080	300	--	0.400	--
14...	0800	--	66	7.8	590	1230	1040	192	--	0.400	--
14...	0937	--	46	7.8	340	728	608	120	--	0.300	--

PLATTE RIVER BASIN

05414213 LITTLE PLATTE RIVER NEAR PLATTEVILLE, WI--CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	ALA- CHLOR TOTAL RECOVER (UG/L) (77825)	ATRA- ZINE, TOTAL (UG/L) (39630)	CARBO- FURAN WATER WHOLE TOT.REC (UG/L) (82615)	CHLOR- PYRIFOS TOTAL RECOVER (UG/L) (38932)	CYAN- AZINE TOTAL (UG/L) (81757)	FONOFOS (DY- FONATE) WATER WHOLE TOT.REC (UG/L) (82614)	METOLA- CHLOR IN WHOLE WATER (UG/L) (39356)	PHORATE TOTAL (UG/L) (39023)	TERBU FOS (UG/L) (82088)
MAY 1990										
*02...	0915	<0.10	0.11	--	<1.0	<0.90	<0.2	<0.20	<0.20	<0.20
16...	0100	0.21	0.34	<4.0	<1.0	<0.90	<0.2	0.21	<0.20	<0.20
19...	1030	0.31	0.74	<4.0	<1.0	<0.90	<0.2	0.81	<0.20	<0.20
19...	1945	0.35	0.76	<4.0	<1.0	<0.90	<0.2	0.66	<0.20	<0.20
JUN										
14...	0145	0.42	0.64	<10.0	<1.0	3.1	<0.2	0.46	<0.20	<0.20
14...	0530	2.00	15	<10.0	<1.0	7.4	<0.2	6.50	<0.20	<0.45
14...	0941	3.00	15	<10.0	<1.0	8.3	<0.2	4.80	<0.20	<0.60

* EQUAL-WIDTH INCREMENT (EWI) SAMPLE.

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)	DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)
OCT 1989					MAR 1990				
11...	1430	13	805	13.5	11...	1637	508	390	4.0
NOV					APR				
29...	1301	14	745	0.5	19...	1305	16	730	10.0
JAN 1990					JUN				
03...	1502	11	835	0.5	11...	1105	12	690	19.5
FEB					26...	1030	35	840	21.0
21...	1155	17	840	1.0					

05414213 LITTLE PLATTE RIVER NEAR PLATTEVILLE, WI--CONTINUED

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	---	---	---	9.5	7.0	8.0	1.0	.00	.50	.00	.00	.00
2	---	---	---	8.0	4.5	6.5	1.0	.00	.50	.00	.00	.00
3	---	---	---	5.0	2.5	4.0	.50	.00	.50	.50	.00	.00
4	---	---	---	8.5	4.5	6.5	.50	.00	.50	.00	.00	.00
5	---	---	---	9.5	7.5	9.0	2.5	.50	1.0	.00	.00	.00
6	---	---	---	8.5	7.0	8.0	1.5	.00	1.0	.00	.00	.00
7	---	---	---	9.0	7.5	8.0	.50	.00	.00	.50	.00	.00
8	---	---	---	9.0	7.5	8.0	.50	.00	.50	.50	.00	.00
9	---	---	---	7.5	5.5	6.0	.50	.00	.50	.50	.00	.00
10	---	---	---	6.5	5.0	6.0	.50	.00	.50	.50	.00	.00
11	---	---	---	7.5	5.5	6.5	.50	.00	.00	.50	.00	.00
12	---	---	---	6.0	3.5	5.0	.50	.00	.00	.00	.00	.00
13	---	---	---	9.0	4.0	6.5	.50	.00	.00	.00	.00	.00
14	---	---	---	8.0	6.0	6.5	.50	.00	.00	.00	.00	.00
15	14.5	10.5	12.5	6.5	4.5	6.0	.50	.00	.00	.50	.00	.00
16	14.0	10.0	11.5	4.5	.00	2.5	.50	.00	.00	.00	.00	.00
17	10.0	8.5	9.0	1.0	.00	.50	.50	.00	.00	.00	.00	.00
18	9.0	7.5	8.5	.50	.00	.50	.50	.00	.00	1.0	.00	.50
19	8.5	7.5	8.0	2.0	.00	1.0	.00	.00	.00	.50	.50	.50
20	9.0	8.0	8.5	5.0	1.5	3.0	.00	.00	.00	1.0	.50	.50
21	9.5	8.0	8.5	2.5	1.0	1.5	.00	.00	.00	1.5	.50	1.0
22	9.5	6.0	8.0	2.5	.50	1.0	.00	.00	.00	2.5	1.0	1.5
23	12.5	7.5	10.0	1.0	.50	.50	.00	.00	.00	2.0	1.0	1.5
24	14.0	8.5	11.5	1.0	.50	.50	.00	.00	.00	2.5	.00	1.5
25	16.0	11.0	13.5	3.0	.50	2.0	.00	.00	.00	.50	.00	.00
26	16.0	12.0	14.0	3.0	.50	1.5	.00	.00	.00	.00	.00	.00
27	14.5	11.5	13.0	3.5	2.0	3.0	.00	.00	.00	1.0	.00	.50
28	15.0	13.0	14.0	3.0	.00	1.0	.00	.00	.00	.50	.00	.00
29	14.5	13.0	14.0	.50	.00	.50	.00	.00	.00	.50	.00	.50
30	14.0	11.5	13.0	1.0	.00	.50	.00	.00	.00	2.0	.50	1.0
31	11.5	8.0	10.0	---	---	---	.00	.00	.00	.50	.00	.50
MONTH	---	---	---	9.5	.00	4.0	2.5	.00	.18	2.5	.00	.31
FEBRUARY			MARCH			APRIL			MAY			
1	2.5	.50	1.5	3.0	.50	1.5	11.5	7.5	9.0	17.5	10.5	14.0
2	1.0	.00	.50	3.5	.50	1.5	7.5	4.5	5.5	18.0	9.5	14.0
3	1.5	.00	.50	1.5	.50	1.0	11.0	3.0	7.0	14.5	10.5	13.0
4	.50	.00	.00	2.0	.50	1.0	13.0	6.5	9.5	12.5	9.0	10.5
5	2.0	.00	.50	1.5	1.0	1.5	12.0	6.5	9.0	15.0	7.5	11.0
6	1.0	.00	.50	3.5	.50	1.5	8.0	3.5	6.0	19.0	10.5	15.0
7	2.0	.00	1.0	1.5	.50	1.0	10.0	2.0	6.0	21.5	12.0	17.0
8	2.0	.50	1.0	1.5	.00	1.0	13.5	4.5	9.5	21.0	15.5	18.5
9	2.0	.50	1.0	3.5	.50	1.5	12.0	9.5	10.0	18.5	13.0	16.0
10	1.5	.50	1.0	4.5	2.0	3.0	11.0	7.5	9.5	13.0	10.5	11.5
11	1.5	.50	1.0	4.0	2.5	3.5	10.0	5.5	7.5	17.5	8.0	13.0
12	3.5	.50	1.5	11.0	4.0	7.5	11.0	3.0	7.0	15.5	12.0	13.0
13	3.0	1.0	2.0	12.5	9.0	10.5	8.5	4.5	7.0	19.5	9.5	14.5
14	1.0	.50	.50	12.5	11.0	11.5	14.0	6.0	10.0	17.0	13.5	15.0
15	.50	.50	.50	11.5	8.0	10.5	15.5	9.0	12.0	15.5	13.5	14.0
16	.50	.50	.50	9.5	6.5	8.0	11.0	7.0	9.0	16.0	13.0	14.5
17	.50	.50	.50	7.0	5.0	6.5	12.0	4.5	8.5	14.5	12.0	13.0
18	1.0	.50	.50	6.0	3.5	4.5	13.5	4.5	9.5	19.5	10.0	14.5
19	1.0	.50	.50	5.5	1.5	3.5	11.0	8.0	10.0	16.5	12.0	13.5
20	1.0	.50	.50	7.5	1.5	4.5	12.5	10.0	11.0	12.0	11.0	11.5
21	1.0	.50	.50	10.5	3.5	7.0	17.5	10.5	13.5	15.5	10.0	12.5
22	2.0	1.0	1.5	8.5	5.0	7.0	19.5	10.5	15.0	19.0	11.0	15.0
23	3.0	.50	1.5	6.0	.50	3.5	22.0	13.5	18.0	18.5	13.5	15.5
24	1.5	.00	.50	7.5	1.0	4.0	23.5	16.5	20.5	19.0	14.0	16.5
25	.50	.00	.50	8.5	1.0	5.0	25.0	17.0	21.0	16.5	14.5	15.5
26	1.0	.50	.50	9.0	2.5	6.0	24.0	18.0	21.0	16.0	14.0	15.0
27	1.5	.50	1.0	10.0	2.0	6.0	22.5	17.5	20.0	22.0	13.0	17.0
28	2.0	.50	1.0	8.0	3.5	6.5	19.0	14.0	17.0	21.5	16.0	18.5
29	---	---	---	7.0	6.0	6.5	19.0	11.5	15.5	22.5	15.0	19.0
30	---	---	---	7.5	5.5	6.0	17.5	12.5	15.5	22.0	14.0	18.0
31	---	---	---	8.5	3.5	6.5	---	---	---	22.5	14.0	18.5
MONTH	3.5	.00	.80	12.5	.00	4.8	25.0	2.0	11.6	22.5	7.5	14.8

WATER TEMPERATURE. DEGREES CELSIUS. WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

OXYGEN DISSOLVED (MG/L). WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

[illegible]

OXYGEN DISSOLVED (MG/L). WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

[illegible]

05414213 LITTLE PLATTE RIVER NEAR PLATTEVILLE, WI--CONTINUED

PRECIPITATION QUANTITY

PERIOD OF RECORD.--July 1987 to current year (during non-freezing periods).

GAGE.--Micrologger.

REMARKS.--Records fair.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily rainfall, 2.74 in., Aug. 31, 1989.

EXTREMES FOR CURRENT YEAR.--Maximum daily rainfall, 1.05 in., Oct. 16.

RAINFALL ACCUMULATED (INCHES), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
SUM VALUES

[illegible]

SINSINAWA RIVER BASIN

391

05414800 SINSINAWA RIVER NEAR HAZEL GREEN, WI

LOCATION.--Lat 42°32'02", long 90°28'53", in NW 1/4 NW 1/4 sec.27, T.1 N., R.1 W., Grant County, Hydrologic Unit 07060005, on left bank 75 ft upstream from the Highway 11 bridge and 2.5 mi west of Hazel Green.

DRAINAGE AREA.--24.9 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 23, 1987 to June 30, 1990 (discontinued).

GAGE.--Water-stage recorder. Elevation of gage is 790 ft, from topographic map.

REMARKS.--Estimated daily discharges: June 25-30 and ice periods listed in rating table below. Records are good except those for estimated daily discharges, which are fair.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,270 ft³/s, Mar. 10, 1989, gage height, 7.54 ft; maximum gage height, 7.58 ft, Jan. 17, 1990, result of ice jam; minimum, 1.8 ft³/s, Jan. 12 and Feb. 14, 1990, gage height, 2.04 ft, result of freezeup.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 334 ft³/s, Mar. 8, gage height, 4.94 ft; maximum gage height, 7.58 ft, Jan. 17, backwater from ice; minimum, 1.8 ft³/s, Jan. 12 and Feb. 14, gage height, 2.04 ft, result of freezeup.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Nov. 24, 25, Dec. 2 to Jan. 1, Jan. 4, 5, 9-18, Jan. 23 to Feb. 1, Feb. 24 and 25.)

2.2	3.9	3.0	39
2.3	5.7	3.5	85
2.5	11	4.0	151
2.7	20		

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.8	4.9	4.8	5.2	6.0	6.5	5.4	4.8	5.0	---	---	---
2	4.7	4.7	4.8	5.4	5.0	9.1	5.3	4.8	16	---	---	---
3	4.8	4.8	4.7	5.4	4.6	6.5	5.2	4.8	6.8	---	---	---
4	4.8	5.0	4.6	8.0	4.5	5.4	5.2	5.6	5.0	---	---	---
5	5.8	4.9	4.6	5.6	9.4	5.2	5.1	5.3	5.7	---	---	---
6	5.2	4.7	4.5	5.3	7.0	5.1	4.9	5.0	5.3	---	---	---
7	4.9	5.5	4.5	5.2	5.2	5.1	5.0	5.0	5.0	---	---	---
8	4.9	5.0	4.5	5.1	6.7	107	5.0	4.9	5.2	---	---	---
9	4.9	4.9	4.5	15	5.6	27	5.1	5.5	4.7	---	---	---
10	5.1	4.8	4.4	10	4.8	7.1	5.5	5.4	4.6	---	---	---
11	4.9	4.8	4.4	6.0	4.6	12	5.0	5.0	4.7	---	---	---
12	4.8	4.7	4.4	4.5	4.7	7.8	5.0	5.1	4.7	---	---	---
13	4.8	4.9	4.4	4.8	4.8	13	5.2	5.1	4.9	---	---	---
14	4.8	4.7	4.4	4.8	4.5	11	5.7	5.0	6.4	---	---	---
15	4.8	4.6	4.3	5.4	5.0	15	5.2	5.0	4.9	---	---	---
16	5.5	4.5	4.4	30	5.0	7.5	5.1	21	8.9	---	---	---
17	4.7	4.6	4.4	150	4.8	6.5	5.0	5.6	11	---	---	---
18	4.5	4.6	4.5	8.0	5.3	6.0	5.0	4.9	5.9	---	---	---
19	4.5	4.9	4.5	5.5	4.9	5.7	5.1	9.0	5.9	---	---	---
20	4.6	5.0	4.5	4.8	5.2	5.6	6.2	5.9	5.8	---	---	---
21	4.7	4.8	4.4	4.7	5.4	5.7	5.4	5.3	5.6	---	---	---
22	4.7	4.8	4.4	5.5	6.2	5.9	5.3	5.1	7.8	---	---	---
23	4.7	4.6	4.3	10	7.3	5.3	5.2	5.1	7.1	---	---	---
24	4.9	4.6	4.3	16	9.0	5.3	5.1	5.1	5.7	---	---	---
25	4.9	4.7	4.4	6.0	7.0	5.3	4.9	5.3	5.8	---	---	---
26	4.8	4.8	4.4	5.0	5.8	5.2	5.0	5.2	5.6	---	---	---
27	4.9	5.0	4.6	4.6	5.5	5.2	5.2	5.0	7.0	---	---	---
28	4.9	4.9	4.8	4.8	5.5	5.2	5.8	5.0	7.8	---	---	---
29	4.9	4.6	4.9	4.6	---	5.4	5.1	4.9	16	---	---	---
30	6.0	4.8	5.0	4.5	---	5.3	4.9	4.8	10	---	---	---
31	5.3	---	5.2	4.5	---	5.3	---	4.9	---	---	---	---
TOTAL	152.5	144.1	140.8	364.2	159.3	333.2	156.1	178.4	204.8	---	---	---
MEAN	4.92	4.80	4.54	11.7	5.69	10.7	5.20	5.75	6.83	---	---	---
MAX	6.0	5.5	5.2	150	9.4	107	6.2	21	16	---	---	---
MIN	4.5	4.5	4.3	4.5	4.5	5.1	4.9	4.8	4.6	---	---	---
CFSM	.20	.19	.18	.47	.23	.43	.21	.23	.27	---	---	---
IN.	.23	.22	.21	.54	.24	.50	.23	.27	.31	---	---	---

CAL YR 1989 TOTAL 3093.9 MEAN 8.48 MAX 301 MIN 4.3 CFSM .34 IN. 4.62

WATER-QUALITY RECORDS

PERIOD OF RECORD.--July 1987 to June 1990 (discontinued).

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: July 1987 to June 1990 (discontinued).

DISSOLVED OXYGEN: July 1987 to June 1990 (discontinued).

INSTRUMENTATION.--Continuous water temperature and dissolved oxygen recorder since July 1987. Automatic pumping sampler since July 1987.

REMARKS.--Water-quality analyses by the Wisconsin State Laboratory of Hygiene. Samples are point samples unless otherwise indicated. Water temperature probe and recorder not working Nov. 26 to Mar. 21.

EXTREMES FOR PERIOD OF RECORD.--

WATER TEMPERATURE: Maximum observed, 32.0°C, July 10, 1989; minimum observed, 0.0°C, on many days.

DISSOLVED OXYGEN: Maximum observed, 18.5 mg/L, Apr. 21, 1990; minimum observed, 1.4 mg/L, Aug. 23, 1988.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum observed, 28.5°C, June 12, 14; minimum observed, 0.0°, on many days.

DISSOLVED OXYGEN: Maximum observed, 18.5 mg/L, Apr. 21; minimum observed, 2.6 mg/L, June 17.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS-CHARGE, IN CUBIC FEET PER SECOND (00060)	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH LAB (STANDARD UNITS) (00403)	TUR-BID-ITY (NTU) (00076)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	RESIDUE FIXED NON FILTER-ABLE (MG/L) (00540)	RESIDUE VOLA-TILE, SUS-PENDED (MG/L) (00535)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)
NOV 1989											
*29...	1030	--	5.0	8.2	4.6	.16	--	--	5.20	0.040	0.070
JAN 1990											
16...	2100	30	--	7.2	150	772	672	100	--	3.00	--
16...	2359	30	--	7.1	380	2280	2040	240	--	4.10	--
17...	0145	150	--	7.0	340	1970	1750	220	--	4.00	--
17...	0615	150	--	7.0	280	1470	1300	170	--	4.10	--
MAR											
08...	1145	--	177	7.3	140	900	740	160	--	1.80	--
08...	1230	--	267	7.2	290	1700	1470	230	--	2.60	--
08...	1300	--	316	7.3	290	2350	2060	290	--	2.60	--
08...	1800	--	196	7.2	360	1700	1460	240	--	2.80	--
08...	1930	--	131	7.2	250	710	560	150	--	2.90	--
MAY											
*02...	1230	--	5.0	--	--	--	--	--	--	--	--
16...	0200	--	32	8.1	56	275	241	34	--	0.250	--
16...	0300	--	98	8.1	350	1350	1190	164	--	0.810	--
16...	0315	--	106	8.1	340	1310	1150	156	--	0.780	--
16...	0515	--	48	7.8	2100	4370	3850	520	--	2.00	--
16...	0845	--	21	7.7	3700	6400	5560	840	--	3.30	--
JUN											
02...	1500	--	32	--	--	--	--	--	--	--	--
02...	1515	--	33	7.9	280	988	852	136	--	0.300	--
02...	1915	--	55	7.7	1400	1940	1720	224	--	0.400	--
02...	2300	--	21	7.7	400	956	832	124	--	0.900	--

*EQUAL-WIDTH INCREMENT (EWI) SAMPLE.

CORE WIDTH INCREMENT (LWT) SAMPLE.										
DATE	TIME	ALA-CHLOR	ATRA-ZINE	CARBO-FURAN	CHLOR-PYRIFOS	CYAN-AZINE	FONOFOS (DY-FONATE)	METOLA-CHLOR	PHORATE	TERBU-FOS
		TOTAL RECOVER	TOTAL	WATER WHOLE TOT.REC	TOTAL RECOVER	TOTAL	WATER WHOLE TOT.REC	IN WHOLE WATER	TOTAL	
		(UG/L) (77825)	(UG/L) (39630)	(UG/L) (82615)	(UG/L) (38932)	(UG/L) (81757)	(UG/L) (82614)	(UG/L) (39356)	(UG/L) (39023)	(UG/L) (82088)
MAY 1990										
02...	1230	<0.10	0.11	<4.0	<1.0	<0.90	<0.2	<0.20	<0.20	<0.20
16...	0200	0.70	0.44	<16.0	<1.0	<0.90	<0.2	<0.20	<0.20	<0.20
16...	0315	5.90	49	<33.0	--	6.7	<0.2	12.0	<0.20	<0.20
16...	0845	23.0	97	<33.0	--	84.0	<0.2	110	<0.60	<2.50
JUN										
02...	1500	1.20	3.0	<10.0	<1.0	<0.90	<0.2	0.24	<0.20	<0.20
02...	1915	29.0	12	<20.0	<1.0	13.0	<0.2	3.50	<0.25	<0.50
DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE	TEMPER-ATURE WATER	DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE	TEMPER-ATURE WATER	
		(00061)	(US/CM) (00095)	(DEG C) (00010)			(00061)	(US/CM) (00095)	(DEG C) (00010)	
OCT 1989										
11...	1225	4.9	610	13.0	21...	0915	5.4	735	0.0	
NOV										
29...	1035	5.1	800	0.0	23...	1335	5.2	650	20.5	
JAN 1990										
03...	1330	5.6	780	0.5	11...	1235	4.7	600	21.0	
					25...	1200	5.8	790	25.0	

SINSINAWA RIVER BASIN

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05414800 SINSINAWA RIVER NEAR HAZEL GREEN, WI--CONTINUED

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	20.0	13.5	16.0	11.5	9.0	10.0	---	---	---	---	---	---
2	18.0	13.0	16.0	9.0	6.0	8.0	---	---	---	---	---	---
3	16.0	9.5	12.5	6.0	5.0	5.5	---	---	---	---	---	---
4	14.5	8.5	11.0	8.5	5.0	6.5	---	---	---	---	---	---
5	12.0	10.0	11.0	10.5	8.0	9.5	---	---	---	---	---	---
6	16.0	10.0	12.0	10.5	9.0	9.5	---	---	---	---	---	---
7	14.5	8.5	10.5	10.0	9.0	9.5	---	---	---	---	---	---
8	13.5	8.0	9.5	10.0	8.0	9.0	---	---	---	---	---	---
9	12.0	7.5	9.5	8.0	6.0	7.0	---	---	---	---	---	---
10	14.0	9.0	10.5	8.0	4.5	6.0	---	---	---	---	---	---
11	16.0	9.5	12.0	8.0	5.0	6.0	---	---	---	---	---	---
12	17.0	11.5	13.5	7.0	4.5	5.5	---	---	---	---	---	---
13	16.5	11.0	13.0	9.0	4.5	7.0	---	---	---	---	---	---
14	17.5	12.5	14.5	8.5	7.5	8.0	---	---	---	---	---	---
15	20.0	14.5	16.5	7.5	5.0	6.5	---	---	---	---	---	---
16	17.5	12.5	15.5	5.0	2.0	3.5	---	---	---	---	---	---
17	12.5	7.5	10.0	2.5	1.0	1.5	---	---	---	---	---	---
18	8.5	6.0	7.0	2.0	.50	1.0	---	---	---	---	---	---
19	7.5	5.5	6.0	3.0	.50	1.5	---	---	---	---	---	---
20	9.5	5.5	7.0	4.5	2.0	3.0	---	---	---	---	---	---
21	12.0	6.0	8.0	3.0	2.0	2.5	---	---	---	---	---	---
22	11.0	6.5	8.0	2.5	1.5	2.0	---	---	---	---	---	---
23	13.5	7.5	10.0	2.5	.50	1.5	---	---	---	---	---	---
24	15.5	10.0	12.0	2.0	.50	1.5	---	---	---	---	---	---
25	17.0	12.0	14.0	4.0	1.0	2.5	---	---	---	---	---	---
26	17.5	13.0	14.5	---	---	---	---	---	---	---	---	---
27	15.5	12.5	14.0	---	---	---	---	---	---	---	---	---
28	16.5	14.0	15.5	---	---	---	---	---	---	---	---	---
29	16.5	15.0	16.0	---	---	---	---	---	---	---	---	---
30	15.5	13.5	15.0	---	---	---	---	---	---	---	---	---
31	13.5	10.0	12.5	---	---	---	---	---	---	---	---	---
MONTH	20.0	5.5	12.0	---	---	---	---	---	---	---	---	---
FEBRUARY			MARCH			APRIL			MAY			
1	---	---	---	---	---	---	12.0	7.5	9.5	18.0	10.0	14.0
2	---	---	---	---	---	---	7.5	4.0	5.0	18.5	10.0	14.0
3	---	---	---	---	---	---	11.5	3.0	6.5	14.5	11.5	13.0
4	---	---	---	---	---	---	13.0	7.5	10.0	12.0	8.0	10.0
5	---	---	---	---	---	---	12.0	6.5	8.5	16.0	6.5	11.0
6	---	---	---	---	---	---	8.5	3.5	5.5	20.5	11.0	15.0
7	---	---	---	---	---	---	10.5	2.0	6.0	22.0	13.0	17.5
8	---	---	---	---	---	---	14.0	5.5	9.5	21.0	15.0	18.0
9	---	---	---	---	---	---	11.0	9.5	10.0	18.0	12.5	16.5
10	---	---	---	---	---	---	10.5	7.5	8.5	13.0	9.5	11.0
11	---	---	---	---	---	---	9.5	5.0	7.0	17.0	8.0	12.5
12	---	---	---	---	---	---	11.5	3.0	7.0	14.5	11.5	13.5
13	---	---	---	---	---	---	8.5	5.5	7.0	20.0	9.5	14.5
14	---	---	---	---	---	---	14.5	6.0	10.0	19.0	14.5	16.0
15	---	---	---	---	---	---	17.0	9.5	12.5	16.5	14.5	15.5
16	---	---	---	---	---	---	11.5	7.5	10.0	17.5	13.0	15.0
17	---	---	---	---	---	---	12.5	4.5	8.5	16.0	13.0	14.5
18	---	---	---	---	---	---	14.0	5.0	9.5	20.5	11.0	15.5
19	---	---	---	---	---	---	11.0	8.5	10.0	17.5	13.0	14.5
20	---	---	---	---	---	---	12.0	10.0	11.0	13.0	11.5	12.5
21	---	---	---	---	---	---	17.5	10.5	13.5	15.5	11.0	13.0
22	---	---	---	9.5	5.5	8.5	20.0	11.5	15.5	20.5	11.5	16.0
23	---	---	---	7.0	1.5	4.0	22.5	14.5	18.5	20.0	15.0	17.5
24	---	---	---	8.5	1.5	4.5	24.0	17.0	20.5	19.0	14.5	17.0
25	---	---	---	9.5	2.5	6.0	25.0	17.5	21.0	17.0	15.5	16.0
26	---	---	---	10.5	3.0	6.5	24.5	18.5	21.0	17.0	14.5	15.5
27	---	---	---	11.0	3.5	7.0	23.0	18.0	20.0	23.0	14.5	18.0
28	---	---	---	9.5	5.0	7.0	19.5	14.0	17.0	23.5	17.5	20.0
29	---	---	---	7.5	6.5	7.0	19.5	11.5	15.5	25.0	16.5	20.0
30	---	---	---	7.0	5.5	6.5	18.0	13.0	15.0	23.5	15.0	19.0
31	---	---	---	10.0	4.5	7.5	---	---	---	24.0	15.0	19.0
MONTH	---	---	---	---	---	---	25.0	2.0	11.6	25.0	6.5	15.3

05414800 SINSINAWA RIVER NEAR HAZEL GREEN, WI--CONTINUED

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

[illegible]

OXYGEN DISSOLVED (MG/L). WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

[illegible]

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OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

[illegible]

SINSINAWA RIVER BASIN

05414800 SINSINAWA RIVER NEAR HAZEL GREEN, WI--CONTINUED

PRECIPITATION QUANTITY

PERIOD OF RECORD.--July 1987 to current year (during non-freezing periods).

GAGE.--Micrologger.

REMARKS.--Records good.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily rainfall, 2.37 in., Aug. 8, 1987.

EXTREMES FOR CURRENT YEAR.--Maximum daily rainfall, 0.79 in., June 2.

RAINFALL ACCUMULATED (INCHES), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	---	---	---	---	.00	.00	.04	---	---	---
2	.00	.00	---	---	---	---	.00	.00	.79	---	---	---
3	.00	.00	---	---	---	---	.00	.20	.00	---	---	---
4	.00	.00	---	---	---	---	.00	.49	.00	---	---	---
5	.63	.00	---	---	---	---	.00	.00	.46	---	---	---
6	.00	.25	---	---	---	---	.00	.01	.00	---	---	---
7	.00	.20	---	---	---	---	.00	.00	.27	---	---	---
8	.00	.00	---	---	---	---	.00	.00	.00	---	---	---
9	.08	.01	---	---	---	---	.00	.29	.00	---	---	---
10	.00	.00	---	---	---	---	.00	.14	.00	---	---	---
11	.00	.00	---	---	---	---	.00	.00	.00	---	---	---
12	.00	.00	---	---	---	---	.00	.19	.00	---	---	---
13	.00	.00	---	---	---	---	.01	.00	.15	---	---	---
14	.00	.00	---	---	---	---	.00	.00	.22	---	---	---
15	.00	.00	---	---	---	---	.00	.57	.00	---	---	---
16	.32	.00	---	---	---	---	.00	.14	.07	---	---	---
17	.00	.01	---	---	---	---	.00	.00	.40	---	---	---
18	.00	.00	---	---	---	---	.00	.01	.00	---	---	---
19	.00	.00	---	---	---	---	.00	.79	.21	---	---	---
20	.00	.00	---	---	---	---	.16	.01	.00	---	---	---
21	.00	.00	---	---	---	---	.00	.00	.00	---	---	---
22	.00	.00	---	---	---	---	.00	.00	.71	---	---	---
23	.00	.00	---	---	---	---	.00	.00	---	---	---	---
24	.00	.00	---	---	---	---	.00	.04	---	---	---	---
25	.00	.00	---	---	---	---	.00	.25	---	---	---	---
26	.00	.00	---	---	---	---	.15	.00	---	---	---	---
27	.00	.08	---	---	---	---	.24	.00	---	---	---	---
28	.04	.00	---	---	---	---	.32	.00	---	---	---	---
29	.09	.00	---	---	---	---	.00	.00	---	---	---	---
30	.62	.00	---	---	---	---	.01	.00	---	---	---	---
31	.02	---	---	---	---	---	---	.00	---	---	---	---
TOTAL	1.80	0.55	---	---	---	---	0.89	3.13	---	---	---	---

05415000 GALENA RIVER AT BUNCOMBE, WI

LOCATION.--Lat 42°30'49", long 90°22'40", in SW 1/4 sec.33, T.1 N., R.1 E., Lafayette County, Hydrologic Unit 07060005, on left bank at Buncombe, 0.6 mi upstream from Coon Branch, 1.5 mi upstream from Scrabble Branch, 2.0 mi upstream from Wisconsin-Illinois State line, and 3.5 mi southeast of Hazel Green.

DRAINAGE AREA.--125 mi².

PERIOD OF RECORD.--September 1939 to current year.

REVISED RECORDS.--WSP 1438: 1942(P), 1943(M), 1944(P), 1945(M). WDR WI-76-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 682.31 ft above National Geodetic Vertical Datum of 1929. Prior to Dec. 1, 1939, nonrecording gage at same site and datum.

REMARKS.--Estimated daily discharges: Ice periods listed in rating table below. Records good except for ice-affected periods and periods of flow over 4,740 ft³/s, which are fair. Gage-height telemeter at station.

AVERAGE DISCHARGE.--51 years, 78.4 ft³/s, 8.52 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 29,700 ft³/s, June 29, 1969, gage height, 19.57 ft from rating curve extended above 8,100 ft³/s on basis of slope-area measurements at gage heights 15.68 ft and 19.57 ft; minimum discharge, 0.8 ft³/s, Mar. 3, 1954.

EXTREMES OUTSIDE OF PERIOD OF RECORD.--Flood of February 1937 reached a stage of about 17.1 ft, from information by local resident, discharge, 18,000 ft³/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,000 ft³/s and maximum (*):

DATE	TIME	DISCHARGE (ft ³ /s)	GAGE HEIGHT (ft)	DATE	TIME	DISCHARGE (ft ³ /s)	GAGE HEIGHT (ft)
June 29	1530	*10,300	*14.93	Aug. 19	2245	3,350	10.34

Minimum discharge, 9.4 ft³/s, Nov. 17, result of freezeup.

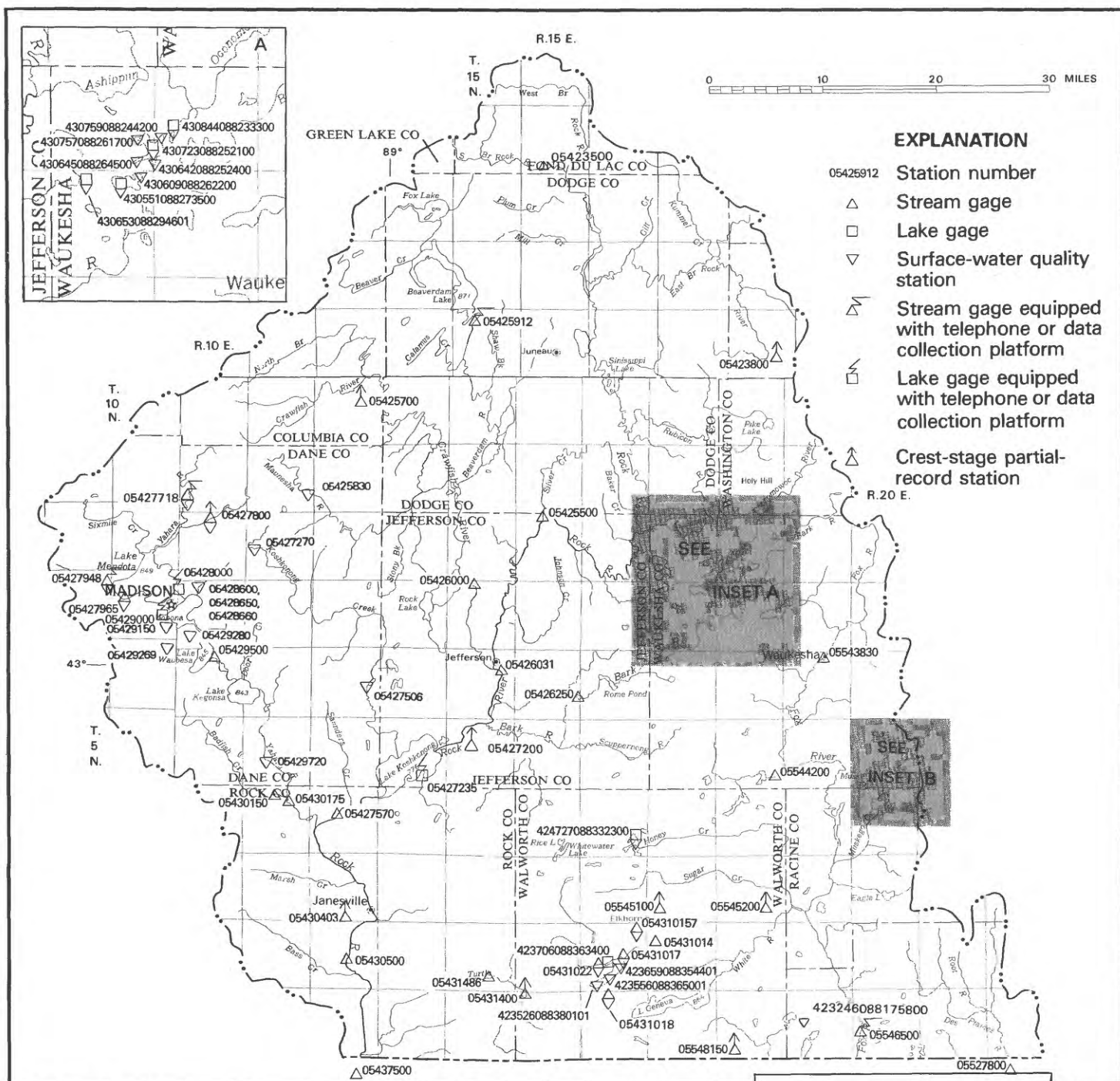
RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Dec. 3 to Feb. 11 and Feb. 14 to Mar. 7.)

2.3	10	3.5	156	6.0	896
2.5	23	4.0	264	8.0	1,800
3.0	77	5.0	548	10.0	3,100
				12.0	4,740

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

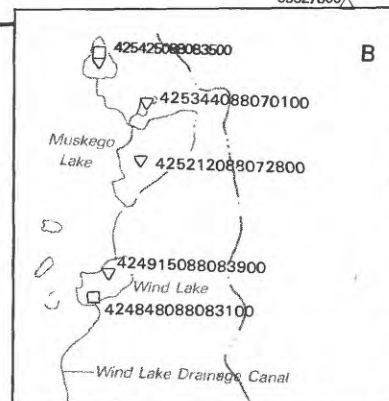
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19	25	19	17	24	20	29	21	23	167	34	58
2	19	22	18	18	26	60	31	20	25	119	31	53
3	19	21	18	18	27	80	28	19	39	97	30	50
4	18	22	18	18	28	35	27	24	26	86	33	47
5	22	22	17	18	34	25	27	25	24	81	29	45
6	28	22	17	18	50	24	24	23	27	68	26	44
7	23	25	16	18	35	26	22	21	24	59	28	41
8	21	25	16	18	29	516	22	20	24	54	28	38
9	20	24	16	24	38	392	23	26	22	48	26	38
10	22	22	15	35	26	91	28	33	19	46	23	36
11	21	22	15	30	22	134	27	28	17	46	24	35
12	20	21	15	25	25	103	23	26	16	42	28	34
13	19	21	15	23	25	139	23	26	17	40	25	33
14	20	21	15	22	25	178	30	25	24	40	22	35
15	20	21	15	21	24	148	29	24	43	67	21	36
16	23	21	15	28	23	86	26	64	30	52	21	33
17	29	18	15	300	22	66	25	48	50	40	36	31
18	26	20	15	60	21	54	22	35	36	37	38	30
19	20	20	15	40	20	46	21	45	25	44	970	32
20	20	21	15	28	19	41	28	61	24	49	604	32
21	21	20	15	24	19	40	30	45	22	39	213	33
22	20	20	15	23	20	41	26	40	28	35	133	31
23	20	20	15	24	20	39	24	38	41	33	101	29
24	20	23	15	50	19	33	23	35	30	30	85	28
25	20	22	15	60	18	32	21	36	23	29	178	28
26	20	24	15	45	18	30	21	38	33	27	140	28
27	20	22	15	33	18	29	23	34	34	27	113	27
28	20	21	16	34	19	28	29	32	92	95	91	26
29	21	19	16	35	---	29	28	30	4100	100	79	26
30	27	21	17	24	---	29	23	26	332	57	69	27
31	32	---	17	24	---	28	---	24	---	40	63	---
TOTAL	670	649	491	1155	694	2622	763	992	5270	1794	3342	1064
MEAN	21.6	21.6	15.8	37.3	24.8	84.6	25.4	32.0	176	57.9	108	35.5
MAX	32	26	19	300	50	516	31	64	4100	167	970	58
MIN	18	18	15	17	18	20	21	19	16	27	21	26
CFSM	.17	.17	.13	.30	.20	.68	.20	.26	1.41	.46	.86	.28
IN.	.20	.19	.15	.34	.21	.78	.23	.30	1.57	.53	.99	.32

CAL YR 1989 TOTAL 13167 MEAN 36.1 MAX 800 MIN 12 CFSM .29 IN. 3.92
WTR YR 1990 TOTAL 19506 MEAN 53.4 MAX 4100 MIN 15 CFSM .43 IN. 5.80



Base from U.S. Geological Survey
State base map, 1968

ROCK-FOX RIVER BASIN



05423500 SOUTH BRANCH ROCK RIVER AT WAUPUN, WI

LOCATION.--Lat 43°38'30", long 88°44'15", in NW 1/4 sec.33, T.14 N., R.15 E., Fond du Lac County, Hydrologic Unit 07090002, 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 mi².

PERIOD OF RECORD.--October 1948 to September 1969. March 1987 to current year. Monthly discharge only for October 1948, published in WSP 1308.

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 National Geodetic Vertical Datum of 1929. October 1948 to September 1969, recording gage at site 150 ft downstream.

REMARKS.--Estimated daily discharge: Aug. 17-21 and ice periods listed in rating table below. Records good except those for estimated daily discharges, which are fair.

AVERAGE DISCHARGE.--24 years (1949-69, 1988-90), 24.2 ft³/s, 5.17 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,500 ft³/s, Apr. 3, 1959, gage height, 7.97 ft, from rating curve extended above 650 ft³/s; minimum, no flow at times in 1949, 1953-54, 1958-59, 1963-64.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 400 ft³/s and maximum (*):

DATE	TIME	DISCHARGE (ft ³ /s)	GAGE HEIGHT (ft)	DATE	TIME	DISCHARGE (ft ³ /s)	GAGE HEIGHT (ft)
Mar. 14	1700	*379	*4.91				

Minimum discharge, 0.42 ft³/s, Feb. 25, gage height, 1.71 ft.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Dec. 14-23 and Jan. 17.)

1.7	0.35	2.2	16
1.8	1.8	2.5	42
1.9	4.2	3.0	105
2.0	7.0	4.0	242
2.1	11	5.0	393

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.1	16	10	3.0	7.0	5.5	38	21	28	91	16	17
2	8.5	15	11	3.5	6.6	11	73	20	31	78	15	15
3	8.0	14	8.8	3.6	6.1	15	67	19	28	68	22	14
4	8.0	15	8.0	4.0	5.4	9.4	58	19	27	59	44	13
5	15	17	8.1	3.7	5.7	7.8	50	20	27	52	43	12
6	12	16	8.1	3.7	5.6	6.7	44	19	27	46	37	21
7	11	17	6.7	3.7	5.5	6.6	38	18	25	42	33	36
8	11	18	6.1	4.0	27	45	36	17	25	41	30	34
9	11	17	5.5	9.9	69	165	36	30	23	38	26	34
10	12	16	5.6	6.0	28	108	47	87	21	36	23	32
11	12	15	5.4	6.3	21	154	46	106	20	34	21	29
12	11	14	4.7	5.0	16	202	41	87	19	30	18	26
13	11	15	4.3	4.6	16	150	37	70	36	28	17	22
14	10	14	4.1	4.5	11	313	41	56	55	27	16	55
15	10	14	3.9	4.5	9.3	294	39	51	59	30	15	68
16	24	12	3.7	4.7	8.3	200	36	67	49	28	14	63
17	18	11	3.5	32	7.3	137	35	57	77	28	13	57
18	13	11	3.2	23	6.8	104	32	49	103	26	30	54
19	12	10	3.0	11	6.7	77	31	66	105	24	70	57
20	13	11	2.8	9.5	5.9	68	34	114	91	24	66	53
21	14	11	2.5	6.6	18	64	34	93	69	22	60	52
22	13	11	2.2	5.9	13	64	33	76	79	21	55	46
23	14	8.9	1.9	14	3.9	57	31	65	141	20	48	41
24	15	8.6	1.8	45	.63	50	30	58	152	20	41	37
25	15	9.0	1.9	21	.54	46	29	51	139	19	35	33
26	15	9.2	2.2	10	.75	42	28	48	114	18	32	29
27	14	15	3.2	8.1	3.7	39	29	43	92	17	32	26
28	13	15	3.6	11	4.5	37	28	38	86	22	29	25
29	13	12	3.1	8.3	---	36	26	33	110	18	25	23
30	15	11	3.0	7.6	---	35	23	30	106	19	22	22
31	17	---	3.2	7.1	---	34	---	28	---	18	20	---
TOTAL	397.6	398.7	145.1	294.8	319.22	2583.0	1150	1556	1964	1044	968	1046
MEAN	12.8	13.3	4.68	9.51	11.4	83.3	38.3	50.2	65.5	33.7	31.2	34.9
MAX	24	18	11	45	69	313	73	114	152	91	70	68
MIN	8.0	8.6	1.8	3.0	.54	5.5	23	17	19	17	13	12

CAL YR 1989 TOTAL 9054.4 MEAN 24.8 MAX 327 MIN 1.8
WTR YR 1990 TOTAL 11866.42 MEAN 32.5 MAX 313 MIN .54

ROCK RIVER BASIN

430844088233300 NORTH LAKE NEAR NORTH LAKE, WI

LAKE-STAGE RECORDS

LOCATION.--Lat 43°08'44", long 88°23'33", in NE 1/4 sec.20, T.8 N., R.18 E., Waukesha County, Hydrologic Unit 07090001, 1.4 mi southwest of North Lake.

PERIOD OF RECORD.--April 1985 to current year.

GAGE.--Staff gage read by Peter J. Michelich. Elevation of gage is 896 ft, from topographic map.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height observed, 13.16 ft, Oct. 5, 1986; minimum observed, 9.75 ft, July 11-14, 1988.

EXTREMES FOR CURRENT YEAR.--Maximum gage height observed, 11.49 ft, May 16; minimum observed, 9.88 ft, Aug. 14-16.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10.06	---	---	---	---	---	---	10.36	10.48	10.46	10.10	10.00
2	10.05	---	---	---	---	---	---	10.33	10.48	10.40	10.10	9.98
3	10.05	---	---	---	---	---	---	10.30	10.46	10.38	10.10	9.98
4	10.07	---	---	---	---	---	---	10.28	10.42	10.36	10.09	9.98
5	10.07	---	---	---	---	---	---	10.28	10.38	10.28	10.03	9.98
6	10.05	---	---	---	---	---	---	10.28	10.32	10.18	10.02	9.98
7	10.03	---	---	---	---	---	---	10.30	10.32	10.20	10.02	9.98
8	10.03	---	---	---	---	---	---	10.32	10.36	10.22	10.01	9.98
9	10.03	---	---	---	---	---	---	10.32	10.36	10.22	10.01	9.98
10	10.02	---	---	---	---	---	10.46	10.32	10.32	10.22	9.98	9.98
11	10.01	---	---	---	---	---	10.46	10.86	10.28	10.26	9.95	9.98
12	10.01	---	---	---	---	---	10.46	---	10.24	10.30	9.92	9.98
13	---	---	---	---	---	---	10.44	11.26	10.20	10.32	9.90	9.98
14	10.01	---	---	---	---	---	10.46	11.39	10.21	10.34	9.88	10.02
15	10.01	---	---	---	---	---	10.48	11.41	10.22	10.36	9.88	10.06
16	10.01	---	---	---	---	---	10.48	11.49	10.20	10.40	9.88	10.06
17	10.01	---	---	---	---	---	10.48	11.46	10.18	10.42	9.90	10.06
18	10.01	---	---	---	---	---	10.48	11.39	10.18	10.42	9.93	10.08
19	10.01	---	---	---	---	---	10.48	11.39	10.18	10.42	10.03	10.10
20	10.01	---	---	---	---	---	10.50	11.32	10.24	10.28	10.18	10.10
21	10.01	---	---	---	---	---	10.49	11.28	10.24	10.28	10.23	10.15
22	10.01	---	---	---	---	---	10.49	11.08	10.28	10.28	10.25	10.15
23	10.01	---	---	---	---	---	10.48	10.98	10.32	10.28	10.15	10.15
24	10.01	---	---	---	---	---	10.48	10.78	10.32	10.32	10.12	10.15
25	10.01	---	---	---	---	---	10.48	10.77	10.32	10.34	10.12	10.14
26	10.01	---	---	---	---	---	10.46	10.76	10.32	10.34	10.12	10.14
27	10.01	---	---	---	---	---	10.42	10.74	10.34	10.34	10.12	10.13
28	10.01	---	---	---	---	---	10.38	10.73	10.38	10.34	10.12	10.11
29	10.01	---	---	---	---	---	10.38	10.73	10.46	10.34	10.12	10.10
30	10.01	---	---	---	---	---	10.38	10.62	10.46	10.30	10.12	10.08
31	10.01	---	---	---	---	---	---	10.58	---	10.26	10.11	---
MAX	10.07	---	---	---	---	---	10.50	11.49	10.48	10.46	10.25	10.15
MIN	10.01	---	---	---	---	---	10.38	10.28	10.18	10.18	9.88	9.98

WATER-QUALITY RECORDS

LOCATION.--Lat 43°08'44", long 88°23'33", in NE 1/4 sec.20, T.8 N., R.18 E., Waukesha County, Hydrologic Unit 07090001, near center of main lake, and 1.4 mi southwest of North Lake.

PERIOD OF RECORD.--May 1985 to September 1986, October 1988 to current year.

REMARKS.--Secchi disc readings made by David Bykowski.

SECCHI DISC TRANSPARENCY (IN METERS) WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	SECCHI DISC (M) (00078)	DATE	TIME	SECCHI DISC (M) (00078)
OCT 1989			AUG 1990		
01...	1300	2.7	01...	1045	2.7
MAY 1990			14...	1000	1.7
11...	1330	5.9	23...	1030	3.7
22...	1030	4.1	29...	1315	2.9
JUN			SEP		
06...	1130	3.4	06...	1230	2.8
14...	1115	3.5	19...	1130	3.8
28...	1300	2.8	26...	1230	4.1
JUL					
09...	1330	1.8			

430723088252100 OKAUCHEE LAKE AT OKAUCHEE, WI

LOCATION.--Lat 43°07'23", long 88°25'21", in NE 1/4 NE 1/4, sec.36, T.8 N., R.17 E., Waukesha County, Hydrologic Unit 07090001, at Okauchee.

DRAINAGE AREA.--80.7 mi².

LAKE-STAGE RECORDS

PERIOD OF RECORD.--February to September 1984, March 1986 to current year.

GAGE.--Staff gage at outlet read by Tom Gukich. Datum of gage, 869.00 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Lake levels controlled at dam outlet by Town of Oconomowoc. The Oconomowoc River flows through the lake.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage-height observed, 5.54 ft, Sept. 22, 1986; minimum observed, 3.48 ft, Aug. 31, 1988.

EXTREMES FOR CURRENT YEAR.--Maximum gage-height observed, 5.04 ft, May 16; minimum observed, 4.14 ft, Dec. 13.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.70	---	4.20	---	---	---	---	4.70	---	---	4.77	---
2	---	---	---	---	---	---	4.70	4.70	---	4.74	4.76	4.76
3	---	---	---	---	---	---	4.70	4.74	---	4.72	4.76	4.72
4	4.70	---	4.20	---	---	---	4.68	---	4.86	4.74	4.78	4.72
5	---	---	---	---	---	---	4.68	---	4.84	4.80	4.78	4.72
6	4.74	---	---	---	---	---	4.68	4.90	4.80	4.80	4.80	4.72
7	4.76	---	---	---	---	---	4.65	4.88	4.80	4.78	4.78	4.72
8	---	---	4.16	---	---	---	4.60	4.86	4.78	4.78	4.70	4.72
9	4.76	---	---	---	---	---	---	4.88	4.80	4.84	4.70	4.70
10	---	---	---	---	---	---	---	5.02	4.78	4.82	4.70	4.72
11	---	---	---	---	---	---	---	---	4.74	4.82	4.70	4.72
12	4.76	---	---	---	---	---	4.62	4.96	4.70	4.78	4.70	4.70
13	---	---	4.14	---	---	---	---	---	4.80	4.68	4.74	4.70
14	---	---	4.16	---	---	---	---	---	4.78	4.64	4.68	4.74
15	4.74	---	4.18	---	---	---	4.62	4.98	4.80	4.64	4.66	4.76
16	---	---	---	---	---	---	---	5.04	---	4.64	---	---
17	---	---	---	---	---	---	---	4.98	4.78	4.64	4.68	4.74
18	---	---	---	---	---	---	4.60	4.94	4.84	4.64	4.80	4.72
19	---	---	---	---	---	---	4.58	---	4.78	4.68	---	4.70
20	---	---	---	---	---	---	4.70	---	4.78	4.80	4.92	4.70
21	4.74	---	---	---	---	---	---	4.82	4.78	4.78	4.86	4.74
22	---	---	---	---	---	---	4.60	4.74	4.84	4.76	4.76	4.76
23	---	---	---	---	---	---	4.78	4.74	4.80	4.76	4.72	---
24	---	---	---	---	---	---	4.78	4.72	4.78	4.76	4.68	---
25	---	---	---	---	---	---	---	---	4.79	4.74	4.70	4.66
26	---	---	---	---	---	---	4.82	---	4.79	4.72	4.80	4.72
27	4.78	---	---	---	---	---	4.80	---	4.82	4.72	4.72	4.72
28	---	---	---	---	---	---	4.80	4.54	4.82	4.70	4.72	4.76
29	---	---	---	---	---	---	4.80	4.54	4.90	4.76	4.70	4.74
30	---	---	---	---	---	---	---	4.62	4.84	4.78	4.70	4.74
31	4.80	---	---	---	---	---	---	4.66	---	4.77	4.72	---
MAX	4.80	---	4.20	---	---	---	4.82	5.04	4.90	4.84	4.92	4.76
MIN	4.70	---	4.14	---	---	---	4.58	4.54	4.70	4.64	4.66	4.66

WATER-QUALITY RECORDS

PERIOD OF RECORD.--February 1984 to current year.

REMARKS.--A detailed water quality management plan has been developed for Okauchee Lake by Southeastern Wisconsin Regional Planning Commission; previous water-quality data are available in this report. Lake sampled near center at a lake depth of about 88 feet. Lake ice-covered during February 1 sampling. Water-quality analyses by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, FEBRUARY 1 TO AUGUST 27, 1990
(Milligrams per liter unless otherwise indicated)

	Feb. 01		Apr. 09		June 26		July 24		Aug. 27	
Depth of sample (ft)	3.0	87	1.5	89	1.5	90	1.5	89	1.5	89
Lake stage (ft)		4.68		4.59		4.82		4.77		4.72
Specific conductance (μ S/cm)	511	537	519	512	512	511	512	524	487	518
pH (units)	8.0	7.8	8.1	8.2	8.3	7.3	8.3	7.3	8.1	7.3
Water temperature ($^{\circ}$ C)	3.5	3.1	5.1	4.6	21.4	6.3	23.9	6.3	24.0	6.5
Color (Pt-Co. scale)	---	---	15	20	---	---	---	---	---	---
Turbidity (NTU)	---	---	0.6	0.5	---	---	---	---	---	---
Secchi-depth (meters)		5.2		3.4		2.8		1.7		1.9
Dissolved oxygen	13.9	10.6	12.6	12.5	9.0	0.0	9.5	0.0	8.4	0.0
Hardness, as CaCO ₃	---	---	270	260	---	---	---	---	---	---
Calcium, dissolved (Ca)	---	---	49	49	---	---	---	---	---	---
Magnesium, dissolved (Mg)	---	---	35	34	---	---	---	---	---	---
Sodium, dissolved (Na)	---	---	10	10	---	---	---	---	---	---
Potassium, dissolved (K)	---	---	2.2	2.1	---	---	---	---	---	---
Alkalinity, as CaCO ₃	---	---	223	223	---	---	---	---	---	---
Sulfate, dissolved (SO ₄)	---	---	26.5	25.8	---	---	---	---	---	---
Fluoride, dissolved (F)	---	---	0.06	0.06	---	---	---	---	---	---
Chloride, dissolved (Cl)	---	---	22	23	---	---	---	---	---	---
Silica, dissolved (SiO ₂)	---	---	2.1	2.1	---	---	---	---	---	---
Solids, dissolved, at 180 $^{\circ}$ C	---	---	302	304	---	---	---	---	---	---
Nitrogen, NO ₂ + NO ₃ , diss. (as N)	---	---	0.33	0.33	---	---	---	---	---	---
Nitrogen, ammonia, dissolved (as N)	---	---	0.02	0.02	---	---	---	---	---	---
Nitrogen, amm. + org., total (as N)	---	---	0.50	0.60	---	---	---	---	---	---
Phosphorus, total (as P)	---	---	0.020	0.018	0.014	0.035	0.013	0.040	0.010	0.061
Phosphorus, ortho, dissolved (as P)	---	---	0.002	0.002	---	0.017	---	0.019	---	0.031
Iron, dissolved (Fe) μ g/L	---	---	<50	<50	---	---	---	---	---	---
Manganese, dissolved (Mn) μ g/L	---	---	<40	<40	---	---	---	---	---	---
Chlorophyll a, phytoplankton (μ g/L)	---	---	7.0	---	4.0	---	5.0	---	5.0	---

2-1-90

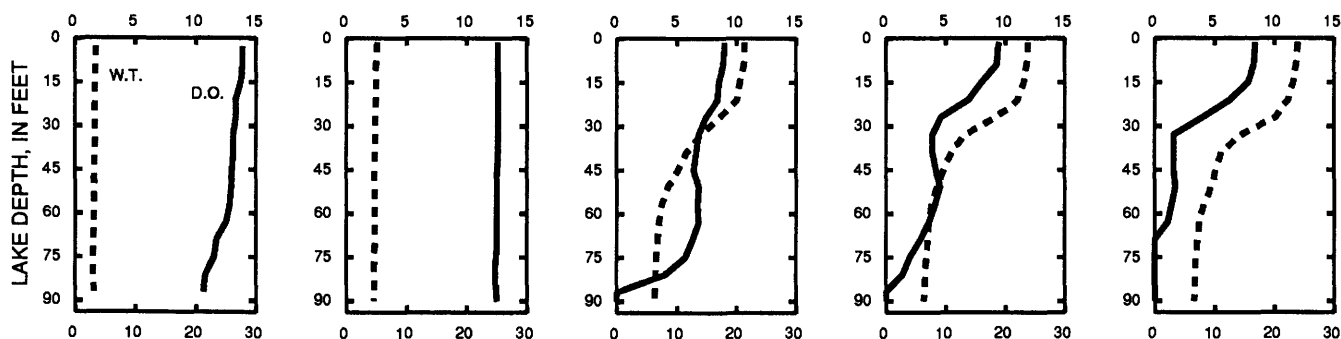
4-9-90

6-26-90

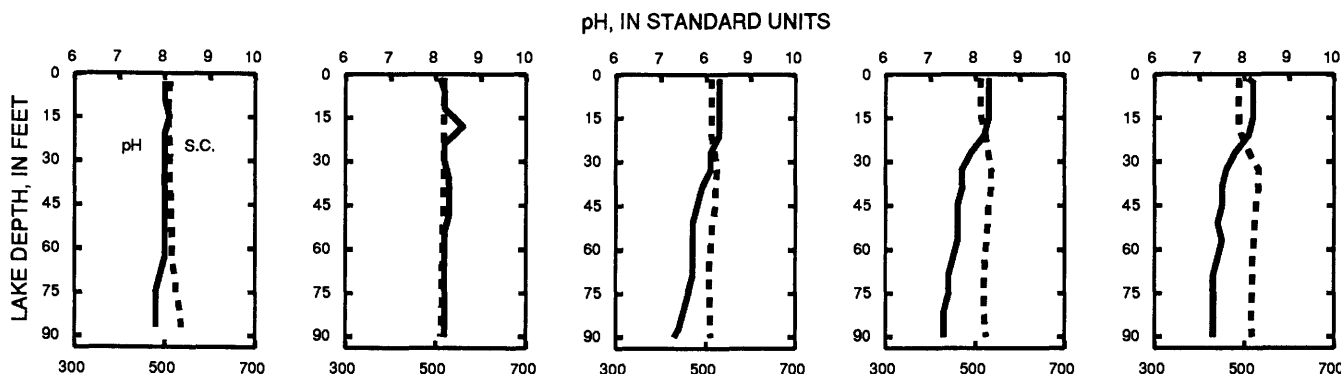
7-24-90

8-27-90

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
WATER-QUALITY RECORDS

403

430759088244200 OKAUCHEE LAKE, NO. 1, NEAR OKAUCHEE, WI

LOCATION.--Lat 43°07'59", long 88°24'42", in NE 1/4 NW 1/4 sec.30, T.8 N., R.18 E., Waukesha County, Hydrologic Unit 07090001, near Okauchee.

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

REMARKS.--Sampling site is located in Crane's Nest Bay, in the northeast part of the lake, at a depth of 10 ft. Water-quality analyses by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, APRIL 9 TO AUGUST 27, 1990
(Milligrams per liter unless otherwise indicated)

	Apr. 09	June 26	July 24	Aug. 27
Depth of sample (ft)	1.5	1.5	1.5	1.5
Lake stage (ft)	4.59	4.82	4.77	4.72
Specific conductance (μS/cm)	550	543	539	532
pH (units)	8.2	8.3	8.3	8.3
Water temperature (°C)	6.2	22.7	24.3	24.9
Secchi-depth (meters)	2.00	---	1.70	1.40
Dissolved oxygen	13.4	10.7	10.6	9.1
Phosphorus, total (as P)	0.020	0.018	0.016	0.013
Chlorophyll a, phytoplankton (μg/L)	6.0	3.0	5.0	7.0

430645088264500 OKAUCHEE LAKE, NO. 2, AT OKAUCHEE, WI

LOCATION.--Lat 43°06'45", long 88°26'45", in NE 1/4 NE 1/4 sec.35, T.8 N., R.17 E., Waukesha County, Hydrologic Unit 07090001, at Okauchee.

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

REMARKS.--Sampling site is located in Lower Okauchee Lake, at a depth of 10 ft. Water-quality analyses by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, APRIL 9 TO AUGUST 27, 1990
(Milligrams per liter unless otherwise indicated)

	Apr. 09	June 26	July 24	Aug. 27
Depth of sample (ft)	1.5	1.5	1.5	1.5
Lake stage (ft)	4.59	4.82	4.77	4.72
Specific conductance (μS/cm)	511	483	483	469
pH (units)	8.3	8.2	8.4	8.3
Water temperature (°C)	7.3	23.7	25.4	25.2
Secchi-depth (meters)	2.80	---	1.40	1.80
Dissolved oxygen	13.5	9.1	10.2	9.0
Phosphorus, total (as P)	0.014	0.018	0.021	0.017
Chlorophyll a, phytoplankton (μg/L)	3.0	3.0	---	6.0

430642088252400 OKAUCHEE LAKE, NO. 3, AT OKAUCHEE, WI

LOCATION.--Lat 43°06'42", long 88°25'24", in NE 1/4 NE 1/4 sec.36, T.8 N., R.17 E., Waukesha County, Hydrologic Unit 07090001, at Okauchee.

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

REMARKS.--Sampling site is located in Ice House Bay, in the south bay of Okauchee Lake, at a depth of 10 ft. Water-quality analyses by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, APRIL 9 TO AUGUST 27, 1990
(Milligrams per liter unless otherwise indicated)

	Apr. 09	June 26	July 24	Aug. 27
Depth of sample (ft)	1.5	1.5	1.5	1.5
Lake stage (ft)	4.59	4.82	4.77	4.72
Specific conductance (μS/cm)	515	498	503	498
pH (units)	8.2	8.3	8.2	8.2
Water temperature (°C)	6.3	22.9	24.9	24.7
Secchi-depth (meters)	2.40	---	1.50	1.40
Dissolved oxygen	12.9	9.6	9.2	8.6
Phosphorus, total (as P)	0.016	0.013	0.013	0.013
Chlorophyll a, phytoplankton (μg/L)	5.0	4.0	---	6.0

ROCK RIVER BASIN
WATER-QUALITY RECORDS

430757088261700 OKAUCHEE LAKE, NO. 4, AT OKAUCHEE, WI

LOCATION.--Lat 43°07'57", long 88°26'17", in NW 1/4 NW 1/4 sec.25, T.8 N., R.17 E., Waukesha County, Hydrologic Unit 07090001, at Okauchee.

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

REMARKS.--Sampling site is located near Crazyman's Island, in the northwest bay of Okauchee Lake, at a depth of 10 ft. Water-quality analyses by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, APRIL 9 TO AUGUST 27, 1990
(Milligrams per liter unless otherwise indicated)

	Apr. 09	June 26	July 24	Aug. 27
Depth of sample (ft)	1.5	1.5	1.5	1.5
Lake stage (ft)	4.59	4.82	4.77	4.72
Specific conductance (μS/cm)	520	510	504	483
pH (units)	7.8	8.2	8.3	8.2
Water temperature (°C)	4.9	21.8	24.4	24.2
Secchi-depth (meters)	3.10	---	1.40	1.50
Dissolved oxygen	12.8	9.1	9.6	8.7
Phosphorus, total (as P)	0.017	0.013	0.011	3.000
Chlorophyll a, phytoplankton (μg/L)	6.0	3.0	---	5.0

430551088273500 OCONOMOWOC LAKE NO. 1 (CENTER) AT OCONOMOWOC, WI

LOCATION.--Lat 43°05'51", long 88°27'35", in NW 1/4 SE 1/4 sec.2, T.7 N., R.17 E., Waukesha County, Hydrologic Unit 07090001, at Oconomowoc.

LAKE-STAGE RECORDS

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

GAGE.--Staff gage at outlet read by Martha Ibach. Datum of gage is 854.08 ft above National Geodetic Vertical Datum of 1929.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height observed, 9.28 ft, Oct. 5, 1986; minimum observed, 6.90 ft, Feb. 24, 1987.

EXTREMES FOR CURRENT YEAR.--Maximum gage-height observed, 8.24 ft, July 1; minimum observed, 7.84 ft, Sept. 6, 25.

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	GAGE HEIGHT	DATE	GAGE HEIGHT	DATE	GAGE HEIGHT	DATE	GAGE HEIGHT
MAY 22	7.98	JUNE 17	7.90	JULY 15	7.94	AUG. 26	7.94
28	7.88	24	7.92	30	8.02	SEPT. 6	7.84
JUNE 7	7.86	JULY 1	8.24	AUG. 19	8.20	25	7.84

WATER-QUALITY RECORDS

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

REMARKS.--Lake sampled near center at a lake depth of about 60 ft. Lake ice-covered during February 1 sampling. Water-quality analyses by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, FEBRUARY 1 TO AUGUST 27, 1990
(Milligrams per liter unless otherwise indicated)

	Feb. 01		Apr. 11		June 26		July 25		Aug. 27	
Depth of sample (ft)	1.0	60	1.5	63	1.5	63	1.5	62	1.5	62
Lake stage (ft)	7.07		7.58		8.09		7.98		7.96	
Specific conductance ($\mu\text{S}/\text{cm}$)	508	572	505	506	497	520	498	543	481	542
pH (units)	8.1	7.5	7.8	8.2	8.2	7.3	8.2	7.2	8.3	7.2
Water temperature ($^{\circ}\text{C}$)	2.1	3.3	5.9	5.2	22.4	7.6	24.8	8.1	24.6	8.6
Color (Pt-Co. scale)	---	---	15	10	---	---	---	---	---	---
Turbidity (NTU)	---	---	0.8	0.8	---	---	---	---	---	---
Secchi-depth (meters)	8.1		4.0		2.8		2.3		2.3	
Dissolved oxygen	14.5	3.4	12.8	12.6	9.0	0.0	9.7	0.0	8.9	0.0
Hardness, as CaCO_3	---	---	260	260	---	---	---	---	---	---
Calcium, dissolved (Ca)	---	---	45	45	---	---	---	---	---	---
Magnesium, dissolved (Mg)	---	---	36	36	---	---	---	---	---	---
Sodium, dissolved (Na)	---	---	12	12	---	---	---	---	---	---
Potassium, dissolved (K)	---	---	2.1	2.1	---	---	---	---	---	---
Alkalinity, as CaCO_3	---	---	217	217	---	---	---	---	---	---
Sulfate, dissolved (SO_4)	---	---	25.1	24.7	---	---	---	---	---	---
Fluoride, dissolved (F)	---	---	0.06	0.06	---	---	---	---	---	---
Chloride, dissolved (Cl)	---	---	26	26	---	---	---	---	---	---
Silica, dissolved (SiO_2)	---	---	3.5	3.5	---	---	---	---	---	---
Solids, dissolved, at 180°C	---	---	300	300	---	---	---	---	---	---
Nitrogen, $\text{NO}_2 + \text{NO}_3$, diss. (as N)	---	---	0.17	0.17	---	---	---	---	---	---
Nitrogen, ammonia, dissolved (as N)	---	---	0.09	0.09	---	---	---	---	---	---
Nitrogen, amm. + org., total (as N)	---	---	0.60	0.60	---	---	---	---	---	---
Phosphorus, total (as P)	---	---	0.008	0.008	0.006	0.042	0.005	0.020	0.007	0.014
Phosphorus, ortho, dissolved (as P)	---	---	0.004	0.004	---	0.005	---	0.007	---	0.002
Iron, dissolved (Fe) $\mu\text{g}/\text{L}$	---	---	<50	<50	---	---	---	---	---	---
Manganese, dissolved (Mn) $\mu\text{g}/\text{L}$	---	---	<40	<40	---	---	---	---	---	---
Chlorophyll a, phytoplankton ($\mu\text{g}/\text{L}$)	---	---	4.0	---	2.0	---	1.0	---	3.0	---

2-1-90

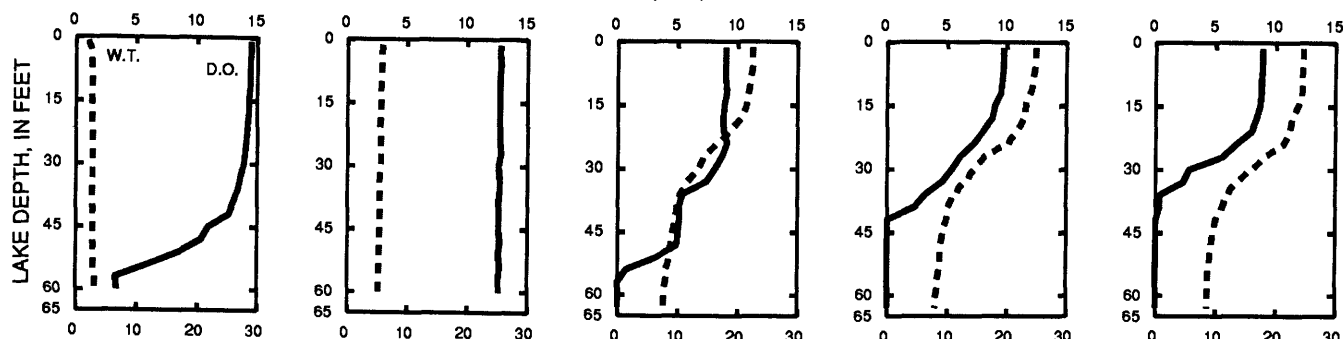
4-11-90

6-26-90

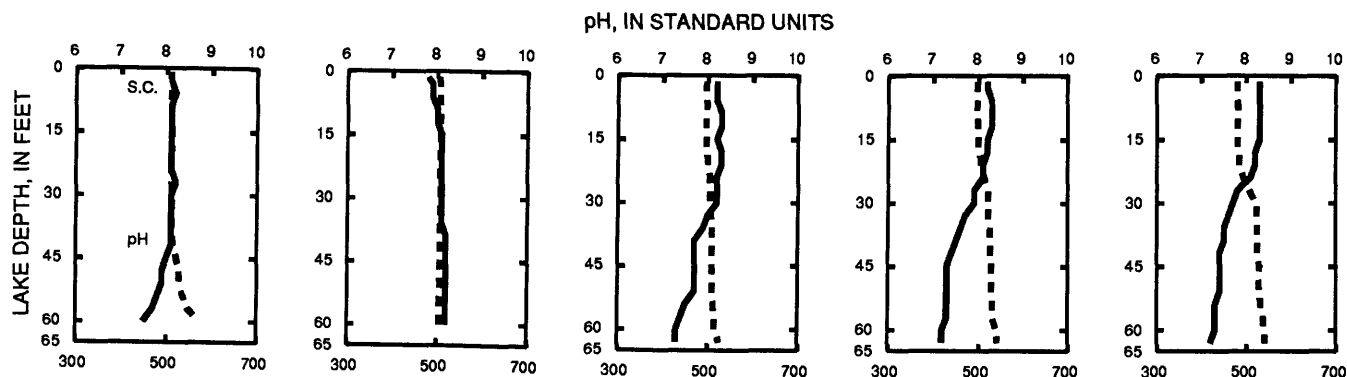
7-25-90

8-27-90

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

430609088262200 OCONOMOWOC LAKE NO. 2 (OFF HEWITT POINT) AT OCONOMOWOC, WI

WATER-QUALITY RECORDS

LOCATION.--Lat 43°06'09", long 88°26'22", in NW 1/4 NW 1/4 sec.1, T.7 N., R.17 E., Waukesha County, Hydrologic Unit 07090001, at Oconomowoc.

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

REMARKS.--Sampling site is located in northeast bay near Hewitt Point at a lake depth of about 48 ft. Lake ice-covered during February 1 sampling. Water-quality analyses by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, FEBRUARY 1 TO AUGUST 27, 1990
(Milligrams per liter unless otherwise indicated)

	Feb. 01		Apr. 11		June 26		July 25		Aug. 27	
Depth of sample (ft)	1.0	48	1.5	47	1.5	48	1.5	48	1.5	47
Lake stage (ft)		7.07		7.58		8.09		7.98		7.96
Specific conductance ($\mu\text{S}/\text{cm}$)	387	606	538	536	512	557	509	578	502	598
pH (units)	8.1	7.4	8.2	8.2	8.2	7.3	8.3	7.2	8.2	7.2
Water temperature ($^{\circ}\text{C}$)	0.4	3.6	5.7	5.7	22.7	7.5	25.2	8.0	24.4	8.2
Secchi-depth (meters)		8.1		4.6		2.4		1.5		2.5
Dissolved oxygen	14.4	3.1	12.6	12.6	9.0	0.0	10.7	0.0	9.1	0.0
Phosphorus, total (as P)	---	---	0.007	0.006	0.005	0.038	0.004	0.050	0.004	0.042
Phosphorus, ortho, dissolved (as P)	---	---	---	0.004	---	0.005	---	0.002	---	<0.002
Chlorophyll a, phytoplankton ($\mu\text{g}/\text{L}$)	---	---	1.0	---	1.0	---	2.0	---	2.0	---

2-1-90

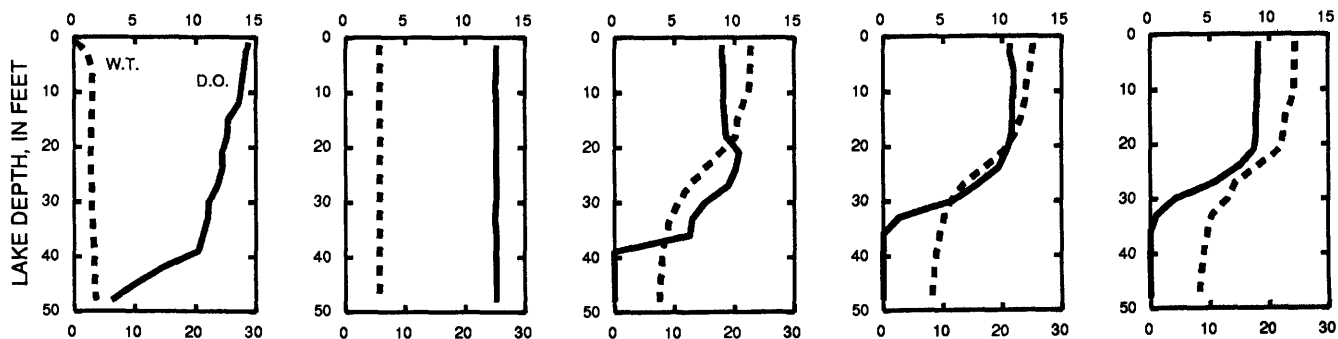
4-11-90

6-26-90

7-25-90

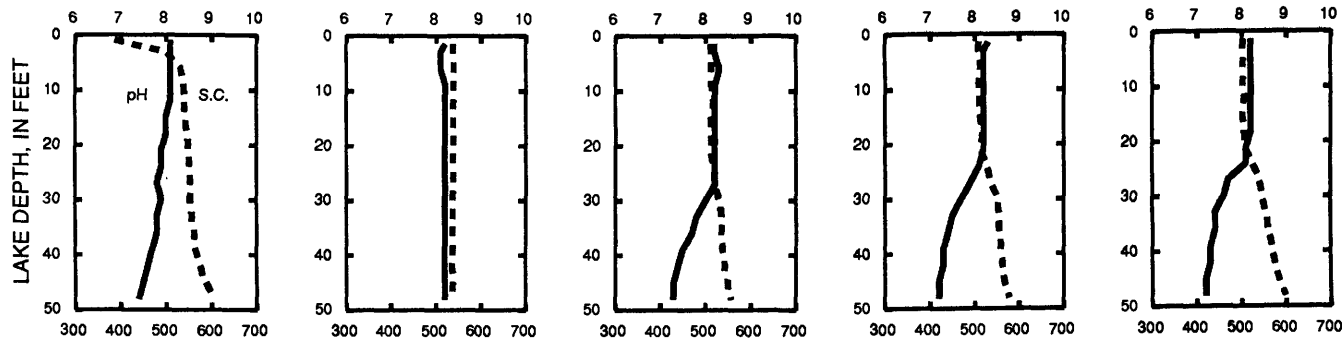
8-27-90

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

ROCK RIVER BASIN

430653088294601 CENTER OF FOWLER LAKE AT OCONOMOWOC, WI

LOCATION.--Lat 43°06'53", Long 88°29'46", in SE 1/4 NW 1/4 sec.33, T.8 N., R.17 E., Waukesha County,
Hydrologic Unit 07120006, within City of Oconomowoc, at center of Fowler Lake.

DRAINAGE AREA.--87.8 mi².

LAKE-STAGE RECORDS

PERIOD OF RECORD.--January to December 1984, October 1986 to current year.

GAGE.--Staff gage at outlet read by City of Oconomowoc Engineering Department.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage-height observed, 9.45 ft, Oct. 6, 7, 9, 1986; minimum observed, 7.82 ft, Sept. 12, 1988.

EXTREMES FOR CURRENT YEAR.--Maximum gage-height observed, 9.20 ft, May 21; minimum observed, 8.12 ft, Sept. 13.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	8.83	---	---	---	---	8.24	---
2	---	---	---	---	---	---	---	8.71	---	---	---	---
3	8.76	---	---	---	---	---	---	---	8.65	9.00	8.32	---
4	---	---	8.74	---	---	---	8.96	---	---	---	---	8.33
5	---	---	---	---	---	---	---	---	---	---	---	---
6	---	---	---	---	8.75	---	---	---	---	---	---	---
7	---	---	---	---	---	---	---	---	---	---	---	---
8	---	8.72	---	8.73	---	8.09	---	---	---	---	---	---
9	---	---	---	---	---	---	---	8.94	---	---	8.70	---
10	---	---	---	---	---	---	---	---	---	---	---	---
11	---	---	---	---	---	---	---	---	---	8.54	---	---
12	---	---	---	---	---	---	---	---	---	---	---	---
13	---	---	8.76	---	---	---	8.83	---	8.78	---	---	8.12
14	---	8.73	---	---	8.70	---	---	---	---	---	---	---
15	---	---	---	---	---	---	---	---	---	---	8.74	---
16	---	---	---	---	---	9.00	---	9.11	---	---	---	---
17	8.72	---	---	8.74	---	---	---	---	---	---	---	8.26
18	---	---	---	---	---	---	---	---	---	8.38	---	---
19	---	---	---	---	---	---	---	---	---	---	---	---
20	---	---	8.66	---	---	---	8.77	---	8.82	---	---	---
21	---	---	---	---	---	9.09	---	9.20	---	---	9.00	---
22	---	---	---	---	---	---	---	---	---	---	---	---
23	---	---	---	---	8.78	---	---	---	---	---	---	---
24	---	---	---	---	---	---	---	---	---	---	---	---
25	8.70	---	---	---	---	---	8.70	---	---	8.28	---	---
26	---	---	---	---	---	---	---	---	---	---	---	8.70
27	---	---	---	---	---	---	---	---	8.89	---	---	---
28	---	8.75	8.79	---	---	---	---	---	---	---	---	---
29	---	---	---	---	---	9.05	---	8.86	---	---	---	---
30	8.71	---	---	---	---	---	---	---	---	---	8.68	8.76
31	---	---	---	8.76	---	---	---	---	---	---	---	---
MAX	8.76	8.75	8.79	8.76	8.78	9.09	8.96	9.20	8.89	9.00	9.00	8.76
MIN	8.70	8.72	8.66	8.73	8.70	8.09	8.70	8.86	8.65	8.28	8.24	8.12

430653088294601 CENTER OF FOWLER LAKE AT OCONOMOWOC, WI--CONTINUED

WATER-QUALITY RECORDS

PERIOD OF RECORD.--January to December 1984 and February 1987 to current year.

REMARKS.--Lake sampled near center at a lake depth of 52 ft. Lake ice-covered during February 1 sampling. Water-quality analyses by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, FEBRUARY 1 TO AUGUST 14, 1990
(Milligrams per liter unless otherwise indicated)

	Feb. 01		Apr. 09		June 12		July 11		Aug. 14	
Depth of sample (ft)	1.0	48	1.5	48	1.5	48	1.5	48	1.5	48
Lake stage (ft)	8.84		8.85		8.54		8.48		8.48	
Specific conductance (μ S/cm)	507	558	508	509	489	532	483	531	462	548
pH (units)	8.1	7.6	8.4	8.4	8.4	7.3	8.3	7.7	8.4	7.2
Water temperature ($^{\circ}$ C)	1.5	3.2	6.4	4.7	22.1	6.6	25.3	6.7	24.3	6.7
Color (Pt-Co. scale)	---	---	10	10	---	---	---	---	---	---
Turbidity (NTU)	---	---	0.7	0.8	---	---	---	---	---	---
Secchi-depth (meters)	6.1		3.6		1.8		2.8		2.6	
Dissolved oxygen	14.5	7.1	13.1	12.5	10.8	0.0	8.9	0.0	9.1	0.0
Hardness, as CaCO ₃	---	---	260	260	---	---	---	---	---	---
Calcium, dissolved (Ca)	---	---	44	45	---	---	---	---	---	---
Magnesium, dissolved (Mg)	---	---	36	36	---	---	---	---	---	---
Sodium, dissolved (Na)	---	---	12	12	---	---	---	---	---	---
Potassium, dissolved (K)	---	---	2.0	2.1	---	---	---	---	---	---
Alkalinity, as CaCO ₃	---	---	216	217	---	---	---	---	---	---
Sulfate, dissolved (SO ₄)	---	---	25.7	25.6	---	---	---	---	---	---
Fluoride, dissolved (F)	---	---	0.06	0.06	---	---	---	---	---	---
Chloride, dissolved (Cl)	---	---	26	26	---	---	---	---	---	---
Silica, dissolved (SiO ₂)	---	---	2.9	2.9	---	---	---	---	---	---
Solids, dissolved, at 180 $^{\circ}$ C	---	---	296	294	---	---	---	---	---	---
Nitrogen, NO ₂ + NO ₃ , diss. (as N)	---	---	0.15	0.14	---	---	---	---	---	---
Nitrogen, ammonia, dissolved (as N)	---	---	0.05	0.06	---	---	---	---	---	---
Nitrogen, amm. + org., total (as N)	---	---	0.5	0.5	---	---	---	---	---	---
Phosphorus, total (as P)	---	---	0.010	0.009	0.013	0.054	0.009	0.150	0.013	0.050
Phosphorus, ortho, dissolved (as P)	---	---	0.002	0.002	---	0.014	---	0.088	---	0.019
Iron, dissolved (Fe) μ g/L	---	---	<50	<50	---	---	---	---	---	---
Manganese, dissolved (Mn) μ g/L	---	---	<40	<40	---	---	---	---	---	---
Chlorophyll a, phytoplankton (μ g/L)	---	---	3.0	---	4.0	---	2.0	---	3.0	---

2-1-90

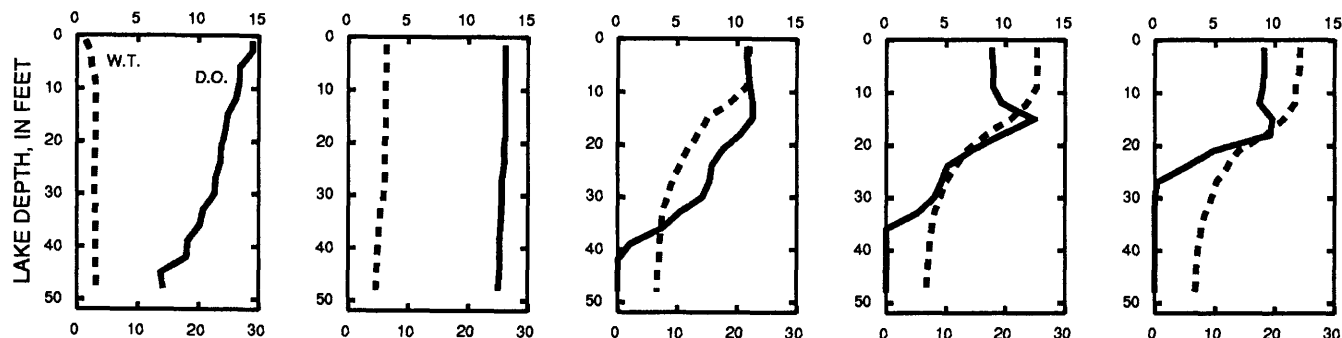
4-9-90

6-12-90

7-11-90

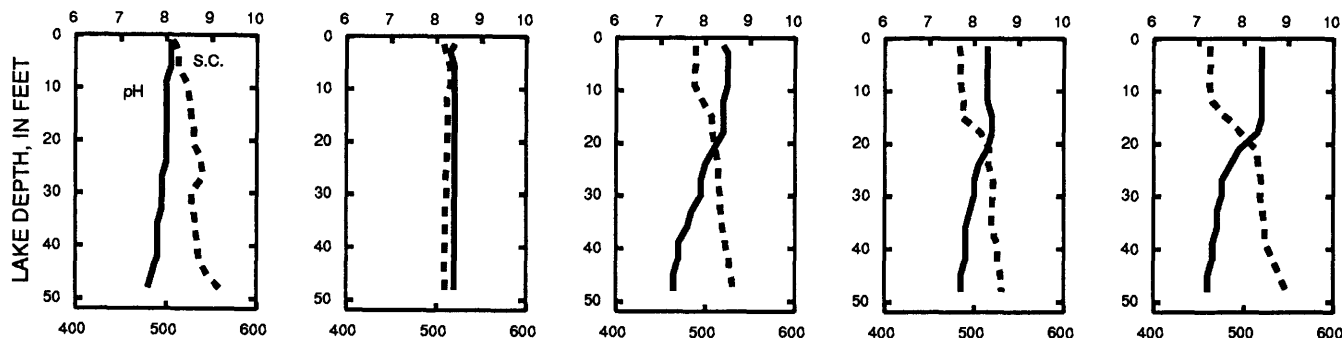
8-14-90

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

ROCK RIVER BASIN

05425500 ROCK RIVER AT WATERTOWN, WI

LOCATION.--Lat 43°11'17", long 88°43'34", in SW 1/4 sec.4, T.8 N., R.15 E., Jefferson County, Hydrologic Unit 07090001, on left bank, 700 ft downstream from Milwaukee Street bridge, 1.1 mi downstream from Silver Creek, at Watertown.

DRAINAGE AREA.--969 mi².

PERIOD OF RECORD.--June 1931 to September 1970, October 1976 to current year.

REVISED RECORDS.--WSP 1438: 1933,1935(M), 1937(M), 1938-39, 1945(M); WDR WI-79-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 792.58 ft above National Geodetic Vertical Datum of 1929. Prior to Sept. 26, 1933, nonrecording gage at site 700 ft upstream at different datum.

REMARKS.--Estimated daily discharges: Apr. 15-19 and ice periods listed in rating table below. Records good except those for ice-affected periods, which are poor. Some regulation caused by manipulation of gates at dams on Horicon Marsh, Lake Winnebago, and other dams in the basin.

