



Water Resources Data Wisconsin Water Year 1988



U.S. GEOLOGICAL SURVEY WATER-DATA REPORT WI-88-1

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

CALENDAR FOR WATER YEAR 1988

1987

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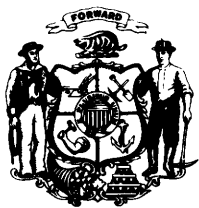
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by B.K. Holmstrom, P.A. Kammerer, Jr., and R.M. Erickson

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

**UNITED STATES DEPARTMENT OF THE INTERIOR
MANUEL LUJAN, JR., SECRETARY**

**GEOLOGICAL SURVEY
DALLAS L. PECK, DIRECTOR**

Prepared in cooperation with

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Wisconsin Department of Transportation
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Okauchee Lake Management District
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Town of Norway
Fowler Lake Management District
City of Fond du Lac
Village of Oconomowoc Lake
Noquebay Lake District
Little Muskego Lake District
City of Muskego/Big Muskego Protection and Rehabilitation Lake District
Chippewa County
Wisconsin Department of Justice
Wood County Board
Balsam Lake Protection and Rehabilitation District

For additional information write to:

District Chief, Water Resources Division
U.S. Geological Survey
6417 Normandy Lane
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:

Jack T. Freshwaters, Rice Lake, northwest
James W. George, Merrill, northeast
Josef Habale, Madison, southwest

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

S. J. Field	H. L. Hanson	S. A. March	P. A. Stark
G. L. Goddard	D. E. Housner	D. L. Olson	D. A. Wentz
D. J. Graczyk	K. J. Hedmark	T. J. Popowski	T. A. Wittwer
J. J. Hanig	K. R. Koenig	W. J. Rose	J. K. Zahn

Additional assistance in data processing and preparation of the report was provided by:

R. B. Bodoh	L. A. Enright	G. W. Gill	G. L. Patterson
W. G. Batten	K. K. Fitzgerald	L. B. House	P. J. Redman

This report was prepared under the general supervision of Warren A. Gebert, Hydrologic Systems and Data Section Chief, James T. Krohelski, Acting Hydrogeologic Studies and Data Section Chief, and Vernon W. Norman, District Chief, Wisconsin.

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FOR WHICH RECORDS ARE PUBLISHED

[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 FOR WISCONSIN, 1988

INTRODUCTION

Water-resources data for Wisconsin for the 1988 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 116 gaging stations and peak stage and discharge from 105 crest-stage stations; stage for 34 lakes and contents for 24 reservoirs; water-quality data from 32 streams, from 42 lakes, and from 13 wells; and water-level records from 69 observation wells. Various discharge, stage, precipitation, ground-water level, and water quality data are collected at four acid-deposition sites in northern Wisconsin. 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, M. E. Ostrom, 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.
 City of Hillsboro, Wayne Peterson, mayor.
 Illinois Department of Transportation.
 City of Waupun.
 City of Peshtigo.
 Rock County Parks Department.
 Village of Oconomowoc Lake.
 Menominee Indian Tribe of Wisconsin.
 Lac Courte Oreilles Governing Board.
 Bad River Tribal Council.
 Oneida Indian Tribe of Wisconsin.
 Stockbridge-Munsee Tribal Council.
 Town of Delavan.
 District of Powers Lake.
 Green Lake Sanitary District.
 Morris Lake Management District.
 Okauchee Lake Management District.
 Wind Lake Management District.
 Town of Norway.
 Fowler Lake Management District.
 City of Fond du Lac.
 Noquebay Lake District.
 Little Muskego Lake District.

City of Muskego/Big Muskego Protection and Rehabilitation Lake District.
 Chippewa County.
 Wisconsin Department of Justice.
 Wood County Board.
 Balsam Lake Protection and Rehabilitation District.

The following organizations aided in collecting streamflow records:
 Wisconsin Valley Improvement Co., Lake Superior District Power Co., Wisconsin-Michigan Power Co., Wisconsin Public Service Corp., Northern States Power Co., Dairyland Power Cooperative, Wisconsin Power and Light Co., Nekoosa Papers Inc., 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

Annual runoff during the 1988 water year was below normal for the entire State except for a few basins in south-central and southeastern Wisconsin where flows were just above normal. Average runoff varied from approximately 45 percent to 111 percent of the stations, long-term averages (fig. 1). The Manitowoc River, located in eastern Wisconsin, exhibited the lowest runoff (45 percent) compared to its long-term average (1973-88). Black Earth Creek basin, located in south-central Wisconsin, showed the greatest runoff (111 percent) compared to its long-term average (1955-88). The comparisons of the monthly and annual mean discharges for the 1988 water year to a 73-year base period at three gaging stations are shown in figure 2.

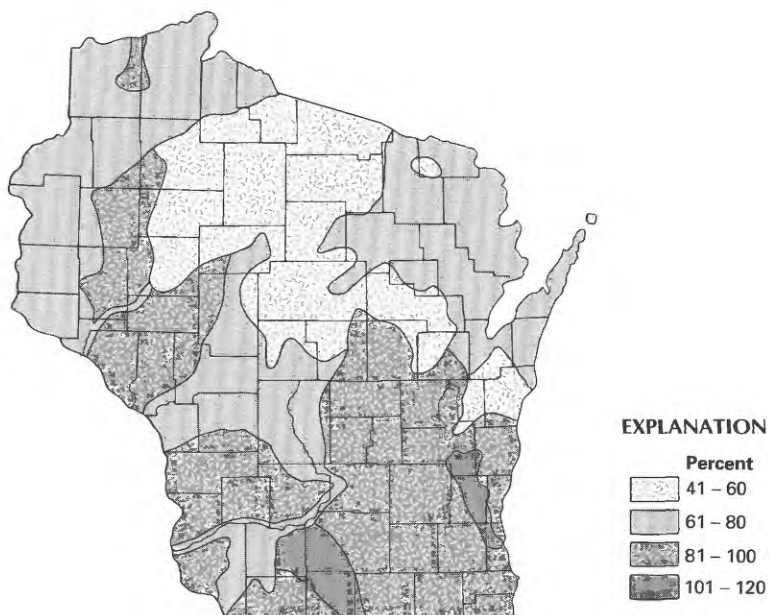


Figure 1. 1988 runoff as percent of long-term average runoff.

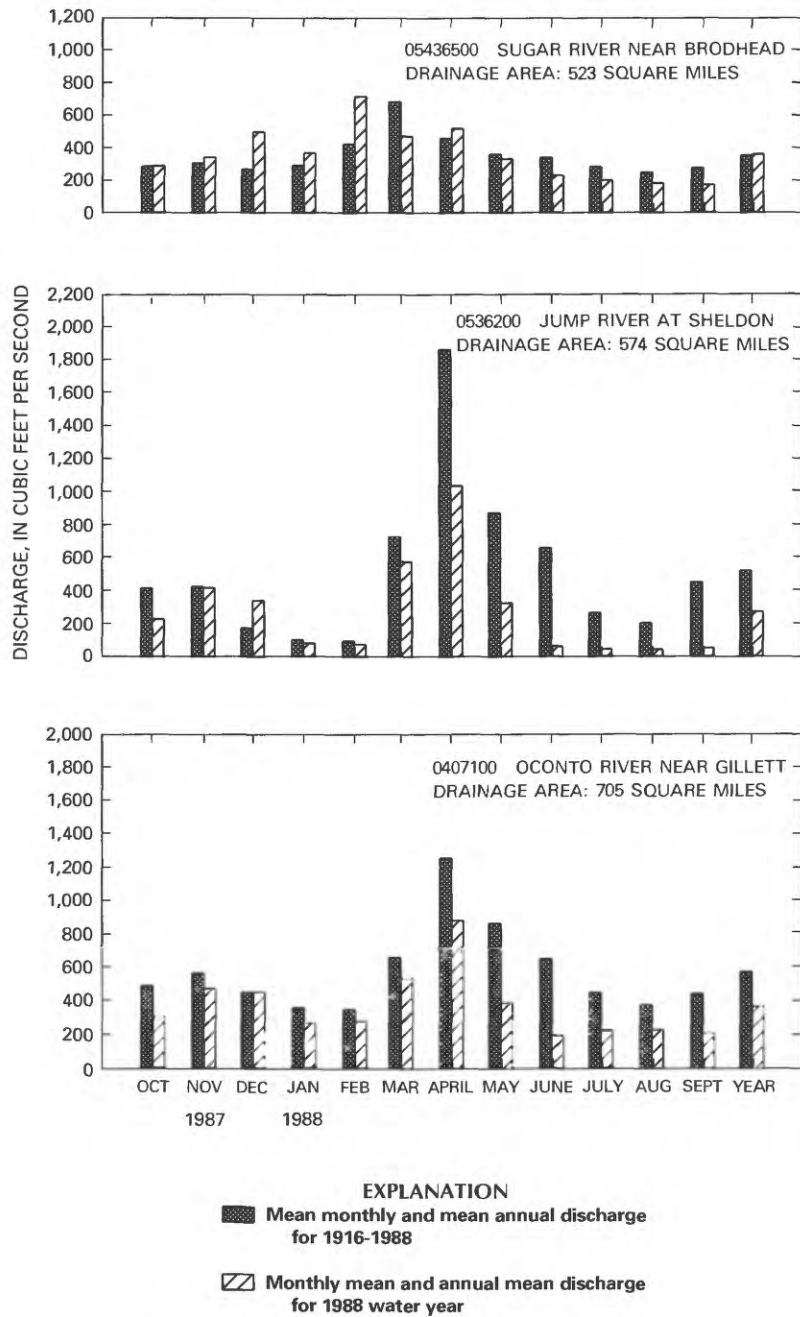


Figure 2. Comparison of discharge at representative gaging stations during 1988 water year with discharge for 1916-1988.

A description of the seasonal variation in streamflow in the State follows.

October - December 1987

Low flows in the first part of September 1987 and below normal precipitation in October produced below normal streamflows in the Wisconsin River basin early in the 1988 water year. Streamflows in the Upper Chippewa River, Upper Wisconsin, and northern part of the Lake Michigan basin were between 50 and 65 percent of normal. The annual minimum consecutive 7-day mean flow at the Chippewa River at Bruce gaging station from October 1-7 was 344 cubic feet per second, which is a 5-year recurrence interval. Precipitation totals for the October-December period were above normal for most of the State, except for northwestern Wisconsin. Precipitation totals were approximately 3 inches above normal for southeastern Wisconsin, which resulted in flows about two times the normal values in the Crawfish River basin.

January - March 1988

Statewide precipitation amounts were generally below normal for the January-March period. Streamflows were near normal for most of the State, except for upper portions of the Chippewa River basin in north-central Wisconsin and the Popple River basin in northeastern Wisconsin. Streamflows for these basins were about 60 percent of normal. The Upper Black River basin showed the highest streamflow at approximately 140 percent of normal for the January-March period. On March 9, the Kewaunee River near Kewaunee gaging station had an instantaneous peak discharge of 3,600 cubic feet per second, which is a 3-year recurrence interval.

April - June 1988

The mean annual flood was equalled or exceeded at three gaging stations in early April. These peak discharges are listed in the following table:

Station number	Station name	Date	Peak discharge (ft ³ /s)	Recurrence interval (years)
04027500	White River nr Ashland	Apr. 7	2,810	2
04077400	Wolf River nr Shawano	Apr. 5	2,490	2
04087233	Root River Canal nr Franklin	Apr. 6	788	3

Statewide precipitation totals for the April-June period ranged from 3.8 inches below normal in south-central Wisconsin to 7.4 inches below normal in northeastern Wisconsin (Wisconsin Agricultural Statistics Service, July 5, 1988). Douglas Clark, State Climatologist, reported that parts of Brown, Kewaunee, and Door Counties in east-central Wisconsin had less than 0.25 inch of rain in May. Green Bay recorded 0.06 inch of rain in May, which was the driest May in 104 years of record keeping. Nearby Algoma had only 0.04 inch of precipitation in May (Wisconsin State Journal, June 4, 1988). Rainfall deficiency continued through June, and streamflows ranged from 35 percent of normal in the Upper Black River basin in north-central Wisconsin to 94 percent of normal in the Sugar River basin in south-central Wisconsin.

The annual minimum consecutive 7-day mean flows (Q_7) at five stations declined to less than the 5-year recurrence interval values during the April-June period. The Q_7 value of 790 ft³/s at Wisconsin River at Wisconsin Rapids gaging station was the lowest recorded value for its period of record (1914-1950, 1958-1988). The previous low Q_7 at this station was 924 ft³/s. The Q_7 values and corresponding recurrence intervals are listed in the following table:

Station number	Station name	Date	Q_7 (ft ³ /s)	Recurrence interval (years)
04069500	Peshtigo River at Peshtigo	June 18-24	190	34
04079000	Wolf River at New London	June 18-24	450	14
05360500	Flambeau River nr Bruce	June 23-29	463	7
05398000	Wisconsin River at Rothschild	June 15-21	758	65
05400760	Wisconsin R at Wisconsin Rapids	June 18-24	790	>100

July - September 1988

Precipitation continued to be below normal for most of the State during July; rain totals were slightly above normal for only the north-central and east-central parts of the State. Precipitation amounts for August and September were at or above normal for the entire State. The large rainfall deficits for the April-September period ranged from 1.3 inches below normal in southeastern Wisconsin to 7.8 inches below normal in northeastern Wisconsin (Wisconsin Agricultural Statistics Service, October 3, 1988). Most of this rainfall deficit occurred during the April-June period. These large deficits in precipitation resulted in below normal streamflow for the entire State during the July-September period. Streamflow ranged from 10 percent of its long-term mean in the upper part of the Black River basin in north-central Wisconsin to 96 percent of the average streamflow in the Black Earth Creek basin in south-central Wisconsin.

The lack of precipitation in early July and hot temperatures in July and August resulted in streamflow declines to record low flows for several streams in July and August. The annual minimum consecutive mean flow (Q_7) values for some of these stations approached or exceeded a 100-year recurrence interval. A list of stations with 10 or more years of record that reached their lowest Q_7 discharge in July and August and the previous lowest recorded Q_7 value follows:

Station number	Station name	Period of record	Previous low Q_7 (ft ³ /s)	1988 WY Q_7 (ft ³ /s)
04063700	Popple River nr Fence	Oct.1963-Sept.1988	19	12
04073500	Fox River at Berlin	Jan.1898-Sept.1988	300	269
04074950	Wolf River at Langlade	Mar.1966-Sept.1979 & Oct.1980-Sept.1988	165	146
04085281	East Twin River at Mishicot	July 1972-Sept.1988	5.2	4.8
04085427	Manitowoc River at Manitowoc	July 1972-Sept.1988	14	9.0
04087030	Menomonee R at Menomonee Falls	Nov.1974-Sept.1977 & July 1979-Sept.1988	1.5	0.82

Station number	Station name	Period of record	Previous low Q_7 (ft ³ /s)	1988 WY Q_7 (ft ³ /s)
04087240	Root River at Racine	Aug.1963-Sept.1988	2.0	0.0
05404000	Wisconsin R nr Wisconsin Dells	Oct.1934-Sept.1988	1,400	1,210
05407000	Wisconsin River at Muscoda	Oct.1913-Sept.1988	2,430	1,900

The Q_7 at many gaging stations declined to less than the 5-year recurrence interval values during the July-September period. These values and corresponding recurrence intervals are listed in the following table:

Station number	Station name	Date	Q_7 (ft ³ /s)	Recurrence interval (years)
04027500	White River nr Ashland	July 25-31	133	5
04063700	Popple River nr Fence	July 3-9	12	90
04066003	Menominee River nr Pembine	July 29-Aug.4	1,060	10
04071000	Oconto River nr Gillett	July 4-10	167	29
04071858	Pensaukee River nr Pensaukee	July 8-14	1.4	14
04073500	Fox River at Berlin	July 23-29	269	100
04074950	Wolf River at Langlade	July 2-8	146	55
04077400	Wolf River nr Shawano	July 3-9	296	18
04084500	Fox River at Rapide Croche Dam nr Wrightstown	July 12-18	968	9
04085200	Kewaunee River nr Kewaunee	July 30-Aug.5	7.9	9
04085281	East Twin River at Mishicot	Aug.5-11	4.8	44
04085427	Manitowoc River at Manitowoc	Aug.3-9	9.0	26
04087030	Menomonee R at Menomonee Falls	Aug.11-17	0.82	>12
04087204	Oak Creek at South Milwaukee	July 9-15	0.71	10
04087220	Root River nr Franklin	July 29-Aug.4	1.9	12
04087240	Root River at Racine	July 9-15	0.0	100
05365500	Chippewa River at Chippewa Falls	July 8-14	720	15
05369500	Chippewa River at Durand	July 9-15	1,970	18
05381000	Black River at Neillsville	July 30-Aug.5	13	5
05393500	Spirit River at Spirit Falls	July 29-Aug.4	2.9	8
05394500	Prairie River nr Merrill	July 2-8	63	8
05395000	Wisconsin River at Merrill	July 2-8	619	19
05397500	Eau Claire River at Kelly	July 4-10	38	8
05399500	Big Eau Pleine River nr Stratford	Sept.10-16	1.4	5
05402000	Yellow River at Babcock	Sept.7-13	3.2	11
05404000	Wisconsin R nr Wisconsin Dells	Aug.10-16	1,210	>100
05407000	Wisconsin River at Muscoda	Aug.13-19	1,900	>100
05425500	Rock River at Watertown	Aug.1-9	14	5
05429500	Yahara River at McFarland	Sept.4-10	6.7	13
05544200	Mukwonago River at Mukwonago	July 10-16	11	8
05546500	Fox River at Wilmot	Aug.2-8	73	7

The lack of precipitation in the preceding 3-month period and in early July and high temperatures in July and August produced drought conditions that stressed crops and resulted in related crop losses. Drought appraisals by Wisconsin Agricultural and Conservation County Offices showed that Wisconsin drought-related crop losses in 1988 exceeded 900 million dollars (Wisconsin State Journal, April 11, 1989).

References cited:

Wisconsin Agricultural Statistics Service, Crop Weather Report, Vol. 11, No. 22, July 5, 1988.

_____, Crop Weather Report, Vol. 11, No. 35, October 3, 1988.

Wisconsin State Journal, Dry May set record in Wisconsin, July 4, 1988.

_____, Drought may hurt industry this year, April 11, 1989.

Water Quality.

Dissolved-solids concentrations represent the total 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 1988 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 3.

Dissolved-solids concentrations measured in water from the Wisconsin River at Muscoda reflect the below normal runoff in central and northern Wisconsin during the 1988 water year (fig. 1). Concentrations exceeded long-term monthly median values in all cases (fig. 3), indicating little dilution by overland runoff. Runoff was also considerably below normal for the entire water year at the HBMN station on the Popple River near Fence. Dissolved-solids concentrations at this station were higher than long-term medians for all but the November sample, which was collected during a period when runoff from precipitation was entering the stream.

Runoff was closer to normal for the year in southeastern Wisconsin (fig. 1) and above normal for the Milwaukee River at Milwaukee. Dissolved-solids concentrations measured at this station during the water year were near normal in October and September when runoff was near normal, below normal in March when the sample was collected following a period of surface runoff, and above normal in June when runoff was below normal (fig. 3).

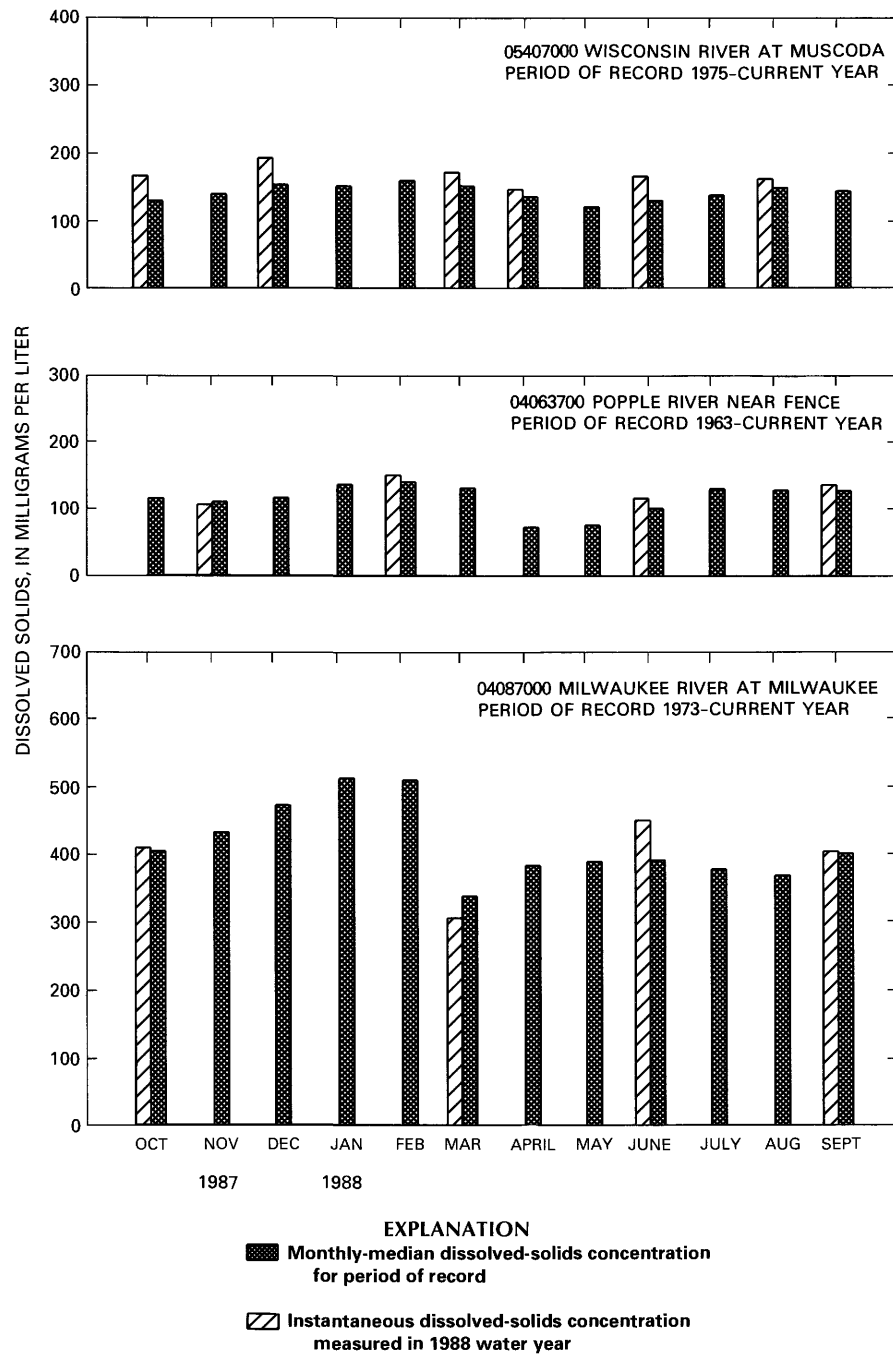


Figure 3. Comparison of dissolved-solids contrations in streams during 1988 water year with monthly medians.