AVERAGE DISCHARGE.--53 years, (water years 1932-70, 1977-90), 475 ft³/s, 6.66 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,080 ft³/s, Mar. 31, 1979, gage height, 6.19 ft; maximum gage height, 6.32 ft, Apr. 4, 1959; minimum daily discharge, 0.9 ft³/s, Oct. 15, 1939, Sept. 9, 1944.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,100 ft³/s and maximum (*):

DATE	TIME	DISCHARGE (ft ³ /s)	GAGE HEIGHT (ft)	DATE	TIME	DISCHARGE (ft ³ /s)	GAGE HEIGHT (ft)
Mar. 24	1045	*2,370	*4.49	June 29	1600	1,250	3.25
May 24	1000	1,500	3.65				

Minimum daily discharge, 55 ft³/s, Oct. 2, 3.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Shifting-control method used Mar. 13 to Apr. 19; stage-discharge relation affected by ice Nov. 15-18, Dec. 6, Dec. 8-31, Jan. 4 to Feb. 21, and Feb. 24 to Mar. 12.)

1.0	52	2.5	594
1.2	78	3.0	977
1.5	143	4.0	1,970
2.0	311	5.0	3,240

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	61	110	170	108	250	250	1810	531	1120	1060	133	345
2	55	131	159	101	240	260	1760	535	1050	984	121	313
3	55	163	92	95	220	280	1730	443	932	932	116	225
4	57	198	158	96	200	270	1680	334	745	895	133	142
5	75	178	163	110	190	270	1630	289	507	869	144	97
6	72	150	150	110	190	260	1590	279	371	814	151	73
7	78	160	141	110	200	270	1560	277	390	670	155	65
8	87	164	140	110	230	280	1530	260	485	409	148	62
9	93	142	130	120	270	350	1490	254	528	252	135	61
10	91	140	130	130	320	450	1470	379	524	162	125	65
11	95	143	120	140	300	600	1420	868	491	131	118	69
12	85	161	110	140	330	1000	1360	1050	442	107	118	99
13	83	159	100	130	350	1330	1310	1090	354	91	107	117
14	79	162	92	120	320	1780	1300	1110	219	85	100	125
15	80	160	90	110	300	1620	1200	1120	180	106	91	114
16	84	150	88	130	300	1510	1200	1240	181	90	85	128
17	79	170	88	140	310	1530	1100	1280	184	98	80	163
18	121	190	86	160	310	1660	1100	1280	175	99	125	163
19	217	232	86	180	350	1810	1100	1340	180	126	169	150
20	266	243	84	200	400	1990	1020	1440	244	145	221	138
21	299	254	84	240	450	2140	930	1440	389	165	274	140
22	309	234	84	230	417	2260	759	1420	485	172	412	129
23	300	191	88	210	412	2320	520	1410	594	160	553	125
24	275	225	92	210	360	2360	367	1480	631	158	607	128
25	221	251	94	200	340	2350	315	1460	659	170	621	120
26	160	246	92	190	300	2330	288	1430	700	166	621	117
27	126	243	110	250	270	2280	301	1390	757	150	509	115
28	110	227	120	320	260	2210	397	1360	873	146	339	108
29	99	162	120	310	---	2130	492	1310	1180	136	267	104
30	97	172	110	300	---	2040	518	1270	1190	135	310	98
31	97	---	110	270	---	1910	---	1190	---	135	344	---
TOTAL	4006	5511	3481	5270	8389	42100	33247	30559	16760	9818	7432	3898
MEAN	129	184	112	170	300	1358	1108	986	559	317	240	130
MAX	309	254	170	320	450	2360	1810	1480	1190	1060	621	345
MIN	55	110	84	95	190	250	288	254	175	85	80	61
CFSM	.13	.19	.12	.18	.31	1.40	1.14	1.02	.58	.33	.25	.13
IN.	.15	.21	.13	.20	.32	1.62	1.28	1.17	.64	.38	.29	.15

CAL YR 1989 TOTAL 138291 MEAN 379 MAX 1640 MIN 55 CFSM .39 IN. 5.31
WTR YR 1990 TOTAL 170471 MEAN 467 MAX 2360 MIN 55 CFSM .48 IN. 6.54

ROCK RIVER BASIN

411

05425830 MAUNESHA RIVER NEAR SUN PRAIRIE, WI

LOCATION.--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.

DRAINAGE AREA.--37.1 mi².

PERIOD OF RECORD.--October 1989 to September 1990.

REMARKS.--Bacteria analyses by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

		DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)		
APR 1990												
05...	1030	14	766	8.2	5.5	2.6	13.0	753	105	28		
JUN 13...	1000	5.1	780	7.8	19.5	2.8	4.8	735	54	27		
JUL 11...	1130	5.2	804	7.9	22.0	19	9.3	739	110	21		
AUG 07...	1220	2.5	744	7.8	18.0	4.1	11.9	745	128	25		
DATE		COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	ALKA-LINITY LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	SEDI-MENT, SUS-PENDED (MG/L) (80154)		
APR 1990												
05...	110	299		34	5.50	0.060	0.60	0.100	0.070	17		
JUN 13...	1600	333		36	4.00	0.040	0.70	0.170	0.110	44		
JUL 11...	1500	337		37	6.70	0.020	1.4	0.060	0.060	146		
AUG 07...	590	319		33	6.20	0.120	1.2	0.130	0.100	73		
DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	STREP-TOCOCCI KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	ARSENIC TOTAL (UG/L AS AS) (01002)	BORON, TOTAL RECOV-ERABLE (UG/L AS B) (01022)
JUL 1990	1130	5.2	600	420	89	47	11	2.2	35	16	2	<10
DATE		CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO) (01037)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	SELE-NIUM, TOTAL RECOV-ERABLE (UG/L AS SE) (01147)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)
JUL 1990	11...	3	<1	8	1200	2	160	0.10	3	<1	<1	20

ROCK RIVER BASIN

05425912 BEAVERDAM RIVER AT BEAVER DAM, WI

LOCATION.--Lat 43°26'57", long 88°50'21", in NE 1/4 SW 1/4 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 mi².

PERIOD OF RECORD.--March 1985 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 839.42 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Estimated daily discharges: June 13-14 and July 24-28, 31. Records good except those for estimated daily discharges, which are fair. Flow regulated by dam 0.8 mi upstream. Gage-height telemeter at station.

AVERAGE DISCHARGE.--5 years, 103 ft³/s, 8.91 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 754 ft³/s, Sept. 26, 1986, gage height, 9.35 ft; minimum daily, 0.64 ft³/s, Oct. 30, 1988.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 639 ft³/s, Aug. 21, gage height, 8.98 ft; minimum daily, 2.4 ft³/s, Oct. 1.

RATING TABLES (gage height, in feet, and discharge, in cubic feet per second).

Oct. 1 to July 24(1445)				July 24(1500) to Sept. 30			
5.4	0.85	6.3	66	5.0	8.4	6.0	78
5.5	2.6	6.6	110	5.1	12	6.5	138
5.6	5.4	7.0	177	5.4	27	7.0	213
5.8	15	8.0	386	5.7	48	7.5	301
6.0	32	9.0	644				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.4	11	26	13	22	48	241	8.9	39	376	16	64
2	8.9	14	27	13	22	45	279	5.8	37	377	15	62
3	6.3	9.6	25	13	23	45	226	5.0	59	382	12	57
4	3.0	9.4	24	125	23	43	148	6.5	40	389	13	39
5	5.6	16	25	84	23	56	121	6.2	18	371	12	16
6	8.7	20	25	23	23	71	77	5.3	20	336	11	13
7	4.9	18	24	23	22	69	39	6.8	11	306	25	10
8	3.8	20	23	23	41	90	35	9.9	8.3	301	20	8.6
9	6.2	26	22	30	68	115	36	20	13	258	18	9.2
10	9.4	25	22	26	77	120	27	58	7.1	131	17	30
11	3.9	24	22	26	75	139	16	30	8.2	77	19	26
12	9.0	17	21	26	72	208	7.1	35	9.9	86	18	26
13	7.0	18	21	25	71	324	3.1	43	50	88	17	25
14	6.7	20	21	25	67	374	5.5	54	34	83	16	59
15	7.5	42	21	25	67	357	5.8	114	29	81	18	60
16	21	63	20	25	68	360	6.5	189	25	51	17	60
17	18	25	21	31	65	378	7.0	210	34	34	16	51
18	10	37	20	53	64	373	4.8	197	48	38	47	45
19	12	25	20	90	61	393	4.3	179	33	40	77	73
20	11	28	20	95	59	394	6.9	201	47	45	162	76
21	8.0	26	19	96	57	378	6.2	254	45	41	249	79
22	5.0	25	19	94	57	389	5.7	293	209	32	243	81
23	5.7	24	18	69	56	394	4.9	284	311	22	230	76
24	5.6	23	18	66	56	347	6.4	272	285	9.0	219	62
25	5.1	23	19	102	53	330	7.0	256	302	11	215	62
26	5.4	22	19	122	52	308	6.8	252	338	14	209	60
27	5.3	27	20	119	51	283	7.2	247	349	14	158	57
28	6.6	28	19	113	50	266	7.1	240	367	15	91	58
29	6.6	27	21	77	---	255	6.4	181	394	14	72	54
30	9.1	26	35	34	---	252	10	107	388	14	68	54
31	13	---	13	22	---	241	---	49	---	19	63	---
TOTAL	240.7	719.0	670	1708	1445	7445	1363.7	3819.4	3558.5	4055.0	2383	1452.8
MEAN	7.76	24.0	21.6	55.1	51.6	240	45.5	123	119	131	76.9	48.4
MAX	21	63	35	125	77	394	279	293	394	389	249	81
MIN	2.4	9.4	13	13	22	43	3.1	5.0	7.1	9.0	11	8.6
CFSM	.05	.15	.14	.35	.33	1.53	.29	.78	.76	.83	.49	.31
IN.	.06	.17	.16	.40	.34	1.76	.32	.90	.84	.96	.56	.34

CAL YR 1989 TOTAL 16757.09 MEAN 45.9 MAX 299 MIN .99 CFSM .29 IN. 3.97
WTR YR 1990 TOTAL 28860.1 MEAN 79.1 MAX 394 MIN 2.4 CFSM .50 IN. 6.84

ROCK RIVER BASIN

413

05426000 CRAWFISH RIVER AT MILFORD, WI

LOCATION.--Lat 43°06'00", long 88°50'58", in SW 1/4 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 mi².

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 National Geodetic Vertical Datum of 1929. Prior to July 28, 1966, nonrecording gage at present site and datum.

REMARKS.--Estimated daily discharges: Ice periods listed in rating table below. Records good except those for ice-affected periods, which are poor. Some diurnal fluctuation at lower flows, due to manipulation of gates on small dams upstream.

AVERAGE DISCHARGE.--59 years, 394 ft³/s, 7.02 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,140 ft³/s, Apr. 6, 1959, gage height, 11.15 ft; minimum observed, 0.2 ft³/s, Sept. 15, 1958, gage height, 1.11 ft.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,250 ft³/s and maximum (*):

DATE	TIME	DISCHARGE (ft ³ /s)	GAGE HEIGHT (ft)	DATE	TIME	DISCHARGE (ft ³ /s)	GAGE HEIGHT (ft)
Mar. 17	2400	*2,740	*7.12	No other peak greater than base discharge.			

Minimum daily discharge, 56 ft³/s, Dec. 23, 24, 31, Jan. 1, 2.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Nov. 18, 23, 24, 29, Dec. 3, 6, 7,
Dec. 11 to Feb. 21, Feb. 24-26, 28, and Mar. 3-12.)

1.7	52	4.0	1,030
2.0	110	5.0	1,540
2.5	283	6.0	2,080
3.0	510	8.0	3,270
3.5	778		

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	68	108	120	56	170	151	1040	233	514	887	103	329
2	80	116	117	56	160	163	1020	217	445	892	91	294
3	78	100	120	66	140	190	945	199	409	863	88	260
4	64	82	116	90	130	180	891	209	425	867	102	221
5	59	99	116	80	120	180	853	204	349	851	98	213
6	80	137	110	70	120	190	780	203	329	794	93	188
7	80	123	110	68	120	200	716	168	297	721	81	178
8	78	107	104	68	130	230	642	164	282	667	72	146
9	64	114	94	80	200	270	551	219	260	653	68	127
10	84	131	88	86	190	300	584	376	236	617	79	123
11	58	118	86	86	190	500	516	494	202	583	73	105
12	84	134	80	90	210	1000	467	626	115	555	82	99
13	84	126	78	82	230	1540	422	710	156	498	88	89
14	88	152	76	76	220	1960	431	706	182	437	74	101
15	74	163	72	70	200	2250	406	726	185	385	86	118
16	102	165	70	80	200	2540	379	742	182	324	89	139
17	114	88	68	90	200	2690	383	719	198	268	81	124
18	96	98	66	100	210	2720	334	728	238	249	153	112
19	126	104	66	110	190	2650	300	732	219	253	224	138
20	109	123	64	120	190	2490	316	812	230	263	258	124
21	91	133	60	150	210	2350	322	825	214	247	316	140
22	82	114	58	140	202	2230	301	835	228	228	360	151
23	97	110	56	120	194	2110	274	833	279	203	385	153
24	103	110	56	130	190	1960	262	832	305	181	390	114
25	99	109	58	130	170	1790	265	814	386	160	395	131
26	93	111	58	120	160	1690	237	796	468	143	420	148
27	87	122	58	200	154	1570	226	766	504	134	428	134
28	96	156	64	200	150	1440	256	735	531	130	449	134
29	92	130	62	200	---	1330	246	698	698	131	436	123
30	101	118	58	190	---	1240	256	639	818	137	404	120
31	111	---	56	180	---	1130	---	574	---	116	359	---
TOTAL	2722	3601	2465	3384	4950	41234	14621	17534	9884	13437	6425	4576
MEAN	87.8	120	79.5	109	177	1330	487	566	329	433	207	153
MAX	126	165	120	200	230	2720	1040	835	818	892	449	329
MIN	58	82	56	56	120	151	226	164	115	116	68	89
CFSM	.12	.16	.10	.14	.23	1.75	.64	.74	.43	.57	.27	.20
IN.	.13	.18	.12	.17	.24	2.01	.71	.86	.48	.66	.31	.22
CAL YR 1989	TOTAL	84617	MEAN	232	MAX	1600	MIN	56	CFSM	.30	IN.	4.13
WTR YR 1990	TOTAL	124833	MEAN	342	MAX	2720	MIN	56	CFSM	.45	IN.	6.09

ROCK RIVER BASIN

05426031 ROCK RIVER AT JEFFERSON, WI

LOCATION.--Lat 42°59'46", long 88°48'26", in sec.2, T.6 N., R.14 E., Jefferson County, Hydrologic Unit 07090001, on right bank 30 ft downstream from bridge on State Highway 26, in Jefferson.

DRAINAGE AREA.--1,850 mi².

PERIOD OF RECORD.--April 1978 to current year.

GAGE.--Water-stage recorder. Datum of gage 774.97 ft above National Geodetic Vertical Datum of 1929 (levels by Wisconsin Department of Natural Resources). Auxiliary water-stage recorder 6.9 mi downstream from base gage to provide slope data.

REMARKS.--Estimated daily discharges: Periods of ice effect, Nov. 16, 17, 23, 24, Dec. 3, 8-22, Dec. 31 to Mar. 15. Records good except for ice-affected periods and discharges less than 200 ft³/s, which are poor.

AVERAGE DISCHARGE.--12 years, 1,337 ft³/s, 9.81 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,300 ft³/s, Apr. 1, 1979, gage height, 10.79 ft; maximum gage height, 10.84 ft, Apr. 2, 1979; minimum daily discharge, 42 ft³/s, Aug. 18, 1988.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,400 ft³/s, Mar. 16, gage height, 6.77 ft; maximum gage height, 6.84 ft, Mar. 17; minimum daily discharge, 138 ft³/s, Oct. 4.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	157	266	352	200	500	450	2930	803	1980	1900	273	642
2	160	264	316	190	460	450	2840	782	1840	1890	269	590
3	156	280	300	190	430	500	2750	733	1770	1850	266	515
4	138	309	296	200	400	500	2670	690	1580	1800	261	441
5	155	336	316	210	360	500	2580	624	1400	1730	254	376
6	187	339	306	220	350	520	2480	572	1120	1660	252	328
7	182	312	293	200	350	540	2370	584	878	1570	241	277
8	176	305	280	200	350	600	2280	549	830	1470	242	236
9	186	331	270	210	450	780	2250	530	831	1200	238	215
10	189	317	250	220	540	1000	2160	882	804	955	233	221
11	220	334	250	240	580	1500	2090	1360	751	811	227	216
12	192	308	240	250	600	2000	2050	1710	720	691	230	211
13	194	332	220	260	600	2700	1950	1930	625	598	232	221
14	191	324	210	260	620	3500	1910	2020	537	515	232	245
15	198	328	210	230	600	4000	1840	2060	425	482	221	255
16	203	330	200	220	580	4270	1740	2210	392	440	224	250
17	220	320	190	230	560	4270	1670	2220	417	413	225	252
18	216	338	190	270	560	4260	1590	2250	406	387	495	266
19	247	377	190	310	580	4190	1530	2260	391	396	565	271
20	305	376	180	350	600	4110	1550	2340	400	428	640	269
21	341	352	180	400	700	4060	1520	2390	481	408	692	274
22	373	351	170	430	700	4040	1400	2400	594	397	785	274
23	395	340	177	450	660	3980	988	2390	793	389	906	266
24	405	360	160	450	600	3880	844	2370	841	374	975	267
25	396	388	154	400	560	3760	797	2350	949	364	1010	253
26	355	374	159	350	500	3670	764	2320	1070	348	1030	249
27	322	380	181	450	500	3560	700	2290	1130	330	1090	247
28	273	364	200	540	470	3450	697	2220	1190	324	998	239
29	267	353	222	600	---	3340	749	2190	1650	330	851	221
30	270	368	227	560	---	3210	777	2160	1850	311	728	212
31	301	---	220	540	---	3070	---	2090	---	283	670	---
TOTAL	7570	10056	7109	9830	14760	80660	52466	52279	28645	25044	15555	8799
MEAN	244	335	229	317	527	2602	1749	1686	955	808	502	293
MAX	405	388	352	600	700	4270	2930	2400	1980	1900	1090	642
MIN	138	264	154	190	350	450	697	530	391	283	221	211
CFSM	.13	.18	.12	.17	.28	1.41	.95	.91	.52	.44	.27	.16
IN.	.15	.20	.14	.20	.30	1.62	1.05	1.05	.58	.50	.31	.18

CAL YR 1989 TOTAL 234286 MEAN 642 MAX 3070 MIN 138 CFSM .35 IN. 4.71
WTR YR 1990 TOTAL 312773 MEAN 857 MAX 4270 MIN 138 CFSM .46 IN. 6.29

ROCK RIVER BASIN

415

05426250 BARK RIVER NEAR ROME, WI

LOCATION.--Lat 42°57'39", long 88°40'09", in SE 1/4 SW 1/4 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 mi².

PERIOD OF RECORD.--November 1979 to September 1982. October 1982 to September 1983 (fragmentary). October 1983 to present.

GAGE.--Water-stage recorder. Elevation of gage is 810 ft, from topographic map.

REMARKS.--Estimated daily discharges: Nov. 11 to Dec. 7, Dec. 22 to Jan. 17, and ice periods listed in rating table below. Records good except for estimated daily discharges, which are fair.

AVERAGE DISCHARGE.--9 years (water years 1981-82, 1984-90), 87.3 ft³/s, 9.72 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 443 ft³/s, Apr. 6, 1982, gage height, 2.39 ft; maximum gage height, 2.40 ft Oct. 1, 1986; minimum, 3.0 ft³/s, Aug. 4, 1988.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 241 ft³/s, Mar. 14, gage height, 1.80 ft; minimum, 21 ft³/s, July 14.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Shifting-control method used Oct. 1-6 and June 22 to Sept. 28; stage-discharge relation affected by ice Dec. 11-21, Jan. 18-23, 25, 26, 31, Feb. 17-20 and Feb. 24 to Mar. 3.)

0.6	18	1.5	171
0.7	28	2.0	293
1.0	73		

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	39	47	45	34	66	58	106	64	120	99	30	74
2	33	46	43	34	66	62	105	50	117	95	35	68
3	25	45	40	35	67	64	105	52	107	92	52	63
4	26	50	42	40	65	67	105	73	102	87	50	60
5	28	49	43	45	64	66	103	88	104	83	45	44
6	29	49	42	43	65	66	97	90	100	81	41	28
7	27	49	38	41	65	63	94	88	93	80	37	32
8	28	51	34	39	74	77	92	97	91	79	36	32
9	28	45	34	40	86	108	91	120	85	74	34	30
10	28	49	34	47	87	123	93	156	76	72	33	31
11	28	50	34	48	83	166	91	189	80	92	33	33
12	30	50	34	45	82	203	87	215	76	97	33	33
13	29	50	34	40	78	219	87	217	58	41	30	32
14	28	50	34	38	80	236	92	207	32	22	30	34
15	29	52	34	37	60	239	92	205	33	39	30	37
16	47	54	33	37	68	228	91	205	39	34	42	34
17	38	56	33	39	72	215	85	198	46	32	37	33
18	35	58	32	54	70	208	84	182	44	32	49	28
19	34	54	32	54	66	207	84	189	41	38	86	33
20	32	50	31	52	64	201	89	201	49	43	174	52
21	35	48	31	52	60	192	98	200	49	42	183	56
22	38	45	30	52	63	185	99	188	48	41	161	49
23	38	43	30	52	70	164	99	178	58	37	162	43
24	37	42	30	71	66	159	96	175	65	35	178	40
25	40	45	29	58	62	146	91	174	66	34	159	40
26	39	46	29	66	60	109	87	171	71	32	140	37
27	38	47	29	69	58	36	85	165	92	32	131	36
28	36	47	30	72	58	67	83	154	87	32	113	33
29	38	46	31	70	---	93	77	145	102	35	87	34
30	41	45	32	65	---	100	74	135	101	38	82	31
31	48	---	33	64	---	109	---	126	---	31	77	---
TOTAL	1049	1458	1060	1533	1925	4236	2762	4697	2232	1701	2410	1210
MEAN	33.8	48.6	34.2	49.5	68.7	137	92.1	152	74.4	54.9	77.7	40.3
MAX	48	58	45	72	87	239	106	217	120	99	183	74
MIN	25	42	29	34	58	36	74	50	32	22	30	28
CFSM	.28	.40	.28	.41	.56	1.12	.75	1.24	.61	.45	.64	.33
IN.	.32	.44	.32	.47	.59	1.29	.84	1.43	.68	.52	.73	.37
CAL YR 1989	TOTAL 18541	MEAN 50.8	MAX 147	MIN 10	CFSM .42	IN. 5.65						
WTR YR 1990	TOTAL 26273	MEAN 72.0	MAX 239	MIN 22	CFSM .59	IN. 8.01						

LOCATION.--Lat 42°51'27", long 88°56'27", in NW 1/4 NE 1/4 sec.34, T.5 N., R.13 E., Jefferson County, Hydrologic Unit 07090001, 80 ft east of Pottawatomie Trail Bridge at Bingham Point Estates, and 4.5 mi northeast of Newville.

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

REMARKS.--No estimated daily lake levels. Records good. Lake level regulated by dam at Indianford. Gage-height telemeter at station.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 9.45 ft. Mar. 23; minimum, 5.40 ft. Dec. 26, 27.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.79	6.05	6.00	5.54	6.42	6.12	8.76	6.57	7.69	7.00	5.99	6.43
2	5.83	6.03	6.00	5.57	6.39	6.10	8.73	6.50	7.62	7.09	5.98	6.39
3	5.77	5.97	5.94	5.59	6.38	6.11	8.60	6.44	7.62	7.16	5.99	6.33
4	5.72	5.96	5.90	5.67	6.37	6.12	8.51	6.45	7.50	7.22	6.03	6.26
5	5.74	5.99	5.88	5.70	6.36	6.13	8.43	6.44	7.38	7.23	6.04	6.20
6	5.81	6.00	5.87	5.73	6.35	6.14	8.34	6.41	7.31	7.18	6.02	6.13
7	5.80	6.03	5.84	5.76	6.33	6.13	8.25	6.39	7.17	7.13	6.00	6.06
8	5.79	6.05	5.81	5.78	6.33	6.16	8.16	6.37	7.06	7.09	6.01	6.00
9	5.79	6.09	5.78	5.83	6.34	6.29	8.08	6.35	6.96	7.05	6.01	5.97
10	5.84	6.10	5.75	5.88	6.38	6.46	8.06	6.58	6.85	6.96	6.02	5.93
11	5.81	6.11	5.71	5.94	6.41	6.76	7.97	6.60	6.74	6.86	6.01	5.89
12	5.84	6.10	5.66	5.99	6.45	7.15	7.88	6.75	6.63	6.73	5.99	5.86
13	5.84	6.12	5.63	6.02	6.48	7.56	7.80	6.95	6.58	6.60	5.99	5.87
14	5.85	6.10	5.61	6.06	6.46	7.98	7.78	7.11	6.54	6.52	5.96	5.95
15	5.85	6.13	5.58	6.08	6.43	8.37	7.71	7.25	6.44	6.47	5.98	5.94
16	5.88	6.17	5.57	6.09	6.40	8.71	7.65	7.41	6.33	6.39	5.97	5.97
17	5.87	6.08	5.56	6.11	6.38	9.00	7.59	7.56	6.31	6.32	5.96	5.94
18	5.82	6.05	5.55	6.15	6.37	9.16	7.50	7.61	6.28	6.25	6.09	5.94
19	5.84	6.05	5.55	6.21	6.36	9.24	7.42	7.67	6.16	6.24	6.24	6.00
20	5.84	6.09	5.53	6.26	6.34	9.29	7.43	7.75	6.15	6.28	6.36	6.00
21	5.85	6.06	5.51	6.32	6.33	9.32	7.40	7.79	6.14	6.25	6.42	6.05
22	5.87	6.05	5.49	6.36	6.32	9.35	7.35	7.85	6.20	6.21	6.43	6.06
23	5.93	6.04	5.47	6.37	6.31	9.36	7.27	7.90	6.25	6.18	6.46	6.04
24	6.01	6.03	5.45	6.37	6.29	9.31	7.16	7.94	6.25	6.12	6.48	5.97
25	6.08	6.03	5.44	6.41	6.25	9.27	7.05	7.96	6.30	6.09	6.53	5.97
26	6.13	6.03	5.40	6.42	6.22	9.23	6.93	7.97	6.39	6.05	6.56	5.97
27	6.16	6.04	5.41	6.44	6.19	9.16	6.82	7.96	6.46	6.04	6.58	5.97
28	6.14	6.05	5.43	6.44	6.15	9.09	6.75	7.93	6.51	6.03	6.62	5.97
29	6.10	6.03	5.46	6.44	---	9.02	6.67	7.88	6.73	6.06	6.59	5.96
30	6.08	6.02	5.49	6.44	---	8.94	6.63	7.81	6.87	6.06	6.54	5.96
31	6.09	---	5.51	6.42	---	8.84	---	7.75	---	6.01	6.47	---
MEAN	5.90	6.05	5.64	6.08	6.35	7.93	7.69	7.22	6.71	6.54	6.20	6.03
MAX	6.16	6.17	6.00	6.44	6.48	9.36	8.76	7.97	7.69	7.23	6.62	6.43
MIN	5.72	5.96	5.40	5.54	6.15	6.10	6.63	6.35	6.14	6.01	5.96	5.86
CAL YR 1989	MEAN 6.23	MAX 8.32	MIN 5.40									
WTR YR 1990	MEAN 6.53	MAX 9.36	MIN 5.40									

ROCK RIVER BASIN

417

05427270 KOSHKONONG CREEK NEAR SUN PRAIRIE, WI

LOCATION.--Lat 43°08'58", long 89°14'13", in NE 1/4 NW 1/4 sec.19, T.8 N., R.11 E., Dane County, Hydrologic Unit 07090001, at bridge on town road, 3.68 mi downstream from sewage treatment plant at Sun Prairie.

DRAINAGE AREA.--12.7 mi².

PERIOD OF RECORD.--October 1989 to September 1990. Single samples in September 1974 and August 1976.

REMARKS.--Bacteria analyses by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

		DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)		
OCT 1989												
24...	1115	4.4	1330	7.9	15.0	1.5	8.0	743	82	42		
DEC												
06...	1010	4.5	1440	7.9	9.0	1.3	9.9	737	89	31		
APR 1990												
04...	1400	5.2	1260	7.9	10.5	2.5	13.3	739	123	49		
JUN												
12...	0945	4.8	1330	7.9	17.0	4.5	6.9	734	75	42		
JUL												
10...	1210	4.8	1390	7.6	20.0	1.5	7.4	736	84	42		
AUG												
06...	1415	3.8	1700	7.9	19.0	3.0	7.4	744	83	36		
		COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	ALKA-LINITY LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	SEDI-MENT, SUS-PENDED (MG/L) (80154)		
OCT 1989												
24...		360	303	230	9.90	0.150	1.1	2.90	2.80	2		
DEC												
06...		150	293	280	12.0	0.170	1.4	3.60	2.90	5		
APR 1990												
04...		180	253	160	12.0	11.0	10	2.80	2.70	13		
JUN												
12...		2800	315	200	9.60	0.290	1.2	2.20	2.10	285		
JUL												
10...		2700	319	240	7.70	0.050	1.4	0.040	0.040	12		
AUG												
06...		5100	296	190	9.20	0.380	1.4	2.50	2.10	10		
		DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	STREP-TOCOC- CI KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	ARSENIC TOTAL (UG/L AS AS) (01002)	BORON, TOTAL RECOV-ERABLE (UG/L AS B) (01022)
DATE	TIME											
JUL 1990												
10...	1210	4.8	160	380	81	42	140	7.2	35	14	<1	190
		CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO) (01037)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	SELE-NIUM, TOTAL RECOV-ERABLE (UG/L AS SE) (01147)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)
JUL 1990												
10...	2	1	11	150	3	40	0.10	2	<1	<1	60	

ROCK RIVER BASIN

05427506 KOSHKONONG CREEK AT ROCKDALE, WI

LOCATION.--Lat 42°58'20", long 89°01'56", in SW 1/4 NW 1/4 sec.24, T.6 N., R.12 E., Dane County, Hydrologic Unit 07090001, at sewage treatment plant in Rockdale, just downstream from dam on Rockdale Mill pond.

DRAINAGE AREA.--146 mi².

PERIOD OF RECORD.--October 1989 to September 1990.

REMARKS.--Bacteria analyses by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

		DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)		
APR 1990												
05...	1200	64	855	8.3	7.5	4.0	12.5	753	106	45		
JUN 14...	1115	35	827	7.9	24.5	17	6.0	737	74	44		
JUL 12...	1400	28	909	8.0	20.0	33	8.3	744	94	42		
AUG 07...	1340	21	892	8.2	23.0	15	9.0	745	108	43		
		COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	ALKA-LINITY LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, AM-MONIA + ORGANIC DIS-SOLVED (MG/L AS N) (00623)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	SEDI-MENT, SUS-PENDED (MG/L) (80154)		
APR 1990												
05...		50	282	38	5.20	0.190	1.2	0.250	0.120	63		
JUN 14...		640	315	52	1.70	0.630	1.4	0.360	0.240	112		
JUL 12...		530	326	64	2.70	0.210	1.2	0.020	0.020	308		
AUG 07...		70	322	77	1.70	0.090	0.90	0.560	0.200	59		
		DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	STREP-TOCOCCI, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	ARSENIC TOTAL (UG/L AS AS) (01002)	BORON, TOTAL RECOV-ERABLE (UG/L AS B) (01022)
DATE	TIME											
JUL 1990												
12...	1400	28	490	420	90	48	32	2.9	68	13	3	<10
		CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO) (01037)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	SELE-NIUM, TOTAL RECOV-ERABLE (UG/L AS SE) (01147)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)
JUL 1990												
12...	3	1	2	2000	5	270	<0.10	3	<1	<1	20	

05427570 ROCK RIVER AT INDIANFORD, WI

LOCATION.--Lat 42°48'15", long 89°05'25", in SW 1/4 SW 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 mi².

PERIOD OF RECORD.--May 1975 to current year.

REVISED RECORDS.--WDR WI-79-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 763.74 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records fair. Natural flow of stream affected by dam in Indianford. Discharge is adjusted for flow through wicket gates.

AVERAGE DISCHARGE.--15 years, 1,777 ft³/s, 9.18 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,900 ft³/s, Apr. 5, 1979, gage height, 16.23 ft; minimum daily, 39 ft³/s, June 19, 1988.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,260 ft³/s, Mar. 22, gage height, 14.08 ft; minimum daily discharge, 100 ft³/s, Dec. 27.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	390	616	690	121	1420	1060	4070	1290	2650	1850	436	1190
2	368	573	629	126	1450	1080	4040	1350	2380	1910	319	1190
3	394	554	615	134	1400	1110	3910	1350	2170	1900	278	1110
4	329	498	604	148	1360	1140	3730	1570	2510	2000	356	1000
5	261	495	604	155	1290	1240	3620	1310	2310	2060	385	983
6	289	509	604	161	1350	1250	3440	1270	2210	2040	385	669
7	295	481	582	170	1300	1200	3320	1090	2130	1930	339	701
8	318	439	649	178	1280	1200	3210	1080	1920	1770	316	611
9	295	430	665	180	1300	1290	3060	1200	1800	1840	315	558
10	317	493	671	209	1360	1530	3200	1270	1760	1760	354	564
11	268	457	641	196	1420	1880	2960	1480	1630	1720	356	464
12	332	569	614	261	1420	2200	2820	1730	1300	1640	353	266
13	341	552	544	308	1510	2850	2700	1910	1390	1460	360	248
14	345	721	473	332	1550	3390	2680	2050	1380	1330	269	259
15	318	691	470	437	1530	3650	2590	2290	1320	1250	269	279
16	457	611	416	524	1310	4140	2460	2330	1170	1140	305	374
17	472	576	354	528	1380	4520	2470	2260	1020	1010	299	349
18	426	598	350	555	1310	4880	2380	2560	1050	990	393	309
19	450	598	351	664	1340	5110	2270	2840	889	1020	586	348
20	343	615	347	851	1330	5120	2310	2870	727	1030	841	356
21	354	650	346	842	1300	5190	2310	2960	689	974	1130	460
22	364	623	341	1040	1360	5150	2230	2950	718	953	1220	548
23	272	583	333	1200	1290	5130	2130	2960	821	889	1230	582
24	216	580	329	1290	1270	5040	1930	3050	832	806	1230	458
25	259	591	324	1410	1210	4800	1860	3110	848	680	1250	437
26	299	605	242	1410	1180	4910	1710	3080	914	618	1320	469
27	491	625	100	1350	1160	4790	1610	3060	1210	608	1280	463
28	676	618	101	1410	1130	4670	1530	3040	1270	576	1370	503
29	621	557	105	1440	---	4630	1490	3030	1440	584	1360	474
30	614	608	110	1400	---	4430	1410	2910	1650	643	1320	452
31	537	---	115	1430	---	4240	---	2790	---	585	1230	---
TOTAL	11711	17116	13319	20460	37510	102820	79450	68040	44108	39566	21454	16674
MEAN	378	571	430	660	1340	3317	2648	2195	1470	1276	692	556
MAX	676	721	690	1440	1550	5190	4070	3110	2650	2060	1370	1190
MIN	216	430	100	121	1130	1060	1410	1080	689	576	269	248
CFSM	.14	.22	.16	.25	.51	1.26	1.01	.83	.56	.49	.26	.21
IN.	.17	.24	.19	.29	.53	1.45	1.12	.96	.62	.56	.30	.24

CAL YR 1989 TOTAL 342205 MEAN 938 MAX 3580 MIN 100 CFSM .36 IN. 4.84
WTR YR 1990 TOTAL 472228 MEAN 1294 MAX 5190 MIN 100 CFSM .49 IN. 6.68

ROCK RIVER BASIN

05427718 YAHARA RIVER AT WINDSOR, WI

LOCATION.--Lat 43°12'32", long 89°21'09", in NW 1/4 NE 1/4 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 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--February 1976 to December 1981, October 1989 to September 1990.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 870 ft above National Geodetic Vertical Datum of 1929, from topographic map. Gage-height telemeter at station.

REMARKS.--Estimated daily discharges: Oct. 1-19, Jan. 17-26, Feb. 9, and ice periods listed in rating table below. Records good except those for estimated daily discharges, which are poor.

AVERAGE DISCHARGE.--6 years (water years 1977-81, 1990), 16.5 ft³/s, 3.04 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 587 ft³/s, Mar. 12, 1976, gage height, 5.56 ft; maximum gage height, 5.60 ft, June 29, 1990; minimum daily, 4.6 ft³/s, Mar. 1-8, 1978.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 150 ft³/s and maximum (*):

DATE	TIME	DISCHARGE (ft ³ /s)	GAGE HEIGHT (ft)	DATE	TIME	DISCHARGE (ft ³ /s)	GAGE HEIGHT (ft)
Mar. 8	2230	280	5.09	Mar. 13	2315	322	5.30
Mar. 11	1215	217	4.77	June 29	0330	*348	*5.60

Minimum daily, 7.5 ft³/s Aug. 9.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Shifting-control method used Aug. 5-11, 13-18; stage-discharge relation affected by ice Nov. 16-18, Dec. 2-4, 7-9, Dec. 11 to Jan. 16, Jan. 27-31, Feb. 3-7, 11-21, and Feb. 24 to Mar. 7.)

0.6	5.0	3.0	76
1.0	18	4.0	114
2.0	49	5.0	262

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	13	11	8.4	11	12	16	12	12	35	8.2	9.0
2	11	13	11	8.4	10	20	17	12	14	25	8.2	9.3
3	11	12	11	9.0	10	16	15	12	15	20	9.3	9.1
4	12	12	10	9.0	9.8	11	15	13	13	18	15	9.1
5	21	12	10	8.8	14	9.8	15	13	13	16	10	8.8
6	16	12	10	8.8	12	9.8	14	13	13	15	8.7	9.2
7	14	13	10	9.0	11	9.8	14	12	12	15	8.4	9.6
8	13	12	9.8	10	31	101	13	12	13	15	8.0	9.4
9	12	12	9.8	13	20	165	14	16	12	15	7.5	9.4
10	13	12	10	14	13	70	20	47	12	14	7.8	10
11	12	12	11	12	9.8	134	16	28	12	14	26	9.7
12	12	12	9.8	11	9.6	94	14	20	12	13	29	9.7
13	12	11	9.6	10	10	90	13	17	12	13	11	9.7
14	11	12	9.6	10	12	190	16	15	12	13	9.1	14
15	11	11	9.6	9.8	15	90	15	14	11	14	8.5	12
16	25	10	9.4	10	11	53	14	26	11	13	8.2	11
17	16	10	9.2	70	10	36	13	19	16	13	8.5	10
18	14	10	9.0	30	9.8	25	13	16	12	14	14	10
19	13	10	9.0	20	9.6	21	13	26	11	16	46	11
20	12	10	8.8	17	10	19	14	36	10	15	46	10
21	12	10	8.8	16	9.4	19	14	22	10	13	24	11
22	13	11	8.8	15	9.2	20	14	18	38	12	17	10
23	11	11	8.8	17	9.8	18	13	16	41	11	14	10
24	12	11	8.8	27	11	17	13	15	21	11	12	10
25	12	11	8.8	24	11	16	13	15	17	11	13	10
26	11	11	8.6	14	10	16	12	15	17	9.7	13	9.7
27	12	12	8.6	12	9.4	16	13	14	17	9.6	12	9.6
28	11	13	8.8	12	11	15	15	14	18	10	11	9.4
29	12	13	8.8	11	---	15	14	13	176	11	10	9.7
30	13	12	8.6	11	---	15	13	13	51	9.7	9.7	9.8
31	14	---	8.4	10	---	15	---	12	---	9.0	9.1	---
TOTAL	405	346	293.4	467.2	329.4	1358.4	428	546	654	443.0	442.2	299.2
MEAN	13.1	11.5	9.46	15.1	11.8	43.8	14.3	17.6	21.8	14.3	14.3	9.97
MAX	25	13	11	70	31	190	20	47	176	35	46	14
MIN	11	10	8.4	8.4	9.2	9.8	12	12	10	9.0	7.5	8.8

WTR YR 1990 TOTAL 6011.8 MEAN 16.5 MAX 190 MIN 7.5

05427718 YAHARA RIVER AT WINDSOR, WI--CONTINUED

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1975 to September 1980, October 1989 to September 1990.

PERIOD OF DAILY RECORD.--

SUSPENDED-SEDIMENT DISCHARGE: March to September 1990.

TOTAL-PHOSPHORUS DISCHARGE: March to September 1990.

INSTRUMENTATION.--Water-quality sampler since March 1990.

REMARKS.--Records good. Bacteria analyses by Wisconsin State Laboratory of Hygiene. Samples are point samples unless otherwise indicated.

EXTREMES FOR CURRENT PERIOD OF DAILY RECORD.--

SUSPENDED-SEDIMENT DISCHARGE: Maximum daily, 1,240 tons, June 29; minimum daily, 0.36 ton, Aug. 9.

TOTAL-PHOSPHORUS DISCHARGE: Maximum daily, 1,670 lb, Mar. 9; minimum daily, 2.41 lb, Mar. 5-7.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00666)	SEDI- MENT, SUS- PENDED (MG/L) (80154)
MAR 1990					
*08...	1714	204	--	--	135
08...	1715	204	0.890	0.800	291
08...	1716	204	1.30	0.890	--
08...	1815	222	--	--	268
08...	1915	242	0.890	0.940	--
08...	2015	264	--	--	595
08...	2215	278	2.20	1.10	644
08...	2315	278	--	--	545
09...	0015	270	1.70	0.900	--
09...	0115	258	--	--	478
09...	0315	238	--	--	419
09...	0415	226	2.20	1.10	--
09...	0815	188	--	--	329
09...	0915	180	2.20	1.50	--
09...	1315	144	--	--	293
09...	1415	139	2.20	1.50	--
09...	2115	104	1.80	1.30	--
10...	0015	96	--	--	185
10...	0850	72	1.20	1.00	225
*10...	0852	72	1.00	0.940	86
10...	1152	66	1.50	1.10	--
10...	1153	66	0.940	0.970	226
10...	1215	65	--	--	97
10...	1815	61	--	--	81
10...	2115	57	0.930	0.800	--
11...	0315	48	--	--	66
11...	0615	45	0.660	0.650	63
11...	0915	110	0.610	0.610	957
11...	1215	217	0.870	0.860	998
11...	1515	195	--	--	738
11...	1815	184	0.930	0.790	--
12...	0015	156	--	--	357
12...	0315	125	0.810	0.800	--
12...	0915	89	--	--	210
12...	1155	84	0.660	0.520	--
12...	1700	80	--	--	135
12...	1900	77	0.470	0.450	--
13...	0300	61	--	--	88
*13...	1128	58	0.430	0.380	63
13...	1130	58	0.500	0.360	74
13...	1615	52	0.380	0.300	49
13...	1915	71	--	--	277
13...	1930	80	0.300	0.290	--
13...	2000	94	--	--	1310
13...	2030	117	0.380	0.380	--
13...	2045	146	--	--	3320
13...	2115	213	1.00	0.470	--
13...	2145	264	--	--	4820
13...	2215	296	1.00	0.550	6850
14...	0345	252	2.70	0.620	3030
14...	0945	217	0.920	0.500	1640
14...	1345	180	--	--	1010
*14...	1533	146	0.480	0.460	674
14...	1535	146	0.720	0.480	758
14...	2000	110	--	--	505
15...	1345	86	0.500	0.360	--
15...	1615	80	--	--	240
16...	0715	57	--	--	244
17...	1045	41	0.290	0.170	--
17...	1315	34	--	--	179
APR					
*09...	0900	14	0.050	0.020	80
*13...	0925	14	--	--	56
*13...	0926	14	--	--	22

ROCK RIVER BASIN

05427718 YAHARA RIVER AT WINDSOR, WI--CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00666)	SEDI- MENT, SUS- PENDED (MG/L) (80154)
MAY 1990					
10...	0415	37	0.310	--	80
10...	0530	42	--	--	85
10...	0615	49	0.350	--	108
10...	0700	54	--	--	131
10...	0745	58	0.400	--	141
10...	1253	57	0.360	--	63
*10...	1257	57	0.330	--	54
10...	1530	53	0.320	--	49
10...	2330	40	0.290	--	41
*11...	0940	28	0.200	--	30
16...	0600	36	0.420	--	135
19...	1545	36	0.360	--	90
19...	1900	40	0.360	--	152
20...	0045	45	0.340	--	133
20...	0930	38	0.250	--	63
22...	1600	18	0.090	--	43
JUN					
*12...	1300	12	--	--	108
*12...	1310	12	0.110	0.070	108
*19...	1435	11	0.140	--	34
22...	1200	36	0.490	--	384
28...	2400	63	0.400	--	331
29...	0015	106	--	--	246
29...	0030	153	0.760	--	3440
29...	0045	191	--	--	7070
29...	0130	238	0.430	--	2900
29...	0200	274	0.870	--	3530
29...	0245	316	0.870	--	5010
29...	0330	348	1.10	--	6540
29...	0630	298	0.760	--	3790
29...	0836	229	1.00	--	2170
*29...	0837	229	0.930	--	1370
29...	1000	183	--	--	1410
29...	1100	154	0.870	--	--
29...	1430	117	--	--	645
29...	1630	105	1.20	--	--
29...	1815	97	--	--	826
29...	2130	83	--	--	735
29...	2300	77	0.840	--	--
30...	0215	64	--	--	521
30...	0415	59	0.560	--	--
30...	0730	54	--	--	368
30...	1515	48	--	--	258
30...	2245	42	0.590	--	--
JUL					
01...	1045	36	--	--	217
*11...	1500	14	0.210	0.210	48
AUG					
*06...	1145	8.7	0.090	0.060	18
11...	1845	43	0.510	--	178
11...	1900	56	0.720	--	362
11...	1915	66	--	--	646
11...	2015	71	0.830	--	--
11...	2045	81	--	--	762
11...	2100	89	0.450	--	--
11...	2115	98	--	--	744
11...	2130	103	0.600	--	743
12...	0030	93	0.820	--	821
12...	0145	76	--	--	583
12...	0215	68	0.730	--	--
12...	0430	40	--	--	368
12...	0530	34	0.810	--	--
*14...	1245	9.4	0.120	--	30
18...	1114	11	0.530	--	--
18...	2345	40	--	--	233
18...	2400	46	--	--	338
19...	0015	54	0.280	--	--
19...	0030	62	--	--	837
19...	0045	69	0.590	--	--
19...	0100	75	--	--	1200
19...	0115	80	0.780	--	1130
19...	0315	73	0.490	--	555
19...	0415	61	--	--	527
19...	0645	43	0.570	--	--
19...	0900	37	--	--	346
19...	1900	36	0.410	--	114
19...	2000	41	--	--	163
19...	2230	50	0.530	--	--
19...	2300	54	--	--	197
19...	2345	59	0.480	--	261
20...	0845	54	0.590	--	218
*20...	1507	39	0.480	--	92
*20...	1510	39	--	--	94

* EQUAL-WIDTH INCREMENT (EWI) SAMPLE.

05427718 YAHARA RIVER AT WINDSOR, WI--CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)					SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE WATER (DEG C) (00010)	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)					SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE WATER (DEG C) (00010)
DATE	TIME						DATE	TIME					
OCT 1989							MAY 1990						
19...	1415	12			760	6.0	10...	1320	57			440	7.5
DEC 01...	1428	10			710	3.0	11...	0935	29			640	8.0
JAN 1990							JUN 12...	1310	12			701	21.5
03...	1440	9.5			660	0.0	19...	1430	11			680	19.0
31...	1435	10			790	1.0	JUL 11...	1500	14			694	21.5
MAR 10...	0930	73			390	1.5	AUG 06...	1145	8.7			693	19.0
APR 09...	0900	14			682	8.5	07...	0100	8.3			705	16.0
13...	0910	14			720	4.5	14...	1232	9.5			750	19.0
DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	BARO-METRIC PRES-SURE (MM HG) (00025)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)			
APR 1990													
*09...	0900	14	682	8.2	8.5	3.0	11.6	749	101	17			
JUN *12...	1310	12	701	8.3	21.5	10	12.7	734	150	25			
JUL *11...	1500	14	694	8.2	21.5	6.3	12.0	736	142	14			
AUG *06...	1145	8.7	693	8.3	19.0	3.4	11.6	744	128	22			
DATE	TIME	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	ALKA-LINITY LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, AM-MONIA + ORGANIC DIS-SOLVED (MG/L AS N) (00623)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	SEDI-MENT, SUS-PENDED (MG/L) (80154)			
APR 1990													
09...	30	283		36	6.10	0.030	0.40	0.050	0.020	80			
JUN 12...	340	301		40	5.30	0.030	0.80	0.110	0.070	108			
JUL 11...	400	286		36	5.40	<0.010	0.80	0.210	0.210	48			
AUG 06...	260	288		36	5.40	0.030	0.90	0.090	0.060	18			
DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	STREP-TOCOCCI KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	ARSENIC TOTAL (UG/L AS AS) (01002)	BORON, TOTAL RECOV-ERABLE (UG/L AS B) (01022)	
JUL 1990													
*11...	1500	14	150	350	72	42	12	1.8	26	11	1	30	
DATE	TIME	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO) (01037)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MERCURY, TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	SELE-NIUM, TOTAL RECOV-ERABLE (UG/L AS SE) (01147)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	
JUL 1990													
11...	3	<1	6	380	2	60	<0.10	3	<1	<1	20		

* EQUAL-WIDTH INCREMENT (EWI) SAMPLE.

ROCK RIVER BASIN

05427718 YAHARA RIVER AT WINDSOR, WI--CONTINUED

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	1.7	4.3	.64	2.1	19	.48	1.1
2	---	---	---	---	---	2.8	4.6	.61	2.5	12	.46	1.1
3	---	---	---	---	---	2.2	4.0	.59	2.8	8.0	.50	1.0
4	---	---	---	---	---	1.5	3.8	.93	2.5	6.2	2.8	1.0
5	---	---	---	---	---	1.3	3.7	.67	2.6	4.9	.50	.98
6	---	---	---	---	---	1.2	3.4	.64	2.8	4.0	.42	1.0
7	---	---	---	---	---	1.2	3.1	.61	2.8	3.5	.40	1.0
8	---	---	---	---	---	96	3.0	.58	3.0	3.0	.39	1.0
9	---	---	---	---	---	136	2.9	1.4	3.1	2.5	.36	.98
10	---	---	---	---	---	25	7.4	9.6	3.2	2.1	.38	1.0
11	---	---	---	---	---	203	2.9	2.3	3.3	1.8	37	.98
12	---	---	---	---	---	49	2.4	1.4	3.4	1.7	25	.96
13	---	---	---	---	---	605	1.3	1.1	3.0	1.5	1.7	.94
14	---	---	---	---	---	1060	4.0	.87	2.5	1.4	.81	2.3
15	---	---	---	---	---	68	.85	.74	1.9	1.6	.67	1.1
16	---	---	---	---	---	30	.81	3.8	1.7	1.4	.64	.98
17	---	---	---	---	---	16	.77	.97	2.1	1.3	.64	.92
18	---	---	---	---	---	11	.73	.76	1.4	1.4	2.3	.93
19	---	---	---	---	---	8.8	.72	5.6	1.0	4.0	49	.93
20	---	---	---	---	---	7.6	.81	6.7	.88	3.4	23	.90
21	---	---	---	---	---	7.3	.79	2.9	.78	1.1	3.9	.90
22	---	---	---	---	---	7.4	.75	2.0	63	.99	2.5	.85
23	---	---	---	---	---	6.6	.72	1.7	25	.94	1.9	.83
24	---	---	---	---	---	5.9	.70	1.7	6.8	.88	1.7	.83
25	---	---	---	---	---	5.5	.68	1.8	4.0	.80	1.7	.79
26	---	---	---	---	---	5.2	.65	1.9	3.0	.71	1.7	.75
27	---	---	---	---	---	5.0	.69	1.9	2.2	.68	1.6	.73
28	---	---	---	---	---	4.8	.45	1.9	2.3	.69	1.5	.70
29	---	---	---	---	---	4.6	.72	1.9	1240	1.7	1.3	.71
30	---	---	---	---	---	4.5	.67	1.9	44	.61	1.2	.71
31	---	---	---	---	---	4.3	---	2.0	---	.54	1.1	---
TOTAL	---	---	---	---	---	2388.4	66.36	62.11	1439.66	94.34	167.55	28.90

PHOSPHORUS TOTAL, POUNDS PER DAY, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	2.95	7.53	3.11	6.28	62.3	4.70	6.07
2	---	---	---	---	---	4.91	7.61	2.99	7.17	25.2	4.52	6.05
3	---	---	---	---	---	3.93	6.40	2.93	12.6	20.3	4.98	5.70
4	---	---	---	---	---	2.70	5.80	3.34	6.77	18.2	21.0	5.54
5	---	---	---	---	---	2.41	5.43	3.31	6.81	16.9	5.05	5.15
6	---	---	---	---	---	2.41	4.74	3.19	6.99	15.9	4.22	5.21
7	---	---	---	---	---	2.41	4.22	3.07	6.76	16.3	3.99	5.26
8	---	---	---	---	---	621	3.86	2.92	7.03	16.6	3.75	5.00
9	---	---	---	---	---	1670	3.73	10.7	6.94	16.0	3.44	4.80
10	---	---	---	---	---	413	21.9	76.7	7.01	15.5	3.52	11.0
11	---	---	---	---	---	553	4.40	30.5	6.94	15.6	67.8	4.67
12	---	---	---	---	---	307	3.86	15.2	7.05	14.8	102	4.51
13	---	---	---	---	---	387	3.59	9.51	7.39	13.5	17.6	4.34
14	---	---	---	---	---	1430	14.4	6.03	7.61	13.0	6.93	5.99
15	---	---	---	---	---	259	3.88	4.18	7.06	14.5	7.78	4.92
16	---	---	---	---	---	101	3.72	29.0	7.60	12.9	10.7	4.28
17	---	---	---	---	---	52.2	3.54	5.22	14.1	11.8	15.8	3.95
18	---	---	---	---	---	33.6	3.37	5.59	9.09	12.6	23.5	3.94
19	---	---	---	---	---	26.3	3.34	33.0	8.01	14.1	114	3.89
20	---	---	---	---	---	21.9	3.76	42.9	6.57	12.6	113	3.68
21	---	---	---	---	---	20.1	3.68	14.4	5.17	10.3	28.5	3.62
22	---	---	---	---	---	19.5	3.53	8.54	91.3	9.22	16.5	3.36
23	---	---	---	---	---	16.7	3.41	7.14	77.1	8.84	12.5	3.26
24	---	---	---	---	---	14.3	3.31	6.83	13.2	8.29	10.6	3.17
25	---	---	---	---	---	12.8	3.22	6.80	8.32	7.57	10.9	2.98
26	---	---	---	---	---	11.6	3.12	7.09	8.56	6.76	10.5	2.79
27	---	---	---	---	---	10.7	3.29	6.70	8.46	6.50	9.97	2.67
28	---	---	---	---	---	9.87	3.76	6.51	9.48	6.62	8.72	2.52
29	---	---	---	---	---	9.13	3.50	6.21	793	6.90	7.77	2.52
30	---	---	---	---	---	8.49	3.25	6.20	150	5.94	7.01	2.46
31	---	---	---	---	---	7.84	---	6.09	---	5.32	6.36	---
TOTAL	---	---	---	---	---	6037.75	153.15	375.90	1320.37	440.86	667.61	133.30

ROCK RIVER BASIN

425

05427800 TOKEN CREEK NEAR MADISON, WI

LOCATION.--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, at U.S. Highway 51, 7.9 mi northeast of Capitol at Madison.

DRAINAGE AREA.--24.3 mi².

PERIOD OF RECORD.--April 1967 and October 1989 to September 1990.

REMARKS.--Bacteria analyses by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	BARO-METRIC PRES-SURE (MM HG) (00025)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)
OCT 1989										
24...	0950	16	650	8.1	9.0	4.0	10.9	747	96	15
DEC 06...	1115	18	651	8.1	3.5	2.6	14.4	738	112	<10
APR 1990										
04...	1130	19	635	8.2	9.0	4.0	11.2	745	99	15
JUN 12...	1115	16	628	7.9	20.5	30	8.6	735	99	40
JUL 10...	1345	15	620	7.9	23.0	23	10.5	732	128	31
AUG 06...	1245	16	648	8.2	19.5	15	10.9	744	123	29

DATE	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	ALKA-LINITY LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, AMMONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	SEDI-MENT, SUS-PENDED (MG/L) (80154)
OCT 1989									
24...	60	279	21	5.30	0.050	0.50	0.030	0.010	22
DEC 06...	<10	291	23	6.80	0.030	1.0	0.070	0.080	18
APR 1990									
04...	<10	278	22	5.70	0.080	0.50	0.060	0.030	74
JUN 12...	180	271	27	4.90	0.090	0.50	0.070	0.040	272
JUL 10...	1900	268	26	4.80	0.030	1.0	0.140	0.140	66
AUG 06...	320	281	25	5.20	0.060	0.90	0.060	0.030	50

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	STREP-TOCOCCHI KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	ARSENIC TOTAL (UG/L AS AS) (01002)	BORON, TOTAL RECOV-ERABLE (UG/L AS B) (01022)
JUL 1990												
10...	1345	15	410	320	64	39	8.8	1.6	24	13	<1	<10

DATE	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO) (01037)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)
JUL 1990											
10...	3	1	5	1100	2	100	<0.10	3	<1	<1	20

ROCK RIVER BASIN

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 mi², of which 1.22 mi² 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 National Geodetic Vertical Datum of 1929.

REMARKS.--Estimated daily discharges: June 12-18, 26-30, and ice periods listed in rating table below. Records fair except for estimated daily discharges, which are poor. Gage-height telemeter at station.

AVERAGE DISCHARGE.--16 years, 4.06 ft³/s, 3.22 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 516 ft³/s, Mar. 21, 1975, gage height, 7.54 ft; maximum gage height, 8.54 ft, Mar. 12, 1976; minimum discharge, 0.15 ft³/s, Dec. 21, 1989, gage height, 3.49 ft.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 100 ft³/s and maximum (*):

DATE	TIME	DISCHARGE (ft ³ /s)	GAGE HEIGHT (ft)	DATE	TIME	DISCHARGE (ft ³ /s)	GAGE HEIGHT (ft)
Jan. 17	0630	115	5.80	Mar. 13	2000	244	6.80
Mar. 8	2000	*256	*6.87	June 29	----	220	6.53
Mar. 11	1200	201	6.54				

Minimum discharge, 0.15 ft³/s Dec. 21, gage height, 3.49 ft.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Shifting-control method used Oct. 10-12, Mar. 29-31, June 3, 4, and July 1, 2; stage-discharge relation affected by ice Dec. 14-19 and 21-24.)

3.5	0.17	4.4	3.7
3.6	.37	4.5	5.3
3.8	.84	4.7	14
4.0	1.4	5.0	34
4.2	2.2	5.5	80
4.3	2.8	6.0	141

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.63	.82	.55	.41	2.7	.84	1.1	.53	.78	4.1	.50	.68
2	.58	.67	.54	.38	3.4	22	1.0	.52	18	3.0	.50	.66
3	.56	.62	.42	.46	1.5	25	.85	.52	9.1	2.3	.59	.61
4	.72	.73	.44	.69	.81	3.7	.90	2.8	2.1	1.6	.51	.71
5	4.5	.66	.57	.53	11	1.3	.82	.82	1.8	1.3	.44	.55
6	2.3	.67	.59	.41	19	.94	.74	.57	1.4	1.1	.43	.72
7	.89	1.2	.42	.37	3.6	.88	.71	.53	1.2	1.3	.43	.53
8	.81	.74	.41	.43	17	90	.74	.50	1.1	.99	.43	.46
9	.77	1.2	.43	5.0	8.7	59	1.3	3.7	.88	.87	.43	.45
10	.73	1.6	.51	6.9	1.6	16	1.7	26	.76	.82	.42	.92
11	.75	1.0	.49	2.2	.86	81	.88	3.2	.71	.75	.53	.52
12	.69	.75	.36	1.0	.78	18	.78	1.6	.70	.68	.52	.53
13	.60	.71	.31	.61	.89	58	.89	1.2	.68	.64	.40	.53
14	.58	.71	.30	.55	.54	43	1.5	1.0	.68	.72	.38	1.8
15	.56	.69	.29	.54	.53	15	.90	.89	.68	3.6	.37	.71
16	4.8	.56	.28	3.7	.53	4.4	.86	18	.66	1.4	.37	.54
17	1.4	.50	.26	71	.52	3.3	.76	2.0	2.0	.81	3.6	.43
18	.77	.52	.25	6.4	.51	2.6	.58	1.2	1.2	1.6	27	.53
19	.68	.53	.23	1.6	.54	2.1	.66	13	.79	10	25	.87
20	.71	.60	.22	.89	.46	1.8	1.3	7.3	1.1	4.2	29	1.1
21	.71	.54	.21	.74	.47	1.7	.79	2.5	.90	1.1	4.0	2.3
22	.64	.57	.20	.65	.59	1.8	.63	1.8	3.4	.75	2.3	.80
23	.61	.52	.19	.87	.69	1.4	.60	1.7	4.3	.68	1.6	.67
24	.63	.51	.18	23	.60	1.3	.59	1.4	1.7	.64	1.5	.80
25	.63	.60	.17	10	.42	1.2	.56	1.4	1.5	.64	3.7	.82
26	.65	.58	.17	2.5	.48	1.1	.77	1.1	3.0	.60	1.6	.90
27	.63	1.0	.17	1.4	.55	1.2	1.5	1.0	1.4	.66	1.4	.97
28	.63	.95	.41	1.2	.56	1.1	2.5	.89	1.3	1.0	1.2	.98
29	.62	.51	.24	.94	---	1.1	.83	.78	70	1.4	.91	1.1
30	1.2	.53	.27	.85	---	1.0	.63	.81	10	.73	.90	1.2
31	1.0	---	.44	.89	---	1.0	---	.80	---	.52	.70	---
TOTAL	31.98	21.79	10.52	147.11	79.83	462.76	28.37	100.06	143.82	50.50	111.66	24.39
MEAN	1.03	.73	.34	4.75	2.85	14.9	.95	3.23	4.79	1.63	3.60	.81
MAX	4.8	1.6	.59	71	19	90	2.5	26	70	10	29	2.3
MIN	.56	.50	.17	.37	.42	.84	.56	.50	.66	.52	.37	.43
CFSM	.06	.04	.02	.26	.16	.82	.05	.18	.26	.09	.20	.04
IN.	.07	.04	.02	.30	.16	.94	.06	.20	.29	.10	.23	.05

CAL YR 1989 TOTAL 1261.77 MEAN 3.46 MAX 173 MIN .17 CFSM .19 IN. 2.56
WTR YR 1990 TOTAL 1212.79 MEAN 3.32 MAX 90 MIN .17 CFSM .18 IN. 2.47

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.

INSTRUMENTATION.--Automatic pumping sampler since December 1977.

REMARKS.--Records fair. Sample times of 0001 to 0017 for June 29 and 1200 for June 30 are estimated. 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.

SUSPENDED-SEDIMENT DISCHARGE: Maximum daily, 2,870 tons, June 10, 1984; minimum daily, 0.01 ton, on many days in 1990 water year.

EXTREMES FOR CURRENT YEAR.--

SUSPENDED-SEDIMENT CONCENTRATIONS: Maximum observed, 10,400 mg/L, June 29; minimum observed, 38 mg/L, Oct. 5.

SUSPENDED-SEDIMENT DISCHARGE: Maximum daily, 448 tons, Mar. 13; minimum daily, 0.01 ton, on many days.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00060)	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SEDI- MENT, SUS- PENDED (MG/L) (80154)
OCT 1989				JUN 1990				
05...	1110	9.9	117	02...	1555	33	--	462
05...	1210	15	86	02...	1605	52	--	731
05...	1440	8.5	38	02...	1615	66	--	945
JAN 1990				03...	0125	30	--	1790
17...	0630	115	397	03...	0820	7.7	--	681
17...	0730	108	532	22...	2345	10	--	63
*17...	0731	108	297	26...	0800	3.0	--	271
*17...	1300	76	376	29...	0001	70	--	372
*18...	0820	7.5	66	29...	0002	70	--	3910
MAR				29...	0003	70	--	4500
*08...	1623	188	815	29...	0004	70	--	5710
*08...	1731	217	856	29...	0005	70	--	9680
09...	1025	43	274	29...	0006	70	--	10400
*09...	1026	43	192	29...	0007	70	--	9490
09...	1400	41	429	29...	0008	70	--	9790
09...	1800	49	436	29...	0009	70	--	5430
10...	0100	29	224	29...	0010	70	--	4940
10...	1200	11	99	29...	0011	70	--	7410
10...	1945	17	120	29...	0012	70	--	8470
11...	0645	19	114	29...	0013	70	--	5010
11...	0845	57	304	29...	0014	70	--	3640
11...	1045	173	1680	29...	0015	70	--	4660
11...	1545	141	2670	29...	0016	70	--	4980
11...	1745	107	1700	29...	0017	70	--	3590
11...	1845	84	1440	*29...	1005	70	--	1880
11...	2345	41	532	*29...	1542	70	--	823
13...	0600	23	377	29...	1550	70	--	1140
13...	1200	22	397	30...	1200	10	--	483
13...	1730	36	287	JUL				
13...	1900	137	5060	01...	0055	--	5.7	219
13...	2000	244	7010	19...	1235	--	29	95
13...	2200	222	4460	19...	1250	--	41	362
13...	2400	136	4020	19...	1535	--	9.9	221
14...	0300	66	1760	19...	1635	--	22	182
14...	0800	40	969	20...	0435	--	6.6	248
14...	1045	33	707	AUG				
14...	1545	24	471	17...	2255	--	35	143
14...	1645	64	487	17...	2305	--	53	2480
14...	1945	18	355	17...	2325	--	71	894
14...	2245	32	802	18...	0130	--	29	362
15...	0945	16	206	18...	0730	--	40	311
MAY				18...	2115	--	14	159
10...	0245	27	457	18...	2205	--	49	262
10...	0345	36	443	19...	0630	--	29	186
10...	0545	60	1420	19...	1230	--	18	104
10...	0745	51	797	20...	0105	--	48	212
*10...	0746	51	703	20...	1305	--	27	71
10...	1245	25	303	21...	0030	--	6.6	62

ROCK RIVER BASIN

05427948 PHEASANT BRANCH AT MIDDLETON, WI--CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO- GEN, AMMONIA TOTAL (MG/L AS NH4) (71845)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO- GEN, TOTAL (MG/L AS N) (00600)	NITRO- GEN, TOTAL (MG/L AS NO3) (71887)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00666)
MAR 1990											
*08...	1623	188	1.30	2.50	3.2	9.5	12	13	59	1.20	1.10
*08...	1730	237	1.40	2.40	3.1	5.6	8.0	9.4	42	1.30	1.10
09...	1025	43	3.90	2.80	3.6	5.6	8.4	12	54	2.00	1.90
09...	1300	46	3.70	2.90	3.7	11	14	18	78	1.90	1.80
10...	2045	20	6.10	2.70	3.5	43	46	52	230	1.30	1.30
11...	1145	220	1.80	1.60	2.1	14	16	18	79	0.970	0.720
11...	2045	70	3.60	2.50	3.2	24	26	30	130	1.40	1.10
13...	1800	114	3.80	0.640	0.82	3.6	4.2	8.0	35	0.770	0.410
13...	2100	224	1.40	0.950	1.2	2.9	3.8	5.2	23	0.820	0.140
14...	0400	64	7.60	2.60	3.3	52	55	63	280	1.90	1.40

* EQUAL-WIDTH INCREMENT (EWI) SAMPLE.

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.02	.04	.02	.01	e.45	.04	.09	.03	.03	1.1	.03	.06
2	.02	.03	.02	.01	e.68	32	.08	.03	52	.31	.03	.06
3	.02	.03	.02	.01	.06	16	.07	.03	20	.17	.03	.05
4	.03	.03	.02	.02	.03	.30	.07	e.48	.20	.11	.03	.06
5	.52	.03	.02	.02	e5.1	.07	.07	.05	.17	.09	.02	.04
6	.17	.03	.02	.01	e13	.04	.06	.03	.12	.07	.02	.06
7	.04	.05	.02	.01	e.75	.04	.06	.03	.09	.08	.02	.04
8	.04	.03	.01	.01	e11	158	.06	.03	.08	.06	.02	.03
9	.03	.05	.02	e1.6	e3.4	51	e.13	1.2	.06	.05	.02	.03
10	.03	.07	.02	e2.3	e.18	4.5	e.20	31	.05	.04	.02	.06
11	.03	.04	.02	e.32	.05	295	.07	.33	.05	.04	.02	.03
12	.03	.03	.01	.05	.04	11	.06	.08	.04	.03	.02	.03
13	.02	.03	.01	.03	.05	448	.07	.06	.04	.03	.02	.03
14	.02	.03	.01	.02	.03	117	.11	.04	.04	.03	.02	e.23
15	.02	.03	.01	.02	.03	9.4	.07	.04	.04	.75	.02	.04
16	.52	.02	.01	.45	.03	.63	.06	14	.03	.12	.01	.03
17	.08	.02	.01	53	.03	.32	.05	.18	.10	.05	6.0	.02
18	.04	.02	.01	1.5	.03	.25	.04	.09	.06	e.18	15	.03
19	.03	.02	.01	.09	.03	.20	.05	7.1	.04	4.3	7.2	.05
20	.03	.02	.01	.05	.02	.17	.09	.90	.05	1.5	6.8	.06
21	.03	.02	.01	.03	.02	.16	.05	.14	.04	.08	.47	e.34
22	.03	.02	.01	.03	.03	.17	.04	.10	.25	.06	.26	e.06
23	.03	.02	.01	.04	.03	.13	.04	.09	.45	.05	.18	.03
24	.03	.02	.01	e18	.03	.12	.04	.07	.09	.05	.16	.04
25	.03	.02	.01	e4.3	.02	.11	.04	.07	.07	.04	e.78	.04
26	.03	.02	.01	e.40	.02	.10	.05	.06	.14	.04	e.18	.04
27	.03	.04	.01	.08	.02	.11	e.17	.05	.06	.04	e.15	.04
28	.03	.04	.01	.06	.02	.09	e.40	.04	.05	.07	.12	.04
29	.03	.02	.01	.05	---	.09	.05	.03	e130	.09	.09	.04
30	.05	.02	.01	.04	---	.09	.04	.03	e4.3	.04	.08	.05
31	.05	---	.01	.04	---	.08	---	.03	---	.03	.06	---
TOTAL	2.11	0.89	0.41	82.60	35.18	1145.21	2.48	56.44	208.74	9.70	37.88	1.76

WTR YR 1990 TOTAL 1583.40

e ESTIMATED.

05427965 SPRING HARBOR STORM SEWER AT MADISON, WI

LOCATION.--Lat 43°04'45", long 89°28'15", in NW 1/4 SE 1/4 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 mi².

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 National Geodetic Vertical Datum of 1929.

REMARKS.--Estimated daily discharges: Jan. 12-17. Records are good except those for period of estimated daily discharges and periods of flow between 0.00 ft³/s and 0.3 ft³/s, which are poor.

AVERAGE DISCHARGE.--14 years, 1.38 ft³/s, 5.70 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 706 ft³/s, Aug. 31, 1981, gage height, 4.04 ft; no flow many days during period of record.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 547 ft³/s, Mar. 13, gage height, 3.63 ft; no flow on many days during current year.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).

0.41	0.0	0.9	12
0.5	0.55	1.0	18
0.6	1.8	1.1	26
0.7	3.8	1.2	34
0.8	6.7	1.4	51

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.04	.01	.00	2.3	.82	.37	.00	.06	.00	.00	.00
2	.00	.00	.00	.00	.20	5.4	.38	.00	9.7	.00	.00	.00
3	.00	.02	.00	.51	.18	.45	.05	.00	.27	.00	2.2	.00
4	.00	.35	.00	2.7	.16	.01	.47	7.3	.05	.00	.22	.02
5	8.7	.09	.00	.34	4.0	.00	.03	.06	.90	.00	.00	.00
6	.02	.10	.00	.19	.70	.00	.00	.00	.06	.00	.00	.57
7	.00	1.9	.00	.12	.91	.03	.00	.00	.23	.79	.00	.02
8	.00	.06	.00	.46	4.0	39	.00	.00	.24	.01	.00	.00
9	.07	3.3	.00	11	.51	7.3	4.1	15	.01	.00	.00	.00
10	.42	.38	.00	.99	.13	2.6	1.6	22	.00	.00	.00	2.4
11	.00	.02	.00	.21	.07	27	1.2	.13	.00	.02	.83	.00
12	.00	.00	.00	.06	.45	2.4	2.9	.03	.00	.00	.18	.00
13	.00	.00	.00	.00	.64	30	1.4	.00	2.2	.00	.00	.00
14	.00	.09	.00	.00	.02	24	2.0	.00	.27	.37	.00	3.2
15	.00	.34	.00	.00	.00	2.2	.08	1.2	.03	4.7	.00	.04
16	9.4	.08	.00	4.0	.04	.03	.20	19	3.5	.06	.00	.07
17	.01	.00	.00	20	.00	.15	.12	.05	4.4	.01	6.9	.00
18	.00	.01	.00	.13	.39	.05	.00	.00	.19	2.2	26	.13
19	.00	.00	.00	.00	.11	.00	.26	16	.01	9.2	24	.59
20	.15	.00	.00	.00	.01	.00	5.3	.86	.79	.65	10	.02
21	.03	.00	.00	.00	.31	.00	.05	.10	.01	.01	1.0	6.4
22	.00	.00	.00	.41	1.2	1.4	.00	.15	7.8	.00	.00	.00
23	.06	.00	.00	3.3	.59	.01	.16	1.2	2.3	.00	.00	.00
24	.09	.00	.00	7.0	.12	.00	.43	.05	.00	2.4	2.5	.00
25	.00	.01	.00	.37	.00	.00	.00	.71	.02	.10	6.5	.05
26	.00	.01	.00	.03	.00	.00	1.6	.06	3.5	.00	.48	.06
27	.57	3.4	.00	1.1	.08	.00	4.6	.00	.10	.76	.01	.00
28	.00	.54	.00	.22	.08	.00	3.4	.00	5.2	.27	.00	.00
29	.00	.00	.00	.09	---	.00	.06	.00	45	4.1	.00	.00
30	3.2	.07	.00	.33	---	.00	.00	.00	.13	.17	.00	.00
31	2.2	---	.00	.17	---	.00	---	.00	---	.01	.00	---
TOTAL	24.92	10.81	0.01	53.73	17.20	142.85	30.76	83.90	86.97	25.83	80.82	13.57
MEAN	.80	.36	.000	1.73	.61	4.61	1.03	2.71	2.90	.83	2.61	.45
MAX	9.4	3.4	.01	20	4.0	39	5.3	22	45	9.2	26	6.4
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
CFSM	.24	.11	.00	.53	.19	1.40	.31	.82	.88	.25	.79	.14
IN.	.28	.12	.00	.61	.19	1.62	.35	.95	.98	.29	.91	.15

CAL YR 1989 TOTAL 425.03 MEAN 1.16 MAX 47 MIN .00 CFSM .35 IN. 4.81
WTR YR 1990 TOTAL 571.37 MEAN 1.57 MAX 45 MIN .00 CFSM .48 IN. 6.46

05427965 SPRING HARBOR STORM SEWER AT MADISON, WI--CONTINUED

WATER-QUALITY RECORDS

PERIOD OF RECORD.--February 1976 to current year.

INSTRUMENTATION.--Automatic pumping sampler.

REMARKS.--Samples are point samples unless otherwise indicated.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	DATE	TIME	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SEDI- MENT, SUS- PENDE (MG/L) (80154)
OCT 1989					MAY 1990				
05...	0840	--	14	244	09...	0930	--	8.7	109
05...	0910	--	40	232	09...	1030	--	67	371
05...	1010	--	25	601	09...	1130	--	57	207
16...	0255	--	12	140	09...	1430	--	7.2	73
16...	0325	--	42	169	15...	2325	--	11	341
16...	0455	--	29	61	15...	2355	--	76	427
16...	0555	--	46	122	16...	0025	--	120	438
16...	0855	--	9.6	21	16...	0155	--	71	463
JAN 1990					16...	0430	--	39	305
*17...	0908	20	--	105	16...	0830	--	6.4	257
MAR					19...	0835	--	9.1	125
08...	1640	--	67	134	19...	0905	--	47	125
*08...	1641	--	67	239	19...	0935	--	71	196
08...	1740	--	95	397	19...	1035	--	53	146
08...	1910	--	59	274	19...	1305	--	42	105
09...	0210	--	7.2	181	19...	1705	--	7.2	102
13...	0405	--	11	411	JUN				
13...	0505	--	51	675	02...	1605	--	11	46
13...	0605	--	33	228	02...	1635	--	116	606
13...	0935	--	7.2	58	02...	1705	--	77	500
13...	1720	--	16	378	02...	1805	--	42	399
13...	1750	--	146	3720	02...	1905	--	31	241
13...	1850	--	95	2050	02...	2035	--	7.7	136
13...	2020	--	61	993	28...	2350	--	12	31
14...	0050	--	35	549	29...	0020	--	211	1380
14...	1625	--	9.6	266	29...	0050	--	56	1330
14...	1655	--	43	564	29...	0120	--	134	852
14...	1925	--	8.2	165	29...	0225	--	105	583
14...	1955	--	13	323	29...	0355	--	72	477
14...	2055	--	42	256	29...	0655	--	49	258
14...	2155	--	40	184	JUL				
15...	0350	--	7.7	176	19...	1155	--	15	188
APR					19...	1225	--	102	762
09...	2005	--	6.4	314	19...	1330	--	41	281
09...	2105	--	33	218	19...	1500	--	14	111
09...	2335	--	12	43	AUG				
20...	0245	--	8.2	508	14...	1525	--	0.0	609
20...	0345	--	37	424	14...	1555	--	0.0	468
20...	0515	--	16	119	14...	1625	--	0.0	521
20...	0815	--	7.2	30	14...	1725	--	0.0	325
27...	1725	--	23	307	14...	1855	--	0.0	91
27...	1755	--	26	385	14...	1925	--	0.0	407
27...	1855	--	37	376	14...	1955	--	0.0	121
MAY					SEP				
04...	0220	--	8.2	196	21...	0120	--	19	557
04...	0320	--	27	98	21...	0220	--	57	371
04...	0420	--	43	306	21...	0320	--	41	215
04...	0820	--	7.7	37	21...	0520	--	8.7	48

* EQUAL-WIDTH INCREMENT (EWI) SAMPLE.

LOCATION.--Lat 43°05'42", long 89°22'12", in SE 1/4 sec.12, T.7 N., R.9 E., Dane County, Hydrologic Unit 07090001, in city boat house at dam at outlet, in Madison.

PERIOD OF RECORD.--December 1902 to May 1903, 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 National Geodetic Vertical Datum 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 and datum.

REMARKS.--Records good, no estimated daily lake levels. 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, 12.01 ft, Apr. 5, 1959; minimum observed, 8.02 ft, Feb. 24 to Mar. 10, 1920, current datum.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 10.60 ft, Mar. 15; minimum, 9.04 ft, Dec. 14, 17, 18, and 20-26.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.55	9.47	9.23	9.09	9.38	9.42	10.10	10.17	10.15	10.42	9.90	10.08
2	9.56	9.46	9.28	9.09	9.38	9.42	10.12	10.15	10.13	10.41	9.88	10.07
3	9.51	9.43	9.21	9.10	9.39	9.44	10.08	10.14	10.16	10.40	9.87	10.05
4	9.49	9.42	9.18	9.14	9.38	9.44	10.07	10.18	10.10	10.42	9.88	10.03
5	9.50	9.43	9.18	9.15	9.38	9.45	10.06	10.19	10.06	10.41	9.87	10.02
6	9.54	9.44	9.18	9.16	9.39	9.44	10.03	10.19	10.04	10.38	9.84	10.01
7	9.51	9.45	9.14	9.16	9.39	9.43	10.02	10.19	10.02	10.34	9.81	9.99
8	9.49	9.45	9.13	9.17	9.39	9.49	10.00	10.18	10.02	10.35	9.80	9.96
9	9.47	9.46	9.12	9.19	9.40	9.63	10.01	10.22	10.01	10.34	9.79	9.95
10	9.49	9.46	9.11	9.19	9.41	9.74	10.05	10.40	9.99	10.32	9.79	9.97
11	9.46	9.45	9.10	9.18	9.41	9.85	10.05	10.38	9.96	10.30	9.79	9.95
12	9.46	9.43	9.08	9.18	9.40	9.98	10.04	10.37	9.94	10.25	9.82	9.94
13	9.45	9.43	9.07	9.19	9.41	10.12	10.03	10.35	9.93	10.20	9.82	9.92
14	9.46	9.43	9.06	9.19	9.41	10.34	10.06	10.32	9.95	10.17	9.80	9.94
15	9.46	9.45	9.06	9.18	9.44	10.48	10.06	10.30	9.92	10.17	9.79	9.92
16	9.51	9.46	9.06	9.18	9.44	10.52	10.07	10.38	9.91	10.15	9.78	9.88
17	9.50	9.39	9.06	9.23	9.45	10.53	10.06	10.38	9.94	10.12	9.79	9.84
18	9.48	9.37	9.06	9.27	9.44	10.50	10.04	10.34	9.94	10.11	9.89	9.81
19	9.47	9.34	9.06	9.29	9.43	10.46	10.03	10.36	9.89	10.15	9.97	9.80
20	9.46	9.37	9.06	9.31	9.43	10.42	10.06	10.41	9.90	10.18	10.07	9.78
21	9.45	9.32	9.05	9.31	9.42	10.39	10.07	10.38	9.89	10.16	10.10	9.81
22	9.43	9.31	9.05	9.32	9.44	10.38	10.07	10.36	9.93	10.14	10.10	9.80
23	9.44	9.29	9.06	9.33	9.44	10.36	10.07	10.34	9.97	10.11	10.10	9.76
24	9.44	9.27	9.05	9.35	9.44	10.31	10.07	10.33	9.95	10.08	10.10	9.72
25	9.44	9.26	9.06	9.37	9.44	10.29	10.08	10.31	9.95	10.05	10.12	9.69
26	9.44	9.25	9.06	9.39	9.43	10.26	10.07	10.30	9.97	10.02	10.13	9.68
27	9.44	9.26	9.07	9.39	9.43	10.23	10.12	10.29	9.97	10.00	10.14	9.67
28	9.44	9.29	9.07	9.39	9.43	10.19	10.16	10.27	9.97	9.98	10.15	9.66
29	9.44	9.26	9.08	9.39	---	10.16	10.16	10.24	10.28	9.99	10.15	9.65
30	9.46	9.24	9.08	9.38	---	10.13	10.18	10.22	10.39	9.97	10.13	9.64
31	9.49	---	9.09	9.38	---	10.11	---	10.19	---	9.94	10.10	---
MEAN	9.48	9.38	9.10	9.25	9.41	10.03	10.07	10.28	10.01	10.19	9.94	9.87
MAX	9.56	9.47	9.28	9.39	9.45	10.53	10.18	10.41	10.39	10.42	10.15	10.08
MIN	9.43	9.24	9.05	9.09	9.38	9.42	10.00	10.14	9.89	9.94	9.78	9.64
CAL YR 1989	MEAN 9.74	MAX 10.31	MIN 9.05									
WTR YR 1990	MEAN 9.75	MAX 10.53	MIN 9.05									

ROCK RIVER BASIN

05428600 WEST BRANCH STARKWEATHER CREEK AT MADISON, WI

LOCATION.--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, at Milwaukee Street, 2.9 mi northeast of Capitol at Madison.

DRAINAGE AREA.--12.1 mi².

PERIOD OF RECORD.--November 1967 and October 1989 to September 1990.

REMARKS.--Bacteria analyses by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

		DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)			
OCT 1989													
24...	1400	2.0	685	8.1	13.0	4.0	14.0	736	138	24			
DEC 05...	1245	1.3	675	7.8	1.0	1.0	8.8	730	65	<10			
APR 1990													
06...	1200	2.0	775	8.2	4.5	3.1	9.0	753	71	34			
JUN 21...	1340	0.55	677	7.8	22.5	30	4.6	734	56	57			
JUL 17...	1200	0.31	547	7.8	23.5	3.5	6.1	738	74	23			
AUG 10...	1140	0.93	334	7.1	22.0	4.4	2.5	741	29	38			
DATE		COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	ALKA-LINITY LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	SEDI-MENT, SUS-PENDED (MG/L) (80154)			
OCT 1989													
24...		220	282	30	2.90	0.030	0.80	0.030	<0.010	21			
DEC 05...		30	297	33	5.40	0.420	1.4	0.020	0.010	14			
APR 1990													
06...		20	293	38	3.40	0.060	0.90	0.080	0.030	78			
JUN 21...		1000	280	20	1.30	0.420	1.4	0.100	0.040	293			
JUL 17...		3200	225	28	1.20	0.150	0.70	0.060	0.060	16			
AUG 10...		30000	291	17	0.700	0.090	0.70	0.140	0.060	24			
DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	STREP-TOCOCCI, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	ARSENIC TOTAL (UG/L AS AS) (01002)	BORON, TOTAL RECOV-ERABLE (UG/L AS B) (01022)	
JUL 1990	17...	1200	0.31	1200	270	54	32	11	1.4	23	4.3	2	20
DATE		CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO) (01037)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	SELE-NIUM, TOTAL RECOV-ERABLE (UG/L AS SE) (01147)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	
JUL 1990	17...	2	<1	7	520	3	70	<0.10	2	<1	<1	20	

05428650 EAST BRANCH STARKWEATHER CREEK AT MADISON, WI

LOCATION.--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, at Milwaukee Street, 3.2 mi northeast of Capitol at Madison.

DRAINAGE AREA.--8.89 mi².

PERIOD OF RECORD.--November 1967 and October 1989 to August 1990.

REMARKS.--Bacteria analyses by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	TUR- BID- ITY (NTU) (00076)	OXYGEN, DIS- SOLVED (MG/L) (00300)	BARO- METRIC PRES- SURE (MM HG) (00025)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L) (00340)
OCT 1989										
24...	1255	1.0	805	7.9	13.0	2.1	11.2	736	110	18
DEC										
05...	1030	1.1	730	7.5	0.5	1.0	9.6	730	70	11
APR 1990										
06...	1305	0.72	642	8.2	5.0	3.0	12.3	753	98	21
JUN										
21...	1245	0.30	671	7.7	22.5	20	2.9	734	35	55
JUL										
17...	1300	0.0	547	7.5	24.0	27	4.5	738	56	42
AUG										
10...	1320	0.49	577	7.3	22.5	8.0	4.9	741	59	50

DATE	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	ALKA- LINEITY LAB (MG/L AS CACO3) (90410)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00666)	SEDI- MENT, SUS- PENDED (MG/L) (80154)
OCT 1989									
24...	80	284	58	2.80	1.10	1.7	0.150	0.120	7
DEC									
05...	10	293	54	3.70	1.60	2.1	0.130	0.090	15
APR 1990									
06...	40	295	39	1.40	0.300	0.80	0.100	0.050	27
JUN									
21...	7100	224	66	1.10	1.30	1.6	0.230	0.170	83
JUL									
17...	900	183	39	1.40	0.990	1.4	0.040	0.040	43
AUG									
10...	16000	205	43	1.20	0.190	1.2	0.210	0.110	263

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	STREP- TOCOC- KF AGAR (COLS. PER 100 ML) (31673)	HARD- NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	ARSENIC TOTAL (UG/L AS AS) (01002)	BORON, TOTAL RECOV- ERABLE (UG/L AS B) (01022)
JUL 1990												
17...	1300	0.0	400	240	52	27	18	3.5	30	5.1	1	<10

DATE	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) (01034)	COBALT, TOTAL RECOV- ERABLE (UG/L AS CO) (01037)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) (01042)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE) (01045)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) (01051)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) (01055)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) (71900)	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI) (01067)	SELE- NIUM, TOTAL (UG/L AS SE) (01147)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) (01092)
JUL 1990											
17...	5	<1	9	2400	70	150	<0.10	4	<1	<1	50

ROCK RIVER BASIN

05428660 STARKWEATHER CREEK AT MADISON, WI

LOCATION.--Lat 43°05'50", long 89°19'58", in NW 1/4 SE 1/4 sec.5, T.7 N., R.10 E., Dane County, Hydrologic Unit 07090001, below confluence with West Branch Starkweather Creek, 3.0 mi northeast of the State Capitol in Madison.

DRAINAGE AREA.--21.3 mi².

PERIOD OF RECORD.--October 1989 to September 1990.

REMARKS.--Bacteria analyses by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

		DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPECIFIC CONDUCTANCE (US/CM) (00095)	PH (STANDARD UNITS) (00400)	TEMPERATURE WATER (DEG C) (00010)	TURBIDITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	BAROMETRIC PRESSURE (MM OF HG) (00025)	OXYGEN, DIS-SOLVED (PER-CENT SATURATION) (00301)	OXYGEN DEMAND, CHEMICAL (HIGH LEVEL) (MG/L) (00340)		
OCT 1989												
25...	0730	4.1	755	8.3	12.5	9.5	10.0	748	96	27		
DEC 06...		1300	3.8	689	7.9	1.0	1.5	12.8	739	93		
APR 1990		1430	-3.5	771	8.4	11.0	4.9	16.2	743	151		
18...	1430	0.59	699	7.7	23.5	20	3.8	735	47	46		
21...	1415	1.0	408	7.5	23.0	40	4.0	738	49	48		
JUL 17...	1230	3.3	340	6.8	23.0	5.3	1.7	740	20	57		
AUG 10...												
DATE		COLIFORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	ALKALINITY LAB (MG/L AS CACO3) (90410)	CHLORIDE, DIS-SOLVED (MG/L AS CL) (00940)	NITROGEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITROGEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOSPHORUS TOTAL (MG/L AS P) (00665)	PHOSPHORUS DIS-SOLVED (MG/L AS P) (00666)	SEDIMENT, SUSPENDED (MG/L) (80154)		
OCT 1989												
25...	1400	281		42	2.50	0.440	1.0	0.120	0.050	25		
DEC 06...		4300	277	42	4.20	0.710	1.3	0.070	0.040	10		
APR 1990		30	285	47	3.20	0.120	0.70	0.080	0.090	49		
18...	400	277		48	1.10	1.10	1.3	0.180	0.100	31		
JUN 21...	1200	154		23	0.700	0.340	1.3	0.010	0.010	13		
JUL 17...	E70000	128		27	1.10	0.120	1.0	0.260	0.080	15		
AUG 10...												
DATE	TIME	DISCHARGE, INST. CUBIC FEET PER SECOND (00061)	STREPTOCOCCI FECAL KF AGAR (COLS. PER 100 ML) (31673)	HARDNESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNESIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	POTASSIUM, DIS-SOLVED (MG/L AS K) (00935)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	ARSENIC TOTAL (UG/L AS AS) (01002)	BORON, TOTAL RECOVERABLE (UG/L AS B) (01022)
JUL 1990	1415	1.0	230	190	41	21	10	1.9	20	4.7	2	<10
17...												
DATE		CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) (01034)	COBALT, TOTAL RECOVERABLE (UG/L AS CO) (01037)	COPPER, TOTAL RECOVERABLE (UG/L AS CU) (01042)	IRON, TOTAL RECOVERABLE (UG/L AS FE) (01045)	LEAD, TOTAL RECOVERABLE (UG/L AS PB) (01051)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN) (01055)	MERCURY TOTAL RECOVERABLE (UG/L AS HG) (71900)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI) (01067)	SELENIUM, TOTAL RECOVERABLE (UG/L AS SE) (01147)	SILVER, TOTAL RECOVERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN) (01092)
JUL 1990	4	1	9	2200	21	170	0.10	4	<1	<1	80	
17...												

E ESTIMATED.

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DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.79	4.55	4.54	4.30	4.56	4.50	5.14	5.11	5.18	5.47	5.32	5.10
2	4.72	4.52	4.51	4.30	4.55	4.50	5.10	5.10	5.19	5.41	5.31	5.08
3	4.66	4.54	4.50	4.29	4.55	4.50	5.07	5.08	5.15	5.37	5.27	5.06
4	4.61	4.55	4.52	4.34	4.55	4.51	5.05	5.14	5.14	5.32	5.25	5.04
5	4.63	4.54	4.54	4.34	4.55	4.51	5.02	5.11	5.14	5.26	5.21	5.02
6	4.62	4.52	4.53	4.33	4.54	4.50	4.99	5.10	5.13	5.20	5.17	5.00
7	4.58	4.55	4.53	4.32	4.54	4.50	4.96	5.07	5.12	5.15	5.13	4.99
8	4.57	4.55	4.54	4.32	4.55	4.57	4.95	5.06	5.07	5.10	5.11	4.95
9	4.57	4.53	4.54	4.35	4.55	4.73	4.94	5.13	5.03	5.05	5.09	4.93
10	4.56	4.54	4.54	4.38	4.54	4.79	4.99	5.37	5.01	5.02	5.12	4.94
11	4.57	4.53	4.53	4.39	4.54	4.91	4.98	5.45	4.99	5.00	5.11	4.92
12	4.56	4.54	4.53	4.38	4.54	5.07	4.99	5.48	4.97	4.96	5.12	4.92
13	4.55	4.54	4.53	4.39	4.53	5.17	5.03	5.48	5.00	4.92	5.09	4.92
14	4.55	4.54	4.53	4.39	4.52	5.39	5.06	5.48	5.02	4.90	5.06	4.93
15	4.56	4.51	4.51	4.40	4.54	5.55	5.07	5.47	5.04	4.93	5.04	4.92
16	4.60	4.45	4.48	4.40	4.56	5.59	5.07	5.59	5.11	4.93	5.04	4.92
17	4.57	4.48	4.47	4.47	4.55	5.58	5.06	5.54	5.16	4.93	5.04	4.92
18	4.55	4.47	4.45	4.50	4.54	5.56	5.08	5.50	5.18	4.98	5.20	4.92
19	4.52	4.48	4.44	4.52	4.53	5.53	5.10	5.55	5.20	5.08	5.33	4.90
20	4.50	4.46	4.42	4.53	4.53	5.51	5.15	5.57	5.18	5.18	5.43	4.90
21	4.50	4.47	4.40	4.54	4.53	5.50	5.17	5.52	5.15	5.19	5.41	4.95
22	4.51	4.49	4.38	4.54	4.53	5.47	5.18	5.48	5.16	5.20	5.38	4.93
23	4.51	4.48	4.37	4.55	4.54	5.40	5.20	5.44	5.16	5.20	5.34	4.90
24	4.51	4.48	4.36	4.57	4.53	5.35	5.20	5.43	5.16	5.20	5.31	4.91
25	4.52	4.49	4.35	4.59	4.53	5.29	5.21	5.41	5.15	5.22	5.31	4.91
26	4.53	4.49	4.34	4.60	4.53	5.26	5.21	5.37	5.16	5.24	5.29	4.91
27	4.53	4.52	4.34	4.60	4.51	5.22	5.23	5.32	5.17	5.24	5.26	4.93
28	4.53	4.52	4.33	4.59	4.51	5.22	5.24	5.28	5.18	5.30	5.23	4.93
29	4.53	4.52	4.32	4.59	---	5.23	5.22	5.25	5.49	5.35	5.19	4.93
30	4.55	4.53	4.31	4.58	---	5.22	5.16	5.21	5.50	5.35	5.16	4.93
31	4.55	---	4.31	4.57	---	5.18	---	5.18	---	5.34	5.12	---
MEAN	4.57	4.51	4.45	4.45	4.54	5.09	5.09	5.33	5.14	5.16	5.21	4.95
MAX	4.79	4.55	4.54	4.60	4.56	5.59	5.24	5.59	5.50	5.47	5.43	5.10
MIN	4.50	4.45	4.31	4.29	4.51	4.50	4.94	5.06	4.97	4.90	5.04	4.90
CAL YR 1989	MEAN 4.78		MAX 5.65		MIN 4.21							
WTR YR 1990	MEAN 4.88		MAX 5.59		MIN 4.29							

ROCK RIVER BASIN

05429150 MURPHY CREEK AT MADISON, WI

LOCATION.--Lat 43°03'21", long 89°23'33", in SW 1/4 SE 1/4 sec.26, T.7 N., R.9 E., Dane County, Hydrologic Unit 07090001, at Beld Street, in Madison.

DRAINAGE AREA.--8.03 mi².

PERIOD OF RECORD.--October 1989 to September 1990.

REMARKS.--Bacteria analyses by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

		DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)		
OCT 1989												
25...	1000	7.9	620	8.3	11.5	2.1	11.7	747	110	36		
DEC 05...	1415	4.7	661	8.6	3.0	1.1	15.5	729	121	28		
APR 1990												
06...	1030	5.1	727	8.6	5.5	2.0	10.2	753	82	43		
JUN 15...	1310	0.68	666	7.7	22.5	3.0	4.1	738	49	40		
JUL 13...	1330	1.8	590	8.0	20.5	59	6.0	742	69	40		
AUG 08...	1414	0.58	562	8.7	22.5	4.2	11.5	740	138	40		
DATE		COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	ALKA-LINITY LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	SEDI-MENT, SUS-PENDED (MG/L) (80154)		
OCT 1989												
25...	100	173		81	<0.100	0.020	0.80	0.050	0.010	4		
DEC 05...	10	209		86	0.100	0.070	0.90	0.060	0.030	4		
APR 1990												
06...	10	195		94	0.700	0.060	0.60	0.050	0.010	62		
JUN 15...	1200	182		87	<0.100	0.140	0.90	0.050	0.040	32		
JUL 13...	740	170		74	<0.100	0.070	0.90	0.060	0.060	13		
AUG 08...	1500	154		74	<0.100	0.020	1.5	0.060	<0.010	7		
DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	ARSENIC TOTAL (UG/L AS AS) (01002)	BORON, TOTAL RECOV-ERABLE (UG/L AS B) (01022)
JUL 1990												
13...	1330	1.8	270	220	40	29	36	2.4	27	6.1	2	20
DATE		CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO) (01037)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)
JUL 1990												
13...	2	<1		16	460	6	60	<0.10	2	<1	<1	20

ROCK RIVER BASIN

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05429269 NINE SPRINGS CREEK AT HIGHWAY 14 NEAR MADISON, WI

LOCATION.--Lat 43°01'32", long 89°22'58", in SW 1/4 NW 1/4 sec.1, T.6 N., R.9 E., Dane County, Hydrologic Unit 07090001, at U.S. Highway 14, 3.4 mi south of the State Capitol in Madison.

DRAINAGE AREA.--8.56 mi².

PERIOD OF RECORD.--October 1989 to September 1990.

REMARKS.--Bacteria analyses by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

		DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)		
OCT 1989												
26...	0730	5.6	760	7.8	11.5	1.3	5.6	748	52	29		
DEC 05...	1505	15	737	7.7	3.0	2.0	9.1	729	71	19		
APR 1990												
06...	0845	9.1	705	7.8	2.5	2.4	9.2	753	68	19		
JUN 12...	1425	6.1	687	8.0	24.0	14	11.1	734	136	27		
JUL 13...	1430	5.6	685	7.9	18.5	35	11.7	742	129	44		
AUG 08...	1320	4.3	687	7.9	21.0	4.0	13.4	740	155	19		
DATE		COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	ALKA-LINITY LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	SEDI-MENT, SUS-PENDED (MG/L) (80154)		
OCT 1989												
26...	--	340		29	2.10	0.040	1.0	0.040	0.020	27		
DEC 05...	10	341		27	4.40	0.210	1.1	0.180	0.120	31		
APR 1990												
06...	<10	302		32	5.40	0.220	0.80	0.080	0.040	52		
JUN 12...	280	299		18	5.70	0.230	0.90	0.120	0.040	184		
JUL 13...	440	295		31	6.00	0.030	0.90	0.210	0.210	90		
AUG 08...	60	304		31	4.60	0.040	0.70	0.250	<0.010	48		
DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	STREP-TOCOCCI, FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	ARSENIC TOTAL (UG/L AS AS) (01002)	BORON, TOTAL RECOV-ERABLE (UG/L AS B) (01022)
JUL 1990												
13...	1430	5.6	280	360	78	41	10	1.1	21	13	10	<10
DATE		CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO) (01037)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MERCURY, TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	SELE-NIUM, TOTAL RECOV-ERABLE (UG/L AS SE) (01147)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)
JUL 1990												
13...	8	2	9	4300	11	290	<0.10	5	<1	<1	40	

ROCK RIVER BASIN

05429280 NINE SPRINGS CREEK NEAR MADISON, WI

LOCATION.--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 southeast of the State Capitol in Madison.

DRAINAGE AREA.--10.8 mi².

PERIOD OF RECORD.--October 1989 to September 1990.

REMARKS.--Bacteria analyses by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)			
JUL 1990	18...	1330	5.2	683	7.8	22.5	1.0	7.2	739	86	58		
DATE	TIME	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	ALKA-LINITY LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	SEDI-MENT, SUS-PENDED (MG/L) (80154)			
JUL 1990	18...	900	287	33	4.70	0.040	0.80	0.020	0.020	256			
DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	STREP-TOCOCCI, FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SILICA, DIS-SOLVED (MG/L AS SiO2) (00955)	ARSENIC TOTAL (UG/L AS AS) (01002)	BORON TOTAL RECOV-ERABLE (UG/L AS B) (01022)	
JUL 1990	18...	1330	5.2	1900	340	73	38	11	1.2	21	10	2	<10
DATE	TIME	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO) (01037)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	SELE-NIUM, TOTAL RECOV-ERABLE (UG/L AS SE) (01147)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	
JUL 1990	18...	13	1	14	3000	7	190	<0.10	3	<1	<1	40	

05429500 YAHARA RIVER NEAR MCFARLAND, WI

LOCATION.--Lat 43°00'32", long 89°18'18", in SW 1/4 sec.3, T.6 N., R.10 E., Dane County, Hydrologic Unit 07090001, on left bank just upstream from bridge on U.S. Highway 51, at dam at outlet of Lake Waubesa and 1.0 mi southwest of McFarland.

DRAINAGE AREA.--327 mi².

PERIOD OF RECORD.--September 1930 to current year.

REVISED RECORDS.--WSP 805, WDR WI-73-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 840.00 ft above National Geodetic Vertical Datum of 1929 (levels by Wisconsin Department of Natural Resources). September 1930 to Dec. 22, 1934, nonrecording gage at same site at datum 0.40 ft higher. Dec. 23, 1934 to Sept. 30, 1982, recording gage at same site at datum 0.40 ft higher.

REMARKS.--Estimated daily discharges: Ice-affected periods, Nov. 22-24, Nov. 28 to Jan. 15, Jan. 26, and Feb. 25. Records fair. Flow regulated by dams at outlets of Lake Mendota and Lake Waubesa. The Madison Metropolitan Sewerage District diverted an average of 56 ft³/s of effluent into the Badfish Creek basin during 1990 water year. The data were provided by the Madison Metropolitan Sewerage District. Prior to 1958 the effluent was discharged into the Yahara River above Mc Farland. Gage-height telemeter at station for Lake Waubesa stage.

AVERAGE DISCHARGE.--60 years, 156 ft³/s, 6.48 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 867 ft³/s, Apr. 10, 1959, gage height, 5.82 ft; maximum gage height, 6.33 ft, July 23, 24, 1950, backwater from aquatic vegetation; minimum discharge, 1.0 ft³/s, Oct. 18, 1964.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 395 ft³/s, Mar. 15; maximum gage height, 5.18 ft, May 19, 20, backwater from aquatic vegetation; minimum, 24 ft³/s Sept. 18, 19, 25.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	173	55	86	58	103	91	242	129	243	288	132	127
2	174	54	84	56	104	89	238	118	246	274	125	127
3	167	47	80	56	104	91	231	112	255	262	118	125
4	156	41	78	60	103	89	197	119	249	254	112	123
5	157	45	86	62	100	86	164	118	249	244	102	127
6	109	49	88	62	99	84	137	115	250	232	91	129
7	72	50	86	64	100	80	119	111	233	222	78	128
8	65	50	84	66	100	91	111	97	222	209	73	125
9	61	53	84	70	104	133	72	107	221	202	68	124
10	60	54	80	74	103	142	39	200	218	194	77	128
11	57	50	78	74	101	178	39	255	214	187	72	64
12	57	47	80	74	100	223	39	254	134	174	71	31
13	59	44	78	74	96	286	41	251	52	163	70	32
14	62	46	78	74	105	350	47	276	53	159	64	27
15	65	49	80	76	113	372	48	303	59	159	57	30
16	69	90	80	79	111	374	50	330	63	121	51	36
17	69	96	78	89	106	373	49	328	77	35	49	33
18	61	91	74	101	102	372	49	346	82	35	71	29
19	57	87	72	101	100	365	49	363	83	52	103	25
20	56	90	70	103	100	357	59	364	85	78	178	27
21	52	85	72	108	98	350	67	352	80	89	222	32
22	47	84	72	105	101	345	65	339	78	93	211	32
23	47	84	72	106	103	338	69	329	86	93	198	28
24	49	84	74	108	103	330	70	319	81	95	185	27
25	51	84	72	115	100	318	70	310	77	96	180	28
26	53	85	70	120	103	307	71	301	73	103	172	32
27	53	89	68	118	97	298	108	288	75	100	163	34
28	53	90	64	121	94	290	143	277	80	111	157	39
29	54	92	62	111	---	284	144	264	226	131	147	33
30	56	92	60	107	---	267	137	257	297	137	137	28
31	62	---	58	110	---	243	---	248	---	138	130	---
TOTAL	2383	2057	2348	2702	2853	7596	2964	7580	4441	4730	3664	1910
MEAN	76.9	68.6	75.7	87.2	102	245	98.8	245	148	153	118	63.7
MAX	174	96	88	121	113	374	242	364	297	288	222	129
MIN	47	41	58	56	94	80	39	97	52	35	49	25
CFSM	.24	.21	.23	.27	.31	.75	.30	.75	.45	.47	.36	.19
IN.	.27	.23	.27	.31	.32	.86	.34	.86	.51	.54	.42	.22
CAL YR 1989	TOTAL 40407	MEAN 111	MAX 271	MIN 10	CFSM .34	IN. 4.60						
WTR YR 1990	TOTAL 45228	MEAN 124	MAX 374	MIN 25	CFSM .38	IN. 5.15						

ROCK RIVER BASIN

05429720 YAHARA RIVER NEAR STOUGHTON, WI

LOCATION.--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.

DRAINAGE AREA.--414 mi².

PERIOD OF RECORD.--October 1989 to September 1990.

REMARKS.--Bacteria analyses by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)
OCT 1989										
23...	1100	174	490	8.8	10.0	5.0	11.6	749	105	27
DEC										
06...	0830	143	529	8.5	1.0	1.7	16.6	736	121	28
APR 1990										
05...	1440	395	494	8.9	8.5	1.1	14.7	753	127	33
JUN										
14...	1300	173	529	8.2	26.0	29	7.9	737	101	51
JUL										
16...	1400	302	483	8.5	25.0	15	9.4	735	119	61
AUG										
08...	1140	161	500	8.7	25.0	15	10.6	740	133	67

DATE	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	ALKA-LINITY LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, AMMONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	SEDI-MENT, SUS-PENDED (MG/L) (80154)
OCT 1989									
23...	690	179	35	0.420	0.080	0.60	0.120	0.060	13
DEC									
06...	30	205	40	0.880	0.200	1.4	0.090	0.050	7
APR 1990									
05...	10	186	37	0.800	0.150	0.90	0.070	0.030	12
JUN									
14...	280	198	8.5	0.600	0.310	0.90	0.130	0.080	95
JUL									
16...	90	183	38	0.300	0.060	1.2	0.030	0.030	42
AUG									
08...	800	195	45	0.700	0.080	1.4	0.350	0.010	73

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	STREP-TOCOCCHI, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	ARSENIC TOTAL (UG/L AS AS) (01002)	BORON, TOTAL RECOV-ERABLE (UG/L AS B) (01022)
JUL 1990												
16...	1400	302	730	220	35	33	18	3.5	26	1.1	2	<10

DATE	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO) (01037)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)
JUL 1990											
16...	1	<1	12	420	5	80	<0.10	4	<1	<1	20

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LOCATION.--Lat 42°50'00", long 89°11'48", in SW 1/4 SE 1/4 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.

PERIOD OF RECORD.--July 1977 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 810 ft. from topographic map.

REMARKS.--Estimated daily discharges: Aug. 8-30 and ice period listed in rating table below. Records good except those for estimated daily discharges, which are fair. Approximately 66 percent of flow is effluent from Nine Springs treatment plant. (Data provided by Madison Metropolitan Sewerage District.)

AVERAGE DISCHARGE.--13 years, 101 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 870 ft³/s, Sept. 1, 1981, gage height, 8.11 ft; minimum daily, 35 ft³/s, Aug. 1, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 626 ft³/s, Mar. 9, gage height, 7.24 ft; minimum daily, 62 ft³/s, Dec. 25.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Shifting-control method used June 15 to Aug. 7; stage-discharge relation
affected by ice Dec. 15-28.)

4.4	55	5.5	243
4.5	69	6.0	340
5.0	155	7.0	562

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	75	77	74	66	96	79	84	84	77	84	71	73
2	78	77	71	70	86	125	91	81	78	76	71	70
3	80	77	69	73	74	121	89	80	73	79	72	67
4	79	74	73	80	71	82	89	99	73	78	74	75
5	86	73	74	74	85	79	89	95	75	73	67	80
6	85	75	74	70	95	80	86	83	75	75	65	76
7	75	82	73	69	82	78	83	82	73	72	69	75
8	71	78	73	73	119	261	80	83	73	72	74	70
9	75	79	70	128	112	382	82	95	71	75	74	68
10	84	83	70	117	83	169	98	196	65	78	72	73
11	79	76	72	84	77	363	91	144	66	77	68	78
12	78	73	71	77	79	231	88	107	71	73	66	78
13	77	77	72	72	84	231	85	98	74	73	66	78
14	73	77	73	70	79	331	94	91	77	75	70	82
15	69	75	74	71	80	205	85	93	75	77	72	75
16	78	75	72	79	79	151	82	142	76	74	74	69
17	80	76	70	160	72	125	86	113	80	79	76	73
18	75	72	74	96	72	109	85	100	73	78	76	74
19	77	70	76	80	74	104	86	110	78	94	90	73
20	78	75	76	76	76	102	105	130	79	103	200	71
21	76	76	78	73	75	100	100	107	80	83	100	77
22	72	77	78	77	82	99	89	97	84	76	80	70
23	75	70	70	79	82	95	91	94	83	73	76	66
24	77	65	64	149	79	89	93	92	73	77	76	69
25	76	68	62	128	74	86	89	90	74	76	72	72
26	78	68	70	85	75	88	88	85	83	74	68	72
27	78	75	72	80	76	88	89	80	83	76	78	71
28	75	78	74	77	76	87	95	75	82	76	78	71
29	70	74	73	78	---	88	86	82	249	79	76	67
30	76	75	70	79	---	88	84	81	115	79	74	67
31	78	---	67	78	---	84	---	78	---	74	72	---
TOTAL	2383	2247	2229	2668	2294	4400	2662	3067	2488	2408	2417	2180
MEAN	76.9	74.9	71.9	86.1	81.9	142	88.7	98.9	82.9	77.7	78.0	72.7
MAX	86	83	78	160	119	382	105	196	249	103	200	82
MIN	69	65	62	66	71	78	80	75	65	72	65	66
CAL YR 1989	TOTAL	31940	MEAN	87.5	MAX	400	MIN	62				
WTR YR 1990	TOTAL	31443	MEAN	86.1	MAX	382	MIN	62				

ROCK RIVER BASIN

05430175 YAHARA RIVER NEAR FULTON, WI

LOCATION.--Lat 42°49'50", long 89°10'09", in NE 1/4 NE 1/4 sec.10, T.4 N., R.11 E., Rock County, Hydrologic Unit 07090001, on right bank, 700 ft downstream from Badfish Creek, 2,000 ft upstream from bridge on State Highway 59, and 2.8 mi northwest of Fulton.

DRAINAGE AREA.--517 mi².

PERIOD OF RECORD.--July 1977 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 792.7 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Estimated daily discharges: Ice period listed in rating tables below. Records good except for ice-affected period, which is fair. Diurnal fluctuation caused by powerplant at Stebbensville 1.5 mi upstream, and additional regulation from other dams and powerplants upstream.

AVERAGE DISCHARGE.--13 years, 353 ft³/s, 9.27 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,040 ft³/s, Sept. 1, 1981, gage height, 8.36 ft; minimum daily, 60 ft³/s, Aug. 7, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,080 ft³/s, Mar. 14, gage height, 5.48 ft; minimum daily, 117 ft³/s, Sept. 23 and 24.

RATING TABLES (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Dec. 14-31.)

Oct. 1 to Dec. 20				Dec. 21 to Sept. 30			
3.1	103	4.0	338	3.1	111	4.5	548
3.5	190	5.0	794	3.5	198	5.0	794
				4.0	341	6.0	1,410

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	335	232	220	197	265	256	434	253	367	422	240	348
2	213	129	212	231	247	237	450	232	418	330	279	254
3	256	129	129	134	231	291	484	209	381	376	259	238
4	257	131	123	132	226	230	501	306	436	370	235	230
5	273	153	167	222	247	204	491	224	415	313	347	250
6	262	292	207	243	224	250	472	267	409	360	305	151
7	137	136	220	202	252	228	349	199	406	354	147	292
8	134	156	208	188	285	442	266	275	328	284	146	273
9	135	215	182	160	225	703	262	233	381	338	225	179
10	141	225	121	249	234	517	293	449	399	291	201	235
11	139	225	146	224	243	778	276	510	314	305	147	216
12	138	130	197	242	223	616	219	422	328	343	145	149
13	131	134	207	225	242	597	262	407	293	282	143	150
14	127	221	190	121	229	1010	249	393	287	367	147	152
15	123	224	180	121	203	877	248	391	315	242	147	147
16	127	134	130	209	189	661	147	465	354	297	147	139
17	119	186	120	314	205	650	287	470	280	174	153	139
18	189	235	120	232	236	649	203	517	241	152	158	141
19	304	132	140	196	209	618	280	635	244	254	261	137
20	372	135	200	221	185	617	247	671	234	278	182	132
21	359	237	210	223	241	599	229	627	164	152	415	129
22	244	204	200	225	220	586	262	608	166	141	424	122
23	247	129	120	230	231	574	221	589	167	131	246	117
24	249	160	120	258	234	564	246	628	158	134	384	117
25	256	354	120	295	188	561	249	619	157	142	264	122
26	230	201	210	276	234	532	242	522	170	148	365	122
27	132	125	160	266	200	511	271	484	180	152	351	128
28	131	128	140	234	226	519	235	488	175	152	216	125
29	127	125	130	241	---	418	247	444	332	253	251	120
30	130	201	120	249	---	419	237	435	473	152	310	119
31	289	---	230	241	---	434	---	427	---	150	272	---
TOTAL	6306	5418	5179	6801	6374	16148	8859	13399	8972	7839	7512	5173
MEAN	203	181	167	219	228	521	295	432	299	253	242	172
MAX	372	354	230	314	285	1010	501	671	473	422	424	348
MIN	119	125	120	121	185	204	147	199	157	131	143	117
CFSM	.39	.35	.32	.42	.44	1.01	.57	.84	.58	.49	.47	.33
IN.	.45	.39	.37	.49	.46	1.16	.64	.96	.65	.56	.54	.37

CAL YR 1989 TOTAL 89001 MEAN 244 MAX 868 MIN 101 CFSM .47 IN. 6.40
WTR YR 1990 TOTAL 97980 MEAN 268 MAX 1010 MIN 117 CFSM .52 IN. 7.05

05430500 ROCK RIVER AT AFTON, WI

LOCATION.--Lat 42°36'33", long 89°04'14", in NE 1/4 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 mi².

PERIOD OF RECORD.--January 1914 to current year. Monthly discharge only for January 1914, published in WSP 1308.

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 National Geodetic Vertical Datum of 1929. Prior to Aug. 21, 1932, a nonrecording gage, and Aug. 21, 1932, to Sept. 30, 1933, water-stage recorder, at same site at datum 1 ft higher.

REMARKS.--Estimated daily discharges: Ice periods listed in rating table below. Records are good except those for ice-affected periods and periods of discharge below 800 ft³/s, which are fair. Diurnal fluctuation caused by powerplants above station. Data-collection platform at station.

AVERAGE DISCHARGE.--76 years, 1,850 ft³/s, 7.52 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,000 ft³/s, Mar. 23, 24, 1929, gage height, 11.81 ft present datum; maximum gage height observed, 13.05 ft, Feb. 5, 1916, present datum (backwater from ice); minimum discharge, 22 ft³/s, Sept. 9, 1964; minimum daily, 42 ft³/s, Aug. 25, 26, 1934; minimum gage height, 0.09 ft, Aug. 26, 1934.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,980 ft³/s, Mar. 22, gage height, 8.38 ft; minimum daily, 300 ft³/s, Dec. 31.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Nov. 28, Dec. 1, 3, 4, Dec. 7 to Jan. 14, and Feb. 9.)

2.2	260	5.0	2,220
3.0	740	7.0	4,210
4.0	1,440	9.0	6,860

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	927	1090	860	420	1630	1280	4760	1560	3070	2330	753	1600
2	895	914	1000	400	1700	1300	4630	1650	2920	2350	725	1560
3	725	869	980	430	1640	1440	4590	1640	2490	2330	770	1530
4	798	810	940	350	1540	1360	4420	1800	2740	2360	749	1380
5	714	803	911	360	1520	1420	4280	1770	2770	2470	721	1350
6	670	857	917	450	1560	1410	4100	1580	2640	2450	894	1270
7	669	895	940	500	1530	1430	3940	1500	2430	2400	753	1050
8	574	771	940	470	1560	1600	3690	1360	2380	2270	585	1040
9	582	759	1000	460	1600	2320	3410	1480	2140	2120	470	962
10	560	859	980	450	1490	2180	3600	1660	2090	2110	677	912
11	584	775	920	560	1590	2450	3500	2000	1980	2140	710	857
12	578	881	920	540	1640	2920	3280	2070	1800	2050	635	816
13	573	815	940	640	1680	3100	3160	2240	1520	1900	715	476
14	593	909	880	700	1730	3880	3200	2330	2020	1870	646	477
15	571	1030	800	658	1790	4380	3000	2590	1730	1800	474	529
16	604	1010	780	767	1530	4720	2910	2790	1730	1460	624	533
17	777	851	680	973	1520	4960	2750	2730	1560	1500	502	538
18	670	906	600	1060	1540	5440	2770	2860	1350	1310	586	533
19	802	979	560	967	1540	5750	2650	3320	1350	1290	812	560
20	878	886	580	1100	1500	5790	2710	3540	1200	1510	1360	552
21	859	883	640	1180	1490	5840	2690	3560	1090	1340	1380	606
22	805	1090	660	1270	1590	5920	2560	3510	1070	1250	1840	708
23	737	926	640	1490	1550	5830	2510	3510	1140	1200	1680	747
24	588	886	560	1520	1520	5810	2320	3550	1150	1150	1590	700
25	606	966	560	1770	1410	5600	2080	3680	1170	941	1760	654
26	698	1080	540	1540	1410	5600	2040	3700	1210	883	1640	609
27	698	897	560	1610	1430	5550	1930	3490	1340	903	1840	609
28	914	800	340	1550	1350	5450	1900	3510	1580	888	1720	641
29	897	711	320	1620	---	5360	1790	3460	2030	942	1690	640
30	910	682	310	1550	---	5130	1730	3340	2140	994	1660	622
31	867	---	300	1570	---	4920	---	3210	---	920	1720	---
TOTAL	22323	26590	22558	28925	43580	120140	92900	80990	55830	51431	32681	25061
MEAN	720	886	728	933	1556	3875	3097	2613	1861	1659	1054	835
MAX	927	1090	1000	1770	1790	5920	4760	3700	3070	2470	1840	1600
MIN	560	682	300	350	1350	1280	1730	1360	1070	883	470	476
CFSM	.22	.27	.22	.28	.47	1.16	.93	.78	.56	.50	.32	.25
IN.	.25	.30	.25	.32	.49	1.34	1.03	.90	.62	.57	.36	.28
CAL YR 1989	TOTAL 479042	MEAN 1312	MAX 4050	MIN 300	CFSM .39	IN. 5.34						
WTR YR 1990	TOTAL 603009	MEAN 1652	MAX 5920	MIN 300	CFSM .49	IN. 6.72						

ROCK RIVER BASIN

05431014 JACKSON CREEK AT PETRIE ROAD NEAR ELKHORN, WI

LOCATION.--Lat 42°31'18", long 88°30'59", in SW 1/4 SW 1/4 sec.8, T.2 N., R.17 E., Walworth County, Hydrologic Unit 07090001, on left bank 5 ft upstream of Petrie Road bridge, 2.5 mi upstream from Delavan Lake inlet at Mound Road, and 2.5 mi southeast of Elkhorn.

DRAINAGE AREA.--8.96 mi².

PERIOD OF RECORD.--October 1983 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 960 ft, from topographic map.

REMARKS.--Estimated daily discharges: Oct. 1-2 and ice periods listed below. Records good except for estimated daily discharges, which are fair.

AVERAGE DISCHARGE.--7 years, 4.15 ft³/s, 6.29 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 359 ft³/s, Mar. 10, 1986, gage height, 8.84 ft; minimum daily, 0.03 ft³/s, Aug. 7, 12, 1987.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 142 ft³/s, May 10, gage height, 7.95 ft; minimum daily, 0.05 ft³/s, Aug. 14, 16.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Shifting-control method used Oct. 2 to Nov. 7, Mar. 16, and May 4 to Sept. 30;
stage-discharge relation affected by ice Dec. 4 to Feb. 7 and Feb. 17 to Mar. 4.)

4.8	0.02	5.5	3.2	6.5	19
5.0	.12	5.7	5.4	6.7	26
5.1	.38	5.9	7.8	7.0	46
5.2	.61	6.1	11	7.5	96
5.3	1.2	6.3	14		

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.35	.22	.31	.90	8.0	2.0	4.0	1.1	2.0	6.0	.12	.19
2	.50	.20	.33	.70	8.4	5.0	7.3	.82	2.1	4.2	.10	.16
3	.43	.17	.30	.80	5.6	7.0	6.0	.65	1.9	3.4	.09	.14
4	.34	.17	.27	2.2	3.5	3.8	5.6	7.7	1.2	2.6	.09	.12
5	.40	.17	.28	1.9	2.5	3.4	4.8	11	1.2	2.0	.07	.12
6	.64	.20	.32	1.5	3.5	2.9	3.7	7.6	1.5	1.6	.07	.10
7	.52	.21	.28	1.0	6.2	2.5	2.8	5.7	1.0	1.6	.06	.09
8	.38	.24	.25	1.1	16	13	2.3	4.5	1.2	1.5	.06	.10
9	.31	.22	.24	6.0	15	30	2.3	4.4	1.0	.99	.06	.09
10	.33	.22	.24	4.9	9.8	28	5.2	82	.60	.75	.06	.10
11	.33	.22	.24	2.0	6.7	32	4.2	45	.49	.72	.06	.10
12	.33	.22	.23	1.0	5.0	31	3.5	21	.49	.52	.06	.10
13	.27	.22	.23	.40	5.3	37	3.1	16	.41	.37	.06	.09
14	.26	.22	.22	.30	3.9	49	9.0	12	12	.46	.05	.11
15	.26	.24	.22	.25	2.2	33	7.3	10	7.1	.75	.06	.10
16	.25	.37	.22	.24	1.1	20	6.0	20	4.0	.61	.05	.10
17	.24	.41	.22	6.4	.90	14	4.6	14	6.3	.42	.10	.09
18	.21	.38	.22	3.9	.80	11	3.4	9.2	4.5	.31	.96	.09
19	.18	.36	.22	1.4	.74	8.5	3.0	17	3.0	.74	4.1	.10
20	.17	.36	.21	1.0	.70	7.1	9.7	46	2.6	2.6	11	.10
21	.18	.35	.20	.70	.68	7.0	11	18	2.0	1.6	4.7	.12
22	.20	.34	.20	.60	1.2	7.4	8.7	12	2.4	.86	2.2	.09
23	.19	.27	.20	.70	3.5	6.7	6.9	8.5	9.0	.51	1.3	.09
24	.18	.25	.20	8.0	6.0	5.5	5.9	6.7	5.9	.34	.70	.09
25	.18	.33	.20	17	1.8	5.0	4.6	6.2	4.1	.28	.43	.10
26	.19	.41	.30	14	.90	4.3	3.7	6.2	3.6	.19	.35	.08
27	.18	.49	.23	.70	.90	3.7	3.1	5.1	3.5	.15	.34	.09
28	.18	.51	.22	.45	1.1	3.5	2.8	4.2	3.3	.15	.29	.09
29	.19	.30	.35	.50	---	3.6	2.0	3.3	25	.81	.25	.09
30	.20	.28	1.5	.60	---	4.1	1.5	2.6	11	.40	.22	.09
31	.22	---	1.4	.70	---	3.7	---	2.2	---	.18	.21	---
TOTAL	8.79	8.55	10.05	81.84	121.92	394.7	148.0	410.67	124.39	37.61	28.27	3.12
MEAN	.28	.28	.32	2.64	4.35	12.7	4.93	13.2	4.15	1.21	.91	.10
MAX	.64	.51	1.5	.17	.16	.49	.11	.82	.25	6.0	.11	.19
MIN	.17	.17	.20	.24	.68	2.0	1.5	.65	.41	.15	.05	.08
CFSM	.03	.03	.04	.29	.49	1.42	.55	1.48	.46	.14	.10	.01
IN.	.04	.04	.04	.34	.51	1.64	.61	1.71	.52	.16	.12	.01

CAL YR 1989 TOTAL 680.01 MEAN 1.86 MAX 73 MIN .10 CFSM .21 IN. 2.82
WTR YR 1990 TOTAL 1377.91 MEAN 3.78 MAX 82 MIN .05 CFSM .42 IN. 5.72

054310157 JACKSON CREEK TRIBUTARY NEAR ELKHORN, WI

LOCATION.--Lat 42°39'03", long 88°33'03", in NW 1/4 NE 1/4 sec.12, T.2 N., R.16 E., Walworth County, Hydrologic Unit 07090001, on left bank 200 ft downstream of 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 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1983 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 930 ft, from topographic map.

REMARKS.--Estimated daily discharges: Mar. 1, May 4, 5, 16, 19, 20, and ice periods listed in rating table below. Records good except for estimated daily discharges, which are fair.

AVERAGE DISCHARGE.--7 years, 3.08 ft³/s, 9.64 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 162 ft³/s, Sept. 26, 1986, gage height, 9.55 ft; minimum daily, 0.11 ft³/s, Sept. 23-24, 1987.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 99 ft³/s, Aug. 19, gage height, 8.21 ft; minimum daily, 0.40 ft³/s, Dec. 22-25.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Shifting-control method used Oct. 9 to Dec. 3; stage-discharge relation affected by ice Dec. 4-31, Jan. 1-7, 20, 26-31, Feb. 1-5, 16-21, 23-28, and Mar. 5-7.)

4.9	0.40	5.4	3.2	6.5	26
5.0	.50	5.5	4.5	7.0	42
5.1	.79	5.6	5.9	8.0	85
5.2	1.3	5.8	9.2	8.5	111
5.3	2.2	6.0	13		

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.65	.60	.52	.72	4.0	2.5	4.1	1.5	1.9	2.7	1.3	1.1
2	.74	.56	.49	.68	3.0	4.0	4.9	1.5	2.6	2.2	1.1	1.2
3	.69	.55	.48	1.6	2.0	2.9	3.1	1.5	1.7	2.0	1.4	1.1
4	.68	.56	.48	3.0	1.7	1.9	2.6	20	1.4	1.6	1.9	1.3
5	1.7	.71	.50	1.7	1.9	1.6	2.4	5.8	2.1	1.5	.99	1.1
6	.70	.59	.52	1.2	3.0	1.4	2.3	3.8	1.5	1.3	.88	1.2
7	.63	1.4	.50	1.1	3.0	1.3	1.9	3.3	1.5	1.1	.99	.88
8	.65	.53	.49	1.8	8.1	12	1.8	2.8	1.5	1.2	1.1	.97
9	.64	.56	.48	7.6	5.2	9.0	2.6	5.9	1.1	1.2	1.1	.81
10	.71	.52	.48	2.2	3.1	16	4.7	62	1.0	1.1	1.2	.90
11	.56	.49	.48	1.2	2.2	21	2.5	14	1.1	1.0	1.2	.90
12	.50	.49	.47	1.0	2.2	13	2.2	7.6	1.2	.86	1.3	.82
13	.52	.52	.46	.83	2.5	13	2.7	6.3	1.2	.79	1.3	.79
14	.51	.52	.45	.85	1.6	17	7.6	4.7	23	1.3	1.2	1.5
15	.50	.99	.45	1.0	1.5	9.4	3.5	4.6	3.3	1.7	.95	.76
16	.64	.57	.45	1.2	1.4	5.4	2.9	12	3.4	.95	.85	.88
17	.58	.49	.45	10	1.2	4.1	2.4	4.6	3.9	1.0	2.7	.75
18	.55	.49	.45	1.9	1.2	3.2	2.1	3.8	2.4	1.2	12	.74
19	.57	.49	.44	1.2	1.2	2.8	2.0	12	2.1	8.3	26	.83
20	.64	.57	.43	1.0	1.1	2.6	11	8.8	2.2	2.9	12	.68
21	.56	.57	.42	1.2	1.1	2.6	5.1	4.9	1.6	.97	4.6	2.6
22	.50	.55	.40	1.6	4.4	4.3	3.2	3.8	7.9	.75	3.2	.73
23	.55	.49	.40	3.4	3.4	2.9	2.6	3.4	11	.63	2.4	.66
24	.58	.49	.40	6.2	2.0	2.4	2.4	3.1	3.3	.66	1.9	.68
25	.58	.50	.40	2.1	1.6	2.3	2.0	3.7	2.5	.63	1.8	.74
26	.53	.50	.50	1.6	1.4	2.2	2.0	3.2	3.5	.64	1.4	.74
27	.51	.56	.42	1.4	1.3	2.1	1.7	2.7	3.7	.85	1.4	.72
28	.50	.55	.41	1.3	1.6	2.1	1.7	2.4	2.2	1.6	1.3	.81
29	.50	.51	.60	1.3	---	2.5	1.5	2.4	26	21	1.3	.68
30	.87	.51	1.0	1.2	---	2.5	1.4	2.2	4.2	2.5	1.1	.70
31	.69	---	.80	1.2	---	2.2	---	2.0	---	1.6	1.2	---
TOTAL	19.73	17.43	15.22	64.28	67.9	172.2	92.9	220.3	126.0	67.73	93.06	28.27
MEAN	.64	.58	.49	2.07	2.42	5.55	3.10	7.11	4.20	2.18	3.00	.94
MAX	1.7	1.4	1.0	10	8.1	21	11	62	26	21	26	2.6
MIN	.50	.49	.40	.68	1.1	1.3	1.4	1.5	1.0	.63	.85	.66
CFSM	.15	.13	.11	.48	.56	1.28	.71	1.64	.97	.50	.69	.22
IN.	.17	.15	.13	.55	.58	1.48	.80	1.89	1.08	.58	.80	.24

CAL YR 1989 TOTAL 587.03 MEAN 1.61 MAX 53 MIN .26 CFSM .37 IN. 5.03
WTR YR 1990 TOTAL 985.02 MEAN 2.70 MAX 62 MIN .40 CFSM .62 IN. 8.44

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.

TOTAL-PHOSPHORUS DISCHARGE: October 1983 to current year.

INSTRUMENTATION.--Automatic pumping sampler since October 1983.

REMARKS.--Records good. Samples are point samples unless otherwise indicated.

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 and May 12, 1990.

SUSPENDED-SEDIMENT DISCHARGE: Maximum daily, 58 tons, Nov. 1, 1984; minimum daily, 0.01 ton on many days from 1984 to 1988, and 1990.

TOTAL-PHOSPHORUS CONCENTRATIONS: Maximum observed, 8.20 mg/L, Aug. 7, 1984; minimum observed, 0.01 mg/L, Jan. 16 and Mar. 14, 1990.

TOTAL-PHOSPHORUS DISCHARGE: Maximum daily, 216 lb, May 25, 1984; minimum daily, 0.03 lb, Sept. 23-24, 1987.

EXTREMES FOR CURRENT YEAR.--

SUSPENDED-SEDIMENT CONCENTRATIONS: Maximum observed, 1,200 mg/L, June 29; minimum observed, 1 mg/L, May 12.

SUSPENDED-SEDIMENT DISCHARGE: Maximum daily, 37 tons, June 14; minimum daily, 0.01 ton on several days.

TOTAL-PHOSPHORUS CONCENTRATIONS: Maximum observed, 1.8 mg/L, Mar. 9; minimum observed, 0.01 mg/L, Jan. 16 and Mar. 14.

TOTAL-PHOSPHORUS DISCHARGE: Maximum daily, 141 lb, May 10; minimum daily, 0.11 lb, Dec. 21-25.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	SEDI- MENT, SUS- PENDE (MG/L) (80154)
OCT 1989					
*11...	1225	--	0.61	--	60
*11...	1230	--	0.62	0.120	--
NOV					
*22...	1144	--	0.53	--	13
*22...	1145	--	0.53	0.050	--
JAN 1990					
*05...	1122	1.7	--	0.420	--
*05...	1124	1.7	--	--	12
*16...	1235	--	1.1	<0.010	--
*16...	1236	--	1.1	--	59
*23...	1340	--	1.4	0.080	--
*23...	1341	--	1.4	--	151
23...	1945	--	7.6	--	101
23...	2030	--	8.0	0.610	--
23...	2115	--	8.1	--	67
23...	2200	--	8.6	--	61
23...	2245	--	9.0	0.790	--
24...	0015	--	9.0	--	39
24...	0100	--	9.0	0.490	--
24...	0230	--	9.0	--	24
*24...	1030	--	3.6	0.730	5
24...	1515	--	7.7	--	52
24...	1600	--	8.7	0.480	--
24...	1645	--	8.9	--	39
24...	1730	--	8.6	0.410	--
24...	1815	--	7.9	--	37
FEB					
01...	1230	4.0	--	--	68
01...	1245	4.0	--	0.490	--
01...	1330	4.0	--	--	78
01...	1415	4.0	--	0.340	--
01...	1500	4.0	--	--	69
01...	1545	4.0	--	0.280	--
01...	1630	4.0	--	--	75
01...	1800	4.0	--	0.240	--
01...	1845	4.0	--	--	33
01...	1930	4.0	--	0.220	--
01...	2015	4.0	--	--	20
*05...	0925	1.9	--	0.720	16
*09...	1115	--	4.9	0.120	--
*20...	1620	1.1	--	--	17
*20...	1621	1.1	--	0.200	--
22...	1045	--	7.3	--	234
22...	1115	--	9.0	0.640	--
22...	1200	--	9.8	--	163
22...	1245	--	8.2	0.410	--

ROCK RIVER BASIN

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054310157 JACKSON CREEK TRIBUTARY NEAR ELKHORN, WI--CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	SEDI- MENT, SUS- PENDE D (MG/L) (80154)
FEB 1990					
22...	1330	--	7.8	--	95
22...	1415	--	7.8	0.370	--
22...	1500	--	8.3	--	98
22...	1545	--	8.3	--	69
*23...	1040	3.4	--	0.160	3
MAR					
*01...	1105	2.5	--	--	16
*01...	1106	2.5	--	0.060	--
*07...	0945	1.3	--	0.540	38
08...	1215	--	11	0.080	--
08...	1300	--	11	--	183
08...	1345	--	13	0.070	--
*08...	1425	--	20	0.580	--
08...	1430	--	21	--	464
08...	1515	--	37	0.350	--
08...	1600	--	43	--	389
08...	1645	--	41	0.070	--
08...	1730	--	37	--	138
08...	1815	--	27	0.040	--
08...	1900	--	23	--	121
08...	1945	--	18	0.080	--
08...	2030	--	16	--	78
08...	2200	--	12	--	58
08...	2245	--	12	0.350	--
08...	2330	--	17	--	116
09...	0015	--	18	0.040	--
09...	0100	--	17	--	81
09...	0230	--	15	0.340	--
09...	0315	--	14	--	55
09...	0445	--	12	<0.010	--
09...	0615	--	9.8	--	41
09...	0700	--	9.8	0.360	--
*09...	0815	--	8.3	0.370	--
*09...	0820	--	8.3	--	20
*09...	0925	--	7.7	1.80	--
10...	0315	--	8.5	--	71
10...	0400	--	13	0.460	--
10...	0445	--	16	--	125
10...	0530	--	34	0.220	--
10...	0615	--	43	--	298
10...	0700	--	40	0.460	--
10...	0745	--	35	--	148
10...	0830	--	30	0.450	--
10...	0915	--	26	--	170
*10...	1000	--	22	0.440	80
*10...	1015	--	21	--	82
10...	1045	--	19	0.370	--
10...	1215	--	15	--	8
10...	1300	--	15	0.360	--
10...	1345	--	14	--	28
10...	1515	--	12	--	18
10...	1600	--	12	0.280	--
10...	1645	--	11	--	16
10...	1815	--	11	--	9
10...	1900	--	11	0.240	--
11...	0615	--	15	--	29
11...	0630	--	22	0.260	--
11...	0715	--	34	--	280
11...	0800	--	36	0.040	--
11...	0845	--	38	--	173
*11...	0945	--	38	--	80
*11...	0955	--	38	0.320	--
*12...	0828	--	14	0.180	--
12...	0915	--	14	0.190	8
*12...	0929	--	14	--	4
12...	0930	--	14	--	7
12...	1045	--	14	0.170	--
12...	1215	--	13	--	5
12...	1300	--	13	0.180	--
12...	1430	--	12	--	2
*12...	1510	--	12	0.200	5
12...	1515	--	12	0.380	--
12...	1645	--	11	--	29
13...	0430	--	13	0.130	--
13...	0445	--	13	--	91
13...	0530	--	15	0.160	--
13...	0615	--	15	--	35

ROCK RIVER BASIN

054310157 JACKSON CREEK TRIBUTARY NEAR ELKHORN, WI--CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	SEDI- MENT, SUS- PENDE (MG/L) (80154)
MAR 1990					
13...	0745	--	14	0.130	--
13...	0830	--	14	--	21
*13...	1000	--	16	0.010	--
13...	1005	--	16	--	41
13...	1100	--	16	--	15
13...	1145	--	15	0.150	--
13...	1230	--	14	--	10
*13...	1231	--	14	0.170	8
13...	1445	--	13	--	10
13...	1530	--	13	0.260	--
13...	1700	--	14	--	13
13...	1915	--	13	0.030	--
13...	2000	--	12	--	8
13...	2215	--	11	--	5
13...	2300	--	11	0.070	--
14...	0030	--	10	--	4
14...	0145	--	11	<0.010	--
14...	0200	--	12	--	11
14...	0245	--	24	0.150	--
14...	0330	--	29	--	138
14...	0415	--	27	0.030	--
14...	0500	--	25	--	61
14...	0545	--	24	0.280	--
14...	0630	--	22	--	45
*14...	0930	--	21	0.450	18
14...	1100	--	19	--	12
14...	1200	--	17	0.360	--
*14...	1530	--	14	0.020	3
14...	1600	--	14	--	8
14...	1800	--	13	0.080	--
14...	2100	--	12	--	5
14...	2400	--	10	0.020	--
15...	0100	--	10	--	5
15...	0500	--	11	0.050	--
15...	0600	--	12	--	15
15...	0700	--	12	0.050	--
15...	0900	--	11	--	7
*15...	0950	--	11	0.140	4
15...	1000	--	11	0.140	--
*15...	1515	--	8.5	0.180	2
*16...	1010	--	5.6	--	17
*16...	1012	--	5.6	0.120	--
16...	1013	--	5.6	0.110	--
*16...	1515	--	5.3	0.110	3
*17...	0940	--	4.1	0.080	6
*17...	1510	--	3.9	0.090	3
*18...	1000	--	3.2	0.070	9
*18...	1310	--	3.2	0.070	--
*18...	1510	--	3.2	--	17
*19...	1000	--	2.7	0.060	23
*20...	1100	--	2.6	0.070	13
APR					
01...	1930	--	9.6	0.130	104
01...	2045	--	16	--	205
01...	2130	--	13	0.130	--
01...	2215	--	10	--	55
*02...	0855	--	5.1	--	9
*02...	0900	--	5.1	0.100	--
09...	2230	--	9.6	--	87
09...	2315	--	12	--	64
10...	0015	--	9.4	--	34
*10...	0830	--	4.3	0.070	2
20...	0715	--	15	--	101
20...	0815	--	16	0.140	--
20...	0915	--	16	--	54
20...	1015	--	16	0.180	--
20...	1115	--	16	--	43
20...	1215	--	15	--	30
20...	1315	--	17	0.120	--
20...	1415	--	18	--	47
20...	1515	--	16	0.120	--
20...	1615	--	16	--	25
20...	1715	--	14	0.090	--
20...	1815	--	12	--	19
20...	1915	--	12	0.140	--
20...	2015	--	10	--	10
*21...	0915	--	4.9	0.070	3

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WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	SEDI- MENT, SUS- PENDED (MG/L) (80154)
APR 1990					
*21...	1640	--	4.4	0.080	5
*22...	0830	--	3.2	0.060	4
*22...	1815	--	3.1	--	18
*23...	1100	--	2.6	--	7
*23...	1340	--	2.6	0.060	24
*24...	1005	--	2.4	--	21
*25...	0915	--	2.0	--	23
*30...	0855	--	1.4	0.060	--
*30...	0856	--	1.4	--	53
MAY					
04...	0345	20	--	--	219
04...	0430	20	--	0.380	--
04...	0515	20	--	--	120
04...	0600	20	--	0.190	--
04...	0645	20	--	--	37
04...	0730	20	--	--	36
04...	0815	20	--	0.270	--
04...	0900	20	--	--	195
04...	0945	20	--	0.260	--
04...	1030	20	--	--	165
04...	1330	20	--	--	29
04...	1415	20	--	0.290	--
*04...	1445	20	--	0.320	19
04...	1730	20	--	--	11
04...	1815	20	--	0.230	--
04...	2245	20	--	--	25
04...	2330	20	--	0.170	--
*05...	1000	5.8	--	0.120	9
*05...	1245	5.8	--	0.130	23
*06...	0905	--	3.7	0.070	15
*06...	1755	--	3.6	0.070	39
*07...	0920	--	3.1	0.060	62
*07...	1520	--	3.8	0.070	6
*08...	1000	--	2.8	0.070	14
*09...	1100	--	2.7	0.260	21
09...	1930	--	13	--	302
09...	2000	--	19	0.620	--
09...	2045	--	22	--	116
09...	2130	--	22	0.270	--
09...	2215	--	16	--	39
09...	2300	--	14	0.230	--
09...	2345	--	13	--	28
10...	0030	--	15	--	33
10...	0115	--	22	0.290	--
10...	0200	--	42	--	257
10...	0245	--	73	0.730	--
10...	0330	--	88	--	306
10...	0415	--	94	0.660	--
10...	0500	--	94	--	234
10...	0545	--	89	0.370	--
10...	0615	--	71	--	154
10...	0745	--	71	--	111
10...	0815	--	55	0.350	--
10...	0900	--	58	--	94
*10...	0930	--	62	--	127
*10...	0935	--	63	0.370	--
10...	1030	--	70	--	84
10...	1115	--	75	0.450	--
10...	1200	--	80	--	91
10...	1245	--	84	0.400	--
10...	1330	--	88	--	112
*10...	1500	--	90	0.400	90
*10...	1501	--	90	--	86
10...	1545	--	85	0.530	--
10...	1630	--	82	--	62
10...	1800	--	57	--	51
10...	1845	--	50	0.310	--
10...	1930	--	43	--	36
10...	2100	--	34	--	32
10...	2145	--	29	0.230	--
10...	2230	--	27	--	33
10...	2400	--	24	--	19
11...	0045	--	21	0.230	--
11...	0130	--	20	--	18
11...	0300	--	19	--	17
11...	0345	--	19	0.200	--
11...	0430	--	19	--	13

ROCK RIVER BASIN

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WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	SEDI- MENT, SUS- PENDED (MG/L) (80154)
MAY 1990					
11...	0600	--	19	--	12
*11...	1100	--	12	0.160	7
11...	1215	--	11	--	13
11...	1300	--	11	0.170	--
*11...	1510	--	11	0.150	5
11...	1515	--	11	--	12
11...	1645	--	10	--	11
11...	1730	--	10	0.140	--
*12...	0945	--	7.0	0.100	1
*12...	1530	--	6.5	0.110	8
*13...	0950	--	6.7	0.110	5
*13...	1445	--	6.2	0.100	10
*14...	0850	--	4.6	0.090	9
*15...	0855	--	4.9	0.070	--
*15...	1525	--	4.5	0.090	30
16...	0200	12	--	--	401
16...	0230	12	--	0.560	--
*16...	0905	12	--	0.190	25
*16...	1530	12	--	--	10
*16...	1630	12	--	0.140	--
*17...	0905	--	4.7	0.080	22
*17...	1525	--	4.3	0.290	9
*18...	1020	--	3.8	0.080	16
*20...	0930	8.8	--	0.140	197
*20...	1620	8.8	--	0.130	--
*20...	1625	8.8	--	--	12
*21...	0930	--	5.1	0.090	25
*21...	1345	--	4.7	0.230	9
*22...	1315	--	3.9	0.070	28
*23...	1035	--	3.4	0.070	12
*24...	1055	--	3.0	0.080	33
*25...	1115	--	3.1	0.080	52
*30...	0905	--	2.1	0.060	50
JUN					
*06...	1435	--	1.4	--	55
*06...	1440	--	1.4	0.120	--
*11...	0910	--	1.1	0.120	46
14...	0230	--	12	0.530	--
14...	0330	--	40	0.480	--
14...	0530	--	94	0.220	--
14...	0730	--	60	0.430	--
14...	0930	--	24	0.330	--
14...	1130	--	15	0.290	--
*14...	1415	--	9.8	0.370	--
*14...	1416	--	9.8	--	34
*15...	0840	--	3.4	0.100	--
*15...	0845	--	3.4	--	11
*16...	0930	--	2.3	0.100	40
*17...	0900	--	5.9	0.160	40
19...	1615	--	2.1	--	79
22...	1200	--	7.0	0.670	253
22...	1300	--	18	--	237
22...	1400	--	18	0.350	--
22...	1500	--	14	--	173
22...	1700	--	8.7	0.350	--
22...	1800	--	7.1	--	56
22...	2130	--	12	0.280	--
22...	2230	--	17	--	61
23...	0030	--	21	0.300	--
23...	0230	--	25	--	43
23...	0330	--	22	0.260	--
23...	0430	--	19	--	30
23...	0630	--	14	0.240	--
23...	0830	--	11	--	18
*23...	0910	--	10	0.070	13
23...	1045	--	8.9	0.180	--
23...	1145	--	8.0	--	16
23...	1345	--	7.0	0.130	--
23...	1445	--	6.5	--	16
*23...	1450	--	6.4	0.150	18
*24...	0810	--	3.6	0.080	--
*24...	0910	--	3.6	--	36
*24...	1450	--	3.0	--	43
*24...	1455	--	3.0	0.090	--
*25...	0835	--	2.5	0.080	145
*25...	1510	--	2.6	0.070	36

054310157 JACKSON CREEK TRIBUTARY NEAR ELKHORN, WI--CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	SEDI- MENT, SUS- PENDED (MG/L) (80154)
JUN 1990					JUL 1990				
26...	0815	6.7	--	126	29...	1230	8.2	0.410	--
26...	0915	9.6	0.380	--	*30...	0845	2.4	0.150	18
26...	1015	9.0	--	51	*30...	1520	2.6	0.120	33
*26...	1020	8.7	0.250	45	*31...	1045	1.6	0.100	11
*27...	0930	2.1	--	48	*31...	1510	1.6	0.100	25
*27...	0935	2.1	0.080	--	AUG				
*27...	1110	2.1	--	22	*01...	0950	1.3	0.090	11
27...	1330	6.2	1.00	110	*01...	1540	1.2	0.100	30
27...	1430	13	--	132	*02...	1025	1.1	0.100	41
27...	1530	11	0.330	--	*03...	1040	2.0	0.250	34
*28...	1055	2.2	0.080	48	*06...	1044	0.76	--	18
29...	0200	12	0.970	665	*06...	1445	0.99	0.110	--
29...	0300	81	1.10	1200	*13...	0840	1.1	0.120	71
29...	0400	91	--	562	17...	1100	8.0	--	112
29...	0500	91	0.330	--	17...	1200	8.2	0.450	--
29...	0600	76	--	397	18...	0200	20	--	710
29...	0700	58	--	269	18...	0300	46	0.820	491
29...	0800	41	0.300	--	18...	0400	44	--	431
29...	0900	29	--	223	18...	0500	40	0.590	178
29...	1000	21	0.330	--	18...	0600	28	--	155
*29...	1100	17	--	70	18...	0700	19	0.410	--
*29...	1101	17	0.250	--	18...	0800	13	--	91
29...	1145	15	--	106	*18...	0925	8.9	--	22
29...	1245	13	0.370	--	*18...	1200	5.0	0.370	--
29...	1345	11	--	61	*18...	1505	3.2	--	9
*29...	1435	10	0.410	25	*18...	1600	3.0	0.210	--
29...	1445	10	--	51	18...	2330	10	0.320	809
29...	1545	9.0	0.280	--	19...	0030	21	0.410	159
29...	1645	8.2	--	72	19...	0130	16	--	77
29...	1845	7.0	0.210	--	19...	0230	12	--	54
29...	1945	6.5	--	46	19...	0330	14	0.240	58
*30...	0950	4.5	0.100	37	19...	0430	15	--	57
*30...	1425	3.9	0.100	20	19...	0530	18	--	47
JUL					19...	0630	25	0.260	--
*01...	0900	2.8	0.080	61	19...	0730	25	0.260	46
*01...	1750	2.4	0.070	40	19...	0830	22	--	38
*02...	0955	2.1	0.060	33	*19...	0930	19	0.350	27
*02...	1400	2.2	0.060	39	*19...	1505	7.1	0.230	--
*03...	1030	2.0	0.050	24	*19...	1600	6.3	--	8
*04...	0915	1.6	0.040	23	20...	1100	8.7	--	75
*09...	0915	1.1	0.070	36	*20...	1125	8.5	0.190	11
*12...	1014	0.84	0.140	--	*20...	1400	7.8	0.170	14
*12...	1015	0.84	--	17	*21...	1214	4.6	0.130	--
28...	1830	8.9	--	402	21...	1215	4.6	0.200	--
28...	1930	7.1	0.320	--	*21...	1216	4.6	--	27
28...	2030	5.6	--	1030	21...	1217	4.6	--	20
29...	0130	11	--	751	*21...	1450	4.4	0.120	30
29...	0230	42	0.440	234	*22...	1100	3.3	0.110	67
29...	0330	41	--	836	*23...	1030	2.4	0.120	--
29...	0430	90	0.700	404	*23...	1040	2.5	0.080	53
29...	0530	88	--	220	*27...	0845	1.2	0.070	13
29...	0630	63	0.440	--	SEP				
29...	0730	36	--	174	*10...	0855	0.79	0.070	12
29...	0830	20	--	99	*24...	0830	0.68	0.040	22
29...	0930	14	0.330	--	*28...	1450	0.92	0.070	--
29...	1030	11	--	59	*28...	1451	0.92	--	36
29...	1130	9.4	--	69					

* EQUAL-WIDTH INCREMENT (EWI) SAMPLE.

ROCK RIVER BASIN

054310157 JACKSON CREEK TRIBUTARY NEAR ELKHORN, WI--CONTINUED

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.05	.04	.02	.02	.46	.16	.68	.20	.26	.33	.07	.04
2	.06	.03	.02	.02	.15	.17	.18	.20	.37	.21	.12	.04
3	.05	.03	.02	.05	.09	.12	.07	.20	.25	.13	.13	.04
4	.05	.03	.02	.09	.08	.10	.06	3.6	.21	.10	.14	.04
5	.13	.04	.02	.05	.10	.10	.06	.28	.30	.10	.06	.04
6	.01	.03	.02	.04	.38	.12	.06	.26	.22	.10	.05	.04
7	.02	.12	.02	.03	1.0	.13	.05	.27	.22	.09	.06	.03
8	.03	.01	.02	.10	4.0	6.3	.04	.10	.21	.10	.08	.03
9	.04	.01	.02	3.0	.20	.88	.20	1.1	.15	.11	.10	.03
10	.07	.01	.02	.12	.04	4.1	.10	20	.13	.08	.13	.03
11	.09	.01	.02	.02	.04	3.9	.02	.40	.14	.06	.15	.03
12	.08	.01	.02	.03	.04	.44	.02	.10	.14	.04	.21	.02
13	.08	.01	.02	.04	.05	.62	.07	.13	.12	.03	.24	.02
14	.07	.02	.01	.06	.04	1.2	.95	.14	37	.05	.20	.05
15	.07	.03	.01	.11	.04	.13	.17	.31	.14	.06	.15	.01
16	.08	.02	.01	.20	.04	.11	.12	2.4	.35	.04	.12	.02
17	.07	.02	.01	3.9	.04	.05	.09	.18	.44	.04	.37	.02
18	.07	.02	.01	.14	.04	.11	.07	.15	.36	.05	7.8	.02
19	.07	.02	.01	.08	.05	.15	.06	3.2	.39	3.0	24	.03
20	.07	.02	.01	.06	.05	.09	1.0	2.8	.36	.16	2.2	.03
21	.06	.02	.01	.07	.05	.08	.06	.21	.20	.03	.33	.27
22	.05	.02	.01	.09	.88	.15	.08	.22	2.2	.02	.50	.04
23	.05	.02	.01	.68	.05	.02	.11	.14	.94	.02	.34	.04
24	.05	.02	.01	.44	.02	.02	.14	.27	.37	.02	.19	.04
25	.05	.02	.01	.17	.02	.02	.13	.50	.48	.02	.12	.05
26	.04	.02	.02	.12	.02	.02	.15	.44	.46	.02	.07	.06
27	.04	.02	.01	.10	.03	.02	.15	.37	.69	.03	.05	.06
28	.04	.02	.01	.08	.05	.03	.18	.34	.26	1.6	.04	.08
29	.04	.02	.02	.08	---	.04	.18	.32	29	15	.04	.06
30	.06	.02	.03	.07	---	.04	.20	.30	.37	.17	.04	.06
31	.05	---	.03	.06	---	.04	---	.27	---	.07	.04	---
TOTAL	1.79	0.73	0.50	10.12	8.05	19.46	5.45	39.40	76.73	21.88	38.14	1.37

WTR YR 1990 TOTAL 223.62

PHOSPHORUS TOTAL, POUNDS PER DAY, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.35	.33	.14	.34	5.83	2.18	2.08	.45	.75	1.11	.65	.41
2	.40	.31	.13	.35	4.54	5.79	2.71	.44	1.16	.70	.61	.44
3	.37	.30	.13	1.70	4.21	2.30	1.50	.42	.82	.53	1.26	.41
4	.37	.31	.13	7.09	4.99	1.62	1.17	24.6	.76	.36	3.52	.51
5	1.71	.39	.13	3.72	7.05	2.10	.98	3.95	1.21	.37	.85	.42
6	.55	.32	.14	1.74	10.1	2.83	.84	1.51	.94	.35	.55	.44
7	.48	1.10	.13	1.00	8.95	2.94	.63	1.18	1.00	.35	.59	.33
8	.48	.17	.13	1.57	26.0	9.77	.55	1.33	.98	.40	.64	.37
9	.45	.18	.13	35.4	4.76	24.0	1.00	10.0	.74	.47	.66	.31
10	.48	.16	.13	10.2	2.09	29.3	1.96	141	.68	.57	.73	.34
11	.36	.15	.13	2.61	1.58	26.5	.85	13.0	.73	.61	.73	.34
12	.32	.15	.13	1.09	1.63	14.7	.66	4.49	.74	.64	.82	.31
13	.33	.16	.12	.42	1.93	7.68	.94	3.56	.65	.60	.83	.30
14	.33	.15	.12	.21	1.31	15.3	4.81	2.21	40.8	.98	.71	2.31
15	.32	.29	.12	.11	1.25	5.58	1.65	1.97	2.10	1.17	.56	.74
16	.40	.17	.12	.14	1.25	3.48	1.22	11.9	2.07	.62	.48	.69
17	.36	.14	.12	62.2	1.12	1.89	.90	3.75	3.29	.63	4.34	.46
18	.34	.14	.12	5.17	1.17	1.24	.68	1.84	2.07	.71	32.2	.37
19	.35	.14	.12	1.21	1.23	.95	.59	4.19	1.73	12.3	113	.33
20	.39	.16	.12	.80	1.18	.96	7.28	5.84	1.81	2.77	28.5	.22
21	.34	.16	.11	.80	1.19	.83	2.26	3.70	1.30	.50	3.31	1.36
22	.30	.15	.11	.84	8.32	1.99	1.08	1.76	16.2	.36	1.92	.19
23	.33	.13	.11	7.54	3.23	1.38	.84	1.30	12.1	.27	1.27	.15
24	.34	.13	.11	16.8	1.46	1.19	.78	1.30	1.59	.26	.80	.15
25	.34	.13	.11	1.82	.99	1.04	.65	1.58	.99	.23	.73	.16
26	.31	.13	.14	.79	.74	.93	.64	1.29	2.98	.21	.56	.16
27	.30	.15	.13	.62	.58	.83	.55	1.03	5.86	.26	.51	.16
28	.29	.15	.14	.51	.61	.76	.56	.88	1.02	1.44	.50	.33
29	.29	.14	.22	.46	---	.84	.47	.81	66.4	54.0	.49	.23
30	.50	.14	.40	.38	---	.78	.46	.72	2.55	2.02	.42	.20
31	.39	---	.35	.34	---	.64	---	.71	---	.87	.47	---
TOTAL	12.87	6.63	4.47	167.97	109.29	172.32	41.29	252.71	176.02	86.66	203.21	13.14

WTR YR 1990 TOTAL 1246.58

05431017 DELAVAN LAKE INLET AT STATE HIGHWAY 50 AT LAKE LAWN, WI

LOCATION.--Lat 42°37'16", long 88°34'57", in NE 1/4 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 mi².

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 914.48 ft above National Geodetic Vertical Datum of 1929 (Wisconsin Department of Transportation benchmark).

REMARKS.--Daily mean discharges were estimated based on discharges upstream at Jackson Creek at Petrie Road near Elkhorn (05431014) and Jackson Creek Tributary near Elkhorn (054310157). Records poor. During lake draw down 1989-90 when low-flow discharge measurements were possible, dates, times, and discharges were as follows: Oct. 11, 1989, 1420 hours, 0.16 ft³/s; Nov. 16, 1989, 1520 hours, 0.72 ft³/s; Nov. 22, 1989, 0930 hours, 0.91 ft³/s; and Apr. 30, 1990, 1100 hours, 8.3 ft³/s.

AVERAGE DISCHARGE.--7 years, 11.4 ft³/s, 7.10 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 823 ft³/s, Mar. 10, 1986; minimum daily (estimated), 0.22 ft³/s, Sept. 15, 1988.

EXTREMES FOR CURRENT YEAR.--Maximum daily (estimated), 222 ft³/s, May 10; minimum daily (estimated), 0.79 ft³/s, Dec. 22-25.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.3	1.0	1.1	2.5	20	6.4	12	3.6	5.8	14	1.5	1.5
2	1.7	.95	1.1	2.0	19	14	19	3.1	6.7	10	1.3	1.5
3	1.5	.88	1.1	3.2	13	17	15	2.8	5.4	8.6	1.6	1.4
4	1.3	.89	1.0	7.3	8.5	9.3	14	35	3.7	6.7	2.1	1.5
5	2.5	1.0	1.0	5.4	6.8	8.2	12	27	4.4	5.4	1.1	1.3
6	1.9	.98	1.1	4.1	9.8	7.1	9.5	19	4.4	4.4	1.0	1.4
7	1.6	1.8	1.0	3.0	15	6.2	7.4	14	3.4	4.2	1.1	1.1
8	1.4	1.0	.98	3.9	39	37	6.3	12	3.8	4.1	1.2	1.2
9	1.2	.99	.95	19	34	67	7.1	14	3.0	3.1	1.2	.99
10	1.4	.95	.95	12	22	71	15	222	2.2	2.6	1.3	1.1
11	1.2	.92	.95	5.1	15	83	11	102	2.1	2.4	1.3	1.1
12	1.1	.92	.92	2.9	12	73	9.0	49	2.2	1.9	1.4	1.0
13	1.0	.95	.91	1.6	13	85	8.7	37	2.0	1.5	1.4	.97
14	1.0	.95	.88	1.4	9.2	113	25	28	46	2.2	1.3	1.7
15	1.0	1.5	.88	1.5	5.8	74	18	24	17	3.2	1.1	.95
16	1.1	1.3	.88	1.7	3.5	44	15	51	11	2.1	.95	1.1
17	1.0	1.3	.88	22	3.0	31	11	32	16	1.8	2.9	.93
18	.96	1.2	.88	9.5	2.8	25	8.7	22	11	1.8	14	.92
19	.92	1.2	.87	3.9	2.6	19	7.8	45	7.9	9.7	34	1.0
20	.97	1.3	.84	2.9	2.5	16	30	98	7.3	8.0	33	.87
21	.91	1.3	.81	2.6	2.4	16	27	40	5.5	4.1	14	2.8
22	.89	1.2	.79	2.8	6.7	19	20	27	13	2.4	7.5	.91
23	.92	1.0	.79	4.8	10	16	16	20	29	1.6	4.9	.84
24	.93	.98	.79	22	14	13	14	16	15	1.3	3.3	.86
25	.93	1.1	.79	35	5.1	12	11	16	10	1.2	2.6	.93
26	.90	1.3	1.1	29	3.2	11	9.2	15	11	1.0	2.1	.90
27	.86	1.5	.87	2.8	3.1	9.3	7.7	13	11	1.1	2.1	.90
28	.85	1.5	.84	2.2	3.7	8.9	7.2	11	8.6	1.9	1.9	.99
29	.87	1.1	1.3	2.3	---	9.5	5.4	8.8	75	23	1.8	.86
30	1.3	1.1	3.9	2.4	---	10	4.3	7.3	26	3.3	1.5	.88
31	1.1	---	3.5	2.6	---	9.4	---	6.3	---	2.0	1.6	---
TOTAL	36.51	34.06	34.65	223.4	304.7	940.3	383.3	1020.9	369.4	140.6	148.05	34.40
MEAN	1.18	1.14	1.12	7.21	10.9	30.3	12.8	32.9	12.3	4.54	4.78	1.15
MAX	2.5	1.8	3.9	35	39	113	30	222	75	23	34	2.8
MIN	.85	.88	.79	1.4	2.4	6.2	4.3	2.8	2.0	1.0	.95	.84
CFSM	.05	.05	.05	.33	.50	1.39	.59	1.51	.56	.21	.22	.05
IN.	.06	.06	.06	.38	.52	1.60	.65	1.74	.63	.24	.25	.06

CAL YR 1989 TOTAL 1909.79 MEAN 5.23 MAX 195 MIN .46 CFSM .24 IN. 3.26
WTR YR 1990 TOTAL 3670.27 MEAN 10.1 MAX 222 MIN .79 CFSM .46 IN. 6.26

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 1990.

TOTAL-PHOSPHORUS DISCHARGE: 1984 and 1985 water years (unpublished) to current year.

REMARKS.--Records poor. Daily mean discharges are estimated based on discharges from upstream stations 05431014 and 054310157. Samples are equal-width increment unless otherwise indicated.

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, 1.0 mg/L, Dec. 7, 1984, Apr. 25 and Sept. 26, 1990.

SUSPENDED-SEDIMENT DISCHARGE: Maximum daily, 200 tons, Dec. 29, 1984; minimum daily, 0.00 ton, Sept. 26, 1990.

TOTAL-PHOSPHORUS CONCENTRATIONS: Maximum observed, 3.8 mg/L, May 27, 1985; minimum observed, 0.01 mg/L, Mar. 7, 1990.

TOTAL-PHOSPHORUS DISCHARGE: Maximum daily, 1,088 lb, Feb. 13, 1984; minimum daily, 0.10 lb, Dec. 28, 1989.

EXTREMES FOR CURRENT YEAR.--

SUSPENDED-SEDIMENT CONCENTRATIONS: Maximum observed, 324 mg/L, May 20, 1990; minimum observed, 1.0 mg/L, Apr. 25 and Sept. 26.

SUSPENDED-SEDIMENT DISCHARGE: Maximum daily, 70 tons, May 10; minimum daily, 0.00 ton, Sept. 26.

TOTAL-PHOSPHORUS CONCENTRATIONS: Maximum observed, 1.80 mg/L, June 11; minimum observed, 0.01 mg/L, Mar. 7.

TOTAL-PHOSPHORUS DISCHARGE: Maximum daily, 448 lb, May 10; minimum daily, 0.10 lb, Dec. 28.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	SEDI- MENT, SUS- PENDED (MG/L) (80154)
OCT 1989					
11...	1035	--	0.16	0.330	--
11...	1040	1.2	--	--	15
26...	1555	0.90	--	0.190	--
NOV					
22...	0945	--	0.91	0.150	--
22...	0946	1.2	--	--	18
JAN 1990					
*16...	1400	1.7	--	0.020	--
24...	1100	22	--	1.00	--
24...	1500	22	--	0.290	--
FEB					
20...	1410	2.5	--	--	118
20...	1411	2.5	--	0.100	--
MAR					
01...	1005	6.4	--	--	5
01...	1006	6.4	--	0.090	--
07...	1145	6.2	--	0.010	--
09...	0907	67	--	0.460	--
09...	1430	67	--	0.330	--
10...	1020	71	--	0.280	--
10...	1350	71	--	0.520	--
11...	1000	83	--	0.360	--
11...	1410	83	--	0.260	--
12...	1000	73	--	0.270	69
12...	1330	73	--	--	185
12...	1331	73	--	0.800	--
12...	1530	73	--	0.410	76
14...	1025	113	--	0.310	--
14...	1030	113	--	--	44
14...	1540	113	--	0.330	34
15...	1530	74	--	0.370	97
16...	1530	44	--	0.190	26
17...	1000	31	--	0.140	8
17...	1535	31	--	0.160	23
18...	1010	25	--	0.140	17
18...	1530	25	--	0.130	25
19...	1015	19	--	0.120	49
20...	1020	16	--	0.500	--
APR					
21...	0935	27	--	0.100	6
21...	1700	27	--	0.100	59
23...	1120	16	--	0.110	15
23...	1350	16	--	0.080	12
24...	1020	14	--	0.170	--
24...	1025	14	--	--	6
25...	0930	11	--	0.140	1
27...	1505	7.7	--	0.220	--
30...	0930	4.3	--	0.300	--
30...	1040	--	8.3	0.220	--
30...	1041	4.3	--	--	19

05431017 DELAVAN LAKE INLET AT STATE HIGHWAY 50 AT LAKE LAWN, WI--CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	DATE	TIME	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	SEDI- MENT, SUS- PENDE (MG/L) (80154)
MAY 1990					JUN 1990				
04...	1525	35	0.260	--	29...	1500	75	0.390	143
04...	1530	35	--	121	30...	1020	26	0.380	10
05...	1035	27	0.200	10	30...	1450	26	0.320	12
05...	1200	27	--	14	JUL				
05...	1300	27	0.200	--	01...	0915	14	0.320	25
10...	1030	222	0.410	184	01...	1810	14	0.330	20
10...	1525	222	0.380	141	02...	1020	10	0.260	69
11...	1150	102	0.400	51	02...	1415	10	0.280	12
11...	1530	102	0.380	47	03...	1045	8.6	0.180	189
12...	1010	49	0.250	25	04...	0925	6.7	0.250	72
12...	1550	49	0.250	38	09...	0935	3.1	0.700	17
13...	1005	37	0.290	34	12...	1305	1.9	--	27
13...	1600	37	0.370	87	12...	1310	1.9	0.820	--
16...	1645	51	0.160	28	30...	1005	3.3	0.740	9
20...	0955	98	0.280	302	30...	1530	3.3	0.700	--
20...	1700	98	0.220	324	30...	1535	3.3	--	14
21...	1010	40	0.210	50	AUG				
22...	1330	27	0.100	27	06...	1505	1.0	0.730	--
23...	1050	20	0.110	6	06...	1510	1.0	--	30
25...	1145	16	0.090	7	13...	1000	1.4	0.680	33
30...	0920	7.3	0.110	9	18...	0945	14	1.20	2
JUN					18...	1630	14	0.660	21
06...	1730	4.4	0.420	--	19...	0950	34	0.830	6
11...	0925	2.1	1.80	13	19...	1535	34	0.560	5
15...	0905	17	0.640	8	20...	1140	33	0.340	7
16...	0845	11	--	6	20...	1425	33	0.460	6
16...	0945	11	0.550	--	21...	1145	14	0.450	6
17...	0645	16	0.570	10	21...	1530	14	0.330	7
23...	0930	29	0.480	12	22...	1130	7.5	0.310	13
23...	1510	29	0.510	12	23...	1045	4.9	0.200	--
24...	0930	15	0.670	--	23...	1105	4.9	0.190	12
24...	1500	15	0.320	--	23...	1110	4.9	--	6
24...	1520	15	--	7	27...	0955	2.1	0.340	--
25...	0940	10	0.240	28	27...	1000	2.1	--	5
25...	1525	10	0.350	14	SEP				
26...	1040	11	0.340	10	10...	1010	1.1	0.210	4
27...	1010	11	0.310	--	24...	0955	0.86	0.210	15
28...	1115	8.6	--	28	26...	1203	0.90	--	1
28...	1145	8.6	0.460	--	28...	1415	0.99	0.180	--
29...	1115	75	0.380	173	28...	1416	0.99	--	44

*SINGLE VERTICAL.

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

WTR YR 1990 TOTAL 461.85

WTR YR 1990 TOTAL 6337.27

ROCK RIVER BASIN

457

05431018 DELAVAN LAKE TRIBUTARY AT SOUTH SHORE DRIVE AT DELAVAN LAKE, WI

LOCATION.--43°35'08", long 88°37'19", in SE 1/4 SE 1/4 sec.32, T.2 N., R.16 E., Walworth County, Hydrologic Unit 07090001, on left bank at bridge on South Shore Drive, at Delavan Lake, and 0.3 mi upstream from Delavan Lake.

DRAINAGE AREA.--9.99 mi², of which 2.33 mi² is non-contributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1983 to September 1986, October 1988 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 930 ft, from topographic map.

REMARKS.--Artificial weir. Estimated daily discharges: None except for ice period listed in rating table below. Records good except for estimated daily discharges, which are poor.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 103 ft³/s Mar. 10, 1986, gage height, 7.49 ft; minimum daily discharge, 0.03 ft³/s Aug. 9-11 and Dec. 24-29, 1989.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 52 ft³/s Mar. 10, gage height, 7.03 ft; minimum daily discharge, 0.03 ft³/s Dec. 24-29.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Dec. 11 to Mar. 6.)

5.60	0.02	5.9	1.2	6.4	13
5.65	.06	6.0	2.4	6.5	17
5.70	.11	6.1	4.1	6.6	22
5.75	.24	6.2	6.4	6.8	34
5.80	.47	6.3	9.3	7.0	50

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.10	.06	.07	.04	.12	.80	1.2	.83	.52	1.1	.22	.15
2	.07	.06	.07	.04	.12	1.3	1.3	.73	.46	.89	.24	.15
3	.04	.05	.08	.05	.11	1.1	1.2	.69	.43	.76	.21	.15
4	.05	.05	.07	.35	.11	.70	1.1	1.5	.37	.68	.21	.16
5	.07	.08	.07	.25	.11	.60	1.1	1.4	.39	.65	.20	.17
6	.04	.06	.07	.18	.10	.54	.97	1.3	.41	.58	.18	.17
7	.05	.07	.08	.14	.13	2.9	.89	1.2	.36	.53	.34	.17
8	.05	.08	.06	.12	3.0	15	.94	1.1	.34	.51	.71	.19
9	.05	.07	.07	.20	2.5	41	.86	1.1	.35	.46	.35	.19
10	.07	.07	.07	.15	1.8	33	1.2	3.2	.28	.42	.12	.15
11	.07	.08	.07	.13	1.4	22	1.1	3.8	.27	.41	.12	.15
12	.06	.08	.07	.12	1.1	12	.97	3.6	.27	.35	.12	.15
13	.05	.09	.06	.11	1.1	11	.95	3.4	.24	.32	.12	.15
14	.06	.09	.06	.10	.90	10	1.3	2.9	.72	.28	.26	.18
15	.07	.11	.06	.09	.80	8.7	1.2	2.5	.32	.28	.56	.21
16	.06	.12	.05	.12	.74	7.1	1.1	2.7	.35	.28	.76	.21
17	.06	.11	.05	.30	.80	5.3	1.1	2.3	.45	.28	1.8	.17
18	.05	.11	.05	.20	.70	4.4	.97	1.7	.35	.24	2.1	.15
19	.05	.11	.05	.15	.66	3.6	.94	1.9	.32	.54	.41	.15
20	.05	.12	.04	.14	.64	2.9	1.4	2.8	.39	.65	.56	.15
21	.05	.13	.04	.13	.62	2.6	1.4	2.9	.31	.40	.30	.23
22	.05	.11	.04	.12	.62	2.3	1.3	2.5	.55	.32	.25	.20
23	.05	.06	.04	.14	.60	2.1	1.3	2.1	.53	.32	.21	.15
24	.05	.06	.03	.20	.56	2.0	1.3	1.7	.40	.28	.20	.16
25	.06	.07	.03	.17	.52	1.7	1.2	1.7	.37	.27	.17	.25
26	.06	.07	.03	.15	.50	1.5	1.1	1.6	.37	.24	.20	.33
27	.08	.07	.03	.14	.48	1.5	1.1	1.4	.37	.21	.23	.37
28	.11	.07	.03	.14	.60	1.4	1.1	.98	.38	.21	.18	.17
29	.08	.07	.03	.13	---	1.3	1.1	.80	1.8	.94	.17	.17
30	.07	.07	.04	.13	---	1.3	.98	.69	1.0	.32	.15	.17
31	.06	---	.04	.12	---	1.2	---	.59	---	.24	.15	---
TOTAL	1.89	2.45	1.65	4.55	21.44	202.84	33.67	57.61	13.67	13.96	11.80	5.52
MEAN	.061	.082	.053	.15	.77	6.54	1.12	1.86	.46	.45	.38	.18
MAX	.11	.13	.08	.35	3.0	41	1.4	3.8	1.8	1.1	2.1	.37
MIN	.04	.05	.03	.04	.10	.54	.86	.59	.24	.21	.12	.15
CFSM	.01	.01	.01	.02	.10	.85	.15	.24	.06	.06	.05	.02
IN.	.01	.01	.01	.02	.10	.99	.16	.28	.07	.07	.06	.03

CAL YR 1989 TOTAL 197.05 MEAN .54 MAX 20 MIN .03 CFSM .07 IN. .96
WTR YR 1990 TOTAL 371.05 MEAN 1.02 MAX 41 MIN .03 CFSM .13 IN. 1.80

05431018 DELAVAN LAKE TRIBUTARY AT SOUTH SHORE DRIVE AT DELAVAN LAKE, WI--CONTINUED

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

SUSPENDED-SEDIMENT DISCHARGE: October 1983 to September 1985.