Ground-Water Levels

Maps showing the seasonal ground-water trends for the year (fig. 4) are based on water-level data from 29 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, 1987; WINTER consists of measurements from December, 1987 through February, 1988; SPRING consists of measurements from March through May, 1988; and SUMMER consists of measurements from June through August, 1988. Mean seasonal water levels for 1988 were compared to the long-term mean seasonal water levels. The 1988 water level was considered normal if it was within one-half of the standard deviation of the long-term mean.

Ground-water levels in 1988 continued the general decline that began in the spring of 1987. In the fall of 1987, only water levels in a band extending from the northwest through the center of the State remained above normal. Water levels in the western and eastern parts of the State had declined to normal levels, and in the far north had declined to below normal levels. The general pattern remained essentially the same through the winter. The below normal snowfall and spring precipitation in early 1988 resulted in little recharge, and ground-water levels continued to decline. In the spring, the area of above normal water levels was reduced, and levels in large areas of the northern and eastern parts of the State had fallen below normal. In the summer of 1988, the lack of rainfall resulted in below normal ground-water levels throughout the entire eastern and western parts of the State. Water levels in one area in the northwest quarter of the State remained above normal, and those in a somewhat north-south trending band across the center of the State remained normal.

Over the past several years ground-water levels in eastern Wisconsin have commonly been normal or below normal. This is not entirely a reflection of climatic conditions, but is partially caused by municipal pumping from the deep confined aquifer in the Green Bay and Milwaukee areas. Pumping from the deep aquifer has contributed to lowered water levels in the overlying aquifers.

Ground-water levels in three wells were above normal throughout the year, and all three of these wells had water levels more than one standard deviation above the long-term mean during all four seasons. The ground-water levels in four wells were below normal for the entire year, and, at the end of water year 1988, nine wells had water levels more than one standard deviation below the long-term mean.

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.

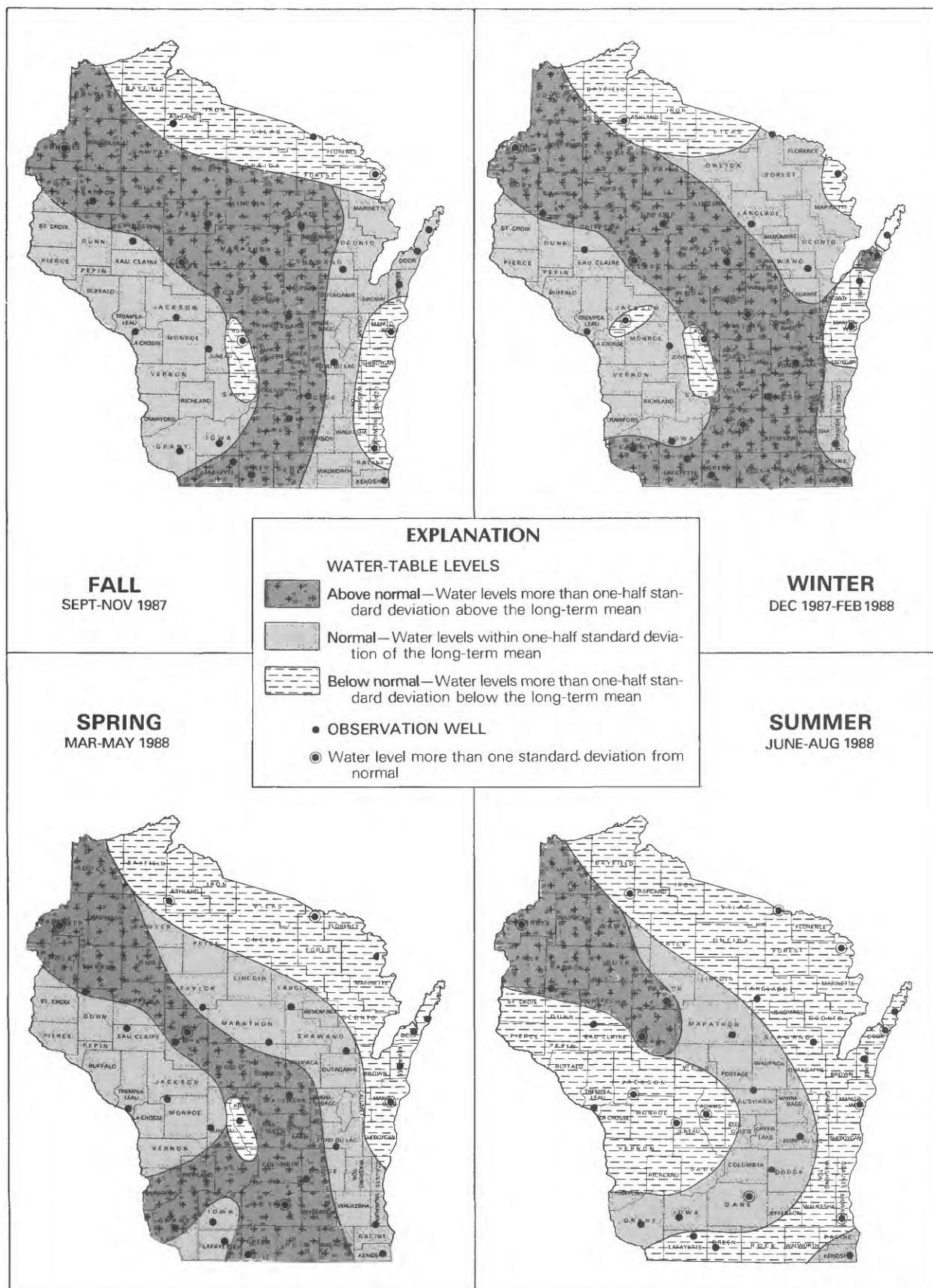


Figure 4. Relation of seasonal water-table levels to long-term means.

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.

The U.S. Geological Survey completed a nation-wide review of the NASQAN program during 1986. This review is expected to result in a change in emphasis in the program and a net reduction, nationally, in the number of stations in the network. The original accounting objectives of the program will be retained only for a reduced number of stations that account for the quality of water leaving the continent or entering the Great Lakes. To meet the accounting objectives, preference will be given to stations where statistically significant water-quality changes have been detected or where changes in upstream land uses are anticipated.

Increased emphasis will be placed on trend detection and transport of dissolved and suspended materials at these remaining accounting stations and any other stations retained in the network. Other stations retained in the network will be selected on the basis of hypotheses concerning the causes of existing or potential trends that the station is intended to identify. This new emphasis will require more intensive sampling (event-related and fixed-frequency sampling) and more chemical analyses of suspended materials, thus increasing per station costs. These increased costs are to be met by a reduction in network size rather than by increased funding of the program. Some reduction in network size and changes in network composition began in the 1987 water year; additional changes in the size, composition, and emphasis of the network are expected to be planned and implemented through the 1989 water year.

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.

EXPLANATION OF THE RECORDS

The surface-water and ground-water records published in this report are from the 1988 water year that began October 1, 1987, and ended September 30, 1988. 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. Data collection as part of cooperative studies of acid deposition in Wisconsin, which includes most of the data type just mentioned, are tabulated in a separate section of the report. The explanations of various types of data given in the remainder of this section apply to these records as well. Figure 5 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 figures 6 and 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- or nine- digit number for each station, such as 04087000 or 054310157, which appears just to the left of the station name, includes the two-digit Part number "04" or "05" plus the six- or seven digit downstream-order number "087000" or "4310157". 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 non-recording 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 in situ quality of the water. To assure this, certain measurements, such as water temperature, pH, and dissolved oxygen, are made on site when the samples are taken. To assure that measurements made in the laboratory also represent the in situ water, carefully 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 load. Water quality in lakes may differ with depth and laterally at a particular depth depending on thermal stratification and other physical and biological factors.

Chemical-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 recording monitors, the records consist of daily maximum, minimum, and mean values for each constituent measured and are based upon values recorded. More detailed records (hourly values) may be obtained from the U.S.G.S. Wisconsin District Office.

Sediment

Suspended-sediment concentrations are determined on samples collected with depth integrating samplers from one or more verticals in the cross section, or on a single sample taken manually or with an automatic sampler at a fixed point. For fixed-point samples, a coefficient is applied to correct for differences between fixed-point and flow-integrated samples.

During periods of rapidly changing flow or rapidly changing concentration, samples may have been collected more frequently than during stable periods. The published sediment discharges for days of rapidly changing flow or concentration were computed by the subdivided-day method (time-discharge weighted average). For periods when no samples were collected, daily discharges of suspended sediment were estimated on the basis of water discharge, sediment concentrations observed immediately before and after the periods, and suspended-sediment loads for other periods of similar discharge. Suspended-sediment discharges less than 0.005 tons/day are reported as 0.

Suspended-sediment samples are collected less frequently at some stations where suspended-sediment discharges are not computed. These periodic samples represent conditions only at the time of observations. However, such data are useful in establishing seasonal relations between suspended-sediment concentration and streamflow and in predicting long-term sediment-discharge characteristics of the stream.

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 U.S.G.S. Sediment Laboratory in Iowa City, Iowa. Chemical analyses, other than field measurements, are performed by the USGS National Water Quality Laboratory unless specified otherwise. Methods used by USGS laboratories in analyzing water and sediment samples and computing sediment records are given in "U.S. Geological Survey Techniques of Water-Resources Investigations" listed in "Publications on techniques of water-resources investigations."

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 non USGS), cooperation, and extremes for parameters currently measured daily. Tables of chemical, physical, biological, radio-chemical data, and so forth, obtained at a frequency less than daily are presented first. Tables of "daily values" of specific conductance, pH, water temperature, dissolved oxygen, and suspended sediment then following in sequence.

The concentrations of some constituents are given as less than some 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.

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 parameters measured daily or continuously and those measured less than daily. For those measured daily or continuously, periods of record are given for the parameters individually.

INSTRUMENTATION.--Information on instrumentation is given only if a water-quality monitor, temperature recorder, pumping 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. Non USGS laboratories providing analytical data 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 U.S. Geological Survey 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	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 65 wells are given in this report. The location of these wells is shown on figure 6. 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 65 wells are presented in this report, water-level data are currently being collected for a total of 226 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 10 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.

Records of Ground-Water Quality

Data Collection and Computation

The records of ground-water quality in this report were obtained mostly as part of special studies in specific areas. Consequently, a number of chemical analyses may be presented for some counties but none for others.

Most methods of collecting and analyzing water samples are described in the "U.S. Geological Survey Techniques of Water-Resources Investigations" manuals listed in "Publications on techniques of water-resources investigations." The values reported in this report represent water-quality conditions at the time of sampling. Care is taken to assure that the water collected represents the geologic unit supplying water to the well. This is done by pumping the well for what is believed to be a sufficient length of time to flush out water that might have been contaminated by exposure to the material that comprise the well casing or distribution system.

Data Presentation

The records of ground-water quality are published in a section titled QUALITY OF GROUND WATER immediately following the ground-water-level records. Data for quality of ground water are listed alphabetically by County. No descriptive statements are given for ground-water-quality records; however, station number, local identifying number, geologic unit, depth of well, date of sampling, and other pertinent data are given in the table containing the chemical analyses of the ground water. The discussion of detection limits and the list of remarks codes for surface-water-quality records also apply to ground-water-quality records.

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

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 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 M-enterococcus 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 µm 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.

PUBLICATIONS ON TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS

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."

- 1-D1. Water temperature--influential factors, field measurement, and data presentation, by H. H. Stevens, Jr., J. F. Ficke, and G. F. Smoot: USGS--TWRI Book 1, Chapter D1. 1975. 65 pages.
- 1-D2. Guidelines for collection and field analysis of ground-water samples for selected unstable constituents, by W. W. Wood: USGS--TWRI Book 1, Chapter D2. 1976. 24 pages.
- 2-D1. Application of surface geophysics to ground-water investigations, by A. A. R. Zohdy, G. P. Eaton, and D. R. Mabey: USGS--TWRI Book 2, Chapter D1. 1974. 116 pages.
- 2-E1. Application of borehole geophysics to water-resources investigations, by W. S. Keys and L. M. MacCary: USGS--TWRI Book 2, Chapter E1. 1971. 126 pages.
- 3-A1. General field and office procedures for indirect discharge measurements, by M. A. Benson and Tate Dalrymple: USGS--TWRI Book 3, Chapter A1. 1967. 30 pages.
- 3-A2. Measurement of peak discharge by the slope-area method, by Tate Dalrymple and M. A. Benson: USGS--TWRI Book 3, Chapter A2. 1967. 12 pages.
- 3-A3. Measurement of peak discharge at culverts by indirect methods, by G. L. Bodhaine: USGS--TWRI Book 3, Chapter A3. 1968. 60 pages.
- 3-A4. Measurement of peak discharge at width contractions by indirect methods, by H. J. Matthai: USGS--TWRI Book 3, Chapter A4. 1967. 44 pages.
- 3-A5. Measurement of peak discharge at dams by indirect methods, by Harry Hulsing: USGS--TWRI Book 3, Chapter A5. 1967. 29 pages.
- 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 and dispersion in streams by dye tracing, by E. F. Hubbard, F. A. Kilpatrick, L. A. Martens, and J. F. Wilson, Jr.: USGS--TWRI Book 3, Chapter A9. 1982. 44 pages.
- 3-A10. Discharge ratings at gaging stations, by E. J. Kennedy: USGS--TWRI Book 3, Chapter A10. 1984. 59 pages.
- 3-A11. Measurement of discharge by moving-boat method, by G. F. Smoot and C. E. Novak: USGS--TWRI Book 3, Chapter A11. 1969. 22 pages.
- 3-A12. Fluorometric procedures for dye tracing, by J. F. Wilson, Jr., E. D. Cobb, and F. A. Kilpatrick: USGS--TWRI Book 3, Chapter A12. 1986. 41 pages.
- 3-A13. Computation of continuous records of streamflow, by E. J. Kennedy: USGS--TWRI Book 3, Chapter A13. 1983. 53 pages.
- 3-A14. Use of flumes in measuring discharge, by F. A. Kilpatrick and V. R. Schneider: USGS--TWRI Book 3, Chapter A14. 1983. 46 pages.
- 3-A15. Computation of water-surface profiles in open channels, by Jacob Davidian: USGS--TWRI Book 3, Chapter A15. 1984. 48 pages.
- 3-A16. Measurement of discharge using tracers, by F. A. Kilpatrick and E. D. Cobb: USGS--TWRI Book 3, Chapter A16. 1985. 52 pages.
- 3-A17. Acoustic velocity meter systems, by Antonius Laenen: USGS--TWRI Book 3, Chapter A17. 1985. 38 pages.
- 3-B1. Aquifer-test design, observation, and data analysis, by R. W. Stallman: USGS--TWRI Book 3, Chapter B1. 1971. 26 pages.

PUBLICATIONS ON TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS--Continued

- 3-B2. Introduction to ground-water hydraulics, a programed test for self-instruction, by G. D. Bennett: USGS--TWRI Book 3, Chapter B2. 1976. 172 pages.
- 3-B3. Type curves for selected problems of flow to wells in confined aquifers, by J. E. Reed: USGS--TWRI Book 3, Chapter B3. 1980. 106 pages.
- 3-B5. Definition of boundary and initial conditions in the analysis of saturated ground-water flow systems--An introduction, by O. L. Franke, T. E. Reilly, and G. D. Bennett: USGS--TWRI Book 3, Chapter B5. 1987. 15 pages.
- 3-B6. The principle of superposition and its application in ground-water hydraulics, by T. E. Reilly, O. L. Franke, and G. D. Bennett: USGS--TWRI Book 3, Chapter B6. 1987. 28 pages.
- 3-C1. Fluvial sediment concepts, by H. P. Guy: USGS--TWRI Book 3, Chapter C1. 1970. 55 pages.
- 3-C2. Field methods for measurement of fluvial sediment, by H. P. Guy and V. W. Norman: USGS--TWRI Book 3, Chapter C2. 1970. 59 pages.
- 3-C3. Computation of fluvial-sediment discharge, by George Porterfield: USGS--TWRI Book 3, Chapter C3. 1972. 66 pages.
- 4-A1. Some statistical tools in hydrology, by H. C. Riggs: USGS--TWRI Book 4, Chapter A1. 1968. 39 pages.
- 4-A2. Frequency curves, by H. C. Riggs: USGS--TWRI Book 4, Chapter A2. 1968. 15 pages.
- 4-B1. Low-flow investigations, by H. C. Riggs: USGS--TWRI Book 4, Chapter B1. 1972. 18 pages.
- 4-B2. Storage analyses for water supply, by H. C. Riggs and C. H. Hardison: USGS--TWRI Book 4, Chapter B2. 1973. 20 pages.
- 4-B3. Regional analyses of streamflow characteristics, by H. C. Riggs: USGS--TWRI Book 4, Chapter B3. 1973. 15 pages.
- 4-D1. Computation of rate and volume of stream depletion by wells, by C. T. Jenkins: USGS--TWRI Book 4, Chapter D1. 1970. 17 pages.
- 5-A1. Methods for determination of inorganic substances in water and fluvial sediments, by M. W. Skougstad and others, editors: USGS--TWRI Book 5, Chapter A1. 1979. 626 pages.
- 5-A2. Determination of minor elements in water by emission spectroscopy, by P. R. Barnett and E. C. Mallory, Jr.: USGS--TWRI Book 5, Chapter A2. 1971. 31 pages.
- 5-A3. Methods for analysis of organic substances in water, by D. F. Goerlitz and Eugene Brown: USGS--TWRI Book 5, Chapter A3. 1972. 40 pages.
- 5-A4. Methods for collection and analysis of aquatic biological and microbiological samples, edited by P. E. Greeson, T. A. Ehlke, G. A. Irwin, B. W. Lium, and K. V. Slack: USGS--TWRI Book 5, Chapter A4. 1977. 332 pages.
- 5-A5. Methods for determination of radioactive substances in water and fluvial sediments, by L. L. Thatcher, V. J. Janzer, and K. W. Edwards: USGS--TWRI Book 5, Chapter A5. 1977. 95 pages.
- 5-A6. Quality assurance practices for the chemical and biological analyses of water and fluvial sediments, by L. C. Friedman and D. E. Erdmann: USGS--TWRI Book 5, Chapter A6. 1982. 181 pages.
- 5-C1. Laboratory theory and methods for sediment analysis, by H. P. Guy: USGS--TWRI Book 5, Chapter C1. 1969. 58 pages.
- 6-A1. A modular three-dimensional finite-difference ground-water flow model, by M. G. McDonald and A. W. Harbaugh: USGS--TWRI Book 6, Chapter A1. 1988. 586 pages.
- 7-C1. Finite difference model for aquifer simulation in two dimensions with results of numerical experiments, by P. C. Trescott, G. F. Pinder, and S. P. Larson: USGS--TWRI Book 7, Chapter C1. 1976. 116 pages.
- 7-C2. Computer model of two-dimensional solute transport and dispersion in ground water, by L. F. Konikow and J. D. Bredehoeft: USGS--TWRI Book 7, Chapter C2. 1978. 90 pages.
- 7-C3. A model for simulation of flow in singular and interconnected channels, by R. W. Schaffranek, R. A. Baltzer, and D. E. Goldberg: USGS--TWRI Book 7, Chapter C3. 1981. 110 pages.
- 8-A1. Methods of measuring water levels in deep wells, by M. S. Garber and F. C. Koopman: USGS--TWRI Book 8, Chapter A1. 1968. 23 pages.
- 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.
- 8-B2. Calibration and maintenance of vertical-axis type current meters, by G. F. Smoot and C. E. Novak: USGS--TWRI Book 8, Chapter B2. 1968. 15 pages.