TOTAL-AMMONIA PLUS ORGANIC-NITROGEN DISCHARGE: October 1983 to September 1985.

TOTAL-NITRITE PLUS NITRATE DISCHARGE: October 1983 to September 1985.

TOTAL-PHOSPHORUS DISCHARGE: October 1983 to September 1985, October 1989 to September 1990.

INSTRUMENTATION: Automatic pumping sampler since November 1983.

REMARKS.--Records good. Samples are point samples unless otherwise indicated.

COOPERATION.--Observer furnished by Delavan Lake Sanitary District.

EXTREMES FOR PERIOD OF RECORD.--

SUSPENDED-SEDIMENT CONCENTRATIONS: Maximum observed, 7,720 mg/L, May 26, 1985; minimum observed, 1.0 mg/L, on several days during 1984.

SUSPENDED-SEDIMENT DISCHARGE: Maximum daily, 23 tons, May 26, 1985; minimum daily, 0.01 ton, on many days during 1984 and 1985.

TOTAL-AMMONIA PLUS ORGANIC-NITROGEN CONCENTRATIONS: Maximum observed, 13 mg/L, June 18, 1984; minimum observed, 0.20 mg/L, Jan. 24, 1985.

TOTAL-AMMONIA PLUS ORGANIC-NITROGEN DISCHARGE: Maximum daily, 495 lb, Feb. 13, 1984; minimum daily, 0.61 lb, Sept. 22-23, 1984.

TOTAL-NITRITE PLUS NITRATE CONCENTRATIONS: Maximum observed, 5.20 mg/L, June 19, 1985; minimum observed, 0.20 mg/L, May 27, 1984 and July 23, 1985.

TOTAL-NITRITE PLUS NITRATE DISCHARGE: Maximum daily, 102 lb, Feb. 25, 1985; minimum daily, 0.53 lb, July 23, 1985.

TOTAL-PHOSPHORUS CONCENTRATIONS: Maximum observed, 2.40 mg/L, Mar. 12, 1990; minimum observed, 0.02 mg/L, Jan. 16, 1990.

TOTAL-PHOSPHORUS DISCHARGE: Maximum daily, 318 lb, Mar. 9, 1990; minimum daily, 0.01 lb Aug. 12, 1985, Jan. 15-16, 1990.

EXTREMES FOR CURRENT YEAR.--

TOTAL-PHOSPHORUS CONCENTRATIONS: Maximum observed, 2.40 mg/L, Mar. 12; minimum observed, 0.02 mg/L, Jan. 16.

TOTAL-PHOSPHORUS DISCHARGE: Maximum daily, 318 lb, Mar. 9; minimum daily, 0.01 lb, Jan. 15-16.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	DIS- CHARGE, INST CUBIC FEET PER SECOND (00061)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	DATE	TIME	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	DIS- CHARGE, INST CUBIC FEET PER SECOND (00061)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)
OCT 1989					MAR 1990				
*11...	1005	--	0.07	0.240	*14...	0800	--	11	0.560
*26...	1615	--	0.06	0.340	*14...	0815	--	11	0.540
26...	1616	--	0.06	0.330	14...	1145	--	11	0.600
NOV					14...	1445	--	10	0.610
*22...	1240	--	0.15	0.190	*14...	1455	--	10	0.620
JAN 1990					14...	1745	--	9.9	0.570
*05...	1510	0.25	--	1.30	14...	2045	--	9.9	0.570
*16...	1530	0.12	--	0.020	14...	2345	--	9.6	0.550
*23...	1420	0.14	--	1.40	15...	0245	--	9.9	0.520
FEB					15...	0545	--	9.9	0.560
*09...	1045	2.5	--	1.00	*15...	0810	--	9.6	0.570
*09...	1405	2.5	--	0.910	15...	0845	--	9.6	0.540
*20...	1700	0.64	--	0.580	15...	1145	--	9.0	0.540
MAR					*15...	1430	--	8.1	0.570
*01...	1610	0.80	--	0.650	15...	1445	--	7.8	0.540
*07...	1030	--	3.9	0.710	15...	1745	--	7.5	0.620
*09...	1350	--	42	1.60	15...	2045	--	7.5	0.550
*10...	0900	--	38	0.800	15...	2345	--	7.5	0.570
*10...	1315	--	31	1.30	16...	0245	--	7.8	0.610
*11...	0925	--	27	0.590	16...	0545	--	7.8	0.550
*11...	1330	--	24	0.650	16...	0845	--	7.5	0.560
*12...	0820	--	12	0.670	*16...	1040	--	7.5	0.550
12...	1109	--	12	0.640	*16...	1218	--	7.2	0.560
*12...	1110	--	12	0.640	16...	1219	--	7.2	0.530
12...	1145	--	12	0.580	*16...	1445	--	6.9	0.560
12...	1445	--	12	0.510	*17...	0900	--	5.4	0.570
12...	1745	--	11	2.40	*17...	1430	--	5.2	0.570
12...	2045	--	11	0.520	*18...	0900	--	4.5	0.550
12...	2345	--	11	0.540	*18...	1430	--	4.3	0.540
13...	0345	--	11	0.520	*19...	0830	--	3.6	0.530
13...	0545	--	12	0.550	APR				
13...	0845	--	12	0.570	*02...	1125	--	1.3	0.350
*13...	0846	--	12	0.510	*10...	0910	--	1.2	0.280
13...	1145	--	11	0.540	*21...	0820	--	1.4	0.350
13...	1445	--	11	0.660	*21...	1615	--	1.3	0.390
*13...	1446	--	11	0.810	*22...	0855	--	1.3	0.440
*13...	1530	--	11	0.740	*22...	1840	--	1.3	0.410
13...	1845	--	11	0.620	*23...	0947	--	1.3	0.460
13...	2145	--	10	1.60	*23...	1310	--	1.3	0.470
14...	0045	--	9.9	0.600	*24...	1030	--	1.3	0.560
14...	0245	--	11	0.500	*25...	0940	--	1.2	0.690
14...	0545	--	11	0.510	*30...	0810	--	1.0	0.870
					*30...	1240	--	0.90	0.820

05431018 DELAVAN LAKE TRIBUTARY AT SOUTH SHORE DRIVE AT DELAVAN LAKE, WI--CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)
MAY 1990				MAY 1990			
*04...	1510	1.6	0.470	21...	0900	2.9	0.480
*05...	1050	1.4	0.470	*21...	1445	2.9	0.500
*05...	1310	1.3	0.480	21...	1446	2.9	0.490
*06...	0610	1.3	0.520	21...	1845	2.9	0.500
*06...	1830	1.3	0.560	21...	2345	2.7	0.510
*07...	0812	1.2	0.610	22...	0545	2.6	0.500
*07...	1545	1.1	0.650	*22...	1030	2.6	0.510
*08...	1025	1.1	0.700	22...	1600	2.4	0.510
*09...	1130	1.0	0.810	*23...	0825	2.1	0.560
10...	0400	3.0	0.610	23...	1215	2.0	0.540
10...	0545	3.0	0.540	23...	2315	1.9	0.550
10...	0715	3.0	0.520	24...	0815	1.9	0.580
*10...	0830	3.0	0.520	*24...	0830	1.9	0.590
10...	1000	3.2	0.480	*25...	0845	1.6	0.620
10...	1300	3.4	0.440	*30...	0800	0.72	0.620
10...	1430	3.4	0.430	JUN			
*10...	1535	3.6	0.480	*05...	1315	0.37	0.600
10...	1730	3.6	0.490	*11...	0813	0.24	0.720
10...	2030	3.6	0.470	*14...	1500	0.53	0.620
10...	2330	3.6	0.500	*25...	0930	0.37	0.760
11...	0230	3.6	0.580	*25...	1535	0.37	0.760
*11...	1230	3.9	0.520	*26...	0945	0.37	0.540
11...	1300	3.9	0.530	*27...	0830	0.37	0.840
*11...	1540	3.7	0.500	*28...	1130	0.32	0.810
11...	1645	3.7	0.480	29...	0200	10	0.630
11...	2030	3.7	0.490	29...	0400	7.3	0.510
11...	2330	3.7	0.470	29...	0500	4.5	0.540
12...	0315	3.7	0.520	*29...	0840	1.6	0.350
12...	0615	3.7	0.500	*29...	1415	0.95	0.530
*12...	0901	3.7	0.530	*30...	0820	1.0	0.730
12...	0915	3.6	0.520	*30...	1510	1.1	0.770
12...	1215	3.6	0.540	JUL			
*12...	1501	3.6	0.540	*01...	0820	1.1	0.830
12...	1515	3.6	0.550	*01...	1830	1.0	0.830
12...	1815	3.6	0.510	*02...	0845	0.87	0.830
12...	2115	3.6	0.520	*02...	1320	0.87	0.760
13...	0015	3.6	0.500	*03...	1010	0.80	0.800
13...	0315	3.6	0.970	*04...	0855	0.65	0.830
*13...	0910	3.3	0.510	*09...	0807	0.47	0.630
*13...	1430	3.6	0.550	*12...	1230	0.37	0.500
*14...	0945	2.9	0.580	*30...	0945	0.32	0.410
14...	1015	2.9	0.650	*30...	1545	0.32	0.400
14...	1400	2.9	0.740	*31...	1020	0.24	0.410
14...	1830	2.7	0.580	*31...	1440	0.24	0.390
14...	2215	2.7	0.880	AUG			
15...	0200	2.6	0.570	*01...	1015	0.21	0.380
15...	0630	2.6	0.610	*01...	1515	0.24	0.350
*15...	0806	2.6	0.610	*02...	0920	0.24	0.370
*15...	1500	2.4	0.600	*03...	1055	0.21	0.370
16...	0215	2.7	0.490	*13...	0945	0.12	0.290
16...	0830	2.9	0.510	*18...	1010	1.6	0.390
*16...	0835	2.9	0.540	*18...	1650	0.40	0.290
16...	1215	2.7	0.530	*19...	1010	0.42	0.330
*16...	1500	2.6	0.540	*19...	1550	0.42	0.300
16...	1615	2.6	0.540	*20...	1110	0.53	0.270
16...	2015	2.4	0.540	*20...	1500	0.42	0.280
17...	0015	2.4	0.560	*21...	1155	0.28	0.290
*17...	0810	2.4	0.630	*21...	1440	0.28	0.290
17...	0830	2.4	0.610	*21...	1525	0.28	0.290
*17...	1455	2.1	0.610	*22...	1030	0.24	0.280
*18...	1045	1.4	0.610	*23...	1130	0.21	0.260
*20...	0815	2.6	0.480	*27...	0945	0.24	0.260
*20...	1600	2.9	0.530	SEP			
20...	1601	2.9	0.550	*10...	0945	0.15	0.280
20...	2200	2.9	0.510	*24...	0940	0.15	0.190
21...	0400	2.9	0.510	*28...	1610	0.17	0.220
*21...	0855	2.9	0.480				

*EQUAL-WIDTH INCREMENT (EWI) SAMPLE.

05431018 DELAVAN LAKE TRIBUTARY AT SOUTH SHORE DRIVE AT DELAVAN LAKE, WI--CONTINUED

PHOSPHORUS TOTAL, POUNDS PER DAY, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.14	.09	.08	.04	.17	2.80	2.41	3.66	1.72	4.96	.44	.21
2	.09	.09	.08	.04	.16	5.52	2.44	3.23	1.52	3.83	.48	.21
3	.05	.08	.08	.06	.14	4.42	2.25	3.07	1.41	3.28	.41	.21
4	.07	.08	.07	2.23	.14	2.53	2.04	4.61	1.20	2.99	.40	.23
5	.10	.12	.07	1.73	.13	1.95	1.89	3.64	1.27	2.72	.38	.26
6	.05	.09	.07	.70	.12	1.58	1.64	3.85	1.37	2.29	.34	.26
7	.06	.10	.08	.26	.15	9.86	1.46	4.03	1.23	1.99	e.64	.26
8	.07	.11	.06	.10	13.3	65.9	1.50	4.17	1.22	1.81	e1.60	.28
9	.07	.10	.07	.10	12.9	318	1.34	4.61	1.28	1.55	e.65	.29
10	.09	.10	.07	.06	8.53	178	1.81	9.05	1.07	1.31	.20	.22
11	.09	.10	.07	.04	6.37	81.5	1.60	10.8	1.03	1.20	.20	.21
12	.08	.10	.07	.03	4.80	50.5	1.44	10.5	1.04	.95	.19	.21
13	.07	.11	.06	.02	4.61	41.3	1.39	11.2	.94	.87	.19	.20
14	.09	.11	.06	.02	3.63	32.6	1.92	10.2	2.09	.77	e.44	.24
15	.09	.13	.06	.01	3.09	26.9	1.71	8.05	1.05	.77	e1.20	.27
16	.09	.14	.05	.01	2.75	21.9	1.62	7.74	1.19	.77	e1.80	.26
17	.09	.12	.05	1.57	2.85	16.3	1.56	7.38	1.51	.76	e5.40	.21
18	.08	.12	.05	.77	2.40	12.8	1.37	5.30	1.18	.67	e6.70	.18
19	.08	.12	.05	.27	2.17	10.1	1.31	5.35	1.08	1.17	e.80	.17
20	.08	.13	.04	.14	2.02	8.04	3.13	7.79	1.31	1.25	.85	.17
21	.09	.14	.04	.10	1.94	6.91	2.90	7.96	1.03	.87	.46	.26
22	.08	.12	.04	.08	1.93	5.98	3.03	7.05	1.38	.72	.38	.21
23	.10	.06	.04	.78	1.86	5.33	3.40	6.25	1.34	.71	.29	.16
24	.09	.06	.03	1.53	1.73	4.95	3.92	5.60	1.30	.63	.28	.17
25	.10	.07	.03	.78	1.60	4.17	4.47	5.61	1.45	.61	.25	.26
26	.11	.07	.03	.36	1.54	3.56	4.43	5.39	1.22	.52	.28	.37
27	.14	.07	.03	.23	1.47	3.41	4.64	4.57	1.62	.46	.32	.42
28	.19	.07	.03	.22	1.91	3.06	4.87	3.27	1.66	.46	.25	.21
29	.13	.08	.03	.20	---	2.81	5.10	2.67	5.35	1.51	.25	.20
30	.14	.08	.04	.19	---	2.73	4.48	2.32	4.13	.67	.21	.19
31	.11	---	.04	.17	---	2.48	---	1.96	---	.52	.21	---
TOTAL	2.91	2.96	1.67	12.84	84.41	937.89	77.07	180.88	46.19	43.59	26.49	7.00

WTR YR 1990 TOTAL 1423.90

e ESTIMATED.

423526088380101 DELAVAN LAKE AT SW END NEAR DELAVAN LAKE, WI

LOCATION.--Lat 42°35'26", long 88°38'01", sec.32, T.2 N., R.16 E., Walworth County, Hydrologic Unit 07090001, 2.6 mi southeast of Delavan.

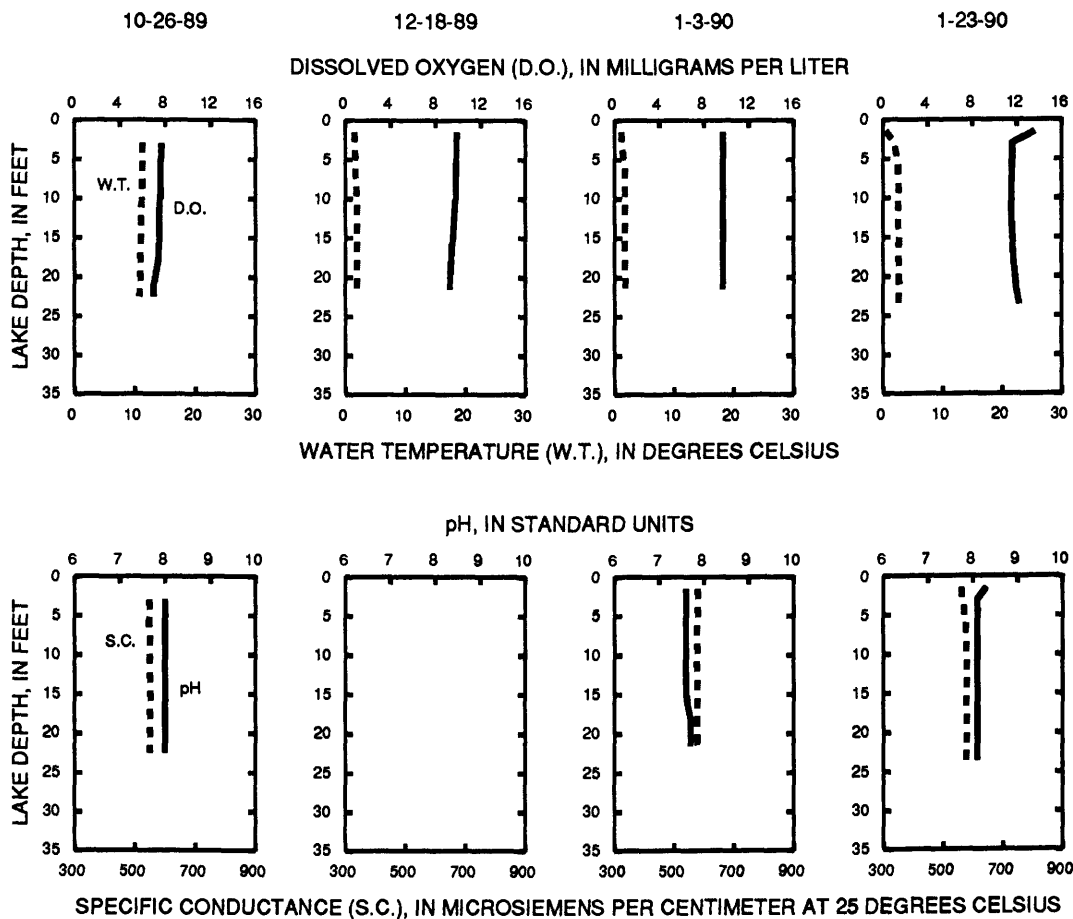
DRAINAGE AREA.--41.2 mi².

PERIOD OF RECORD.--October 1983 to current year.

REMARKS.--Lake ice-covered during December 18, January 3, 23, and February 20 sampling.

WATER-QUALITY DATA, OCTOBER 26, 1989 TO JANUARY 23, 1990
(Milligrams per liter unless otherwise indicated)

	Oct. 26		Dec. 18		Jan. 03		Jan. 23	
Depth of sample (ft)	1.5	22.5	1.5	21.5	1.5	21.5	1.5	23.5
Lake stage (ft)	-3.52		-4.24		-4.17		-3.66	
Specific conductance (μS/cm)	548	550	---	---	580	580	562	577
pH (units)	8.0	8.0	---	---	7.6	7.7	8.3	8.1
Water temperature (°C)	11.3	10.8	1.5	1.9	1.1	1.8	0.5	2.7
Secchi-depth (meters)	2.6		---		1.2		0.5	
Dissolved oxygen	7.7	7.0	9.9	9.3	9.7	9.7	13.6	12.2
Phosphorus, total (as P)	0.107	0.108	0.119	0.132	0.138	0.110	0.223	0.083
Phosphorus, ortho, dissolved (as P)	0.061	0.063	0.073	0.071	0.060	0.077	0.037	0.036
Chlorophyll a, phytoplankton (μg/L)	1.2	---	---	---	54	---	120	---



ROCK RIVER BASIN

423526088380101 DELAVAN LAKE AT SW END NEAR DELAVAN LAKE, WI--CONTINUED

WATER-QUALITY DATA, FEBRUARY 20 TO APRIL 13, 1990
(Milligrams per liter unless otherwise indicated)

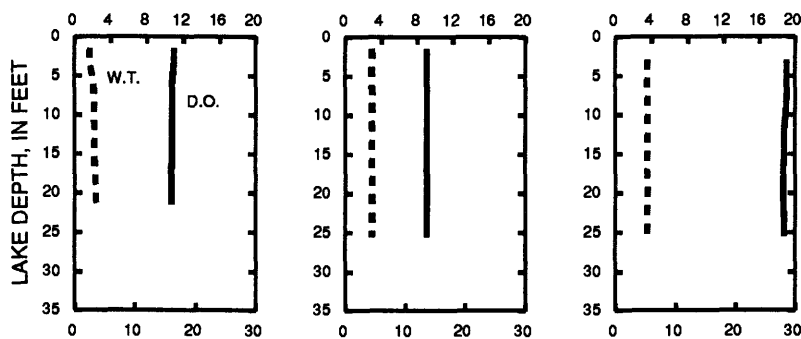
	Feb. 20			Mar. 20			Apr. 13		
Depth of sample (ft)	1.5	18.0	21.5	1.5	21.0	25.5	1.5	21.0	25.5
Lake stage (ft)	-2.53			-0.29			0.21		
Specific conductance ($\mu\text{S}/\text{cm}$)	518	569	568	563	564	564	555	558	560
pH (units)	8.5	8.1	8.1	7.2	7.5	7.6	8.5	8.5	8.5
Water temperature ($^{\circ}\text{C}$)	2.5	3.4	3.5	4.4	4.4	4.4	5.3	5.3	5.3
Color (Pt-Co. scale)	---	---	---	---	---	---	---	---	13
Turbidity (NTU)	---	---	---	---	---	---	---	---	2
Secchi-depth (meters)	1.8			---			1.0		
Dissolved oxygen	11.0	10.7	10.7	9.1	9.1	9.1	19.1	18.7	18.8
Hardness, as CaCO_3	---	---	---	---	---	---	---	---	230
Calcium, dissolved (Ca)	---	---	---	---	---	---	---	---	39
Magnesium, dissolved (Mg)	---	---	---	---	---	---	---	---	32
Sodium, dissolved (Na)	---	---	---	---	---	---	---	---	25
Potassium, dissolved (K)	---	---	---	---	---	---	---	---	3.4
Alkalinity, as CaCO_3	---	---	---	---	---	---	---	---	177
Sulfate, dissolved (SO_4)	---	---	---	---	---	---	---	---	26
Fluoride, dissolved (F)	---	---	---	---	---	---	---	---	0.2
Chloride, dissolved (Cl)	---	---	---	---	---	---	---	---	57
Silica, dissolved (SiO_2)	---	---	---	---	---	---	---	---	0.06
Solids, dissolved, at 180°C	---	---	---	---	---	---	---	---	323
Nitrogen, nitrate, total (as N)	---	---	---	---	---	---	0.47	---	0.48
Nitrogen, nitrite, total (as N)	---	---	---	---	---	---	0.03	---	0.02
Nitrogen, $\text{NO}_2 + \text{NO}_3$, total (as N)	---	---	---	---	---	---	0.5	---	0.5
Nitrogen, ammonia, total (as N)	---	---	---	---	---	---	0.47	---	0.50
Nitrogen, organic, total (as N)	---	---	---	---	---	---	1.3	---	1.3
Nitrogen, amm. + org., total (as N)	---	---	---	---	---	---	1.8	---	1.8
Nitrogen, total (as N)	---	---	---	---	---	---	2.3	---	2.3
Phosphorus, total (as P)	0.290	0.105	0.118	0.135	0.136	0.151	0.136	0.145	0.142
Phosphorus, ortho, dissolved (as P)	0.185	0.064	0.063	0.112	0.113	0.125	0.046	0.052	0.048
Iron, dissolved (Fe) $\mu\text{g}/\text{L}$	---	---	---	---	---	---	---	---	3.0
Manganese, dissolved (Mn) $\mu\text{g}/\text{L}$	---	---	---	---	---	---	---	---	<1.0
Chlorophyll a, phytoplankton ($\mu\text{g}/\text{L}$)	1.2	---	---	0.4	---	---	16	---	---

2-20-90

3-20-90

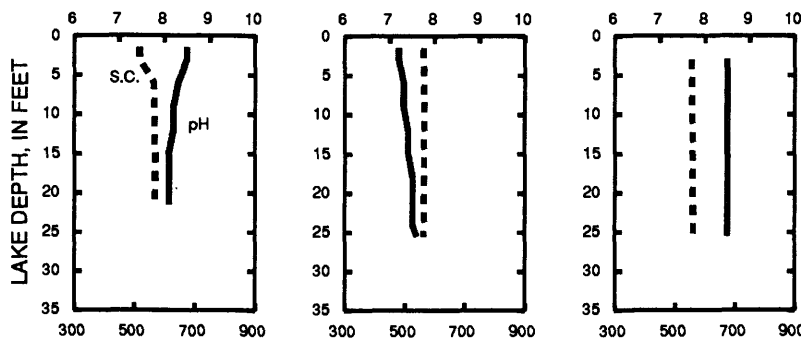
4-13-90

DISSOLVED OXYGEN (D.O.), IN MILLIGRAMS PER LITER



WATER TEMPERATURE (W.T.), IN DEGREES CELSIUS

pH, IN STANDARD UNITS

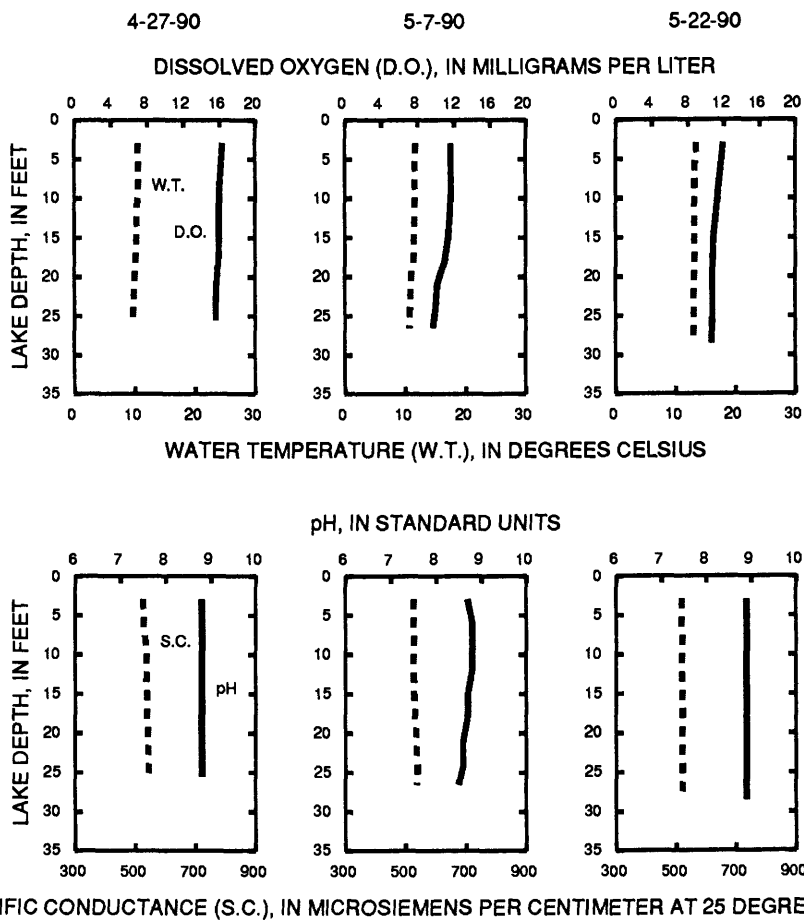


SPECIFIC CONDUCTANCE (S.C.), IN MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS

423526088380101 DELAVAN LAKE AT SW END NEAR DELAVAN LAKE, WI--CONTINUED

WATER-QUALITY DATA, APRIL 27 TO MAY 22, 1990
(Milligrams per liter unless otherwise indicated)

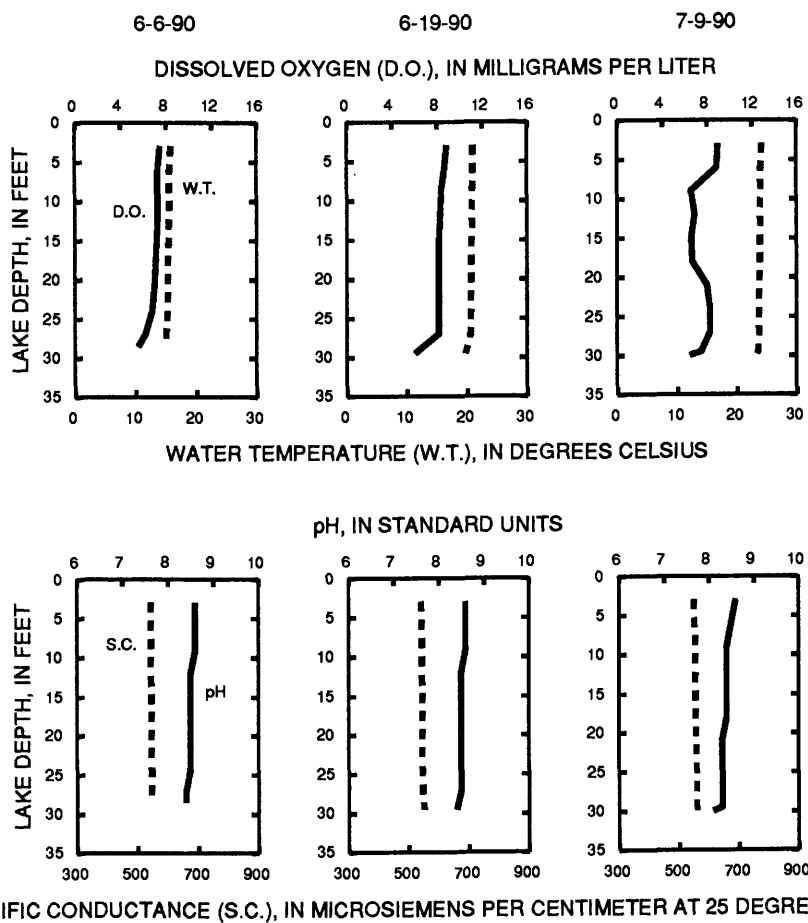
	Apr. 27			May 07			May 22		
Depth of sample (ft)	1.5	21.0	25.5	1.5	24.0	26.5	1.5	24.0	28.5
Lake stage (ft)		0.62			0.92			2.19	
Specific conductance ($\mu\text{S}/\text{cm}$)	525	543	544	526	537	537	518	520	521
pH (units)	8.8	8.8	8.8	8.7	8.6	8.5	8.9	8.9	8.9
Water temperature ($^{\circ}\text{C}$)	10.5	9.9	9.7	11.7	10.8	10.7	13.5	13.0	13.0
Secchi-depth (meters)		0.8			1.6			1.3	
Dissolved oxygen	16.4	15.7	15.6	11.7	10.0	9.7	12.0	10.8	10.7
Phosphorus, total (as P)	0.078	0.089	0.097	0.059	0.067	0.059	0.091	0.075	0.064
Phosphorus, ortho, dissolved (as P)	0.009	0.015	0.019	0.006	0.017	0.019	0.009	0.032	0.010
Chlorophyll a, phytoplankton ($\mu\text{g}/\text{L}$)	30.0	---	---	6.6	---	---	6.2	---	---



WATER-QUALITY DATA, JUNE 6 TO JULY 9, 1990
(Milligrams per liter unless otherwise indicated)

	June 06			June 19			July 09		
Depth of sample (ft)	1.5	24.0	28.5	1.5	24.0	29.5	1.5	27.0	29.5
Lake stage (ft)		2.40			2.72			3.12	
Specific conductance ($\mu\text{S}/\text{cm}$)	544	546	548	543	547	552	550	559	560
pH (units)	8.6	8.5	8.4	8.6	8.5	8.4	8.6	8.3	8.3
Water temperature ($^{\circ}\text{C}$)	15.8	15.3	14.9	21.0	20.7	19.8	24.2	23.7	23.6
Secchi-depth (meters)		4.4			2.7			2.4	
Dissolved oxygen	7.5	6.8	5.6	8.9	8.2	6.1	9.0	8.3	7.5
Phosphorus, total (as P)	0.075	0.087	0.099	0.086	0.079	0.090	1/0.062	0.164	0.162
Phosphorus, ortho, dissolved (as P)	0.040	0.053	0.072	0.044	0.047	0.057	0.026	0.048	0.114
Chlorophyll a, phytoplankton ($\mu\text{g}/\text{L}$)	0.2	---	---	8.1	---	---	18.0	---	---

1/ Duplicate sample concentration 0.060 mg/L.



423526088380101 DELAVAN LAKE AT SW END NEAR DELAVAN LAKE, WI--CONTINUED

WATER-QUALITY DATA, JULY 23 TO SEPTEMBER 28, 1990
(Milligrams per liter unless otherwise indicated)

	July 23				Aug. 06			
Depth of sample (ft)	1.5	18.0	27.0	29.5	1.5	24.0	30.0	31.5
Lake stage (ft)		3.20				3.26		
Specific conductance ($\mu\text{S}/\text{cm}$)	550	558	563	564	531	562	570	574
pH (units)	8.4	8.0	7.8	7.7	8.8	8.0	7.7	7.6
Water temperature ($^{\circ}\text{C}$)	23.3	22.2	21.7	21.6	24.5	23.2	21.7	21.4
Secchi-depth (meters)		1.9				1.7		
Dissolved oxygen	8.5	3.6	1.2	0.9	11.2	0.8	0.2	0.2
Phosphorus, total (as P)	0.075	0.108	0.124	0.134	0.048	0.063	0.161	0.180
Phosphorus, ortho, dissolved (as P)	0.044	0.082	0.097	0.102	0.001	0.027	0.127	0.141
Chlorophyll a, phytoplankton ($\mu\text{g}/\text{L}$)	2.7	---	---	---	26.0	---	---	---

	Aug. 22			Sep. 11			Sep. 28		
Depth of sample (ft)	1.5	27.0	29.5	1.5	27.0	29.5	1.5	27.0	29.5
Lake stage (ft)		3.40			3.32			3.16	
Specific conductance ($\mu\text{S}/\text{cm}$)	541	543	544	546	548	548	565	567	568
pH (units)	8.3	8.2	8.2	8.4	8.4	8.4	8.3	8.2	8.2
Water temperature ($^{\circ}\text{C}$)	23.0	22.9	22.8	24.3	24.2	24.1	18.4	18.3	18.3
Secchi-depth (meters)		2.0			1.8			0.8	
Dissolved oxygen	9.3	8.4	7.7	8.1	7.6	7.5	7.2	6.0	5.9
Phosphorus, total (as P)	0.050	0.226	0.046	0.051	0.045	0.044	0.153	0.112	0.127
Phosphorus, ortho, dissolved (as P)	0.011	0.170	0.016	0.008	0.008	0.010	0.083	0.086	0.090
Chlorophyll a, phytoplankton ($\mu\text{g}/\text{L}$)	5.9	---	---	9.9	---	---	48.0	---	---

7-23-90

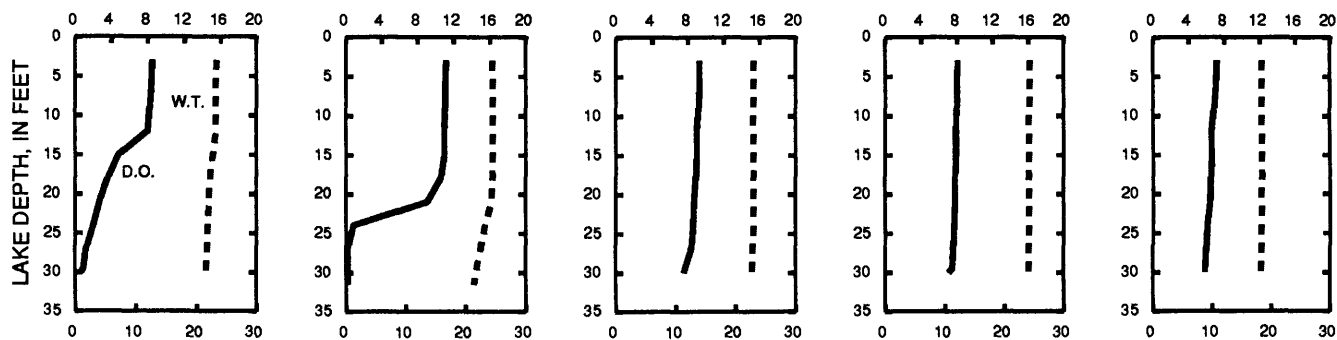
8-6-90

8-22-90

9-11-90

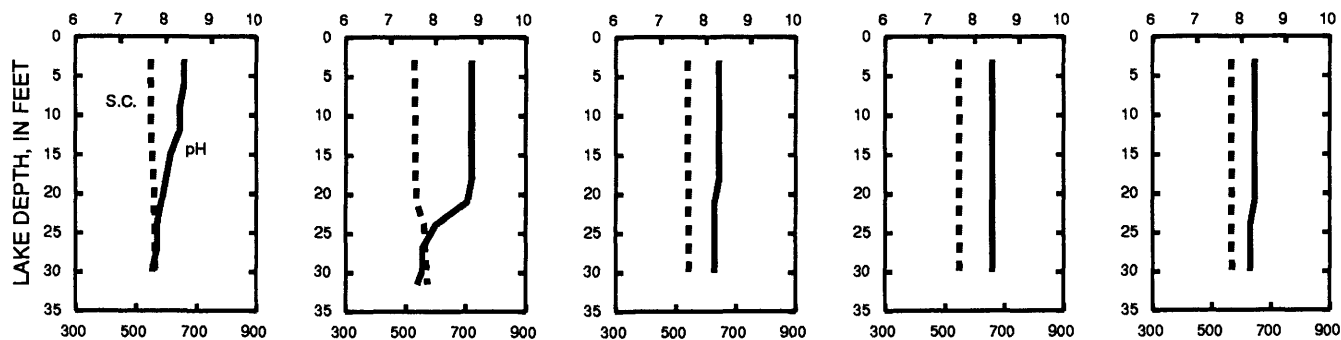
9-28-90

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

ROCK RIVER BASIN

423556088365001 DELAVAN LAKE AT CENTER NEAR DELAVAN LAKE, WI

LOCATION.--Lat 42°35'60", long 88°36'50", sec.28, T.2 N., R.16 E., Walworth County, Hydrologic Unit 07090001, 2.6 mi southeast of Delavan.

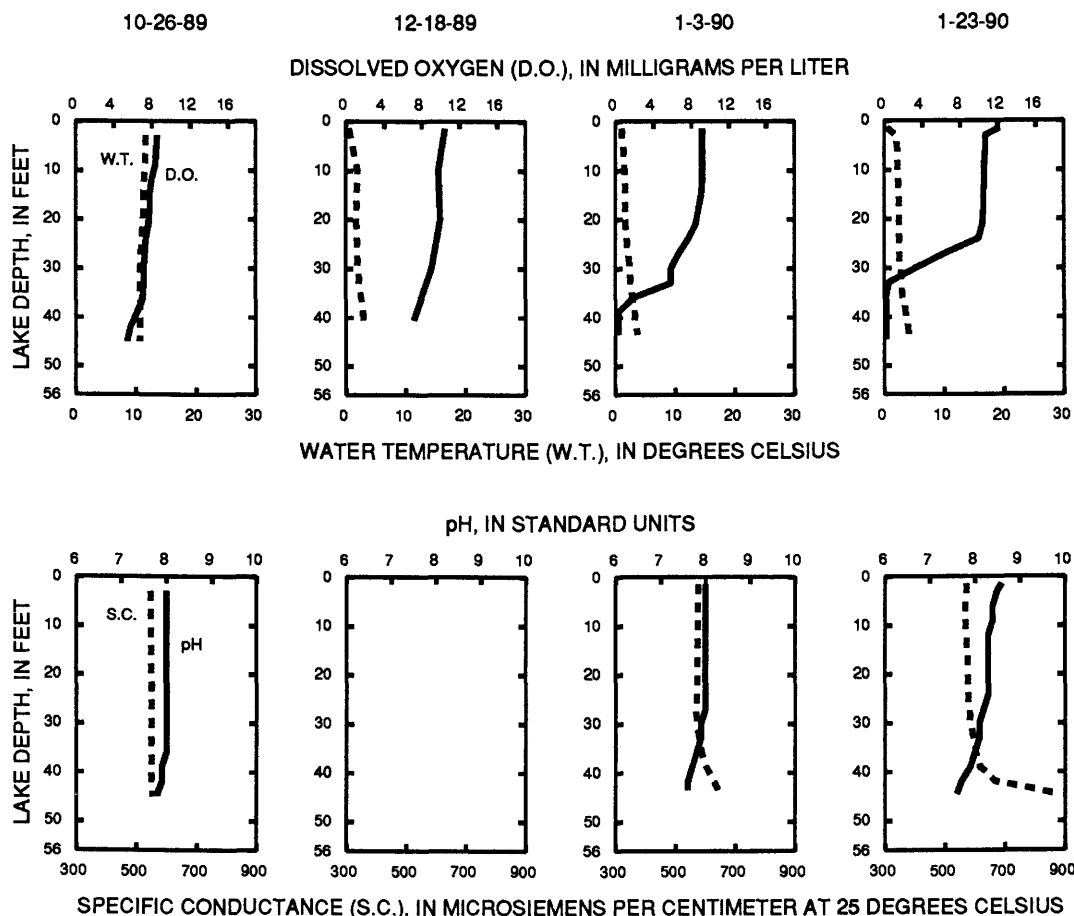
DRAINAGE AREA.--41.2 mi².

PERIOD OF RECORD.--October 1983 to current year.

REMARKS.--Lake ice-covered during December 18, January 3, 23, and February 20 sampling.

WATER-QUALITY DATA, OCTOBER 26, 1989 TO JANUARY 23, 1990
(Milligrams per liter unless otherwise indicated)

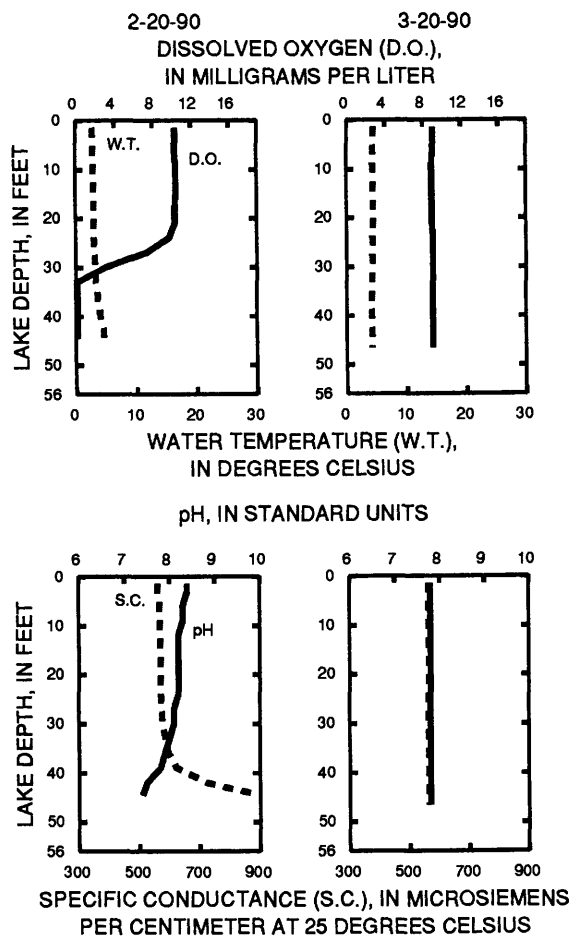
	Oct. 26		Dec. 18		Jan. 03		Jan. 23		
Depth of sample (ft)	1.5	44.5	1.5	40.5	1.5	43.5	1.5	30.0	44.5
Lake stage (ft)	-3.52		-4.24		-4.17		-3.66		
Specific conductance (μS/cm)	548	553	---	---	577	642	572	587	868
pH (units)	8.0	7.8	---	---	8.0	7.6	8.6	8.1	7.6
Water temperature (°C)	11.7	10.7	0.5	2.9	1.1	3.7	0.5	2.7	4.3
Secchi-depth (meters)	2.4		---		1.2		0.5		
Dissolved oxygen	8.6	5.5	10.5	7.2	9.2	0.3	12.2	3.4	0.2
Phosphorus, total (as P)	0.088	0.123	0.148	0.162	0.135	0.345	0.332	0.108	0.297
Phosphorus, ortho, dissolved (as P)	0.062	0.077	0.057	0.111	0.053	0.058	0.014	0.069	0.208
Chlorophyll a, phytoplankton (μg/L)	6.7	---	---	---	56.0	---	120.0	---	---



423556088365001 DELAVAN LAKE AT CENTER NEAR DELAVAN LAKE, WI--CONTINUED

WATER-QUALITY DATA, FEBRUARY 20 TO MARCH 20, 1990
(Milligrams per liter unless otherwise indicated)

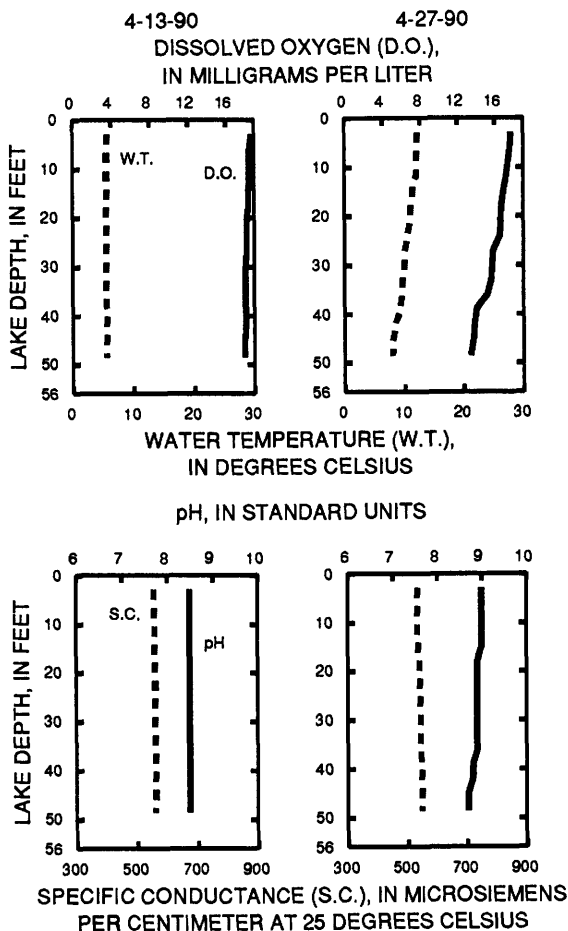
	Feb. 20				Mar. 20			
Depth of sample (ft)	1.5	30.0	36.0	44.5	1.5	33.0	42.0	46.5
Lake stage (ft)	-2.53				-0.25			
Specific conductance ($\mu\text{S}/\text{cm}$)	562	577	596	890	564	565	565	565
pH (units)	8.4	8.1	7.9	7.4	7.8	7.8	7.8	7.8
Water temperature ($^{\circ}\text{C}$)	2.8	3.3	3.6	4.7	4.4	4.2	4.2	4.2
Secchi-depth (meters)		2.3			---			
Dissolved oxygen	10.4	3.1	0.2	0.2	9.1	9.1	9.1	9.1
Phosphorus, total (as P)	0.132	0.098	0.120	0.775	0.126	0.136	0.136	0.135
Phosphorus, ortho, dissolved (as P)	0.083	0.061	0.084	0.207	0.111	0.111	0.116	0.112
Chlorophyll a, phytoplankton ($\mu\text{g}/\text{L}$)	0.6	---	---	---	0.5	---	---	---



423556088365001 DELAVAN LAKE AT CENTER NEAR DELAVAN LAKE, WI--CONTINUED

WATER-QUALITY DATA, APRIL 13 TO APRIL 27, 1990
(Milligrams per liter unless otherwise indicated)

	Apr. 13				Apr. 27			
Depth of sample (ft)	1.5	36.0	42.0	48.5	1.5	36.0	42.0	48.5
Lake stage (ft)		0.21				0.62		
Specific conductance ($\mu\text{S}/\text{cm}$)	557	561	562	562	534	544	549	549
pH (units)	8.5	8.5	8.5	8.5	9.0	8.9	8.8	8.7
Water temperature ($^{\circ}\text{C}$)	5.7	5.5	5.5	5.5	12.2	9.6	8.5	8.0
Color (Pt-Co. scale)	13	---	---	13	---	---	---	---
Turbidity (NTU)	1.3	---	---	1.5	---	---	---	---
Secchi-depth (meters)		1.0				0.8		
Dissolved oxygen	18.7	18.1	18.1	18.0	17.7	15.2	13.8	13.4
Hardness, as CaCO_3	240	---	---	240	---	---	---	---
Calcium, dissolved (Ca)	40	---	---	40	---	---	---	---
Magnesium, dissolved (Mg)	33	---	---	33	---	---	---	---
Sodium, dissolved (Na)	26	---	---	26	---	---	---	---
Potassium, dissolved (K)	3.3	---	---	3.3	---	---	---	---
Alkalinity, as CaCO_3	180	---	---	181	---	---	---	---
Sulfate, dissolved (SO_4)	27	---	---	25	---	---	---	---
Fluoride, dissolved (F)	0.3	---	---	0.2	---	---	---	---
Chloride, dissolved (Cl)	58	---	---	64	---	---	---	---
Silica, dissolved (SiO_2)	0.060	---	---	0.050	---	---	---	---
Solids, dissolved, at 180°C	316	---	---	308	---	---	---	---
Nitrogen, nitrate, total (as N)	0.48	---	---	0.48	---	---	---	---
Nitrogen, nitrite, total (as N)	0.02	---	---	0.02	---	---	---	---
Nitrogen, $\text{NO}_2 + \text{NO}_3$, total (as N)	0.5	---	---	0.5	---	---	---	---
Nitrogen, ammonia, total (as N)	0.43	---	---	0.48	---	---	---	---
Nitrogen, organic, total (as N)	1.6	---	---	1.3	---	---	---	---
Nitrogen, amm. + org., total (as N)	2.0	---	---	1.8	---	---	---	---
Nitrogen, total (as N)	2.5	---	---	2.3	---	---	---	---
Phosphorus, total (as P)	0.153	0.154	0.151	0.151	0.110	0.085	0.120	0.150
Phosphorus, ortho, dissolved (as P)	0.049	0.042	0.048	0.049	0.004	0.012	0.021	0.043
Iron, dissolved (Fe) $\mu\text{g}/\text{L}$	6.0	---	---	4.0	---	---	---	---
Manganese, dissolved (Mn) $\mu\text{g}/\text{L}$	<1.0	---	---	<1.0	---	---	---	---
Chlorophyll a, phytoplankton ($\mu\text{g}/\text{L}$)	15	---	---	---	31	---	---	---



423556088365001 DELAVAN LAKE AT CENTER NEAR DELAVAN LAKE, WI--CONTINUED

WATER-QUALITY DATA, MAY 07 TO JUNE 19, 1990
(Milligrams per liter unless otherwise indicated)

	May 07				May 22			
Depth of sample (ft)	1.5	30.0	42.0	47.5	1.5	36.0	42.0	50.5
Lake stage (ft)		0.92				2.24		
Specific conductance ($\mu\text{S}/\text{cm}$)	517	523	542	547	519	521	521	521
pH (units)	8.7	8.6	8.2	8.1	9.0	8.9	8.9	8.9
Water temperature ($^{\circ}\text{C}$)	12.5	11.8	10.4	10.2	13.5	12.9	12.9	12.9
Secchi-depth (meters)		1.4				1.5		
Dissolved oxygen	13.2	12.5	9.6	6.3	12.2	10.4	10.4	10.2
Phosphorus, total (as P)	0.057	0.051	0.065	0.082	0.070	0.070	0.083	0.064
Phosphorus, ortho, dissolved (as P)	0.003	<0.001	0.013	0.018	0.009	0.009	0.007	0.007
Chlorophyll a, phytoplankton ($\mu\text{g}/\text{L}$)	7.2	---	---	---	1.7	---	---	---

	June 06				June 19			
Depth of sample (ft)	1.5	36.0	42.0	49.5	1.5	36.0	42.0	49.5
Lake stage (ft)		2.40				2.72		
Specific conductance ($\mu\text{S}/\text{cm}$)	544	550	552	558	540	556	564	566
pH (units)	8.5	8.3	8.2	7.9	8.6	8.0	7.9	7.8
Water temperature ($^{\circ}\text{C}$)	16.0	14.8	14.7	14.4	21.1	17.7	16.1	16.0
Secchi-depth (meters)		5.5				2.6		
Dissolved oxygen	7.4	5.6	4.3	1.0	8.9	1.9	0.1	0.1
Phosphorus, total (as P)	0.074	0.101	0.126	0.255	0.085	0.134	0.195	0.290
Phosphorus, ortho, dissolved (as P)	0.043	0.069	0.082	0.158	0.041	0.102	0.179	0.230
Chlorophyll a, phytoplankton ($\mu\text{g}/\text{L}$)	0.3	---	---	---	4.5	---	---	---

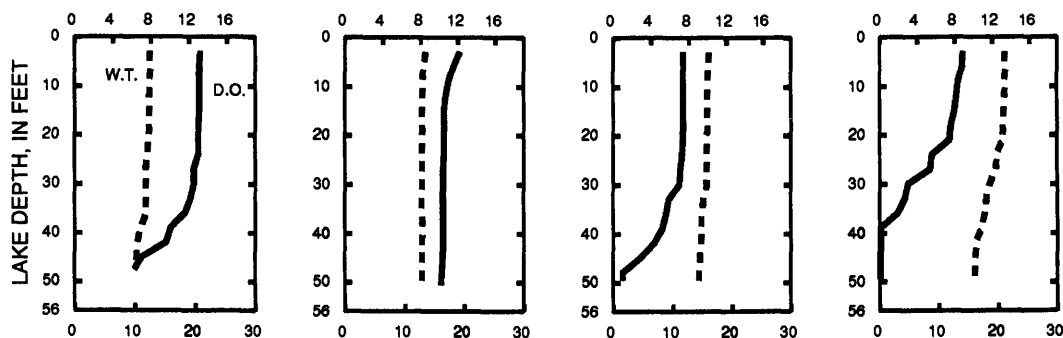
5-7-90

5-22-90

6-6-90

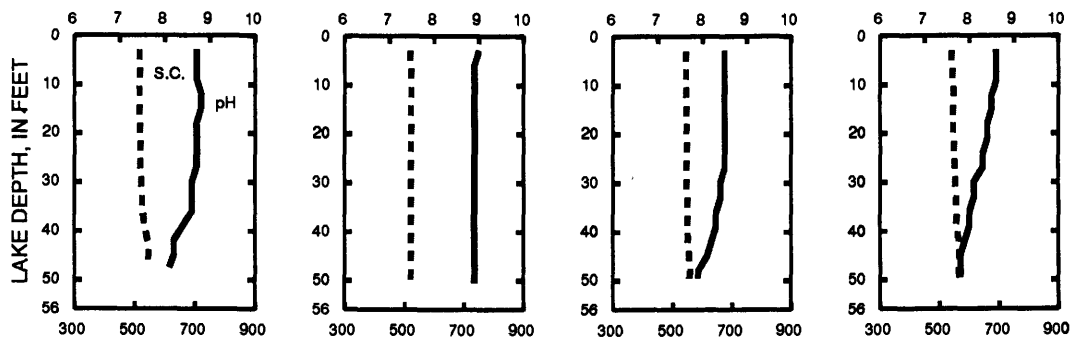
6-19-90

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

423556088365001 DELAVAN LAKE AT CENTER NEAR DELAVAN LAKE, WI--CONTINUED

WATER-QUALITY DATA, JULY 09 TO AUGUST 22, 1990
(Milligrams per liter unless otherwise indicated)

	July 09				July 23			
Depth of sample (ft)	1.5	36.0	42.0	49.5	1.5	36.0	42.0	49.5
Lake stage (ft)		3.12				3.20		
Specific conductance ($\mu\text{S}/\text{cm}$)	540	572	586	596	548	564	586	632
pH (units)	8.9	7.7	7.4	7.3	8.4	7.7	7.5	7.3
Water temperature ($^{\circ}\text{C}$)	25.0	19.7	17.4	16.6	23.4	21.0	18.0	16.0
Secchi-depth (meters)		0.5				1.9		
Dissolved oxygen	9.6	0.1	0.1	0.1	8.4	0.2	0.2	0.2
Phosphorus, total (as P)	1/0.094	0.197	---	---	0.064	0.154	---	1.000
Phosphorus, ortho, dissolved (as P)	2/0.005	0.137	---	---	0.044	0.122	0.380	0.920
Chlorophyll a, phytoplankton ($\mu\text{g}/\text{L}$)	300	---	---	---	1.7	---	---	---

1/ Duplicate sample concentration 0.085 mg/L.

2/ Duplicate sample concentration 0.007 mg/L.

	Aug. 06				Aug. 22			
Depth of sample (ft)	1.5	36.0	45.0	49.5	1.5	36.0	45.0	49.5
Lake stage (ft)		3.23				3.37		
Specific conductance ($\mu\text{S}/\text{cm}$)	531	582	598	642	541	565	627	642
pH (units)	8.8	7.5	7.4	7.2	8.3	7.6	7.1	7.1
Water temperature ($^{\circ}\text{C}$)	24.3	20.2	18.8	16.6	23.0	21.8	18.0	17.4
Secchi-depth (meters)		1.8				1.8		
Dissolved oxygen	10.6	0.2	0.2	0.2	9.4	0.3	0.3	0.3
Phosphorus, total (as P)	0.042	0.220	0.440	0.830	0.051	0.178	0.653	0.951
Phosphorus, ortho, dissolved (as P)	0.002	0.220	0.430	0.855	0.015	0.171	0.695	0.927
Chlorophyll a, phytoplankton ($\mu\text{g}/\text{L}$)	16.0	---	---	---	3.2	---	---	---

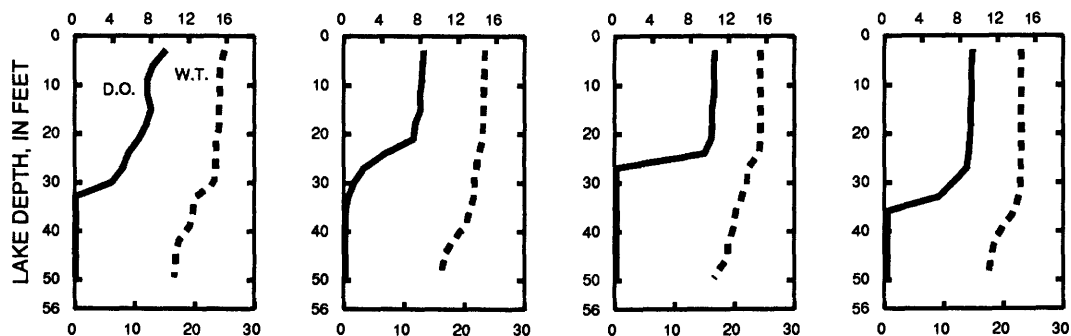
7-9-90

7-23-90

8-6-90

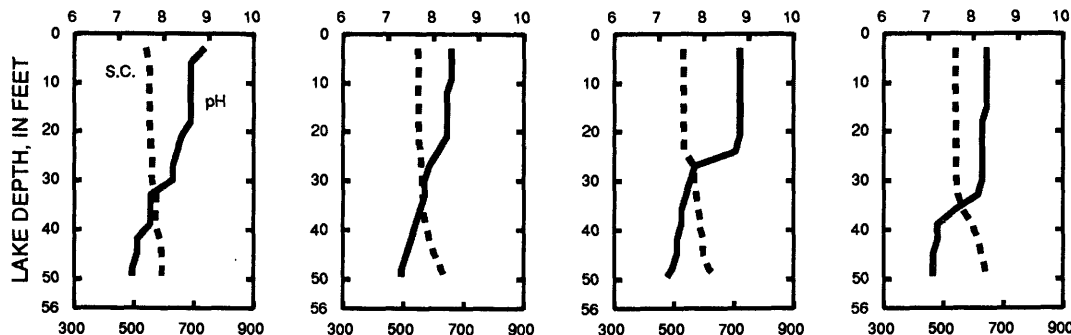
8-22-90

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

423556088365001 DELAVAN LAKE AT CENTER NEAR DELAVAN LAKE, WI--CONTINUED

WATER-QUALITY DATA, AUGUST 28 TO SEPTEMBER 28, 1990
(Milligrams per liter unless otherwise indicated)

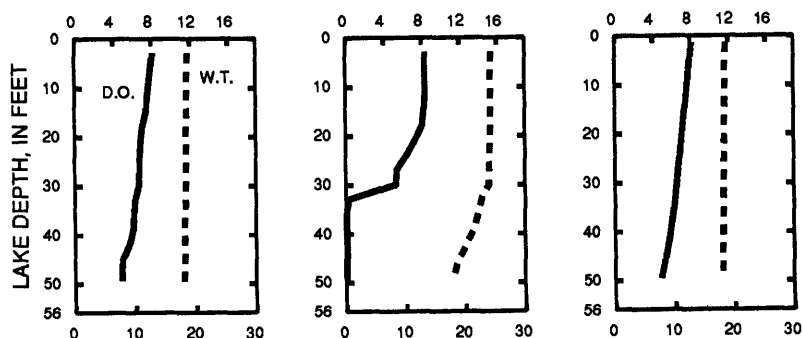
	Aug. 28		Sep. 11				Sep. 28			
Depth of sample (ft)	3.0	49.5	1.5	33.0	42.0	49.5	1.5	36.0	42.0	49.5
Lake stage (ft)	---		3.32				3.16			
Specific conductance ($\mu\text{S}/\text{cm}$)	563	569	547	568	606	665	563	566	567	569
pH (units)	8.6	8.2	8.5	7.6	7.2	7.0	8.6	8.4	8.3	8.2
Water temperature ($^{\circ}\text{C}$)	18.6	18.1	24.3	22.7	20.2	17.8	18.6	18.2	18.1	18.1
Secchi-depth (meters)	---		1.6				1.4			
Dissolved oxygen	8.2	4.9	8.4	0.3	0.1	0.1	8.2	6.2	5.7	4.9
Phosphorus, total (as P)	---	---	0.048	0.182	0.614	1.000	0.217	0.117	0.118	0.129
Phosphorus, ortho, dissolved (as P)	---	---	0.012	0.146	0.630	1.100	0.073	0.082	0.085	0.091
Chlorophyll a, phytoplankton ($\mu\text{g}/\text{L}$)	---	---	14	---	---	---	20	---	---	---

8-28-90

9-11-90

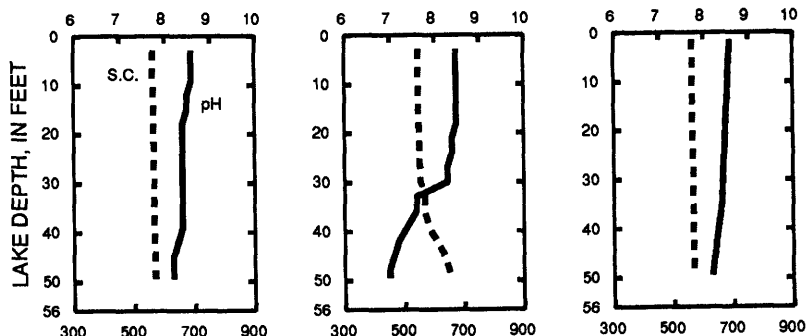
9-28-90

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

ROCK RIVER BASIN

423659088354401 DELAVAN LAKE AT NORTH END NEAR LAKE LAWN, WI

LOCATION.--Lat 42°36'59", long 88°35'44", sec.22, T.2 N., R.16 E., Walworth County, Hydrologic Unit 07090001, 2.6 mi southeast of Delavan.

DRAINAGE AREA.--41.2 mi².

PERIOD OF RECORD.--October 1983 to current year.

REMARKS.--Lake ice-covered during December 18, January 3, 23, and February 20 sampling.

WATER-QUALITY DATA, OCTOBER 26, 1989 TO FEBRUARY 20, 1990
(Milligrams per liter unless otherwise indicated)

	Oct. 26		Dec. 18		Jan. 03		Jan. 23		Feb. 20		
Depth of sample (ft)	1.5	22.5	1.5	28.5	1.5	26.5	1.5	22.5	1.5	21.0	24.5
Lake stage (ft)	-3.52		-4.24		-4.17		-3.66		-2.53		
Specific conductance (μS/cm)	547	549	---	---	570	582	462	578	570	574	577
pH (units)	8.2	8.1	---	---	7.9	7.8	9.2	8.4	8.6	8.2	8.2
Water temperature (°C)	13.0	12.1	0.5	2.0	1.3	1.7	0.5	2.4	2.7	2.9	2.9
Secchi-depth (meters)		1.6	---	---		1.8		0.4		1.5	
Dissolved oxygen	10.4	8.4	7.5	8.2	9.3	9.4	20.2	12.0	10.2	10.2	10.2
Phosphorus, total (as P)	0.124	0.112	0.108	0.125	0.094	0.109	0.318	0.073	0.305	0.110	0.103
Phosphorus, ortho, dissolved (as P)	0.055	0.060	0.075	0.070	0.070	0.078	0.042	0.032	0.176	0.062	0.058
Chlorophyll a, phytoplankton (μg/L)	42.0	---	---	---	10.0	---	93.0	---	1.0	---	---

10-26-89

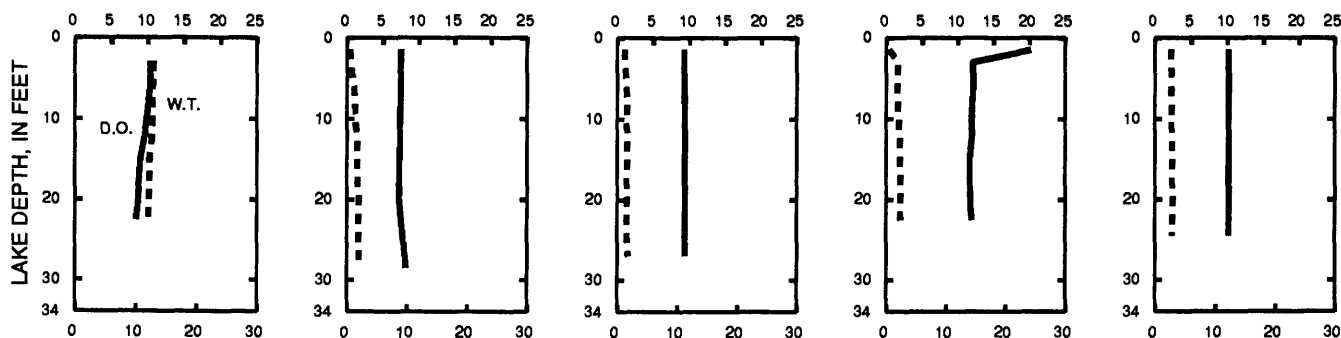
12-18-89

1-3-90

1-23-90

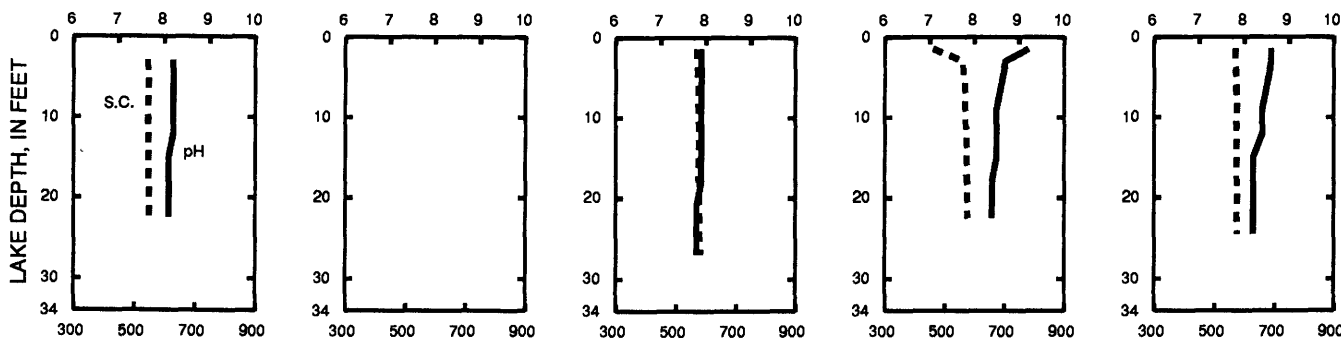
2-20-90

DISSOLVED OXYGEN (D.O.), IN MILLIGRAMS PER LITER



WATER TEMPERATURE (W.T.), IN DEGREES CELSIUS

pH, IN STANDARD UNITS

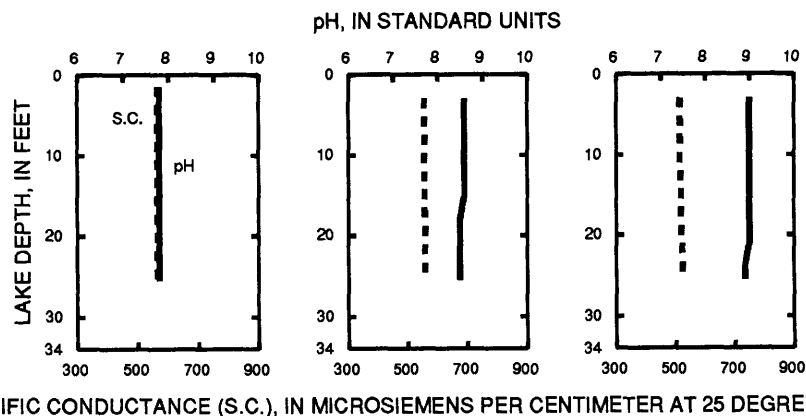
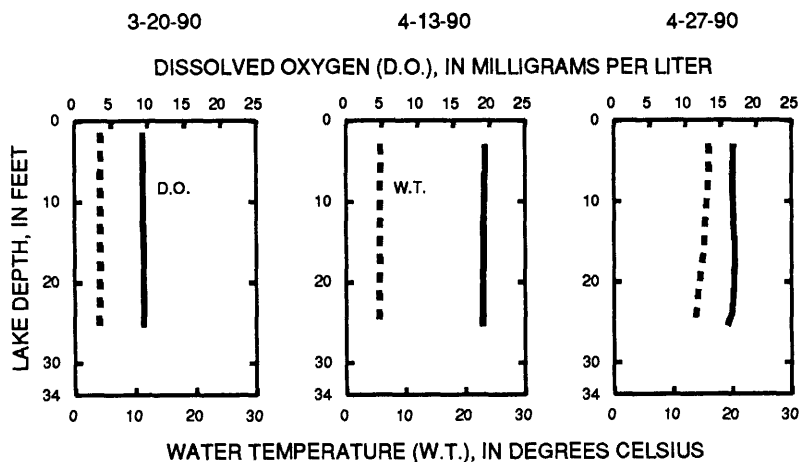


SPECIFIC CONDUCTANCE (S.C.), IN MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS

423659088354401 DELAVAN LAKE AT NORTH END NEAR LAKE LAWN, WI--CONTINUED

WATER-QUALITY DATA, MARCH 20 TO APRIL 27, 1990
(Milligrams per liter unless otherwise indicated)

	Mar. 20			Apr. 13			Apr. 27		
Depth of sample (ft)	1.5	24.0	25.5	1.5	24.0	25.5	1.5	21.0	25.5
Lake stage (ft)	-0.29			0.21			0.62		
Specific conductance ($\mu\text{S}/\text{cm}$)	564	565	565	555	558	558	514	521	526
pH (units)	7.8	7.8	7.8	8.6	8.5	8.5	9.0	9.0	8.9
Water temperature ($^{\circ}\text{C}$)	4.3	4.1	4.1	5.8	5.6	5.6	16.0	14.3	13.6
Color (Pt-Co. scale)	---	---	---	13	---	13	---	---	---
Turbidity (NTU)	---	---	---	1.8	---	2.0	---	---	---
Secchi-depth (meters)	---			1.0			0.8		
Dissolved oxygen	9.4	9.5	9.5	19.4	19.1	19.1	16.8	16.9	16.0
Hardness, as CaCO_3	---	---	---	240	---	240	---	---	---
Calcium, dissolved (Ca)	---	---	---	40	---	41	---	---	---
Magnesium, dissolved (Mg)	---	---	---	33	---	34	---	---	---
Sodium, dissolved (Na)	---	---	---	25	---	24	---	---	---
Potassium, dissolved (K)	---	---	---	3.3	---	3.3	---	---	---
Alkalinity, as CaCO_3	---	---	---	181	---	177	---	---	---
Sulfate, dissolved (SO_4)	---	---	---	27	---	29	---	---	---
Fluoride, dissolved (F)	---	---	---	0.2	---	0.2	---	---	---
Chloride, dissolved (Cl)	---	---	---	59	---	57	---	---	---
Silica, dissolved (SiO_2)	---	---	---	0.03	---	<0.50	---	---	---
Solids, dissolved, at 180°C	---	---	---	299	---	340	---	---	---
Nitrogen, nitrate, total (as N)	---	---	---	0.47	---	0.48	---	---	---
Nitrogen, nitrite, total (as N)	---	---	---	0.03	---	0.02	---	---	---
Nitrogen, $\text{NO}_2 + \text{NO}_3$, total (as N)	---	---	---	0.50	---	0.50	---	---	---
Nitrogen, ammonia, total (as N)	---	---	---	0.42	---	0.42	---	---	---
Nitrogen, organic, total (as N)	---	---	---	1.3	---	1.4	---	---	---
Nitrogen, amm. + org., total (as N)	---	---	---	1.7	---	1.8	---	---	---
Nitrogen, total (as N)	---	---	---	2.2	---	2.3	---	---	---
Phosphorus, total (as P)	0.133	0.134	0.134	0.136	0.149	0.141	0.053	0.059	0.080
Phosphorus, ortho, dissolved (as P)	0.113	0.108	0.110	0.041	0.039	0.042	<0.001	<0.001	<0.001
Iron, dissolved (Fe) $\mu\text{g}/\text{L}$	---	---	---	5.0	---	<10.0	---	---	---
Manganese, dissolved (Mn) $\mu\text{g}/\text{L}$	---	---	---	<1.0	---	<10.0	---	---	---
Chlorophyll a, phytoplankton ($\mu\text{g}/\text{L}$)	0.5	---	---	20.0	---	---	21.0	---	---



423659088354401 DELAVAN LAKE AT NORTH END NEAR LAKE LAWN, WI--CONTINUED

WATER-QUALITY DATA, MAY 07 TO JULY 09, 1990
(Milligrams per liter unless otherwise indicated)

	May 07			May 22			June 06		
Depth of sample (ft)	1.5	21.0	23.5	1.5	24.0	28.5	1.5	27.0	29.5
Lake stage (ft)		0.92			2.19			2.40	
Specific conductance ($\mu\text{S}/\text{cm}$)	521	525	530	522	523	524	547	548	552
pH (units)	8.8	8.9	8.9	8.8	8.7	8.7	8.5	8.5	8.5
Water temperature ($^{\circ}\text{C}$)	13.6	13.5	13.4	13.2	12.6	12.1	16.1	15.7	15.5
Secchi-depth (meters)		---			---			5.2	
Dissolved oxygen	13.7	13.5	13.2	12.2	9.9	9.7	7.5	7.4	7.4
Phosphorus, total (as P)	0.051	0.056	0.040	0.059	0.079	0.068	0.064	0.066	0.068
Phosphorus, ortho, dissolved (as P)	<0.001	<0.001	<0.001	0.010	0.038	0.018	0.038	0.038	0.040
Chlorophyll a, phytoplankton ($\mu\text{g}/\text{L}$)	7.6	---	---	0.9	---	---	0.2	---	---

	June 19			July 09		
Depth of sample (ft)	1.5	27.0	29.5	1.5	27.0	29.5
Lake stage (ft)		2.72			3.12	
Specific conductance ($\mu\text{S}/\text{cm}$)	544	551	553	540	563	565
pH (units)	8.6	8.3	8.2	8.8	8.0	7.9
Water temperature ($^{\circ}\text{C}$)	21.2	19.3	19.2	24.8	22.1	21.8
Secchi-depth (meters)		2.6			1.2	
Dissolved oxygen	8.6	4.8	4.2	11.8	3.5	3.0
Phosphorus, total (as P)	0.093	0.112	0.119	1/0.071	0.118	0.119
Phosphorus, ortho, dissolved (as P)	0.056	0.074	0.085	0.009	0.084	0.088
Chlorophyll a, phytoplankton ($\mu\text{g}/\text{L}$)	7.9	---	---	2/76.0	---	---

1/ Duplicate sample reading 0.067 mg/L.

2/ Duplicate sample reading 79 $\mu\text{g}/\text{L}$.

5-7-90

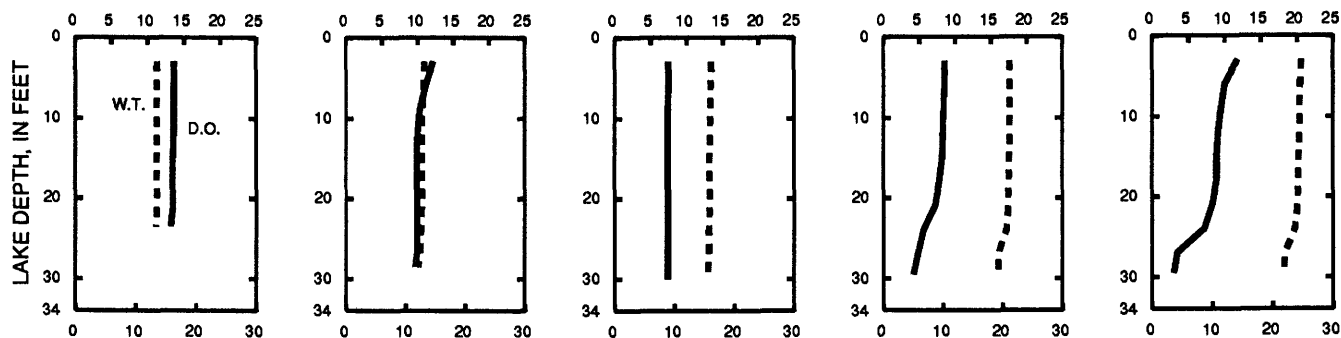
5-22-90

6-6-90

6-19-90

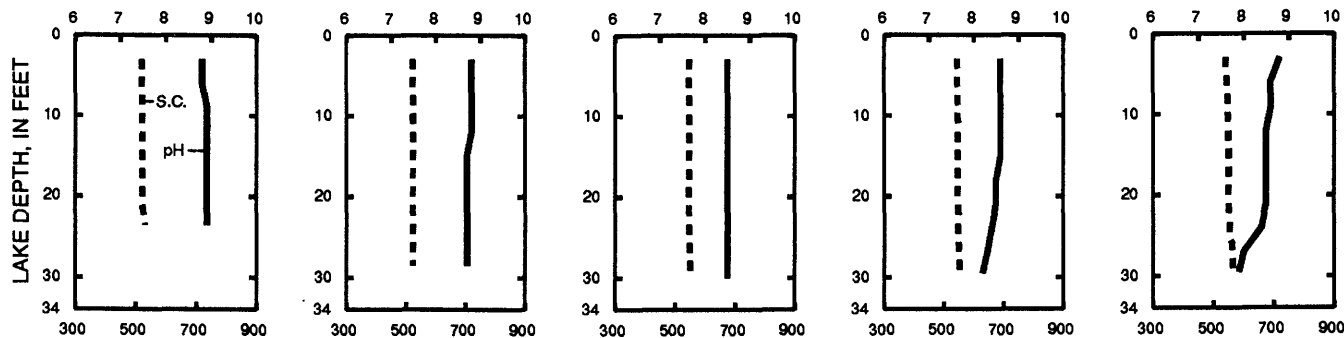
7-9-90

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

423659088354401 DELAVAN LAKE AT NORTH END NEAR LAKE LAWN, WI--CONTINUED

WATER-QUALITY DATA, JULY 23 TO SEPTEMBER 28, 1990
(Milligrams per liter unless otherwise indicated)

	July 23				Aug. 06				Aug. 22		
Depth of sample (ft)	1.5	21.0	27.0	29.5	1.5	24.0	30.0	31.5	1.5	27.0	29.5
Lake stage (ft)		3.20				3.26				3.40	
Specific conductance ($\mu\text{S}/\text{cm}$)	553	555	559	560	542	559	579	581	546	553	555
pH (units)	8.3	8.2	8.0	8.0	8.7	7.9	7.6	7.5	8.2	7.9	7.9
Water temperature ($^{\circ}\text{C}$)	23.3	22.7	22.4	22.2	23.6	23.0	20.6	20.0	22.7	22.4	22.3
Secchi-depth (meters)		2.4				2.4				2.3	
Dissolved oxygen	6.9	5.6	3.8	3.0	7.3	2.8	0.2	0.2	8.0	3.7	3.7
Phosphorus, total (as P)	0.083	0.086	0.093	0.118	0.051	0.052	0.210	0.255	0.057	0.097	0.081
Phosphorus, ortho, dissolved (as P)	0.049	0.055	0.064	0.081	0.023	0.049	0.205	0.245	0.023	0.054	0.050
Chlorophyll a, phytoplankton ($\mu\text{g}/\text{L}$)	0.5	---	---	---	1.6	---	---	---	6.6	---	---

	Sep. 11				Sep. 28		
Depth of sample (ft)	1.5	24.0	27.0	29.5	1.5	27.0	29.5
Lake stage (ft)		3.32				3.16	
Specific conductance ($\mu\text{S}/\text{cm}$)	544	558	562	563	561	568	568
pH (units)	8.5	7.9	7.8	7.8	8.6	8.3	8.3
Water temperature ($^{\circ}\text{C}$)	24.4	23.8	23.6	23.4	18.7	17.9	17.9
Secchi-depth (meters)		1.5				1.4	
Dissolved oxygen	8.8	1.7	0.5	0.2	9.2	5.5	5.5
Phosphorus, total (as P)	0.052	0.084	0.096	0.118	0.123	0.129	0.138
Phosphorus, ortho, dissolved (as P)	0.007	0.051	0.065	0.086	0.066	0.101	0.099
Chlorophyll a, phytoplankton ($\mu\text{g}/\text{L}$)	15	---	---	---	15	---	---

7-23-90

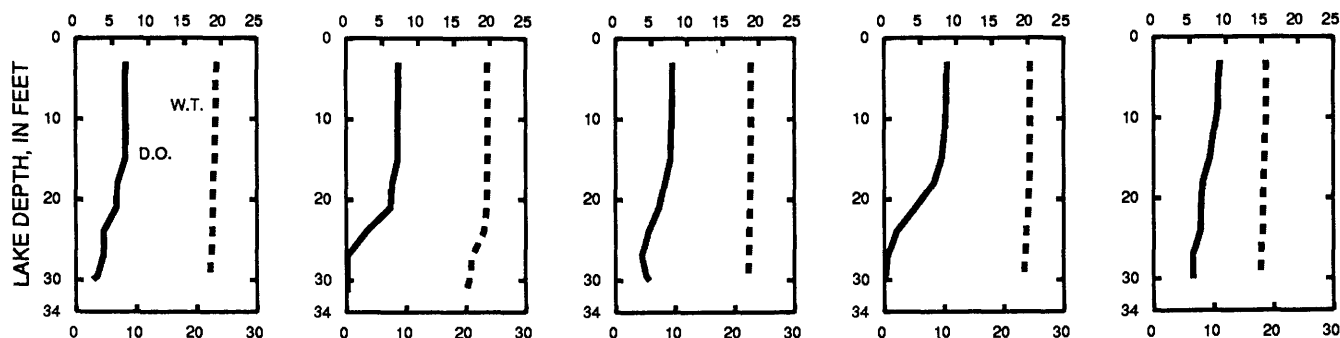
8-6-90

8-22-90

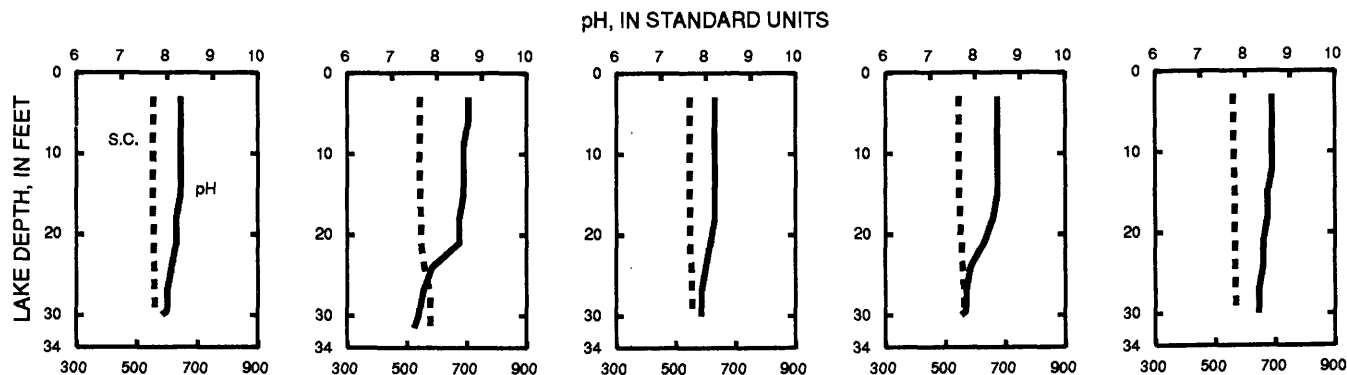
9-11-90

9-28-90

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

423706088363400 DELAVAN LAKE NEAR DELAVAN, WI

LOCATION.--42°36'27", long 88°36'19", in SW 1/4 NE 1/4 sec.28, T.2 N., 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 mi², of which 2.3 mi² is non-contributing.

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 National Geodetic Vertical Datum of 1929. Prior to Sept. 5, 1989, staff gage at bridge on North Shore Drive at same datum.

REMARKS.--Estimated daily gage heights: Nov. 5-16. Records good except estimated daily gage heights, which are fair. Lake was ice covered from Dec. 7 to Mar. 13. Lake levels controlled by Town of Delavan. Lake drawn down during 1990 water year for rehabilitation project. On Nov. 16 when lake was drawn down about 9.2 ft below normal summer level, springflow entering at the west end of the lake at latitude 42°35'33" and longitude 88°38'53" was measured at 0.46 ft³/s at 1615 hours.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height observed, 5.85 ft, Sept. 30, 1986; minimum daily, -4.44 ft Nov. 6, 1989.

EXTREMES FOR CURRENT YEAR.--Maximum daily gage height, 3.42 ft, Aug. 25-30; minimum daily, -4.44 ft, Nov. 6.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.47	-4.25	-4.25	-4.17	-3.33	-2.31	-.05	.67	2.38	3.14	3.31	3.40
2	1.24	-4.34	-4.25	-4.17	-3.26	-2.29	.01	.68	2.39	3.15	3.30	3.40
3	1.01	-4.42	-4.25	-4.16	-3.20	-2.26	.04	.67	2.40	3.15	3.28	3.39
4	.78	-4.43	-4.27	-4.09	-3.17	-2.23	.05	.75	2.39	3.16	3.27	3.38
5	.57	-4.43	-4.26	-4.06	-3.13	-2.20	.07	.86	2.38	3.16	3.27	3.37
6	.36	-4.44	-4.26	-4.03	-3.11	-2.19	.09	.90	2.40	3.15	3.26	3.37
7	.14	-4.36	-4.26	-4.02	-3.08	-2.17	.09	.92	2.40	3.13	3.24	3.35
8	-.09	-4.31	-4.26	-4.01	-3.01	-2.11	.09	.94	2.41	3.12	3.23	3.34
9	-.32	-4.31	-4.26	-4.00	-2.88	-1.87	.10	.96	2.42	3.12	3.22	3.33
10	-.55	-4.31	-4.26	-3.97	-2.81	-1.63	.17	1.23	2.42	3.12	3.20	3.32
11	-.77	-4.30	-4.26	-3.94	-2.76	-1.37	.19	1.49	2.42	3.11	3.19	3.32
12	-.98	-4.30	-4.25	-3.94	-2.72	-1.11	.20	1.59	2.42	3.09	3.19	3.31
13	-1.20	-4.26	-4.26	-3.94	-2.68	-.91	.21	1.67	2.42	3.07	3.18	3.30
14	-1.41	-4.27	-4.25	-3.93	-2.65	-.68	.29	1.71	2.53	3.05	3.17	3.30
15	-1.61	-4.25	-4.24	-3.92	-2.60	-.51	.32	1.74	2.60	3.06	3.15	3.30
16	-1.83	-4.25	-4.24	-3.91	-2.57	-.41	.34	1.84	2.63	3.08	3.15	3.28
17	-2.06	-4.27	-4.24	-3.82	-2.56	-.36	.35	1.90	2.69	3.08	3.15	3.26
18	-2.28	-4.28	-4.24	-3.76	-2.53	-.33	.36	1.92	2.72	3.08	3.20	3.24
19	-2.50	-4.27	-4.23	-3.74	-2.52	-.31	.36	1.97	2.72	3.09	3.28	3.24
20	-2.70	-4.25	-4.23	-3.72	-2.51	-.29	.44	2.13	2.76	3.18	3.36	3.23
21	-2.88	-4.26	-4.22	-3.69	-2.49	-.27	.51	2.20	2.76	3.20	3.39	3.24
22	-3.03	-4.27	-4.22	-3.67	-2.47	-.23	.54	2.24	2.79	3.20	3.40	3.24
23	-3.17	-4.27	-4.23	-3.65	-2.43	-.19	.57	2.26	2.87	3.20	3.41	3.22
24	-3.30	-4.27	-4.22	-3.59	-2.39	-.18	.59	2.28	2.89	3.20	3.41	3.20
25	-3.41	-4.28	-4.21	-3.48	-2.37	-.16	.60	2.31	2.90	3.20	3.42	3.17
26	-3.52	-4.27	-4.21	-3.45	-2.35	-.16	.61	2.34	2.91	3.19	3.42	3.17
27	-3.66	-4.26	-4.21	-3.43	-2.35	-.15	.62	2.37	2.92	3.17	3.42	3.17
28	-3.80	-4.23	-4.21	-3.41	-2.34	-.14	.64	2.38	2.94	3.17	3.42	3.16
29	-3.93	-4.24	-4.20	-3.39	---	-.12	.65	2.38	3.05	3.29	3.42	3.16
30	-4.05	-4.24	-4.19	-3.37	---	-.09	.67	2.38	3.12	3.32	3.42	3.15
31	-4.15	---	-4.17	-3.35	---	-.08	---	2.38	---	3.32	3.41	---
MEAN	-1.67	-4.30	-4.24	-3.80	-2.72	-.95	.32	1.68	2.63	3.15	3.29	3.28
MAX	1.47	-4.23	-4.17	-3.35	-2.34	-.08	.67	2.38	3.12	3.32	3.42	3.40
MIN	-4.15	-4.44	-4.27	-4.17	-3.33	-2.31	-.05	.67	2.38	3.05	3.15	3.15

WTR YR 1990 MEAN -2.26 MAX 3.42 MIN -4.44

05431022 DELAVAN LAKE OUTLET AT BORG ROAD NEAR DELAVAN, WI

LOCATION.--Lat 42°36'53", long 88°37'29", in SW 1/4 SE 1/4 sec.20, T.2 N., R.16 E., Walworth County, Hydrologic Unit 07090001, on right bank 25 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 mi², of which 2.3 mi² 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 920 ft, from topographic map

REMARKS.--Estimated daily discharges: None except for ice period listed in rating table below. Records good except for Nov. 4-13 and intermittent flows after Nov. 13, which are poor. Flow regulated by dam upstream from station. October and November flows are artificially high because of lake rehabilitation to draw down Delavan Lake. Draw down ended Nov. 3 and no outflow from the lake after Nov. 13. Intermittent flows after Nov. 13 are from the drainage area between the dam and the gage.

AVERAGE DISCHARGE.--7 years, 21.0 ft³/s, 7.17 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 228 ft³/s Oct. 1, 1986, gage height, 7.92 ft; minimum daily discharge, no flow June 21-22, 1989, and many days during the 1990 water year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 172 ft³/s Oct. 1-2, gage height, 7.77 ft; minimum daily discharge, no flow on many days.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Shifting-control method used Oct. 14 to Nov. 8; stage-discharge relation affected by ice Dec. 5 to Mar. 11.)

4.90	0.00	5.30	3.0	6.50	47
4.92	.01	5.40	5.3	7.00	74
5.00	.05	5.50	8.1	7.50	122
5.10	.35	6.00	26	8.00	202
5.20	1.4				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	163	64	.00	.00	5.0	.00	.00	.00	.00	.28	.00	.00
2	162	59	.00	.00	3.0	2.8	.00	.00	.00	.16	.00	.00
3	159	52	.00	.00	.04	2.5	.00	.00	.00	.03	.00	.00
4	157	11	.00	.50	.00	.00	.00	.00	.00	.02	.00	.00
5	158	2.7	.00	.20	.05	.00	.00	.00	.00	.00	.00	.00
6	154	2.1	.00	1.5	2.0	.00	.00	.00	.00	.00	.00	.00
7	148	2.6	.00	1.0	2.1	.00	.00	.00	.00	.00	.00	.00
8	154	1.0	.00	.70	4.2	3.0	.00	.00	.00	.00	.00	.00
9	157	.53	.00	1.7	.12	1.5	.00	.00	.00	.00	.00	.00
10	153	.38	.00	1.3	.00	2.0	.00	.12	.00	.00	.00	.00
11	149	.25	.00	.30	.00	.50	.00	.01	.00	.00	.00	.00
12	148	.12	.00	.00	.00	.06	.00	.01	.00	.00	.00	.00
13	156	.03	.00	.00	.00	.05	.00	.00	.00	.00	.00	.00
14	151	.00	.00	.00	.00	.05	.00	.00	.00	.00	.00	.00
15	143	.00	.00	.00	.00	.04	.00	.00	.00	.00	.00	.00
16	147	.00	.00	.02	.00	.04	.00	.00	.00	.00	.00	.00
17	145	.00	.00	1.0	.00	.03	.00	.00	.00	.00	.00	.00
18	142	.00	.00	.01	.00	.01	.00	.00	.00	.00	.00	.01
19	137	.00	.00	.00	.00	.00	.00	.03	.00	.00	.00	.10
20	125	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	.17
21	112	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.21
22	99	.00	.00	.00	1.5	.00	.00	.00	.00	.00	.00	.09
23	87	.00	.00	.50	1.8	.00	.00	.00	.00	.00	.00	.00
24	81	.00	.00	.80	.00	.00	.00	.00	.00	.00	.00	.03
25	80	.00	.00	.20	.00	.00	.00	.00	.00	.00	.00	.00
26	78	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01	.00
27	94	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01	.00
28	89	.00	.00	.00	.00	.00	.00	.00	.00	.00	.17	.00
29	81	.00	.00	.00	---	.00	.00	.00	.21	.10	1.0	.00
30	74	.00	.00	.00	---	.00	.00	.00	.20	.19	.00	.00
31	68	---	.00	.00	---	.00	---	.00	---	.01	.00	---
TOTAL	3951	195.71	0.00	9.73	19.81	12.58	0.00	0.18	0.41	0.79	1.19	0.61
MEAN	127	6.52	.000	.31	.71	.41	.000	.006	.014	.025	.038	.020
MAX	163	64	.00	1.7	5.0	3.0	.00	.12	.21	.28	1.0	.21
MIN	68	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
CFSM	3.03	.15	.00	.01	.02	.01	.00	.00	.00	.00	.00	.00
IN.	3.49	.17	.00	.01	.02	.01	.00	.00	.00	.00	.00	.00

CAL YR 1989 TOTAL 9247.91 MEAN 25.3 MAX 174 MIN .00 CFSM .60 IN. 8.17
WTR YR 1990 TOTAL 4192.01 MEAN 11.5 MAX 163 MIN .00 CFSM .27 IN. 3.70

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 1983-84, October 1989 to September 30, 1990.

TOTAL-PHOSPHORUS DISCHARGE: October 1983 to current year.

INSTRUMENTATION.--Automatic pumping sampler from October to December 1983. Manual samples from January 1984 to present.

REMARKS.--Records good except for period of Nov. 14 to Sept. 30, which is poor. Samples are equal-width increment.

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 water year.

TOTAL-PHOSPHORUS CONCENTRATIONS: Maximum observed, 6.00 mg/L, Jan. 5, 1990; minimum observed, <0.01 mg/L, Mar. 9-10, 1990.

TOTAL-PHOSPHORUS DISCHARGE: Maximum daily, 432 lb, May 28, 1984; minimum daily, 0.00 lb, Aug. 9, 13, 1987, and many days during 1990 water year.

EXTREMES FOR CURRENT YEAR.--

SUSPENDED-SEDIMENT CONCENTRATIONS: Maximum observed, 50 mg/L, Jan. 5; minimum observed, 1 mg/L, Mar. 18.

SUSPENDED-SEDIMENT DISCHARGE: Maximum daily, 9.4 tons, Oct. 17-18; minimum daily, 0.00 ton on many days.

TOTAL-PHOSPHORUS CONCENTRATIONS: Maximum observed, 6.00 mg/L, Jan. 5; minimum observed, <0.01 mg/L, Mar. 9-10.

TOTAL-PHOSPHORUS DISCHARGE: Maximum daily, 75.6 lb, Oct. 13; minimum daily, 0.00 lb, on many days.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	SEDI- MENT, SUS- PENDED (MG/L) (80154)
OCT 1989					
02...	0845	--	167	--	10
04...	1000	--	159	--	8
06...	1025	--	153	--	6
11...	0905	--	148	--	18
11...	1605	--	148	0.090	--
11...	1610	--	148	--	20
26...	1530	--	73	0.090	--
26...	1535	--	73	--	31
JAN 1990					
05...	0930	0.20	--	6.00	--
05...	0935	0.20	--	--	50
24...	1045	0.80	--	2.30	--
24...	1450	0.80	--	0.170	--
FEB					
09...	1425	0.12	--	1.70	--
MAR					
08...	1445	3.0	--	1.90	--
08...	1510	3.0	--	0.560	--
09...	0857	1.5	--	0.020	--
09...	1415	1.5	--	<0.010	--
10...	0910	2.0	--	<0.010	--
10...	1340	2.0	--	<0.010	--
11...	0940	0.50	--	0.010	--
11...	1450	0.50	--	0.330	--
12...	0855	--	0.05	0.930	--
12...	1450	--	0.05	0.720	10
13...	0910	--	0.04	0.560	23
13...	1515	--	0.05	0.620	17
14...	0905	--	0.05	0.720	16
14...	1510	--	0.05	0.740	6
15...	0855	--	0.04	0.560	37
15...	1455	--	0.04	0.500	5
16...	1115	--	0.04	0.400	11
16...	1500	--	0.03	0.400	5
17...	0915	--	0.03	0.360	1
17...	1450	--	0.03	--	12
17...	1550	--	0.03	0.400	--
18...	0925	--	0.01	0.340	13
18...	1450	--	0.01	0.280	1
19...	0910	--	--	0.440	--
APR					
24...	1005	--	--	0.050	--
25...	0915	--	--	0.070	--

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SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

PHOSPHORUS TOTAL, POUNDS PER DAY, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

[illegible]

ROCK RIVER BASIN

05431486 TURTLE CREEK AT CARVERS ROCK ROAD NEAR CLINTON, WI

LOCATION.--Lat 42°35'50", long 88°49'45", in SW 1/4 sec.27, T.2 N., R.14 E., Rock County, Hydrologic Unit 07090001, on left bank 25 ft downstream from bridge on Carvers Rock Road, 3.3 mi northeast of Clinton, 13 mi northeast of Beloit, and 17.8 mi upstream from mouth.

DRAINAGE AREA.--199 mi², of which 2.33 mi² is noncontributing.

PERIOD OF RECORD.--September 1939 to current year.

REVISED RECORDS.--WSP 955: 1940. WSP 1308: 1950(M). WDR WI-71-1: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 823 ft, from topographic map. September 1939 to December 1979, water-stage recorder at site 1.8 mi downstream at a different datum.

REMARKS.--Estimated daily discharge: Ice periods listed in rating table below. Records good except those for estimated daily discharges, which are fair. Some seasonal regulation caused by dams used to maintain levels of Turtle and Delavan Lakes. Drawdown of Delavan Lake from Sept. 1 to Nov. 4, 1989, caused an increase in flow by 30 to 174 ft³/s during the Oct. 1 to Nov. 4 period. Flows from Nov. 5, 1989 to Sept. 30, 1990, were abnormally low because Delavan Lake was being filled and there was no outfall during this period.

AVERAGE DISCHARGE.--51 years, 123 ft³/s, 8.48 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,500 ft³/s, Apr. 21, 1973, gage height, 12.85 ft, from rating curve extended above 6,500 ft³/s on basis of slope-area measurement of peak flow; minimum discharge, 8.0 ft³/s, Dec. 29, 1956, gage height, 2.04 ft, result of freezeup.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,200 ft³/s and maximum (*):

DATE	TIME	DISCHARGE (ft ³ /s)	GAGE HEIGHT (ft)	DATE	TIME	DISCHARGE (ft ³ /s)	GAGE HEIGHT (ft)
Mar. 10	1100	*929	*6.47				

Minimum discharge, 12 ft³/s, Dec. 2 and 3, gage height, 3.00 ft, result of freezeup.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Nov. 17-20, 23-25, Nov. 29 to Dec. 5, Dec. 7-10, Dec. 12 to Jan. 22, Jan. 25 to Feb. 1, Feb. 12, and Feb. 14 to Mar. 2.)

3.2	28	5.0	374
3.5	60	6.0	726
4.0	140	7.0	1,180

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	205	126	40	43	80	54	77	59	59	125	59	45
2	198	118	35	43	116	88	94	53	60	91	55	43
3	201	111	50	44	94	132	89	48	59	77	54	43
4	207	101	52	44	76	86	83	89	58	71	59	44
5	220	82	50	45	69	70	81	176	60	66	55	40
6	229	63	44	45	76	63	75	107	75	62	51	37
7	221	61	47	45	91	59	72	82	68	59	47	36
8	215	58	45	46	233	237	70	73	63	59	46	40
9	214	53	46	50	265	747	70	73	60	57	45	40
10	216	52	45	70	173	727	83	249	53	57	44	40
11	214	50	44	60	103	532	78	328	52	55	44	41
12	211	50	44	48	68	406	71	227	51	48	46	41
13	200	50	44	47	77	368	76	199	49	46	46	41
14	201	49	43	47	50	364	110	133	106	47	43	42
15	197	54	43	48	49	281	106	105	102	52	41	45
16	192	53	43	60	48	217	92	163	74	53	40	44
17	190	47	42	170	48	184	85	134	90	53	43	45
18	191	46	42	120	48	163	77	102	91	54	61	41
19	190	46	42	60	48	142	74	109	72	55	80	47
20	188	46	41	58	48	90	108	211	70	78	135	49
21	182	47	41	58	50	77	138	142	65	75	125	51
22	170	47	40	58	52	83	111	114	62	68	80	60
23	157	45	40	58	52	86	99	103	73	62	59	53
24	146	45	39	161	52	94	91	96	73	57	49	43
25	137	45	40	66	50	97	83	94	64	55	50	39
26	128	48	40	60	50	92	77	102	67	52	49	35
27	121	48	41	54	52	82	73	97	78	51	49	39
28	128	49	41	52	52	75	71	89	70	52	48	44
29	137	44	41	48	---	75	69	84	225	117	48	44
30	139	43	42	45	---	78	66	70	221	99	49	45
31	137	---	42	43	---	76	---	63	---	68	47	---
TOTAL	5682	1777	1329	1896	2270	5925	2549	3774	2370	2021	1747	1297
MEAN	183	59.2	42.9	61.2	81.1	191	85.0	122	79.0	65.2	56.4	43.2
MAX	229	126	52	170	265	747	138	328	225	125	135	60
MIN	121	43	35	43	48	54	66	48	49	46	40	35
CFSM	.93	.30	.22	.31	.41	.97	.43	.62	.40	.33	.29	.22
IN.	1.07	.34	.25	.36	.43	1.12	.48	.71	.45	.38	.33	.24

CAL YR 1989	TOTAL 32019	MEAN 87.7	MAX 906	MIN 28	CFSM .45	IN. 6.05
WTR YR 1990	TOTAL 32637	MEAN 89.4	MAX 747	MIN 35	CFSM .45	IN. 6.16

05432055 LIVINGSTON BRANCH PECATONICA RIVER NEAR LIVINGSTON, WI

LOCATION.--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 mi².

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 1,010 ft, from topographic map.

REMARKS.--Estimated daily discharges: Ice periods listed in rating tables below. Records good except those for ice-affected periods, which are poor. Gage-height telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,260 ft³/s, June 29, 1990, basis of slope-area measurement of peak flow, gage height, 13.49 ft, from floodmark; minimum discharge, 0.81 ft³/s, Mar. 7, 1990, gage height, 2.58 ft, result of freezeup.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 6,260 ft³/s, June 29, basis of slope-area measurement of peak flow, gage height, 13.49 ft, from floodmark; minimum discharge, 0.81 ft³/s, Mar. 7, gage height, 2.58 ft, result of freezeup.

RATING TABLES (gage height, in feet, and discharge, in cubic feet per second).
(Shifting-control method used July 2 to Aug. 2; stage-discharge relation affected by ice Nov. 16 to Feb. 7 and Feb. 10 to Mar. 7.)

Oct. 1 to June 29(0245)

June 29(0246) to Sept. 30

2.6	0.96	3.5	26	3.4	3.7	4.5	56
2.7	1.9	4.0	55	3.5	5.0	5.0	107
2.9	4.6	4.5	92	3.7	9.0	5.5	171
3.1	10	5.0	138	3.9	16	6.5	366
				4.2	33	7.5	671

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.8	3.4	3.0	1.7	4.5	5.0	3.9	3.0	2.9	16	5.4	6.2
2	2.8	3.2	2.7	1.7	3.6	15	3.9	2.9	3.2	13	5.3	6.0
3	2.6	3.2	2.6	1.8	3.2	6.0	3.7	2.9	3.0	11	5.4	6.0
4	2.7	3.3	2.7	1.8	2.9	3.2	3.7	3.2	2.7	9.9	5.3	6.1
5	3.9	3.3	2.9	1.8	20	2.8	3.4	3.1	2.9	8.8	5.1	5.9
6	3.5	3.1	2.6	1.8	13	2.7	3.2	3.0	2.8	8.0	4.9	6.0
7	2.9	3.4	2.4	1.8	25	2.7	3.2	2.9	2.8	8.0	5.1	5.8
8	2.8	3.4	2.2	1.8	80	113	3.2	2.8	3.0	7.8	5.1	5.6
9	2.8	3.1	2.1	1.9	15	29	3.4	6.9	2.7	7.1	5.0	5.7
10	3.3	3.1	2.0	2.3	5.4	9.5	4.0	5.8	2.6	6.9	5.0	5.7
11	3.0	3.0	1.9	2.1	4.3	67	3.4	3.9	2.7	6.5	5.3	5.5
12	2.8	2.9	1.9	1.9	5.4	11	3.3	3.6	2.8	6.0	5.3	5.4
13	2.8	3.0	1.8	1.8	6.4	47	3.5	3.5	3.0	5.9	5.2	5.4
14	2.8	2.9	1.8	1.8	6.0	27	4.0	3.2	3.0	6.3	5.0	5.6
15	2.9	2.9	1.7	1.8	3.8	22	3.5	3.3	3.0	7.6	5.3	5.4
16	4.8	2.8	1.7	5.0	3.5	9.6	3.5	5.4	3.6	6.4	5.2	5.3
17	3.5	2.7	1.7	60	3.2	7.8	3.3	3.5	4.1	5.9	5.9	5.2
18	2.9	2.7	1.6	7.0	3.0	6.5	3.2	3.2	3.4	6.1	12	5.2
19	2.8	2.8	1.6	4.0	2.9	6.2	3.3	5.6	3.1	6.5	22	5.4
20	2.8	3.0	1.6	3.6	2.7	5.3	5.7	6.2	3.2	7.9	20	5.3
21	2.8	2.9	1.6	3.4	2.6	5.4	4.2	4.4	3.1	6.1	8.7	5.8
22	2.8	2.7	1.5	3.2	2.6	5.3	3.8	4.0	31	5.9	7.6	5.3
23	2.7	2.5	1.5	2.9	2.7	6.6	3.6	3.8	11	5.6	7.0	5.2
24	2.7	2.6	1.5	9.0	2.8	4.3	3.4	3.6	6.1	5.5	6.9	5.1
25	2.8	2.8	1.5	10	2.7	4.2	3.2	3.8	5.1	5.4	16	5.1
26	2.7	3.0	1.5	5.0	2.5	4.0	3.2	3.8	5.2	5.4	9.5	4.9
27	2.7	3.2	1.6	3.5	2.4	3.8	3.4	3.6	4.6	5.8	8.5	4.8
28	2.7	2.9	1.6	4.0	2.4	3.9	3.8	3.4	4.7	6.0	7.7	4.8
29	2.8	2.5	1.7	3.4	---	3.8	3.3	3.1	535	8.1	7.0	4.6
30	5.5	2.8	1.7	3.2	---	3.9	3.1	3.0	27	5.8	6.5	4.6
31	4.7	---	1.7	3.0	---	3.8	---	2.9	---	5.5	6.3	---
TOTAL	96.1	89.1	59.9	158.0	234.5	447.3	107.3	117.3	693.3	226.7	234.5	162.9
MEAN	3.10	2.97	1.93	5.10	8.37	14.4	3.58	3.78	23.1	7.31	7.56	5.43
MAX	5.5	3.4	3.0	60	80	113	5.7	6.9	535	16	22	6.2
MIN	2.6	2.5	1.5	1.7	2.4	2.7	3.1	2.8	2.6	5.4	4.9	4.6

CAL YR 1989 TOTAL 1997.5 MEAN 5.47 MAX 214 MIN 1.5
WTR YR 1990 TOTAL 2626.9 MEAN 7.20 MAX 535 MIN 1.5

05432055 LIVINGSTON BRANCH PECATONICA RIVER NEAR LIVINGSTON, WI--CONTINUED

WATER-QUALITY RECORDS

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

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: July 1987 to current year.

DISSOLVED OXYGEN: July 1987 to current year.

INSTRUMENTATION.--Continuous water temperature and dissolved oxygen recorder since July 17, 1987. Automatic pumping sampler since July 17, 1987.

REMARKS.--Water-quality analyses by the Wisconsin State Laboratory of Hygiene. Samples are point samples unless otherwise indicated.

EXTREMES FOR PERIOD OF RECORD.--

WATER TEMPERATURE: Maximum observed, 35.0°C, July 10, 1989; minimum observed, 0.0°C, on many days.

DISSOLVED OXYGEN: Maximum observed, 18.6 mg/L, Apr. 8, 1990; minimum observed, 0.5 mg/L, July 31, 1987.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum observed, 31.5°C, June 27; minimum observed, 0.0°C, on many days.

DISSOLVED OXYGEN: Maximum observed, 18.6 mg/L, Apr. 8; minimum observed, 1.1 mg/L, Aug. 19.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH LAB (STAND- ARD UNITS) (00403)	TUR- BID- ITY (NTU) (00076)	OXYGEN DEMAND, CHEM- ICAL (LOW LEVEL) (MG/L) (00335)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L) (00310)	HARD- NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM TOTAL RECOV- ERABLE (MG/L AS CA) (00916)	MAGNE- SIUM, TOTAL RECOV- ERABLE (MG/L AS MG) (00927)	SODIUM, TOTAL RECOV- ERABLE (MG/L AS NA) (00929)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDED (MG/L) (00530)
NOV 1989											
*29...	1510	3.1	8.1	5.8	--	--	--	--	--	--	18
JAN 1990											
17...	0015	86	7.6	130	--	--	--	--	--	--	692
17...	0215	247	7.3	240	--	--	--	--	--	--	1280
17...	0400	408	7.3	260	--	--	--	--	--	--	1410
17...	1445	122	7.3	74	--	--	--	--	--	--	456
MAR											
08...	1200	155	7.4	260	--	--	--	--	--	--	2790
08...	1230	233	7.2	320	--	--	--	--	--	--	3850
08...	1300	273	--	260	--	--	--	--	--	--	3160
08...	1400	300	7.0	270	--	--	--	--	--	--	2890
08...	2015	179	7.0	240	--	--	--	--	--	--	1970
11...	0645	57	7.6	120	--	--	--	--	--	--	1330
11...	0715	90	7.5	220	--	--	--	--	--	--	1610
11...	0815	190	7.5	400	--	--	--	--	--	--	3460
11...	0915	236	7.4	550	--	--	--	--	--	--	4200
11...	1615	55	7.4	310	--	--	--	--	--	--	1740
13...	1745	129	7.8	780	--	--	--	--	--	--	5030
13...	1800	135	7.7	1900	--	--	--	--	--	--	8910
13...	1830	158	7.6	1300	--	--	--	--	--	--	5740
13...	2000	191	7.6	1500	--	--	--	--	--	--	7300
13...	2330	108	7.4	2100	--	--	--	--	--	--	8140
14...	0015	69	7.5	2100	--	--	--	--	--	--	6920
14...	0115	44	7.4	1500	--	--	--	--	--	--	4420
14...	0415	35	7.6	730	--	--	--	--	--	--	2120
MAY											
*02...	0815	2.9	--	--	--	--	--	--	--	--	--
09...	1300	15	8.0	390	--	--	--	--	--	--	1410
JUN											
22...	0730	16	8.0	96	--	--	--	--	--	--	992
22...	0915	41	7.7	110	--	--	--	--	--	--	696
22...	0930	55	7.7	170	--	--	--	--	--	--	1340
22...	0945	57	7.6	190	--	--	--	--	--	--	1070
AUG											
20...	0300	34	8.2	--	160	>22	330	68	39	9.2	860
20...	0400	43	8.1	--	140	23	330	68	39	9.8	756
20...	1051	20	8.1	--	89	15	250	51	30	7.5	310
*20...	1052	20	7.9	--	--	--	--	--	--	--	102
*23...	1100	7.1	8.2	--	18	2.2	420	88	49	9.2	18
SEP											
*11...	1430	5.6	8.5	--	12	1.2	400	80	49	8.6	11
*24...	1505	5.2	8.3	--	18	2.8	410	83	49	8.8	7
*26...	1445	5.0	8.3	--	40	2.8	420	84	50	8.7	6

* EQUAL-WIDTH INCREMENT (EWI) SAMPLE.

05432055 LIVINGSTON BRANCH PECATONICA RIVER NEAR LIVINGSTON, WI--CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	RESIDUE FIXED NON FILTER- ABLE (MG/L) (00540)	RESIDUE VOLA- TILE, SUS- PENDE (MG/L) (00535)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA) (01007)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) (01042)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE) (01045)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) (01055)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) (01092)
NOV 1989										
29...	--	--	8.30	0.370	0.160	--	--	--	--	--
JAN 1990										
17...	592	100	--	2.70	--	--	--	--	--	--
17...	1120	160	--	3.80	--	--	--	--	--	--
17...	1210	200	--	4.00	--	--	--	--	--	--
17...	384	72	--	5.20	--	--	--	--	--	--
MAR										
08...	2450	340	--	1.80	--	--	--	--	--	--
08...	3370	480	--	2.40	--	--	--	--	--	--
08...	2790	370	--	2.60	--	--	--	--	--	--
08...	2590	300	--	2.80	--	--	--	--	--	--
08...	1710	260	--	3.30	--	--	--	--	--	--
11...	1180	150	--	2.40	--	--	--	--	--	--
11...	1380	230	--	2.90	--	--	--	--	--	--
11...	3090	370	--	2.70	--	--	--	--	--	--
11...	3700	500	--	4.20	--	--	--	--	--	--
11...	1530	210	--	4.30	--	--	--	--	--	--
13...	4600	430	--	1.60	--	--	--	--	--	--
13...	7860	1050	--	3.10	--	--	--	--	--	--
13...	5060	680	--	2.00	--	--	--	--	--	--
13...	6500	800	--	1.90	--	--	--	--	--	--
13...	7280	860	--	2.90	--	--	--	--	--	--
14...	6120	800	--	3.10	--	--	--	--	--	--
14...	3860	560	--	2.70	--	--	--	--	--	--
14...	1840	280	--	2.30	--	--	--	--	--	--
MAY										
02...	--	--	--	--	--	--	--	--	--	--
09...	1210	204	--	1.50	--	--	--	--	--	--
JUN										
22...	856	136	--	<0.100	--	--	--	--	--	--
22...	584	112	--	0.600	--	--	--	--	--	--
22...	1160	176	--	0.600	--	--	--	--	--	--
22...	906	164	--	0.500	--	--	--	--	--	--
AUG										
20...	744	116	2.40	1.40	2.93	300	<20	18000	870	200
20...	664	92	2.60	1.50	2.73	200	<20	16000	800	180
20...	262	48	2.50	1.00	1.99	100	<20	7800	400	90
20...	78	24	2.60	1.00	1.74	--	--	--	--	--
23...	11	7	7.60	<0.100	0.481	90	<20	460	98	<10
SEP										
11...	5	6	5.70	<0.100	--	80	<20	370	240	<10
24...	4	3	6.50	<0.100	0.211	80	<20	240	110	<10
26...	4	2	6.00	<0.100	0.280	90	<20	290	110	<10

DATE	TIME	ALA- CHLOR TOTAL RECOVER (UG/L) (77825)	ATRA- ZINE, TOTAL (UG/L) (39630)	CARBO- FURAN WATER WHOLE TOT. REC (UG/L) (82615)	CHLOR- PYRIFOS TOTAL RECOVER (UG/L) (38932)	CYAN- AZINE TOTAL (UG/L) (81757)	FONOFOS (DY- FONATE) WATER WHOLE TOT. REC (UG/L) (82614)	METOLA- CHLOR IN WHOLE WATER (UG/L) (39356)	PHORATE TOTAL (UG/L) (39023)	TERBU- FOS (UG/L) (82088)
MAY 1990										
*02...	0815	<0.10	0.28	<4.0	<1.0	<0.90	<0.2	<0.20	<0.20	<0.20
09...	1300	1.00	0.51	<16.0	<1.0	1.0	<0.2	2.00	<0.20	<0.20

* EQUAL-WIDTH INCREMENT SAMPLE.

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)	DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)
OCT 1989					APR 1990				
16...	1020	4.8	680	13.0	19...	1106	3.3	700	7.5
NOV					JUN				
29...	1415	2.5	810	0.5	05...	1058	2.8	660	12.5
JAN 1990					29...	1450	109	380	21.5
05...	1002	1.7	760	0.5	JUL				
FEB					24...	1406	5.5	760	23.5
21...	1355	2.5	735	0.0	SEP				
MAR					05...	1310	5.7	770	23.5
14...	1240	16	600	14.0					

05432055 LIVINGSTON BRANCH PECATONICA RIVER NEAR LIVINGSTON, WI--CONTINUED

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	21.0	10.0	15.0	9.5	6.0	7.0	---	---	---	---	---	---
2	17.0	10.0	13.5	6.0	2.5	4.5	---	---	---	---	---	---
3	14.0	7.0	10.0	3.0	1.0	2.0	---	---	---	---	---	---
4	13.5	4.5	9.0	9.0	3.0	6.0	---	---	---	---	---	---
5	11.5	9.5	10.5	11.0	7.5	9.0	---	---	---	---	---	---
6	15.0	8.5	11.0	8.5	5.5	7.0	---	---	---	---	---	---
7	13.5	5.5	9.0	8.5	7.0	7.5	---	---	---	---	---	---
8	13.5	5.0	8.5	8.5	5.5	7.0	---	---	---	---	---	---
9	12.5	5.0	8.5	5.5	2.5	4.5	---	---	---	---	---	---
10	14.0	7.5	10.5	7.5	3.0	5.0	---	---	---	---	---	---
11	17.5	8.0	12.0	8.5	4.0	5.5	---	---	---	---	---	---
12	17.5	9.5	13.5	7.5	2.0	4.5	---	---	---	---	---	---
13	18.0	8.5	13.0	10.5	3.5	7.0	---	---	---	---	---	---
14	19.5	12.0	15.5	7.0	5.0	6.0	---	---	---	---	---	---
15	22.0	14.0	17.5	5.5	2.0	4.5	---	---	---	---	---	---
16	18.0	11.0	14.5	2.0	.00	1.0	---	---	---	---	---	---
17	11.0	7.0	9.0	.50	.00	.00	---	---	---	---	---	---
18	7.5	3.5	6.0	.00	.00	.00	---	---	---	---	---	---
19	7.0	4.0	5.0	.50	.00	.00	---	---	---	---	---	---
20	10.0	4.5	6.5	3.0	.00	1.0	---	---	---	---	---	---
21	12.5	4.0	7.5	1.0	.00	.50	---	---	---	---	---	---
22	12.0	3.0	7.5	.50	.00	.50	---	---	---	---	---	---
23	16.0	7.5	11.0	.50	.00	.00	---	---	---	---	---	---
24	17.5	8.0	12.5	.50	.00	.00	---	---	---	---	---	---
25	19.0	11.0	14.5	1.0	.00	.50	---	---	---	---	---	---
26	19.0	12.0	15.0	1.5	.00	.50	---	---	---	---	---	---
27	16.0	10.0	13.0	2.0	.50	1.0	---	---	---	---	---	---
28	16.5	12.5	14.0	1.0	.00	.50	---	---	---	---	---	---
29	15.0	12.5	14.0	---	---	---	---	---	---	---	---	---
30	13.5	10.5	12.5	---	---	---	---	---	---	---	---	---
31	10.0	6.5	8.5	---	---	---	---	---	---	---	---	---
MONTH	22.0	3.0	11.2	---	---	---	---	---	---	---	---	---
FEBRUARY			MARCH			APRIL			MAY			
1	---	---	---	.50	.00	.00	12.5	5.0	8.5	20.5	7.5	13.5
2	---	---	---	1.0	.00	.00	6.5	2.5	4.0	23.5	7.0	15.0
3	---	---	---	.50	.00	.00	15.0	1.0	7.0	18.0	9.0	13.5
4	---	---	---	1.0	.00	.00	15.5	6.0	9.5	12.0	7.5	10.5
5	---	---	---	.50	.00	.00	12.0	2.5	7.0	21.5	5.5	12.5
6	---	---	---	3.0	.00	.50	8.5	.50	3.5	24.5	8.5	16.0
7	---	---	---	.00	.00	.00	13.0	.00	5.0	25.5	10.5	17.5
8	---	---	---	.50	.00	.00	17.0	2.5	9.5	24.0	13.5	18.0
9	---	---	---	3.0	.50	1.5	11.5	7.5	9.5	17.0	10.0	14.0
10	1.5	.00	.50	4.0	1.0	2.5	13.5	6.0	8.5	12.5	7.0	9.5
11	.50	.00	.00	3.5	1.5	2.5	10.5	2.0	5.5	21.5	4.0	12.5
12	4.0	.00	1.5	15.5	3.5	9.5	12.5	.00	5.5	14.0	9.5	12.0
13	3.0	.00	1.0	15.0	8.5	11.5	9.5	2.0	6.0	24.0	6.0	14.5
14	.00	.00	.00	14.0	11.0	12.5	17.0	5.0	10.0	20.5	12.0	15.0
15	.00	.00	.00	12.0	7.0	10.0	19.0	7.0	12.0	15.0	12.5	13.5
16	.00	.00	.00	10.0	5.0	7.0	10.5	4.5	7.5	19.5	12.5	15.0
17	.00	.00	.00	6.0	3.0	4.5	15.0	1.5	7.5	14.0	9.5	12.0
18	.00	.00	.00	6.5	1.0	3.0	18.0	1.5	9.0	---	---	---
19	.50	.00	.00	7.5	.50	3.0	12.0	6.5	9.0	---	---	---
20	.50	.00	.00	10.0	.50	4.5	15.0	9.5	11.5	12.0	9.5	10.5
21	.50	.00	.00	11.5	3.5	7.0	22.0	10.0	15.0	17.0	9.0	12.5
22	.50	.00	.00	8.5	3.0	6.5	23.0	9.0	15.5	24.5	8.5	16.0
23	1.0	.00	.00	6.5	.50	2.5	25.0	12.5	18.0	21.0	13.0	16.5
24	.00	.00	.00	9.5	.50	4.0	26.0	15.5	20.0	21.5	13.0	17.0
25	.00	.00	.00	10.0	.50	4.5	27.0	15.0	20.5	16.5	14.0	15.0
26	.00	.00	.00	12.0	.50	5.0	25.0	6.0	19.5	17.5	13.5	15.0
27	.50	.00	.00	12.5	.50	5.5	24.5	15.0	19.0	26.0	12.0	18.0
28	.50	.00	.00	9.5	1.5	5.5	17.5	11.5	15.5	28.0	15.0	21.0
29	---	---	---	7.5	4.5	6.0	22.0	9.0	15.5	28.0	14.0	20.5
30	---	---	---	8.5	2.5	5.5	19.0	9.5	14.5	27.0	11.0	18.5
31	---	---	---	10.0	2.0	6.0	---	---	---	27.5	11.5	19.0
MONTH	---	---	---	15.5	.00	4.2	27.0	.00	10.9	---	---	---

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

[illegible]

ROCK RIVER BASIN

05432055 LIVINGSTON BRANCH PECATONICA RIVER NEAR LIVINGSTON, WI--CONTINUED

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY				MARCH			APRIL			MAY		
1	---	---	---	---	---	---	16.9	10.0	12.2	14.5	7.6	10.7
2	---	---	---	---	---	---	17.1	10.7	13.7	14.8	6.8	10.7
3	---	---	---	---	---	---	17.7	9.8	13.8	14.8	6.8	10.2
4	---	---	---	---	---	---	17.7	9.5	12.6	13.3	7.4	10.2
5	---	---	---	---	---	---	17.0	9.5	13.0	14.2	6.8	10.6
6	---	---	---	---	---	---	17.1	10.6	13.9	13.4	5.8	9.4
7	---	---	---	---	---	---	18.0	10.5	14.1	11.7	5.2	8.1
8	---	---	---	---	---	---	18.6	8.5	13.3	10.8	4.9	7.3
9	---	---	---	---	---	---	17.9	8.5	12.0	---	---	---
10	---	---	---	---	---	---	17.1	9.3	12.4	9.4	7.1	8.3
11	---	---	---	---	---	---	17.7	9.8	13.6	10.7	5.5	8.3
12	---	---	---	---	---	---	17.8	10.2	13.8	9.7	5.5	7.9
13	---	---	---	---	---	---	17.8	10.1	13.2	11.1	5.3	8.6
14	---	---	---	---	---	---	18.2	9.1	13.4	9.9	5.6	7.8
15	---	---	---	---	---	---	18.5	8.9	12.9	10.3	6.3	8.1
16	---	---	---	---	---	---	16.2	9.0	12.4	8.1	5.9	7.3
17	---	---	---	---	---	---	16.6	10.1	13.2	10.5	6.3	8.7
18	---	---	---	---	---	---	16.8	9.2	12.8	---	---	---
19	---	---	---	---	---	---	15.7	9.2	11.9	---	---	---
20	---	---	---	---	---	---	11.9	7.6	9.8	8.8	7.2	8.2
21	---	---	---	12.2	9.7	11.0	14.2	6.8	9.8	10.5	7.5	9.0
22	---	---	---	11.9	9.9	10.8	14.2	6.6	9.8	11.3	5.9	8.8
23	---	---	---	13.6	11.7	12.6	12.6	5.5	8.7	10.7	6.1	8.1
24	---	---	---	13.8	11.2	12.4	11.2	5.3	7.8	11.7	6.3	8.5
25	---	---	---	13.5	11.0	12.2	11.8	5.2	7.9	10.1	6.4	8.2
26	---	---	---	13.5	10.8	12.2	11.8	5.2	7.6	10.9	7.5	8.9
27	---	---	---	13.8	10.5	12.2	12.3	5.4	8.0	12.5	5.7	9.1
28	---	---	---	14.1	10.6	12.2	12.5	5.8	8.6	12.9	5.3	8.6
29	---	---	---	14.2	10.5	12.1	14.1	6.4	10.1	13.3	5.4	8.9
30	---	---	---	16.0	10.9	12.9	14.2	6.4	10.2	13.9	5.8	9.5
31	---	---	---	16.3	10.1	13.0	---	---	---	14.4	5.4	9.6
MONTH	---	---	---	---	---	---	18.6	5.2	11.5	---	---	---
JUNE				JULY			AUGUST			SEPTEMBER		
1	14.4	4.7	8.8	8.9	6.9	7.9	12.2	6.4	9.0	12.8	5.7	8.5
2	11.5	4.5	7.8	9.3	6.9	8.3	13.0	6.2	9.1	11.8	5.7	8.2
3	13.9	7.1	10.6	9.3	6.3	8.1	12.9	5.8	8.5	12.5	6.1	8.6
4	16.2	6.3	11.5	9.6	6.2	7.7	12.1	5.6	8.2	11.6	5.0	7.9
5	13.2	6.3	9.3	11.0	6.2	8.3	12.0	5.8	8.5	10.8	4.9	6.9
6	16.2	6.2	11.1	12.2	6.6	9.2	12.5	6.6	9.1	9.9	4.3	6.6
7	16.0	5.8	9.6	12.8	7.4	9.5	13.1	6.2	9.1	9.9	4.1	6.5
8	15.4	5.2	9.7	12.7	6.1	9.1	12.8	6.0	8.8	---	---	---
9	15.8	4.8	9.8	12.5	6.0	8.9	12.9	5.7	8.7	---	---	---
10	15.9	3.9	9.5	12.6	6.7	8.7	12.8	5.6	8.4	---	---	---
11	13.9	3.8	8.7	12.7	6.6	9.2	12.6	5.6	8.0	---	---	---
12	14.1	3.4	8.3	12.9	6.6	9.1	13.1	6.0	8.6	---	---	---
13	12.3	3.4	6.8	13.4	6.8	9.7	13.0	6.2	8.8	---	---	---
14	14.4	3.3	7.9	12.7	6.8	9.2	13.5	5.9	9.1	---	---	---
15	14.0	3.3	7.5	---	---	---	13.7	5.5	8.6	---	---	---
16	10.9	4.2	6.7	---	---	---	13.5	5.3	8.3	---	---	---
17	11.9	3.8	8.0	12.7	5.5	8.5	10.8	5.4	7.2	---	---	---
18	13.0	3.5	7.8	11.4	5.5	7.7	6.4	4.4	5.6	---	---	---
19	13.9	3.4	7.3	10.3	6.0	7.5	5.7	1.1	3.9	---	---	---
20	14.8	4.3	8.9	9.5	5.6	7.2	5.0	2.0	4.3	---	---	---
21	14.6	4.2	9.1	10.7	5.7	8.0	7.2	4.7	6.1	---	---	---
22	7.4	4.7	5.7	11.3	6.6	8.5	8.5	5.9	7.1	---	---	---
23	8.2	5.4	6.9	12.0	6.6	9.0	9.4	6.0	7.5	---	---	---
24	10.5	5.3	7.9	12.6	6.6	9.1	10.1	6.1	7.5	---	---	---
25	11.6	5.2	8.2	13.0	6.5	9.2	6.6	4.1	5.3	---	---	---
26	11.7	4.8	7.8	13.2	6.6	9.2	8.4	4.5	6.1	---	---	---
27	12.1	4.6	7.3	12.4	6.9	9.1	9.1	5.1	6.7	11.7	5.4	7.9
28	---	---	---	12.9	6.4	9.1	9.9	5.2	7.0	10.5	4.8	7.1
29	7.6	4.6	6.7	8.9	5.7	7.4	10.9	5.6	7.8	10.4	6.3	8.1
30	8.4	6.6	7.6	11.1	5.9	8.1	11.7	5.8	8.3	12.3	7.3	9.4
31	---	---	---	11.9	6.2	8.7	12.1	5.9	8.5	---	---	---
MONTH	---	---	---	---	---	---	13.7	1.1	7.7	---	---	---

05432055 LIVINGSTON BRANCH PECATONICA RIVER NEAR LIVINGSTON, WI--CONTINUED

PRECIPITATION QUANTITY

PERIOD OF RECORD.--July 1987 to current year (during non-freezing periods).

GAGE.--Micrologger.

REMARKS.--Records good. May have been more than 5.25 in. of rain on June 29. Rain gage was full and overflowed; 7.25 in. of rain was recorded at the National Weather Service rain gage at Darlington, WI, approximately 20 mi southeast of the gage.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily rainfall, 5.25 in. June 29, 1990.

EXTREMES FOR CURRENT YEAR.--Maximum daily rainfall, 5.25 in. June 29.

RAINFALL ACCUMULATED (INCHES), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	---	---	---	---	---	.00	.05	.00	.00	.00
2	.00	.00	---	---	---	---	---	.00	.16	.00	.00	.00
3	.00	.00	---	---	---	---	---	.00	.00	.00	.03	.00
4	.00	.01	---	---	---	---	---	.24	.00	.00	.00	.00
5	.91	.01	---	---	---	---	---	.00	.12	.08	.00	.00
6	.00	.06	---	---	---	---	---	.01	.01	.00	.00	.00
7	.00	.21	---	---	---	---	---	.00	.23	.02	.00	.00
8	.00	.00	---	---	---	---	---	.00	.00	.01	.00	.00
9	.23	.05	---	---	---	---	---	1.39	.00	.00	.00	.00
10	.00	.00	---	---	---	---	---	.28	.00	.04	.00	.00
11	.01	.00	---	---	---	---	---	.00	.00	.00	.12	.00
12	.00	.00	---	---	---	---	---	.02	.01	.05	.00	.00
13	.00	.03	---	---	---	---	---	.01	.23	.00	.00	.00
14	.00	.00	---	---	---	---	---	.00	.01	.25	.00	.00
15	.10	.00	---	---	---	---	---	.77	.00	.68	.00	.00
16	.70	.00	---	---	---	---	---	.02	.52	.00	.00	.00
17	.00	.00	---	---	---	---	---	.00	.26	.00	.99	.00
18	.00	.00	---	---	---	---	---	.00	.00	.12	.80	.00
19	.00	.00	---	---	---	---	.00	.82	.08	.43	1.51	.00
20	.01	.00	---	---	---	---	.58	.01	.01	.59	.02	.00
21	.00	.00	---	---	---	---	.01	.01	.00	.00	.00	.00
22	.00	.00	---	---	---	---	.00	.01	1.88	.00	.00	.00
23	.00	.22	---	---	---	---	.00	.00	.00	.00	.00	.00
24	.00	.21	---	---	---	---	.00	.03	.00	.00	.00	.04
25	.00	.08	---	---	---	---	.00	.27	.00	.00	.00	.05
26	.00	.00	---	---	---	---	.28	.01	.26	.00	.00	.04
27	.00	.22	---	---	---	---	.19	.00	.00	.00	.00	.00
28	.09	---	---	---	---	---	.24	.00	.20	.00	.00	.00
29	.11	---	---	---	---	---	.00	.00	5.25	.63	.00	.00
30	.80	---	---	---	---	---	.00	.00	.01	.00	.00	.00
31	.02	---	---	---	---	---	---	.00	---	.00	.00	---
TOTAL	2.98	---	---	---	---	---	---	3.90	9.29	2.90	3.47	0.13

ROCK RIVER BASIN

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 mi².

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 National Geodetic Vertical Datum of 1929.

REMARKS.--Estimated daily discharges: Ice periods listed in rating tables below. Records good except for ice-affected periods, which are fair. Gage-height telemeter at station.

AVERAGE DISCHARGE.--51 years, 185 ft³/s, 9.20 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 22,000 ft³/s, July 16, 1950, gage height, 20.71 ft, from rating curve extended above 11,000 ft³/s basis of slope-area determination of peak flow; minimum, 17 ft³/s, Nov. 29, 1966, gage height, 2.09 ft, result of freezeup; minimum gage height, 1.07 ft, Dec. 6, 1968, result of freezeup.

EXTREMES OUTSIDE OF PERIOD OF RECORD.--Flood of Feb. 21, 1937, reached a stage of 17.6 ft, from floodmarks.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,500 ft³/s and maximum (*):

DATE	TIME	DISCHARGE (ft ³ /s)	GAGE HEIGHT (ft)	DATE	TIME	DISCHARGE (ft ³ /s)	GAGE HEIGHT (ft)
Mar. 9	2000	1,620	11.47	June 29	2130	*18,300	*19.80

Minimum daily discharge, 32 ft³/s, Dec. 22.

RATING TABLES (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Nov. 22-25, Dec. 2 to Jan. 19, Jan. 26 to Feb. 11, and Feb. 24 to Mar. 3.)

Oct. 1 to June 29(0829)

June 29(0830) to Sept. 30

1.3	32	5.0	385	2.0	60	7.0	578	13.0	1,800
1.5	45	7.0	653	3.0	134	8.0	718	14.0	2,300
2.0	86	9.0	966	4.0	224	9.0	866	15.0	3,200
3.0	176	11.0	1,450	5.0	329	10.0	1,030	16.0	4,640
				6.0	448	11.0	1,200	17.0	7,100
						12.0	1,420	18.0	11,100

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DAY	OCT	NOV	DEC	JAN	FEB	MEAN VALUES		APR	MAY	JUN	JUL	AUG	SEP
						MAR	APR						
1	43	74	53	47	64	52	77	62	59	1570	87	142	
2	41	60	49	47	70	70	83	58	61	614	82	136	
3	41	55	43	48	72	180	82	57	69	303	80	129	
4	40	54	43	49	66	156	75	60	70	241	116	125	
5	44	55	44	49	60	83	74	65	60	207	110	121	
6	63	54	45	48	150	57	69	63	61	185	80	117	
7	60	56	43	48	160	57	64	59	61	166	75	114	
8	50	58	41	48	130	457	62	55	59	156	72	110	
9	47	57	40	56	300	1400	62	59	59	148	70	107	
10	47	57	39	80	170	826	72	92	52	138	70	106	
11	48	55	39	72	90	428	82	98	47	133	70	102	
12	49	52	37	62	82	612	69	77	46	126	69	99	
13	46	51	35	50	105	317	64	72	45	119	70	98	
14	46	52	35	46	65	434	72	69	54	116	68	97	
15	48	52	35	45	63	429	80	66	56	122	66	100	
16	63	51	35	60	78	310	74	129	54	119	65	97	
17	84	39	35	600	73	196	69	147	77	113	70	94	
18	67	51	34	840	66	157	66	102	77	103	510	90	
19	54	49	34	720	62	131	62	98	59	104	945	94	
20	51	54	34	209	58	116	67	138	53	121	1160	95	
21	51	51	33	128	55	111	79	140	54	128	762	95	
22	52	43	32	99	56	110	80	112	54	107	354	96	
23	49	42	33	88	58	108	69	99	148	97	252	90	
24	49	45	34	132	58	94	65	92	131	91	208	86	
25	49	50	35	360	56	89	63	88	76	87	256	85	
26	49	53	37	170	54	87	60	94	71	83	332	84	
27	48	59	40	100	52	82	61	90	75	82	241	83	
28	48	58	42	110	50	79	71	81	68	107	202	81	
29	49	44	44	74	---	79	80	74	7660	127	180	81	
30	55	59	46	72	---	79	70	67	7220	140	163	81	
31	76	---	47	70	---	77	---	62	---	101	150	---	
TOTAL	1607	1590	1216	4627	2423	7463	2123	2625	16736	6054	7035	3035	
MEAN	51.8	53.0	39.2	149	86.5	241	70.8	84.7	558	195	227	101	
MAX	84	74	53	840	300	1400	83	147	7660	1570	1160	142	
MIN	40	39	32	45	50	52	60	55	45	82	65	81	
CFSM	.19	.19	.14	.55	.32	.88	.26	.31	2.04	.72	.83	.37	
IN.	.22	.22	.17	.63	.33	1.02	.29	.36	2.28	.82	.96	.41	
CAL YR 1989	TOTAL 33476	MEAN 91.7	MAX 1800	MIN 32	CFSM .34	IN. 4.56							
WTR YR 1990	TOTAL 56534	MEAN 155	MAX 7660	MIN 32	CFSM .57	IN. 7.70							

ROCK RIVER BASIN

489

05433000 EAST BRANCH PECATONICA RIVER NEAR BLANCHARDVILLE, WI

LOCATION.--Lat 42°47'10" long 89°51'40", in SE 1/4 sec. 26, T.4 N., R.5 E., Lafayette County, Hydrologic Unit 07090003, on left bank at downstream side of bridge on State Highway 78, 1.8 mi south of Blanchardville and 4.5 mi upstream from Sawmill Creek.

DRAINAGE AREA.--221 mi².

PERIOD OF RECORD.--September 1939 to September 1986, October 1987 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 796.8 ft above National Geodetic Vertical Datum of 1929. Prior to Dec. 20, 1939, nonrecording gage at bridge 50 ft upstream at same datum.

REMARKS.--Estimated daily discharges: Ice periods listed in rating table below. Records fair except for periods of ice effect, which are poor. Gage-height telemeter at station.

AVERAGE DISCHARGE.--50 years (1940-86, 1988-90), 145 ft³/s, 8.91 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,700 ft³/s, Feb. 28, 1948, gage height, 15.74 ft; minimum, 18 ft³/s, Nov. 29, 1966.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,300 ft³/s and maximum (*):

DATE	TIME	DISCHARGE (ft ³ /s)	GAGE HEIGHT (ft)	DATE	TIME	DISCHARGE (ft ³ /s)	GAGE HEIGHT (ft)
Mar. 9	1300	1,550	12.52	June 30	0045	*2,540	*14.05

Minimum daily, 47 ft³/s, Dec. 22.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Shifting-control method used Oct. 1 to Nov. 10, Mar. 9-12, June 29 to July 2, and Aug. 18-23, 25-27; stage-discharge relation affected by ice Nov. 18-20, 23-25, Nov. 29 to Jan. 19, and Jan. 26 to Mar. 8.)

3.5	60	8.0	526
4.0	95	9.0	676
5.0	177	10.0	894
6.0	274	11.0	1,210
7.0	392	12.0	1,650
		13.0	2,520

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	67	78	74	68	76	72	87	74	77	568	81	106
2	68	75	70	68	96	100	90	73	85	190	80	103
3	67	74	66	68	76	250	87	73	111	142	80	100
4	67	74	62	70	82	94	86	77	83	126	82	99
5	71	76	62	70	84	76	85	79	80	116	81	97
6	81	76	66	70	180	72	83	77	82	108	78	96
7	73	77	62	70	90	72	81	76	80	104	77	95
8	70	79	60	70	120	300	80	74	79	104	77	93
9	69	77	58	80	240	1310	81	77	78	99	77	92
10	72	76	56	110	84	547	87	90	75	95	77	92
11	72	76	56	96	72	501	85	84	74	95	76	90
12	70	75	54	82	70	601	81	78	75	92	77	90
13	70	75	50	70	84	245	80	79	75	90	78	90
14	70	75	50	84	70	441	86	77	77	94	76	89
15	71	75	50	80	120	432	85	76	74	97	77	90
16	79	75	50	82	130	192	81	114	76	94	76	89
17	85	70	50	360	86	133	81	101	84	90	77	87
18	74	76	49	700	84	117	78	86	80	88	623	87
19	72	74	49	340	82	107	77	86	73	98	609	88
20	72	76	49	164	74	102	82	106	76	99	667	88
21	73	75	48	142	82	100	84	94	74	92	674	89
22	72	75	47	132	80	100	79	88	76	89	283	89
23	72	76	48	119	76	98	77	85	96	87	166	87
24	72	76	49	142	76	93	76	85	82	85	141	86
25	73	78	50	377	74	91	75	84	75	84	204	86
26	73	80	54	160	72	90	74	85	77	82	216	86
27	72	80	58	120	72	88	75	84	77	82	149	85
28	72	81	60	130	72	87	80	81	74	88	132	84
29	73	78	64	88	---	87	83	79	1510	89	121	84
30	75	78	66	78	---	87	77	77	1910	91	113	84
31	83	---	68	88	---	87	---	76	---	84	108	---
TOTAL	2250	2286	1755	4378	2604	6772	2443	2575	5645	3542	5533	2721
MEAN	72.6	76.2	56.6	141	93.0	218	81.4	83.1	188	114	178	90.7
MAX	85	81	74	700	240	1310	90	114	1910	568	674	106
MIN	67	70	47	68	70	72	74	73	73	82	76	84
CFSM	.33	.34	.26	.64	.42	.99	.37	.38	.85	.52	.81	.41
IN.	.38	.38	.30	.74	.44	1.14	.41	.43	.95	.60	.93	.46

CAL YR 1989 TOTAL 36912 MEAN 101 MAX 1100 MIN 47 CFSM .46 IN. 6.21
WTR YR 1990 TOTAL 42504 MEAN 116 MAX 1910 MIN 47 CFSM .53 IN. 7.15

ROCK RIVER BASIN

05434500 PECATONICA RIVER AT MARTINTOWN, WI

LOCATION.--Lat 42°30'34", long 89°47'58", in SE 1/4 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 mi².

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 National Geodetic Vertical Datum of 1929. Prior to Jan. 6, 1940, nonrecording gage at same site and datum. Auxiliary recording gage 1.2 mi downstream, at same datum, which records stage above 7.4 ft.

REMARKS.--Estimated daily discharge: Period of ice effect, Nov. 30 to Mar. 10. Records good except those for ice-affected periods, which are fair. Diurnal fluctuation at low flow caused by powerplant in Argyle, 28.2 mi upstream. Gage-height telemeter at station.

AVERAGE DISCHARGE.--51 years, 720 ft³/s, 9.46 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 15,100 ft³/s, July 1, 1969, gage height, 21.46 ft; no flow for part of Dec. 14, 1939.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,000 ft³/s and maximum (*):

DATE	TIME	DISCHARGE (ft ³ /s)	GAGE HEIGHT (ft)	DATE	TIME	DISCHARGE (ft ³ /s)	GAGE HEIGHT (ft)
July 1	1515	*12,000	*20.98	No other peak greater than base discharge.			

Minimum daily discharge, 160 ft³/s, Dec. 21-24.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	230	274	260	200	480	240	385	341	313	11400	429	680
2	226	288	250	210	520	270	385	314	313	10700	380	645
3	225	278	240	210	520	380	389	312	367	8510	357	613
4	218	271	230	210	500	520	388	317	450	6090	351	584
5	222	267	220	200	480	420	374	328	381	4370	349	562
6	238	272	230	200	540	310	365	333	356	3150	370	545
7	251	278	220	200	660	280	354	330	344	1980	340	521
8	263	280	210	200	780	580	344	315	334	1140	323	509
9	249	286	200	230	800	1800	339	314	327	797	295	493
10	240	288	200	350	940	2200	344	339	319	685	301	474
11	236	285	190	370	860	2580	365	362	310	633	291	467
12	239	284	180	300	580	2830	367	380	297	594	282	458
13	240	276	170	250	410	2730	356	370	286	559	294	443
14	231	271	170	230	380	2520	357	349	334	547	279	436
15	234	271	170	220	370	2290	368	339	338	553	280	436
16	232	269	170	230	350	2030	372	361	326	568	276	432
17	244	266	170	480	330	1610	360	431	397	538	284	427
18	273	238	170	1200	310	1090	348	500	455	504	430	421
19	274	252	170	1400	300	812	341	441	387	491	2180	414
20	259	289	170	1600	280	687	353	438	351	499	2870	414
21	251	290	160	1400	270	617	381	474	324	510	3040	417
22	250	275	160	960	270	581	386	482	323	496	3520	418
23	249	265	160	720	280	562	374	439	342	467	3480	414
24	248	286	160	660	280	537	357	401	373	432	2900	403
25	247	307	170	760	270	488	341	385	417	406	2080	391
26	247	312	170	960	260	450	328	383	373	386	1460	386
27	248	305	180	960	250	427	318	378	348	373	1250	381
28	246	285	190	760	240	405	335	372	340	364	1070	375
29	246	247	190	600	---	396	356	357	3700	439	917	368
30	250	280	190	540	---	392	355	339	6460	488	812	367
31	264	---	190	500	---	389	---	325	---	471	739	---
TOTAL	7570	8335	5910	17310	12510	31423	10785	11549	19985	59140	32229	13894
MEAN	244	278	191	558	447	1014	359	373	666	1908	1040	463
MAX	274	312	260	1600	940	2830	389	500	6460	11400	3520	680
MIN	218	238	160	200	240	240	318	312	286	364	276	367
CFSM	.24	.27	.18	.54	.43	.98	.35	.36	.64	1.85	1.01	.45
IN.	.27	.30	.21	.62	.45	1.13	.39	.42	.72	2.13	1.16	.50

CAL YR 1989 TOTAL 151798 MEAN 416 MAX 4640 MIN 160 CFSM .40 IN. 5.46
WTR YR 1990 TOTAL 230640 MEAN 632 MAX 11400 MIN 160 CFSM .61 IN. 8.30

ROCK RIVER BASIN

491

05435948 SUGAR RIVER AT RIVERSIDE ROAD NEAR VERONA, WI

LOCATION.--Lat 42°57'31", long 89°33'32", in NW 1/4 NW 1/4 sec.33, T.6 N., R.8 E., Dane County, Hydrologic Unit 07090004, at Riverside Road, 2.5 mi southwest of Verona.

DRAINAGE AREA.--80.0 mi².

PERIOD OF RECORD.--October 1989 to September 1990.

REMARKS.--Bacteria analyses by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

		DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)			
APR 1990													
09...	1200	23	570	8.4	10.0	2.0	14.2	747	128	17			
JUN 15...		0915	16	607	7.8	18.0	15	8.8	738	96	22		
JUL 19...		1150	17	602	8.0	19.0	25	11.7	739	130	21		
AUG 09...		1200	15	588	8.2	18.5	3.5	15.4	740	169	16		
		COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	ALKA-LINITY LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	SEDI-MENT, SUS-PENDED (MG/L) (80154)			
APR 1990													
09...	7200	266	51	5.00	0.770	1.0	0.420	0.390		47			
JUN 15...		4000	278	23	4.80	0.080	0.70	0.130	0.090	94			
JUL 19...		11000	275	35	4.70	0.050	0.60	0.040	0.040	23			
AUG 09...		2200	280	19	4.00	0.030	0.70	0.050	0.020	35			
		DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	ARSENIC TOTAL (UG/L AS AS) (01002)	BORON, TOTAL RECOV-ERABLE (UG/L AS B) (01022)	
DATE	TIME												
JUL 1990	19...	1150	17	2800	320	68	37	16	1.9	16	9.4	<1	<10
		CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO) (01037)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	
JUL 1990													
19...	2	1	4	300	2	110	<0.10	1	<1	<1		10	

ROCK RIVER BASIN

05435980 WEST BRANCH SUGAR RIVER NEAR MT. VERNON, WI

LOCATION.--Lat 42°54'47", long 89°37'19", in NE 1/4 NE 1/4 sec.14, T.5 N., R.7 E., Dane County, Hydrologic Unit 07090004, at State Highway 92, 2.9 mi southeast of Mt. Vernon.

DRAINAGE AREA.--32.7 mi².

PERIOD OF RECORD.--October 1989 to September 1990.

REMARKS.--Bacteria analyses by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)		
APR 1990												
09...	1100	10	641	8.6	9.5	1.4	14.6	747	131	17		
JUN 15...	1130	20	546	8.1	14.5	9.2	10.2	738	104	16		
JUL 19...	1300	14	545	8.2	15.0	1.5	10.9	739	111	16		
AUG 09...	1330	13	544	8.4	15.0	2.3	12.1	740	124	14		
DATE		COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	ALKA-LINITY LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	SEDI-MENT, SUS-PENDED (MG/L) (80154)		
APR 1990												
09...		160	273	40	4.40	0.010	<0.20	0.260	0.210	18		
JUN 15...		960	262	17	4.70	0.030	0.90	0.100	0.070	73		
JUL 19...		4000	256	12	4.10	0.010	0.60	0.040	0.040	28		
AUG 09...		430	263	11	4.20	0.020	0.60	0.030	0.020	19		
DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	STREP-TOCOCCI, FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	ARSENIC TOTAL (UG/L AS AS) (01002)	BORON, TOTAL RECOV-ERABLE (UG/L AS B) (01022)
JUL 1990												
19...	1300	14	2500	290	62	34	4.2	1.4	13	9.4	<1	<10
DATE		CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO) (01037)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	SELE-NIUM, TOTAL RECOV-ERABLE (UG/L AS SE) (01147)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)
JUL 1990												
19...	1	<1	3	270	1	30	<0.10	2	<1	<1	10	

05436500 SUGAR RIVER NEAR BRODHEAD, WI

LOCATION.--Lat 42°36'42", long 89°23'53", in SW 1/4 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 Brodhead, and 1.9 mi upstream from Sylvester Creek.

DRAINAGE AREA.--523 mi².

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-71-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 768.14 ft above National Geodetic Vertical Datum of 1929. Prior to Oct. 17, 1938, nonrecording gage at same site and datum.

REMARKS.--Estimated daily discharges: Ice periods listed in rating table below. Records good except those for periods of ice effect, which are fair. Some regulation from dam and powerplant upstream.

AVERAGE DISCHARGE.--76 years, 349 ft³/s, 9.06 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,800 ft³/s, Sept. 13, 1915, gage height, 11.4 ft from floodmarks, from rating curve extended above 7,500 ft³/s; minimum, 35 ft³/s, Sept. 19, 1959, gage height, -0.16 ft.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,300 ft³/s and maximum (*):

DATE	TIME	DISCHARGE (ft ³ /s)	GAGE HEIGHT (ft)	DATE	TIME	DISCHARGE (ft ³ /s)	GAGE HEIGHT (ft)
Mar. 11	2000	*2,090	*5.61	July 2	0200	1,310	4.02

Minimum discharge, 115 ft³/s, Nov. 24 and Dec. 3, result of freezeup.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Nov. 23, 24, 29, Dec. 2, 3, Dec. 6 to Jan. 19, and Jan. 26-31.)

0.10	123	4.0	1,310
1.0	316	6.0	2,320
2.0	592		

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	156	183	179	150	238	222	255	257	210	1100	177	191
2	169	180	190	150	263	214	264	233	211	1200	167	188
3	154	177	150	160	271	334	264	208	212	700	165	172
4	153	178	156	160	249	475	258	235	223	374	185	166
5	182	181	178	160	242	381	254	262	251	284	175	166
6	179	180	180	170	234	255	248	273	244	246	164	163
7	166	189	160	170	325	220	237	253	223	220	156	154
8	173	193	150	170	293	285	231	236	194	217	152	152
9	189	193	170	170	323	1020	230	229	223	209	162	165
10	172	190	160	170	393	1630	239	285	198	201	149	157
11	184	192	160	180	309	2030	257	385	191	198	158	155
12	168	188	150	300	239	1810	250	394	186	191	146	154
13	173	188	150	280	234	1710	239	338	185	187	143	156
14	166	185	150	230	222	1760	253	298	188	205	161	154
15	174	185	150	200	149	1600	270	277	194	233	148	155
16	178	182	150	180	184	1310	262	309	189	244	141	157
17	175	172	150	250	264	1080	224	385	202	224	137	154
18	178	152	140	360	236	707	213	398	227	200	149	152
19	176	168	140	520	229	470	234	340	207	194	213	164
20	176	199	140	674	209	378	263	336	195	211	382	160
21	177	183	130	512	211	351	270	370	190	222	482	160
22	178	181	130	296	229	334	294	347	188	207	466	161
23	183	150	130	253	233	329	273	303	194	191	471	160
24	206	140	140	284	255	313	276	278	197	182	367	155
25	205	178	140	385	202	293	243	270	185	177	282	156
26	166	194	140	470	213	278	231	266	179	177	265	145
27	160	189	150	480	225	267	219	264	183	170	251	147
28	166	182	150	390	222	259	226	253	180	174	250	145
29	172	160	150	320	---	257	259	241	595	194	227	158
30	176	142	150	260	---	258	288	226	784	203	209	150
31	180	---	150	250	---	257	---	217	---	191	192	---
TOTAL	5410	5354	4713	8704	6896	21087	7524	8966	7028	8926	6892	4772
MEAN	175	178	152	281	246	680	251	289	234	288	222	159
MAX	206	199	190	674	393	2030	294	398	784	1200	482	191
MIN	153	140	130	150	149	214	213	208	179	170	137	145
CFSM	.33	.34	.29	.54	.47	1.30	.48	.55	.45	.55	.43	.30
IN.	.38	.38	.34	.62	.49	1.50	.54	.64	.50	.63	.49	.34

CAL YR 1989 TOTAL 92493 MEAN 253 MAX 2640 MIN 130 CFSM .48 IN. 6.58
WTR YR 1990 TOTAL 96272 MEAN 264 MAX 2030 MIN 130 CFSM .50 IN. 6.85

ROCK RIVER BASIN

05437500 ROCK RIVER AT ROCKTON, IL

LOCATION.--Lat 42°26'55", long 89°04'11", in SW 1/4 NE 1/4 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 mi².

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.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 707.94 ft above National Geodetic Vertical Datum 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.--Estimated daily discharges: Dec. 4-29 and July 11-17. Water-discharge records fair except those for estimated daily discharges, which are poor. Low flow regulated by powerplant above station. U.S. Army Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--58 years (water years 1904-5, 1915-19, 1940-90), 4,059 ft³/s, 8.66 in/yr, discharge for site at Rockford adjusted for difference in drainage area.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 32,500 ft³/s, Mar. 30, 1916, gage height, 13.06 ft, site and datum then in use; minimum daily, 501 ft³/s, Sept. 14, 1958.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in February 1937 reached a stage of 14.6 ft (backwater from ice), from painted floodmark.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 11,300 ft³/s, Mar. 19, gage height, 8.19 ft; minimum daily discharge, 774 ft³/s, Oct. 17.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1460	1650	1470	1090	2800	2320	6480	2970	4580	6120	2460	4370
2	1310	1920	1500	1150	2840	2170	6360	2810	4470	6250	2080	3980
3	1060	1410	1100	1260	2780	2540	6300	2970	4110	6430	1970	3540
4	1080	1580	1100	1210	2550	2740	6070	3170	3930	6860	1980	3210
5	1420	1390	1090	1260	2470	2890	6050	3430	4250	7500	1890	3130
6	1220	1520	1080	1310	2580	3010	5770	3180	4170	8120	2040	2820
7	1190	1700	1070	1340	2750	2870	5600	2930	4040	8940	1900	2430
8	1190	1320	1050	1330	2800	2740	5300	2750	3870	9540	1650	2460
9	1190	1400	1040	1290	3360	5630	4980	2800	3380	9400	1520	2340
10	1230	1440	1030	1490	3110	7290	5260	3370	3420	8650	1510	2100
11	1230	1510	1020	1660	3160	7640	5130	4100	3160	7900	1660	1990
12	1250	1460	1000	1710	3020	8370	4890	4260	2860	6800	1630	2010
13	1230	1480	980	1850	3150	8690	4680	4350	2620	5100	1620	1560
14	1170	1570	960	1860	2920	9800	4860	4390	2860	4300	1610	1570
15	1260	1750	940	1550	2280	10600	4730	4430	3080	4000	1500	1590
16	981	1800	920	1610	2310	10600	4640	4890	2830	3600	1270	1630
17	774	1380	910	1920	2250	10800	4310	4950	2970	3400	1490	1490
18	810	1520	930	2120	2430	11000	4400	4870	3130	3130	1670	1590
19	1290	1430	926	2160	2510	11100	4120	5320	2960	3380	2770	1500
20	1670	1560	960	2660	2410	10400	4370	6000	2740	3780	5650	1530
21	1640	1340	950	3000	2370	9210	4460	6080	2430	3690	6620	1670
22	1600	1680	945	3140	2560	8590	4490	5980	2200	3340	7000	1620
23	1400	1580	930	3460	2530	8130	4360	5750	2280	2970	7040	1690
24	1360	1290	920	3270	2670	7880	4220	5650	2340	2790	6810	1500
25	1200	1390	910	3270	2180	7650	3890	5680	2390	2490	7090	1550
26	1370	1720	920	2690	2380	7390	3610	5670	2390	2120	6920	1430
27	1310	1620	940	2840	2570	7360	3420	5460	2450	2120	7050	1370
28	1440	1730	960	2810	2320	7170	3320	5280	2930	2080	7000	1420
29	1660	1780	1000	3090	---	7060	3190	5230	4780	2550	6690	1340
30	1540	935	1120	2970	---	6870	3190	5010	5890	3000	6270	1320
31	1760	---	1070	2700	---	6640	---	4820	---	2740	5370	---
TOTAL	40295	45855	31741	65070	74060	217150	142450	138550	99510	153090	113730	61750
MEAN	1300	1528	1024	2099	2645	7005	4748	4469	3317	4938	3669	2058
MAX	1760	1920	1500	3460	3360	11100	6480	6080	5890	9540	7090	4370
MIN	774	935	910	1090	2180	2170	3190	2750	2200	2080	1270	1320
CFSM	.20	.24	.16	.33	.42	1.10	.75	.70	.52	.78	.58	.32
IN.	.24	.27	.19	.38	.43	1.27	.83	.81	.58	.90	.66	.36

CAL YR 1989 TOTAL 848078 MEAN 2324 MAX 8790 MIN 756 CFSM .37 IN. 4.96
WTR YR 1990 TOTAL 1183251 MEAN 3242 MAX 11100 MIN 774 CFSM .51 IN. 6.92

05527800 DES PLAINES RIVER AT RUSSELL, IL

LOCATION.--Lat 42°29'22", long 87°55'32", 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 mi².

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 National Geodetic Vertical Datum 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.--Estimated daily discharges: Oct. 1-16, Nov. 23-25, Nov. 30 to Feb. 11, and Mar. 24-27. Water-discharge records good except those for estimated daily discharges, which are poor. Recording rain gage and gage-height telemeter at station.

AVERAGE DISCHARGE.--23 years, 96.7 ft³/s, 10.68 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,120 ft³/s, Mar. 21, 1979, gage height, 9.69 ft; maximum gage height, 10.75 ft, Mar. 6, 1976, and Sept. 27, 1986; no flow at times during several years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 852 ft³/s, Mar. 15, gage height, 8.96 ft; minimum daily discharge, 0.80 ft³/s, Oct. 8.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.96	6.6	13	3.8	66	96	84	27	122	199	66	31
2	1.0	6.2	12	3.9	78	103	83	26	105	200	44	24
3	.98	5.8	10	4.5	66	114	88	23	100	194	30	18
4	.94	6.2	12	14	63	128	95	29	84	173	23	16
5	.90	6.9	11	13	71	141	99	85	70	131	20	14
6	2.0	6.5	9.8	13	110	137	95	126	60	87	17	12
7	1.2	7.4	9.0	13	145	121	85	151	53	62	14	11
8	.80	9.2	8.3	12	152	111	75	180	48	49	13	9.6
9	1.2	10	7.9	14	160	166	67	179	43	37	11	9.2
10	1.6	11	8.8	50	166	244	76	230	37	29	9.1	9.1
11	1.3	15	8.4	68	183	317	97	288	30	24	8.3	6.8
12	2.5	14	7.2	47	197	416	99	334	24	21	7.9	6.6
13	2.0	13	6.4	30	209	572	90	386	21	18	7.7	7.2
14	2.6	12	6.0	18	193	729	89	419	43	15	7.4	7.7
15	3.2	13	5.6	14	185	824	98	415	121	15	6.0	9.1
16	2.7	17	5.2	12	183	825	104	420	171	15	5.2	12
17	3.4	19	4.9	15	156	730	105	470	203	16	4.6	14
18	2.8	18	4.6	19	132	603	96	452	215	15	58	14
19	2.0	16	4.3	27	113	480	85	406	205	23	157	12
20	3.3	15	4.0	30	98	393	77	413	183	54	200	10
21	5.8	13	3.6	26	86	337	80	411	154	78	223	11
22	8.3	12	3.3	23	85	298	88	393	143	85	241	11
23	11	11	3.2	21	106	263	92	369	164	90	250	9.1
24	11	11	3.1	23	125	230	92	343	188	76	252	6.5
25	8.3	10	3.1	31	137	180	89	320	211	51	246	3.8
26	5.5	12	3.2	28	130	150	79	300	225	35	232	2.2
27	4.4	14	3.3	41	117	121	64	277	225	26	210	2.0
28	4.0	15	4.0	47	105	99	53	249	208	20	171	1.9
29	4.3	15	3.7	48	---	90	43	217	197	39	113	1.9
30	7.3	14	3.5	45	---	86	34	182	197	78	61	1.9
31	7.8	---	4.0	53	---	85	---	149	---	84	40	---
TOTAL	115.08	354.8	196.4	807.2	3617	9189	2501	8269	3850	2039	2748.2	304.6
MEAN	3.71	11.8	6.34	26.0	129	296	83.4	267	128	65.8	88.7	10.2
MAX	11	19	13	68	209	825	105	470	225	200	252	31
MIN	.80	5.8	3.1	3.8	63	85	34	23	21	15	4.6	1.9
CFSM	.03	.10	.05	.21	1.05	2.41	.68	2.17	1.04	.53	.72	.08
IN.	.03	.11	.06	.24	1.09	2.78	.76	2.50	1.16	.62	.83	.09

CAL YR 1989 TOTAL 8467.63 MEAN 23.2 MAX 152 MIN .75 CFSM .19 IN. 2.56
WTR YR 1990 TOTAL 33991.28 MEAN 93.1 MAX 825 MIN .80 CFSM .76 IN. 10.28

ILLINOIS RIVER BASIN

05543830 FOX RIVER AT WAUKESHA, WI

LOCATION.--Lat 43°00'17", long 88°14'37", in SW 1/4 sec.3, T.6 N., R.18 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 mi².

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

GAGE.--Water-stage recorder. Datum of gage is 793.04 ft above National Geodetic Vertical Datum of 1929 (levels by city of Waukesha).

REMARKS.--Estimated daily discharge: Aug. 18 to Sept. 11 and ice period listed in rating table below. Records good except for estimated daily discharges, which are fair. There is occasional regulation from mill dam 1.0 mi upstream.

AVERAGE DISCHARGE.--27 years, 99.5 ft³/s, 10.72 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,260 ft³/s, Apr. 22, 1973, gage height, 7.42 ft; minimum, 3.0 ft³/s, Jan. 1, 1964, gage height, 1.52 ft.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,210 ft³/s, May 11, gage height, 6.32 ft; minimum daily, 23 ft³/s, Dec. 16.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Dec. 17-29.)

2.6	21	4.0	308
2.8	39	5.0	624
3.0	74	6.0	1,050
3.5	182	6.2	1,150

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	48	44	39	39	89	67	113	84	128	369	64	60
2	45	43	40	39	98	88	141	70	123	285	50	54
3	45	43	36	38	89	111	153	61	120	227	44	49
4	45	43	37	52	77	106	147	142	91	201	46	45
5	56	44	36	39	74	95	137	196	93	149	42	40
6	56	45	35	35	78	82	124	173	104	117	41	43
7	55	47	33	32	78	80	112	152	103	101	40	48
8	52	47	31	32	113	194	102	129	104	90	36	50
9	48	54	30	49	176	294	103	150	101	91	35	48
10	52	59	30	52	173	389	127	516	89	83	34	46
11	52	56	31	46	158	544	128	1060	78	72	32	45
12	49	51	32	43	142	578	120	1130	75	59	38	44
13	46	48	31	41	146	590	114	933	78	51	35	42
14	43	44	28	37	128	612	156	649	120	45	32	68
15	44	56	26	35	109	577	163	476	111	44	32	84
16	46	53	23	36	103	463	150	463	101	64	31	67
17	44	47	27	93	87	346	138	426	116	75	33	58
18	44	42	25	106	85	272	122	358	123	74	150	52
19	44	39	25	79	78	222	110	389	105	81	600	53
20	47	41	24	73	74	197	169	550	120	93	620	53
21	54	41	24	57	76	182	214	563	86	93	400	59
22	49	39	24	53	97	172	195	491	90	149	300	62
23	53	36	24	63	108	172	165	417	131	161	230	51
24	49	36	24	109	104	159	140	357	129	127	180	47
25	41	38	25	110	82	144	126	313	109	90	150	48
26	42	41	27	96	82	121	115	285	83	59	130	43
27	45	43	29	101	118	117	107	257	70	45	110	40
28	43	45	31	94	43	113	101	222	155	49	96	43
29	45	40	34	85	---	112	93	187	440	103	84	42
30	46	40	36	78	---	122	88	159	458	111	76	38
31	44	---	37	74	---	117	---	142	---	87	68	---
TOTAL	1472	1345	934	1916	2865	7438	3973	11500	3834	3445	3859	1522
MEAN	47.5	44.8	30.1	61.8	102	240	132	371	128	111	124	50.7
MAX	56	59	40	110	176	612	214	1130	458	369	620	84
MIN	41	36	23	32	43	67	88	61	70	44	31	38
CFSM	.38	.36	.24	.49	.81	1.90	1.05	2.94	1.01	.88	.99	.40
IN.	.43	.40	.28	.57	.85	2.20	1.17	3.40	1.13	1.02	1.14	.45

CAL YR 1989 TOTAL 27168 MEAN 74.4 MAX 261 MIN 23 CFSM .59 IN. 8.02
WTR YR 1990 TOTAL 44103 MEAN 121 MAX 1130 MIN 23 CFSM .96 IN. 13.02

05544200 MUKWONAGO RIVER AT MUKWONAGO, WI

LOCATION.--Lat 42°51'24", long 88°19'40", in NE 1/4 NE 1/4 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 mi².

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

REVISED RECORDS.--WDR WI-79-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 779.23 ft above National Geodetic Vertical Datum of 1929 (South-eastern Wisconsin Regional Planning Commission bench mark). Prior to Oct. 19, 1981, at datum 0.85 ft higher.

REMARKS.--Estimated daily discharges: Dec. 22 to Jan. 17, Aug. 29-31, and ice periods listed in rating table below. Records good except those for estimated daily discharges, which are fair. Discharge affected by manipulation of gates at dams 800 ft and 11.4 mi upstream.

AVERAGE DISCHARGE.--17 years, 56.9 ft³/s, 10.43 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 300 ft³/s, Mar. 5, 1976, gage height, 2.50 ft; maximum gage height, 3.55 ft, Sept. 29, 1986; minimum daily, 1.8 ft³/s, Dec. 23, 1976.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 261 ft³/s, Aug. 23, gage height, 3.40 ft; minimum daily, 10 ft³/s, Oct. 25.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Shifting-control method used Oct. 1-4 and June 27 to Sept. 1; stage-discharge relation affected by ice Nov. 18 and Dec. 20, 21.)

1.8	8	2.6	103
2.0	15	2.8	151
2.2	34	3.0	199
2.4	64	3.2	247

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	20	32	23	47	46	54	23	31	69	33	32
2	14	21	32	24	48	46	56	22	32	66	33	28
3	14	21	31	25	49	45	57	22	31	63	32	26
4	15	23	30	26	49	44	59	28	28	61	32	25
5	17	25	29	28	48	38	61	36	30	56	29	23
6	19	26	29	30	42	35	60	57	31	29	27	26
7	21	26	29	29	37	36	59	65	30	17	26	24
8	21	50	30	28	39	40	56	60	30	18	25	24
9	21	59	30	27	43	51	56	55	31	16	22	25
10	23	51	29	34	45	63	57	156	30	15	21	23
11	23	43	28	35	46	79	58	141	40	15	19	23
12	25	38	27	32	47	151	57	119	41	17	19	23
13	25	26	27	30	53	214	55	122	37	20	19	23
14	25	20	27	31	59	225	59	119	37	21	19	25
15	24	41	26	30	58	216	60	138	36	22	18	28
16	50	50	26	29	57	164	61	139	36	22	17	30
17	55	29	25	32	55	143	58	79	38	19	18	31
18	50	25	25	41	54	132	55	55	39	19	58	30
19	47	24	25	50	52	119	54	53	63	22	89	32
20	46	28	24	55	50	109	56	62	54	24	120	30
21	42	27	24	55	48	66	58	110	32	26	138	36
22	38	27	24	53	47	48	61	126	35	27	140	36
23	36	26	23	50	48	54	61	116	42	29	213	38
24	24	26	23	51	47	56	72	80	45	71	148	60
25	10	27	22	54	46	58	81	56	77	85	91	64
26	12	26	22	53	46	55	73	59	84	51	84	54
27	13	26	22	52	46	52	65	59	73	17	48	47
28	14	27	23	51	46	54	59	56	68	18	21	34
29	16	30	23	50	---	54	55	54	76	22	28	29
30	18	31	23	49	---	55	33	42	72	26	29	28
31	20	---	23	47	---	55	---	32	---	30	30	---
TOTAL	792	919	813	1204	1352	2603	1766	2341	1329	1013	1646	957
MEAN	25.5	30.6	26.2	38.8	48.3	84.0	58.9	75.5	44.3	32.7	53.1	31.9
MAX	55	59	32	55	59	225	81	156	84	85	213	64
MIN	10	20	22	23	37	35	33	22	28	15	17	23
CFSM	.34	.41	.35	.52	.65	1.13	.79	1.02	.60	.44	.72	.43
IN.	.40	.46	.41	.60	.68	1.31	.89	1.18	.67	.51	.83	.48

CAL YR 1989 TOTAL 13928 MEAN 38.2 MAX 204 MIN 10 CFSM .51 IN. 6.99
WTR YR 1990 TOTAL 16735 MEAN 45.8 MAX 225 MIN 10 CFSM .62 IN. 8.40

ILLINOIS RIVER BASIN

425425088083500 LITTLE MUSKEGO LAKE AT MUSKEGO, WI

LOCATION.--Lat 42°54'25", long 88°08'35", in SE 1/4 NW 1/4 sec.9, T.5 N., R.20 E., Waukesha County, Hydrologic Unit 07120006, at Muskego.