ST. LAWRENCE RIVER BASIN RECORDS

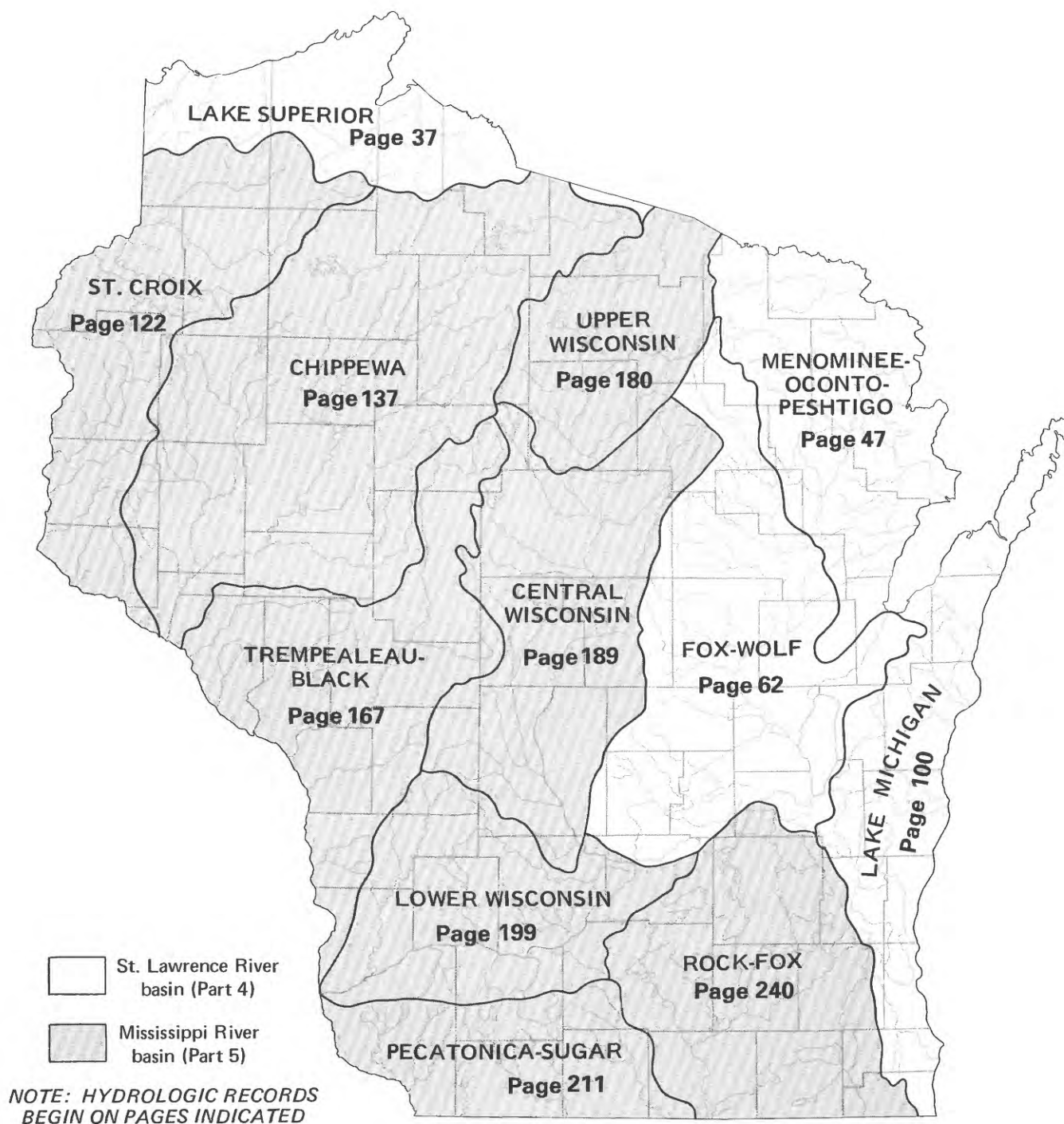
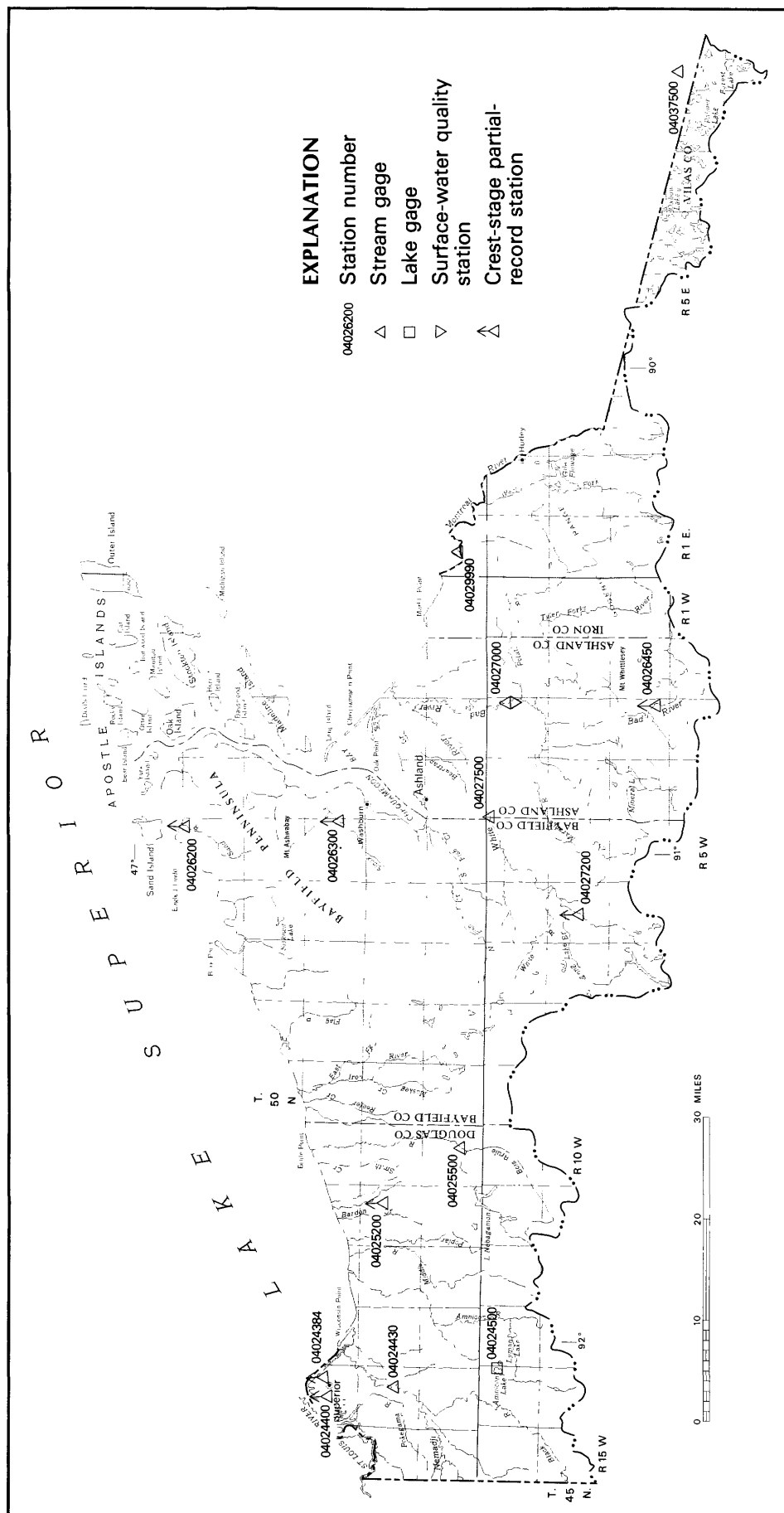


Figure 5. Major surface-water drainage basins and index of hydrologic records.



Base from U S Geological Survey
State base map, 1968

LAKE SUPERIOR BASIN

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 periods listed in rating table below. Records good except for ice-affected periods and those for May through September, which are fair.

AVERAGE DISCHARGE.--14 years, 407 ft³/s, 13.16 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,700 ft³/s, May 10, 1979, gage height, 22.83 ft; maximum gage height, 23.82 ft, Sept. 3, 1985; 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)
Apr. 7	1100	(a) 4,290	(a) *19.10	May 10	0500	*4,500	*19.10

(a) Backwater from ice.

Minimum discharge, 39 ft³/s, July 28, gage height, 3.78 ft.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Shifting-control method used May 26 to Aug. 13, Aug. 17 to Sept. 19, and Sept. 25-30; stage-discharge relation affected by ice Nov. 6-15, and Nov. 19 to Apr. 8.)

3.5	38	11.0	1,400
3.7	56	14.0	2,260
4.0	84	18.0	3,820
5.0	198	19.0	4,430
7.0	514		

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	73	87	110	84	70	64	1300	193	139	65	59	59
2	74	87	100	82	68	66	1700	185	129	58	57	62
3	72	91	98	82	68	66	2000	174	122	55	51	63
4	74	98	96	82	66	66	2500	164	117	51	64	63
5	75	123	94	80	66	64	3100	157	111	48	78	63
6	98	110	92	78	66	64	3700	151	103	46	75	58
7	95	110	90	76	64	66	4000	151	98	46	65	53
8	76	100	88	76	64	70	3400	174	95	46	93	51
9	76	90	88	76	64	100	2480	2300	97	48	90	47
10	75	88	90	74	62	130	1870	3980	89	48	71	44
11	77	100	94	74	62	240	1540	1980	85	45	60	43
12	75	98	96	76	62	170	1320	1220	79	45	61	43
13	74	96	92	74	62	150	1170	1010	75	49	116	43
14	73	98	88	72	62	140	987	823	74	53	1060	42
15	73	100	86	72	60	150	798	652	73	49	605	41
16	76	102	86	72	60	170	671	549	70	45	333	44
17	78	124	86	72	60	170	600	468	66	44	217	57
18	80	192	86	72	62	170	536	395	63	43	169	60
19	83	190	88	72	62	170	460	344	77	42	137	63
20	88	170	88	72	64	160	403	316	81	41	114	1390
21	90	150	86	72	64	160	357	293	73	42	100	1180
22	92	140	86	72	66	160	324	269	71	42	93	601
23	94	130	86	70	66	160	300	246	67	44	115	430
24	97	120	84	70	66	190	287	223	61	43	124	317
25	98	110	84	70	64	840	273	199	59	43	104	246
26	103	110	84	70	64	1700	258	185	58	41	88	204
27	98	110	84	68	64	1200	243	175	54	41	78	173
28	96	98	86	68	64	1000	228	179	58	39	71	154
29	94	100	86	68	64	900	214	177	72	40	66	145
30	92	120	84	66	---	880	197	166	71	49	62	141
31	90	---	84	68	---	1100	---	151	---	53	58	---
TOTAL	2609	3442	2770	2280	1856	10736	37216	17649	2487	1444	4534	5980
MEAN	84.2	115	89.4	73.5	64.0	346	1241	569	82.9	46.6	146	199
MAX	103	192	110	84	70	1700	4000	3980	139	65	1060	1390
MIN	72	87	84	66	60	64	197	151	54	39	51	41
CFSM	.20	.27	.21	.18	.15	.82	2.95	1.36	.20	.11	.35	.47
IN.	.23	.30	.25	.20	.16	.95	3.30	1.56	.22	.13	.40	.53

CAL YR 1987 TOTAL 63418 MEAN 174 MAX 1340 MIN 63 CFSM .41 IN. 5.62
WTR YR 1988 TOTAL 93003 MEAN 254 MAX 4000 MIN 39 CFSM .61 IN. 8.24

STREAMS TRIBUTARY TO LAKE SUPERIOR
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 to September 1988.

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, 17.75 ft, May 10; minimum observed, 16.96 ft, July 27-31.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	17.42	17.21	17.00	17.48
2	---	---	---	---	---	---	---	---	17.42	17.21	17.04	17.46
3	---	---	---	---	---	---	---	---	17.42	17.21	17.05	17.46
4	---	---	---	---	---	---	---	---	---	17.19	17.07	17.44
5	---	---	---	---	---	---	---	---	17.40	17.19	17.11	17.44
6	---	---	---	---	---	---	---	---	17.40	17.19	17.15	17.42
7	---	---	---	---	---	---	---	---	17.38	17.17	17.17	17.40
8	---	---	---	---	---	---	---	---	17.38	17.15	17.19	17.40
9	---	---	---	---	---	---	---	---	17.38	17.11	17.17	17.40
10	---	---	---	---	---	---	---	17.75	17.36	17.08	17.15	17.38
11	---	---	---	---	---	---	---	---	17.36	17.08	17.13	17.38
12	---	---	---	---	---	---	---	---	17.36	17.06	17.13	17.38
13	---	---	---	---	---	---	---	---	17.34	17.06	17.21	17.36
14	---	---	---	---	---	---	---	---	17.34	17.04	17.57	17.36
15	---	---	---	---	---	---	---	---	17.34	17.04	17.59	17.36
16	---	---	---	---	---	---	---	---	17.31	17.02	17.59	17.34
17	---	---	---	---	---	---	---	---	17.31	17.00	17.61	17.34
18	---	---	---	---	---	---	---	---	17.31	17.00	17.59	17.34
19	---	---	---	---	---	---	---	---	17.29	17.00	17.59	17.32
20	---	---	---	---	---	---	---	---	17.29	17.00	17.59	17.62
21	---	---	---	---	---	---	---	---	17.29	17.00	17.59	17.62
22	---	---	---	---	---	---	---	---	17.27	16.98	17.63	17.64
23	---	---	---	---	---	---	---	17.44	17.27	16.98	17.59	17.64
24	---	---	---	---	---	---	---	17.44	17.27	16.98	17.55	17.62
25	---	---	---	---	---	---	---	17.42	17.27	16.98	17.53	17.60
26	---	---	---	---	---	---	---	17.42	17.25	16.98	17.51	17.62
27	---	---	---	---	---	---	---	17.46	17.25	16.96	17.50	17.62
28	---	---	---	---	---	---	---	17.46	17.25	16.96	17.48	17.60
29	---	---	---	---	---	---	---	17.44	17.23	16.96	17.46	17.56
30	---	---	---	---	---	---	---	17.44	17.23	16.96	17.46	17.54
31	---	---	---	---	---	---	---	17.44	---	16.96	17.48	---
MEAN	---	---	---	---	---	---	---	---	---	17.06	17.37	17.47
MAX	---	---	---	---	---	---	---	---	---	17.21	17.63	17.64
MIN	---	---	---	---	---	---	---	---	---	16.96	17.00	17.32

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.--43 years (water years 1943-81, 1985-88), 172 ft³/s, 19.46 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)
Jan. 10	0900	(a)	*3.73	Sept. 20	0800	345	2.63
Apr. 9	0100	*547	3.37				

(a) Backwater from ice.

Minimum discharge, 102 ft³/s, July 28, 29.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Nov. 19-21, Dec. 1-6, 26, 27, Jan. 1 to Feb. 27, and Mar. 12-24.)

1.4	101	3.0	443
2.0	200	4.0	742

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	128	132	180	150	130	129	191	167	133	118	122	122
2	132	132	170	150	130	128	200	164	138	116	123	121
3	129	140	160	140	130	130	237	161	137	114	116	119
4	127	156	160	140	130	130	253	159	132	113	130	124
5	129	154	150	140	130	128	284	157	129	111	128	123
6	144	146	150	140	130	128	314	153	127	108	122	120
7	146	140	153	140	130	128	394	153	125	108	117	117
8	139	136	153	140	130	140	494	181	126	110	130	114
9	132	135	164	140	130	142	498	225	127	111	127	113
10	130	132	169	140	130	140	409	241	125	111	121	112
11	128	132	166	140	130	140	372	226	122	109	114	113
12	128	132	162	140	130	140	347	217	123	108	127	113
13	129	132	158	140	130	140	327	213	122	113	163	113
14	127	132	154	140	130	140	307	195	118	112	180	112
15	129	137	154	130	130	130	285	186	117	109	158	112
16	139	171	153	130	130	130	270	179	117	108	150	121
17	142	190	150	130	130	130	259	172	117	107	149	127
18	138	194	150	130	130	130	246	167	117	107	140	128
19	134	180	155	130	140	130	235	162	136	106	127	133
20	134	160	148	130	140	130	222	166	130	106	121	313
21	137	150	146	130	140	130	215	161	123	107	119	251
22	138	148	146	130	140	130	209	156	122	106	123	234
23	141	146	144	130	140	140	204	153	118	106	139	230
24	139	145	144	130	140	150	201	148	116	106	135	213
25	139	145	142	130	140	184	195	144	119	105	130	193
26	136	143	150	130	140	181	189	142	115	105	124	181
27	136	142	150	130	140	172	185	146	113	104	121	168
28	135	141	144	130	131	171	180	144	127	103	118	158
29	135	180	141	130	130	176	175	140	130	106	118	157
30	133	188	141	130	---	180	171	136	123	117	116	155
31	132	---	141	130	---	186	---	134	---	119	116	---
TOTAL	4165	4491	4748	4190	3861	4463	8068	5248	3724	3389	4024	4510
MEAN	134	150	153	135	133	144	269	169	124	109	130	150
MAX	146	194	180	150	140	186	498	241	138	119	180	313
MIN	127	132	141	130	130	128	171	134	113	103	114	112
CFSM	1.12	1.25	1.28	1.13	1.11	1.20	2.24	1.41	1.03	.91	1.08	1.25
IN.	1.29	1.39	1.47	1.30	1.20	1.38	2.50	1.63	1.15	1.05	1.25	1.40

CAL YR 1987	TOTAL 53522	MEAN 147	MAX 237	MIN 115	CFSM 1.22	IN. 16.59
WTR YR 1988	TOTAL 54881	MEAN 150	MAX 498	MIN 103	CFSM 1.25	IN. 17.01

STREAMS TRIBUTARY TO LAKE SUPERIOR

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 periods listed in rating table below and Aug. 13. Records good except those for periods of estimated daily discharges, which are poor.

AVERAGE DISCHARGE.--48 years (1915-22, 1949-88), 622 ft³/s, 14.15 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)
Apr. 4	1600	a	*11.22	No other peak greater than base discharge.			
Apr. 7	0900	*6,360	10.53				

a Backwater from ice.

Minimum discharge, 61 ft³/s, July 29, gage height, 2.13 ft.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Nov. 21-28, Dec. 2-9, and Dec. 13 to Apr. 6.)

2.1	56	4.0	780
2.5	162	6.0	2,100
3.0	323	8.0	3,810
		11.0	6,880

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	144	570	944	280	190	180	2400	352	165	107	76	90
2	169	535	720	270	190	180	2600	331	182	99	84	89
3	269	548	660	250	180	180	3100	311	184	90	84	88
4	314	801	580	240	180	180	4200	292	185	85	130	90
5	297	768	450	230	180	180	5200	276	172	84	205	94
6	287	633	410	230	180	180	6000	264	162	81	202	91
7	528	535	430	220	180	200	6140	248	150	78	168	87
8	643	470	410	220	170	230	5960	245	144	74	154	83
9	514	413	560	210	170	280	5710	476	136	74	138	78
10	396	363	953	210	170	460	4870	955	135	78	116	75
11	325	331	839	200	170	560	3510	914	129	78	103	73
12	284	321	727	200	170	540	2540	724	117	78	100	72
13	258	303	580	200	160	500	2000	647	109	78	220	72
14	240	289	470	200	160	480	1640	594	103	81	331	71
15	227	279	420	190	160	500	1370	521	98	78	327	71
16	321	277	410	190	160	520	1140	462	97	78	280	71
17	642	345	390	190	160	500	987	433	92	84	266	81
18	642	754	380	190	160	490	878	394	91	89	331	111
19	540	745	400	190	160	470	771	353	99	84	256	174
20	456	615	380	190	160	450	690	319	111	81	199	206
21	462	470	350	190	170	440	630	294	107	78	162	312
22	498	500	340	190	170	430	565	279	106	78	143	290
23	497	450	330	190	170	430	530	271	103	84	143	244
24	496	400	320	190	180	450	536	261	96	81	155	208
25	500	370	310	190	180	1200	529	234	94	78	150	179
26	589	330	310	190	180	2100	497	216	88	76	137	164
27	778	310	310	190	180	1800	456	210	83	74	125	154
28	829	300	300	200	180	1700	424	206	90	68	113	143
29	754	795	300	200	180	1600	398	195	120	66	105	135
30	677	1190	290	200	---	1900	375	184	119	68	101	131
31	620	---	280	190	---	2300	---	175	---	74	96	---
TOTAL	14196	15010	14553	6420	5000	21610	66646	11636	3667	2484	5200	3827
MEAN	458	500	469	207	172	697	2222	375	122	80.1	168	128
MAX	829	1190	953	280	190	2300	6140	955	185	107	331	312
MIN	144	277	280	190	160	180	375	175	83	66	76	71
CFSM	.77	.84	.79	.35	.29	1.17	3.72	.63	.20	.13	.28	.21
IN.	.88	.94	.91	.40	.31	1.35	4.15	.73	.23	.15	.32	.24

CAL YR 1987 TOTAL 130153 MEAN 357 MAX 1700 MIN 84 CFSM .60 IN. 8.11
WTR YR 1988 TOTAL 170249 MEAN 465 MAX 6140 MIN 66 CFSM .78 IN. 10.61

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 1987 to September 1988. Water-quality data collected downstream at bridge on U.S. Highway 2 at Odanah from February 1978 to September 1987.