DRAINAGE AREA.--11.6 mi².

LAKE-STAGE RECORDS

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

GAGE.--Staff gage at lake inlet. Datum of gage is 693.40 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Lake levels controlled at dam outlet. Lake levels drawn down approximately 1.5 ft from October through April. Published previously as station number 425450088083500.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage-height observed, 99.99 ft, May 11, 1990; minimum observed, 95.97 ft, Nov. 29, 1989, due to lake draw-down.

EXTREMES FOR CURRENT YEAR.--Maximum gage-height observed, 99.99 ft, May 11; minimum observed, 95.97 ft, Nov. 29, due to lake draw-down.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	98.87	---	---	---	---	---	98.73	98.94	99.02	99.07	98.99	98.77
2	98.67	---	---	---	---	---	98.75	98.95	99.01	99.03	98.97	98.77
3	98.57	---	---	---	---	---	98.77	98.96	98.99	98.95	98.87	98.78
4	98.47	---	---	---	---	---	98.77	98.96	98.97	98.99	98.87	98.77
5	98.57	97.27	---	---	---	---	98.77	98.96	98.95	98.95	98.87	98.77
6	98.49	---	---	---	---	---	98.79	98.95	98.93	98.93	98.83	98.76
7	98.43	---	---	---	---	---	98.81	98.93	98.92	98.91	98.83	98.75
8	98.37	---	---	---	---	97.77	98.81	98.95	98.90	98.87	98.81	98.75
9	---	---	---	---	---	97.79	98.81	98.97	98.89	98.85	98.81	98.75
10	---	---	---	---	---	97.83	98.83	99.59	98.88	98.85	98.81	98.77
11	---	---	---	---	---	97.85	98.85	99.99	98.89	98.81	98.81	98.77
12	---	---	---	---	---	97.87	98.87	99.65	98.87	98.81	98.81	98.77
13	---	---	---	---	---	97.91	98.87	99.43	98.87	98.81	98.81	98.77
14	---	---	---	---	---	97.93	98.87	99.27	98.86	98.81	98.82	98.77
15	---	---	---	---	---	97.93	98.89	99.23	98.85	98.83	98.83	98.75
16	---	---	---	---	---	97.95	98.89	99.19	98.84	98.85	98.81	98.75
17	---	---	---	---	---	98.01	98.89	99.17	98.92	98.85	98.81	98.77
18	---	---	---	---	---	98.05	98.89	99.11	98.89	98.83	99.27	98.77
19	---	---	---	---	---	98.09	98.91	99.09	98.89	98.83	99.52	98.79
20	---	---	---	---	---	98.17	98.89	99.07	98.89	98.83	99.32	98.79
21	---	---	---	---	---	98.27	98.91	99.06	98.87	98.85	99.17	98.79
22	---	---	---	---	---	98.33	98.93	99.07	98.87	98.83	98.96	98.79
23	97.31	---	---	---	---	98.39	98.95	99.07	98.85	98.83	98.93	98.77
24	97.31	96.47	---	---	---	98.47	98.95	99.07	98.83	98.85	98.89	98.77
25	97.27	96.37	---	---	---	98.57	98.95	99.06	98.83	98.83	98.86	98.75
26	---	96.27	---	---	---	98.58	98.95	99.07	98.85	98.85	98.83	98.75
27	---	96.17	---	---	---	98.63	98.93	99.05	98.85	98.86	98.81	98.75
28	---	96.07	---	---	---	98.63	98.95	99.05	98.91	98.93	98.81	98.75
29	---	95.97	---	---	---	98.63	98.95	99.03	99.05	98.99	98.80	98.78
30	---	---	---	---	---	98.65	98.94	99.03	99.07	99.03	98.79	98.78
31	---	---	---	---	---	98.69	---	99.03	---	99.01	98.79	---
MAX	98.87	97.27	---	---	---	98.69	98.95	99.99	99.07	99.07	99.52	98.79
MIN	97.27	95.97	---	---	---	97.77	98.73	98.93	98.83	98.81	98.79	98.75

425425088083500 LITTLE MUSKEGO LAKE AT MUSKEGO, WI--CONTINUED

WATER-QUALITY RECORDS

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

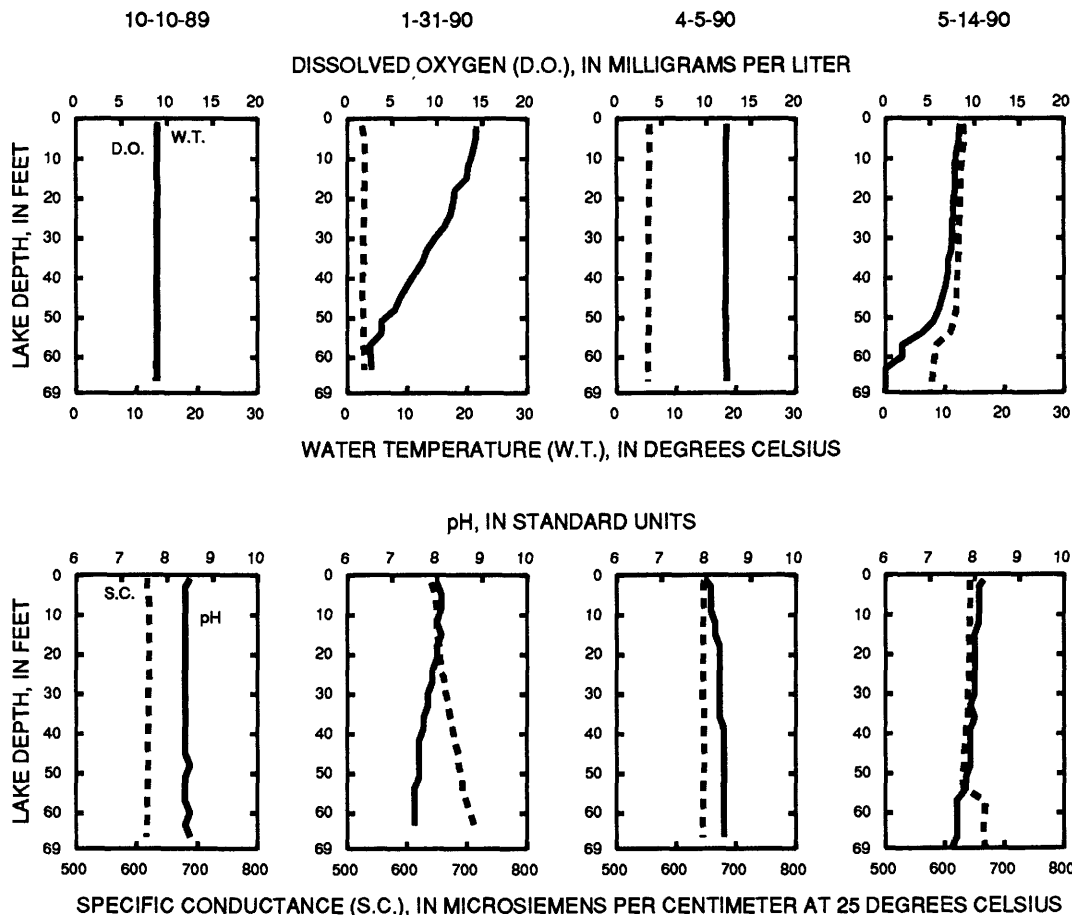
REVISIONS.--The labels for dissolved oxygen and water temperature for the plot of 2-24-87 are reversed. Dissolved oxygen is the solid line and water temperature is the dashed line.

REMARKS.--Lake sampled about 1,000 ft north-northwest of dam outlet at an approximate lake depth of 65 ft. An aeration system in the lake may disrupt the physical and chemical measurements in the lake. Water-quality analyses by Wisconsin State Laboratory of Hygiene. January sampling during ice cover. Published previously as station number 425450088083500.

WATER-QUALITY DATA, OCTOBER 10, 1989 TO MAY 14, 1990
(Milligrams per liter unless otherwise indicated)

	Oct. 10		Jan. 31		Apr. 05		May 14		
Depth of sample (ft)	1.5	65	1.5	63	1.5	65	1.5	55	69
Lake stage (ft)	98.17		---		98.90		99.33		
Specific conductance (μS/cm)	617	616	641	711	646	646	642	632	668
pH (units)	8.4	8.5	8.0	7.5	8.0	8.4	8.2	7.8	7.5
Water temperature (°C)	13.5	13.1	2.4	2.8	5.5	5.2	13.1	10.9	7.7
Color (Pt-Co. scale)	---	---	---	---	15	20	---	---	---
Turbidity (NTU)	---	---	---	---	2.2	2.4	---	---	---
Secchi-depth (meters)	1.2		1.4		1.4		1.3		
Dissolved oxygen	8.9	8.9	14.4	2.7	12.3	12.3	8.4	4.1	0.0
Hardness, as CaCO ₃	---	---	---	---	260	260	---	---	---
Calcium, dissolved (Ca)	---	---	---	---	48	49	---	---	---
Magnesium, dissolved (Mg)	---	---	---	---	34	34	---	---	---
Sodium, dissolved (Na)	---	---	---	---	40	40	---	---	---
Potassium, dissolved (K)	---	---	---	---	2.7	2.6	---	---	---
Alkalinity, as CaCO ₃	---	---	---	---	193	194	---	---	---
Sulfate, dissolved (SO ₄)	---	---	---	---	39	39	---	---	---
Fluoride, dissolved (F)	---	---	---	---	0.12	0.12	---	---	---
Chloride, dissolved (Cl)	---	---	---	---	74	74	---	---	---
Silica, dissolved (SiO ₂)	---	---	---	---	3.2	3.2	---	---	---
Solids, dissolved, at 180°C	---	---	---	---	376	376	---	---	---
Nitrogen, NO ₂ + NO ₃ , diss. (as N)	<0.02	<0.02	---	---	0.30	0.30	---	---	---
Nitrogen, ammonia, dissolved (as N)	0.04	0.05	---	---	0.18	0.17	---	---	---
Nitrogen, amm. + org., total (as N)	0.9	0.9	---	---	0.9	1.0	---	---	---
Phosphorus, total (as P)	0.039	0.040	0.050	0.100	1/0.044	0.041	0.045	0.043	0.114
Phosphorus, ortho, dissolved (as P)	0.004	0.005	0.006	0.056	0.003	0.004	0.011	0.017	0.066
Iron, dissolved (Fe) μg/L	---	---	---	---	<50	<50	---	---	---
Manganese, dissolved (Mn) μg/L	---	---	---	---	<40	<40	---	---	---
Chlorophyll a, phytoplankton (μg/L)	27	---	5.0	---	25	---	5.0	---	---

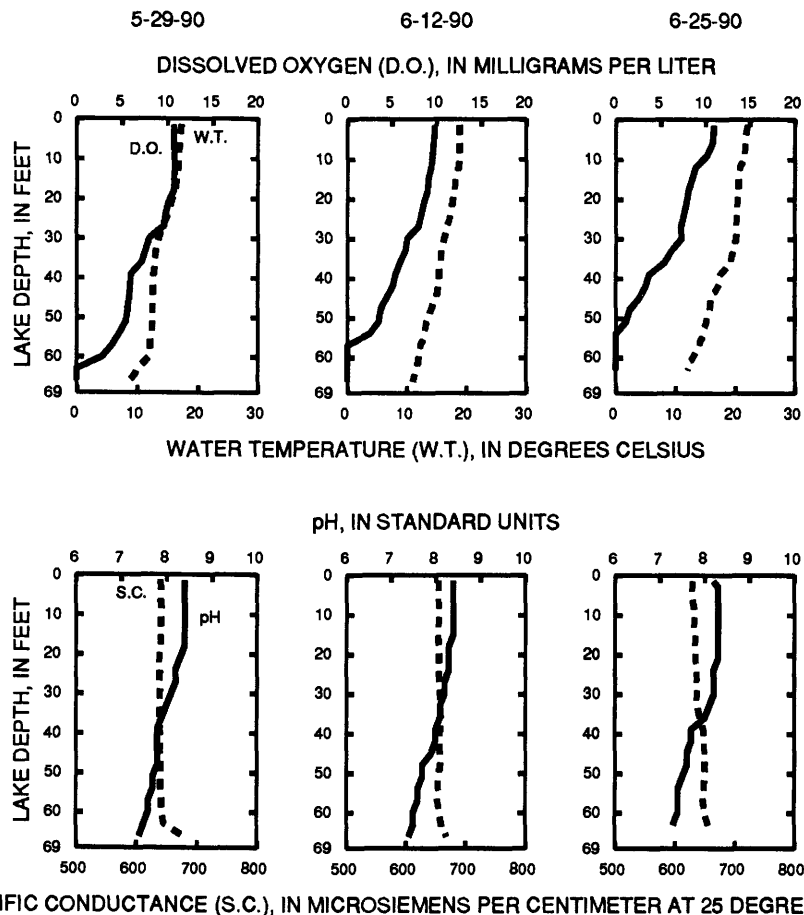
1/ Duplicate sample concentration 0.050 mg/L.



425425088083500 LITTLE MUSKEGO LAKE AT MUSKEGO, WI--CONTINUED

WATER-QUALITY DATA, MAY 29 TO JUNE 25, 1990
(Milligrams per liter unless otherwise indicated)

	May 29			June 12			June 25		
Depth of sample (ft)	1.5	63	67	1.5	48	66	1.5	39	63
Lake stage (ft)		98.93			98.83			98.87	
Specific conductance ($\mu\text{S}/\text{cm}$)	639	646	675	655	658	668	630	648	655
pH (units)	8.4	7.5	7.4	8.4	7.7	7.4	8.2	7.7	7.3
Water temperature ($^{\circ}\text{C}$)	17.3	10.2	8.9	18.9	14.0	11.1	22.1	17.5	12.1
Secchi-depth (meters)		1.2			1.3			1.2	
Dissolved oxygen	10.7	0.0	0.0	9.8	3.7	0.0	10.9	3.7	0.0
Phosphorus, total (as P)	0.027	0.195	0.051	0.026	0.039	0.280	0.035	0.044	0.220
Phosphorus, ortho, dissolved (as P)	0.011	0.153	0.025	0.004	0.019	0.218	0.006	0.026	0.190
Chlorophyll a, phytoplankton ($\mu\text{g}/\text{L}$)	12	---	---	11	---	---	35	---	---



425425088083500 LITTLE MUSKEGO LAKE AT MUSKEGO, WI--CONTINUED

WATER-QUALITY DATA, JULY 12 TO AUGUST 14, 1990
(Milligrams per liter unless otherwise indicated)

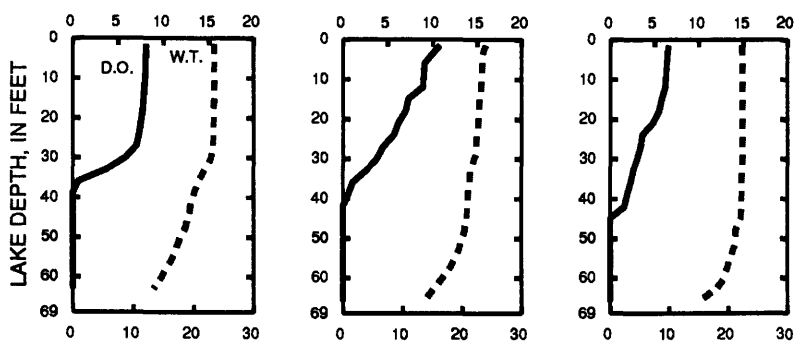
	July 12			July 25				Aug. 14		
Depth of sample (ft)	1.5	33	64	1.5	42	57	65	1.5	48	66
Lake stage (ft)	98.85			98.93				98.73		
Specific conductance ($\mu\text{S}/\text{cm}$)	623	632	663	624	646	658	695	626	636	695
pH (units)	8.2	7.9	7.2	8.5	7.5	7.4	7.0	8.3	7.6	7.1
Water temperature ($^{\circ}\text{C}$)	23.4	21.8	13.4	23.9	20.9	18.0	13.7	22.3	21.2	15.2
Secchi-depth (meters)	1.0			0.8				0.8		
Dissolved oxygen	8.1	3.7	0.0	10.8	0.0	0.0	0.0	6.6	0.0	0.0
Nitrogen, ammonia, dissolved (as N)	---	---	---	<0.02	0.1	---	2.7	---	---	---
Phosphorus, total (as P)	0.046	0.047	0.220	0.043	---	0.129	0.460	0.062	0.070	0.560
Phosphorus, ortho, dissolved (as P)	0.005	0.015	0.201	0.002	---	0.105	0.400	0.006	0.049	0.480
Chlorophyll a, phytoplankton ($\mu\text{g}/\text{L}$)	24	---	---	27	---	---	---	39	---	---

7-12-90

7-25-90

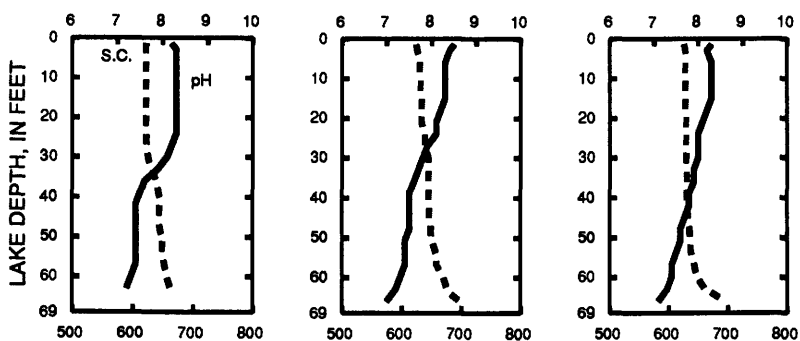
8-14-90

DISSOLVED OXYGEN (D.O.), IN MILLIGRAMS PER LITER



WATER TEMPERATURE (W.T.), IN DEGREES CELSIUS

pH, IN STANDARD UNITS

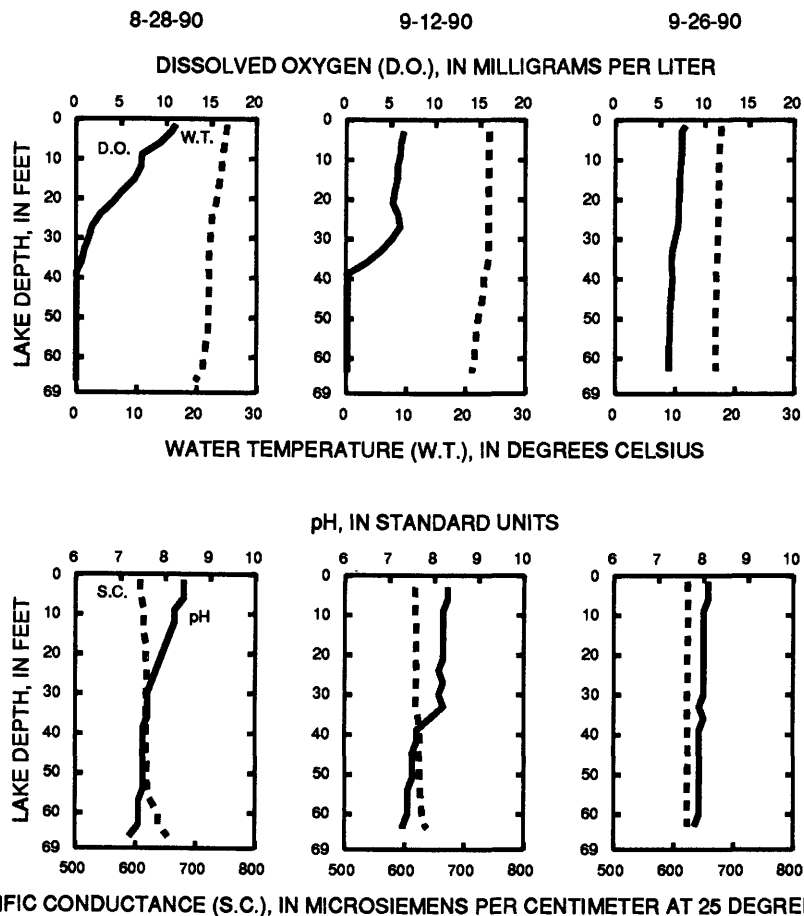


SPECIFIC CONDUCTANCE (S.C.), IN MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS

425425088083500 LITTLE MUSKEGO LAKE AT MUSKEGO, WI--CONTINUED

WATER-QUALITY DATA, AUGUST 28 TO SEPTEMBER 26, 1990
(Milligrams per liter unless otherwise indicated)

	Aug. 28			Sep. 12			Sep. 26	
Depth of sample (ft)	1.5	24	66	1.5	39	63	1.5	63
Lake stage (ft)		98.92			98.73			98.77
Specific conductance ($\mu\text{S}/\text{cm}$)	607	619	654	617	625	638	624	622
pH (units)	8.4	7.8	7.2	8.3	7.6	7.3	8.1	7.8
Water temperature ($^{\circ}\text{C}$)	25.1	22.6	19.8	24.0	23.2	21.2	17.8	16.8
Secchi-depth (meters)		0.7			0.7			0.9
Dissolved oxygen	11	2.7	0.0	6.4	0.1	0.1	7.8	6.0
Phosphorus, total (as P)	0.068	0.070	0.065	0.060	0.046	0.283	0.054	0.056
Phosphorus, ortho, dissolved (as P)	0.004	0.007	0.094	0.004	0.016	0.246	0.006	0.014
Chlorophyll a, phytoplankton ($\mu\text{g}/\text{L}$)	79	---	---	67	---	---	53	---



425344088070100 BIG MUSKEGO LAKE, BASS BAY, NEAR MUSKEGO, WI

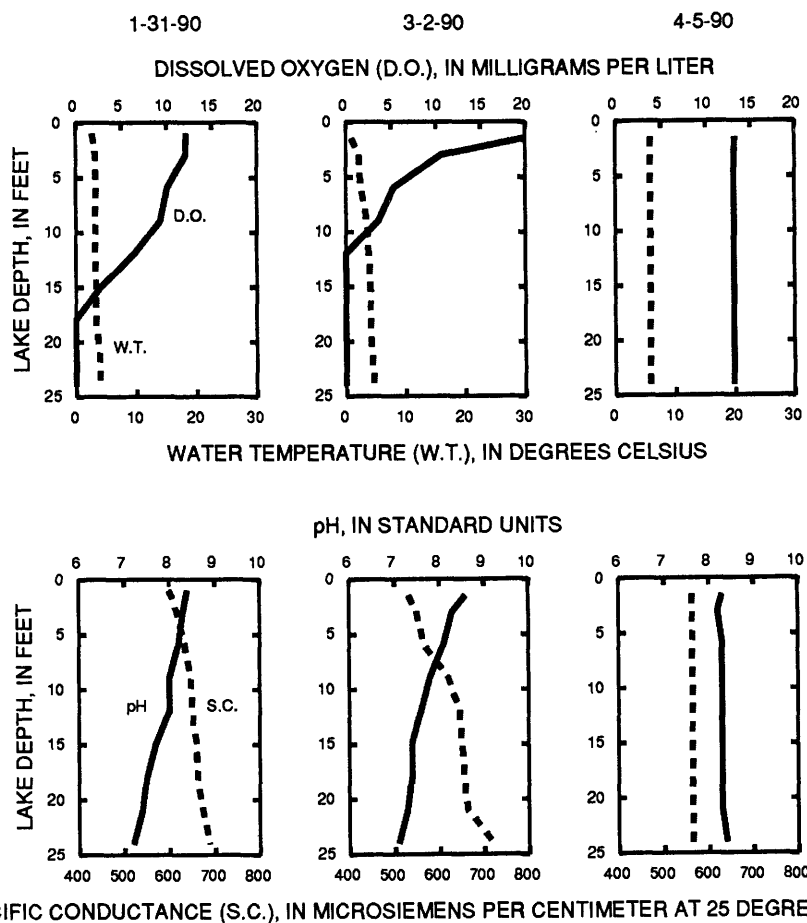
LOCATION.--Lat 42°53'44", long 88°07'01", in SW 1/4 NE 1/4 sec.15, T.5 N., R.20 E., Waukesha County, Hydrologic Unit 07120006, 1.3 mi southeast of Muskego.

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

REMARKS.--Lake ice-covered during January 31 and March 2 sampling.

WATER-QUALITY DATA, JANUARY 31 TO APRIL 5, 1990
(Milligrams per liter unless otherwise indicated)

	Jan. 31		Mar. 02		Apr. 05	
Depth of sample (ft)	1.0	24	1.5	24	1.5	23
Lake stage (ft)		11.76		11.79		11.78
Specific conductance ($\mu\text{S}/\text{cm}$)	600	688	532	721	563	564
pH (units)	8.4	7.2	8.6	7.1	8.3	8.4
Water temperature ($^{\circ}\text{C}$)	2.7	4.1	0.9	4.8	5.8	5.8
Secchi-depth (meters)		0.7		1.5		0.9
Dissolved oxygen	12.2	0.0	19.9	0.0	13.3	13.2
Phosphorus, total (as P)	---	---	---	---	0.070	0.056
Phosphorus, ortho, dissolved (as P)	---	---	---	---	---	0.003
Chlorophyll a, phytoplankton ($\mu\text{g}/\text{L}$)	---	---	---	---	38	---



425344088070100 BIG MUSKEGO LAKE, BASS BAY, NEAR MUSKEGO, WI--CONTINUED

WATER-QUALITY DATA, JUNE 12 TO AUGUST 14, 1990
(Milligrams per liter unless otherwise indicated)

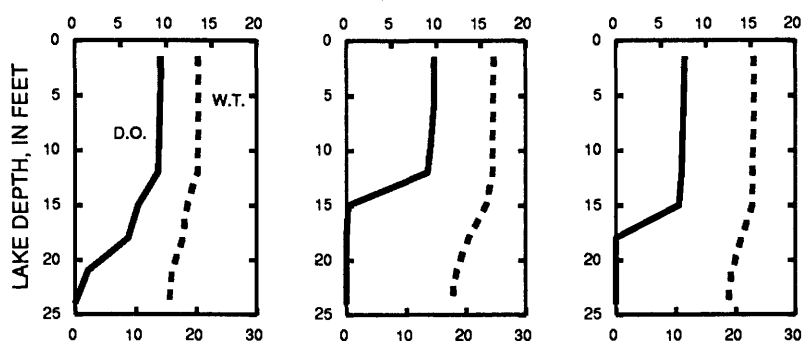
	June 12		July 11		Aug. 14	
Depth of sample (ft)	1.5	23	1.5	23	1.5	23
Lake stage (ft)	11.42		11.66		11.60	
Specific conductance ($\mu\text{S}/\text{cm}$)	560	578	501	620	486	657
pH (units)	8.5	7.4	8.5	7.1	8.6	6.9
Water temperature ($^{\circ}\text{C}$)	20.4	15.5	24.8	17.5	23.1	18.8
Secchi-depth (meters)	1.1		0.6		0.6	
Dissolved oxygen	9.4	0.0	9.8	0.0	7.7	0.0
Phosphorus, total (as P)	0.055	0.103	0.043	0.320	0.033	0.310
Phosphorus, ortho, dissolved (as P)	---	0.045	---	0.240	---	0.260
Chlorophyll a, phytoplankton ($\mu\text{g}/\text{L}$)	16	---	21	---	6.0	---

6-12-90

7-11-90

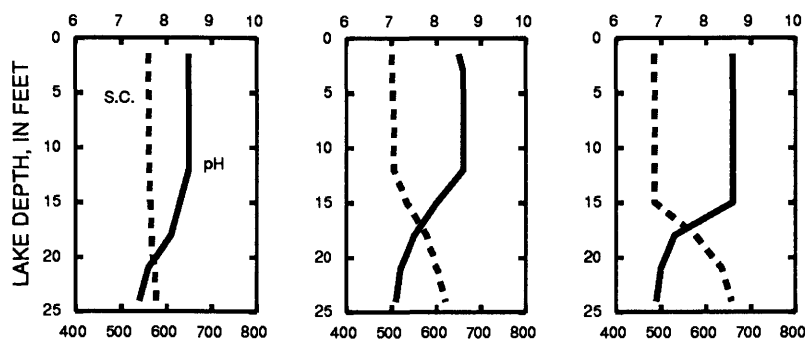
8-14-90

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

425212088072800 BIG MUSKEGO LAKE, SOUTH SITE, NEAR MUSKEGO, WI

LOCATION.--Lat 42°52'12", long 88°07'28", in NW 1/4 NW 1/4 sec.27, T.5 N., R.20 E., Waukesha County, Hydrologic Unit 07120006, near Muskego.

DRAINAGE AREA.--33.9 mi².

PERIOD OF RECORD.--February 16 to current year.

REMARKS.--Lake sampled at south end of lake at a depth of about 3 ft. Lake ice-covered during January 31 and March 2 sampling. Water-quality analyses by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, JANUARY 31 TO AUGUST 14, 1990
(Milligrams per liter unless otherwise indicated)

	Jan. 31		Mar. 02		Apr. 05	
	0.5	2.0	0.5	2.0	0.5	2.0
Depth of sample (ft)						
Lake stage (ft)	11.76		11.79		11.77	
Specific conductance (μS/cm)	850	850	783	773	504	501
pH (units)	7.6	7.6	6.8	7.3	8.0	8.2
Water temperature (°C)	0.4	1.9	1.7	1.4	6.1	6.1
Color (Pt-Co. scale)	---	---	---	---	35	35
Turbidity (NTU)	---	---	---	---	12	11
Secchi-depth (meters)	0.4		0.3		0.4	
Dissolved oxygen	12.1	12.1	20.2	18.5	11.7	11.7
Hardness, as CaCO ₃	---	---	---	---	230	230
Calcium, dissolved (Ca)	---	---	---	---	46	46
Magnesium, dissolved (Mg)	---	---	---	---	27	28
Sodium, dissolved (Na)	---	---	---	---	21	21
Potassium, dissolved (K)	---	---	---	---	3.1	3.1
Alkalinity, as CaCO ₃	---	---	---	---	168	169
Sulfate, dissolved (SO ₄)	---	---	---	---	40	40
Fluoride, dissolved (F)	---	---	---	---	0.15	0.15
Chloride, dissolved (Cl)	---	---	---	---	40	40
Silica, dissolved (SiO ₂)	---	---	---	---	<0.2	<0.2
Nitrogen, NO ₂ + NO ₃ , diss. (as N)	---	---	---	---	0.34	0.33
Nitrogen, ammonia, dissolved (as N)	---	---	---	---	0.31	0.26
Nitrogen, amm. + org., total (as N)	---	---	---	---	2.2	1.9
Phosphorus, total (as P)	0.060	0.060	0.048	0.050	0.092	0.085
Phosphorus, ortho, dissolved (as P)	0.003	0.003	0.003	0.004	0.004	0.004
Iron, dissolved (Fe) μg/L	---	---	---	---	<50	<50
Manganese, dissolved (Mn) μg/L	---	---	---	---	<40	<40
Chlorophyll a, phytoplankton (μg/L)	41	---	96	---	38	---

	June 12		July 11		Aug. 14	
	0.5	2.5	0.5	2.0	0.5	2.0
Depth of sample (ft)						
Lake stage (ft)	11.42		11.66		11.60	
Specific conductance (μS/cm)	554	555	524	525	503	504
pH (units)	8.6	8.5	8.3	8.4	8.8	8.8
Water temperature (°C)	21.2	21.2	22.8	22.7	21.3	21.2
Secchi-depth (meters)	0.1		0.2		0.2	
Dissolved oxygen	8.6	8.6	7.8	7.7	8.2	8.0
Phosphorus, total (as P)	0.310	0.290	0.142	0.120	0.144	0.150
Phosphorus, ortho, dissolved (as P)	0.003	0.004	0.006	0.005	0.026	0.033
Chlorophyll a, phytoplankton (μg/L)	100	---	48	---	73	---

424915088083900 WIND LAKE AT WIND LAKE, WI

LOCATION.--Lat 42°49'15", long 88°08'39", in NW 1/4 SW 1/4 sec.9, T.4 N., R.20 E., Racine County, Hydrologic Unit 07120006, at Wind Lake.

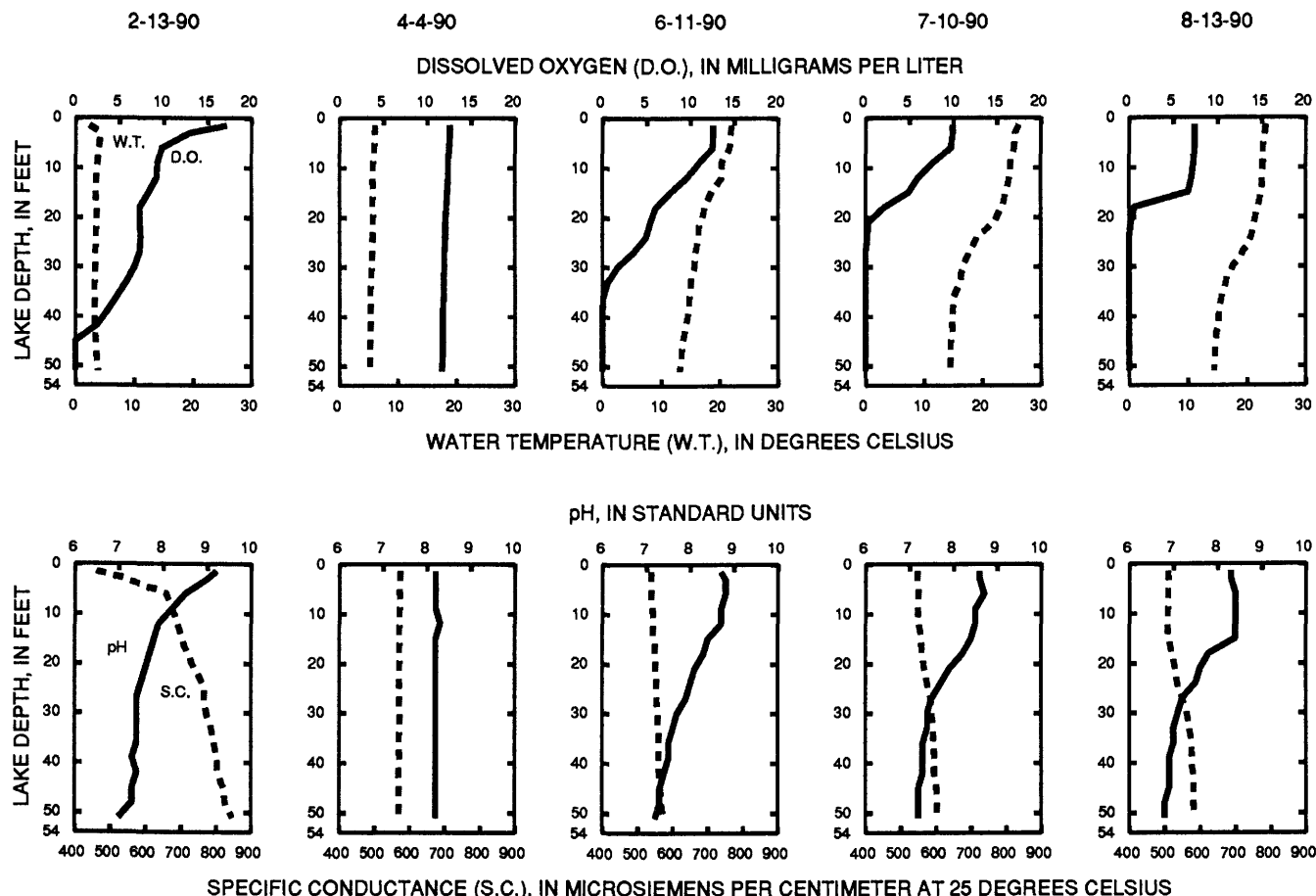
PERIOD OF RECORD.--February 1985 to current year.

REMARKS.--Lake sampled near center at a lake depth of about 50 feet. Lake ice-covered during February 13 sampling. Water-quality analyses by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, FEBRUARY 13 TO AUGUST 13, 1990
(Milligrams per liter unless otherwise indicated)

	Feb. 13		Apr. 04		June 11		July 10		Aug. 13	
Depth of sample (ft)	1.5	51	1.5	50	1.5	51	1.5	50	1.5	50
Lake stage (ft)	7.600		7.861		8.249		8.110		8.135	
Specific conductance (μS/cm)	462	846	573	570	538	574	546	603	510	582
pH (units)	9.2	7.0	8.2	8.2	8.7	7.2	8.6	7.2	8.3	6.8
Water temperature (°C)	2.5	3.9	6.1	5.2	22.0	13.2	26.2	14.4	23.2	14.5
Color (Pt-Co. scale)	---	---	35	45	---	---	---	---	---	---
Turbidity (NTU)	---	---	3.2	3.5	---	---	---	---	---	---
Secchi-depth (meters)	0.8		1.1		0.8		0.9		0.8	
Dissolved oxygen	17.1	0.0	12.6	11.7	12.6	0.0	9.9	0.0	7.4	0.0
Hardness, as CaCO ₃	---	---	260	250	---	---	---	---	---	---
Calcium, dissolved (Ca)	---	---	50	50	---	---	---	---	---	---
Magnesium, dissolved (Mg)	---	---	32	31	---	---	---	---	---	---
Sodium, dissolved (Na)	---	---	26	25	---	---	---	---	---	---
Potassium, dissolved (K)	---	---	3.5	3.4	---	---	---	---	---	---
Alkalinity, as CaCO ₃	---	---	179	179	---	---	---	---	---	---
Sulfate, dissolved (SO ₄)	---	---	51	51	---	---	---	---	---	---
Fluoride, dissolved (F)	---	---	0.15	0.15	---	---	---	---	---	---
Chloride, dissolved (Cl)	---	---	48	48	---	---	---	---	---	---
Silica, dissolved (SiO ₂)	---	---	<0.2	<0.2	---	---	---	---	---	---
Nitrogen, NO ₂ + NO ₃ , diss. (as N)	---	---	0.31	0.30	---	---	---	---	---	---
Nitrogen, ammonia, dissolved (as N)	---	---	0.35	0.37	---	---	---	---	---	---
Nitrogen, amm. + org., total (as N)	---	---	2.0	1.6	---	---	---	---	---	---
Phosphorus, total (as P)	---	---	1/0.070	0.049	0.037	0.220	0.031	0.450	0.028	0.440
Phosphorus, ortho, dissolved (as P)	---	---	0.003	0.002	---	0.181	---	0.330	---	0.410
Iron, dissolved (Fe) μg/L	---	---	<50	<50	---	---	---	---	---	---
Manganese, dissolved (Mn) μg/L	---	---	<40	<40	---	---	---	---	---	---
Chlorophyll a, phytoplankton (μg/L)	---	---	32	---	26	---	18	---	16	---

1/ Duplicate sample concentration 0.073 mg/L.



ILLINOIS RIVER BASIN

507

424848088083100 WIND LAKE OUTLET AT WIND LAKE, WI

LOCATION.--Lat 42°48'48" Long 88°08'31", in NE 1/4 NW 1/4 sec.16, T.4 N., R.20 E., Racine County, Hydrologic Unit 07120006, at Wind Lake.

DRAINAGE AREA.--39.6 mi².

PERIOD OF RECORD.--March 1985 to current year.

GAGE.--Water-stage recorder and concrete dam. Datum of gage is 760.30 ft above National Geodetic Vertical Datum of 1929. Prior to Oct. 2, 1987, nonrecording gage at same site and datum.

REMARKS.--Lake ice-covered Nov. 4-26 and Dec. 4 to Mar. 14. Records good. Lake level regulated by dam with two 10-foot gates at outlet. Previously published as Wind Lake at Wind Lake, Wis.

EXTREMES FOR PERIOD OF RECORD.--Maximum instantaneous gage-height, 8.61 ft, Sept. 1, 1989; minimum instantaneous, 5.57 ft, Feb. 26, 1988.

EXTREMES FOR CURRENT YEAR.--Maximum instantaneous gage-height, 8.55 ft, May 29; minimum instantaneous, 6.88 ft, Mar. 8.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.06	8.34	7.19	---	7.54	7.70	7.61	8.16	8.31	8.16	8.21	8.23
2	8.07	8.34	7.23	---	7.53	7.58	7.72	8.16	8.31	8.11	8.15	8.26
3	8.05	8.33	7.25	---	7.53	7.47	7.81	8.17	8.31	8.11	8.14	8.28
4	8.03	8.32	7.27	---	7.52	7.34	7.86	8.29	8.30	8.12	8.18	8.28
5	8.03	8.32	7.30	---	7.49	7.21	7.92	8.32	8.29	8.14	8.20	8.30
6	8.06	8.33	7.33	---	7.47	7.08	7.96	8.27	8.28	8.14	8.20	8.30
7	8.05	8.35	7.34	---	7.45	6.97	8.00	8.17	8.28	8.12	8.19	8.33
8	8.05	8.35	7.36	---	7.45	6.92	8.02	8.08	8.28	8.10	8.18	8.32
9	8.05	8.34	7.38	---	7.50	7.05	8.04	8.12	8.28	8.11	8.17	8.31
10	8.08	8.35	7.40	---	7.53	7.21	8.15	8.40	8.26	8.11	8.16	8.30
11	8.07	8.34	7.43	---	7.55	7.40	8.22	8.49	8.25	8.10	8.16	8.30
12	8.08	8.33	7.44	---	7.57	7.62	8.25	8.50	8.22	8.09	8.14	8.29
13	8.08	8.33	---	---	7.60	7.83	8.27	8.49	8.21	8.07	8.14	8.27
14	8.09	8.34	---	---	7.62	8.05	8.36	8.40	8.25	8.06	8.11	8.27
15	8.10	8.41	---	---	7.70	8.10	8.40	8.29	8.25	8.05	8.10	8.28
16	8.14	8.39	---	---	7.73	8.05	8.42	8.22	8.23	8.05	8.09	8.30
17	8.19	8.26	---	---	7.76	7.93	8.41	8.08	8.27	8.04	8.08	8.29
18	8.21	8.07	---	7.86	7.77	7.80	8.39	7.88	8.27	8.04	8.34	8.26
19	8.25	7.88	---	7.79	7.79	7.67	8.37	7.72	8.24	8.08	8.47	8.28
20	8.32	7.75	---	7.73	7.80	7.53	8.39	7.77	8.25	8.16	8.40	8.27
21	8.33	7.58	---	7.69	7.81	7.39	8.32	7.74	8.24	8.18	8.24	8.29
22	8.33	7.45	---	7.64	7.84	7.28	8.22	7.65	8.25	8.18	8.08	8.29
23	8.33	7.30	---	7.61	7.89	7.21	8.13	7.63	8.30	8.22	7.97	8.27
24	8.34	7.17	---	7.60	7.92	7.18	8.05	7.69	8.30	8.23	7.89	8.24
25	8.35	7.07	---	7.65	7.92	7.20	8.02	7.91	8.29	8.24	7.89	8.22
26	8.33	7.05	---	7.68	7.92	7.22	8.05	8.15	8.29	8.24	8.00	8.22
27	8.33	7.08	---	7.66	7.90	7.28	8.08	8.34	8.29	8.25	8.21	8.21
28	8.33	7.14	---	7.64	7.81	7.33	8.11	8.48	8.29	8.25	8.33	8.23
29	8.33	7.14	---	7.62	---	7.40	8.13	8.52	8.35	8.31	8.33	8.22
30	8.33	7.16	---	7.59	---	7.49	8.16	8.42	8.25	8.33	8.28	8.22
31	8.34	---	---	7.56	---	7.55	---	8.34	---	8.27	8.23	---
MAX	8.35	8.41	7.44	7.86	7.92	8.10	8.42	8.52	8.35	8.33	8.47	8.33
MIN	8.03	7.05	7.19	7.56	7.45	6.92	7.61	7.63	8.21	8.04	7.89	8.21

ILLINOIS RIVER BASIN

424727088332300 PLEASANT LAKE NEAR LA GRANGE, WI

LAKE-STAGE RECORDS

LOCATION.--Lat 42°47'27", long 88°33'23", in SW 1/4 sec.24, T.4N., R.16 E., Walworth County, Hydrologic Unit 07120006, 2.6 mi southeast of LaGrange.

PERIOD OF RECORD.--October 1984 to current year.

GAGE.--Staff gage read by Gordon Dobbs. Elevation of gage is 879 ft, from topographic map.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height observed, 8.90 ft, Apr. 30, 1987; minimum observed, 7.12 ft, July 15, 1989.

EXTREMES FOR CURRENT YEAR.--Maximum gage height observed, 7.84 ft, June 30; minimum observed, 7.20 ft, Nov. 4, 12, and Sept. 26.

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	GAGE HEIGHT	DATE	GAGE HEIGHT	DATE	GAGE HEIGHT	DATE	GAGE HEIGHT
OCT. 1	7.40	APR. 25	7.70	JUNE 17	7.71	AUG. 5	7.50
8	7.37	MAY 1	7.61	24	7.77	12	7.40
15	7.32	6	7.67	30	7.84	19	7.54
23	7.24	13	7.80	JULY 8	7.70	SEPT. 3	7.44
NOV. 4	7.20	20	7.82	15	7.58	9	7.34
12	7.20	28	7.80	22	7.62	16	7.30
APR. 23	7.70	JUNE 9	7.62	29	7.65	26	7.20

WATER-QUALITY RECORDS

LOCATION.--Lat 42°47'16", long 88°33'02", in SE 1/4 sec.24, T.4N., R.16 E., Walworth County, Hydrologic Unit 07120006, near center of lake, and 2.7 mi southeast of LaGrange.

PERIOD OF RECORD.--June 1985 to current year.

REMARKS.--Secchi disc readings made by Gordon Dobbs.

SECCHI DISC TRANSPARENCY (IN METERS) WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	SECCHI DISC (M) (00078)	DATE	TIME	SECCHI DISC (M) (00078)
OCT 1989			JUN 1990		
01...	1200	1.9	17...	1200	3.5
08...	1200	2.0	24...	1200	3.5
15...	1200	2.0	30...	1200	2.3
23...	1200	2.6	JUL		
NOV			08...	1200	3.5
04...	1200	3.0	15...	1200	2.9
12...	1200	4.0	22...	1200	2.6
APR 1990			29...	1200	2.3
25...	1200	2.0	AUG		
MAY			05...	1200	2.2
01...	1200	2.6	12...	1200	2.3
06...	1200	5.8	19...	1200	2.1
13...	1200	4.3	SEP		
20...	1200	4.0	03...	1200	2.1
28...	1200	5.0	09...	1200	1.9
JUN			16...	1200	2.0
09...	1200	2.1	26...	1200	2.4

05546500 FOX RIVER AT WILMOT, WI

LOCATION.--Lat 42°30'40", long 88°10'45", in SW 1/4 sec.30, T.1 N., R.20 E., Kenosha County, Hydrologic Unit 07120006, on right bank 100 ft downstream from bridge on County Trunk Highway C, 300 ft upstream from Wilmot Dam, 1.0 mi north of Wisconsin-Illinois State line, and 6.0 mi upstream from Fox Chain of Lakes.

DRAINAGE AREA.--868 mi².

PERIOD OF RECORD.--October 1939 to current year.

REVISED RECORDS.--WSP 1308: 1943(M), 1945(M). WDR WI-67-1: Drainage area.

GAGE.--Water-stage recorder and concrete dam. Datum of gage is 735.22 ft above National Geodetic Vertical Datum of 1929. Prior to Sept. 1, 1965, nonrecording gage and concrete dam.

REMARKS.--Estimated daily discharges: Ice periods, Dec. 13, 14, 16-25, Jan. 14, 28-30, Feb. 16-19, 26, and 27. Records are good, except for estimated periods, which are fair. Three 6-ft lift gates in Wilmot dam were in operation during the year; discharge through gates computed by weir and orifice formulas and added to flow over dam. Gage-height telemeter and data-collection platform at station.

AVERAGE DISCHARGE.--51 years, 547 ft³/s, 8.56 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,520 ft³/s, Mar. 31, 1960, gage height, 9.25 ft, from graph based on gage readings; no flow part of day Oct. 26, 1945, and Aug. 10, 1990; minimum daily discharge, 35 ft³/s, Sept. 9, 1958.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,770 ft³/s, Mar. 15, gage height, 7.29 ft; minimum daily, 122 ft³/s, Aug. 10.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	192	205	232	146	501	494	598	514	989	1100	624	284
2	166	219	218	146	672	528	657	461	898	957	471	272
3	199	218	143	150	718	633	739	354	854	825	338	271
4	245	208	218	195	653	673	712	372	816	737	299	266
5	186	203	220	265	574	657	682	707	834	742	309	261
6	194	234	211	289	569	578	676	900	585	770	316	236
7	165	261	157	269	588	534	626	947	529	699	289	173
8	194	322	187	255	680	541	579	886	568	788	253	219
9	210	276	186	251	1080	1100	543	788	608	609	214	234
10	207	293	190	287	1230	1640	578	1130	618	607	122	255
11	210	295	176	305	1100	1940	618	1820	566	496	176	285
12	202	298	142	273	910	2180	588	2270	399	369	201	217
13	212	299	140	249	868	2420	539	2320	343	331	206	207
14	213	304	140	240	753	2660	603	2230	457	248	201	210
15	203	312	137	236	261	2730	717	2160	631	247	187	183
16	196	334	130	228	400	2640	715	2260	561	261	153	201
17	225	346	130	250	700	2520	704	2380	555	267	161	342
18	235	334	130	379	600	2380	732	2330	603	234	385	285
19	235	349	130	404	500	2210	618	2160	555	231	930	267
20	255	360	130	392	489	2010	559	2150	506	545	1530	218
21	291	373	130	378	487	1840	888	2250	513	690	1700	237
22	278	369	130	383	474	1710	941	2170	544	615	1680	266
23	228	289	130	373	511	1590	880	1940	812	537	1520	280
24	232	279	130	445	569	1470	853	1750	860	497	1400	261
25	235	313	130	487	371	1290	805	1600	620	428	1280	231
26	228	281	128	308	450	1160	729	1490	542	402	1160	242
27	222	284	129	495	460	965	660	1420	609	392	969	308
28	212	238	131	480	472	697	616	1320	641	378	876	196
29	202	202	136	440	---	585	584	1230	850	426	738	187
30	194	205	138	430	---	588	552	1100	1180	516	573	211
31	201	---	144	416	---	604	---	996	---	679	393	---
TOTAL	6667	8503	4803	9844	17640	43567	20291	46405	19646	16623	19654	7305
MEAN	215	283	155	318	630	1405	676	1497	655	536	634	243
MAX	291	373	232	495	1230	2730	941	2380	1180	1100	1700	342
MIN	165	202	128	146	261	494	539	354	343	231	122	173
CFSM	.25	.33	.18	.37	.73	1.62	.78	1.72	.75	.62	.73	.28
IN.	.29	.36	.21	.42	.76	1.87	.87	1.99	.84	.71	.84	.31

CAL YR 1989 TOTAL 137686 MEAN 377 MAX 1780 MIN 50 CFSM .43 IN. 5.90
WTR YR 1990 TOTAL 220948 MEAN 605 MAX 2730 MIN 122 CFSM .70 IN. 9.47

423246088175800 POWERS LAKE AT POWERS LAKE, WI

LOCATION.--Lat 42°32'46", long 88°17'58", in NW 1/4 SE 1/4 sec.13, T.1 N., R.18 E., Walworth County, Hydrologic Unit 07120006, at Powers Lake.

DRAINAGE AREA.--3.42 mi².

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

REMARKS.--Lake sampled near center at a lake depth of about 32 ft. Lake ice-covered during February 13 sampling. Water-quality analyses by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, FEBRUARY 13 TO AUGUST 13, 1990
(Milligrams per liter unless otherwise indicated)

	Feb. 13		Apr. 04		June 11		July 10		Aug. 13	
Depth of sample (ft)	1.5	33	1.5	32	1.5	32	1.5	31	1.5	32
Lake stage (ft)	9.74		10.30		10.12		10.14		10.00	
Specific conductance (μS/cm)	389	534	467	463	468	477	459	478	431	467
pH (units)	8.2	7.7	8.2	8.3	8.4	7.8	8.3	7.5	8.5	7.3
Water temperature (°C)	3.4	4.7	6.6	6.0	20.7	15.9	25.4	17.8	23.5	18.4
Color (Pt-Co. scale)	---	---	5.0	5.0	---	---	---	---	---	---
Turbidity (NTU)	---	---	0.5	0.5	---	---	---	---	---	---
Secchi-depth (meters)	5.2		5.8		3.8		3.4		2.8	
Dissolved oxygen	17.9	6.8	12.1	11.7	9.6	3.2	8.2	0.0	8.9	0.0
Hardness, as CaCO ₃	---	---	230	230	---	---	---	---	---	---
Calcium, dissolved (Ca)	---	---	34	34	---	---	---	---	---	---
Magnesium, dissolved (Mg)	---	---	35	36	---	---	---	---	---	---
Sodium, dissolved (Na)	---	---	14	14	---	---	---	---	---	---
Potassium, dissolved (K)	---	---	2.4	2.3	---	---	---	---	---	---
Alkalinity, as CaCO ₃	---	---	179	181	---	---	---	---	---	---
Sulfate, dissolved (SO ₄)	---	---	34	34	---	---	---	---	---	---
Fluoride, dissolved (F)	---	---	0.09	0.09	---	---	---	---	---	---
Chloride, dissolved (Cl)	---	---	28	28	---	---	---	---	---	---
Silica, dissolved (SiO ₂)	---	---	6.2	6.2	---	---	---	---	---	---
Nitrogen, NO ₂ + NO ₃ , diss. (as N)	---	---	0.05	0.05	---	---	---	---	---	---
Nitrogen, ammonia, dissolved (as N)	---	---	<0.02	<0.02	---	---	---	---	---	---
Nitrogen, amm. + org., total (as N)	---	---	0.50	0.40	---	---	---	---	---	---
Phosphorus, total (as P)	---	---	0.009	0.008	0.009	0.012	0.007	0.030	0.007	0.050
Phosphorus, ortho, dissolved (as P)	---	---	0.003	0.002	---	0.002	---	0.003	---	0.005
Iron, dissolved (Fe) μg/L	---	---	<50	<50	---	---	---	---	---	---
Manganese, dissolved (Mn) μg/L	---	---	<40	<40	---	---	---	---	---	---
Chlorophyll a, phytoplankton (μg/L)	---	---	2.0	---	3.0	---	3.0	---	4.0	---

2-13-90

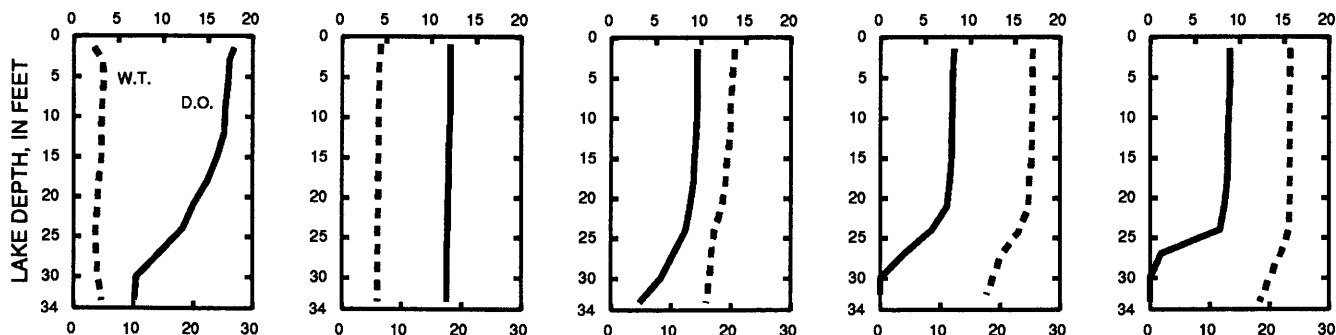
4-4-90

6-11-90

7-10-90

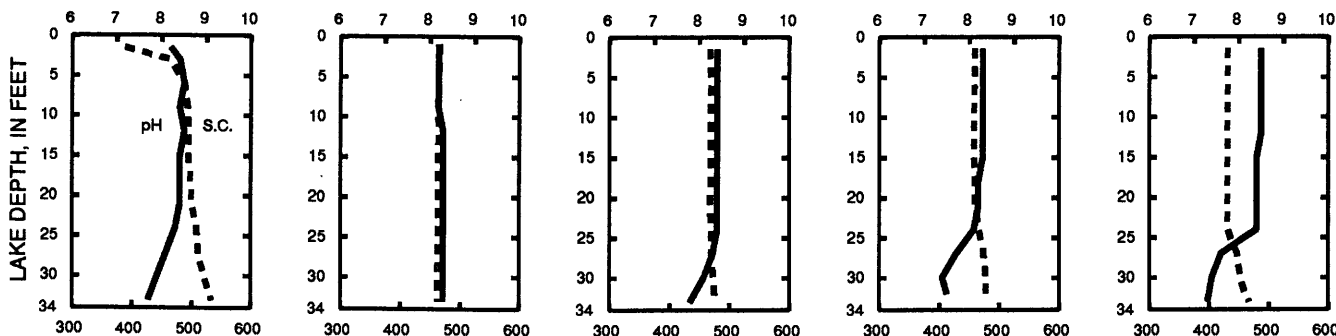
8-13-90

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

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 minimum has been determined.

ANNUAL MAXIMUM DISCHARGE AT CREST-STAGE PARTIAL-RECORD STATIONS DURING WATER YEAR 1990

STATION NO.	STATION NAME	LOCATION	DRAINAGE AREA (MI ²)	PERIOD OF RECORD	DATE	ANNUAL MAXIMUM GAGE HEIGHT (FT)	DIS-CHARGE (FT ³ /S)
STREAMS TRIBUTARY TO LAKE SUPERIOR							
04024400	Stony Brook near Superior, WI	Lat 46°35'01", long 92°07'10", in SE 1/4 sec.4, T.47 N., R.14 W., Douglas County, 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.	1.86	1959-90	09-14-90	>17.01	>330
04025200	Pearson Creek near Maple, WI	Lat 46°38'51", long 91°42'55", on common boundary of secs.11 and 14, T.48 N., R.11 W., Douglas County, at box culvert on State Highway 13, 4.0 mi north of Maple.	4.01	1957-90	09-14-90	15.39	495
04026200	Sand River Tributary near Red Cliff, WI	Lat 46°53'53", long 90°56'47", in NE 1/4 sec.14, T.51 N., R.5 W., Bayfield County, at box culvert on State Highway 13, 8.0 mi northwest of Red Cliff.	1.14	1959-90	03-15-90 05-24-89	12.08 12.84	170 E 230
*04026300	Sioux River near Washburn, WI	Lat 46°41'20", long 90°57'02", in NE 1/4 sec.35, T.49 N., R.5 W., Bayfield County, on County Trunk Highway C, 2.5 mi west of Washburn.	33.9	1959-65 1966# 1967-90	05-24-90	10.61	230
04026450	Bad River near Mellen, WI	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, on left bank 150 ft downstream from bridge on U.S. Forest Service Road, 4.4 mi southeast of Mellen.	83.4	1971-75# 1976-90	09-14-90	3.44	415
*04027200	Pearl Creek at Grandview, WI	Lat 46°22'05", long 91°05'27", in NE 1/4 sec.22, T.45 N., R.6 W., Bayfield County, at box culvert on U.S. Highway 63, 0.8 mi east of Grandview.	16.9	1960-90	03-15-90	11.78	180
STREAMS TRIBUTARY TO LAKE MICHIGAN							
*04059900	Allen Creek Tributary near Alvin, WI	Lat 45°58'05", long 88°47'24", on north boundary sec.7, T.40 N., R.14 E., Forest County, at culvert on State Highway 70, 2.2 mi southeast of Alvin.	1.24	1960-90	03-15-90	10.28	6
04063640	North Branch Pine River at Windsor Dam near Alvin, WI	Lat 45°55'43", long 88°51'38", in SE 1/4 sec.21, T.40 N., R.13 E., Forest County, 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.	27.8	1967-68# 1970-90	06-13-90	2.12	34
04063688	South Branch Popple River near Newald, WI	Lat 45°44'42", long 88°35'31", in NW 1/4 sec.26, T.38 N., R.15 E., Florence County, at corrugated twin barrel culverts on U.S. Forest Service Road 2159, 5.4 mi east of Newald.	9.47	1970-90	03-16-90 10-25-88	11.82 12.22	46 E 56
*04063800	Woods Creek near Fence, WI	Lat 45°49'53", long 88°23'17", in SE 1/4 sec.29, T.39 N., R.17 E., Florence County, at box culvert on State Highway 101, 6.0 mi north of Fence.	41.40	1958-90	03-16-90	11.70	250
04064800	Little Popple River near Aurora, WI	Lat 45°47'34", long 88°11'40", in SW 1/4 sec.1, T.38 N., R.18 E., Florence County, at 3-barrel corrugated culvert on County Trunk Highway N, 5.5 mi west of Aurora.	35.0	1970-90	06-21-90	12.59	310
04067760	Peshtigo River near Cavour, WI	Lat 45°39'20", long 88°38'52", in SW 1/4 sec.29, T.37 N., R.15 E., Forest County, at bridge on U.S. Highway 8, 0.7 mi northwest of Cavour.	150	1970-90	06-21-90	12.74	750

ANNUAL MAXIMUM DISCHARGE AT CREST-STAGE PARTIAL-RECORD STATIONS DURING WATER YEAR 1990

ANNUAL MAXIMUM DISCHARGE AT CREST-STAGE PARTIAL RECORD STATIONS DURING WATER YEAR 1990						ANNUAL MAXIMUM	
STATION NO.	STATION NAME	LOCATION	DRAINAGE AREA (MI ²)	PERIOD OF RECORD	DATE	GAGE HEIGHT (FT)	DIS-CHARGE (FT ³ /S)
STREAMS TRIBUTARY TO LAKE MICHIGAN--CONTINUED							
04067800	Armstrong Creek near Armstrong Creek, WI	Lat 45°39'29", long 88°28'44", in W 1/2 sec.27, T.37 N., R.16 E., Forest County, at bridge on U.S. Highway 8, 1.8 mi northwest of Armstrong Creek.	23.2	1958-90	1990	10.04	91
04069700	North Branch Oconto River near Wabeno, WI	Lat 45°26'19", long 88°37'40", in SW 1/4 sec.9, T.34 N., R.15 E., Forest County, at pipe arch culvert on County Trunk Highway C, 0.6 mi east of intersection with State Highway 32 at Wabeno.	34.1	1970-90	06-21-90	12.89	306
04071700	North Branch Little River near Coleman, WI	Lat 45°00'37", long 88°02'43", on common boundary of secs.2 and 3, T.29 N., R.20 E., Oconto County, at bridge on U.S. Highway 141, 3.8 mi south of Coleman.	21.4	1958-90	03-21-90	13.77	400
*04071800	Pensaukee River near Pulaski, WI	Lat 44°45'48", long 88°15'07", in NE 1/4 sec.1, T.26 N., R.18 E., Shawano County, at bridge on State Highway 32, 6.1 mi north of Pulaski.	41.80	1961-90	05-17-90	11.90	320
*04073400	Bird Creek at Wautoma, WI	Lat 44°06'00", long 89°18'00", in S 1/2 sec.34, T.19 N., R.10 E., Waushara County, at concrete culvert on State Highway 21, 0.2 mi west of Wautoma.	3.59	1959-90	05-19-90	12.06	87
04074300	Mud Creek near Nashville, WI	Lat 45°34'19", long 89°02'39", in SW 1/4 sec.30, T.36 N., R.12 E., Forest County, at concrete circular culvert on U.S. Highway 8, 3.5 mi north of Nashville.	10.0	1970-90	05-19-90	12.42	61
*04074700	Hunting River near Elcho, WI	Lat 45°25'10", long 89°11'15", in N 1/2 sec.24, T.34 N., R.10 E., Langlade County, at twin culverts on U.S. Highway 45 and State Highway 47, 1.5 mi south of Elcho.	9.00	1958-90	03-15-90	10.62	36
*04074850	Lily River near Lily, WI	Lat 45°20'59", long 88°49'52", in SE 1/4 sec.11, T.33 N., R.13 E., Langlade County, at culvert on County Trunk Highway A, 3.2 mi north from junction of State Highways 55 and 52 at Lily.	52.4	1970-90	06-13-90	10.91	140
*04075200	Evergreen Creek near Langlade, WI	Lat 45°10'11", long 88°48'12", in NW 1/4 sec.18, T.31 N., R.14 E., Langlade County, at culvert on State Highway 64, 3.5 mi southwest of Langlade.	8.00	1959-65 1966-72# 1973-90	06-13-90	11.61	79
*04079700	Spaulding Creek near Big Falls, WI	Lat 44°38'13", long 89°01'20", on common boundary of secs.14 and 15, T.25 N., R.12 E., Waupaca County, at culvert on County Trunk Highway E, 1.5 mi north of Big Falls.	4.90	1959-65 1966# 1967-90	06-13-90	11.27	72
04081900	Sawyer Creek at Oshkosh, WI	Lat 44°02'00", long 88°35'00", in SW 1/4 sec.15, T.18 N., R.16 E., Winnebago County, at bridge on U.S. Highway 41, 1.0 mi southwest of bridge on Algoma Street at Fox River, at Oshkosh.	15.3	1961-90	08-19-90 03-26-89 04-02-88 08-09-87 10-19-84 04-30-84 11-10-82 03-16-82 02-22-81 06-06-80 E 03-24-79 05-13-78	15.80 12.57 E 11.44 E 11.37 E 13.28 E 12.45 E 11.06 E 12.43 E 12.44 E 10.63 E 14.42 E 15.10 E	1,650 690 425 400 880 660 330 650 660 245 E1,230 E1,450
*04085030	Apple Creek near Kaukauna, WI	Lat 44°19'15", long 88°17'33", on west boundary sec.2, T.21 N., R.18 E., Outagamie County, at bridge on State Highway 55, 3.0 mi north of Kaukauna.	15.0	1960-90	03-14-90	14.69	1,110
04085300	Neshota River Tributary near Denmark, WI	Lat 44°23'43", long 87°52'13", in NE 1/4 sec.7, T.22 N., R.22 E., Brown County, at box culvert on U.S. Highway 141, 3.8 mi northwest of Denmark.	3.08	1959-90	06-23-90	16.46	1,040
*04085400	Killsnake River near Chilton, WI	Lat 44°03'33", long 88°08'36", in E 1/2 sec.6, T.18 N., R.20 E., Calumet County, at bridge on country road, 2.4 mi northeast of Chilton.	29.5	1961-90	06-23-90	11.82	1,060
*04087050	Little Menomonee River near Freistadt, WI	Lat 43°12'24", long 88°02'24", on common boundary of secs.29 and 32, T.9 N., R.21 E., Ozaukee County, at bridge on Donges Bay Road, 2.0 mi south of Freistadt.	8.00	1958-90	03-13-90	10.72	96

ANNUAL MAXIMUM DISCHARGE AT CREST-STAGE PARTIAL-RECORD STATIONS DURING WATER YEAR 1990

ANNUAL MAXIMUM DISCHARGE AT GAGE STATION PARTIAL RECORD STATIONS DURING WATER YEAR 1990					ANNUAL MAXIMUM		DIS-CHARGE (FT ³ /S)
STATION NO.	STATION NAME	LOCATION	DRAINAGE AREA (MI ²)	PERIOD OF RECORD	DATE	GAGE HEIGHT (FT)	
STREAMS TRIBUTARY TO LAKE MICHIGAN--CONTINUED							
04087100	Honey Creek at Milwaukee, WI	Lat 42°58'41", long 87°59'52", in SE 1/4 sec.15, T.6 N., R.21 E., Milwaukee County, 400 ft upstream from bridge on S. 68TH Street, 6.0 mi southwest of mouth of Milwaukee River, at Milwaukee.	3.26	1959-90	05-10-90	21.32	600
*04087200	Oak Creek near South Milwaukee, WI	Lat 42°52'58", long 87°53'31", on common boundary of secs.21 and 22, T.5 N., R.22 E., Milwaukee County, at bridge on West Nicholson Road, 3.0 mi southwest of South Milwaukee.	13.8	1958-90	05-10-90 09-03-89 01-30-88 04-22-87	16.46 15.63 16.01 15.53	520 E 295 E 380 E 280
04087230	West Branch Root River Canal Tributary near North Cape, WI	Lat 42°45'44", long 88°01'04", in SE 1/4 sec.33, T.4 N., R.21 E., Racine County, at culvert on County Trunk Highway U, 3.0 mi southeast of North Cape.	3.92	1962-90	05-10-90	12.29	132
*04087250	Pike Creek near Kenosha, WI	Lat 42°36'12", long 87°53'41", in W 1/2 sec.27, T.2 N., R.22 E., Kenosha County, at box culvert on State Highway 43, 3.0 mi northwest of Kenosha.	7.25	1960-90	05-10-90	15.46	100
ST. CROIX RIVER BASIN							
*05333100	Little Frog Creek near Minong, WI	Lat 46°05'48", long 91°46'39", in NW 1/4 sec.29, T.42 N., R.11 W., Washburn County, at culvert on country road, 2.5 mi east of Minong.	13.0	1961-90	03-13-90	15.24 G	180
*05335380	Bashaw Brook near Shell Lake, WI	Lat 45°47'02", long 92°07'51", in SW 1/4 sec.8, T.38 N., R.14 W., Burnett County, at twin box culverts on country road, 10.5 mi northwest of Shell Lake.	24.9	1959-65 1966# 1967-90	03-13-90	13.38	175
*05340300	Trade River near Frederic, WI	Lat 45°37'41", long 92°29'19", in SW 1/4 sec.4, T.36 N., R.17 W., Polk County, at box culvert on State Highways 35 and 48, 2.5 mi southwest of Frederic.	6.34	1958-90	03-13-90	11.66	100
05341900	Kinnickinnic River Tributary at River Falls, WI	Lat 44°49'57", long 92°38'23", in NE 1/4 sec.14, T.27 N., R.19 W., Pierce County, at bridge on County Trunk Highway FF, 1.6 mi southwest of River Falls.	7.26	1959-90	03-13-90	15.07	3,440
CHIPPEWA RIVER BASIN							
05357360	Bear River near Powell, WI	Lat 46°04'40", long 90°00'52", in NE 1/4 sec.32, T.42 N., R.4 E., Iron County, at bridge on State Highway 182, 3.0 mi west of Powell.	118	1970-90	03-14-90	11.74 G	296
05357390	Weber Creek near Mercer, WI	Lat 46°11'16", long 90°07'57", in SE 1/4 sec.21, T.43 N., R.3 E., Iron County, at culvert on U.S. Highway 51, 3.7 mi northeast of Mercer.	7.10	1970-90	09-14-90	10.57	43
05358100	Smith Creek near Park Falls, WI	Lat 45°57'06", long 90°28'07", in NE 1/4 sec.15, T.40 N., R.1 W., Price County, at culvert on State Highway 13, 1.5 mi northwest of Park Falls.	9.46	1970-90	09-14-90	12.02	125
*05359600	Price Creek near Phillips, WI	Lat 45°43'33", long 90°40'12", in SW 1/4 sec.31, T.38 N., R.2 W., Price County, at culvert on County Trunk Highway W, 13.0 mi west of Phillips.	16.9	1958-65 1966# 1967-90	09-14-90	11.86	110
*05361400	Hay Creek near Prentice, WI	Lat 45°32'32", long 90°21'37", in SE 1/4 sec.4, T.35 N., R.1 E., Price County, at culvert on U.S. Highway 8, 3.5 mi west of Prentice.	21.9	1961-90	05-16-90	11.44	285
05361420	Douglas Creek near Prentice, WI	Lat 45°31'06", long 90°15'28", in NE 1/4 sec.17, T.35 N., R.2 E., Price County, at culvert on County Trunk Highway C, 2.3 mi southeast of intersection with State Highway 13 at Prentice.	25.2	1970-90	08-19-90	13.67	620

ANNUAL MAXIMUM DISCHARGE AT CREST-STAGE PARTIAL-RECORD STATIONS DURING WATER YEAR 1990

ANNUAL MAXIMUM DISCHARGE AT CREST--STAGE PARTIAL-RECORD STATIONS DURING WATER YEAR 1990					ANNUAL MAXIMUM		
STATION NO.	STATION NAME	LOCATION	DRAINAGE AREA (MI ²)	PERIOD OF RECORD	DATE	GAGE HEIGHT (FT)	DIS-CHARGE (FT ³ /S)
CHIPPEWA RIVER BASIN--CONTINUED							
05361600	North Fork Jump River near Phillips, WI	Lat 45°37'45", long 90°23'32", in SW 1/4 sec.5, T.36 N., R.1 E., Price County, at culvert on State Highway 13, 4.0 mi south of Phillips.	10.4	1970-90	03-12-90	11.29	40
*05364000	Yellow River at Cadott, WI	Lat 44°57'21", long 91°08'48", in NE 1/4 sec.31, T.29 N., R.6 W., Chippewa County, at bridge on State Highway 27, at Cadott.	351	1943-61# 1962-90	03-12-90	13.76	11,400
05364100	Seth Creek near Cadott, WI	Lat 44°59'24", long 91°08'48", in SW 1/4 sec.17, T.29 N., R.6 W., Chippewa County, at culvert on State Highway 27, 3.1 mi north of Cadott.	3.04	1962-90	06-13-90	16.72	688
05364500	Duncan Creek at Bloomer, WI	Lat 45°07'00", long 91°30'00", in sec.8, T.30 N., R.9 W., Chippewa County, 0.2 mi below Bloomer dam, at Bloomer.	49.2	1945-51# 1958-90	06-13-90	>9.17	>4,500
*05365700	Goggle-Eye Creek near Thorp, WI	Lat 44°58'40", long 90°48'00", on west boundary sec.19, T.29 N., R.3 W., Clark County, at culvert on State Highway 73, 1.3 mi north of Thorp.	6.70	1958-90	06-13-90	21.12	2,650
*05366500	Eau Claire River near Fall Creek, WI	Lat 44°48'35", long 91°16'50", in NW 1/4 sec.19, T.27 N., R.7 W., Eau Claire County, 500 ft east of County Trunk Highway K, 3.2 mi north of Fall Creek.	758	1943-55# 1958-90	06-13-90	14.70	14,300
05367030	Willow Creek near Eau Claire, WI	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, at box culvert on State Highway 93, 4.0 mi south of Eau Claire.	4.38	1958-90	03-14-90 10-16-87	11.92 11.66 E	180 165
*05367480	East Branch Pine Creek Tributary near Dallas, WI	Lat 45°16'50", long 91°48'30", in SW 1/4 sec.1, T.32 N., R.12 W., Barron County, at culvert on County Trunk Highway O, 1.5 mi north of Dallas.	3.85	1960-90	03-14-90	17.87 G	175
05367700	Lightning Creek at Almena, WI	Lat 45°25'17", long 92°01'57", in NW 1/4 sec.19, T.34 N., R.13 W., Barron County, at bridge on County Trunk Highway P, at Almena.	19.8	1958-90	03-14-90	12.31	500
05370600	Arkansaw Creek Tributary near Arkansaw, WI	Lat 44°38'31", long 92°03'09", in SW 1/4 sec.14, T.25 N., R.14 W., Pepin County, at box culvert on U.S. Highway 10, 1.2 mi northwest of Arkansaw.	2.56	1959-90	06-12-90	13.32	325
*05370900	Spring Creek near Durand, WI	Lat 44°34'13", long 91°57'48", in S 1/2 sec.9, T.24 N., R.13 W., Buffalo County, at bridge on country road, 4.0 mi south of bridge on Chippewa River at Durand.	6.49	1962-90	03-14-90	12.04	120
BUFFALO RIVER BASIN							
05371800	Buffalo River Tributary near Osseo, WI	Lat 44°35'01", long 91°05'40", in S 1/2 sec.3, T.24 N., R.6 W., Jackson County, at culvert on U.S. Highway 10, 6.5 mi east of Osseo.	1.44	1960-90	03-14-90	11.22	62
05371920	Buffalo River near Mondovi, WI	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, at bridge on State Highway 88, 4.0 mi south of Mondovi.	279	1974-90	03-14-90	14.34	2,990
WAUMANDEE CREEK BASIN							
*05378200	Eagle Creek near Fountain City, WI	Lat 44°09'49", long 91°42'28", in SW 1/4 sec.33, T.20 N., R.11 W., Buffalo County, at bridge on County Trunk Highway G, 2.5 mi north of Fountain City.	26.8	1961-90	03-14-90	17.29 D	680

ANNUAL MAXIMUM DISCHARGE AT CREST-STAGE PARTIAL-RECORD STATIONS DURING WATER YEAR 1990

ANNUAL MAXIMUM DISCHARGE AT CREST-STAGE PARIAL-RECORD STATIONS DURING WATER YEAR 1990						ANNUAL MAXIMUM	
STATION NO.	STATION NAME	LOCATION	DRAINAGE AREA (MI ²)	PERIOD OF RECORD	DATE	GAGE HEIGHT (FT)	DIS-CHARGE (FT ³ /S)
BLACK RIVER BASIN							
05380800	Black River Tributary near Whittlesey, WI	Lat 45°12'34", long 90°19'05", in SW 1/4 sec.35, T.32 N., R.1 E., Taylor County, at bridge on State Highway 13, 1.1 mi south of Whittlesey.	2.12	1960-90	06-13-90	11.44	98
*05380900	Poplar River near Owen, WI	Lat 44°53'10", long 90°34'17", in NW 1/4 sec.25, T.28 N., R.2 W., Clark County, at bridge on County Trunk Highway N, 4.2 mi south of Owen.	157	1958-65 1966# 1967-90	06-13-90	19.28	10,500
*05380970	Cawley Creek near Neillsville, WI	Lat 44°36'42", long 90°34'31", in SW 1/4 sec.25, T.25 N., R.2 W., Clark County, at bridge on State Highway 73, 3.7 mi north of Neillsville.	38.6	1961-90	03-12-90	15.40	1,700
*05382200	French Creek near Ettrick, WI	Lat 44°11'04", long 91°18'49", in NE 1/4 sec.27, T.20 N., R.8 W., Trempealeau County, at bridge on County Trunk Highways D and T, 2.5 mi west of Ettrick.	14.3	1960-90	03-12-90	11.18	440
MORMON CREEK BASIN							
*05386300	Mormon Creek near La Crosse, WI	Lat 43°46'00", long 91°08'27", in NE 1/4 sec.19, T.15 N., R.6 W., La Crosse County, at bridge on country road, 6.0 mi southeast of La Crosse.	25.5	1961-90	06-29-90	18.02	4,200
BAD AXE RIVER BASIN							
*05387100	North Fork Bad Axe River near Genoa, WI	Lat 43°33'10", long 91°08'58", in SW 1/4 sec.36, T.13 N., R.7 W., Vernon County, at bridge on State Highway 56, 4.1 mi southeast of Genoa.	80.9	1959-65 1966# 1967-90	03-12-90	11.86	515
WISCONSIN RIVER BASIN							
*05390140	Muskrat Creek at Conover, WI	Lat 46°03'27", long 89°15'24", in SW 1/4 sec.4, T.41 N., R.10 E., Vilas County, at corrugated culvert on U.S. Highway 45, 0.1 mi north of Conover.	10.2	1970-90	03-14-90	11.63 G	20
05390240	Fourmile Creek near Three Lakes, WI	Lat 45°50'17", long 89°04'32", in NE 1/4 sec.26, T.39 N., R.11 E., Oneida County, at 2-barrel corrugated culvert on Fourmile Creek Road, 5.5 mi northeast of Three Lakes.	10.3	1970-90	06-13-90	12.01	82
05391260	Gudegast Creek near Starks, WI	Lat 45°41'41", long 89°15'42", in NW 1/4 sec.16, T.37 N., R.10 E., Oneida County, at corrugated culvert on country road, 3.0 mi northwest of Starks.	14.0	1970-90	05-09-90	13.33	130
05391950	Squaw Creek near Harrison, WI	Lat 45°32'47", long 89°29'16", in SW 1/4 sec.3, T.35 N., R.8 E., Lincoln County, at culvert on County Trunk Highway A, 5.0 mi northeast of Harrison.	3.23	1970-90	05-09-90	10.80	21
*05392150	Mishonagon Creek near Woodruff, WI	Lat 45°54'41", long 89°45'30", in NE 1/4 sec.32, T.40 N., R.6 E., Vilas County, at twin culverts on State Highway 47, 3.0 mi northwest of Woodruff.	17.6	1958-90	03-14-90	10.25	65
*05392350	Bearskin Creek near Harshaw, WI	Lat 45°38'43", long 89°41'12", in SW 1/4 sec.36, T.37 N., R.6 E., Oneida County, at culvert on County Trunk Highway K, 2.1 mi southwest of Harshaw.	31.1	1958-65 1966# 1967-90	09-14-90	9.49	65
05393640	Little Pine Creek near Irma, WI	Lat 45°23'37", long 89°40'20", in NW 1/4 sec.31, T.34 N., R.7 E., Lincoln County, at box culvert on U.S. Highway 51, 3.0 mi north of Irma.	22.0	1970-90	06-13-90	12.90	132

ANNUAL MAXIMUM DISCHARGE AT CREST-STAGE PARTIAL-RECORD STATIONS DURING WATER YEAR 1990

ANNUAL MAXIMUM DISCHARGE AT CREST--STAGE PARTIAL-RECORD STATIONS DURING WATER YEAR 1990					ANNUAL MAXIMUM		
STATION NO.	STATION NAME	LOCATION	DRAINAGE AREA (MI ²)	PERIOD OF RECORD	DATE	GAGE HEIGHT (FT)	DIS-CHARGE (FT ³ /S)
WISCONSIN RIVER BASIN--CONTINUED							
*05394200	Devil Creek near Merrill, WI	Lat 45°08'56", long 89°47'13", in N 1/2 sec.30, T.31 N., R.6 E., Lincoln County, at culvert on County Trunk Highway F, 5.8 mi southwest of Merrill.	9.58	1961-90	06-13-90	17.98	1,600
05395020	Lloyd Creek near Doering, WI	Lat 45°13'57", long 89°22'04", in SE 1/4 sec.21, T.32 N., R.9 E., Langlade County, at bridge on County Trunk Highway C, 4.5 mi east of Doering.	7.80	1970-90	06-13-90	>16.00	>1,000
05395100	Trappe River Tributary near Merrill, WI	Lat 45°08'07", long 89°30'08", in SW 1/4 sec.28, T.31 N., R.8 E., Lincoln County, at culvert on County Trunk Highway P, 9.5 mi southeast of Merrill.	1.58	1959-90	06-13-90 03-28-89	17.57 13.00 E	390 150
05396100	Pet Brook Tributary near Edgar, WI	Lat 44°56'40", long 89°57'05", in SE 1/4 sec.31, T.29 N., R.5 E., Marathon County, at culvert on State Highway 29, 1.5 mi northeast of Edgar.	6.86	1962-90	06-13-90	16.48	650
05396300	Wisconsin River Tributary at Wausau, WI	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, on road right-of-way of 24th Avenue opposite the Ace Motel, 300 ft east of U.S. Highway 51, at Wausau.	1.10	1982-90	06-12 or 13-90	9.11	740
05397600	Big Sandy Creek near Wausau, WI	Lat 45°01'55", long 89°27'00", in SE 1/4 sec.31, T.30 N., R.9 E., Marathon County, at bridge on State Highway 52, 10.0 mi northeast of Wausau.	11.5	1959-90	06-12 or 13-90 03-28-89	13.22 12.03 E	850 460
05400025	Johnson Creek near Knowlton, WI	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, at bridge on County Trunk Highway X, 2.7 mi east of Knowlton.	25.1	1973-90	06-12 or 13-90	15.15	1,000
05401800	Yellow River Tributary near Pittsville, WI	Lat 44°28'58", long 90°07'05", on common boundary of secs.11 and 14, T.23 N., R.3 E., Wood County, at bridge on County Trunk Highway C, 2.0 mi north of Pittsville.	7.23	1959-90	03-12-90	13.38	690
*05403520	Webster Creek at New Lisbon, WI	Lat 43°51'23", long 90°10'25", in NE 1/4 sec.19, T.16 N., R.3 E., Juneau County, at bridge on State Highway 80, 1.2 mi south of New Lisbon.	11.8	1961-90	08-17 or 18-90	15.12	580
*05403550	Onemile Creek near Mauston, WI	Lat 43°45'50", long 90°04'45", in SE 1/4 sec.24, T.15 N., R.3 E., Juneau County, at bridge on State Highway 58, 2.4 mi south of Mauston.	30.2	1958-90	03-11-90	14.39	500
05403630	Hulbert Creek near Wisconsin Dells, WI	Lat 43°37'37", long 89°48'36", in SE 1/4 SW 1/4 sec.5, T.13 N., R.6 E., Sauk County, 1.6 mi upstream from mouth, and 2.0 mi west of Wisconsin Dells.	11.2	1971-77# 1978-90	03-11-90	3.59	88
05403700	Dell Creek near Lake Delton, WI	Lat 43°33'05", long 89°51'55", in NW 1/4 sec.2, T.12 N., R.5 E., Sauk County, on right bank 50 ft upstream from highway bridge, 6.0 mi southwest of Lake Delton, and 7.0 mi upstream from mouth.	44.9	1957-65# 1966-70 1971-80# 1983-90	06-29-90	5.12	144
*05404200	Narrows Creek at Loganville, WI	Lat 43°26'32", long 90°02'06", in SE 1/4 sec.8, T.11 N., R.4 E., Sauk County, at bridge on State Highways 23 and 154, 0.2 mi north of Loganville.	40.1	1958-65 1966# 1967-90	06-29-90	16.74	7,200
*05405600	Rowan Creek at Poynette, WI	Lat 43°23'13", long 89°23'25", in S 1/2 sec.35, T.11 N., R.9 E., Columbia County, at bridge on U.S. Highway 51, at Poynette.	10.4	1961-90	03-11-90	12.54	260
05406800	Rocky Branch near Richland Center, WI	Lat 43°18'52", long 90°23'22", in E 1/2 sec.29, T.10 N., R.1 E., Richland County, at culvert on State Highway 80, 1.5 mi south of Richland Center.	1.68	1960-90	06-29-90 03-24-89 1988 07-30-87 03-05-86 05-16-85 04-30-84	10.95 11.06 B 11.00 9.48 11.46 10.00	50 E 50 E <40 E 50 E <40 E 70 E <40

ANNUAL MAXIMUM DISCHARGE AT CREST-STAGE PARTIAL-RECORD STATIONS DURING WATER YEAR 1990

STATION NO.	STATION NAME	LOCATION	DRAINAGE AREA (MI ²)	PERIOD OF RECORD	DATE	ANNUAL MAXIMUM GAGE HEIGHT (FT)	DIS-CHARGE (FT ³ /S)
WISCONSIN RIVER BASIN--CONTINUED							
*05407100	Richland Creek near Plughtown, WI	Lat 43°11'12", long 90°44'23", in NW 1/4 sec.9, T.8 N., R.3 W., Crawford County, at bridge on U.S. Highway 61, 2.0 mi south of Plughtown.	19.2	1958-90	03-11-90	13.77	395
*05407200	Crooked Creek near Boscobel, WI	Lat 43°06'27", long 90°42'18", in SE 1/4 sec.2, T.7 N., R.3 W., Grant County, at bridge on U.S. Highway 61, 1.6 mi south of Boscobel.	12.9	1959-90	06-29-90	12.73	620
GRANT RIVER BASIN							
*05413400	Pigeon Creek near Lancaster, WI	Lat 42°49'00", long 90°43'20", in SW 1/4 sec.15, T.4 N., R.3 W., Grant County, at culvert on country road, 2.0 mi south of Lancaster.	6.93	1960-65 1966# 1967-90	01-16-90	13.69	630
PLATTE RIVER BASIN							
*05414200	Bear Branch near Platteville, WI	Lat 42°45'46", long 90°30'06", in NW 1/4 sec.4, T.3 N., R.1 W., Grant County, at box culvert on State Highway 81, 2.3 mi northwest of Platteville.	2.80	1958-90	06-29-90 03-10-89	10.85 11.00	640 E 760
GALENA RIVER BASIN							
*05414900	Pats Creek near Elk Grove, WI	Lat 42°40'03", long 90°22'40", in SW 1/4 sec.4, T.2 N., R.1 E., Lafayette County, at bridge on State Highway 81, 7.0 mi southeast of Platteville.	8.49	1960-90	06-29-90	16.19	3,100
05414915	Madden Branch Tributary near Belmont, WI	Lat 42°40'03", long 90°19'45", in NE 1/4 sec.11, T.2 N., R.1 E., Lafayette County, at State Highway 81, 4.7 mi south of Belmont.	2.83	1981-82# 1984-90	06-29-90	14.29	1,800
ROCK RIVER BASIN							
*05423800	East Branch Rock River Tributary near Slinger, WI	Lat 43°23'06", long 88°18'29", in S 1/2 sec.26, T.11 N., R.18 E., Washington County, at culvert on U.S. Highway 41, 4.0 mi northwest of Slinger.	4.42	1960-90	03-13-90 03-25-89	12.06 12.18	186 E 200
*05425700	Robbins Creek at Columbus, WI	Lat 43°20'48", long 89°01'55", in SE 1/4 sec.11, T.10 N., R.12 E., Columbia County, at culvert on U.S. Highway 16, at Columbus.	8.01	1960-90	03-13-90	13.14	263
*05427200	Allen Creek near Fort Atkinson, WI	Lat 42°53'54", long 88°51'35", in NE 1/4 sec.17, T.5 N., R.14 E., Jefferson County, at box culvert on State Highway 26, 2.5 mi southwest of Fort Atkinson.	10.2	1958-90	1990 03-35-89	B 10.31	<72 E 125
05427800	Token Creek near Madison, WI	Lat 43°10'52", Long 89°19'28", in SW 1/4 sec.4, T.8 N., R.10 E., Dane County, at culvert on U.S. Highway 51, 8 mi northeast of State Capitol in Madison.	24.3	1961-65 1966# 1967-75 1976-81# 1982-90	03-13-90	12.23	213
05430403	Fisher Creek Tributary at Janesville, WI	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, at Culvert on Rockport Road, 0.4 mi west of South Crosby Avenue, and 0.6 mi upstream from County Trunk Highway D, at Janesville.	1.95	1982-90	06-29-90 09-05-89	7.62 6.79	830 E 435
*05431400	Little Turtle Creek at Allens Grove, WI	Lat 42°34'46", long 88°45'33", in NE 1/4 sec.6, T.1 N., R.15 E., Walworth County, at bridge on country road, 0.2 mi south of Allens Grove.	41.8	1962-90	1990	B	<280

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

ANNUAL MAXIMUM DISCHARGE AT CREST-STAGE PARTIAL-RECORD STATIONS DURING WATER YEAR 1990

ANNUAL MAXIMUM DISCHARGE AT CREST-STAGE PARTIAL-RECORD STATIONS DURING WATER YEAR 1990					ANNUAL MAXIMUM		
STATION NO.	STATION NAME	LOCATION	DRAINAGE AREA (MI ²)	PERIOD OF RECORD	DATE	GAGE HEIGHT (FT)	DIS-CHARGE (FT ³ /S)
ROCK RIVER BASIN--CONTINUED							
*05432300	Rock Branch near Mineral Point, WI	Lat 42°50'02", long 90°09'15", in SE 1/4 sec.8, T.4 N., R.3 E., Iowa County, at box culvert on State Highway 23, 2.5 mi south of Mineral Point.	4.83	1959-90	06-29-90	18.41	1,250
*05433500	Yellowstone River near Blanchardville, WI	Lat 42°46'55", long 89°59'50", in NE 1/4 sec.34, T.4 N., R.4 E., Lafayette County, 0.6 mi upstream from bridge on County Trunk Highway F, 7.0 mi west-southwest of Blanchardville.	28.5	1954-65# 1966-90	06-29-90	11.40	8,500
05435900	Sugar River Tributary near Pine Bluff, WI	Lat 43°02'48", long 89°38'42", in SE 1/4 sec.27, T.7 N., R.7 E., Dane County, at culvert on County Trunk Highway J, 1.1 mi southeast of Pine Bluff.	7.42	1961-90	06-29-90	12.80	150
*05436200	Gill Creek near Brooklyn, WI	Lat 42°49'38", long 89°26'43", in NW 1/4 sec.16, T.4 N., R.9 E., Green County, at culvert on State Highway 92, 4.3 mi west of Brooklyn.	3.34	1961-90	06-29-90	13.38	115
*05437200	East Fork Raccoon Creek Tributary near Beloit, WI	Lat 42°30'44", long 89°06'40", on common boundary of secs.30 and 31, T.1 N., R.12 E., Rock County, at culvert on State Highway 81, 2.9 mi west of Beloit.	4.64	1958-90	06-29-90	12.60	200
ILLINOIS RIVER BASIN							
05545100	Sugar Creek at Elkhorn, WI	Lat 42°41'05", long 88°30'50", in SW 1/4 sec.29, T.3 N., R.17 E., Walworth County, at culvert on State Highway 11, 2.0 mi northeast of Elkhorn.	6.68	1962-90	05-10-90	11.51	75
05545200	White River Tributary near Burlington, WI	Lat 42°41'03", long 88°21'37", on common boundary of secs.27 and 34, T.3 N., R.18 E., Walworth County, at box culvert on State Highway 11, 4.5 mi west of Burlington.	2.42	1958-90	05-10-90	11.75	101
*05548150	North Branch Nippersink Creek Tributary near Genoa City, WI	Lat 42°30'15", long 88°23'01", in E 1/2 sec.32, T.1 N., R.18 E., Walworth County, at bridge on County Trunk Highway B, 3.0 mi west of Genoa City.	13.8	1962-90	03-08-90	11.26	160

* ALSO A LOW-FLOW PARTIAL-RECORD STATION.
 # OPERATED AS A CONTINUOUS-RECORD STATION.
 B PEAK DID NOT REACH BOTTOM OF GAGE.
 D BACKWATER FROM BEAVER DAM.
 E REVISED.
 G BACKWATER FROM ICE.