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

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 (FTU) (00076)	OXYGEN, DIS- SOLVED (MG/L) (00300)	BARO- METRIC PRES- SURE (MM HG) (00025)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)
OCT 1987										
14...	1145	--	239	135	7.40	6.5	1.8	11.7	765	95
DEC										
15...	1130	420	--	118	7.20	0.0	5.1	14.4	755	99
MAR 1988										
01...	1205	--	178	176	7.50	0.0	3.3	13.2	759	91
APR										
12...	1045	--	2550	50	7.40	5.0	27	11.8	732	96
JUN										
10...	1020	--	135	174	8.10	17.0	4.9	8.6	772	88
AUG										
22...	1215	--	140	160	8.10	19.5	6.5	8.3	765	90

DATE	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP- TOCOC FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD- NESS TOTAL (MG/L AS CAC03) (00900)	HARD- NESS NONCARB WH WAT TOT FLD MG/L AS CAC03 (00902)	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)
OCT 1987								
14...	K18	35	64	11	17	5.2	2.9	9
DEC								
15...	24	130	49	10	13	4.0	2.6	10
MAR 1988								
01...	28	40	78	8	21	6.3	3.9	10
APR								
12...	9	14	25	6	7.0	1.9	1.3	10
JUN								
10...	32	85	86	0	23	6.9	3.8	9
AUG								
22...	K89	350	82	7	22	6.5	3.7	9

DATE	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	BICAR- BONATE WATER DIS IT FIELD MG/L AS HCO3 (00453)	ALKA- LINIT WAT DIS TOT IT FIELD MG/L AS CAC03 (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 1987									
14...	0.90	59	48	18	3.2	0.20	11	88	91
DEC									
15...	1.0	46	38	13	3.0	0.10	12	79	73
MAR 1988									
01...	0.90	81	66	12	3.5	0.80	16	112	109
APR									
12...	0.80	20	16	18	1.5	0.10	7.6	52	51
JUN									
10...	1.1	101	82	9.4	3.1	0.10	9.6	113	118
AUG									
22...	1.0	88	72	13	3.4	0.10	10	111	105

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- PHOROUS DIS- SOLVED (MG/L AS P) (00665)	PHOS- PHOROUS DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHOROUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)
OCT 1987									
14...	0.12	56.8	<0.100	0.050	0.050	0.50	0.020	<0.010	<0.010
DEC									
15...	0.11	89.6	0.100	0.060	0.060	0.50	<0.010	0.010	0.010
MAR 1988									
01...	0.15	53.8	0.280	0.080	0.080	0.60	0.020	0.010	0.010
APR									
12...	0.07	358	0.150	0.080	0.050	0.60	0.090	0.020	<0.010
JUN									
10...	0.15	41.2	<0.100	0.010	<0.010	0.30	0.020	0.010	<0.010
AUG									
22...	0.15	42.0	<0.100	0.010	0.020	0.50	0.030	0.010	<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

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

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 1987 14...	1145	239	30	<1	21	<0.5	<1	3	<3	2	260
MAR 1988 01...	1205	178	20	<1	25	<0.5	<1	2	<3	2	360
APR 12...	1045	2550	140	<1	15	<0.5	<1	<1	<3	3	210
AUG 22...	1215	140	20	1	28	<0.5	2	1	<3	2	270

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 1987 14...	<5	<4	14	<0.1	<10	<1	<1	39	<6	<3
MAR 1988 01...	<5	<4	17	<0.1	<10	4	4	45	<6	34
APR 12...	<5	<4	14	<0.1	<10	<1	<1	16	<6	6
AUG 22...	<5	<4	36	<0.1	<10	<1	<1	53	<6	6

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, DIS- SUS- PENDE (MG/L) (80154)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT 1987 06...	1430	--	284	145	9.5	--	--	--
14...	1145	--	239	135	6.5	4	2.6	90
DEC 08...	0920	--	410	120	0.5	--	--	--
15...	1130	420	--	118	0.0	12	14	91
JAN 1988 21...	1320	--	191	--	0.0	--	--	--
MAR 01...	1205	--	178	176	0.0	6	2.9	93
APR 11...	1850	--	3170	67	6.0	--	--	--
12...	1045	--	2550	50	5.0	164	1130	79
MAY 18...	1230	--	393	113	14.0	--	--	--
JUN 10...	1020	--	135	174	17.0	7	2.6	93
30...	1515	--	116	210	24.5	--	--	--
AUG 12...	0905	--	103	225	21.0	--	--	--
22...	1215	--	140	160	19.5	16	6.0	93
SEP 07...	1120	--	92	106	15.5	--	--	--
22...	0918	--	298	105	13.5	--	--	--

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: Jan. 5-11. Records good except those for estimated daily discharges, which are fair. Diurnal fluctuation caused by hydroelectric plant at gage.

AVERAGE DISCHARGE.--40 years, 282 ft³/s, 12.72 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, 2,810 ft³/s, Apr. 7, gage height, 4.64 ft; minimum daily, 80 ft³/s, Dec. 27.

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

0.7	63	2.0	520
1.0	128	3.0	1,170
1.5	292		

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	164	169	280	168	184	176	665	167	148	161	169	152
2	191	169	273	150	182	201	715	155	178	154	141	160
3	167	199	236	167	167	175	875	175	143	147	141	161
4	168	201	229	202	169	200	884	146	144	141	178	160
5	193	248	179	180	184	176	1020	149	174	141	184	168
6	168	211	222	190	260	175	1010	174	141	141	192	167
7	169	200	243	200	304	197	986	148	136	142	160	165
8	196	198	201	190	303	168	857	149	139	136	161	161
9	169	197	218	200	221	273	801	231	144	135	191	158
10	194	193	269	200	203	242	690	286	147	137	169	157
11	169	165	287	202	187	298	617	293	145	140	164	158
12	169	195	300	203	190	250	485	287	144	142	154	158
13	169	172	259	220	194	170	428	235	137	141	199	159
14	169	201	245	275	194	169	367	234	137	149	204	162
15	170	172	218	231	191	260	318	213	140	170	196	166
16	196	203	207	189	187	276	290	211	142	151	188	161
17	200	212	230	174	186	251	286	217	144	150	196	159
18	199	221	190	176	186	253	241	211	146	141	178	161
19	197	240	162	200	209	219	222	219	184	134	211	209
20	196	254	196	183	181	221	207	221	180	133	158	224
21	170	184	211	177	182	179	201	223	154	137	158	232
22	201	197	179	199	180	231	193	223	153	150	192	301
23	193	240	197	174	169	207	191	273	152	152	156	308
24	177	200	222	207	205	256	194	228	151	149	157	279
25	197	188	178	174	182	367	193	228	151	138	194	260
26	182	203	157	200	182	638	190	217	151	133	157	205
27	201	204	80	167	180	488	185	211	149	133	158	196
28	170	191	144	153	179	466	182	244	148	134	159	197
29	199	235	253	202	202	494	177	183	185	131	160	191
30	169	273	239	170	---	625	177	173	161	130	161	161
31	199	---	192	198	---	683	---	162	---	132	154	---
TOTAL	5671	6135	6696	5921	5743	8984	13847	6486	4548	4405	5340	5656
MEAN	183	204	216	191	198	290	462	209	152	142	172	189
MAX	201	273	300	275	304	683	1020	293	185	170	211	308
MIN	164	165	80	150	167	168	177	146	136	130	141	152
CFSM	.61	.68	.72	.63	.66	.96	1.53	.70	.50	.47	.57	.63
IN.	.70	.76	.83	.73	.71	1.11	1.71	.80	.56	.54	.66	.70

CAL YR 1987 TOTAL 82224 MEAN 225 MAX 1300 MIN 80 CFSM .75 IN. 10.16
WTR YR 1988 TOTAL 79432 MEAN 217 MAX 1020 MIN 80 CFSM .72 IN. 9.82

STREAMS TRIBUTARY TO LAKE SUPERIOR

04029990 MONTREAL RIVER AT SAXON FALLS NEAR SAXON, WI

LOCATION.--Lat 46°32'13", long 90°17'47", 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 except for discharges less than 50 ft³/s, which are poor. 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.--34 years (1939-70, 1987-88), 317 ft³/s, 16.43 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, 2,630 ft³/s, Apr. 5; minimum daily discharge, 33 ft³/s, Oct. 1.

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	33	370	370	185	185	185	720	235	137	125	95	83
2	45	265	286	185	185	165	869	220	137	113	92	60
3	60	250	205	185	185	125	869	197	140	113	95	60
4	89	250	220	185	185	137	2040	191	149	113	119	60
5	89	285	197	185	185	145	2630	197	149	106	149	60
6	148	250	197	185	185	155	2500	191	149	95	146	60
7	404	197	160	185	185	155	2380	189	143	95	131	60
8	370	197	185	185	185	164	2200	185	131	95	131	60
9	286	185	185	185	185	176	2100	185	128	95	120	58
10	220	173	471	185	185	185	2100	526	116	95	107	49
11	220	149	471	185	197	182	1130	471	113	95	95	42
12	185	140	370	185	185	173	790	371	113	95	95	42
13	158	125	370	185	185	165	720	370	113	95	95	39
14	113	125	250	185	185	143	650	326	113	95	174	36
15	113	125	220	185	195	134	585	326	113	95	155	36
16	140	120	210	185	195	149	475	250	110	95	149	36
17	185	120	197	185	195	176	420	220	107	95	137	36
18	185	305	185	185	205	178	370	197	107	95	137	36
19	250	325	185	185	205	185	325	185	107	95	137	42
20	185	325	185	185	195	155	270	185	113	95	131	122
21	250	220	198	185	195	121	235	185	125	95	119	131
22	250	220	185	185	185	131	250	185	131	95	119	131
23	250	185	185	185	185	149	286	185	140	95	119	125
24	250	185	185	185	185	167	286	185	125	95	113	101
25	250	173	185	185	185	277	250	173	116	95	95	95
26	326	149	185	185	185	585	250	137	116	95	95	95
27	495	149	185	185	185	585	220	137	113	95	95	95
28	535	149	185	185	185	585	210	137	113	92	95	89
29	471	149	185	185	185	585	235	137	125	83	89	77
30	385	395	185	185	---	585	235	137	143	83	77	77
31	370	---	197	185	---	700	---	137	---	73	95	---
TOTAL	7310	6255	7179	5735	5467	7702	26600	6952	3735	2991	3601	2093
MEAN	236	208	232	185	189	248	887	224	124	96.5	116	69.8
MAX	535	395	471	185	205	700	2630	526	149	125	174	131
MIN	33	120	160	185	185	121	210	137	107	73	77	36
CFSM	.90	.80	.88	.71	.72	.95	3.38	.86	.48	.37	.44	.27
IN.	1.04	.89	1.02	.81	.78	1.09	3.78	.99	.53	.42	.51	.30
CAL YR 1987	TOTAL 56372	MEAN 154	MAX 870	MIN 25	CFSM .59	IN. 8.00						
WTR YR 1988	TOTAL 85620	MEAN 234	MAX 2630	MIN 33	CFSM .89	IN. 12.16						

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 1.5 ft³/s, which are poor. Flow regulated by Cisco Lake (station 04037400). Several measurements of water temperature were made during the year.

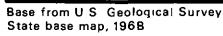
AVERAGE DISCHARGE.--44 years, 47.0 ft³/s, 12.59 in/yr.

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, 176 ft³/s, Oct. 17, gage height, 5.54 ft; minimum daily, 0.08 ft³/s, July 21, Aug. 2, 3.

DISCHARGE, IN 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	.93	100	55	59	33	23	47	.34	.19	.17	.09	.28
2	1.1	94	53	61	14	23	48	.31	.18	.16	.08	.23
3	1.7	90	52	61	14	23	54	.29	.16	.13	.08	1.5
4	1.9	82	52	59	14	23	62	.31	.18	.12	.13	2.2
5	46	76	51	53	16	23	67	.32	.22	.10	.17	2.9
6	69	75	51	46	16	23	72	.31	.20	.10	.15	37
7	68	72	48	34	16	22	88	.29	.17	.10	.15	107
8	69	67	46	10	16	24	99	.29	.16	.10	.10	126
9	64	81	47	2.1	17	38	102	.26	.13	.10	.10	106
10	21	88	48	2.0	17	55	105	.20	.13	.10	.10	57
11	.76	81	47	2.0	17	54	104	.22	.13	.10	.09	1.8
12	.51	75	47	2.1	17	54	104	.23	.13	.10	.09	1.4
13	.40	71	46	2.1	17	54	103	.21	.13	.09	.14	1.4
14	.37	69	56	2.0	17	54	105	.26	.13	.09	.55	1.0
15	.81	62	76	14	17	53	105	.22	.13	21	18	.85
16	76	53	73	33	17	53	104	.22	.13	21	33	1.0
17	160	51	72	36	17	52	101	.19	.13	.20	55	51
18	162	69	65	42	18	52	43	.16	.13	.11	79	81
19	146	78	62	51	19	51	67	.16	.13	.09	76	94
20	137	76	60	52	19	51	34	.19	.13	.09	35	107
21	130	77	57	52	19	50	3.6	.19	.13	.08	.54	106
22	126	72	58	53	35	50	3.0	.19	.27	.09	.55	104
23	121	70	59	53	54	49	2.6	.19	.23	.09	.43	100
24	115	69	57	52	53	50	2.5	.19	.22	.09	.34	66
25	109	67	57	52	53	52	1.7	.19	.19	.10	.31	29
26	97	65	57	51	40	51	1.5	.16	.19	.10	.31	30
27	93	63	56	50	21	50	1.3	.17	.18	.12	.32	17
28	92	61	56	49	21	47	1.2	.17	.23	.09	.28	1.6
29	107	61	56	49	22	47	.88	.16	.23	.09	.26	1.5
30	108	58	58	48	---	47	.53	.17	.19	.09	.26	1.4
31	104	---	58	48	---	47	---	.18	---	.09	.30	---
TOTAL	2228.48	2173	1736	1180.3	666	1345	1632.81	6.94	5.08	45.08	301.92	1237.06
MEAN	71.9	72.4	56.0	38.1	23.0	43.4	54.4	.22	.17	1.45	9.74	41.2
MAX	162	100	76	61	54	55	105	.34	.27	21	79	126
MIN	.37	51	46	2.0	14	22	.53	.16	.13	.08	.08	.23
CAL YR 1987	TOTAL	11433.55	MEAN	31.3	MAX	162	MIN	.22	CFSM	.62	IN	8.39
WTR YR 1988	TOTAL	12557.67	MEAN	34.3	MAX	162	MIN	.08	CFSM	.68	IN	9.21



MENOMINEE-OCNTO-PESHTIGO RIVER BASIN

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. 21-18 and Dec. 3 to Apr. 2. 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.--45 years (water years 1915, 1945-88), 361 ft³/s, 12.60 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, 1.79 ft, July 24, 1964.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,100 ft³/s, Apr. 7, gage height, 3.47 ft; maximum gage height, 5.93 ft Jan. 3, backwater from ice; minimum discharge, 154 ft³/s, July 29, gage height, 1.76 ft.

DISCHARGE, IN 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	189	227	314	215	190	205	570	270	213	188	163	164
2	210	225	286	215	190	210	580	262	197	181	162	166
3	224	233	215	210	185	215	581	254	193	184	167	208
4	215	263	240	210	185	215	781	252	192	176	197	360
5	210	274	250	210	185	215	911	254	188	169	293	325
6	218	256	250	210	190	220	1060	254	184	165	258	280
7	236	244	260	205	190	230	1080	247	182	162	208	240
8	231	237	270	205	195	235	913	251	182	160	187	215
9	228	232	285	205	200	240	723	270	186	191	177	199
10	221	226	305	205	200	235	610	301	181	206	172	187
11	212	227	290	205	200	230	541	301	178	192	165	177
12	207	225	265	210	200	230	482	279	177	180	169	176
13	206	224	255	210	200	230	435	289	173	173	210	184
14	204	221	250	210	200	230	409	276	170	170	220	182
15	213	219	250	210	200	240	378	259	169	221	207	177
16	323	229	250	210	200	245	356	251	170	382	186	179
17	382	333	250	210	200	255	341	244	170	279	223	228
18	332	435	250	210	200	250	333	239	169	222	245	246
19	289	382	250	210	200	250	325	232	179	201	225	232
20	279	316	250	210	195	250	307	226	185	187	195	267
21	266	275	245	215	195	240	293	229	174	185	178	272
22	264	285	240	215	195	250	284	263	275	191	169	266
23	266	300	235	215	190	260	288	265	299	183	185	253
24	264	300	230	215	190	265	304	264	228	176	208	232
25	258	300	230	215	190	300	304	233	207	177	194	215
26	254	300	225	215	190	650	297	223	195	178	183	208
27	262	300	225	215	195	600	296	218	184	170	176	213
28	259	300	220	210	195	520	303	223	187	164	175	204
29	253	284	220	208	195	520	289	217	215	158	172	200
30	240	335	220	200	---	525	277	212	208	168	170	210
31	234	---	215	195	---	540	---	213	---	164	164	---
TOTAL	7649	8707	7740	6503	5640	9300	14651	7771	5810	5903	6003	6665
MEAN	247	274	250	210	194	300	488	251	194	190	194	222
MAX	382	435	314	215	200	650	1080	301	299	382	293	360
MIN	189	219	215	195	185	205	277	212	169	158	162	164
CFSM	.63	.70	.64	.54	.50	.77	1.25	.65	.50	.49	.50	.57
IN.	.73	.78	.74	.62	.54	.89	1.40	.74	.56	.56	.57	.64
CAL YR 1987	TOTAL	97848	MEAN	268	MAX	592	MIN	185	CFSM	.69	IN.	9.36
WTR YR 1988	TOTAL	91842	MEAN	251	MAX	1080	MIN	158	CFSM	.65	IN.	8.78

STREAMS TRIBUTARY TO LAKE MICHIGAN

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.--January 1914 to current year. Published as "at Twin Falls near Iron Mountain, MI" 1914-57. 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, Michigamme Reservoir, capacity, 119,950 acre-ft, and 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.--74 years, 1,815 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, 4,610 ft³/s, Apr. 7, gage height, 6.67 ft; minimum, 87 ft³/s, May 13, gage height, 1.44 ft; minimum daily, 508 ft³/s, Apr. 24.

DISCHARGE, IN 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	756	873	1890	890	1780	1400	2550	883	974	1000	583	1510
2	766	1040	1890	1500	1820	1430	2790	1480	895	861	661	1380
3	750	1470	1750	1470	1820	1420	3000	1610	853	677	758	937
4	725	1380	2070	1800	1870	1450	3440	1280	841	980	802	1730
5	603	1160	1800	1770	1830	1460	3510	1150	697	914	1090	1150
6	635	1140	1860	1960	1630	1470	3560	1080	732	994	1270	1320
7	667	806	1910	1440	1670	1510	3830	673	764	1050	994	1380
8	753	757	1860	1780	1760	1520	3770	852	666	999	937	1100
9	872	1060	2040	1520	1790	1420	3360	998	702	935	706	1150
10	917	1170	2270	1690	1690	1480	3080	934	742	752	733	924
11	864	1180	2220	1510	1760	1450	2580	1070	903	827	772	853
12	733	1170	2160	1700	1730	1470	2350	776	866	1040	716	728
13	930	855	2100	1870	1520	1420	1950	984	762	986	693	908
14	730	775	1850	1940	1480	1530	1500	828	773	1080	714	1200
15	691	820	1900	1940	1740	1420	1500	900	730	932	1010	1130
16	948	977	1890	1940	1480	1490	1250	1360	741	776	1520	1020
17	1270	1240	1940	1910	1540	1140	1120	1370	789	655	1550	937
18	1450	1290	1950	1910	1630	1100	1030	1520	859	714	1940	854
19	1200	1450	1840	1700	1430	1100	1000	1440	835	961	1920	808
20	1170	1660	1730	1640	1420	1040	841	1290	872	1020	1400	936
21	1280	1170	1930	1660	1490	1080	924	1040	826	941	1410	1200
22	1120	1180	1870	1690	1600	1120	845	1010	787	900	1300	1290
23	1180	1770	1900	1750	1600	1170	655	1170	818	734	1280	1110
24	1060	1890	1830	1660	1270	1250	508	1140	763	716	1090	777
25	1150	1770	1980	1650	1710	1590	599	1210	573	878	1110	774
26	1050	1950	1940	1720	1530	1930	1010	1290	844	824	1410	1040
27	1100	1970	1860	1660	1470	2110	1160	1280	753	781	1280	1260
28	1000	1900	2000	1690	1420	2060	1680	791	751	822	1290	943
29	969	1820	1820	1650	1380	2280	1470	982	880	809	1310	1070
30	915	1840	1960	1620	---	2430	753	910	967	759	1820	1040
31	903	---	1020	1740	---	2580	---	1020	---	727	1570	---
TOTAL	29157	39533	59030	52370	46860	47320	57615	34321	23958	27044	35639	32459
MEAN	941	1318	1904	1689	1616	1526	1921	1107	799	872	1150	1082
MAX	1450	1970	2270	1960	1870	2580	3830	1610	974	1080	1940	1730
MIN	603	757	1020	890	1270	1040	508	673	573	655	583	728
CAL YR 1987	TOTAL	475210	MEAN	1302	MAX	3140	MIN	356				
WTR YR 1988	TOTAL	485306	MEAN	1326	MAX	3830	MIN	508				

STREAMS TRIBUTARY TO LAKE MICHIGAN

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 periods listed in rating table below. Records good except those for ice-affected periods, which are fair.