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 ²)	Measured Previously (Water Years)	Date	Measurements (ft ³ /s)
BLACK RIVER BASIN						
Black River	Mississippi River	Lat 44°17'37", long 90°50'47", in SE 1/4 SE 1/4 sec.15, T.21 N., R.4 W., Jackson County, on right bank 500 ft downstream from bridge on State Highway 54, at Black River Falls, 1,000 ft downstream from Town Creek.	1,590	1985-89	07-10-90 08-08-90	558 319
WISCONSIN RIVER BASIN						
Wisconsin River	Mississippi River	Lat 45°17'41", long 89°47'34", in SW 1/4 SW 1/4 sec.31, T.33 N., R.6 E., Lincoln County, 0.5 mi downstream from powerplant at Grandfather Dam, 9.5 mi northwest of Merrill.	2,280	1989	04-05-90 07-24-90 08-07-90 08-23-90 09-06-90 09-27-90	686 1,510 917 1,050 2,630 2,590
Yellow River	Wisconsin River	Lat 44°12'50", long 90°07'12", in SW 1/4 SE 1/4 sec.10, T.20 N., R.3 E., Juneau County, at bridge on County Trunk F, 0.8 mi east of Finley.	379	--	03-14-90 05-02-90 08-10-90	4,690 422 82.9
ROCK RIVER BASIN						
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, at country road, 4.7 mi northeast of Sun Prairie.	37.1	1967	04-05-90 06-13-90 07-12-90 08-07-90	14.1 5.05 5.22 2.46
Koshkonong Creek	Rock River	Lat 43°08'58", long 89°14'13", in NE 1/4 NW 1/4 sec.19, T.8 N., R.11 E., Dane County, at bridge on town road, 3.68 mi downstream from sewage treatment plant at Sun Prairie.	12.7	1974	10-27-89 12-06-89 04-04-90 06-12-90 07-10-90 08-06-90	4.35 4.54 5.19 4.80 4.84 3.77
Koshkonong Creek	Rock River	Lat 42°58'20", long 89°01'56", in SW 1/4 NW 1/4 sec.24, T.6 N., R.12 E., Dane County, at sewage treatment plant in Rockdale just downstream from dam on Rockdale Mill pond.	146	1973-75	04-05-90 06-14-90 07-16-90 08-07-90	63.8 34.5 28.4 21.3
Yahara River	Rock River	Lat 43°12'32", long 89°21'09", in NW 1/4 NE 1/4 sec.31, T.9 N., R.10 E., Dane County, at bridge on town road to Lake Windsor Country Club.	73.6	1976-81#	10-19-89 12-01-89 01-03-90 01-31-90 03-08-90 03-09-90 03-10-90 03-10-90 03-12-90 04-13-90 05-10-90 05-11-90 06-19-90 06-29-90 08-14-90 08-20-90	12.5 10.2 9.51 10.1 210 147 73.1 69.4 86.0 13.6 57.1 29.1 10.8 200 9.47 38.6
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, at U.S. Highway 51, 7.9 mi northeast of Capitol at Madison.	24.3	1961-69 1975-80#	10-24-89 12-06-89 04-04-90 06-12-90 07-10-90 08-06-90	16.2 18.2 19.0 16.0 15.4 15.7

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

DISCHARGE MEASUREMENTS MADE AT MISCELLANEOUS SITES DURING WATER YEAR 1990

Stream	Tributary to	Location	Drainage Area (mi ²)	Measured Previously (Water Years)	Measurements	
					Date	Discharge (ft ³ /s)
ROCK RIVER BASIN--CONTINUED						
W Br 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, at Milwaukee Street, 2.9 mi northeast of Capitol at Madison.	12.1	--	12-05-89	1.3
					04-06-90	1.97
					06-21-90	0.55
					07-17-90	0.31
					08-10-90	0.93
E Br 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, at Milwaukee Street, 3.2 mi northeast of Capitol at Madison.	8.89	--	12-05-89	1.09
					04-06-90	0.72
					06-21-90	0.30
					07-17-90	0.0
					08-10-90	0.49
Starkweather Creek	Yahara River	Lat 43°05'50", long 89°19'58", in NW 1/4 SE 1/4 sec.5, T.7 N., R.10 E., Dane County, below confluence with W. Br. Starkweather Creek, 3.0 mi northeast of the State Capitol in Madison.	21.3	--	10-25-89	4.11
					12-06-89	3.77
					04-18-90	-3.54
					06-21-90	0.59
					07-17-90	1.05
Murphy Creek	Yahara River	Lat 43°03'21", long 89°23'33", in SW 1/4 SE 1/4 sec.26, T.7 N., R.9 E., Dane County, at Beld Street, in Madison.	8.03	--	10-25-89	7.88
					12-05-89	4.71
					04-06-90	5.08
					06-15-90	0.68
					07-13-90	1.80
Nine Springs Creek	Yahara River	Lat 43°01'32", long 89°22'58", in SW 1/4 NW 1/4 sec.1, T.6 N., R.9 E., Dane County, at U.S. Highway 14, 3.4 mi south of the State Capitol in Madison.	--	--	10-26-89	5.60
					12-05-89	14.6
					04-06-90	9.13
					06-12-90	6.07
					07-13-90	5.60
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, at Moorland Road, 3.5 mi southeast of the State Capitol in Madison.	10.8	--	07-18-90	5.24
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, at dam, 2.5 mi south of Stoughton.	414	--	10-23-89	174
					12-06-89	143
					04-05-90	395
					06-14-90	173
					07-16-90	302
Sugar River	Pecatonica River	Lat 42°57'31", long 89°33'32", in NW 1/4 NW 1/4 sec.33, T.6 N., R.8 E., Dane County, at Riverside Road, 2.5 mi southwest of Verona.	80	--	04-09-90	22.5
					06-15-90	16.0
					07-19-90	16.7
					08-09-90	14.9
W Br Sugar River	Sugar River	Lat 42°54'47", long 89°37'19", in NE 1/4 NE 1/4 sec.14, T.5 N., R.7 E., Dane County, at State Highway 92, 2.9 mi southeast of Mt. Vernon.	32.7	1959	04-09-90	9.95
				1969	06-15-90	19.8
				1979-80#	07-19-90	13.8
					08-09-90	12.7

OPERATED AS A CONTINUOUS-RECORD STATION.

Water-quality partial-record stations are particular sites where chemical-quality, biological, physical, and/or sediment data are collected systematically over a period of years for use in hydrologic analyses.

MISCELLANEOUS WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)	DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)
STREAMS TRIBUTARY TO LAKE SUPERIOR									
04024430 NEMADJI RIVER NEAR SOUTH SUPERIOR, WI (LAT 46 38 00N LONG 092 05 38W)									
OCT 1989					MAR 1990				
25...	1215	70	210	7.0	16...	1110	3600	120	0.5
DEC					JUN				
14...	1400	33	340	0.0	27...	1430	808	142	19.0
JAN 1990					AUG				
31...	1240	43	310	0.0	21...	1300	77	253	19.0
04025500 BOIS BRULE RIVER AT BRULE, WI (LAT 46 32 16N LONG 091 35 43W)									
OCT 1989					MAY 1990				
25...	1410	122	120	6.5	10...	0900	207	120	7.5
DEC					JUN				
14...	1150	120	--	0.0	27...	0945	126	123	18.0
JAN 1990					AUG				
31...	1455	146	95	0.0	21...	1440	114	122	17.5
MAR									
16...	0945	235	95	3.0					
04027500 WHITE RIVER NEAR ASHLAND, WI (LAT 46 29 50N LONG 090 54 15W)									
OCT 1989					MAY 1990				
25...	1625	164	185	7.0	08...	1740	181	180	13.0
DEC					JUN				
14...	0930	173	190	0.0	25...	1630	168	290	20.5
FEB 1990					AUG				
01...	1440	79	220	1.5	22...	1955	173	154	18.0
MAR									
15...	1503	1020	90	1.5					
STREAMS TRIBUTARY TO LAKE MICHIGAN									
04066003 MENOMINEE RIVER BELOW PEMENE CRK NR PEMBINE, WI (LAT 45 34 46N LONG 087 47 13)									
OCT 1989					JUN 1990				
05...	1330	992	305	10.0	21...	1115	3210	210	19.0
MAR 1990					AUG				
28...	1110	1480	263	3.0	29...	1300	1330	259	22.0
04067500 MENOMINEE RIVER NEAR MCALLISTER, WI (LAT 45 19 20N LONG 087 39 40W)									
OCT 1989					AUG 1990				
05...	1425	1040	302	11.0	17...	0840	1980	275	23.5
NOV									
15...	1410	2080	295	4.0					
04069500 PESHTIGO RIVER AT PESHTIGO, WI (LAT 45 02 49N LONG 087 44 40W)									
OCT 1989					MAY 1990				
05...	1045	166	260	12.0	09...	1200	552	250	16.0
NOV					JUN				
15...	1715	492	270	3.5	15...	1440	5000	200	20.5
MAR 1990					AUG				
15...	1320	3230	180	1.5	16...	1545	506	280	23.0
04071000 OCONTO RIVER NEAR GILLET, WI (LAT 44 51 53N LONG 088 18 00W)									
OCT 1989					MAY 1990				
04...	1100	185	297	9.0	08...	1205	309	282	19.0
DEC					JUN				
19...	1545	202	280	0.0	19...	1340	1760	172	18.5
FEB 1990					AUG				
06...	1600	223	308	0.0	16...	1123	475	280	22.5
MAR									
20...	1740	1080	182	1.5					

DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)	DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)
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04071765 OCONTO RIVER NEAR OCONTO, WI (LAT 44 51 38N LONG 087 59 02W)

04071858		PENSAUKEE RIVER NEAR PENSAUKEE, WI (LAT 44 49 08N LONG 087 57 12W)							
OCT 1989					MAR 1990				
04...	1830	3.0	460	11.0	20...	1425	133	400	2.0
24...	1750	5.9	550	10.0	MAY				
NOV					08...	1725	11	575	22.0
16...	1140	8.5	--	2.0	JUN				
FEB 1990					20...	0945	53	480	18.5
07...	1400	6.2	675	0.0	AUG				
					03...	1410	24	450	22.0

04073500			FOX RIVER AT BERLIN, WI (LAT 43 57 14N LONG 088 57 08W)						
OCT 1989					APR 1990				
06...	1205	495	370	11.5	12...	1050	1380	330	7.5
NOV					MAY				
20...	0930	880	390	1.5	22...	1152	2240	315	13.5
JAN 1990					AUG				
05...	1120	440	470	0.0	29...	1603	1330	360	26.5
FEB									
28...	1115	687	400	0.5					

		WOLF RIVER AT NEW LONDON, WI (LAT 44 23 32N LONG 088 44 25W)									
04079000											
OCT 1989						MAY 1990					
03...	1430	450	360	13.5		07...	1720	1160	320	17.0	
DEC						JUN					
19...	1145	551	370	0.0		18...	1810	2880	274	22.0	
FEB 1990						AUG					
06...	1130	650	385	0.5		15...	1457	849	400	24.0	
MAR											
21...	1700	6870	185	2.0							

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)

040844126 FOX RIVER MENASHA CHANNEL AT MENASHA, WI (LAT 44 12 08 LONG 88 25 41W)

JAN 1990				
17...	0940	1170	2	--
MAR 01...	0905	728	7	--
APR 30...	1210	687	21	71
AUG 14...	1120	1180	52	91
29...	1240	5960	9	--
SEP 12...	1225	3470	11	--
26...	1150	4530	10	--

WATER-QUALITY PARTIAL-RECORD STATIONS

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MISCELLANEOUS WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
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STREAMS TRIBUTARY TO LAKE MICHIGAN--CONTINUED

040844128 FOX RIVER NEENAH CHANNEL AT NEENAH, WI (LAT 44 11 14 LONG 88 22 31W)

NOV 1989				
16...	1005	1050	14	--
JAN 1990				
17...	1200	1060	5	--
MAR				
01...	1145	1430	2	--
APR				
30...	1405	165	17	83
MAY				
31...	1235	4960	13	88
JUN				
20...	1355	4210	5	87
JUL				
19...	1135	422	360	35
AUG				
14...	1240	1090	13	59
29...	0955	1010	10	--
SEP				
12...	1025	710	21	--
26...	0940	609	6	--

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)	DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)
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04085200 KEWAUNEE RIVER NEAR KEWAUNEE, WI (LAT 44 27 30N LONG 087 33 23W)

OCT 1989					MAY 1990				
19...	1110	23	635	5.0	22...	1215	225	570	13.5
NOV					JUL				
30...	1120	25	770	0.5	03...	1020	88	625	19.0
JAN 1990					AUG				
10...	1112	13	680	0.0	08...	1110	44	650	19.0
FEB					SEP				
21...	1140	17	670	0.0	06...	0817	34	615	21.0
APR					19...	0850	125	605	13.0
17...	1120	53	630	5.5					

04085281 EAST TWIN RIVER AT MISHICOT, WI (LAT 44 14 16N LONG 087 38 11W)

OCT 1989					MAY 1990				
19...	0915	21	470	5.0	22...	0940	222	485	12.5
NOV					JUL				
30...	0900	22	600	0.0	03...	1325	90	560	20.5
JAN 1990					AUG				
10...	0900	10	570	0.0	08...	0840	50	600	18.0
FEB					SEP				
21...	0925	14	360	0.0	19...	1200	109	600	13.5
APR									
17...	0900	54	520	5.5					

04086000 SHEBOYGAN RIVER AT SHEBOYGAN, WI (LAT 43 44 25N LONG 087 45 35W)

OCT 1989					MAY 1990				
18...	1250	93	530	8.0	21...	1300	964	590	11.0
NOV					JUL				
29...	1125	68	680	0.5	02...	1245	244	570	25.5
JAN 1990					AUG				
09...	1205	94	750	0.0	07...	1240	100	540	22.0
FEB					SEP				
20...	1155	117	710	0.0	18...	1240	239	625	16.5
APR									
16...	1205	323	620	10.5					

WATER-QUALITY PARTIAL-RECORD STATIONS

MISCELLANEOUS WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)	DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)
STREAMS TRIBUTARY TO LAKE MICHIGAN--CONTINUED									
04086600 MILWAUKEE RIVER NEAR CEDARBURG, WI (LAT 43 16 46N LONG 087 56 34W)									
OCT 1989					JUN				
23...	1225	212	710	8.5	28...	1355	428	635	22.5
JAN 1990					AUG				
29...	1240	325	580	0.0	09...	1235	121	640	26.0
APR					SEP				
18...	1120	470	670	8.5	20...	1105	258	705	16.5
04087030 MENOMONEE RIVER AT MENOMONEE FALLS, WI (LAT 43 10 22N LONG 088 06 14W)									
OCT 1989					JUN 1990				
23...	1510	7.8	1040	9.5	29...	1200	27	710	20.5
DEC					AUG				
05...	1400	6.7	980	0.0	09...	1640	4.0	710	22.5
APR 1990					SEP				
18...	1440	23	860	9.0	20...	1355	19	890	15.5
MAY									
23...	1505	46	720	13.5					
04087088 UNDERWOOD CREEK AT WAUWATOSA, WI (LAT 43 03 17N LONG 088 02 46W)									
JAN 1990					JUN 1990				
23...	1222	4.7	2080	3.5	04...	1155	8.2	1210	19.0
APR					AUG				
23...	1040	16	1180	15.5	15...	1055	4.2	1020	24.5
04087120 MENOMONEE RIVER AT WAUWATOSA, WI (LAT 43 02 44N LONG 087 59 59W)									
NOV 1989					JUN 1990				
01...	1225	27	1000	8.5	04...	1445	55	1030	16.5
DEC					JUL				
12...	1430	15	1230	0.0	12...	0955	20	1150	19.5
JAN 1990					AUG				
23...	1425	34	3210	1.0	15...	1311	15	970	24.0
MAR					SEP				
13...	1105	530	760	7.0	12...	1715	28	800	23.0
APR									
23...	1325	98	1120	15.5					
04087159 KINNICKINNIC R AT S. 11TH ST AT MILWAUKEE, WI (LAT 42 59 51N LONG 087 55 35W)									
NOV 1989					APR 1990				
01...	1420	8.9	830	10.5	23...	1600	13	1360	20.5
JAN 1990					JUN				
23...	1643	69	2600	2.5	04...	1720	8.8	1100	21.5
MAR									
14...	0750	66	965	10.5					
04087204 OAK CREEK AT SOUTH MILWAUKEE, WI (LAT 42 55 30N LONG 087 52 12W)									
NOV 1989					APR 1990				
01...	1640	8.0	1270	8.5	24...	0940	20	1300	14.5
DEC					JUN				
13...	1409	3.1	1650	0.0	05...	0730	8.6	1270	11.5
20...	1240	6.1	2050	3.0	JUL				
JAN 1990					12...	1240	4.1	1340	20.0
24...	1120	72	1700	2.0	AUG				
30...	1428	14	3210	2.5	15...	1905	2.6	1330	24.0
MAR					SEP				
12...	1320	253	680	8.0	13...	1025	3.5	1300	21.0
13...	0910	202	730	7.0					
15...	1058	110	990	10.5					
04087220 ROOT RIVER NEAR FRANKLIN, WI (LAT 42 52 25N LONG 087 59 45W)									
NOV 1989					JUN 1990				
02...	0953	7.8	1180	6.0	05...	0950	20	930	13.0
DEC					JUL				
13...	1155	3.4	910	0.0	12...	1415	6.4	910	21.0
MAR 1990					AUG				
12...	1535	470	595	8.0	16...	1014	4.4	1060	22.5
13...	0730	358	640	6.5	SEP				
15...	1300	207	820	10.5	13...	1300	4.6	1000	22.0
APR									
24...	0705	41	1060	14.0					

MISCELLANEOUS WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)	DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)
STREAMS TRIBUTARY TO LAKE MICHIGAN--CONTINUED									
04087233 ROOT RIVER CANAL NEAR FRANKLIN, WI (LAT 42 48 55N LONG 087 59 40W)									
NOV 1989					MAR 1990				
02...	0840	14	970	6.5	16...	0710	232	595	7.5
DEC 13...	0855	5.7	640	0.0	APR 23...	1820	69	860	15.5
JAN 1990					JUN 05...	1255	23	800	12.5
24...	0820	56	1000	0.5	JUL 12...	1606	10	930	20.0
MAR 12...	1150	705	430	9.5	AUG 16...	1508	5.7	1020	24.5
13...	1345	621	500	9.0					
15...	0740	406	550	10.5					
04087240 ROOT RIVER AT RACINE, WI (LAT 42 45 05N LONG 087 49 25W)									
OCT 1989					APR 1990				
25...	1655	72	1040	12.0	10...	1610	148	877	7.5
DEC 06...	1438	33	1180	1.0	MAY 23...	1205	526	620	14.0
JAN 1990					JUL 19...	0945	31	760	22.5
17...	1330	51	1100	1.5	SEP 11...	0747	19	868	22.0
FEB 26...	1611	146	1940	0.5					
04087257 PIKE RIVER NEAR RACINE, WI (LAT 42 38 49N LONG 087 51 38W)									
OCT 1989					APR 1990				
25...	1500	15	810	15.0	10...	1500	52	741	6.0
DEC 06...	1235	10	805	3.0	MAY 23...	0926	69	712	12.0
JAN 1990					JUL 19...	0710	24	664	20.5
17...	1126	22	640	3.5	SEP 11...	0940	11	420	22.5
FEB 26...	1408	45	950	0.5					
ST. CROIX RIVER BASIN									
05333500 ST. CROIX RIVER NEAR DANBURY, WI (LAT 46 04 28N LONG 092 14 50W)									
OCT 1989					MAR 1990				
24...	1310	696	125	7.0	16...	1220	5200	150	1.0
DEC 15...	1159	700	200	0.0	MAY 03...	1355	2620	126	12.5
JAN 1990					AUG 15...	1110	604	133	22.5
29...	1233	736	220	0.5					
05340500 ST. CROIX RIVER AT ST. CROIX FALLS, WI (LAT 45 24 25N LONG 092 38 49W)									
OCT 1989					APR 1990				
11...	0940	1710	208	9.0	23...	1040	5450	168	14.5
JAN 1990					JUL 30...	1155	5600	174	24.0
22...	1120	2550	265	0.0					
MAR 20...	1000	12200	160	0.0					
CHIPPEWA RIVER BASIN									
05356000 CHIPPEWA RIVER AT BISHOPS BRIDGE NEAR WINTER, WI (LAT 45 50 57N LONG 091 04 44)									
OCT 1989					APR 1990				
26...	1602	140	92	7.5	16...	1355	230	75	8.0
DEC 13...	1000	216	130	0.0	AUG 23...	1435	240	91	21.5
FEB 1990									
02...	1132	1130	65	1.0					

WATER-QUALITY PARTIAL-RECORD STATIONS

MISCELLANEOUS WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	OXYGEN, DIS- SOLVED (MG/L) (00300)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)
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CHIPPEWA RIVER BASIN--CONTINUED

454657091300600 BIG SISSABAGAMA TRIBUTARY NEAR STONE LAKE, WI (LAT 45 46 57N LONG 091 30 06W)

APR 1990						
23...	1155	0.0	7.3	12.5	12.6	0.020
JUN						
18...	1240	0.0	7.2	20.0	9.7	0.130
JUL						
18...	1240	0.0	7.0	25.5	7.2	0.030
AUG						
14...	1255	0.0	8.6	24.5	10.1	0.020

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)	DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)
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05356500 CHIPPEWA RIVER NEAR BRUCE, WI (LAT 45 27 08N LONG 091 15 39W)

OCT 1989					APR 1990				
27...	1125	343	150	12.5	27...	1230	1030	100	17.0
DEC					JUN				
18...	1225	312	--	0.0	19...	0925	1220	90	19.0
FEB 1990					AUG				
05...	1410	851	120	0.0	07...	1035	408	109	21.0
MAR									
19...	1130	4050	92	1.0					

05360500 FLAMBEAU RIVER NEAR BRUCE, WI (LAT 45 22 21N LONG 091 12 34W)

OCT 1989					APR 1990				
27...	1020	449	160	11.0	27...	1030	793	130	13.5
NOV					JUN				
24...	1430	450	187	1.0	08...	1055	833	108	17.0
FEB 1990					AUG				
05...	1015	499	180	0.0	07...	1310	609	112	26.0
MAR									
19...	1215	3320	94	1.0					

05362000 JUMP RIVER AT SHELDON, WI (LAT 45 18 29N LONG 090 57 23W)

OCT 1989					MAR 1990				
24...	1235	46	217	10.0	12...	1650	560	153	1.0
NOV					20...	1458	862	92	2.0
29...	1340	60	220	0.5	APR				
30...	1552	60	224	0.5	26...	1450	871	96	20.0
JAN 1990					JUN				
09...	1050	51	303	0.0	21...	1300	610	75	21.5
					AUG				
					06...	1640	116	115	24.5

05365500 CHIPPEWA RIVER AT CHIPPEWA FALLS, WI (LAT 44 55 37N LONG 091 24 33W)

OCT 1989					MAR 1990				
25...	1400	1920	140	13.0	16...	0910	29100	180	1.0
26...	1545	5700	135	12.0	APR				
NOV					24...	0910	7660	135	10.0
24...	1240	778	185	3.0	JUN				
JAN 1990					13...	1455	29600	75	19.5
24...	0905	218	235	1.5	AUG				
FEB					08...	1205	334	158	25.0
26...	1100	2750	238	0.5	09...	1135	372	165	25.5
					15...	1110	295	198	24.0

MISCELLANEOUS WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)	DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)
CHIPPEWA RIVER BASIN--CONTINUED									
05365707		NORTH FORK EAU CLAIRE RIVER NEAR THORP, WI (LAT 44 58 25N LONG 090 50 57W)							
OCT 1989					MAR 1990				
20...	1142	2.7	855	7.0	20...	1210	41	286	2.0
NOV					JUN 1990				
29...	1124	1.8	367	0.0	18...	1225	156	131	21.0
MAR 1990					AUG				
12...	1445	1050	110	1.5	06...	1420	28	127	21.5
05369000		RED CEDAR RIVER AT MENOMONIE, WI (LAT 44 53 02N LONG 091 55 57W)							
OCT 1989					APR 1990				
03...	1202	688	170	14.0	26...	1430	2000	218	16.0
NOV					JUN				
24...	1025	614	260	1.0	12...	1420	2640	210	18.5
JAN 1990					AUG				
22...	1630	660	282	1.5	09...	1555	600	220	24.0
MAR									
14...	1600	12000	218	2.5					
TREMPEALEAU RIVER BASIN									
05379500		TREMPEALEAU RIVER AT DODGE, WI (LAT 44 07 55N LONG 091 33 14W)							
OCT 1989					MAR 1990				
17...	1440	346	300	10.0	15...	1028	6400	174	6.0
DEC					APR				
05...	1302	260	346	0.5	30...	1710	820	270	14.5
JAN 1990					JUN				
23...	1145	239	338	0.0	19...	1115	751	251	21.0
MAR					AUG				
13...	1315	4270	210	2.5	09...	1319	341	305	21.0
BLACK RIVER BASIN									
05381000		BLACK RIVER AT NEILLSVILLE, WI (LAT 44 33 34N LONG 090 36 52W)							
OCT 1989					APR 1990				
19...	1812	53	218	7.5	25...	1317	2480	140	19.0
DEC					JUN				
07...	1425	55	282	0.0	20...	1545	768	108	22.5
JAN 1990					AUG				
25...	1425	33	366	0.0	08...	1445	161	155	24.0
MAR									
15...	1810	8010	119	2.5					
WISCONSIN RIVER BASIN									
05391000		WISCONSIN R AT RAINBOW LK NEAR LAKE TOMAHAWK, WI (LAT 45 49 58N LONG 089 32 51)							
OCT 1989					MAY 1990				
04...	1500	292	88	12.5	08...	1630	312	92	16.0
NOV					JUL				
16...	1450	284	85	1.0	23...	1500	420	63	23.0
JAN 1990									
03...	1400	355	90	1.0					
05393500		SPIRIT RIVER AT SPIRIT FALLS, WI (LAT 45 26 58N LONG 089 58 47W)							
OCT 1989					MAR 1990				
02...	1115	4.8	158	12.5	21...	1115	138	85	1.5
NOV					MAY				
15...	1040	20	135	1.5	01...	1430	198	80	9.5
DEC					18...	1025	512	58	9.5
22...	1550	7.2	170	0.0	JUN				
FEB 1990					26...	1345	72	90	24.5
07...	1130	11	175	0.0	AUG				
					30...	1600	95	83	21.0

WATER-QUALITY PARTIAL-RECORD STATIONS

MISCELLANEOUS WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)	DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)
WISCONSIN RIVER BASIN--CONTINUED									
05394500 PRAIRIE RIVER NEAR MERRILL, WI (LAT 45 14 09N LONG 089 38 59W)									
OCT 1989					MAR 1990				
02...	1325	57	175	12.0	21...	1345	165	125	2.5
NOV					MAY				
14...	1100	81	180	2.0	01...	1200	145	140	9.5
JAN 1990					16...	1515	436	95	11.0
02...	1500	68	210	1.0	JUN				
FEB					25...	1540	124	145	23.5
06...	1455	74	200	0.0	AUG				
					14...	1050	105	160	18.0
05395000 WISCONSIN RIVER AT MERRILL, WI (LAT 45 10 41N LONG 089 40 52W)									
NOV 1989					MAY 1990				
13...	1630	1020	210	4.0	18...	1630	6020	118	12.5
05397500 EAU CLAIRE RIVER AT KELLY, WI (LAT 44 55 06N LONG 089 33 00W)									
OCT 1989					MAR 1990				
03...	1210	43	305	10.5	21...	1540	333	142	4.0
NOV					MAY				
14...	1435	71	270	4.0	02...	1215	198	180	11.0
DEC					JUN				
21...	1100	45	270	0.0	14...	1725	4400	73	19.5
FEB 1990					AUG				
05...	1215	52	285	0.0	31...	1210	253	145	19.0
05398000 WISCONSIN RIVER AT ROTHSCILD, WI (LAT 44 53 09N LONG 089 38 05W)									
JUN 1990									
14...	1440	39000	65	20.0					
05399500 BIG EAU PLEINE RIVER NEAR STRATFORD, WI (LAT 44 49 19N LONG 090 04 46W)									
OCT 1989					MAR 1990				
03...	1545	1.3	285	11.5	22...	1410	67	200	6.5
NOV					MAY				
15...	1400	14	265	4.0	04...	1540	77	190	16.5
DEC					17...	1545	666	140	11.0
20...	1400	1.9	620	0.0	AUG				
FEB 1990					08...	1052	21	210	21.5
07...	1550	2.4	600	0.5					
05402000 YELLOW RIVER AT BABCOCK, WI (LAT 44 18 05N LONG 090 07 15W)									
OCT 1989					MAY 1990				
19...	1515	6.2	122	5.0	02...	1227	144	160	13.5
DEC					JUN				
06...	1352	12	186	0.0	20...	1220	180	118	21.5
JAN 1990					AUG				
24...	1455	8.5	196	0.0	10...	1130	50	145	21.5
MAR									
14...	1505	5930	112	2.0					
05404000 WISCONSIN RIVER NEAR WISCONSIN DELLS, WI (LAT 43 36 22N LONG 089 45 25W)									
OCT 1989					MAY 1990				
06...	1520	2020	220	10.5	24...	1250	10700	210	13.5
NOV					JUN				
13...	1315	2510	230	7.5	18...	1250	14600	180	21.5
FEB 1990					AUG				
22...	1545	2110	320	1.5	01...	1440	5960	150	24.0
MAR					SEP				
20...	1020	7930	260	3.0	20...	1150	8550	200	18.5
APR									
11...	1445	2440	260	7.5					

MISCELLANEOUS WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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WISCONSIN RIVER BASIN--CONTINUED									
05404116 SOUTH BRANCH BARABOO RIVER AT HILLSBORO, WI (LAT 43 39 10N LONG 090 20 09W)									
OCT 1989					MAR 1990				
02...	1350	4.1	400	14.5	01...	1215	3.8	410	1.5
NOV					30...	1215	7.9	420	7.0
01...	1035	12	440	9.5	MAY				
DEC					02...	0850	6.1	435	13.0
01...	0733	6.6	475	2.0	31...	1325	7.4	435	21.0
29...	0945	4.0	585	1.5	JUL				
FEB 1990					02...	1115	26	430	21.5
01...	1100	8.5	425	1.0	31...	1330	6.0	490	22.0
					AUG				
					29...	1400	12	490	23.5
05405000 BARABOO RIVER NEAR BARABOO, WI (LAT 43 28 51N LONG 089 38 09W)									
OCT 1989					APR 1990				
12...	1045	176	385	11.0	10...	1430	318	340	9.0
NOV					MAY				
15...	1340	211	400	5.5	24...	1515	687	270	15.5
JAN 1990					JUN				
08...	1325	167	430	0.0	13...	1145	181	340	21.5
FEB					JUL				
19...	1355	247	360	0.5	02...	1435	2570	210	24.0
MAR					31...	1635	190	390	22.0
15...	1225	2010	230	7.5	SEP				
					21...	1035	203	375	16.0
05408000 KICKAPOO RIVER AT LA FARGE, WI (LAT 43 34 27N LONG 090 38 35W)									
OCT 1989					APR 1990				
06...	1305	120	440	10.0	16...	1300	133	450	8.5
NOV					JUN				
14...	1345	105	470	5.0	08...	1143	123	440	17.0
JAN 1990					JUL				
10...	1145	180	410	0.5	31...	1130	128	435	19.5
FEB					AUG				
20...	1330	87	470	0.0	20...	1120	730	300	18.5
MAR					SEP				
12...	1130	1530	220	5.5	19...	1255	163	480	13.5
05410490 KICKAPOO RIVER AT STEUBEN, WI (LAT 43 10 58N LONG 090 51 30W)									
OCT 1989					MAR 1990				
11...	0835	262	490	8.0	27...	1055	414	480	5.5
NOV					MAY				
22...	1005	302	480	0.5	08...	0945	301	480	16.5
JAN 1990					JUN				
02...	0945	251	480	0.0	21...	0922	403	430	21.0
FEB					AUG				
12...	0928	413	370	0.5	20...	1448	1040	430	20.5
PLATTE RIVER BASIN									
05414000 PLATTE RIVER NEAR ROCKVILLE, WI (LAT 42 43 52N LONG 090 38 25W)									
OCT 1989					MAR 1990				
11...	1418	33	570	13.0	27...	1600	42	595	8.5
NOV					MAY				
24...	1030	27	600	0.0	08...	1515	35	540	20.0
JAN 1990					JUN				
02...	1310	26	580	0.0	21...	1532	36	560	23.0
FEB					AUG				
12...	1520	42	560	2.0	20...	1450	208	440	21.5

WATER-QUALITY PARTIAL-RECORD STATIONS

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GALENA RIVER BASIN

05415000 GALENA RIVER AT BUNCOMBE, WI (LAT 42 30 49N LONG 090 22 40W)									
OCT 1989					MAR 1990				
11...	1722	20	910	14.5	28...	1115	28	860	6.5
NOV					MAY				
24...	1345	23	970	1.0	09...	1106	26	790	17.5
JAN 1990					JUN				
02...	1549	19	920	0.0	22...	1318	27	820	21.0
FEB					AUG				
13...	0900	26	810	2.0	20...	1235	340	455	21.0

ROCK RIVER BASIN

05423500 SOUTH BRANCH ROCK RIVER AT WAUPUN, WI (LAT 43 38 30N LONG 088 43 15W)									
OCT 1989					MAR 1990				
06...	1620	13	1040	11.5	09...	1158	182	280	1.0
NOV					30...	1157	36	830	6.0
02...	1326	15	1010	8.0	MAY				
DEC					01...	1405	22	870	15.5
01...	0915	11	1060	1.5	31...	1435	29	830	20.5
JAN 1990					JUL				
03...	0950	3.7	1470	0.0	30...	1415	19	960	24.0
31...	1035	7.4	890	0.0	AUG				
FEB					30...	1008	22	905	22.5
28...	1500	4.8	1040	1.0					

05425500 ROCK RIVER AT WATERTOWN, WI (LAT 43 11 25N LONG 088 43 35W)									
OCT 1989					APR 1990				
26...	1435	158	690	14.0	19...	1225	1100	560	8.5
DEC					AUG				
01...	1215	162	700	1.0	06...	1115	156	500	22.5
JAN 1990					SEP				
08...	1250	107	790	0.5	21...	1025	144	660	18.0
FEB									
23...	1120	424	670	0.5					

05425912 BEAVERDAM RIVER AT BEAVER DAM, WI (LAT 43 26 57N LONG 088 50 21W)									
OCT 1989					MAR 1990				
02...	0943	16	530	15.5	30...	1000	269	410	5.5
NOV					MAY				
02...	1507	14	560	8.0	01...	1643	10	480	16.0
DEC					31...	1605	40	490	20.5
01...	1130	26	555	3.5	JUL				
JAN 1990					30...	1145	13	500	24.5
03...	1205	14	580	3.0	AUG				
31...	1223	23	650	2.5	07...	1630	77	480	25.0
FEB					30...	1220	71	515	26.0
28...	1609	50	640	2.5					

05426000 CRAWFISH RIVER AT MILFORD, WI (LAT 43 06 00N LONG 088 50 58W)									
OCT 1989					APR 1990				
24...	1345	102	820	14.0	19...	1030	290	660	8.5
DEC					AUG				
01...	1025	120	740	0.0	06...	1400	111	600	24.5
JAN 1990					SEP				
08...	1050	66	810	0.0	21...	1200	144	620	18.0
FEB									
23...	0940	190	710	0.5					

05426031 ROCK RIVER AT JEFFERSON, WI (LAT 42 59 46N LONG 088 48 26W)									
OCT 1989					AUG 1990				
24...	1035	433	710	9.5	10...	1050	233	620	25.5
DEC					SEP				
06...	1005	309	750	0.5	24...	1100	246	660	14.0
APR 1990									
13...	1110	1880	530	8.0					

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ROCK RIVER BASIN--CONTINUED									
05426250 BARK RIVER NEAR ROME, WI (LAT 42 57 39N LONG 088 40 09W)									
OCT 1989					APR 1990				
26...	1414	38	695	15.0	11...	1050	92	606	7.0
DEC					MAY				
07...	1148	38	760	0.5	24...	1217	173	568	17.0
JAN 1990					JUL				
18...	1325	54	610	1.0	20...	0845	42	568	23.0
FEB					SEP				
27...	1055	56	715	0.5	11...	1430	32	623	23.0
MAR									
14...	1300	230	380	10.0					
05427570 ROCK RIVER AT INDIANFORD, WI (LAT 42 48 15N LONG 089 05 25W)									
OCT 1989					JUN 1990				
24...	1150	225	690	9.0	25...	1005	824	616	22.0
DEC					JUL				
05...	1328	601	695	1.0	17...	1046	1010	606	23.0
JAN 1990					AUG				
16...	1050	525	840	2.5	09...	1135	321	584	23.5
APR					SEP				
13...	1010	2680	435	6.5	13...	0900	274	588	24.5
05429500 YAHARA RIVER NEAR MC FARLAND, WI (LAT 43 00 32N LONG 089 18 18W)									
OCT 1989					APR 1990				
10...	1110	58	490	12.0	09...	1205	45	459	9.0
24...	0742	46	485	9.5	MAY				
NOV					01...	0755	129	464	12.5
20...	0846	88	455	4.0	29...	0812	267	473	16.0
DEC					JUN				
04...	1324	79	500	0.5	21...	0824	80	450	21.5
27...	0912	68	510	1.0	JUL				
JAN 1990					16...	0838	157	464	22.0
19...	1312	100	540	4.0	AUG				
FEB					08...	0745	72	476	22.0
06...	0817	99	530	2.5	30...	0812	136	476	24.0
27...	1245	96	535	6.0	SEP				
MAR					13...	1247	30	462	27.0
21...	0830	349	440	4.5					
05430150 BADFISH CREEK NEAR COOKSVILLE, WI (LAT 42 50 00N LONG 089 11 48W)									
OCT 1989					MAY 1990				
24...	1330	72	1490	15.5	29...	1325	79	1250	19.5
DEC					JUN				
04...	0900	82	1340	3.0	21...	1143	75	1280	21.5
JAN 1990					JUL				
19...	1035	78	1350	4.0	16...	1350	76	1440	23.0
FEB					AUG				
28...	1100	77	1480	4.0	08...	1106	76	1480	21.0
MAR					30...	1035	84	1390	21.0
14...	0835	356	800	10.5	SEP				
					13...	1015	87	1430	21.0
05430175 YAHARA RIVER NEAR FULTON, WI (LAT 42 49 50N LONG 089 10 09W)									
OCT 1989					APR 1990				
23...	1412	360	1010	13.0	13...	1107	156	944	10.5
DEC					MAY				
04...	1038	132	1340	3.5	29...	1115	446	1030	18.0
JAN 1990					JUL				
19...	0842	133	1250	3.5	16...	1120	394	1050	21.0
FEB					SEP				
28...	0925	135	1370	3.5	12...	1400	150	1340	24.0
MAR									
15...	1111	879	500	11.0					

WATER-QUALITY PARTIAL-RECORD STATIONS

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ROCK RIVER BASIN--CONTINUED									
05430500		ROCK RIVER AT AFTON, WI (LAT 42 36 33N LONG 089 04 14W)							
OCT 1989					APR 1990				
23...	1040	661	660	9.5	12...	1100	3350	515	6.5
DEC					MAY				
05...	0831	849	740	2.0	21...	1305	3560	644	13.5
JAN 1990					JUL				
15...	1110	668	800	1.5	06...	0945	2540	600	26.0
MAR					SEP				
01...	0905	1360	745	2.5	12...	1035	829	648	22.0
05431486		TURTLE CREEK AT CARVERS ROCK ROAD NR CLINTON, WI (LAT 42 35 50N LONG 088 49 45)							
OCT 1989					APR 1990				
25...	0843	138	675	12.0	10...	0818	85	673	8.0
DEC					MAY				
06...	0841	45	750	0.5	22...	1015	117	707	14.0
JAN 1990					JUL				
15...	0925	42	790	0.5	18...	0840	56	722	21.5
FEB					SEP				
26...	0940	46	800	0.0	10...	0820	40	778	20.0
MAR									
12...	1150	406	490	9.5					
05432500		PECATONICA RIVER AT DARLINGTON, WI (LAT 42 40 40N LONG 090 07 07W)							
OCT 1989					MAR 1990				
12...	0755	49	660	10.5	28...	0825	79	660	6.0
NOV					MAY				
27...	1100	60	650	1.0	09...	0745	56	590	18.5
DEC					JUN				
20...	1125	34	730	0.0	27...	1245	74	610	25.5
JAN 1990					AUG				
04...	1115	49	720	0.0	20...	0915	1160	380	22.0
FEB									
19...	0910	63	580	0.5					
05433000		EAST BR PECATONICA R NR BLANCHARDVILLE, WI (LAT 42 47 10N LONG 089 51 40W)							
OCT 1989					MAR 1990				
12...	0943	70	580	11.5	29...	0815	88	550	7.0
NOV					MAY				
27...	0830	79	550	2.5	07...	1345	75	540	17.5
JAN 1990					JUN				
04...	1423	70	1420	0.0	27...	1445	77	550	26.0
FEB									
19...	1145	85	545	0.5					
05434500		PECATONICA RIVER AT MARTINTOWN, WI (LAT 42 30 34N LONG 089 47 58W)							
OCT 1989					MAR 1990				
16...	1300	233	655	15.0	28...	1355	388	630	7.5
NOV					MAY				
21...	1317	305	600	1.0	07...	1110	330	580	15.0
JAN 1990					JUN				
03...	1310	212	610	0.0	22...	1005	323	600	21.0
FEB									
13...	1245	407	470	0.5					
05436500		SUGAR RIVER NEAR BRODHEAD, WI (LAT 42 36 42N LONG 089 23 53W)							
OCT 1989					MAR 1990				
16...	1027	189	590	16.0	28...	1419	256	590	9.5
NOV					MAY				
21...	1005	178	580	1.0	07...	0835	254	540	14.5
JAN 1990					JUN				
03...	0928	158	585	0.0	22...	0812	188	560	22.0
FEB					AUG				
13...	1518	237	510	2.0	21...	0826	467	440	21.0

WATER-QUALITY PARTIAL-RECORD STATIONS

533

MISCELLANEOUS WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)	DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)
ILLINOIS RIVER BASIN									
05543830		FOX RIVER AT WAUKESHA, WI (LAT 43 00 17N LONG 088 14 37W)							
NOV 1989					JUN 1990				
01...	0810	44	1120	9.5	04...	0818	109	880	14.0
DEC					JUL				
12...	0900	31	820	0.0	12...	0750	54	900	20.5
JAN 1990					AUG				
23...	0850	56	1070	1.5	15...	0812	30	1210	21.5
MAR					SEP				
12...	1808	568	545	8.0	12...	1125	44	1100	23.0
APR									
23...	0823	167	895	14.5					
05544200		MUKWONAGO RIVER AT MUKWONAGO, WI (LAT 42 51 24N LONG 088 19 40W)							
OCT 1989					APR 1990				
26...	1251	12	600	13.5	11...	0915	59	502	7.0
DEC					MAY				
07...	0915	28	580	4.0	24...	0931	107	464	16.0
JAN 1990					JUL				
18...	1120	41	580	3.0	19...	1242	21	473	25.5
FEB					AUG				
27...	0813	46	590	2.0	31...	1030	26	476	25.0
MAR					SEP				
14...	1122	219	350	6.0	11...	1150	24	504	24.0
05546500		FOX RIVER AT WILMOT, WI (LAT 42 30 40N LONG 088 10 45W)							
MAY 1990									
22...	1540	2230	616	15.0					

GROUND-WATER RECORDS

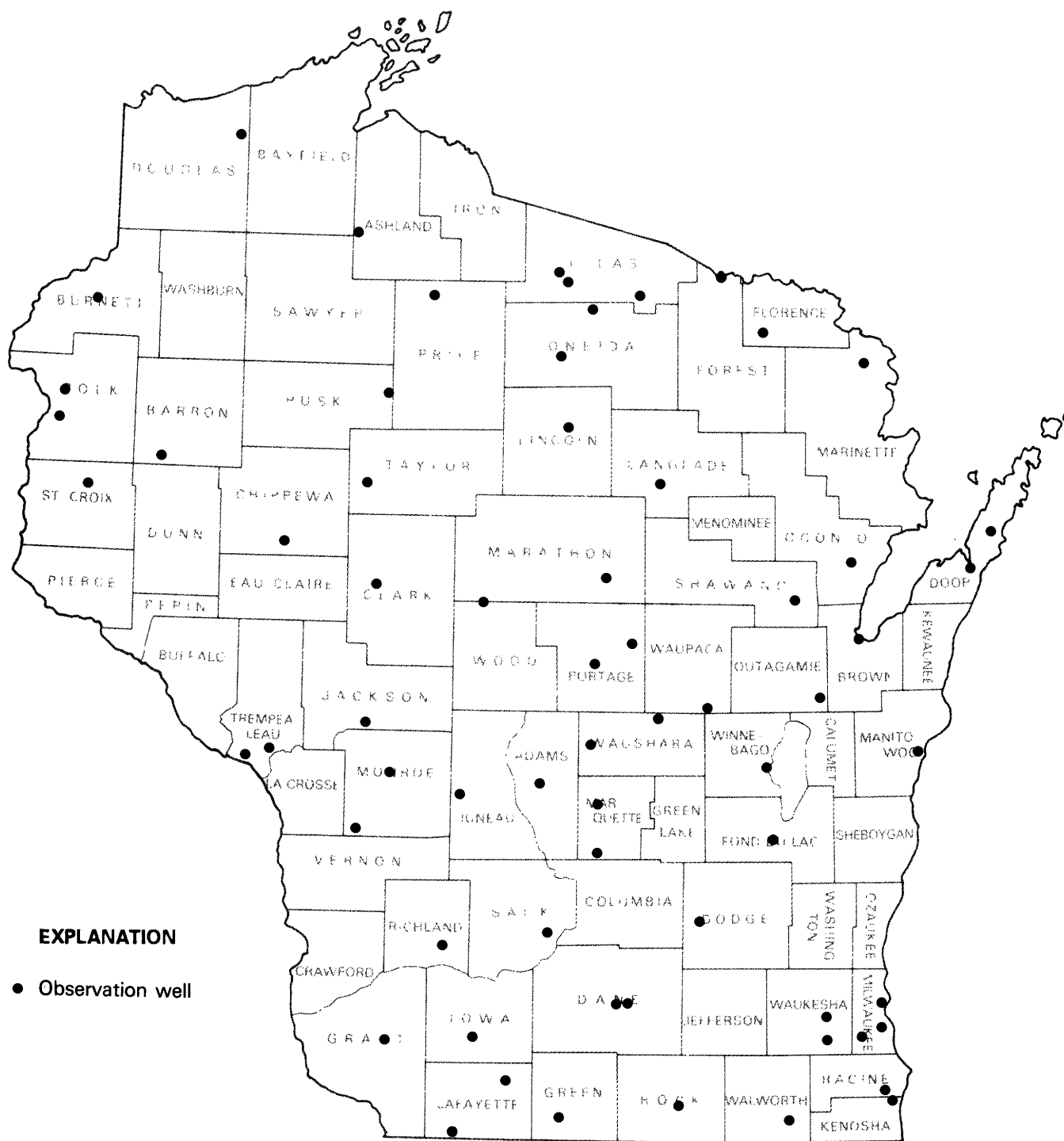


Figure 7. Location of observation wells in Wisconsin.

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.--Driven observation water table well, diameter 1 1/4 in, depth 21 ft, cased to 19 ft, well point 19-21 ft.

DATUM.--Altitude of land-surface is 955 ft above National Geodetic Vertical Datum of 1929. 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, 9.61 ft below land-surface datum. May 29, 1973; lowest water level measured, 18.14 ft below land-surface datum, Mar. 7, 1977.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 2	16.00	DEC 5	15.92	FEB 12	17.25	APR 19	16.03	JUN 11	14.70	AUG 6	14.21
9	15.92	18	16.47	20	17.25	23	16.20	18	14.60	16	14.40
17	15.95	27	16.68	26	17.26	MAY 1	16.19	25	13.83	20	14.32
23	16.06	JAN 3	16.77	MAR 6	17.54	7	16.14	JUL 2	13.64	27	14.03
NOV 1	16.01	8	16.80	12	17.37	14	15.78	9	14.05	SEP 4	14.01
6	15.92	16	17.00	19	16.87	21	15.25	19	14.71	10	14.00
13	15.99	22	16.99	27	16.64	29	14.93	23	14.59	17	13.30
25	16.22	30	17.07	APR 2	16.45	JUN 4	14.95	30	14.57	24	13.30
28	15.70	FEB 5	17.15	9	16.36						

ASHLAND COUNTY

460936090531701. Local number, AS-43/04W/32-0006.

LOCATION.--Lat 46°09'36", long 90°53'17", Hydrologic Unit 07050001. Owner: U.S. Forest Service.

AQUIFER.--Sand and gravel.

WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 5 in, depth 89 ft.

DATUM.--Altitude of land-surface datum is 1,470 ft above National Geodetic Vertical Datum of 1929. Measuring point: top of hole in pump base, at land-surface datum.

PERIOD OF RECORD.--August 1957 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 24.4 ft below land-surface datum, Mar. 24, 1985; lowest water level measured, 32.4 ft below land-surface datum, Apr. 1, 1964.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 30	30.90	JAN 3	31.20	FEB 26	31.50	MAY 25	31.80	JUL 23	31.60	SEP 25	31.70
NOV 22	31.20	26	31.30	APR 18	31.70	JUN 25	31.50	AUG 24	31.80		

BARRON COUNTY

451514091582101. Local number, BR-33/13W/21-0046.

LOCATION.--Lat 45°15'14", long 91°58'21", Hydrologic Unit 07050007. Owner: Edward Thuftin.

AQUIFER.--Sandstone.

WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 4 in, depth 65 ft.

DATUM.--Altitude of land-surface is 1,115 ft above National Geodetic Vertical Datum of 1929. Measuring point: top of casing, 2.00 ft above land-surface datum.

PERIOD OF RECORD.--October 1956 to current year.

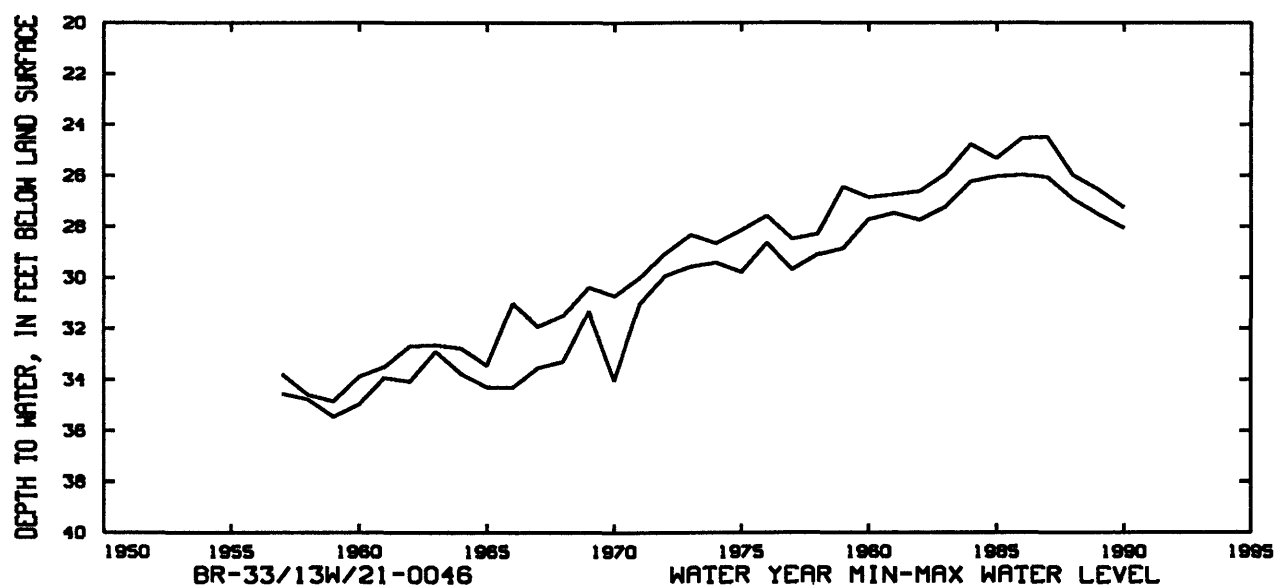
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 24.47 ft below land-surface datum, Nov. 5, 1986; lowest water level measured, 35.45 ft below land-surface datum, May 13, 1959.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 8	27.25	DEC 10	27.52	FEB 11	27.84	APR 22	27.89	JUN 17	27.58	AUG 9	27.70
15	27.29	16	27.62	20	27.83	29	27.94	24	27.87	18	27.70
20	27.26	23	27.58	28	27.83	MAY 6	27.93	JUL 3	27.70	25	27.57
28	27.28	31	27.52	MAR 6	28.01	15	28.01	8	27.80	SEP 2	27.37
NOV 3	27.38	JAN 5	27.64	11	27.80	20	28.06	15	27.69	9	27.32
12	27.42	13	27.72	18	27.97	27	28.00	22	27.70	15	27.27
19	27.32	20	27.67	25	27.85	JUN 2	27.93	30	27.72	23	27.32
27	27.44	28	27.78	APR 1	27.81	11	27.88	AUG 4	27.70	29	27.41
DEC 3	27.48	FEB 4	27.78	8	27.89						

GROUND-WATER LEVELS

BARRON COUNTY



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.

DATUM.--Altitude of land-surface is 590 ft above National Geodetic Vertical Datum of 1929. 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 LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 3	115.05	DEC 5	101.49	FEB 6	94.38	MAR 28	95.49	MAY 22	95.30	JUL 17	95.82
10	113.95	12	100.38	13	94.19	APR 3	93.43	JUN 6	95.12	31	97.29
18	112.83	20	99.31	20	94.10	17	93.55	12	95.10	AUG 21	99.14
24	111.33	JAN 2	96.88	27	93.43	24	92.80	20	95.62	28	99.01
31	109.71	9	95.82	MAR 7	93.15	MAY 1	93.46	26	95.94	SEP 18	100.32
NOV 7	107.42	16	96.00	13	92.56	8	93.71	JUL 3	95.94	25	99.28
14	105.80	23	94.94	20	95.31	18	94.95	10	96.13	26	97.83
28	103.25	30	94.58								

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 1/2-46 ft.

DATUM.--Altitude of land-surface is 981 ft above National Geodetic Vertical Datum of 1929. 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, 37.32 ft below land-surface datum, Mar. 3, 1938.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 6	33.61	DEC 8	33.79	FEB 9	33.86	APR 20	34.02	JUN 15	34.00	AUG 10	34.00
13	33.69	15	33.79	16	33.81	27	34.04	22	34.00	17	33.98
20	33.67	22	33.80	23	33.89	MAY 4	34.09	29	33.98	24	33.99
27	33.74	29	33.80	MAR 2	33.88	11	34.05	JUL 6	34.00	31	34.01
NOV 3	33.76	JAN 5	33.71	9	33.91	18	34.03	13	33.95	SEP 7	34.00
10	33.73	12	33.75	16	33.91	25	34.03	20	33.98	14	34.00
17	33.72	19	33.80	23	33.93	JUN 1	34.02	27	34.00	21	33.99
24	33.66	26	33.87	APR 6	34.00	8	34.04	AUG 3	34.01	28	33.99
DEC 1	33.77	FEB 2	33.92	13	34.00						

CHIPPEWA COUNTY

445544091155701. Local number, CH-28/07W/17-0142.

LOCATION.--Lat 44°55'44", long 91°15'57", Hydrologic Unit 07050005. Owner Wis. Dept. of Transportation.

AQUIFER.--Sandstone.

WELL CHARACTERISTICS.--Drilled domestic artesian well, diameter 6 in, depth 60 ft, cased to 39 ft, open end.

DATUM.--Altitude of land-surface is 965 ft above National Geodetic Vertical Datum of 1929. Measuring point: 1/4-in hole in pump base, 2.20 ft above land-surface datum.

PERIOD OF RECORD.--January 1968 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 25.97 ft below land-surface datum, Oct. 28, 1986; lowest water level measured, 33.46 ft below land-surface datum, Jan. 10, 1978.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 3	30.48	DEC 4	30.40	FEB 5	31.40	APR 9	31.43	JUN 10	31.58	AUG 6	31.00
10	30.42	11	31.10	12	30.97	16	31.56	18	31.07	13	30.81
16	30.90	18	31.11	19	31.69	23	31.26	25	30.99	20	30.71
23	30.73	25	30.47	25	31.80	30	31.20	JUL 2	30.66	26	30.34
30	30.69	JAN 2	31.00	MAR 5	31.62	MAY 7	31.27	9	30.89	SEP 2	30.41
NOV 6	30.88	8	31.68	12	31.12	14	31.53	16	30.77	10	30.31
14	30.59	16	31.29	19	31.91	21	31.53	23	30.91	17	30.59
21	30.99	22	31.41	26	31.77	29	31.76	31	30.96	25	30.11
27	30.57	28	31.29	APR 2	31.71	JUN 4	31.50				

CLARK COUNTY

444525090443201. Local number, CK-26/03W/04-0001.

LOCATION.--Lat 44°45'25", long 90°44'32", Hydrologic Unit 07050006. Owner: Wis. Dept. of Natural Resources.

AQUIFER.--Sandstone.

WELL CHARACTERISTICS.--Drilled domestic artesian well, diameter 6 in, depth 150 ft cased to 53 ft, open end.

DATUM.--Altitude of land-surface is 1,210 ft above National Geodetic Vertical Datum of 1929. Measuring point: hole in pump base, at land-surface datum.

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

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 51.93 ft below land-surface datum Dec. 18, 1986; lowest water level measured, 70.64 ft below land-surface datum, Sept. 17, 1965.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 25	59.64	DEC 7	60.36	MAR 13	60.65	MAY 10	61.00	JUN 14	60.15	AUG 8	60.11
NOV 6	59.70	JAN 3	60.63	APR 12	61.04	JUN 7	60.26	JUL 12	59.93	SEP 7	59.70
DEC 5	59.58	FEB 7	60.60								

GROUND-WATER LEVELS

DANE COUNTY

430429089230301. Local number, DN-07/09E/23-0005.

LOCATION.--Lat 43°04'29", long 89°23'03", Hydrologic Unit 07090001. Owner: State of Wisconsin.

AQUIFER.--Sandstone.

WELL CHARACTERISTICS.--Drilled unused artesian well, diameter 8 in, depth 346 ft, cased to 265 ft, open end.

DATUM.--Altitude of land-surface is 930 ft above National Geodetic Vertical Datum of 1929. Measuring point: hole in pump base, 3.50 ft below land-surface datum.

REMARKS.--Water level affected by pumping of nearby wells.

PERIOD OF RECORD.--July 1946 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 83.37 ft below land-surface datum, Jan. 2, 1961; lowest water level measured, 120.50 ft below land-surface datum, Nov. 6, 1985.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 2	99.26	DEC 4	107.45	FEB 5	91.05	APR 9	91.25	JUN 4	94.34	AUG 6	101.80
9	99.27	11	91.05	12	90.16	16	88.95	11	94.18	13	104.89
16	99.96	18	91.77	19	90.45	23	91.88	18	97.48	20	105.40
23	97.53	26	88.67	26	92.04	30	94.21	25	97.11	27	97.96
30	100.67	JAN 2	90.48	MAR 5	92.60	MAY 7	92.90	JUL 2	98.90	SEP 4	95.70
NOV 6	101.88	8	89.85	12	90.55	14	92.90	16	98.22	10	100.76
13	99.48	16	91.29	19	88.90	21	94.90	23	102.36	17	97.02
20	104.10	22	89.72	26	90.53	29	93.34	30	103.03	24	94.77
27	98.72	29	91.52	APR 2	91.96						

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.

DATUM.--Altitude of land-surface is 870 ft above National Geodetic Vertical Datum of 1929. 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, 19.63 ft below land-surface datum, Mar. 23, 1986; lowest water level measured, 32.76 ft below land-surface datum, June 30, 1977.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

LOWEST VALUE

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	26.93	27.60	27.17	27.54	27.43	27.55	27.11	26.78	26.00	27.24	26.65	26.93
10	27.07	27.21	27.12	27.57	27.53	27.36	26.82	26.60	26.14	27.07	28.66	27.12
15	26.99	27.27	27.43	27.66	27.42	27.51	26.45	26.20	27.48	26.38	27.76	26.65
20	27.05	27.22	27.47	27.37	27.59	27.42	26.66	25.64	27.23	26.85	26.54	26.81
25	27.32	26.98	27.55	27.48	27.12	26.46	27.25	25.77	26.66	27.03	26.35	27.12
EOM	26.97	27.18	27.49	27.50	27.60	26.53	26.87	26.11	26.44	26.66	26.68	26.62

WTR YEAR 1990 MAX 28.66 AUG 10 MIN 24.57 MAY 28

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 domestic artesian well, diameter 6 in, depth 125 ft, cased to 57 ft, open end.

DATUM.--Altitude of land-surface is 880 ft above National Geodetic Vertical Datum of 1929. Measuring point: 1/4-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, 15.94 ft below land-surface datum, Sept. 30, 1986; lowest water level measured, 26.67 ft below land-surface datum, Feb. 3, 1965.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 31	21.60	JAN 23	21.02	APR 2	19.55	JUN 5	19.50	JUL 5	18.68	SEP 4	20.99
NOV 29	20.96	FEB 8	20.98	17	19.59	25	18.89	AUG 2	19.90	12	21.17
JAN 8	20.44	MAR 1	20.21	MAY 1	20.07						

455757087151701. Local number. DR-29/27E/30-0007.

AQUIFER.--Silurian dolomite.

WELL CHARACTERISTICS.--Drilled unused artesian well. diameter 4 in. depth 84 ft.

DATUM.--Altitude of land-surface is 725 ft above National Geodetic Vertical Datum of 1929. Measuring point:
hole in pump base. 1.00 ft above land-surface datum.

PERIOD OF RECORD.--July 1946 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 8.00 ft below land-surface datum, Mar. 22, 1979;
lowest water level measured, 56.12 ft below land-surface datum, Feb. 21, 1977.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 11	46.31	DEC 19	40.22	FEB 20	38.76	JUN 26	26.64	AUG 21	46.29	SEP 25	43.84
NOV 27	41.69	JAN 23	38.93	APR 17	37.69	JUL 23	46.28				

445055087213801. Local number, DR-27/26E/05-0265

LOCATION.--Lat 44°50'55", long 87°21'38", Hydrologic Unit 04030102. Owner: U.S. Geol. Survey.

AQUIFER.--Silurian dolomite.

WELL CHARACTERISTICS.--Drilled observation, diameter 6 in, depth 442 ft, cased to 170 ft, open end.

DATUM.--Altitude of land-surface is 616 ft above National Geodetic Vertical Datum of 1929. Measuring point: top of casing, 1.57 ft above land-surface datum.

REMARKS.--Water level affected by pumping of nearby wells.

PERIOD OF RECORD.--September 1971 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 1.57 ft above land-surface datum, June 18, 1974;
lowest water level, 35.33 ft below land-surface datum, Feb. 1, 1977.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

LOWEST VALUE

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	31.62	30.40	32.39	34.71	32.72	34.34	11.40	16.40	12.17		12.48	17.98
10	31.31	31.30	32.64	34.57	32.16	32.70	12.60	15.97	14.43		14.20	17.80
15	31.90	31.32	33.09	34.35	31.90	7.90	11.92	13.73	11.67		15.11	14.65
20	30.97	31.67	33.68	32.52	32.83	7.67	13.93	8.84	11.84		16.20	12.67
25	31.82	31.98	33.61	32.77	32.64	8.26	14.04	9.18				12.42
EOM	30.68	32.30	34.21	32.97	33.16	8.82	14.38	11.28	3.90	12.36	17.11	

WTR YEAR 1990 MAX 35.26 JAN 12 MIN 0.73 JUN 26

DOUGLAS COUNTY

463217091342801. Local number, DS-47/10W/23-0001.

LOCATION.--Lat 46°32'17", long 91°34'28". Hydrologic Unit 04010301. Owner: Wis. Dept. of Natural Resources.

AQUIFER.--Sand and gravel.

WELL CHARACTERISTICS.--Drilled observation artesian well, diameter 8 in, depth 40 ft, cased to 40 ft, perforated 37-40 ft.

DATUM.--Altitude of land-surface is 980 ft above National Geodetic Vertical Datum of 1929. Measuring point: pointer on float gage, 4.33 ft above land-surface datum.

PERIOD OF RECORD.--June 1937 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 1.81 ft above land-surface datum, Apr. 28, 1978; lowest water level measured, 29.59 ft below land-surface datum, July 29, 1939.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

	WATER			WATER			WATER			WATER			WATER			WATER	
DATE	LEVEL		DATE	LEVEL		DATE	LEVEL		DATE	LEVEL		DATE	LEVEL		DATE	LEVEL	
NOV 8	9.09		JAN 29	11.87		MAR 13	12.90		MAY 3	1.51		JUN 18	3.48		AUG 6	6.27	
15	9.65		FEB 12	12.19		26	13.15		18	2.01		JUL 1	4.88		29	7.39	
DEC 1	10.25		20	12.42		APR 3	13.32		23	2.12		9	4.68		SEP 5	7.67	
15	10.67		26	12.59		20	13.77		29	2.34		16	5.13		11	2.10	
JAN 1	11.07		MAR 5	12.87		30	0.32		JUN 11	3.08		31	6.06		24	1.59	
19	11.57																

GROUND-WATER LEVELS

FLORENCE COUNTY

454622088324802. Local number, FC-38/15E/18-0093.

LOCATION.--Lat 45°46'22", long 88°32'48", Hydrologic Unit 04030108. Owner: U.S. Forest Service.

AQUIFER.--Sand and gravel.

WELL CHARACTERISTICS.--Augered water-table observation well, diameter 3 in.

DATUM.--Datum of gage is approximately 1,400 ft above National Geodetic Vertical Datum of 1929.

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

EXTREMES FOR PERIOD OF RECORD.--Maximum observed water level, 63.77 ft, Apr. 6, 1988; minimum observed water level, 62.04 ft, Mar. 10-11, 1990.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	62.41	62.34	62.20	---	---	62.07	62.28	62.24	62.59	62.78	62.67	62.72
2	62.40	62.34	62.20	---	---	62.06	62.27	62.23	62.58	62.77	62.66	62.70
3	62.39	62.34	62.20	---	---	62.06	62.27	62.22	62.60	62.77	62.65	62.69
4	62.39	62.34	62.20	---	---	62.06	62.27	62.21	62.59	62.75	62.67	62.69
5	62.39	62.34	62.19	---	---	62.05	62.26	62.21	62.60	62.73	62.70	62.69
6	62.38	62.36	62.17	62.22	---	62.05	62.26	62.20	62.63	62.73	62.70	62.70
7	62.38	62.37	---	---	---	62.05	62.25	62.19	62.63	62.72	62.70	62.73
8	62.38	62.37	62.27	---	---	62.05	62.25	62.19	62.63	62.72	62.69	62.74
9	62.37	62.37	62.27	---	---	62.05	62.25	62.20	62.62	62.73	62.69	62.74
10	62.37	62.36	62.27	---	62.12	62.04	62.24	62.27	62.61	62.73	62.69	62.74
11	62.36	62.35	62.27	---	62.12	62.04	62.24	62.31	62.60	62.73	62.69	62.74
12	62.36	62.34	62.27	---	62.12	62.08	62.24	62.36	62.71	62.73	62.68	62.74
13	62.35	62.34	62.26	---	62.11	62.14	62.23	62.39	62.83	62.72	62.68	62.74
14	62.35	62.33	62.26	---	62.11	62.40	62.23	62.40	62.85	62.72	62.66	62.80
15	62.34	62.32	62.26	---	62.11	62.62	62.23	62.43	62.86	62.71	62.66	62.82
16	62.33	62.31	62.26	---	62.11	62.59	62.23	62.49	62.85	62.71	62.66	62.82
17	62.33	62.31	62.26	---	62.11	62.52	62.23	62.59	62.86	62.71	62.66	62.82
18	62.32	62.30	62.26	---	62.10	62.48	62.23	62.62	62.86	62.71	62.72	62.82
19	62.32	62.30	62.26	---	62.09	62.45	62.23	62.63	62.86	62.70	62.80	62.82
20	62.31	62.28	62.26	---	62.09	62.43	62.23	62.65	62.84	62.70	62.80	62.82
21	62.31	62.27	62.25	---	62.09	62.41	62.23	62.66	62.82	62.70	62.80	62.82
22	62.31	62.27	---	---	62.08	62.40	62.23	62.66	62.80	62.69	62.80	62.82
23	62.30	62.27	---	---	62.08	62.38	62.23	62.66	62.83	62.69	62.78	62.82
24	62.30	62.27	---	---	62.08	62.37	62.24	62.66	---	62.69	62.77	62.82
25	62.30	62.27	---	---	62.07	62.36	62.24	62.65	---	62.69	62.77	62.82
26	62.29	62.26	---	---	62.07	62.35	62.25	62.64	---	62.68	62.76	62.82
27	62.29	62.26	---	---	62.07	62.34	62.25	62.64	---	62.67	62.76	62.82
28	62.29	62.21	---	---	62.07	62.32	62.25	62.63	---	62.67	62.76	62.82
29	62.29	62.20	---	---	---	62.30	62.25	62.62	62.80	62.67	62.74	62.82
30	62.29	62.20	---	---	---	62.29	62.24	62.61	62.79	62.68	62.74	62.82
31	62.33	---	---	---	---	62.28	---	62.60	---	62.68	62.72	---
MEAN	62.34	62.31	---	---	---	62.26	62.24	62.45	---	62.71	62.72	62.78
MAX	62.41	62.37	---	---	---	62.62	62.28	62.66	---	62.78	62.80	62.82
MIN	62.29	62.20	---	---	---	62.04	62.23	62.19	---	62.67	62.65	62.69

FOND DU LAC COUNTY

434358088301001. Local number. FL-15/17E/30-0374.

LOCATION.--Lat 43°43'58", long 88°30'46", Hydrologic Unit 04030203. Owner: Wis. Dept. of Transportation.

AQUIFER.--Galena-Platteville.

WELL CHARACTERISTICS.--Drilled domestic artesian well, diameter 6 in, depth 120 ft, cased to 63 ft, open end.

DATUM.--Altitude of land-surface is 835 ft above National Geodetic Vertical Datum of 1928. Measuring point: hole in pump base, 1.50 ft above land-surface datum.

PERIOD OF RECORD.--October 16, 1967, to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 11.05 ft below land-surface datum, Apr. 11, 1986; lowest water level measured, 34.99 ft below land-surface datum, Mar. 21, 1977.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 11	20.73	DEC 22	20.67	FEB 20	19.90	MAY 22	13.54	JUL 25	13.79	SEP 12	17.53
NOV 29	19.68	JAN 23	20.86	APR 0	16.03	JUN 28	13.83	AUG 24	17.82		

FOREST COUNTY

460156088474901. Local number, FR-41/14E/18-0002.

LOCATION.--Lat 46°01'56", long 88°47'49", Hydrologic Unit 04030106. Owner: Wis. Dept. of Transportation.

AQUIFER.--Sand and gravel.

WELL CHARACTERISTICS.--Driven observation water-table well, diameter 1 1/4 in, depth 18 ft, cased to 15 ft, well point 15-18 ft.

DATUM.--Land-surface datum is 1,552 ft above National Geodetic Vertical Datum of 1929. Measuring point: top of casing, 1.70 ft above land-surface datum.

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

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 7.96 ft below land-surface datum, Apr. 29, 1954; lowest water level measured, 11.89 ft below land-surface datum, Aug. 13, 1968.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 30	11.79	NOV 30	11.46	JAN 4	11.01

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.

DATUM.--Altitude of land-surface is 980 ft above National Geodetic Vertical Datum of 1929. Measuring point: edge of pump base, 0.50 ft above land-surface datum.

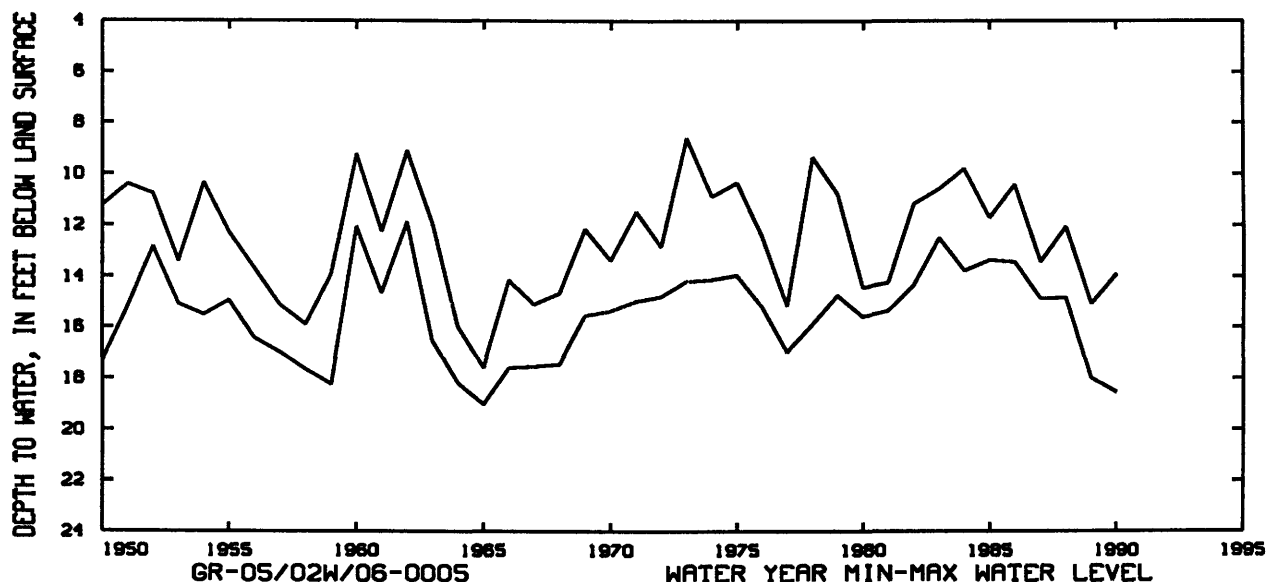
PERIOD OF RECORD.--July 1946 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 8.60 ft below land-surface datum, May 22, 1973; lowest water level measured, 19.03 ft below land-surface datum, Aug. 17, 1965.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 31	18.00	DEC 19	18.55	FEB 20	18.33	APR 26	17.90	JUN 18	18.23	AUG 28	14.11
NOV 15	18.28	FEB 2	18.43	MAR 30	17.81	MAY 15	17.40	JUL 27	13.92	SEP 20	15.10

GRANT COUNTY



GREEN COUNTY

423815089404201. Local number. GN-02/07E/21-0001.

LOCATION.--Lat 42°38'15", long 89°40'12", Hydrologic Unit 07090003. Owner: Eric Welty.

AQUIFER.--Galena-Platteville.

WELL CHARACTERISTICS.--Drilled domestic water-table well, diameter 6 in, depth 75 ft.

DATUM.--Altitude of land-surface is 995 ft above National Geodetic Vertical Datum of 1929. Measuring point: top of casing, 4.50 ft above land-surface datum.

PERIOD OF RECORD.--July 1946 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 47.96 ft below land-surface datum, Apr. 13, 1966; lowest water level measured, 69.72 ft below land-surface datum, Feb. 17, 1964.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE		WATER LEVEL	DATE		WATER LEVEL	DATE		WATER LEVEL	DATE		WATER LEVEL	
OCT 4	64.46		DEC 5	66.16	FEB 6	62.97	MAY 3	60.61	JUL 5	52.57	SEP 5	53.96
NOV 8	65.48		JAN 3	66.99	APR 5	60.66	JUN 12	60.52	AUG 2	56.87		

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.

DATUM.--Altitude of land-surface is 1,200 ft above National Geodetic Vertical Datum of 1929. Measuring point:
1/4-in hole pump base, at land-surface datum.

PERIOD OF RECORD.--August 1957 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 39.40 ft below land-surface datum, May 17, 1960;
lowest water level measured, 68.81 ft below land-surface datum, Aug. 18, 1965.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE		WATER LEVEL		DATE		WATER LEVEL		DATE		WATER LEVEL	
OCT 12	63.28	DEC 20	63.93	FEB 19	64.11	APR 6	63.74	JUN 13	63.87	AUG 20	61.54
27	63.57	22	63.91	23	64.15	11	63.79	22	63.73	21	61.63
NOV 24	63.69	JAN 4	63.78	MAR 27	63.76	MAY 8	63.91	JUL 20	61.29	SEP 14	57.80
29	63.81	25	63.83								

JACKSON COUNTY

441051090470901. Local number, JA-20/03W/30-0005.

LOCATION.--Lat 44°10'51", long 90°47'09", Hydrologic Unit 07040007. Owner: Robert Foulker.

AQUIFER.--Sandstone.

WELL CHARACTERISTICS.--Drilled unused artesian well, diameter 10 in, depth 190 ft, cased to 54 ft, open end.

DATUM.--Altitude of land-surface is 845 ft above National Geodetic Vertical Datum of 1929. Measuring point: hole in pump base, at land-surface datum.

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

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 15.53 ft below land-surface datum, May 22, 1973; lowest water level measured, 22.60 ft below land-surface datum, Dec. 19, 1958.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 25	20.29	DEC 7	20.59	APR 10	20.93	JUN 7	19.87	AUG 8	19.21	SEP 6	18.09
NOV 20	20.44	FEB 14	20.89	MAY 18	20.48	JUL 13	18.83				

JUNEAU COUNTY

435515090152901. Local number, JU-17/02E/28-0098.

LOCATION.--Lat 43°55'15", long 90°15'29", Hydrologic Unit 07070003. Owner: Wis. Dept. of Transportation.

AQUIFER.--Sandstone.

WELL CHARACTERISTICS.--Drilled domestic water-table well, diameter 6 in, depth 71 ft, cased to 42 ft, open end.

DATUM.--Altitude of land-surface is 930 ft above National Geodetic Vertical Datum of 1929. Measuring point: 1/4-in hole in pump base, 1.00 ft above land-surface datum.

PERIOD OF RECORD.--July 1969 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 9.86 ft below land-surface datum, May 24, 1973; lowest water level measured, 13.90 ft below land-surface datum, Jan. 10, 1979.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 17	13.32	DEC 7	13.14	APR 10	12.79	JUN 7	12.38	AUG 9	12.06	SEP 19	11.33
NOV 16	13.61	FEB 14	13.46	MAY 17	12.41	JUL 13	12.24	SEP 6	11.24		

KENOSHA COUNTY

423907087521701. Local number, KE-02/22E/11-0006.

LOCATION.--Lat 42°39'07", long 87°52'17", Hydrologic Unit 04040002. Owner: Kenosha County.

AQUIFER.--Sandstone.

WELL CHARACTERISTICS.--Drilled unused artesian well, diameter 10 in, depth 1,751 ft, cased to 492 ft, open end.

DATUM.--Altitude of land-surface is 639 ft above National Geodetic Vertical Datum of 1929. Measuring point: end of 3/4-in. plastic pipe, 1.35 ft above land-surface datum.

REMARKS.--Water level affected by regional pumping of wells.

PERIOD OF RECORD.--July 1946 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 21.10 ft below land-surface datum, Dec. 3, 1947; lowest water level measured, 211.19 ft below land-surface datum, Sept. 10, 1990.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 25	210.70	DEC 6	209.99	APR 26	210.38	JUL 18	210.55	SEP 10	211.19

GROUND-WATER LEVELS

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.