AVERAGE DISCHARGE.--25 years, 121 ft³/s, 11.82 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)
Apr. 8	0600	*563	*2.94	No other peak greater than base discharge.			
Minimum discharge, 10 ft ³ /s, July 6, 7, 8, gage height, 0.91 ft.							

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Nov. 21-22, Dec. 2-6, Dec. 14 to Mar. 27, and Mar. 31 to Apr. 5.)

0.9	10	1.7	108
1.0	14	2.0	188
1.2	30	3.0	591
1.4	55		

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	26	68	108	33	30	33	150	109	52	20	12	21
2	28	66	100	33	30	32	170	96	36	16	12	18
3	32	71	90	32	27	30	210	89	29	13	12	37
4	34	91	80	31	26	30	300	87	25	12	15	77
5	34	100	74	26	26	32	400	80	25	11	31	78
6	36	98	70	23	25	35	484	75	23	11	35	64
7	42	91	68	23	24	37	533	80	22	11	34	53
8	44	84	68	24	24	37	558	76	20	11	25	45
9	42	78	74	24	25	40	533	76	21	12	20	37
10	41	73	81	25	26	42	491	99	20	16	17	30
11	40	80	83	28	27	45	442	107	18	17	15	24
12	41	64	82	28	27	45	397	105	17	15	13	23
13	40	58	80	26	27	45	353	110	19	15	16	23
14	42	56	70	26	28	42	312	112	23	15	30	27
15	45	54	64	27	29	41	268	110	20	19	27	25
16	55	65	60	29	30	40	226	99	18	29	22	25
17	76	109	54	31	31	43	194	89	16	28	30	43
18	101	167	52	33	33	43	163	82	16	24	48	38
19	108	186	52	33	33	37	141	72	18	21	47	39
20	98	157	54	32	30	35	125	63	20	19	36	52
21	91	130	54	31	28	34	110	59	19	24	27	51
22	86	140	52	30	30	36	99	57	19	28	24	52
23	88	130	48	29	30	35	98	65	17	27	26	58
24	88	119	50	27	28	34	101	58	16	23	24	57
25	86	111	50	27	27	60	115	49	15	19	22	65
26	85	104	45	26	27	130	130	45	14	16	20	53
27	94	96	40	25	29	120	125	43	14	16	20	53
28	98	88	40	26	33	124	136	42	16	14	20	63
29	88	100	39	28	33	128	133	39	25	13	22	52
30	81	117	38	30	---	132	122	37	24	13	23	44
31	74	---	36	32	---	140	---	41	---	13	22	---
TOTAL	1964	2951	1956	878	823	1737	7619	2351	637	541	747	1327
MEAN	63.4	98.4	63.1	28.3	28.4	56.0	254	75.8	21.2	17.5	24.1	44.2
MAX	108	186	108	33	33	140	558	112	52	29	48	78
MIN	26	54	36	23	24	30	98	37	14	11	12	18
CFSM	.46	.71	.45	.20	.20	.40	1.83	.55	.15	.13	.17	.32
IN.	.53	.79	.52	.23	.22	.46	2.04	.63	.17	.14	.20	.36

CAL YR 1987 TOTAL 23951 MEAN 65.6 MAX 257 MIN 17 CFSM .47 IN. 6.41
WTR YR 1988 TOTAL 23531 MEAN 64.3 MAX 558 MIN 11 CFSM .46 IN. 6.30

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 1987 TO SEPTEMBER 1988

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 (FTU) (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)
NOV 1987												
18...	1240	174	165	7.60	1.5	1.3	12.4	736	92	25	43	74
FEB 1988												
17...	1200	30	252	7.70	0.0	1.8	9.2	733	65	5	<1	130
JUN												
01...	1140	34	190	8.10	22.5	2.2	7.7	733	93	--	--	100
SEP												
05...	1445	79	185	8.20	13.5	1.5	--	732	--	90	63	110
DATE		HARD- NESS NONCARB WH WAT TOT FLD MG/L AS CACO3 (00902)	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 WAT IT 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)
NOV 1987												
18...	15	16	8.3	1.4	4	0.1	0.90	60	49	21	2.2	0.10
FEB 1988												
17...	11	29	15	2.0	3	0.1	1.2	155	127	16	1.9	0.20
JUN												
01...	11	22	11	1.8	4	0.1	0.80	110	90	14	1.9	0.20
SEP												
05...	16	23	13	1.6	3	0.1	0.90	114	93	16	1.1	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 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- PHOROUS DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHOROUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)
NOV 1987												
18...	10	108	96	0.15	50.7	0.130	0.060	0.070	0.50	0.020	0.010	<0.010
FEB 1988												
17...	17	152	158	0.21	12.5	0.180	0.160	0.130	0.30	0.020	0.010	0.020
JUN												
01...	5.2	118	111	0.16	11.0	<0.100	0.020	0.040	0.60	0.020	0.020	<0.010
SEP												
05...	11	138	124	0.19	29.4	<0.100	0.020	0.020	0.60	0.020	0.010	<0.010

STREAMS TRIBUTARY TO LAKE MICHIGAN

04063700 POPPLE RIVER NEAR FENCE, WI--CONTINUED

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

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 1987 18...	1240	174	20	<1	9	<0.5	<1	<1	<3	1	270
FEB 1988 17...	1200	30	<10	<1	13	<0.5	1	<1	<3	1	410
JUN 01...	1140	34	<10	1	12	<0.5	1	<1	<3	2	220
SEP 05...	1445	79	<10	1	14	<0.5	1	<1	<3	1	170

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 1987 18...	<5	<4	38	<0.1	<10	<1	<1	19	<6	4
FEB 1988 17...	14	6	93	<0.1	<10	<1	<1	28	<6	5
JUN 01...	15	5	270	<0.1	<10	2	<1	29	<6	12
SEP 05...	5	<4	31	<0.1	<10	<1	<1	27	<6	4

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)
FEB 1988 17...	1200	30	<0.4	<0.4	1.7	<0.4	1.3	<0.4	0.04

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)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT 1987 06...	1445	37		200	8.0	--	--
NOV 18...	1240	174		165	1.5	4	1.9
JAN 1988 15...	1100	28	--	0.0	--	--	--
FEB 17...	1200	30		252	0.0	7	0.58
APR 29...	1250	134		110	10.0	--	--
JUN 01...	1140	34		190	22.5	4	0.37
JUL 07...	1610	12		237	29.0	--	--
SEP 05...	1445	79		185	13.5	2	0.43

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 September 1988.

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

REMARKS.--Estimated daily discharges: Dec. 26, 27, 30, and Jan. 1-28. Records excellent except for estimated daily discharges, which are fair. Flow regulated by powerplants, by Michigamme Reservoir, capacity, 119,950 acre-ft, and 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 CURRENT YEAR.--Maximum discharge during period December to September, 7,650 ft³/s, Apr. 8, gage height, 10.86 ft; minimum, 815 ft³/s, Aug. 3, 4, gage height, 4.67 ft; minimum daily, 846 ft³/s Aug. 3.

DISCHARGE, IN 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			2980	1400	2030	1750	4270	1760	1260	1220	958	1580
2			2610	2000	2240	1610	4630	1850	1430	978	946	1590
3			2300	1800	2200	1690	5330	2310	1170	933	846	1550
4			2350	2500	2320	1790	6610	2260	1100	1040	880	1880
5			2500	2900	2350	1780	6790	1870	1080	1130	1130	1900
6			2380	2500	2100	1760	6880	1650	997	1130	1620	1870
7			2530	2100	2100	1760	7210	1420	1030	1080	1410	1690
8			2570	2200	2260	1750	7130	1390	996	1180	1250	1710
9			2660	2100	2180	1880	6590	1700	988	1190	1060	1600
10			2900	2100	2220	1880	5850	1690	988	1170	1020	1250
11			2980	2100	2130	1950	5060	1710	988	1140	978	1130
12			2940	2200	2140	1810	4380	1770	992	1170	973	1210
13			2870	2250	2170	1930	3980	1730	1020	1250	976	1050
14			2470	2250	1950	1950	3130	1570	1010	1220	1100	1210
15			2530	2300	1770	1790	2960	1570	1000	1170	1290	1230
16			2450	2400	1980	1780	2890	1730	997	1270	1480	1270
17			2400	2350	1770	1730	2560	2360	979	1100	2030	1270
18			2210	2600	1940	1630	2240	2050	971	1130	2210	1180
19			2280	2200	1770	1450	1760	1900	974	1150	2250	1270
20			2190	2150	1590	1470	1690	1970	996	1160	2060	1290
21			2360	2150	1880	1600	1910	1750	1060	1170	1970	1590
22			2500	2200	1720	1490	1690	1600	1210	1250	1520	1660
23			2330	2150	1730	1630	1500	1640	1170	1060	1490	1550
24			2430	2100	1860	1710	1480	1640	1080	981	1390	1400
25			2450	2050	1700	1890	1590	1460	1060	972	1430	1260
26			2500	2050	1780	3090	1720	1590	1030	996	1410	1360
27			2600	2050	1730	3190	1930	1720	996	984	1510	1320
28			2170	2100	1800	3270	2520	1440	991	981	1600	1400
29			2210	2160	1540	3510	2460	1380	1110	981	1430	1490
30			2200	2060	---	4070	1780	1330	1200	966	1840	1310
31			2090	2070	---	3970	---	1510	---	958	1840	---
TOTAL			76940	67540	56950	64560	110520	53320	31873	34110	43897	43070
MEAN			2482	2179	1964	2083	3684	1720	1062	1100	1416	1436
MAX			2980	2900	2350	4070	7210	2360	1430	1270	2250	1900
MIN			2090	1400	1540	1450	1480	1330	971	933	846	1050

STREAMS TRIBUTARY TO LAKE MICHIGAN

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.--39 years, 2,982 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, 8,230 ft³/s, Apr. 7, gage height, 11.21 ft; maximum gage height, 13.38 ft, Dec. 27, backwater from ice; minimum daily, 952 ft³/s, Aug. 4.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Dec. 17 to Mar. 26.)

6.6	905	9.0	3,840
6.8	1,030	10.0	5,600
7.0	1,180	12.0	10,210
8.0	2,370		

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	1070	1350	3140	1300	1800	1500	4650	1890	1350	1340	1070	1700
2	1080	1520	2940	1200	1700	1500	5080	1830	1360	1180	1160	1630
3	1190	2110	2680	1800	1900	1500	5750	2380	1360	1010	1090	1550
4	1120	2160	2570	1600	1800	1600	7330	2440	1190	1030	952	1850
5	1190	1920	2580	1600	1800	1600	7600	2020	1150	1230	1060	2160
6	1140	1900	2730	1900	1700	1600	7650	1730	1110	1150	1500	1970
7	1070	1640	2640	1800	1600	1500	7950	1690	1110	1190	1810	1730
8	1080	1460	2730	1600	1600	1500	7900	1450	1100	1160	1330	1840
9	1240	1550	2690	1400	1700	1600	7200	1650	1080	1230	1300	1700
10	1280	1860	3040	1460	1800	1800	6310	1790	1070	1300	1170	1390
11	1290	1810	3140	1500	1700	1800	5660	1760	1080	1220	1070	1230
12	1300	1580	3130	1600	1700	1800	4890	1870	1080	1240	1070	1300
13	1250	1580	3090	1700	1600	1700	4250	1910	1120	1320	1100	1120
14	1300	1480	2660	1700	1500	1700	3590	1800	1140	1340	1210	1180
15	1240	1290	2680	1700	1400	1700	3170	1610	1110	1310	1450	1310
16	1220	1430	2610	1800	1500	1700	3200	1710	1100	1400	1430	1390
17	1560	2100	2500	2100	1600	1800	2860	2270	1090	1350	1980	1430
18	2160	2770	2300	2000	1700	1500	2580	2160	1090	1180	2470	1210
19	1980	2900	2300	1900	1700	1500	2170	1970	1120	1280	2370	1430
20	1880	3000	2300	1800	1500	1300	1860	2020	1100	1300	2260	1260
21	1920	2780	2400	1800	1600	1400	1940	1900	1100	1250	2020	1550
22	2000	2130	2500	1800	1600	1500	1870	1690	1220	1300	1700	1790
23	1920	2270	2600	1900	1600	1600	1710	1630	1310	1260	1590	1710
24	1830	2990	2400	1800	1700	1900	1650	1700	1170	1160	1470	1540
25	1790	2780	2500	1700	1500	2200	1690	1500	1160	1140	1530	1430
26	1780	2780	2300	1700	1600	3000	1700	1560	1150	1100	1440	1430
27	1920	2810	2200	1700	1600	3660	1990	1720	1110	1070	1550	1490
28	1870	2800	2300	1800	1500	3380	2660	1590	1090	1050	1890	1500
29	1630	2690	2100	1800	1500	3660	2750	1420	1080	1050	1510	1450
30	1620	2840	2300	1800	---	4430	2120	1340	1250	1040	1720	1470
31	1620	---	2200	1800	---	4380	---	1490	---	1040	2060	---
TOTAL	46540	64280	80250	53000	47500	63310	121730	55490	34550	37220	47332	45740
MEAN	1501	2143	2589	1710	1638	2042	4058	1790	1152	1201	1527	1525
MAX	2160	3000	3140	2100	1900	4430	7950	2440	1360	1400	2470	2160
MIN	1070	1290	2100	1200	1400	1300	1650	1340	1070	1010	952	1120

CAL YR 1987 TOTAL 711530 MEAN 1949 MAX 4200 MIN 1040
WTR YR 1988 TOTAL 696942 MEAN 1904 MAX 7950 MIN 952

STREAMS TRIBUTARY TO LAKE MICHIGAN

04067500 MENOMINEE RIVER NEAR MC ALLISTER, WI

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.

DRAINAGE AREA.--3,930 mi².

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

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

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.

REMARKS.--Estimated daily discharges: Apr. 1-21. Records good except those for Apr. 1-21, which are fair. Flow regulated by powerplants, by Michigamme Reservoir, capacity, 119,950 acre-ft, and Peavy Pond, capacity, 33,860 acre-ft on the Michigamme River, and by many smaller reservoirs above station.

AVERAGE DISCHARGE.--23 years (1946-61, 1980-86, 1988), 3,577 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 32,500 ft³/s, May 9, 1960, gage height, 20.0 ft, from graph based on gage readings; minimum observed, 538 ft³/s, Oct. 6, 1946, gage height, 7.29 ft.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge during period April to September, 9,800 ft³/s, Apr. 7; minimum daily, 1,040 ft³/s, Aug. 3.

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

8.0	1,010	11.0	4,600
8.5	1,280	12.0	6,400
9.0	1,760	14.0	10,500
10.0	3,040		

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	---	---	---	---	---	---	5800	2970	1700	1210	1100	1910
2	---	---	---	---	---	---	6800	2430	1720	1270	1150	1990
3	---	---	---	---	---	---	7600	2650	1460	1520	1040	1990
4	---	---	---	---	---	---	8800	3000	1490	1150	1370	1510
5	---	---	---	---	---	---	8600	2890	1330	1150	1690	2420
6	---	---	---	---	---	---	9400	2570	1360	1150	1170	2230
7	---	---	---	---	---	---	9800	2170	1280	1460	1310	2240
8	---	---	---	---	---	---	9600	2170	1280	1300	2170	2020
9	---	---	---	---	---	---	9000	2000	1210	1330	1370	1800
10	---	---	---	---	---	---	8000	2310	1270	1310	1360	2300
11	---	---	---	---	---	---	7000	2390	1160	1580	1560	1420
12	---	---	---	---	---	---	6400	2260	1290	1180	1230	1200
13	---	---	---	---	---	---	6000	2490	1160	1470	1470	1590
14	---	---	---	---	---	---	5400	2470	1140	1270	1380	1600
15	---	---	---	---	---	---	3700	2220	1290	1710	1320	1190
16	---	---	---	---	---	---	3400	2080	1180	1730	1930	1180
17	---	---	---	---	---	---	3200	2400	1260	1560	1670	1950
18	---	---	---	---	---	---	3000	2530	1150	1800	2280	1330
19	---	---	---	---	---	---	2800	2590	1150	1190	2800	1220
20	---	---	---	---	---	---	2700	2320	1160	1370	2500	2020
21	---	---	---	---	---	---	2600	2280	1360	1720	2510	1840
22	---	---	---	---	---	---	2540	2170	1300	1330	2170	1320
23	---	---	---	---	---	---	2470	2090	1260	1750	2030	2090
24	---	---	---	---	---	---	2650	1900	1530	1190	1800	2100
25	---	---	---	---	---	---	2420	1940	1250	1190	1500	1350
26	---	---	---	---	---	---	2350	1850	1150	1410	1860	1970
27	---	---	---	---	---	---	2580	1780	1160	1330	1700	1390
28	---	---	---	---	---	---	3030	1970	1240	1330	1470	1570
29	---	---	---	---	---	---	3700	2000	1290	1310	2350	2010
30	---	---	---	---	---	---	3560	1680	1300	1200	1640	1610
31	---	---	---	---	---	---	---	1390	---	1130	1800	---
TOTAL	---	---	---	---	---	---	154900	69960	38880	42600	52700	52360
MEAN	---	---	---	---	---	---	5163	2257	1296	1374	1700	1745
MAX	---	---	---	---	---	---	9800	3000	1720	1800	2800	2420
MIN	---	---	---	---	---	---	2350	1390	1140	1130	1040	1180

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.--Elevation of gage is 1190 ft, from topographic map.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height observed, 11.74, Sept. 28, 1985; minimum observed, 10.77, Aug. 3, 1985.

EXTREMES FOR CURRENT YEAR.--Maximum gage height observed, 11.51 ft, June 9; minimum observed, 10.92 ft, Oct. 4.

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	GAGE HEIGHT	DATE	GAGE HEIGHT	DATE	GAGE HEIGHT
Oct. 4	10.92	Oct. 24	11.02	June 9	11.51
10	10.96	Nov. 1	11.04		

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 1987 TO SEPTEMBER 1988

DATE	SECCHI DEPTH	DATE	SECCHI DEPTH
Oct. 4	1.2	Oct. 24	1.8
10	1.7	Nov. 1	2.0

STREAMS TRIBUTARY TO LAKE MICHIGAN

451511087550900 LAKE NOQUEBAY NEAR CRIVITZ, WI

LOCATION.--Lat 45°15'11", long 87°55'09", in SE 1/4 SE 1/4 sec.7, T.32 N., R.21 E., Marinette County,
Hydrologic Unit 04030105, near Crivitz.

DRAINAGE AREA.--132 mi².

PERIOD OF RECORD.--February 25, 1987 to current year (discontinued).

REMARKS.--Lake sampled at a lake depth of approximately 31 ft approximately 4,000 ft northeast of dam outlet. Lake
ice-covered during February 17 sampling. Water-quality analyses by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, FEBRUARY 17 TO AUGUST 29, 1988
(Milligrams per liter unless otherwise indicated)

	Feb. 17		Apr. 21		June 24		July 27		Aug. 29	
Depth of sample (ft)	1.5	32.0	1.5	28.0	1.5	27.0	1.5	30.0	1.5	28.0
Specific conductance (μS/cm)	---	---	268	267	290	294	283	302	275	275
pH (units)	7.60	7.40	8.00	8.00	8.50	7.40	8.60	7.50	8.20	8.10
Water temperature (°C)	0.5	3.5	7.0	6.5	23.5	15.5	24.0	18.0	20.5	19.5
Color (Pt-Co. scale)	---	---	50	50	---	---	---	---	---	---
Turbidity (NTU)	---	---	1.0	1.0	---	---	---	---	---	---
Secchi-disc (meters)	---	---	1.5	---	3.1	---	2.5	---	1.4	---
Dissolved oxygen	9.6	2.7	11.2	11.1	8.1	0.2	8.0	0	9.6	8.8
Hardness, total (as CaCO ₃)	---	---	130	130	---	---	---	---	---	---
Calcium, dissolved (Ca)	---	---	30	29	---	---	---	---	---	---
Magnesium, Dissolved (Mg)	---	---	13	13	---	---	---	---	---	---
Sodium, dissolved (Na)	---	---	1.6	1.6	---	---	---	---	---	---
Potassium, dissolved (K)	---	---	0.80	0.80	---	---	---	---	---	---
Alkalinity, total (as CaCO ₃)	---	---	120	122	---	---	---	---	---	---
Sulfate, dissolved (SO ₄)	---	---	11	11	---	---	---	---	---	---
Fluoride, total (as F)	---	---	0.0	0.0	---	---	---	---	---	---
Chloride, dissolved (Cl)	---	---	3.0	3.0	---	---	---	---	---	---
Silica, dissolved (SiO ₂)	---	---	7.2	7.2	---	---	---	---	---	---
Solids, dissolved, at 180°C	---	---	158	160	---	---	---	---	---	---
Nitrogen, nitrite plus nitrate, diss (as N)	---	---	0.04	0.04	---	---	---	---	---	---
Nitrogen, ammonia, diss (as N)	---	---	0.03	0.03	---	---	---	---	---	---
Nitrogen, ammonia plus organic, total (as N)	---	---	0.40	0.40	---	---	---	---	---	---
Total phosphorus (as P)	---	---	0.010	0.013	0.004	0.006	0.005	<0.020	0.017	0.020
Phosphorus, ortho, diss (as P)	---	---	0.002	0.002	---	<0.002	---	0.006	---	0.003
Iron, dissolved (Fe) μg/L	---	---	<100	<100	---	---	---	---	---	---
Manganese, dissolved (Mn) μg/L	---	---	<40	<40	---	---	---	---	---	---
Chlorophyll a, phyto. (μg/L)	---	---	4	---	5	---	4	---	7	---

2-17-88

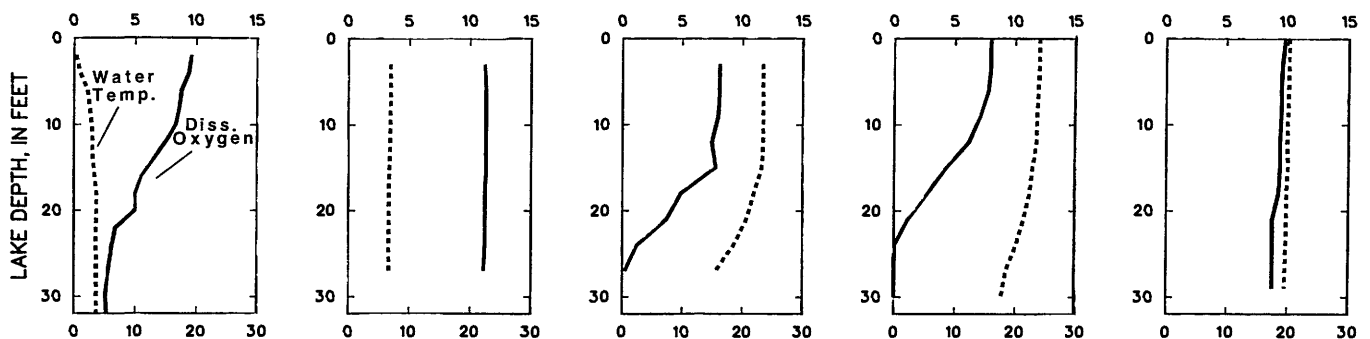
4-21-88

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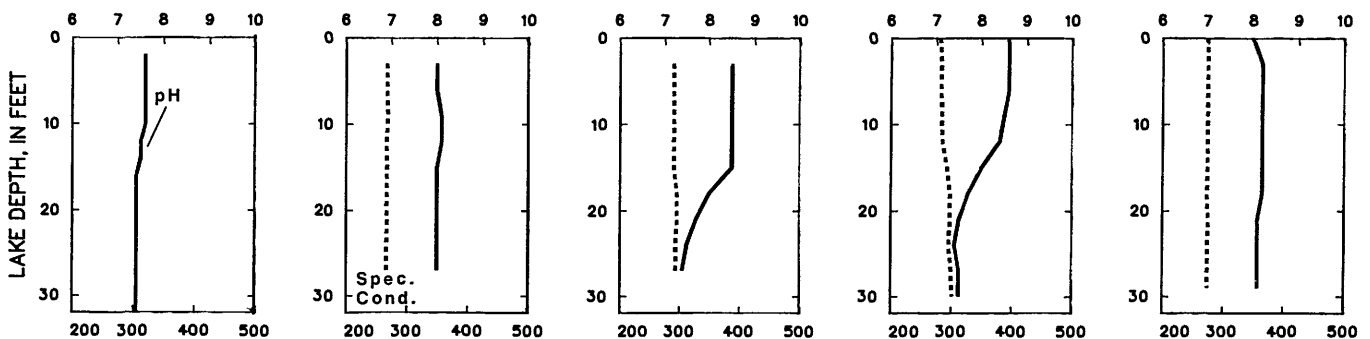
8-29-88

DISSOLVED OXYGEN, IN MILLIGRAMS PER LITER



WATER TEMPERATURE, IN DEGREES CELSIUS

PH, IN STANDARD UNITS



SPECIFIC CONDUCTANCE, IN MICROSIEMENS PER CENTIMETER

STREAMS TRIBUTARY TO LAKE MICHIGAN

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: Dec. 3-8, 19-21, and Dec. 26 to Mar. 10. Records good except those for Nov. 18 to Dec. 3 and Mar. 11-29, which are fair; and ice periods, Dec. 3-8, 19-21, and Dec. 26 to Mar. 10, which are poor. Diurnal fluctuation caused by two powerplants upstream. Gage-height telemeter at station.

AVERAGE DISCHARGE.--35 years, 935 ft³/s, 11.76 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, 3,240 ft³/s, Mar. 30, gage height, 6.52 ft; minimum daily, 166 ft³/s, June 29.

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	428	770	1220	600	700	500	2310	1240	391	178	305	302
2	355	757	1010	560	580	660	2290	1250	260	247	239	302
3	434	792	900	540	520	580	2620	1090	229	296	234	285
4	256	842	700	500	520	680	3020	1070	199	180	235	403
5	312	1070	680	520	540	700	3040	947	229	252	352	305
6	353	939	700	500	640	600	3020	839	257	178	316	367
7	373	810	660	480	660	640	3030	801	203	178	392	482
8	363	901	700	460	740	540	2810	823	303	219	323	488
9	346	892	847	500	640	500	2550	759	211	250	542	354
10	364	826	978	450	680	640	2330	702	295	342	384	403
11	353	672	1010	450	560	790	2140	671	312	278	328	354
12	397	663	1050	450	500	918	1840	771	255	235	442	354
13	360	563	1020	470	500	1140	1680	769	202	289	471	252
14	402	638	867	520	470	998	1310	841	215	287	317	204
15	351	552	819	450	430	1010	1040	779	221	361	317	260
16	356	585	786	430	480	964	1090	718	251	349	303	232
17	557	779	668	470	520	1020	921	578	216	432	357	306
18	724	1190	554	500	640	938	802	756	195	506	389	317
19	731	1360	540	520	540	989	798	630	215	429	317	323
20	546	1380	560	560	560	950	887	484	183	348	309	374
21	669	1240	700	600	420	983	706	502	191	363	341	390
22	793	924	781	540	400	830	737	531	198	423	350	358
23	884	967	805	500	450	787	824	453	176	435	389	435
24	801	1170	787	520	480	871	975	526	203	454	457	419
25	729	998	787	540	450	1080	974	385	242	457	410	407
26	637	985	700	560	500	1620	850	357	203	505	310	388
27	797	872	560	560	500	1950	1090	440	203	333	309	358
28	1000	865	580	620	450	2040	1310	378	193	356	442	290
29	828	939	560	620	440	2340	1460	426	166	343	297	307
30	852	1110	580	580	---	2860	1490	519	211	233	291	347
31	806	---	580	660	---	2690	---	501	---	364	321	---
TOTAL	17157	27051	23689	16230	15510	33808	49944	21536	6828	10100	10789	10366
MEAN	553	902	764	524	535	1091	1665	695	228	326	348	346
MAX	1000	1380	1220	660	740	2860	3040	1250	391	506	542	488
MIN	256	552	540	430	400	500	706	357	166	178	234	204
CFSM	.51	.83	.71	.48	.50	1.01	1.54	.64	.21	.30	.32	.32
IN.	.59	.93	.82	.56	.53	1.16	1.72	.74	.24	.35	.37	.36
CAL YR 1987	TOTAL 230799	MEAN 632	MAX 1400	MIN 215	CFSM .59	IN. 7.95						
WTR YR 1988	TOTAL 243008	MEAN 664	MAX 3040	MIN 166	CFSM .61	IN. 8.37						

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

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.

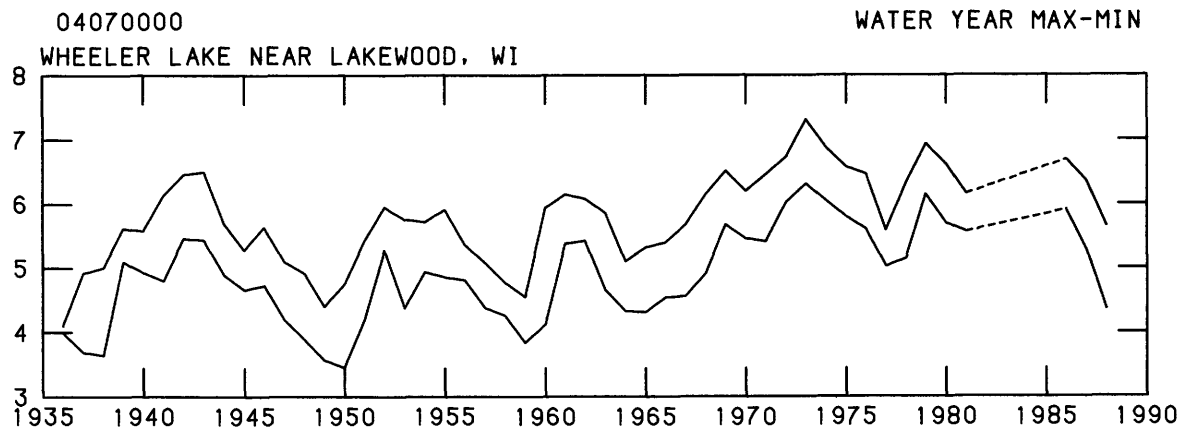
EXTREMES FOR PERIOD OF RECORD.--Maximum gage height observed, 7.31 ft June 6, 1973; minimum observed, 3.45 ft Feb. 5, 1950.

EXTREMES FOR CURRENT YEAR.--Maximum gage height observed, 5.66 ft, May 2; minimum observed, 4.36 ft, May 8.

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	GAGE HEIGHT	DATE	GAGE HEIGHT	DATE	GAGE HEIGHT	DATE	GAGE HEIGHT	DATE	GAGE HEIGHT
May 2	5.66	May 27	5.44	June 28	4.98	Aug. 1	4.92	Sept. 7	4.76
8	4.36	June 3	5.34	July 4	4.92	5	4.92	14	4.72
9	4.96	8	5.24	12	4.96	9	5.00	16	4.76
12	4.76	9	5.24	15	4.94	20	4.92	21	4.72
13	5.64	15	5.16	23	5.04	30	4.84	25	4.74
19	5.56	22	5.10	30	4.92	Sept. 3	4.78	30	4.74

STAGE, IN FEET ABOVE ARBITRARY DATUM



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 1987 TO SEPTEMBER 1988

DATE	SECCHI DEPTH	DATE	SECCHI DEPTH	DATE	SECCHI DEPTH	DATE	SECCHI DEPTH	DATE	SECCHI DEPTH
May 2	6.4	June 3	8.2	June 22	6.1	July 23	3.4	Aug. 30	3.2
13	6.4	9	8.2	28	4.9	Aug. 1	2.7	Sept. 7	3.2
27	8.2	15	6.7	July 4	4.3	9	2.6	14	3.7
				12	3.4	20	3.4	25	4.0

STREAMS TRIBUTARY TO LAKE MICHIGAN

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 periods listed in rating table below. Records good except those for ice-affected periods, which are fair. Gage-height telemeter at station.

AVERAGE DISCHARGE.--77 years (water years 1907-08, 1914-88), 582 ft³/s, 11.21 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)
Dec. 20	1100	ice jam	*4.47	Apr. 7	1100	* 1,470	3.10

Minimum discharge, 152 ft³/s, July 8, gage height, 0.41 ft.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Dec. 6, 7, Dec. 17 to Mar. 31.)

0.3	135	2.0	780
1.0	330	3.0	1,400
		4.0	2,100

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	255	350	618	350	280	270	1250	661	249	200	201	211
2	246	351	609	330	290	270	1110	608	247	187	198	204
3	237	362	564	340	290	260	1160	565	242	180	194	200
4	239	404	490	300	296	260	1200	525	241	174	180	196
5	241	472	447	280	280	270	1290	490	234	169	198	194
6	248	478	450	260	280	280	1410	463	226	165	238	197
7	257	479	450	260	280	290	1460	440	221	161	268	198
8	258	452	444	250	270	350	1450	428	213	155	231	196
9	260	433	462	250	270	420	1370	426	208	165	205	192
10	254	419	492	240	270	500	1270	428	207	177	236	188
11	250	397	525	240	270	540	1160	425	204	188	264	185
12	245	375	530	240	270	580	1050	417	200	188	242	182
13	248	361	527	240	270	540	946	406	196	184	251	178
14	246	342	507	240	280	520	809	405	188	183	265	176
15	245	339	423	250	280	490	729	405	182	186	253	173
16	246	346	304	260	280	490	694	390	173	200	249	174
17	275	422	260	250	280	490	663	373	163	248	236	179
18	319	574	420	250	280	480	624	361	165	329	232	185
19	377	662	440	260	270	470	586	349	165	284	232	196
20	377	706	450	270	260	500	533	338	167	251	223	205
21	355	676	410	270	270	470	505	330	169	266	217	232
22	348	571	400	260	280	440	484	321	180	306	211	271
23	348	542	430	250	270	480	469	311	189	366	232	268
24	352	561	470	250	280	560	500	298	187	357	245	257
25	354	540	490	250	290	640	542	278	182	328	253	250
26	359	513	420	240	290	740	553	273	174	293	233	239
27	396	483	370	240	280	760	566	272	168	242	223	230
28	399	470	380	260	270	860	641	267	180	231	223	225
29	391	505	390	280	270	980	716	265	187	223	228	223
30	372	574	400	300	---	1100	726	262	199	217	231	224
31	357	---	400	290	---	1400	---	253	---	204	220	---
TOTAL	9354	14159	13972	8250	8040	16700	26466	12033	5906	7007	7112	6228
MEAN	302	472	451	266	277	539	882	388	197	226	229	208
MAX	399	706	618	350	290	1400	1460	661	249	366	268	271
MIN	237	339	260	240	260	260	469	253	163	155	180	173
CFSM	.43	.67	.64	.38	.39	.76	1.25	.55	.28	.32	.33	.29
IN.	.49	.75	.74	.44	.42	.88	1.40	.63	.31	.37	.38	.33

CAL YR 1987 TOTAL 142852 MEAN 391 MAX 837 MIN 195 CFSM .56 IN. 7.54
WTR YR 1988 TOTAL 135227 MEAN 369 MAX 1460 MIN 155 CFSM .52 IN. 7.14

STREAMS TRIBUTARY TO LAKE MICHIGAN

04071858 PENSsauKEE RIVER NEAR PENSsauKEE, 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 periods listed in rating table below. Records good except for ice-affected periods, which are poor.

AVERAGE DISCHARGE.--16 years, 92.7 ft³/s, 9.39 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, gage height, 2.09 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. 11	2300	ice jam	*7.23	Mar. 30	0100	*502	5.56

Minimum discharge, 0.76 ft³/s, July 10, gage height, 2.07 ft.

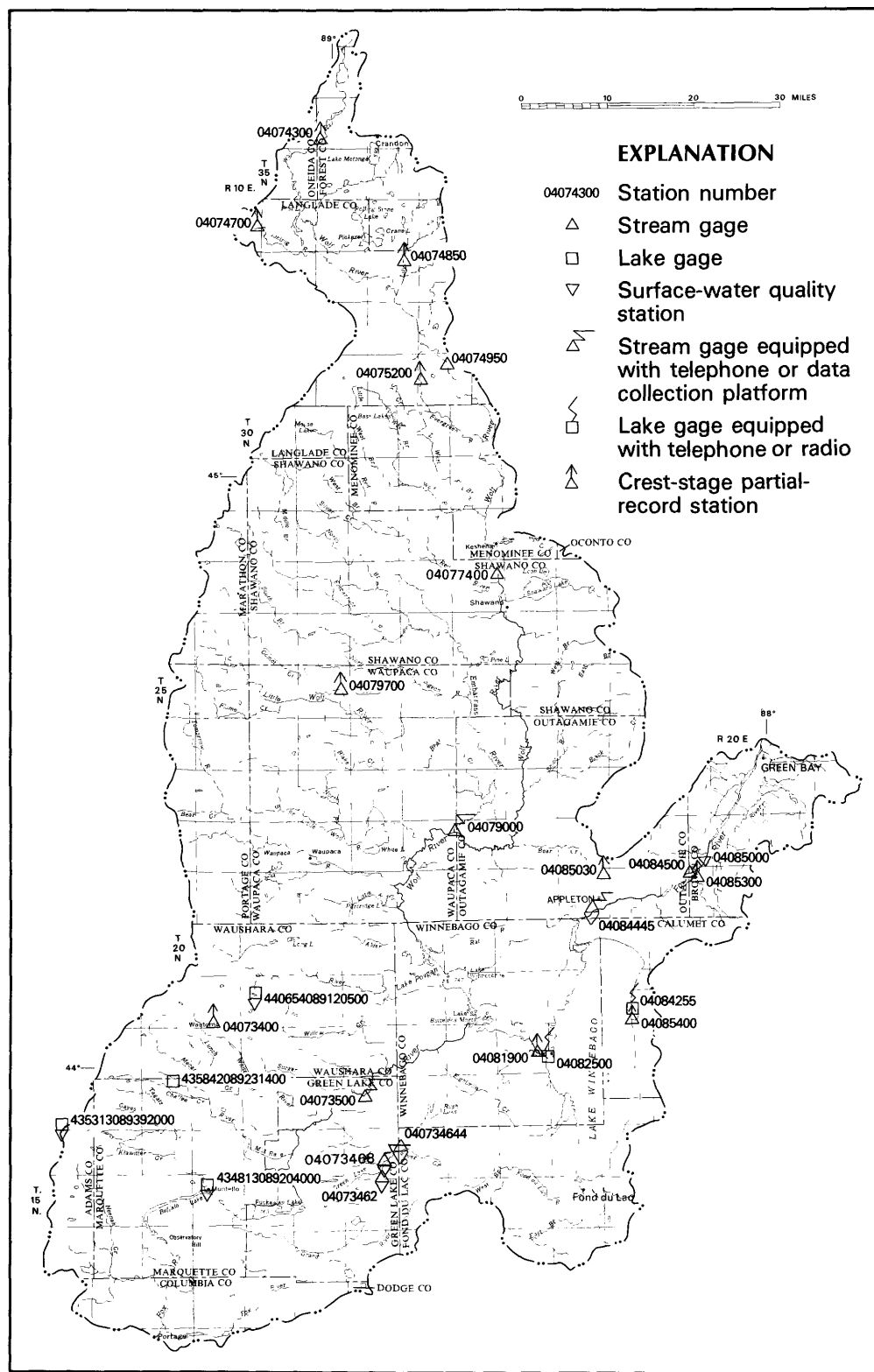
RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Shifting-control method used Oct. 11 to Nov. 17, Nov. 19, 23 to 29; stage-discharge relation affected by ice Nov. 20-22 and Dec. 2 to Mar. 29.)

2.0	0.2	3.0	84
2.1	1.0	4.0	210
2.2	3.5	5.0	390
2.3	9.0	6.0	610
2.5	29		

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	25	6.8	79	7.0	6.4	14	188	72	5.2	2.4	1.5	3.2
2	22	11	49	6.0	6.0	13	151	59	6.0	2.5	1.1	2.8
3	9.6	14	35	5.2	6.4	12	337	52	5.6	1.6	.97	2.5
4	16	14	28	4.5	5.8	13	459	40	4.5	1.0	2.4	2.4
5	15	16	23	4.2	5.4	14	340	35	4.4	1.3	2.7	2.6
6	21	13	21	3.9	5.4	16	261	32	3.6	2.6	2.0	5.4
7	24	7.9	20	3.6	5.6	16	217	28	3.1	1.9	1.4	4.8
8	24	8.1	19	3.3	5.2	20	159	26	2.7	1.2	1.8	2.8
9	24	11	30	3.6	5.4	34	129	25	3.0	1.0	1.9	2.4
10	20	11	50	3.8	5.6	110	110	28	2.8	.80	1.7	2.1
11	17	11	43	3.9	5.8	500	95	27	3.1	.87	1.3	1.7
12	29	7.9	46	3.7	6.0	400	80	24	3.0	1.5	1.2	1.3
13	6.9	11	40	3.5	6.2	90	71	22	2.9	2.4	1.6	1.1
14	2.3	11	35	3.5	7.0	80	62	20	2.5	1.8	2.0	1.3
15	3.4	20	30	3.6	7.6	82	54	19	1.9	2.2	2.0	1.1
16	6.8	26	26	4.2	8.4	88	48	18	1.8	6.5	2.5	1.2
17	12	49	23	4.0	9.0	86	45	17	1.6	8.8	3.5	1.9
18	9.1	67	20	3.9	10	80	41	15	1.5	7.8	1.9	2.4
19	8.2	57	23	4.3	11	76	36	14	1.8	5.7	1.5	4.3
20	14	35	20	4.1	11	70	34	14	1.7	3.0	1.7	6.9
21	11	22	18	4.0	10	74	30	13	1.4	3.9	1.7	5.0
22	6.6	17	16	4.0	12	86	27	12	1.8	4.5	1.5	3.7
23	9.0	30	14	4.0	11	110	32	9.6	1.8	5.1	3.8	6.4
24	11	26	16	4.2	10	170	57	7.9	2.3	4.5	5.3	7.0
25	9.4	25	14	4.5	9.8	270	65	7.3	3.5	4.5	5.8	7.9
26	8.6	23	13	4.4	11	300	58	7.3	1.9	3.0	3.4	12
27	13	23	11	4.0	13	260	82	6.4	1.7	3.0	2.8	14
28	17	22	10	4.4	14	230	142	6.2	1.0	3.0	3.1	12
29	8.2	41	9.0	4.9	14	400	126	6.2	1.8	2.6	3.3	10
30	10	72	8.0	5.8	---	412	93	5.8	3.1	1.8	4.8	12
31	9.7	---	8.4	6.8	---	262	---	6.6	---	1.4	4.1	---
TOTAL	422.8	708.7	797.4	134.8	244.0	4388	3629	675.3	83.0	94.17	76.27	144.2
MEAN	13.6	23.6	25.7	4.35	8.41	142	121	21.8	2.77	3.04	2.46	4.81
MAX	29	72	79	7.0	14	500	459	72	6.0	8.8	5.8	14
MIN	2.3	6.8	8.0	3.3	5.2	12	27	5.8	1.0	.80	.97	1.1
CFSM	.10	.18	.19	.03	.06	1.06	.90	.16	.02	.02	.02	.04
IN.	.12	.20	.22	.04	.07	1.22	1.01	.19	.02	.03	.02	.04

CAL YR 1987	TOTAL 13142.16	MEAN 36.0	MAX 500	MIN .96	CFSM .27	IN. 3.65
WTR YR 1988	TOTAL 11397.64	MEAN 31.1	MAX 500	MIN .80	CFSM .23	IN. 3.16



FOX-WOLF RIVER BASIN

STREAMS TRIBUTARY TO LAKE MICHIGAN
435313089392000 PATRICK LAKE NEAR GRAND MARSH, WI

LAKE-STAGE RECORDS

LOCATION.--Lat 43°53'13", long 89°39'20", in NW 1/4 sec.10, T.16 N., R.7 E., Adams County, Hydrologic Unit 04030201, 2.5 mi east of Grand Marsh.