DATUM.--Altitude of land-surface is 1,000 ft above National Geodetic Vertical Datum of 1929. 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, 22.74 ft below land-surface datum, Nov. 8, 1986; lowest water level, 130.99 ft below land-surface datum, Nov. 6, 1959.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

LOWEST VALUE												
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	44.25	44.45	44.58	45.36	45.59	46.15	45.88	46.04	46.16	46.07	46.08	45.73
10	44.23	44.60	45.10	45.29	45.48	45.77	46.03	45.94	46.44	45.99	45.85	45.71
15	44.20	44.53	45.25	45.41	45.65	45.60	45.94	46.03	46.24	45.79	45.85	45.49
20	44.38	44.93	45.50	45.40	46.25	46.25	46.08	46.07	46.02	45.86	45.89	45.61
25	44.69	44.76	45.15	45.30	46.52	46.18	45.97	46.10	46.22	46.00	45.80	45.31
EOM	44.58	45.11	45.17	45.68	46.36	45.84	46.11	46.31	46.06	46.01	45.68	45.75
WTR YEAR 1990 MAX			46.52	FEB 25	MIN	43.84	OCT 1					

424620089590001. Local number, LF-04/04E/35-0078.

LOCATION.--Lat 42°46'20", long 89°58'57", Hydrologic Unit 07090003. Owner: Wis. Dept. of Natural Resources.

AQUIFER.--Sandstone.

WELL CHARACTERISTICS.--Drilled unused artesian well, diameter 3/4 in, depth 29 ft, cased to 16 ft, open end.

DATUM.--Altitude of land-surface is 850 ft above National Geodetic Vertical Datum of 1929. Measuring point: top of casing, 0.20 ft above land-surface datum.

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

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 3.89 ft below land-surface datum, May 23, 1974; lowest water level measured, 19.81 ft below land-surface datum, Mar. 3, 1959.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 12	18.39	DEC 20	18.52	FEB 19	18.77	APR 6	17.35	JUN 27	16.69	AUG 21	5.83
27	19.27	JAN 4	18.61	MAR 29	17.64	MAY 9	16.71	JUL 20	13.99	SEP 14	14.08

LANGLADE COUNTY

450933089084801. Local number, LA-31/11E/20-0064.

LOCATION.--Lat 45°09'33", long 89°08'48", Hydrologic Unit 07070002. Owner: Wis. Dept. of Natural Resources.

AQUIFER.--Sand and gravel.

WELL CHARACTERISTICS.--Driven observation water-table well, diameter 2 in, depth 20 ft, cased to 18 ft, well point 18-20 ft.

DATUM.--Land-surface datum is 1,508 ft above National Geodetic Vertical Datum of 1929. Measuring point: top of collar on casing, 0.30 ft above land-surface datum.

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

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 10.16 ft below land-surface datum, June 4, 1973; lowest water level measured, 16.46 ft below land-surface datum, Jan. 31, 1949.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 9	14.86	JAN 2	15.58	FEB 19	15.91	APR 23	14.94	JUN 18	13.99	AUG 13	13.86
16	14.95	9	15.76	26	15.96	30	15.24	25	13.75	20	13.70
23	15.04	16	15.68	MAR 5	16.03	MAY 7	15.18	JUL 3	13.50	27	13.27
30	15.11	22	15.73	12	15.99	21	14.92	18	13.62	SEP 11	13.02
NOV 6	15.02	29	15.76	19	15.21	28	14.77	23	13.65	19	12.66
20	15.18	FEB 5	15.83	APR 12	15.99	JUN 11	14.85	31	13.75	24	12.39
DEC 4	15.29	12	15.87	16	15.21						

LINCOLN COUNTY

452318089402501. Local number, LN-34/06E/36-0060.

LOCATION.--Lat 45°23'18", long 89°40'25", Hydrologic Unit 07070002. Owner: U.S. Geol. Survey.

AQUIFER.--Sand and gravel.

WELL CHARACTERISTICS.--Driven observation water-table well, diameter 1 1/4 in, depth 22 ft, cased to 20 ft, well point 20-22 ft.

DATUM.--Altitude of land-surface is 1,435 ft above National Geodetic Vertical Datum of 1929. Measuring point: top of pipe, 3.00 ft above land-surface datum.

PERIOD OF RECORD.--July 1955 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 5.79 ft below land-surface datum, Oct. 9, 1985; lowest water level measured, 10.38 ft below land-surface datum, Jan. 17, 1977.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	WATER LEVEL	DATE	WATER LEVEL
AUG 7	8.58	SEP 19	7.66

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.

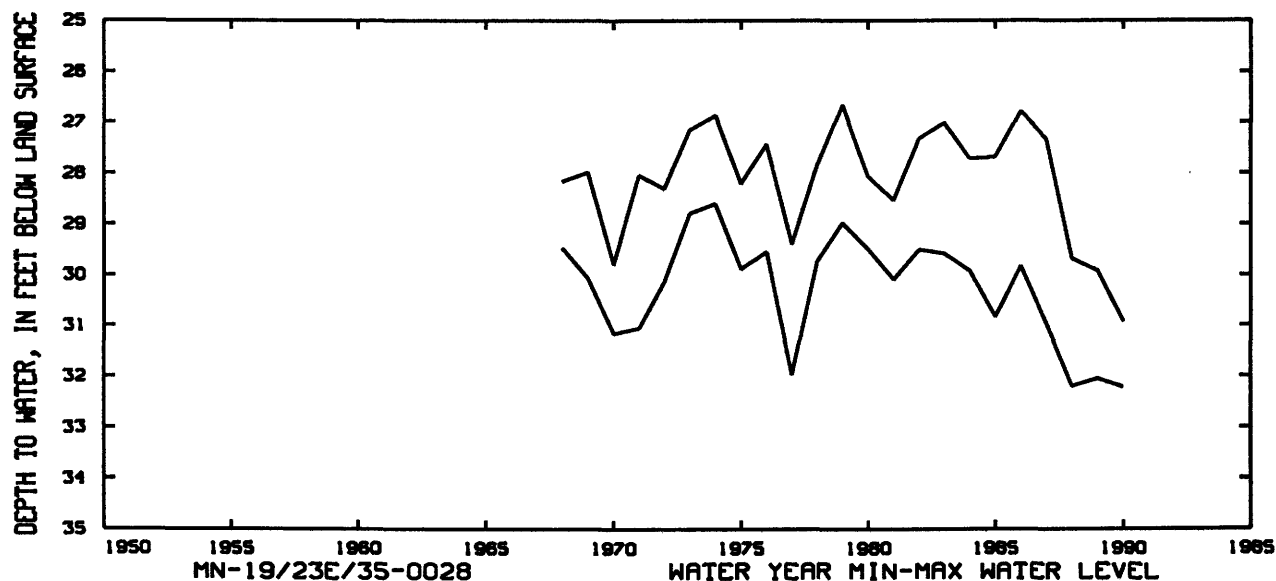
DATUM.--Altitude of land-surface is 670 ft above National Geodetic Vertical Datum of 1929. Measuring point: 1/4-in hole in pump base, 1.00 ft above land-surface datum.

PERIOD OF RECORD.--June 1968 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 26.66 ft below land-surface datum, June 11, 1979; lowest water level measured, 32.22 ft below land-surface datum, Dec. 28, 1989.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 10	31.86	JAN 5	32.07	FEB 28	31.59	APR 16	31.17	JUN 5	31.04	JUL 24	31.55
16	31.96	16	32.17	MAR 7	31.63	24	31.30	11	31.36	AUG 14	31.23
19	32.03	18	32.09	14	31.16	MAY 2	31.50	19	31.14	28	31.42
24	31.84	31	31.80	21	30.92	8	31.47	20	31.16	SEP 5	31.62
31	31.73	FEB 7	31.86	28	31.14	16	31.12	26	31.13	11	31.53
NOV 14	31.78	14	31.87	APR 5	31.14	22	31.11	JUL 2	31.04	17	31.34
28	31.96	21	31.66	11	31.23	29	31.25	6	31.45	24	31.05
DEC 28	32.22										



MARATHON COUNTY

44470989265301. 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 1/4 in, depth 27 ft, cased to 25 ft, well point 25-27 ft.

DATUM.--Altitude of land-surface is 1,229 ft above National Geodetic Vertical Datum of 1929. 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, 12.77 ft below land-surface datum, July 21, 1973; lowest water level measured, 26.09 ft below land-surface datum, Mar. 30, 1959.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 1	22.13	DEC 10	22.53	FEB 11	22.95	APR 15	22.54	JUN 17	22.72	AUG 12	22.41
8	22.18	17	22.54	18	22.95	22	22.53	24	22.68	19	22.32
15	22.23	27	22.63	25	23.07	29	22.64	JUL 1	22.62	26	22.31
22	22.27	31	22.67	MAR 5	23.16	MAY 6	22.70	8	22.54	SEP 2	22.27
29	22.28	JAN 7	22.71	11	23.05	13	22.75	15	22.51	9	22.24
NOV 5	22.32	14	22.79	18	22.24	20	22.79	22	22.49	16	22.19
19	22.42	21	22.79	25	22.32	27	22.81	29	22.42	23	22.17
27	22.43	28	22.80	APR 1	22.32	JUN 3	22.81	AUG 5	22.42	30	22.11
DEC 3	22.47	FEB 4	22.80	8	22.41	11	22.84				

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.

DATUM.--Altitude of land-surface is 980 ft above National Geodetic Vertical Datum of 1929. Measuring point: pointer on float gage, 4.00 ft above land-surface datum.

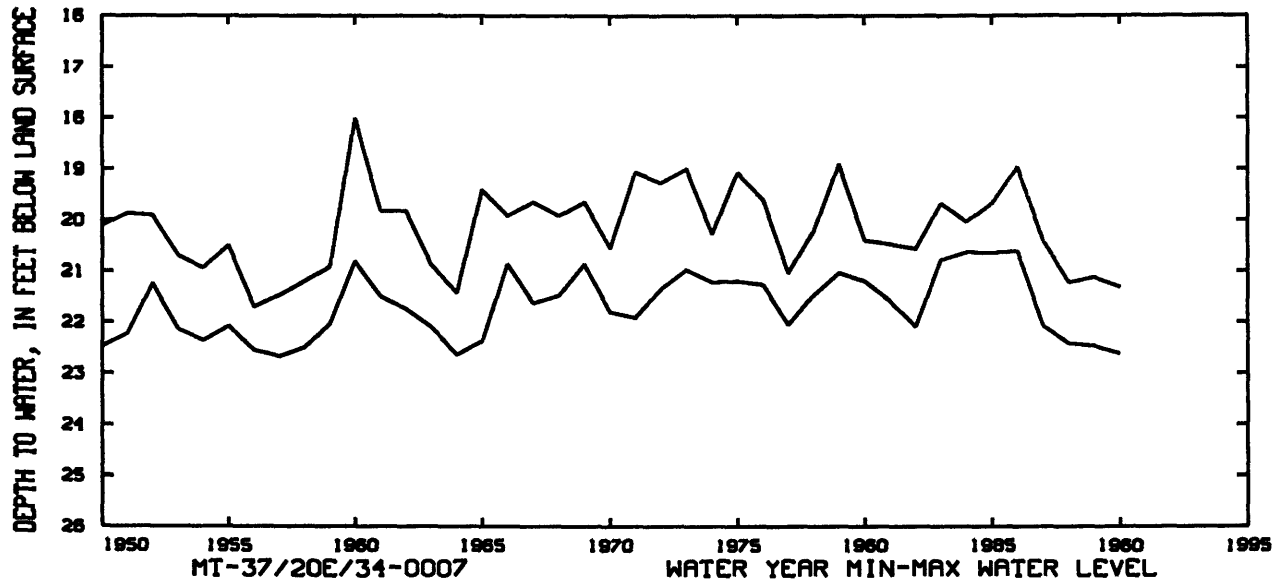
PERIOD OF RECORD.--March 1939 to current year.

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 LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 3	22.09	DEC 5	22.18	FEB 6	22.55	APR 10	22.13	JUN 12	21.48	AUG 7	21.78
10	22.10	12	22.21	13	22.57	17	22.17	19	21.33	14	21.85
17	22.12	19	22.24	20	22.58	24	22.21	26	21.32	21	21.87
24	22.14	26	22.26	27	22.59	MAY 1	22.22	JUL 3	21.44	28	21.89
31	22.11	JAN 2	22.40	MAR 6	22.62	8	22.21	10	21.55	SEP 4	21.98
NOV 7	22.01	8	22.43	13	22.59	15	21.99	17	21.60	11	22.00
14	22.00	16	22.45	20	22.12	22	21.65	24	21.68	18	21.89
21	22.08	23	22.48	27	22.03	29	21.49	31	21.72	25	21.88
28	22.14	30	22.51	APR 2	22.11	JUN 5	21.47				

MARINETTE COUNTY



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.

DATUM.--Altitude of land-surface is 880 ft above National Geodetic Vertical Datum of 1929. 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, 12.89 ft below land-surface datum, Oct. 24, 1986; lowest water level measured, 18.21 ft below land-surface datum, Feb. 18, 1965.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 18	15.87	JAN 17	16.18	APR 12	15.91	MAY 8	15.98	JUL 13	15.26	SEP 7	15.19
NOV 9	15.91	FEB 15	16.29	MAY 7	16.04	JUN 8	15.59	AUG 7	15.29	SEP 12	15.09
DEC 7	15.75	APR 9	15.96								

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.

DATUM.--Altitude of land-surface is 800 ft above National Geodetic Vertical Datum of 1929. Measuring point: 1/4 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, 19.22 ft below land-surface datum, Feb. 22, 1977.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 17	18.56	JAN 17	18.77	APR 12	17.33	MAY 17	16.73	JUL 13	16.65	SEP 7	17.92
NOV 9	18.31	FEB 15	18.73	MAY 8	17.19	JUN 8	16.57	AUG 7	17.33	SEP 24	18.14
DEC 7	18.49	MAR 15	18.00								

GROUND-WATER LEVELS

MILWAUKEE COUNTY

425819087551201. Local number, ML-06/22E/20-0085.

LOCATION.--Lat 42°58'19", long 87°55'12", Hydrologic Unit 04040003. Owner: City of Milwaukee.

AQUIFER.--Sandstone.

WELL CHARACTERISTICS.--Drilled unused artesian well, diameter 16 in, depth 1,834 ft, cased to 705 ft, open end.

DATUM.--Altitude of land-surface is 705 ft above National Geodetic Vertical Datum of 1929. Measuring point: hole in cover on casing, 6.00 ft below land-surface datum.

PERIOD OF RECORD.--Water years 1938, 1944, 1946, 1950, 1952, 1961, 1973 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 110.00 ft below land-surface datum, 1938; lowest water level, 316.70 ft below land-surface datum, Sept. 30, 1990.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

LOWEST VALUE

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	314.56	314.70	314.26	313.91	313.60	313.64	313.28	313.25	312.86	313.65	314.84	315.73
10	314.69	314.73	314.84	313.69	313.91	313.39	313.33	312.91	313.00	313.87	314.69	315.76
15	314.87	314.47	315.07	313.61	313.67	313.16	313.32	313.01	312.83	313.86	314.79	315.62
20	315.10	314.57	315.21	313.51	313.94	313.77	313.41	312.92	312.83	314.11		315.92
25	314.86	314.40	314.98	313.62	313.98	313.75	313.32	312.93	313.21	314.52		316.04
EOY	314.97	314.55	314.71	313.78	313.83	313.42	313.28	312.94	313.30	314.73	315.49	316.70
WTR YEAR 1990 MAX 316.70 SEP 30 MIN 312.36 JUN 2												

430412087545801. Local number, ML-07/22E/17-0120.

LOCATION.--Lat 43°04'12", long 87°54'58", Hydrologic Unit 04040003. Owner: Nunn-Bush Shoe Co.

AQUIFER.--Silurian dolomite.

WELL CHARACTERISTICS.--Drilled unused artesian well, diameter 10 in, depth 400 ft, cased to 215 ft, open end.

DATUM.--Altitude of land-surface is 685 ft above National Geodetic Vertical Datum of 1929. Measuring point: top of concrete, 8.75 ft below land-surface datum.

REMARKS.--Water level affected by pumping of nearby wells.

PERIOD OF RECORD.--April 1946 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 54.67 ft below land-surface datum, Mar. 19, 1986; lowest water level, 135.23 ft below land-surface datum, Aug. 29, 1990.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 31	121.90	NOV 30	125.24	JAN 30	125.36	APR 25	130.54	JUN 5	131.82	AUG 29	135.23
NOV 7	122.38	DEC 28	125.14	FEB 27	128.23	MAY 31	131.68	JUL 20	133.32		

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.

DATUM.--Altitude of land-surface is 774 ft above National Geodetic Vertical Datum of 1929. Measuring point: top of 1/4-inch pipe, at land-surface datum.

PERIOD OF RECORD.--September 1946 to current year.

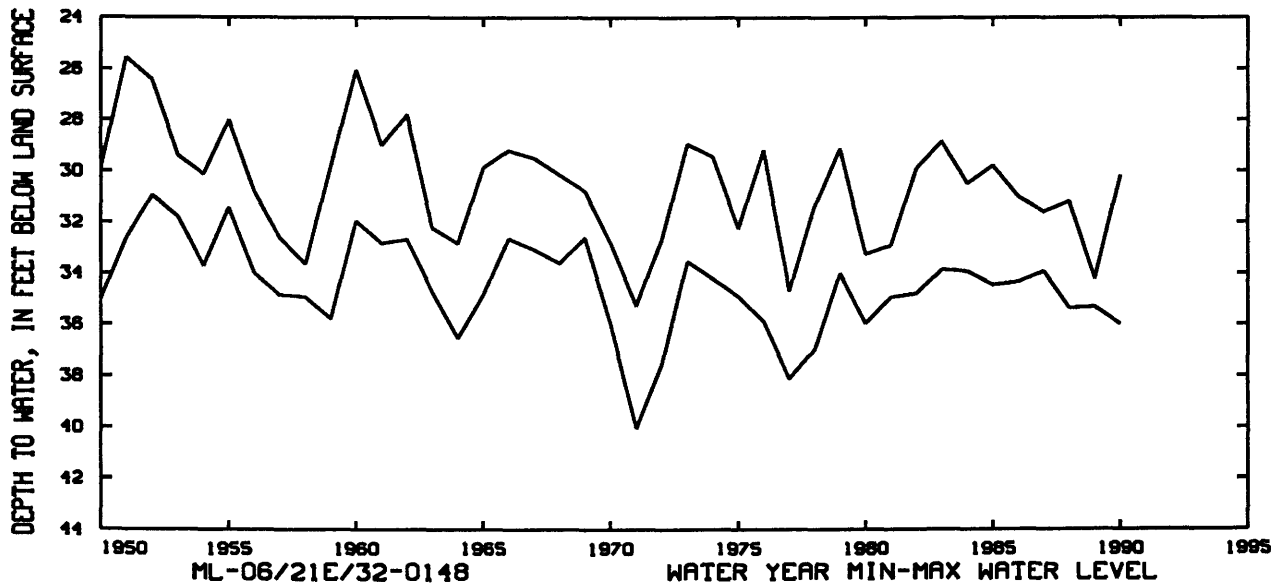
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 25.44 ft below land-surface datum, May 3, 1951; lowest water level measured, 40.03 ft below land-surface datum, Aug. 13, 1971.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 31	34.74	DEC 28	35.98	FEB 27	35.45	MAY 31	30.18	JUL 20	31.29	SEP 28	32.70
NOV 30	35.28	JAN 30	35.94	APR 25	32.63	JUN 29	30.73	AUG 29	31.45		

GROUND-WATER LEVELS
MILWAUKEE COUNTY

551



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.

DATUM.--Altitude of land-surface is 1,100 ft above National Geodetic Vertical Datum of 1929. 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, 4.66 ft below land-surface datum, Mar. 19, 1986; lowest water level measured, 18.23 ft below land-surface datum, Mar. 27, 1959.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DAY	LOWEST VALUE											
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	8.55	8.50	8.96			8.83		8.94	8.55	7.49	7.11	7.05
10	8.60	8.49	9.08		8.91	8.55	8.35	8.41	8.77	7.71	7.49	7.17
15	8.64	8.60	9.25		8.75	7.82	8.54	8.50	8.33	7.95	7.70	7.27
20	8.67	8.75	9.40		8.90	7.85	8.55	7.74	8.13	8.13	6.65	7.40
25	8.74	8.83			9.15	7.98	8.61	8.00	7.91	8.35	7.10	7.52
EOM	8.68	8.91			9.26		8.77	8.33	7.18	8.08	6.80	7.65
WTR YEAR 1990	MAX		9.40	DEC 20	MIN	6.15	AUG 27					

GROUND-WATER LEVELS

MONROE COUNTY

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.

DATUM.--Altitude of land-surface is 909 ft above National Geodetic Vertical Datum of 1929. 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, 0.43 ft below land-surface datum, May 8, 1973; lowest water level, 8.30 ft below land-surface datum, Mar. 5, 1990.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

LOWEST VALUE

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	7.79	7.55	7.65	8.04	8.20	8.30	7.24	7.29	6.52	5.89	6.00	3.87
10	7.85	7.47	7.73	8.05	8.14	8.25	7.26	7.26	6.62	5.92	5.70	4.10
15	7.86	7.45	7.86	8.08	8.20	7.91	7.27	7.10	6.54	6.11	5.86	4.24
20	7.68	7.46	7.95	8.11	8.24	7.44	7.30	6.95	6.40	6.33	4.02	4.39
25	7.59	7.48	7.99	8.14	8.26	7.31	7.31	6.68	6.34	6.48	3.85	4.55
EOM	7.59	7.56	8.02	8.17	8.28	7.24	7.32	6.52	6.19	6.53	3.57	4.71

WTR YEAR 1990 MAX 8.30 MAR 5 MIN 3.39 AUG 28

OCONTO COUNTY

445054088025201. Local number, OC-27/20E/03-0020.

LOCATION.--Lat 44°50'54", long 88°02'52", Hydrologic Unit 04030104. Owner: Wis. Dept. of Transportation.

AQUIFER.--Prairie du Chien.

WELL CHARACTERISTICS.--Drilled domestic water-table well, diameter 6 in, depth 100 ft, cased to 88 ft, open end.

DATUM.--Altitude of land-surface is 640 ft above National Geodetic Vertical Datum of 1929. Measuring point: 1/4-in hole in pump base, 2.00 ft above land-surface datum.

PERIOD OF RECORD.--February 1968 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 8.07 ft below land-surface datum, June 20, 1969; lowest water level measured, 13.52 ft below land-surface datum, Aug. 27, 1981.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 12	11.52	JAN 24	11.31	MAY 9	11.07	MAY 23	10.84	JUL 24	10.83	AUG 28	10.77
NOV 16	11.41	MAR 31	11.08	11	11.01	JUN 27	10.71	AUG 16	10.84	SEP 27	10.66
DEC 21	11.66										

ONEIDA COUNTY

455213089323501. Local number, ON-39/08E/18-0022.

LOCATION.--Lat 45°52'13", long 89°32'35", Hydrologic Unit 07070001. Owner: Wisconsin Valley Improvement Co.

AQUIFER.--Sand and gravel.

WELL CHARACTERISTICS.--Jetted unused water-table well, diameter 6 in, depth 27 ft, cased to 27 ft, open end.

DATUM.--Altitude of land-surface is 1,607 ft above National Geodetic Vertical Datum of 1929. Measuring point: top of casing, 6.00 ft above land-surface datum.

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

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 12.29 ft below land-surface datum, May 28, 1973; lowest water level, 19.29 ft below land-surface datum, Apr. 9, 1949.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

LOWEST VALUE

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	17.76	17.93	17.95	18.09	18.20	18.34	18.37	18.24	17.75	17.26	17.13	17.22
10	17.80	17.92	17.99	18.11	18.21	18.35	18.35	18.20	17.63	17.23	17.16	17.10
15	17.84	17.93	18.00	18.13	18.24	18.39	18.33	18.17	17.54	17.20	17.21	17.05
20	17.87	17.95	18.03	18.15	18.26	18.40	18.33	18.13	17.40	17.18	17.20	16.98
25	17.93	17.95	18.04	18.16	18.30	18.38	18.26	18.04	17.36	17.17	17.16	16.94
EOM	17.94	17.95	18.06	18.20	18.31	18.39	18.25	17.85	17.30	17.14	17.16	16.93

WTR YEAR 1990 MAX 18.42 MAR 26 MIN 16.90 SEP 30

553

454026089425301. Local number. ON-37/06E/27-0023.

LOCATION.--Lat 45°40'26", long 89°42'53". Hydrologic Unit 07070001. Owner: U.S. Geol. Survey.

AQUIFER.--Sand and gravel.

WELL CHARACTERISTICS.--Driven observation water-table well, diameter 1 1/4 in, depth 37 ft, cased to 35 ft, well point 35-37 ft.

DATUM.--Altitude of land-surface is 1,529 ft above National Geodetic Vertical Datum of 1929. Measuring point: top of casing, 1.00 ft above land-surface datum.

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

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 26.35 ft below land-surface datum, July 22, 1973;
lowest water level measured, 34.29 ft below land-surface datum, June 6, 1990.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

[illegible]

OUTAGAMIE COUNTY

441840088115001. Local number. OU-21/19E/04-0326.

LOCATION.--Lat 44°18'40", long 88°11'50", Hydrologic Unit 04030204. Owner: Outagamie County, Rapid Croche.

AQUIFER.--Sandstone.

WELL CHARACTERISTICS.--Drilled domestic artesian well. diameter 6 in. depth 280 ft. cased to 82 ft.

DATUM.--Altitude of land-surface is 660 ft above National Geodetic Vertical Datum of 1929. Measuring point: 1/4-in. hole in pump base, 1.50 ft above land-surface datum.

PERIOD OF RECORD.--October 1969 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 46.10 ft below land-surface datum, Apr. 20, 1970;
lowest water level measured, 84.52 ft below land-surface datum, Sept. 12, 1990.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 18	83.48	DEC 21	79.62	FEB 23	78.72	MAY 26	79.21	JUL 25	81.66	SEP 12	84.52
NOV 28	81.26	JAN 24	79.41	APR 19	78.43	JUN 27	80.14	AUG 22	83.98		

POLK COUNTY

453013092314601. Local number, PK-35/17W/08-0040.

LOCATION.--Lat 45°30'13", long 92°31'46", Hydrologic Unit 07030005. Owner: Village of Milltown.

AQUIFER.--Sand and gravel.

WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 5 in, depth 52 ft.

DATUM.--Altitude of land-surface is 1,250 ft above National Geodetic Vertical Datum of 1929. Measuring point:
hole in pump base, at land-surface datum.

PERIOD OF RECORD.--September 1957 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 29.55 ft below land-surface datum, Jul 23, 1986;
lowest water level measured, 41.38 ft below land-surface datum, July 22, 1959.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

[illegible]

GROUND-WATER LEVELS

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.

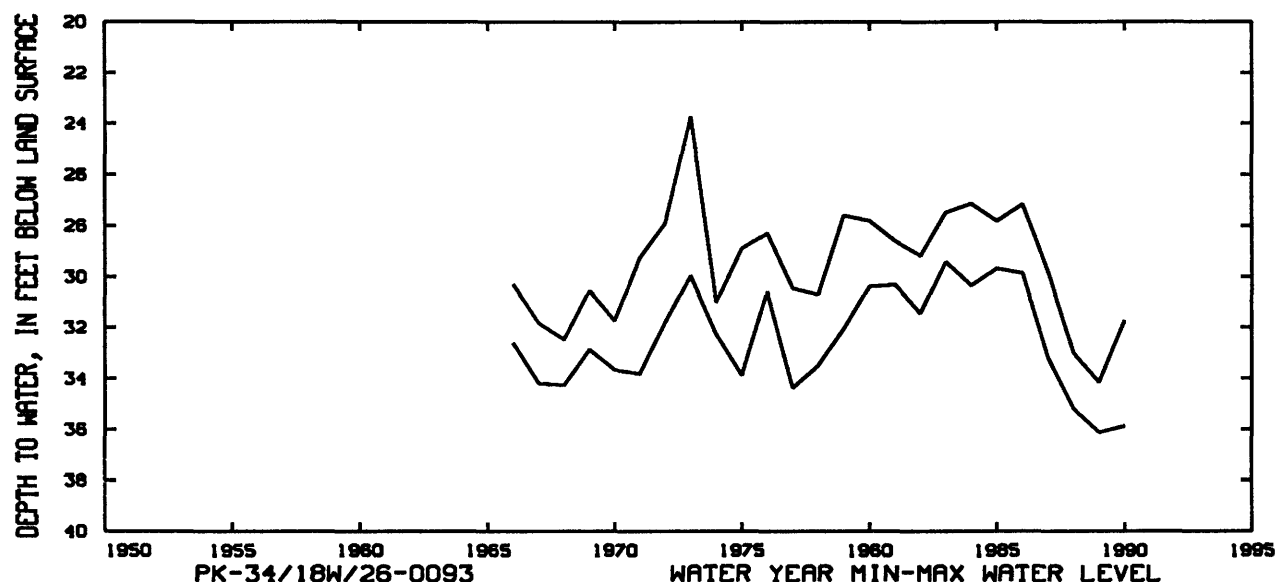
DATUM.--Altitude of land-surface is 1,140 ft above National Geodetic Vertical Datum of 1929. Measuring point: hole in pump base, 2.00 ft above land-surface datum.

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 LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 4	34.58	DEC 6	35.10	FEB 7	35.65	APR 3	34.60	JUN 8	33.90	AUG 1	32.70
13	34.64	13	35.15	14	35.70	10	34.50	13	33.70	15	32.79
18	34.74	21	35.18	21	35.76	17	34.46	20	33.40	22	32.40
27	34.85	28	35.26	28	35.85	24	34.42	27	33.15	29	32.10
NOV 2	34.83	JAN 3	35.65	MAR 6	35.88	MAY 8	34.34	JUL 5	32.96	SEP 5	31.93
7	34.80	10	35.38	14	35.34	16	34.28	11	32.86	12	31.80
15	34.92	17	35.45	21	35.82	22	34.25	20	32.77	19	31.75
24	34.97	23	35.47	27	35.70	28	34.15	25	32.64	27	31.74
29	34.98	30	35.60								



PORTAGE COUNTY

443127089174101. Local number, PT-24/10E/28-0015.

LOCATION.--Lat 44°31'27", long 89°17'41", Hydrologic Unit 04030202. Owner: Lawrence Krogwold.

AQUIFER.--Sand and gravel.

WELL CHARACTERISTICS.--Driven unused water-table well, diameter 2 in, depth 52 ft, cased to 50 ft, screened 50-52 ft.

DATUM.--Altitude of land-surface is 1,133 ft above National Geodetic Vertical Datum of 1929. Measuring point: rim of casing, 1.50 ft above land-surface datum.

PERIOD OF RECORD.--August 1950 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 28.50 ft below land-surface datum, Aug. 4, 1973; lowest water level measured, 38.81 ft below land-surface datum, Nov. 12, 1959.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 7	33.36	DEC 16	33.59	FEB 24	33.89	APR 21	34.02	JUN 16	34.16	AUG 11	34.22
21	33.41	30	33.65	MAR 10	33.92	MAY 5	34.05	30	34.18	25	34.24
NOV 4	33.45	JAN 13	33.70	24	33.98	19	34.09	JUL 14	34.20	SEP 8	34.25
18	33.44	27	33.76	APR 7	34.01	JUN 2	34.13	28	34.21	22	34.26
DEC 2	33.54	FEB 10	33.81								

PORTAGE COUNTY

442623089302701. Local number, PT-23/08E/25-0376.

LOCATION.--Lat 44°26'23", long 89°30'27", Hydrologic Unit 07070003. Owner: U. S. Geol. Survey.

AQUIFER.--Sand and gravel.

WELL CHARACTERISTICS.--Driven observation water table well, diameter 1 1/4 in, depth 36 ft, cased to 34 ft, well point 34-36 ft.

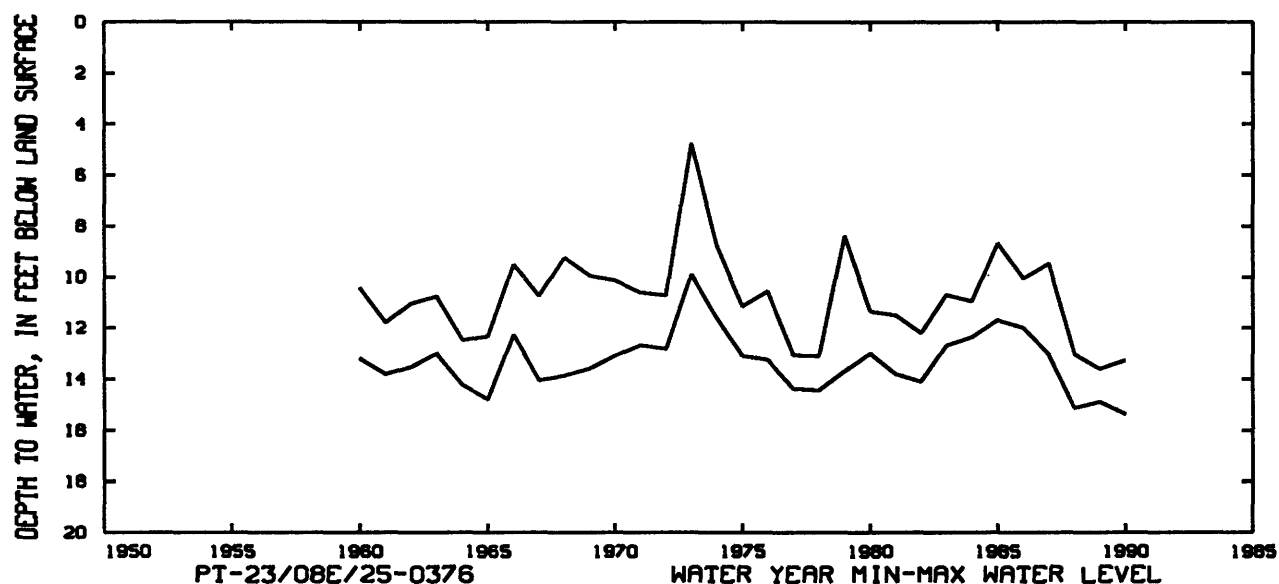
DATUM.--Altitude of land-surface is 1,099 ft above National Geodetic Vertical Datum of 1929. Measuring point: top of casing, 4.20 ft above land-surface datum.

PERIOD OF RECORD.--December 1, 1959, to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 4.77 ft below land-surface datum, June 5, 1973; lowest water level measured, 15.37 ft below land-surface datum, Feb. 15, 1990.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 26	14.88	JAN 25	15.22	MAR 21	14.60	APR 20	14.60	JUN 8	14.34	AUG 7	14.21
NOV 9	14.86	FEB 15	15.37	APR 11	14.56	MAY 10	14.87	JUL 12	14.16	SEP 7	13.27
DEC 8	14.84										



PRICE COUNTY

455448090263401. Local number, PR-40/01W/24-0006.

LOCATION.--Lat 45°54'48", long 90°26'34", Hydrologic Unit 07050002. Owner: Wis. Dept. of Natural Resources.

AQUIFER.--Sand and gravel.

WELL CHARACTERISTICS.--Jetted unused water-table well, diameter 8 in, depth 13 ft, cased to 13 ft.

DATUM.--Altitude of land-surface is 1,510 ft above National Geodetic Vertical Datum of 1929. Measuring point: top of casing, 5.00 ft above land-surface datum.

PERIOD OF RECORD.--March 1937 to current year.

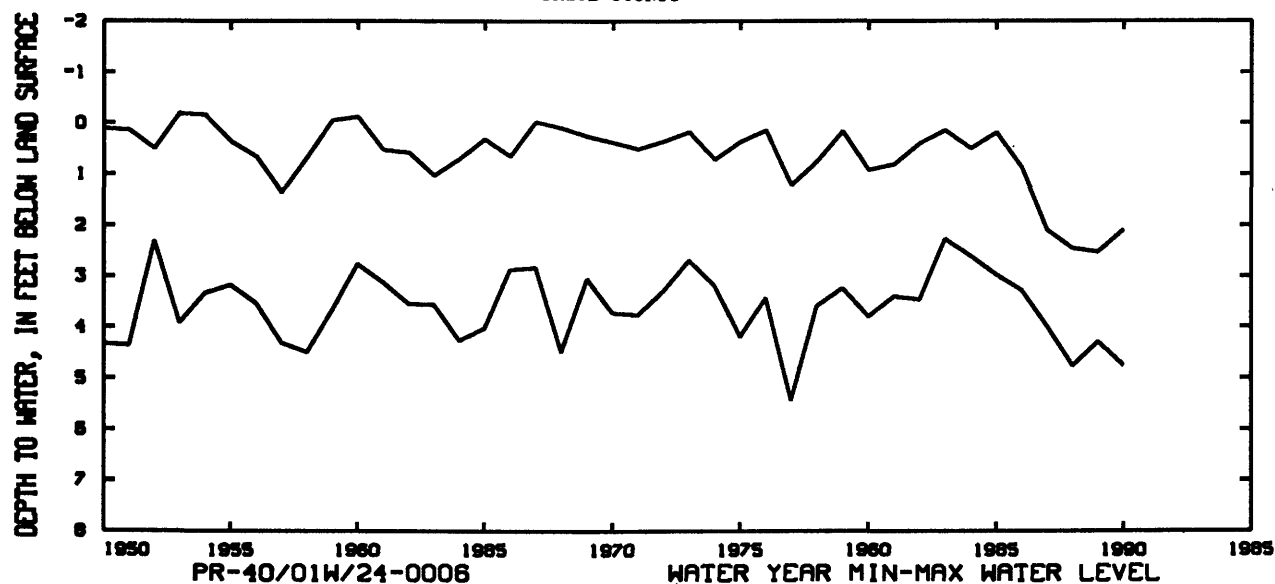
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 0.41 ft above land-surface datum, June 29, 1946; lowest water level measured, 5.67 ft below land-surface datum, Oct. 31, 1948.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 6	4.15	NOV 30	4.10	JAN 26	4.60	MAR 30	3.66	JUN 1	3.44	AUG 3	3.64
13	4.05	DEC 1	4.10	FEB 2	4.63	APR 6	3.62	8	3.32	10	3.66
20	4.01	8	4.21	9	4.55	13	3.60	15	3.40	17	3.67
27	3.94	15	4.30	16	4.76	20	3.55	22	3.46	24	2.75
31	3.94	22	4.42	23	4.76	27	3.40	29	3.39	31	3.43
NOV 3	3.10	29	4.50	MAR 2	4.76	MAY 4	3.45	JUL 6	3.40	SEP 7	2.75
10	3.80	JAN 5	4.55	9	4.69	11	3.42	13	3.24	14	2.10
17	3.83	12	4.58	16	4.72	18	3.24	20	3.60	21	2.10
24	3.97	19	4.60	23	3.80	25	3.40	27	3.63	28	2.36

GROUND-WATER LEVELS

PRICE COUNTY



RACINE COUNTY

424202087542301. Local number, RA-03/22E/21-0005.

LOCATION.--Lat 42°42'02", long 87°54'23", Hydrologic Unit 04040002. Owner: Chicago, Milwaukee, St. Paul and Pacific Railroad Co.

AQUIFER.--Sandstone.

WELL CHARACTERISTICS.--Drilled unused artesian well, diameter 12 in, depth 1,176 ft, cased to 586 ft, 10 in liner 976-1,083 ft.

DATUM.--Altitude of land-surface is 730 ft above National Geodetic Vertical Datum of 1929. Measuring point: top of casing, 1.00 ft above land-surface datum.

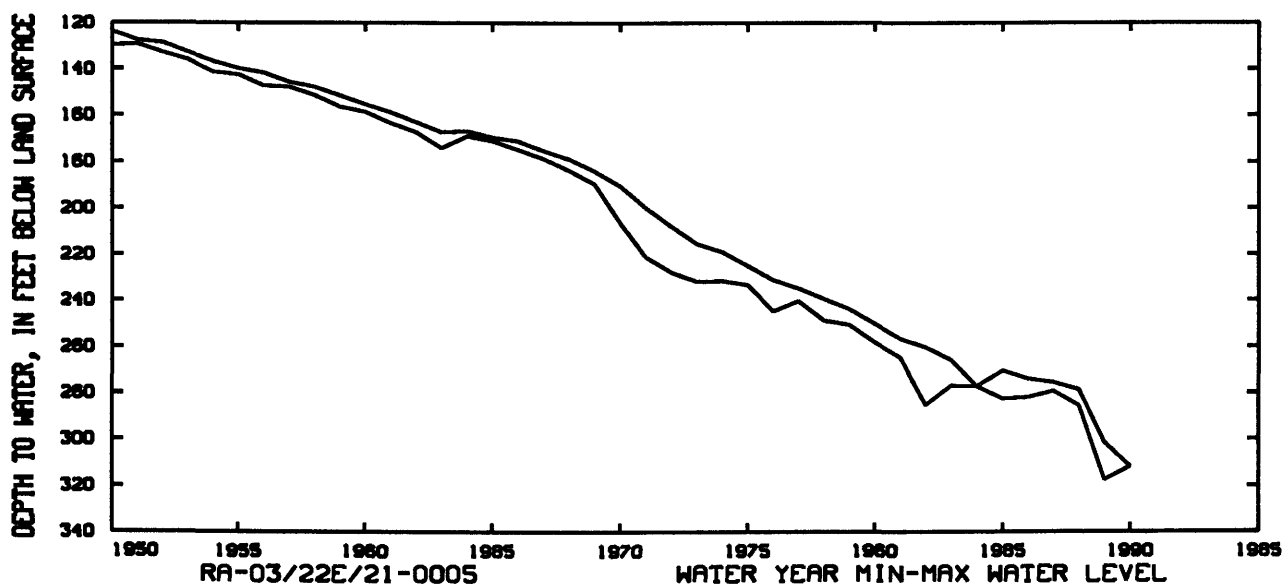
REMARKS.--Water level affected by regional pumping of wells.

PERIOD OF RECORD.--July 1946 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 109.00 ft below land-surface datum, July 29, 1946; lowest water level measured, 317.52 ft below land-surface datum, July 29, 1989.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	WATER LEVEL
APR 26	311.84



GROUND-WATER LEVELS

557

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.

DATUM.--Altitude of land-surface is 725 ft above National Geodetic Vertical Datum of 1929. 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, 16.06 ft below land-surface datum, Jan. 25, 1990.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 26	14.98	DEC 21	15.28	FEB 22	14.92	MAY 2	14.56	JUL 19	14.02	AUG 20	15.02
NOV 28	15.02	JAN 25	16.06	APR 10	14.79	JUN 12	14.39				

ROCK COUNTY

423956089022301. Local number, RO-02/12E/02-0003.

LOCATION.--Lat 42°39'56", long 89°02'23", Hydrologic Unit 07090001. Owner: School for the Blind, Janesville.

AQUIFER.--Sandstone.

WELL CHARACTERISTICS.--Drilled unused artesian well, diameter 10 in, depth 470 ft, cased to 113 ft, open end.

DATUM.--Altitude of land-surface is 824 ft above National Geodetic Vertical Datum of 1929. Measuring point: 1/4-in hole cap of casing, 1.50 ft above land-surface datum.

PERIOD OF RECORD.--July 1947 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 49.27 ft below land-surface datum, Apr. 2 and 16, 1986; lowest water level measured, 61.87 ft below land-surface datum, June 28, 1990.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 5	58.92	NOV 30	54.72	FEB 8	54.36	APR 5	56.14	MAY 24	58.55	JUL 12	61.21
12	56.08	DEC 7	54.53	15	55.74	12	54.71	31	56.15	19	57.58
19	55.01	JAN 4	54.29	22	54.40	19	54.79	JUN 7	55.90	26	56.85
26	54.98	11	55.01	MAR 1	54.24	26	54.96	14	57.73	AUG 16	56.07
NOV 2	54.67	18	54.64	8	54.21	MAY 3	54.82	21	60.97	23	59.50
9	54.33	25	54.39	21	54.61	10	54.81	28	61.87	30	56.88
16	55.01	FEB 1	54.54	29	54.53	16	58.54	JUL 5	60.41	SEP 6	56.13
24	54.44										

RUSK COUNTY

453107090420101. Local number, RU-35/03W/14-0089.

LOCATION.--Lat 45°31'07", long 90°42'01", Hydrologic Unit 07050004. Owner: Hawkins Cemetery.

AQUIFER.--Sand and gravel.

WELL CHARACTERISTICS.--Drilled public-supply water-table well, diameter 6 in, depth 25 ft.

DATUM.--Altitude of land-surface is 1,380 ft above National Geodetic Vertical Datum of 1929. Measuring point: top of casing, 1.00 ft above land-surface datum.

PERIOD OF RECORD.--April 1957 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 7.38 ft below land-surface datum, Oct. 1, 1986; lowest water level measured, 23.50 ft below land-surface datum, Mar. 2, 1977.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 8	14.73	JAN 17	16.10	MAR 6	16.95	JUN 14	14.45	AUG 29	14.47	SEP 18	13.83
DEC 4	14.93	FEB 6	16.44	MAY 10	16.30	JUL 9	13.85				

GROUND-WATER LEVELS

ST. CROIX COUNTY

450812092223601. Local number, SC-31/16W/29-0094.

LOCATION.--Lat 45°08'12", long 92°22'36", Hydrologic Unit 07030005. Owner: Cylon Methodist Church.

AQUIFER.--Sandstone.

WELL CHARACTERISTICS.--Drilled domestic artesian well, diameter 4 in, depth 73 ft, cased to 63 ft, open end.

DATUM.--Altitude of land-surface is 1,059 ft above National Geodetic Vertical Datum of 1929. Measuring point: top of casing, 2.90 ft above land-surface datum.

PERIOD OF RECORD.--October 1957 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 28.29 ft below land-surface datum, Sept. 24, 1973; lowest water level measured, 36.04 ft below land-surface datum, Sept. 13, 1961.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 10	32.57	DEC 1	32.73	FEB 5	32.84	APR 4	32.82	JUN 12	32.00	AUG 2	31.14
NOV 8	32.60	JAN 4	32.92	MAR 9	32.86	MAY 2	32.69	JUL 9	31.40	SEP 5	31.25

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.

DATUM.--Altitude of land-surface is 884 ft above National Geodetic Vertical Datum of 1929. Measuring point: hole in platform, at land-surface datum.

REMARKS.--Water level affected by pumping of nearby wells.

PERIOD OF RECORD.--March to September 1989.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 78.89 ft below land-surface datum, May 24, 1989; lowest water level, 83.29 ft below land-surface datum, Mar. 6, 1990.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

LOWEST VALUE

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	81.01	81.45	81.82	82.40	82.71	83.21	82.65	82.39	81.41	80.48	80.00	80.04
10	81.09	81.63	82.12	82.45	82.85	83.04	82.60	82.37	81.44	80.16	79.89	80.07
15	81.16	81.63	82.16	82.51	82.89	83.00	82.52	82.27	81.27	79.93	79.90	80.00
20	81.14	81.89	82.27	82.47	83.09	83.16	82.48	82.10	81.14	79.96	79.94	80.05
25	81.41	81.86	82.29	82.55	82.27	82.88	82.43	81.85	81.16	79.97	79.95	79.98
ECM	81.45	81.97	82.31	82.77	83.18	82.58	82.43	81.62	80.82	79.97	79.97	80.25

WTR YEAR 1990 MAX 83.29 MAR 6 MIN 79.77 AUG 3

SHAWANO COUNTY

444203088214601. Local number, SH-26/18E/30-0001.

LOCATION.--Lat 44°42'03", long 88°21'46", Hydrologic Unit 04030103. Owner: Wis. Dept. of Transportation.

AQUIFER.--Prairie du Chien.

WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 6 in, depth 132 ft.

DATUM.--Altitude of land-surface is 917 ft above National Geodetic Vertical Datum of 1929. Measuring point: top of plastic pipe, 0.43 ft below land-surface datum.

PERIOD OF RECORD.--April 1947 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 52.75 ft below land-surface datum, Oct. 15, 1986; lowest water level measured, 65.15 ft below land-surface datum, Feb. 22, 1990.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 12	64.70	DEC 19	64.70	FEB 22	65.15	MAY 9	64.10	JUL 17	61.41	SEP 26	59.49
NOV 28	64.31	JAN 24	64.89	APR 18	64.17	JUN 14	62.08	AUG 15	61.39		

TAYLOR COUNTY

450947090483901. 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.

DATUM.--Altitude of land-surface is 1,200 ft above National Geodetic Vertical Datum of 1929. 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, 3.93 ft below land-surface datum, Apr. 18, 1982; lowest water level, 13.11 ft below land-surface datum, Oct. 15, 1959.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

LOWEST VALUE												
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	10.01	9.94	9.74	9.98	9.85		9.50	8.39	7.95	9.25		8.71
10	9.92	9.63	9.77	10.02	8.87		9.40	8.24	8.27	9.20	9.50	8.52
15	9.88	9.63	9.76	10.03	9.15	7.75	9.41	7.64	6.45	9.48	9.54	7.95
20	9.81	9.72	9.77	10.01		8.04	9.35	6.50		9.68	5.54	8.11
25	9.87	9.72	9.78	9.96		8.69	8.71	7.80	9.09	9.91	7.39	8.64
EOM	9.97	9.70	9.93	9.78		9.65	7.13	8.65	8.93		7.94	8.96
WTR YEAR 1990 MAX 10.06 OCT 2 MIN 5.49 AUG 20												

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.

DATUM.--Altitude of land-surface is 820 ft above National Geodetic Vertical Datum of 1929. 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, 133.18 ft below land-surface datum, Jan. 13, 1955; lowest water level measured, 144.95 ft below land-surface datum, Oct. 27, 1966.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 11	141.00	DEC 5	141.05	FEB 9	141.28	APR 6	140.17	JUN 8	139.49	AUG 3	139.99
NOV 9	141.19	JAN 12	141.45	MAR 2	141.24	MAY 4	139.63	JUL 6	139.40		

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.

DATUM.--Altitude of land-surface is 740 ft above National Geodetic Vertical Datum of 1929. 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, 44.26 ft below land-surface datum, Nov. 9, 1987; lowest water level measured, 57.11 ft below land-surface datum, Mar. 16, 1965.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 5	49.92	DEC 5	49.60	FEB 6	49.10	MAY 7	50.50	JUL 6	51.92	SEP 12	49.10
NOV 7	50.00	JAN 8	49.70	APR 6	50.60	JUN 7	50.40	AUG 6	53.14		

VILAS COUNTY

455958089420501. Local number, VI-41/06E/26-0895.

LOCATION.--Lat 45°59'58", long 89°42'05", Hydrologic Unit 07070001. Owner: State of Wisconsin.

AQUIFER.--Sand and gravel.

WELL CHARACTERISTICS.--Augered water-table observation well, diameter 3 in., depth 22 ft, cased to 20 ft, screened 20-22 ft.

DATUM.--Datum of gage is 1,600 ft above National Geodetic Vertical Datum of 1929.

PERIOD OF RECORD.--October 1983 to current year.

EXTREMES FOR PERIOD OF RECORD.--Maximum observed water level, 27.08 ft, Apr. 26-28, 1986; minimum observed water level, 22.64 ft, Mar. 14, 1990.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23.37	23.14	23.02	22.89	22.78	22.68	22.73	22.76	23.09	23.14	22.93	23.00
2	23.35	23.13	23.02	22.89	22.78	22.68	22.73	22.77	23.09	23.14	22.93	23.00
3	23.33	23.13	23.02	22.89	22.78	22.68	22.73	22.77	23.10	23.14	22.93	23.00
4	23.32	23.13	23.02	22.88	22.78	22.68	22.73	22.77	23.10	23.14	22.92	23.00
5	23.32	23.13	23.00	22.87	22.77	22.67	22.73	22.78	23.11	23.14	22.91	23.00
6	23.31	23.12	22.99	22.87	22.77	22.67	22.73	22.78	23.11	23.14	22.91	23.00
7	23.31	23.12	22.99	22.87	22.77	22.66	22.73	22.78	23.11	23.13	22.90	23.01
8	23.30	23.11	22.99	22.87	22.77	22.66	22.73	22.79	23.11	23.12	22.89	23.00
9	23.29	23.11	22.98	22.87	22.77	22.66	22.73	22.79	23.11	23.11	22.88	23.01
10	23.29	23.11	22.98	22.86	22.77	22.65	22.73	22.80	23.11	23.11	22.87	23.05
11	23.28	23.10	22.98	22.86	22.76	22.65	22.73	22.80	23.11	23.11	22.87	23.06
12	23.27	23.10	22.98	22.86	22.76	22.65	22.73	22.80	23.12	23.10	22.87	23.07
13	23.27	23.09	22.95	22.84	22.75	22.65	22.73	22.81	23.12	23.10	22.87	23.08
14	23.26	23.08	22.94	22.84	22.74	22.64	22.73	22.81	23.12	23.09	22.87	23.10
15	23.25	23.07	22.94	22.84	22.74	22.65	22.73	22.82	23.13	23.09	22.88	23.11
16	23.24	23.07	22.94	22.84	22.72	22.66	22.73	22.83	23.13	23.09	22.88	23.11
17	23.23	23.07	22.94	22.83	22.72	22.69	22.73	22.86	23.14	23.07	22.88	23.15
18	23.23	23.07	22.94	22.83	22.72	22.69	22.73	22.88	23.14	23.07	22.87	23.16
19	23.22	23.07	22.93	22.83	22.72	22.70	22.73	22.90	23.14	23.06	22.89	23.17
20	23.22	23.06	22.93	22.83	22.72	22.71	22.73	22.93	23.14	23.06	22.91	23.18
21	23.21	23.06	22.93	22.82	22.72	22.72	22.73	22.95	23.14	23.05	22.94	23.19
22	23.21	23.05	22.93	22.82	22.72	22.72	22.73	22.97	23.14	23.04	22.95	23.21
23	23.21	23.04	22.93	22.82	22.71	22.72	22.73	22.99	23.14	23.04	22.96	23.22
24	23.21	23.04	22.93	22.81	22.70	22.72	22.73	23.01	23.14	23.02	22.96	23.23
25	23.20	23.04	22.93	22.81	22.70	22.73	22.73	23.03	23.14	23.01	22.97	23.24
26	23.19	23.03	22.93	22.81	22.70	22.73	22.73	23.04	23.14	22.99	22.97	23.25
27	23.17	23.03	22.92	22.81	22.69	22.73	22.73	23.05	23.14	22.98	22.98	23.25
28	23.16	23.03	22.91	22.80	22.69	22.73	22.73	23.06	23.14	22.98	22.99	23.25
29	23.15	23.02	22.91	22.80	---	22.73	22.75	23.07	23.14	22.96	22.99	23.26
30	23.15	23.02	22.90	22.78	---	22.73	22.75	23.07	23.14	22.96	22.99	23.25
31	23.14	---	22.89	22.78	---	22.73	---	23.08	---	22.94	22.99	---
MEAN	23.25	23.08	22.95	22.84	22.74	22.69	22.73	22.89	23.12	23.07	22.92	23.12
MAX	23.37	23.14	23.02	22.89	22.78	22.73	22.75	23.08	23.14	23.14	22.99	23.26
MIN	23.14	23.02	22.89	22.78	22.69	22.64	22.73	22.76	23.09	22.94	22.87	23.00
CAL YR 1989	MEAN	23.54	MAX	24.14	MIN	22.89						
WTR YR 1990	MEAN	22.95	MAX	23.37	MIN	22.64						

GROUND-WATER LEVELS

561

VILAS COUNTY

455910089403701. Local number, VI-41/07E/31-0085.

LOCATION.--Lat 45°59'10", long 89°40'37", Hydrologic Unit 07070001. Owner: State of Wisconsin.

AQUIFER.--Sand and gravel.

WELL CHARACTERISTICS.--Augered water-table observation well, diameter 3 in., depth 60 ft, cased to 57 ft, well screened 57-60 ft.

PERIOD OF RECORD.--November 1980 to current year.

DATUM.--Datum of gage is 1,600 ft above National Geodetic Vertical Datum of 1929.

EXTREMES FOR PERIOD OF RECORD.--Maximum observed water level, 33.83 ft, Apr. 14, 1986; minimum observed water level, 29.27 ft, May 15-17, 1990.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	30.09	29.95	29.79	29.67	29.54	29.48	29.41	29.32	29.41	29.41	29.44	29.39
2	30.07	29.95	29.79	29.66	29.54	29.48	29.41	29.31	29.41	29.41	29.44	29.39
3	30.06	29.94	29.78	29.66	29.54	29.47	29.40	29.31	29.41	29.41	29.44	29.39
4	30.05	29.94	29.78	29.65	29.54	29.47	29.40	29.31	29.41	29.41	29.43	29.39
5	30.06	29.94	29.77	29.65	29.53	29.46	29.40	29.30	29.41	29.41	29.43	29.38
6	30.05	29.93	29.77	29.65	29.52	29.45	29.40	29.30	29.42	29.41	29.42	29.38
7	30.04	29.93	29.77	29.65	29.52	29.45	29.39	29.30	29.42	29.41	29.42	29.38
8	30.04	29.94	29.76	29.65	29.52	29.45	29.39	29.29	29.42	29.41	29.41	29.38
9	30.04	29.93	29.76	29.64	29.52	29.45	29.39	29.29	29.42	29.41	29.41	29.38
10	30.03	29.92	29.75	29.64	29.52	29.44	29.39	29.29	29.42	29.41	29.41	29.38
11	30.04	29.92	29.74	29.64	29.52	29.44	29.38	29.28	29.42	29.42	29.41	29.39
12	30.03	29.91	29.74	29.63	29.51	29.44	29.38	29.28	29.42	29.42	29.40	29.41
13	30.02	29.91	29.73	29.63	29.50	29.43	29.38	29.28	29.42	29.42	29.39	29.42
14	30.02	29.90	29.73	29.63	29.51	29.44	29.38	29.28	29.41	29.42	29.39	29.45
15	30.02	29.89	29.72	29.62	29.51	29.44	29.37	29.27	29.41	29.42	29.39	29.45
16	30.01	29.88	29.72	29.62	29.50	29.44	29.37	29.27	29.41	29.42	29.38	29.45
17	30.00	29.88	29.72	29.61	29.49	29.44	29.36	29.27	29.41	29.42	29.38	29.47
18	29.99	29.86	29.71	29.61	29.50	29.45	29.36	29.30	29.41	29.42	29.38	29.51
19	29.99	29.86	29.71	29.60	29.49	29.45	29.36	29.33	29.41	29.42	29.38	29.54
20	30.00	29.85	29.70	29.60	29.49	29.45	29.35	29.35	29.41	29.43	29.37	29.56
21	29.99	29.84	29.70	29.60	29.49	29.45	29.35	29.37	29.41	29.43	29.37	29.58
22	29.98	29.84	29.69	29.59	29.50	29.45	29.35	29.38	29.41	29.43	29.38	29.58
23	29.98	29.84	29.69	29.59	29.50	29.44	29.34	29.39	29.41	29.43	29.39	29.59
24	29.97	29.83	29.69	29.58	29.48	29.44	29.34	29.39	29.41	29.43	29.39	29.60
25	29.98	29.82	29.69	29.58	29.48	29.44	29.34	29.39	29.41	29.43	29.39	29.61
26	29.98	29.82	29.68	29.57	29.49	29.43	29.33	29.40	29.41	29.43	29.39	29.61
27	29.97	29.82	29.68	29.57	29.48	29.43	29.33	29.40	29.41	29.43	29.39	29.61
28	29.97	29.81	29.67	29.56	29.48	29.43	29.33	29.40	29.41	29.43	29.38	29.61
29	29.96	29.80	29.67	29.56	---	29.42	29.32	29.40	29.40	29.44	29.40	29.61
30	29.96	29.80	29.67	29.55	---	29.42	29.32	29.41	29.40	29.44	29.40	29.61
31	29.96	---	29.67	29.55	---	29.41	---	29.41	---	29.44	29.40	---
MEAN	30.01	29.88	29.72	29.61	29.51	29.44	29.37	29.33	29.41	29.42	29.40	29.48
MAX	30.09	29.95	29.79	29.67	29.54	29.48	29.41	29.41	29.42	29.44	29.44	29.61
MIN	29.96	29.80	29.67	29.55	29.48	29.41	29.32	29.27	29.40	29.41	29.37	29.38

WTR YR 1990 MEAN 29.55 MAX 30.09 MIN 29.27

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.

DATUM.--Altitude of land-surface is 1,640 ft above National Geodetic Vertical Datum of 1929. 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, 10.60 ft below land-surface datum, July 21, 1968; lowest water level measured, 14.92 ft below land-surface datum, Aug. 10, 1977.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 16	13.54	DEC 13	13.67	FEB 15	14.00	APR 19	13.82	JUN 18	13.42	AUG 16	13.50
NOV 14	13.60	JAN 15	13.80	MAR 19	13.82	MAY 16	13.63	JUL 13	13.42	SEP 13	13.37

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.

DATUM.--Altitude of land-surface is 860 ft above National Geodetic Vertical Datum of 1929. 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, 215.10 ft below land-surface datum, Mar. 5, 1990.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 26	214.67	DEC 29	214.65	FEB 26	212.10	APR 16	212.47	JUN 27	212.50	AUG 27	214.14
NOV 22	214.71	JAN 28	214.82	MAR 5	215.10	MAY 22	212.55	JUL 12	216.94	SEP 24	211.33

WAUKESHA COUNTY

430049088131301. Local number, WK-06/19E/02-0014.

LOCATION.--Lat 43°00'49", long 88°13'13", Hydrologic Unit 07120006. Owner: New Tribes Mission, Waukesha.

AQUIFER.--Sandstone.

WELL CHARACTERISTICS.--Drilled unused artesian well, diameter 8 in, depth 1,300 ft.

DATUM.--Altitude of land-surface is 875 ft above National Geodetic Vertical Datum of 1929. Measuring point: top of casing, at land-surface datum.

REMARKS.--Water level affected by pumping of nearby municipal wells.

PERIOD OF RECORD.--September 1946 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 249.86 ft below land-surface datum, July 6, 1947; lowest water level, 502.48 ft below land-surface datum, Sept. 3, 1988.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 5	484.08	OCT 20	489.76	NOV 5	492.54	DEC 10	481.12	DEC 25	478.86	FEB 27	485.76
10	484.21	25	489.32	30	480.16	15	479.27	JAN 2	481.76	APR 11	489.91
15	488.58	31	492.21	DEC 5	479.14	20	479.52	30	480.44		

WAUKESHA COUNTY

425535088131701. Local number, WK-05/19E/02-0031.

LOCATION.--Lat 42°55'35", long 88°13'17", Hydrologic Unit 07120006. Owner: William M. Foss.

AQUIFER.--Silurian dolomite.

WELL CHARACTERISTICS.--Drilled unused artesian well, diameter 6 in, depth 508 ft, cased to 434 ft, open end.

DATUM.--Altitude of land-surface is 962 ft above National Geodetic Vertical Datum of 1929. 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, 126.28 ft below land-surface datum, June 10, 1974; lowest water level, 138.14 ft below land-surface datum, Feb. 2, 1959.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

LOWEST VALUE												
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	135.96	135.93	135.99	136.39	136.44	136.42	135.60	135.36	135.04	135.10	135.05	134.71
10	135.90	135.87	136.06	136.44	136.46	136.42	135.49	135.16	134.89	135.21	135.07	134.90
15	136.04	135.85	136.14	136.48	136.48	136.27	135.40	135.03	135.01	134.96	135.34	134.73
20	135.97	135.92	136.21	136.46	136.44	136.13	135.42	134.74	135.00	135.03	135.05	134.72
25	136.10	135.93	136.29	136.40	136.43	135.97	135.35	134.66	135.01	135.05	134.69	134.67
EOM	135.99	136.01	136.38	136.42	136.41	135.73	135.54	134.76	134.81	134.96	134.63	134.78

WTR YEAR 1990 MAX 136.48 JAN 15 MIN 134.58 MAY 26

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.

DATUM.--Altitude of land-surface is 764 ft above National Geodetic Vertical Datum of 1929. 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, 15.91 ft below land-surface datum, Feb. 23, 1954.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 7	15.05	DEC 9	14.74	FEB 10	15.50	APR 14	13.65	JUN 16	13.14	AUG 11	13.48
13	14.70	16	14.75	17	15.48	21	14.08	23	13.19	18	13.58
21	14.73	23	14.78	24	15.52	28	14.09	30	13.22	25	13.60
28	14.47	30	14.17	MAR 3	15.38	MAY 5	14.03	JUL 7	12.63	SEP 1	13.55
NOV 4	14.38	JAN 6	15.08	10	15.30	12	14.08	14	12.61	8	13.54
11	14.68	13	15.06	17	14.68	19	13.36	21	13.26	15	13.52
18	14.64	20	15.24	24	13.22	26	12.88	28	13.45	22	13.54
25	14.77	27	15.44	31	13.52	JUN 2	12.85	AUG 4	13.49	29	13.69
DEC 2	14.80	FEB 3	15.47	APR 7	13.60	9	12.82				

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.

DATUM.--Altitude of land-surface is 1,080 ft above National Geodetic Vertical Datum of 1929. 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, 15.71 ft below land-surface datum, June 10, 1959.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

LOWEST VALUE

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	11.74	12.07	12.18	12.23	12.52	12.71	12.30	12.43	11.99	11.28	11.12	10.74
10	11.79	12.11	12.13	12.24	12.55	12.70	12.32	12.45	11.91	11.15	11.07	10.69
15	11.84	12.13	12.14	12.33	12.58	12.05	12.33	12.46	11.81	11.07	11.06	10.69
20	11.97	12.15	12.16	12.35	12.63	12.18	12.35	12.38	11.69	11.09	11.06	10.62
25	12.02	12.16	12.18	12.42	12.67	12.24	12.35	12.25	11.60	11.17	10.98	10.58
EOM	12.05	12.18	12.21	12.47	12.70	12.29	12.39	12.09	11.44	11.15	10.83	10.57

WTR YEAR 1990 MAX 12.72 MAR 9 MIN 10.57 SEP 30

441414089091101. Local number, WS-20/11E/02-0053.

LOCATION.--Lat 44°14'14", long 89°09'11", Hydrologic Unit 04030202. Owner: Merle Knox.

AQUIFER.--Sand and gravel.

WELL CHARACTERISTICS.--Drilled domestic water-table well, diameter 6 in, depth 177 ft, cased to 172 ft, screened 172-177 ft.

DATUM.--Altitude of land-surface is 923 ft above National Geodetic Vertical Datum of 1929. Measuring point: top of casing, 1.00 ft above land-surface datum.

PERIOD OF RECORD.--February 1956 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 32.78 ft below land-surface datum, Oct. 18, 1986; lowest water level measured, 40.41 ft below land-surface datum, Mar. 4, 1959.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 16	36.84	DEC 17	37.19	FEB 15	37.53	APR 16	37.07	JUL 24	36.04	SEP 20	36.45
NOV 20	37.08	JAN 23	37.00	MAR 17	37.22	JUN 20	36.18	AUG 20	36.38		

WINNEBAGO COUNTY

440122088324601. Local number, WI-18/16E/23-0006.

LOCATION.--Lat 44°01'22", long 88°32'46", Hydrologic Unit 04030201. Owner: City of Oshkosh.

AQUIFER.--Sandstone.

WELL CHARACTERISTICS.--Drilled unused artesian well, diameter 8 in, depth 200 ft.

DATUM.--Altitude of land-surface is 765 ft above National Geodetic Vertical Datum of 1929. 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, 17.20 ft below land-surface datum, Apr. 26, 1979; lowest water level measured, 39.75 ft below land-surface datum, Sept. 1, 1960.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 31	21.28	JAN 2	20.89	MAR 5	21.54	APR 27	21.77	JUL 5	19.78	AUG 30	19.84
NOV 29	20.74	30	21.15	30	20.40	MAY 30	19.39	30	20.66	SEP 27	19.55

WOOD COUNTY

444106090085801. Local number, WD-25/03E/04-0528.

LOCATION.--Lat 44°41'06", long 90°08'58", Hydrologic Unit 07070002. Owner: U.S. Geological Survey.

AQUIFER.--Sand and gravel.

WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 3 in, depth 44 ft, cased to 30 ft, screened 30-44 ft.

DATUM.--Altitude of land-surface is 1,180 ft above National Geodetic Vertical Datum of 1929. Measuring point: top of casing, 2.00 ft above land-surface datum.

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

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 20.72 ft below land-surface datum, Oct. 26, 1987; lowest water level measured, 27.23 ft below land-surface datum, June 23, 1988.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 5	24.72	NOV 5	24.86	DEC 5	25.11	JAN 5	25.45	FEB 5	25.66	MAR 5	25.91
10	24.75	10	24.90	10	25.21	10	25.50	10	25.70	10	25.96
15	24.77	15	24.95	15	25.25	15	25.55	15	25.73	APR 11	23.11
20	24.80	20	24.99	20	25.29	20	25.60	20	25.78	MAY 9	22.87
25	24.82	25	25.03	25	25.35	25	25.65	25	25.83	JUN 7	22.63
31	24.82	30	25.07	31	25.40	31	25.61	28	25.85	JUL 12	24.59
									SEP 9	24.38	

The following streamflow stations have been discontinued in Wisconsin. Continuous daily streamflow records were collected and published for the period of record shown for each station.

Station number	Station name	Drainage area (sq mi)	Period of record
04024314	Little Balsam Creek at Patzau, WI	4.89	1976-78
04024315	Little Balsam Creek near Patzau, WI	5.05	1975-78
04024318	Little Balsam Creek Tributary near Patzau, WI	0.60	1976-78
04024320	Little Balsam Creek near Foxboro, WI	3.27	1977-78
04025000	Amnicon River near Poplar (Amnicon Falls), WI	110	1914-16
04026000	Bois Brule (Brule) River near Brule, WI	160	1914-17
04026300	Sioux River near Washburn, WI	33.9	1964-66
04026347	Pine Creek at Moquah, WI	6.20	1975-78
04026348	Pine Creek Tributary at Moquah, WI	0.48	1976-78
04026349	Pine Creek near Moquah, WI	19.9	1975-78
04026450	Bad River near Mellen, WI	82.0	1970-75
04026500	Bad River at Mellen, WI	98.3	1948-55
04026870	Alder Creek near Upson, WI	22.2	1972-77
04028500	Montreal River near Kimball, WI	100	1924-25
04029000	West Fork Montreal River at Gile, WI	75.0	1918-25, 1942-47
04029500	West Fork Montreal River near Kimball, WI	86.2	1924-25
04063640	North Branch Pine River at Windsor Dam nr Alvin, WI	27.8	1966-68
04064000	Pine River near Florence, WI	510	1913-23
04064500	Pine River below Pine River Powerplant near Florence, WI	533	1923-75
04066500	Pike River at Amberg, WI	255	1914-70
04067000	Menominee River below Koss, WI	3,720	1907-09, 1913-81
04068000	Peshtigo River at High Falls near Crivitz, WI	537	1912-57
04072000	Suamico River at Suamico, WI	60.7	1951-52
04072750	Lawrence Creek near Westfield, WI	13.4	1967-73
04073050	Grand River near Kingston, WI	73.5	1968-75
04073405	West Branch White River near Wautoma, WI	38.9	1963-65
04073462	White Creek at Forest Glen Beach near Green Lake, WI	3.05	1981-88
04074538	Swamp Creek above Rice Lake at Mole Lake, WI	46.3	1977-83, 1984-86
04074548	Swamp Creek below Rice Lake at Mole Lake, WI	56.8	1977-79, 1982-85
04075000	Wolf River near White Lake, WI	485	1935-37
04075200	Evergreen Creek near Langlade, WI	8.09	1964-73
04075500	Wolf River above West Branch Wolf River, WI	616	1927-62
04076000	West Branch Wolf River at Neopit, WI	93.2	1911-17
04076500	West Branch Wolf River near Keshena, WI	163	1928-31
04078500	Embarrass River near Embarrass, WI	384	1919-85
04079602	Little Wolf River near Galloway, WI	22.6	1973-79
04079700	Spaulding Creek near Big Falls, WI	5.57	1964-66
04080000	Little Wolf River at Royalton, WI	507	1914-70, 1982-85
04080950	Emmons Creek near Rural, WI	25.1	1968-74
04080976	Storm Sewer to Mirror Lake at Waupaca, WI	0.04	1971-74
04081000	Waupaca River near Waupaca, WI	265	1916-66, 1982-85
04081800	Daggets Creek at Butte Des Morts, WI	10.6	1976-77
04083000	West Branch Fond du Lac River at Fond du Lac, WI	83.1	1939-54
04083500	East Branch Fond du Lac River near Fond du Lac, WI	78.4	1939-54
04084200	Brothertown Creek at Brothertown, WI	5.10	1976-77
04085813	Onion River at Hingham, WI	37.2	1978-80
04085845	Onion River near Sheboygan Falls, WI	94.1	1978-82
04086150	Milwaukee River at Kewaskum, WI	138	1968-81
04086200	East Branch Milwaukee River near New Fane, WI	54.1	1968-81
04086340	North Branch Milwaukee River near Fillmore, WI	148	1968-81
04086360	Milwaukee River at Waubeka, WI	432	1968-81
04086489	Mud Lake Outlet near Decker Corner, WI	7.36	1982-84
04086500	Cedar Creek near Cedarburg, WI	120	1930-70, 1973-81, 1983-87
04087010	Milwaukee River above North Avenue Dam at Milwaukee, WI	702	1982-84
04087018	Menomonee River at Germantown, WI	19.0	1974-77
04087019	Jefferson Park Drainageway at Germantown, WI	1.82	1976-78
04087040	Menomonee River at Butler, WI	60.6	1974-79
04087070	Little Menomonee River at Milwaukee, WI	19.7	1974-77
04087119	Honey Creek at Wauwatosa, WI	10.3	1974-81
04087125	Schoonmaker Creek at Wauwatosa, WI	1.94	1974-79
04087130	Hawley Road Storm Sewer at Milwaukee, WI	1.83	1975-77
04087138	Menomonee River at Milwaukee, WI	134	1981-84
04087160	Kinnickinnic River at Milwaukee, WI	20.4	1976-82
05332000	Namekagon River at Trego, WI	433	1914-27
05335010	Loon Creek near Danbury, WI	17.6	1970-71
05335380	Bashaw Brook near Shell Lake, WI	26.6	1964-66
05335500	Clam River near Webster, WI	361	1940-42
05336000	St. Croix River near Grantsburg, WI	2,980	1923-70
05339000	Wood River near Grantsburg, WI	185	1939
05341375	Rice Creek near Balsam Lake, WI	12.5	1987-89

Station number	Station name	Drainage area (sq mi)	Period of record
05341402	Balsam Branch at Balsam Lake, WI	52.8	1987-89
05342000	Kinnickinnic River near River Falls, WI	165	1916-21
05355500	West Fork Chippewa River at Lessards, nr Winter, WI	474	1911-16
05356121	Couderay River near Couderay, WI	169	1981-83
05357500	Flambeau River at Flambeau Flowage (Flambeau Reservoir), WI	622	1927-61
05358000	Flambeau River near Butternut, WI	688	1914-38
05358300	Pine Creek near Oxbo, WI	38.9	1970-75
05358500	Flambeau River at Babbs Island near Winter, WI	967	1929-75
05359500	South Fork Flambeau River near Phillips, WI	609	1929-75
05359600	Price Creek near Phillips, WI	16.9	1964-66
05360000	Flambeau River near (at) Ladysmith, WI	1,790	1903-06, 1914-61
05361000	Chippewa River near Holcombe, WI	3,720	1944-49
05361500	South Fork Jump River near Ogema, WI	327	1944-54
05362500	Chippewa River at Holcombe, WI	4,680	1942-49
05363000	Fisher River at (near) Holcombe, WI	81.5	1944-45
05363500	O'Neil Creek near Chippewa Falls, WI	78.1	1944-45
05363700	Yellow River near Hannibal, WI	86.7	1962-63
05364000	Yellow River at Cadott, WI	364	1942-61
05364500	Duncan Creek at Bloomer, WI	50.3	1943-51
05364850	Duncan Creek Tributary near Tilden, WI	4.17	1986-89
05365000	Duncan Creek at Chippewa Falls, WI	117	1942-55
05366000	Eau Claire River near Augusta, WI	509	1914-26
05366300	Bridge Creek at Augusta, WI	35.0	1979-80
05366500	Eau Claire River near Fall Creek, WI	760	1942-55
05367000	Chippewa River at (near) Eau Claire, WI	6,620	1902-09, 1944-54
05367425	Red Cedar River near Cameron, WI	442	1966-70
05367426	Red Cedar River near Cameron, WI	443	1971-73
05369900	Eau Galle River near Woodville, WI	39.4	1978-83
05369955	French Creek near Spring Valley, WI	6.03	1980-83
05369970	Lousy Creek near Spring Valley, WI	5.97	1980-83
05369985	Lohn Creek near Spring Valley, WI	2.53	1980-83
05370500	Eau Galle River at Elmwood, WI	91.6	1942-53
05372000	Buffalo River near Tell, WI	406	1932-51
05379288	Bruce Valley Creek near Pleasantville, WI	10.1	1979-80
05379305	Elk Creek near Independence, WI	108	1979-80
05379400	Trempealeau River at Arcadia, WI	553	1960-77
05380000	Trempealeau River near Trempealeau, WI	719	1931-34
05380806	Black River at Medford, WI	48.1	1984-87
05380900	Poplar River near Owen, WI	155	1964-66
05382500	Little LaCrosse River near Leon, WI	76.9	1934-61, 1978-81
05383000	LaCrosse River near West Salem, WI	396	1913-70
05386490	Spring Coulee Creek near Coon Valley, WI	9.01	1978-81
05386500	Coon Creek at Coon Valley, WI	77.2	1934-40, 1978-81
05386999	Coon Creek near Stoddard, WI	120	1934-40, 1979-81
05387100	North Fork Bad Axe River near Genoa, WI	80.8	1964-66
05390180	Wisconsin River at Conover, WI	177	1966-71
05391226	Pelican River near Rhinelander, WI	101	1976-79
05392000	Wisconsin River at Whirlpool Rapids, near Rhinelander, WI	1,220	1905-61
05392350	Bearskin Creek near Harshaw, WI	31.1	1964-66
05392400	Tomahawk River near Bradley, WI	422	1914-27, 1928-29
05393000	Tomahawk River at Bradley, WI	544	1930-73
05394000	New Wood River near Merrill, WI	82.2	1952-61
05396000	Rib River at Rib Falls, WI	303	1925-57
05396500	Little Rib River near Wausau, WI	79.1	1914-16
05397000	East Branch Eau Claire River near Antigo, WI	81.5	1949-55
05397110	Eau Claire River near Antigo, WI	185	1974-81
05398500	Bull Junior Creek (Bull Creek Junior) near Rothschild, WI	27.4	1944-51
05399000	Big Eau Pleine River near Colby, WI	78.1	1941-54
05399431	Hamann Creek near Stratford, WI	11.3	1976-79
05400000	Wisconsin River at Knowlton, WI	4,530	1920-42
05400500	Plover River near Stevens Point, WI	145	1914-19, 1944-51
05400600	Little Plover River near Arnott, WI	2.24	1959-75
05400650	Little Plover River at Plover, WI	19.0	1959-87
05400840	Fourmile Creek near Kellner, WI	75.0	1964-67
05400853	Buena Vista Creek near Kellner, WI	53.1	1964-67
05401020	Tenmile Creek Ditch 5 near Bancroft, WI	9.73	1964-73
05401100	Fourteenmile Creek near New Rome, WI	91.1	1964-79
05401500	Wisconsin River near Necedah, WI	5,990	1902-14, 1944-50
05401510	Big Roche a Cri Creek near Hancock, WI	9.61	1963-67
05401535	Big Roche a Cri Creek near Adams, WI	52.8	1963-78

Station number	Station name	Drainage area (sq mi)	Period of record
05402500	Yellow River at Sprague, WI	392	1926-40
05403000	Yellow River at Necedah, WI	491	1940-57
05403500	Lemonweir River at New Lisbon, WI	507	1944-87
05403630	Hulbert Creek near Wisconsin Dells, WI	11.2	1970-77
05403700	Dell Creek near Lake Delton, WI	44.9	1957-1965, 1970-80
05404200	Narrows Creek at Loganville, WI	40.1	1964-66
05406000	Wisconsin River at Prairie du Sac, WI	9,180	1946-53
05406573	Trout Creek at Confluence with Arneson Creek near Barneveld, WI	8.37	1975-79
05406574	Trout Creek at Twin Parks Dam 8 nr Barneveld, WI	9.02	1975-79
05406575	Trout Creek at County Highway T nr Barneveld, WI	12.1	1975-79
05406577	Trout Creek near Ridgeway, WI	13.5	1975-79
05406590	Knight Hollow Creek near Arena, WI	7.57	1976-77
05406640	Otter Creek near Highland, WI	16.8	1968-69, 1970-75
05407500	Kickapoo River at Ontario, WI	151	1938-39, 1973-77
05408500	Knapp Creek near Bloomingdale, WI	8.44	1954-69
05409000	West Fork Kickapoo River near Readstown, WI	106	1938-39
05409500	Kickapoo River at Soldiers Grove, WI	530	1938-39
05409830	North Fork Nederlo Creek near Gays Mills, WI	2.21	1967-79
05409890	Nederlo Creek near Gays Mills, WI	9.46	1967-80
05410000	Kickapoo River at Gays Mills, WI	617	1913-34, 1964-77
05413400	Pigeon Creek near Lancaster, WI	6.93	1964-66
05414894	Pats Creek near Belmont, WI	5.42	1980-82
05414915	Madden Branch Tributary near Belmont, WI	2.83	1980-82
05414920	Madden Branch near Meekers Grove, WI	15.04	1980-82
05418731	Apple River near Shullsburg, WI	9.34	1980-82
05423000	West Branch Rock River near Waupun, WI	40.7	1949-70, 1978-81
05423100	West Branch Rock River at County Trunk Highway D near Waupun, WI	43.9	1978-81
05424000	East Branch Rock River near Mayville, WI	179	1949-70
05424082	Rock River at Hustisford, WI	511	1978-85
05425537	Johnson Creek near Johnson Creek, WI	1.13	1978-79
05425539	Johnson Creek near Johnson Creek, WI	13.3	1978-79
05425928	Pratt Creek near Juneau, WI	3.54	1978-80
05426500	Whitewater Creek near Whitewater, WI	11.8	1926-28, 1946-54
05426900	Whitewater Creek at Millis Road near Whitewater, WI	20.6	1978-81
05427000	Whitewater Creek at Whitewater, WI	22.8	1926-28, 1946-54
05427507	Koshkonong Creek near Rockdale, WI	150	1976-82
05427800	Token Creek near Madison, WI	24.3	1975-80
05427900	Sixmile Creek near Waunakee, WI	41.1	1976-81
05427943	Pheasant Branch at Airport Road near Middleton, WI	9.61	1977-81
05427945	South Fork Pheasant Branch at Highway 14 near Middleton, WI	5.74	1977-81
05427950	Pheasant Branch at Century Avenue at Middleton, WI	20.8	1977-81
054279502	Graber Pond at Middlton, WI	0.60	1988-89
05427952	Pheasant Branch at mouth at Middleton, WI	24.5	1978-81
05427970	Willow Creek at Madison, WI	3.15	1973-83
05428665	Olbrich Park Storm Ditch at Madison, WI	2.57	1976-80
05429040	Manitou Way Storm Sewer at Madison, WI	0.23	1970-77
05429050	Nakoma Storm Sewer at Madison, WI	2.30	1971-77
05429118	Lake Wingra at Madison, WI	6.00	1970-79
05429120	Lake Wingra Outlet at Madison, WI	6.00	1970-77
05429580	Door Creek near Cottage Grove, WI	15.3	1975-79
05430000	Yahara River near Edgerton, WI	430	1916-17
05430030	Oregon Branch at Oregon, WI	9.93	1979-81
05430095	Badfish Creek at County Highway A near Stoughton, WI	41.9	1956-66, 1985-88
05430100	Badfish Creek near Stoughton, WI	41.3	1956-66
05433500	Yellowstone River near Blanchardville, WI	28.5	1954-65, 1977-79
05434000	Pecatonica River at Dill, WI	944	1914-19
05433510	Steiner Branch near Waldwick, WI	5.9	1977-79
05434235	Skinner Creek at Skinner Hollow Road near Monroe, WI	32.6	1978-81
05434240	Skinner Creek at Klondyke Road near Monroe, WI	35.0	1978-81
05435980	West Branch Sugar River near Mount Vernon, WI	32.7	1979-80
05436000	Mount Vernon Creek near Mount Vernon, WI	16.4	1954-65, 1975-80
05545300	White River near Burlington, WI	110	1973-82

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 25425, Federal Center, Denver, CO 80225. Prepayment is required. Remittance should be sent by check or money order payable to the U.S. Geological Survey. Prices can be obtained by writing to the above address or by calling (303)236-7476. 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, WI 53705.

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FACTORS FOR CONVERTING INCH-POUND UNITS TO INTERNATIONAL SYSTEM UNITS (SI)

The following factors may be used to convert the inch-pound units published herein to the International System of Units (SI).

Multiply inch-pound units	By	To obtain SI units
<i>Length</i>		
inches (in)	2.54×10^1	millimeters (mm)
	2.54×10^{-2}	meters (m)
feet (ft)	3.048×10^{-1}	meters (m)
miles (mi)	1.609×10^0	kilometers (km)
<i>Area</i>		
acres	4.047×10^3	square meters (m ²)
	4.047×10^{-1}	square hectometers (hm ²)
	4.047×10^{-3}	square kilometers (km ²)
square miles (mi ²)	2.590×10^0	square kilometers (km ²)
<i>Volume</i>		
gallons (gal)	3.785×10^0	liters (L)
	3.785×10^0	cubic decimeters (dm ³)
	3.785×10^{-3}	cubic meters (m ³)
million gallons	3.785×10^3	cubic meters (m ³)
	3.785×10^{-3}	cubic hectometers (hm ³)
cubic feet (ft ³)	2.832×10^1	cubic decimeters (dm ³)
	2.832×10^{-2}	cubic meters (m ³)
cfs-days	2.447×10^3	cubic meters (m ³)
	2.447×10^{-3}	cubic hectometers (hm ³)
acre-feet (acre-ft)	1.233×10^3	cubic meters (m ³)
	1.233×10^{-3}	cubic hectometers (hm ³)
	1.233×10^{-6}	cubic kilometers (km ³)
<i>Flow</i>		
cubic feet per second (ft ³ /s)	2.832×10^1	liters per second (L/s)
	2.832×10^1	cubic decimeters per second (dm ³ /s)
	2.832×10^{-2}	cubic meters per second (m ³ /s)
gallons per minute (gal/min)	6.309×10^{-2}	liters per second (L/s)
	6.309×10^{-2}	cubic decimeters per second (dm ³ /s)
	6.309×10^{-5}	cubic meters per second (m ³ /s)
million gallons per day	4.381×10^1	cubic decimeters per second (dm ³ /s)
	4.381×10^{-2}	cubic meters per second (m ³ /s)
<i>Mass</i>		
tons (short)	9.072×10^{-1}	megagrams (Mg) or metric tons

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