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

GAGE.--Staff gage read by Orval Vierck. Elevation of gage is 973 ft, from topographic map.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height observed, 16.01 ft, Oct. 25, 1986; minimum observed, 11.38 ft, Sept. 16, 1988.

EXTREMES FOR CURRENT YEAR.--Maximum gage height observed, 13.36 ft, Oct. 19; minimum observed, 11.38 ft, Sept. 16 and 18.

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	GAGE HEIGHT	DATE	GAGE HEIGHT	DATE	GAGE HEIGHT	DATE	GAGE HEIGHT	DATE	GAGE HEIGHT
Oct. 19	13.36	Aug. 5	11.80	Aug. 13	11.66	Aug. 25	11.64	Sept. 18	11.38
May 19	12.72	6	11.80	18	11.70	28	11.64	19	11.40
July 27	11.87	8	11.76	19	11.67	31	11.54	23	11.64
				23	11.68	Sept. 16	11.38	30	11.54

WATER-QUALITY RECORDS

LOCATION.--Lat 43°53'09", long 89°39'33", in NE 1/4 sec.9, T.16 N., R.7 E., Adams County, Hydrologic Unit 04030201, near center of lake, and 2.3 mi east of Grand Marsh.

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

REMARKS.--Secchi disc readings made by Orval Vierck.

SECCHI DISC TRANSPARENCY (IN METERS) WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	SECCHI DEPTH	DATE	SECCHI DEPTH	DATE	SECCHI DEPTH	DATE	SECCHI DEPTH
Oct. 19	4.0	Aug. 6	2.7	Aug. 19	2.4	Sept. 16	2.4
July 27	2.3	13	2.8	31	2.6	30	4.1

STREAMS TRIBUTARY TO LAKE MICHIGAN
434813089204000 MONTELLO LAKE AT MONTELLO, WI

LAKE-STAGE RECORDS

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, June 29; minimum observed, 11.03 ft, June 26.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	11.51	11.55	---	---
2	---	---	---	---	---	---	---	---	11.49	11.57	---	---
3	---	---	---	---	---	---	---	---	11.41	---	---	---
4	---	---	---	---	---	---	---	---	---	---	---	---
5	---	---	---	---	---	---	---	---	---	11.27	---	---
6	---	---	---	---	---	---	---	---	11.17	11.37	---	---
7	---	---	---	---	---	---	---	---	11.31	11.57	---	---
8	---	---	---	---	---	---	---	---	11.47	11.35	---	---
9	---	---	---	---	---	---	---	---	11.39	---	---	---
10	---	---	---	---	---	---	---	---	11.43	11.49	---	---
11	---	---	---	---	---	---	---	---	11.55	11.15	---	---
12	---	---	---	---	---	---	---	---	11.39	11.47	---	---
13	---	---	---	---	---	---	---	---	11.17	11.55	---	---
14	---	---	---	---	---	---	---	---	11.27	11.51	---	---
15	---	---	---	---	---	---	---	---	11.35	---	---	---
16	---	---	---	---	---	---	---	---	11.37	11.39	---	---
17	---	---	---	---	---	---	---	---	11.33	11.31	---	---
18	---	---	---	---	---	---	---	---	11.33	11.29	---	---
19	---	---	---	---	---	---	---	11.42	11.23	11.53	---	---
20	---	---	---	---	---	---	---	---	---	11.57	---	---
21	---	---	---	---	---	---	---	---	11.45	11.53	---	---
22	---	---	---	---	---	---	---	---	11.37	11.45	---	---
23	---	---	---	---	---	---	---	11.15	11.17	11.45	---	---
24	---	---	---	---	---	---	---	11.53	11.17	11.35	---	---
25	---	---	---	---	---	---	---	11.45	11.05	11.37	---	---
26	---	---	---	---	---	---	---	11.43	11.03	11.35	---	---
27	---	---	---	---	---	---	---	---	11.21	11.39	---	---
28	---	---	---	---	---	---	---	11.43	11.37	11.37	---	---
29	---	---	---	---	---	---	---	11.43	11.59	---	---	---
30	---	---	---	---	---	---	---	11.51	11.49	---	---	---
31	---	---	---	---	---	---	---	---	---	---	---	---

WATER-QUALITY RECORDS

LOCATION.--Lat 43°48'01", long 89°20'29", in NW 1/4 sec.8, T.15 N., R.10 E., Marquette County, Hydrologic Unit 04030201, near center of lake, at Montello.

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

REMARKS.--Secchi disc readings made by Harry Clark.

SECCHI DISC TRANSPARENCY (IN METERS) WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	SECCHI DEPTH	DATE	SECCHI DEPTH	DATE	SECCHI DEPTH	DATE	SECCHI DEPTH	DATE	SECCHI DEPTH
May 24	2.2	June 7	2.8	June 16	2.7	July 1	3.4	July 18	3.1
25	2.4	9	2.8	17	2.8	2	2.1	19	2.8
28	2.8	10	2.9	19	2.3	5	3.1	20	3.0
29	2.3	11	2.6	21	2.3	6	2.8	22	3.4
30	2.6	12	2.6	23	2.7	7	2.7	23	2.7
June 1	2.6	13	2.9	24	2.3	8	2.7	24	2.8
3	2.5	14	2.4	26	2.5	11	2.7	25	2.5
6	2.4	15	2.9	27	2.4	13	2.6	26	2.6
				28	2.8	14	2.8	28	2.7

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, 7.82 ft, Apr. 9-11; minimum observed, 6.10 ft, Sept. 18.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.63	---	---	---	---	---	---	7.70	7.32	6.76	6.44	6.32
2	7.61	---	---	---	---	---	---	7.68	7.30	6.76	6.40	6.30
3	7.59	---	---	---	---	---	---	7.68	7.28	6.74	6.38	6.28
4	7.59	---	---	---	---	---	---	7.66	7.26	6.74	6.42	6.26
5	7.59	---	---	---	---	---	---	7.66	7.24	6.72	6.44	6.24
6	7.57	---	---	---	---	---	---	7.64	7.22	6.70	6.44	6.22
7	7.57	---	---	---	---	---	---	7.62	7.20	6.70	6.44	6.20
8	7.55	---	---	---	---	---	---	7.62	7.18	6.68	6.46	6.18
9	7.55	---	---	---	---	---	7.82	7.68	7.16	6.66	6.46	6.18
10	7.53	---	---	---	---	---	7.82	7.68	7.14	6.62	6.44	6.16
11	7.51	---	---	---	---	---	7.82	7.66	7.10	6.60	6.42	6.16
12	7.51	---	---	---	---	---	7.80	7.64	7.08	6.60	6.42	6.16
13	7.49	---	---	---	---	---	7.80	7.62	7.06	6.60	6.40	6.14
14	7.47	---	---	---	---	---	7.78	7.58	7.04	6.58	6.38	6.14
15	7.47	---	---	---	---	---	7.78	7.58	7.02	6.56	6.36	6.14
16	7.55	---	---	---	---	---	7.76	7.56	7.00	6.64	6.34	6.12
17	7.55	---	---	---	---	---	7.76	7.52	6.98	6.66	6.32	6.12
18	7.55	---	---	---	---	---	7.74	7.52	6.96	6.66	6.30	6.10
19	7.53	---	---	---	---	---	7.72	7.50	6.94	6.66	6.38	6.14
20	7.53	---	---	---	---	---	7.70	7.50	6.92	6.66	6.38	6.14
21	7.53	---	---	---	---	---	7.70	7.48	6.88	6.64	6.38	6.14
22	7.53	---	---	---	---	---	7.70	7.48	6.84	6.64	6.36	6.30
23	7.51	---	---	---	---	---	7.70	7.46	6.82	6.62	6.34	6.48
24	7.51	---	---	---	---	---	7.68	7.46	6.80	6.60	6.34	6.48
25	7.51	---	---	---	---	---	7.68	7.44	6.78	6.58	6.40	6.46
26	7.51	---	---	---	---	---	7.74	7.42	6.74	6.56	6.40	6.46
27	7.49	---	---	---	---	---	7.74	7.40	6.72	6.54	6.38	6.46
28	7.49	---	---	---	---	---	7.74	7.40	6.70	6.52	6.40	6.44
29	7.49	---	---	---	---	---	7.74	7.36	6.78	6.50	6.40	6.42
30	7.49	---	---	---	---	---	7.72	7.36	6.78	6.48	6.38	6.42
31	---	---	---	---	---	---	---	7.34	---	6.46	6.36	---
MEAN	---	---	---	---	---	---	---	7.55	7.01	6.63	6.39	6.26
MAX	---	---	---	---	---	---	---	7.70	7.32	6.76	6.46	6.48
MIN	---	---	---	---	---	---	---	7.34	6.70	6.46	6.30	6.10

STREAMS TRIBUTARY TO LAKE MICHIGAN

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

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

DRAINAGE AREA.--3.05 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--December 1981 to June 1988 (discontinued).

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

REMARKS.--Estimated daily discharge: Ice periods listed in rating table below. Records good.

AVERAGE DISCHARGE.--5 years, 5.34 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 781 ft³/s, Sept. 10, 1986, gage height, 10.14 ft; minimum daily, 0.21 ft³/s, Nov. 21, 1987.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 41 ft³/s, Mar. 6, gage height, 4.91 ft; minimum daily, 0.21 ft³/s, Nov. 21.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Jan. 1-16, 23-28, and Feb. 20-21.)

3.9	0.15	4.4	5.8
4.0	.50	4.5	8.8
4.1	1.1	4.6	13
4.2	2.1	4.7	17
4.3	3.7		

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	.47	.48	.30	.54	5.4	8.9	2.6	3.0	1.7	---	---	---
2	.55	.37	.27	.52	3.4	11	3.4	3.0	1.7	---	---	---
3	.48	.36	.28	.50	2.5	9.3	4.2	3.0	1.7	---	---	---
4	.46	.29	.27	.48	1.9	7.1	3.9	2.9	1.6	---	---	---
5	.46	.27	.29	.45	1.6	7.8	3.8	2.8	1.6	---	---	---
6	.45	.27	.30	.43	2.0	14	4.4	2.7	1.6	---	---	---
7	.46	.28	.34	.40	1.3	14	4.3	2.7	1.5	---	---	---
8	.46	.32	.40	.37	1.2	17	4.3	2.8	1.5	---	---	---
9	.44	.30	.51	.36	1.2	12	4.3	2.9	1.5	---	---	---
10	.42	.29	.45	.35	1.1	9.8	4.3	2.8	1.5	---	---	---
11	.41	.29	.45	.34	1.1	8.5	4.4	2.7	1.4	---	---	---
12	.37	.27	.43	.34	1.5	7.4	4.5	2.5	1.4	---	---	---
13	.30	.27	.46	.34	1.1	6.2	4.5	2.4	1.3	---	---	---
14	.30	.26	.46	.35	1.0	5.3	4.4	2.4	1.3	---	---	---
15	.30	.24	.47	.33	.99	4.9	4.3	2.4	1.3	---	---	---
16	.33	.25	.47	.30	1.0	4.2	4.3	2.2	1.3	---	---	---
17	.39	.53	.45	.27	.96	3.8	4.3	2.2	1.3	---	---	---
18	.34	.32	.45	.27	.94	3.6	4.1	2.1	1.2	---	---	---
19	.29	.25	.48	.25	.90	3.5	3.7	2.1	1.2	---	---	---
20	.30	.24	.56	.28	.88	3.3	3.7	2.1	1.1	---	---	---
21	.32	.21	.50	.27	.86	3.0	3.6	2.0	1.1	---	---	---
22	.32	.25	.50	.27	1.0	3.0	3.5	2.0	1.1	---	---	---
23	.30	.30	.50	.26	1.1	3.0	3.6	2.0	.99	---	---	---
24	.32	.27	.55	.26	1.1	3.0	3.4	1.9	1.0	---	---	---
25	.30	.27	.58	.25	1.4	3.1	3.4	1.9	1.0	---	---	---
26	.37	.26	.56	.25	2.1	2.8	3.4	1.9	.96	---	---	---
27	.33	.24	.60	.24	3.7	2.7	3.6	1.9	.96	---	---	---
28	.27	.32	.60	.25	5.1	3.0	3.3	1.9	1.0	---	---	---
29	.28	.34	.59	.27	7.1	3.0	3.2	1.8	.97	---	---	---
30	.29	.35	.57	.56	---	2.7	3.1	1.8	.91	---	---	---
31	.27	---	.57	6.7	---	2.7	---	1.7	---	---	---	---
TOTAL	11.35	8.96	14.21	17.05	55.43	193.6	115.8	72.5	38.69	---	---	---
MEAN	.37	.30	.46	.55	1.91	6.25	3.86	2.34	1.29	---	---	---
MAX	.55	.53	.60	6.7	7.1	17	4.5	3.0	1.7	---	---	---
MIN	.27	.21	.27	.24	.86	2.7	2.6	1.7	.91	---	---	---
CFSM	.12	.10	.15	.18	.63	2.05	1.27	.77	.42	---	---	---
IN.	.14	.11	.17	.21	.68	2.36	1.41	.88	.47	---	---	---

CAL YR 1987 TOTAL 689.32 MEAN 1.89 MAX 8.0 MIN .21 CFSM .62 IN. 8.41

STREAMS TRIBUTARY TO LAKE MICHIGAN

04073462 WHITE CREEK AT FOREST GLEN BEACH NEAR GREEN LAKE, WI--CONTINUED

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1981 to June 1988 (discontinued).

PERIOD OF DAILY RECORD.--

SUSPENDED-SEDIMENT DISCHARGE: October 1981 to June 1988 (discontinued).

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

TOTAL-PHOSPHORUS DISCHARGE: October 1981 to June 1988 (discontinued).

INSTRUMENTATION.--Automatic pumping sampler since December 1981.

REMARKS.--Records good.

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

EXTREMES FOR PERIOD OF DAILY RECORD.--

SUSPENDED-SEDIMENT DISCHARGE: Maximum daily, 2,420 tons, Apr. 3, 1982; minimum daily, 0 ton, Sept. 11-18, 24-30, 1982, Jan. 11-16, 1987, Oct. 13-16, 18-20, 1987.

TOTAL AMMONIA-NITROGEN DISCHARGE.--Maximum daily, 490 lb, Apr. 3, 1982; minimum daily, 0.01 lb, Nov. 27, Dec. 2-4, 1987.

TOTAL-PHOSPHORUS DISCHARGE: Maximum daily, 1,130 lb, Sept. 10, 1986; minimum daily, 0.06 lb, Oct. 28, 31, Nov. 5-6, 12-16, 21, 26-27, 1987.

EXTREMES FOR CURRENT YEAR.--

SUSPENDED-SEDIMENT DISCHARGE: Maximum daily, 13 tons, Mar. 6; minimum daily, 0 ton Oct. 13-16, 18-20.

TOTAL AMMONIA-NITROGEN DISCHARGE: Maximum daily, 27 lb, Mar. 2; minimum daily, 0.01 lb, Nov. 27, Dec. 2-4.

TOTAL-PHOSPHORUS DISCHARGE: Maximum daily, 26 lb, Mar. 8; minimum daily, 0.04 lb, Oct. 28, 31, Nov. 5-6, 12-16, 21, 26-27.

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

					DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)					
		DATE			TIME						
		JAN 1988			14...	1510	0.35	420			
DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	PHOS-PHOROUS TOTAL (MG/L AS P) (00665)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	PHOS-PHOROUS TOTAL (MG/L AS P) (00665)	SEDI-MENT, SUS-PENDED (MG/L) (80154)
OCT 1987						MAR 1988					
06...	1420	0.42	--	--	21	01...	0950	7.3	0.280	0.280	32
16...	1120	0.27	--	--	3	01...	1350	7.6	0.250	0.270	54
23...	1530	0.30	0.020	0.030	9	01...	1710	10	--	--	159
NOV						01...	1730	10	0.370	0.330	--
09...	1515	0.30	--	--	13	01...	1750	11	--	--	110
30...	1450	0.34	--	--	16	01...	1910	12	--	--	143
DEC						01...	2030	12	0.370	0.310	--
09...	1530	0.50	<0.010	0.070	60	01...	2050	12	--	--	133
JAN 1988						01...	2310	11	--	--	97
14...	1510	0.35	0.040	0.040	67	02...	0150	11	--	--	82
31...	0220	3.2	<0.010	0.040	--	02...	0210	11	0.620	0.410	--
31...	0240	4.7	--	--	86	02...	1350	9.6	--	--	61
31...	0320	5.2	--	--	39	02...	1445	11	--	--	90
31...	0340	5.4	<0.010	0.050	--	02...	1515	12	0.320	0.330	--
31...	0420	6.1	--	--	49	02...	1545	13	--	--	169
31...	0500	6.1	<0.010	0.040	--	02...	1645	14	--	--	359
31...	0600	6.1	--	--	36	02...	1715	14	0.390	0.350	--
31...	0620	6.1	0.070	0.050	--	02...	1745	15	--	--	356
31...	0820	6.1	--	--	23	02...	1915	15	0.520	0.410	--
31...	1040	7.0	--	--	29	02...	1945	15	--	--	241
31...	1100	7.0	0.050	0.570	--	02...	2115	13	0.630	0.470	--
FEB						02...	2145	13	--	--	148
17...	1430	0.96	0.020	0.030	16	02...	2315	12	0.530	0.470	--
23...	1600	1.1	--	--	14	02...	2345	12	--	--	112
29...	1700	10	--	--	255	03...	0345	11	--	--	81
29...	1720	10	0.240	0.260	--	03...	0415	10	0.310	0.270	--
29...	1740	10	--	--	228	03...	1110	8.8	0.160	0.210	36
29...	1800	10	0.220	0.300	--	05...	0950	6.1	--	--	110
29...	1820	13	--	--	508	05...	1720	10	--	--	121
29...	1840	13	0.430	0.480	--	05...	1805	11	0.180	0.190	--
29...	1900	12	--	--	238	05...	1850	11	--	--	128
29...	2000	12	0.720	0.500	173	05...	2020	10	--	--	92
29...	2120	10	0.830	0.580	167	05...	2105	9.6	0.250	0.260	--
29...	2300	9.2	--	--	107	06...	1330	11	--	--	123
29...	2320	9.2	0.740	0.560	--	06...	1430	16	0.410	0.450	--

STREAMS TRIBUTARY TO LAKE MICHIGAN

04073462 WHITE CREEK AT FOREST GLEN BEACH NEAR GREEN LAKE, WI--CONTINUED

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)	PHOS- PHOROUS TOTAL (MG/L AS P) (00665)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)	PHOS- PHOROUS TOTAL (MG/L AS P) (00665)	SEDI- MENT, SUS- PENDE (MG/L) (80154)
MAR 1988						MAR 1988					
06...	1530	29	--	--	992	08...	1335	26	--	--	303
06...	1630	32	0.400	0.390	--	08...	1405	26	0.270	0.320	--
06...	1730	41	0.330	0.360	662	08...	1435	26	--	--	267
06...	1830	24	--	--	434	08...	1740	19	--	--	124
06...	1930	20	0.390	0.340	--	08...	1840	16	0.160	0.180	--
06...	2030	16	--	--	225	09...	0140	13	0.040	0.090	--
06...	2230	14	--	--	154	09...	0840	16	--	--	49
06...	2330	12	0.250	0.270	--	09...	0940	12	0.050	0.080	--
07...	0230	11	--	--	96	09...	1330	11	0.050	0.100	50
07...	0330	11	0.150	0.180	--	21...	1130	3.0	--	--	7
07...	0630	10	--	--	72	APR					
07...	0730	9.6	0.090	0.140	--	02...	2115	6.1	--	--	62
07...	1150	10	--	--	71	02...	2135	7.9	0.030	0.210	735
07...	1250	14	0.130	0.180	--	02...	2155	9.6	--	--	1120
07...	1350	19	--	--	174	02...	2215	9.2	0.070	0.730	1350
07...	1450	21	0.510	0.470	--	02...	2235	9.2	--	--	920
07...	1550	26	--	--	387	02...	2255	11	--	--	828
07...	1620	20	0.440	0.430	280	02...	2335	7.9	0.060	0.330	--
07...	1621	21	0.450	0.450	277	02...	2355	7.0	--	--	1510
07...	1635	22	--	--	245	03...	0035	5.8	--	--	1060
07...	1705	21	0.420	0.420	--	03...	0055	5.6	0.030	0.280	--
07...	1735	20	--	--	182	07...	1745	4.3	0.020	0.050	37
07...	1905	17	--	--	150	15...	1455	4.3	--	--	20
07...	1935	16	0.380	0.400	--	22...	1005	3.5	--	--	15
07...	2205	15	--	--	115	MAY					
07...	2305	15	0.320	0.320	--	05...	1320	2.8	--	--	15
08...	0135	16	--	--	131	10...	1320	2.8	--	--	7
08...	0205	16	0.320	0.360	--	20...	1500	2.0	0.030	0.030	13
08...	0605	16	--	--	115	JUN					
08...	0635	16	0.270	0.300	--	02...	1600	1.7	--	--	15
08...	0950	17	0.240	0.300	110	06...	1410	1.6	--	--	27
08...	1035	18	--	--	170	13...	1151	1.4	--	--	25
08...	1105	20	0.240	0.310	--	20...	1105	1.1	--	--	19
08...	1135	21	--	--	198	27...	1134	0.96	--	--	17
08...	1205	21	0.290	0.310	--	JUL					
08...	1235	22	--	--	251	13...	1530	0.64	0.060	0.050	--

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	.03	.03	.01	.10	.40	2.0	.05	.12	.07	---	---	---
2	.04	.01	.02	.09	.22	4.2	2.8	.12	.07	---	---	---
3	.03	.01	.02	.09	.13	1.3	4.7	.12	.08	---	---	---
4	.03	.01	.02	.09	.09	.68	.41	.12	.08	---	---	---
5	.03	.01	.03	.08	.07	2.0	.40	.11	.10	---	---	---
6	.03	.01	.03	.08	.12	13	.45	.10	.11	---	---	---
7	.02	.01	.04	.07	.05	5.6	.43	.08	.11	---	---	---
8	.02	.01	.06	.07	.05	7.1	.41	.07	.11	---	---	---
9	.01	.01	.08	.07	.04	1.9	.38	.06	.10	---	---	---
10	.01	.01	.07	.06	.04	1.1	.35	.05	.10	---	---	---
11	.01	.01	.07	.06	.04	.83	.33	.05	.10	---	---	---
12	.01	.01	.07	.06	.09	.62	.31	.05	.09	---	---	---
13	.00	.01	.07	.06	.06	.44	.29	.05	.09	---	---	---
14	.00	.01	.07	.06	.05	.32	.26	.06	.08	---	---	---
15	.00	.01	.08	.06	.05	.25	.24	.06	.08	---	---	---
16	.00	.01	.08	.05	.05	.18	.23	.06	.08	---	---	---
17	.02	.02	.07	.05	.04	.14	.21	.06	.07	---	---	---
18	.00	.01	.07	.05	.04	.11	.19	.06	.07	---	---	---
19	.00	.01	.08	.04	.04	.09	.17	.07	.06	---	---	---
20	.00	.01	.09	.05	.04	.07	.16	.07	.06	---	---	---
21	.01	.01	.08	.05	.03	.06	.15	.07	.06	---	---	---
22	.01	.01	.08	.05	.04	.06	.14	.07	.06	---	---	---
23	.01	.02	.08	.04	.04	.06	.15	.07	.05	---	---	---
24	.01	.01	.09	.04	.04	.06	.14	.07	.05	---	---	---
25	.01	.01	.09	.04	.06	.06	.14	.07	.05	---	---	---
26	.02	.01	.09	.04	.25	.05	.14	.07	.04	---	---	---
27	.01	.01	.10	.04	.45	.05	.15	.07	.04	---	---	---
28	.01	.02	.10	.04	.81	.06	.13	.07	.05	---	---	---
29	.01	.02	.10	.04	2.2	.06	.13	.07	.04	---	---	---
30	.01	.02	.09	.10	---	.05	.12	.07	.04	---	---	---
31	.01	---	.09	.93	---	.05	---	.07	---	---	---	---
TOTAL	0.41	0.37	2.12	2.75	5.63	42.55	14.16	2.31	2.19	---	---	---
MEAN	.01	.01	.07	.09	.19	1.4	.47	.07	.07	---	---	---
MAX	.04	.03	.10	.93	2.2	13	4.7	.12	.11	---	---	---
MIN	.00	.01	.01	.04	.03	.05	.05	.05	.04	---	---	---

CAL YR 1987 TOTAL 72.11 MEAN .20 MAX 15 MIN .00

STREAMS TRIBUTARY TO LAKE MICHIGAN

04073462 WHITE CREEK AT FOREST GLEN BEACH NEAR GREEN LAKE, WI--CONTINUED

NITROGEN, AMMONIA, TOTAL, POUNDS PER DAY, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.10	.08	.02	.11	.68	19	.29	.41	.32	---	---	---
2	.11	.05	.01	.11	.37	27	.59	.41	.33	---	---	---
3	.09	.05	.01	.10	.27	12	.67	.42	.32	---	---	---
4	.09	.04	.01	.10	.21	6.2	.55	.40	.31	---	---	---
5	.08	.03	.02	.09	.18	6.7	.50	.40	.31	---	---	---
6	.08	.03	.02	.09	.21	22	.52	.39	.32	---	---	---
7	.07	.03	.02	.08	.14	21	.48	.39	.31	---	---	---
8	.07	.04	.02	.08	.13	22	.47	.40	.31	---	---	---
9	.07	.04	.03	.08	.13	3.0	.48	.43	.31	---	---	---
10	.06	.03	.02	.07	.12	2.6	.48	.41	.31	---	---	---
11	.06	.03	.02	.07	.12	2.1	.49	.40	.31	---	---	---
12	.05	.03	.02	.07	.16	1.8	.51	.38	.30	---	---	---
13	.04	.03	.03	.07	.12	1.5	.52	.37	.30	---	---	---
14	.04	.02	.03	.08	.11	1.2	.50	.37	.29	---	---	---
15	.03	.03	.03	.07	.11	1.0	.50	.36	.30	---	---	---
16	.04	.03	.03	.06	.11	.88	.51	.35	.30	---	---	---
17	.05	.08	.03	.05	.10	.77	.51	.34	.29	---	---	---
18	.04	.04	.02	.04	.10	.70	.49	.33	.29	---	---	---
19	.03	.03	.03	.04	.10	.64	.45	.34	.28	---	---	---
20	.03	.03	.03	.04	.10	.58	.45	.33	.27	---	---	---
21	.03	.02	.03	.03	.09	.52	.44	.33	.27	---	---	---
22	.03	.02	.03	.03	.11	.50	.44	.33	.28	---	---	---
23	.03	.03	.03	.03	.12	.48	.45	.34	.25	---	---	---
24	.03	.02	.03	.02	.12	.46	.43	.33	.26	---	---	---
25	.03	.02	.03	.02	.15	.45	.43	.33	.26	---	---	---
26	.04	.02	.03	.02	1.3	.40	.44	.33	.25	---	---	---
27	.04	.01	.03	.02	2.9	.37	.47	.33	.25	---	---	---
28	.03	.03	.03	.02	4.4	.40	.43	.33	.27	---	---	---
29	.03	.02	.03	.02	13	.38	.42	.33	.26	---	---	---
30	.03	.02	.03	.03	---	.33	.41	.33	.25	---	---	---
31	.03	---	.03	2.9	---	.32	---	.32	---	---	---	---
TOTAL	1.58	0.99	0.78	4.64	25.76	157.28	14.32	11.26	8.68	---	---	---
MEAN	.05	.03	.03	.15	.89	5.1	.48	.36	.29	---	---	---
MAX	.11	.08	.03	2.9	13	27	.67	.43	.33	---	---	---
MIN	.03	.01	.01	.02	.09	.32	.29	.32	.25	---	---	---

CAL YR 1987 TOTAL 170.68 MEAN .47 MAX 6.3 MIN .01

PHOSPHORUS, TOTAL, POUNDS PER DAY, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.12	.12	.07	.12	4.6	17	.72	.61	.31	---	---	---
2	.14	.06	.07	.11	2.5	22	3.3	.61	.32	---	---	---
3	.12	.06	.07	.11	1.6	12	5.5	.60	.31	---	---	---
4	.11	.05	.08	.11	1.1	8.0	3.4	.56	.30	---	---	---
5	.11	.04	.09	.10	.88	8.0	2.3	.55	.30	---	---	---
6	.10	.04	.09	.09	.95	24	1.9	.53	.30	---	---	---
7	.10	.05	.11	.09	.58	23	1.3	.51	.30	---	---	---
8	.10	.05	.14	.08	.48	26	1.2	.52	.29	---	---	---
9	.09	.05	.19	.08	.43	5.9	1.1	.54	.29	---	---	---
10	.08	.05	.17	.08	.36	5.1	1.1	.51	.29	---	---	---
11	.08	.05	.17	.07	.32	4.3	1.1	.49	.29	---	---	---
12	.07	.04	.16	.07	.41	3.7	1.2	.46	.28	---	---	---
13	.05	.04	.17	.07	.27	3.0	1.1	.43	.27	---	---	---
14	.05	.04	.17	.08	.23	2.5	1.1	.42	.26	---	---	---
15	.05	.04	.17	.07	.20	2.2	1.1	.41	.27	---	---	---
16	.06	.04	.18	.06	.19	1.9	1.0	.38	.27	---	---	---
17	.08	.14	.17	.06	.16	1.7	1.0	.37	.26	---	---	---
18	.05	.06	.17	.06	.15	1.5	.97	.35	.26	---	---	---
19	.05	.05	.18	.05	.15	1.4	.88	.34	.25	---	---	---
20	.05	.05	.21	.06	.14	1.3	.86	.33	.24	---	---	---
21	.05	.04	.19	.06	.14	1.2	.82	.33	.24	---	---	---
22	.05	.05	.19	.06	.16	1.1	.80	.33	.25	---	---	---
23	.05	.06	.19	.06	.18	1.1	.81	.33	.22	---	---	---
24	.05	.05	.20	.06	.18	1.1	.75	.33	.23	---	---	---
25	.05	.05	.21	.05	.22	1.0	.73	.32	.23	---	---	---
26	.07	.04	.21	.05	1.4	.93	.74	.32	.22	---	---	---
27	.06	.04	.22	.05	3.0	.86	.78	.33	.22	---	---	---
28	.04	.07	.22	.05	5.0	.95	.70	.33	.24	---	---	---
29	.05	.07	.22	.06	12	.91	.66	.32	.23	---	---	---
30	.05	.08	.21	.12	---	.81	.63	.32	.22	---	---	---
31	.04	---	.21	13	---	.78	---	.31	---	---	---	---
TOTAL	2.22	1.67	5.10	15.24	37.98	185.24	39.55	13.09	7.96	---	---	---
MEAN	.07	.06	.16	.49	1.3	6.0	1.3	.42	.27	---	---	---
MAX	.14	.14	.22	13	12	26	5.5	.61	.32	---	---	---
MIN	.04	.04	.07	.05	.14	.78	.63	.31	.22	---	---	---

CAL YR 1987 TOTAL 259.23 MEAN .71 MAX 24 MIN .04

STREAMS TRIBUTARY TO LAKE MICHIGAN

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.

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

REMARKS.--Estimated daily discharges: Aug. 11-22 and ice periods listed in rating table below. Records good, except for estimated daily discharges and Oct. 1-23, which are fair. Approximately 2.3 ft³/s of daily flow is effluent from Ripon Wastewater Treatment Plant.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 145 ft³/s, Apr. 3, 1988, gage height, 7.46 ft; minimum daily, 1.8 ft³/s, July 31, 1988.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 145 ft³/s, Apr. 3, gage height, 7.46 ft; minimum daily, 1.8 ft³/s, July 31.

REVISIONS.--The maximum discharge for the period February 1 to September 30, 1987 has been revised to 137 ft³/s, May 31, 1987, gage height, 7.37 ft.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Dec. 31 to Jan. 9, Jan. 25-29, Feb. 9, 12, 13, 20-23.)

5.0	1.6	6.0	31
5.1	2.8	6.5	64
5.4	9.4	7.0	105
5.7	18	7.5	149

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	7.7	15	20	6.6	12	17	35	22	5.7	2.7	2.2	2.9
2	7.7	14	17	5.6	13	31	40	20	6.9	2.5	2.4	2.7
3	7.7	14	16	5.4	13	37	82	18	6.0	2.4	3.7	7.4
4	6.5	12	12	5.2	12	32	85	17	5.5	2.2	6.0	13
5	5.6	11	11	4.8	11	32	88	16	4.8	2.3	5.6	4.8
6	7.3	9.8	9.7	4.4	11	42	81	15	4.9	2.2	2.8	3.8
7	9.1	9.2	12	3.8	11	61	67	14	4.5	2.3	2.0	3.3
8	9.1	11	15	3.7	11	93	57	14	4.0	2.0	6.4	3.1
9	8.2	11	23	3.6	10	111	48	16	3.7	2.3	9.5	2.8
10	7.0	9.5	23	3.3	9.3	104	40	15	4.0	2.7	4.4	2.3
11	7.0	9.0	23	3.9	9.0	97	36	14	3.5	2.8	4.6	2.0
12	6.5	9.1	20	4.2	8.8	84	31	13	3.2	2.5	3.9	2.6
13	5.8	9.2	16	4.3	8.6	61	28	12	3.8	2.2	4.1	2.8
14	5.8	8.9	15	4.0	8.2	47	25	12	3.5	2.2	6.0	2.6
15	5.8	8.5	13	4.1	8.7	38	23	11	3.4	6.1	4.4	2.5
16	7.0	9.7	9.9	3.9	8.7	35	22	11	3.2	14	4.5	2.7
17	10	25	13	4.0	8.8	35	20	11	3.2	3.4	3.5	2.7
18	10	21	12	4.7	9.0	30	19	10	2.8	7.5	2.9	5.6
19	10	18	11	5.0	8.9	27	19	9.9	2.6	5.7	2.6	7.3
20	10	14	11	6.0	8.0	23	18	9.4	3.1	3.7	9.0	5.4
21	10	11	12	5.2	7.8	22	17	8.8	2.9	4.1	4.5	3.7
22	10	9.8	12	5.1	7.6	23	17	8.3	4.4	3.1	4.0	48
23	9.7	13	12	4.8	8.0	27	20	8.3	3.0	2.5	3.9	20
24	8.3	13	13	4.6	8.1	29	20	7.8	3.0	2.6	4.3	12
25	7.8	13	13	4.5	8.0	37	20	7.4	2.4	2.8	3.1	9.4
26	9.8	12	12	4.4	8.5	34	21	7.3	2.0	2.6	2.9	7.9
27	10	11	11	4.3	8.6	31	31	6.9	2.3	2.4	3.3	6.5
28	9.6	14	11	4.4	9.0	33	29	6.4	4.8	2.3	2.8	5.6
29	9.0	19	10	5.0	11	40	28	6.1	4.9	2.1	3.0	4.8
30	8.8	22	9.4	9.9	---	38	25	5.8	3.2	2.0	2.8	4.5
31	7.8	---	8.4	20	---	38	---	5.9	---	1.8	3.3	---
TOTAL	254.6	386.7	426.4	162.7	276.6	1389	1092	359.3	115.2	102.0	128.4	204.7
MEAN	8.21	12.9	13.8	5.25	9.54	44.8	36.4	11.6	3.84	3.29	4.14	6.82
MAX	10	25	23	20	13	111	88	22	6.9	14	9.5	48
MIN	5.6	8.5	8.4	3.3	7.6	17	17	5.8	2.0	1.8	2.0	2.0

WTR YR 1988 TOTAL 4897.6 MEAN 13.4 MAX 111 MIN 1.8

STREAMS TRIBUTARY TO LAKE MICHIGAN

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.

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

EXTREMES FOR PERIOD OF DAILY RECORD.--

SUSPENDED-SEDIMENT DISCHARGE: Maximum daily, 47 tons, Apr. 3 and Sept. 22, 1988; minimum daily, 0.00 ton, Aug. 12, 1988.

TOTAL-PHOSPHORUS DISCHARGE: Maximum daily, 231 lb, Sept. 22, 1988; minimum daily, 2.3 lb, Aug. 7, 1988.

EXTREMES FOR CURRENT YEAR.--

SUSPENDED-SEDIMENT DISCHARGE: Maximum daily, 47 tons, Apr. 3 and Sept. 22; minimum daily, 0.00 ton, Aug. 12.

TOTAL-PHOSPHORUS DISCHARGE: Maximum daily, 231 lb, Sept. 22; minimum daily, 2.3 lb, Aug. 7.

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	PHOS- PHOROUS TOTAL (MG/L AS P) (00665)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	DATE	TIME	DIS- CHARGE INST. CUBIC FEET PER SECOND (00061)	PHOS- PHOROUS TOTAL (MG/L AS P) (00665)	SEDI- MENT, SUS- PENDE (MG/L) (80154)
OCT 1987					MAR 1988				
06...	1330	8.2	--	2	01...	2315	26	--	42
23...	1420	9.1	--	8	02...	0315	23	--	36
NOV					02...	0345	23	0.370	--
01...	0515	26	--	170	02...	1015	25	0.420	32
01...	0545	27	0.440	--	02...	1045	26	--	38
01...	0615	26	--	70	02...	1115	27	0.460	--
01...	0645	22	0.440	--	02...	1145	27	--	45
01...	0715	20	--	55	02...	1245	29	--	60
01...	0745	18	0.330	--	02...	1315	32	0.490	--
01...	0845	17	0.270	--	02...	1430	36	--	73
01...	0915	16	--	17	02...	1445	38	0.540	--
10...	0840	8.9	--	18	02...	1515	40	--	110
16...	1200	9.6	--	4	02...	1615	48	0.650	--
17...	0030	22	0.150	46	02...	1645	47	--	92
17...	0130	33	--	52	02...	1945	41	0.450	--
17...	0230	43	--	128	02...	2015	40	--	46
17...	0330	33	--	142	02...	2345	33	--	33
17...	0500	24	--	40	03...	0815	32	--	26
17...	0830	24	--	16	03...	0845	33	0.380	--
17...	0930	24	--	20	03...	0915	35	--	36
17...	1100	27	--	16	03...	0945	35	0.420	--
17...	1200	26	--	17	03...	1015	38	--	71
17...	1330	24	--	17	03...	1045	43	0.520	--
17...	1530	22	--	16	03...	1115	47	--	89
17...	1600	23	0.160	--	03...	1145	49	0.710	--
17...	1630	24	--	15	03...	1215	49	--	106
17...	1730	23	--	13	03...	1415	42	--	55
17...	2100	22	--	30	03...	1545	41	0.510	--
18...	0030	22	--	19	03...	1615	41	--	52
18...	0500	21	--	26	03...	1845	39	--	37
28...	1930	23	--	58	03...	2015	38	0.420	--
28...	1945	22	0.340	66	03...	2145	37	0.390	--
30...	1400	22	0.280	6	04...	1045	35	--	27
DEC					04...	1130	36	0.500	--
11...	0815	25	0.270	--	04...	1215	34	--	33
11...	0830	26	--	49	04...	1515	33	--	24
11...	0930	27	0.140	--	04...	1600	32	0.450	--
11...	1000	27	--	36	04...	1945	32	--	18
11...	1200	24	--	18	04...	2030	32	0.390	--
11...	1230	24	0.100	--	05...	0100	31	--	15
JAN 1988					05...	0400	29	0.320	--
18...	1200	5.6	--	19	05...	0700	28	--	15
FEB					06...	1315	37	--	26
17...	1210	9.7	0.250	33	06...	1500	49	0.420	--
MAR					06...	1915	57	--	62
01...	1015	14	--	24	07...	0500	49	0.270	--
01...	1415	16	--	25	07...	0715	50	--	25
01...	1445	16	0.700	--	07...	0915	59	--	57
01...	1515	17	--	23	07...	1100	52	--	39
01...	1615	20	--	40	07...	1315	62	0.410	61
01...	1645	22	0.600	--	07...	1330	70	0.450	--
01...	1845	23	--	43	07...	1600	73	--	90
01...	2045	26	--	60	07...	2100	72	--	69
01...	2115	26	0.520	--	07...	2400	75	--	57

STREAMS TRIBUTARY TO LAKE MICHIGAN

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

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	PHOS- PHOROUS TOTAL (MG/L AS P) (00665)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	PHOS- PHOROUS TOTAL (MG/L AS P) (00665)	SEDI- MENT, SUS- PENDE (MG/L) (80154)
MAR 1988					APR 1988				
08	0300	78	---	53	03...	0530	75	--	98
08...	0700	79	0.290	--	03...	0630	71	0.250	--
08...	0800	79	--	60	03...	0930	67	--	811
08...	0945	86	--	82	03...	1230	70	--	34
08...	1045	86	0.440	--	03...	1330	70	0.240	--
08...	1145	93	--	121	03...	1530	71	0.190	--
08...	1345	99	--	127	03...	1630	71	--	35
08...	1545	103	--	181	03...	1830	83	--	57
08...	1645	108	0.490	--	03...	2030	80	0.200	--
08...	1700	108	--	141	03...	2130	80	--	41
08...	1945	112	--	128	04...	0230	80	--	34
08...	2245	112	--	116	04...	0330	80	0.180	--
08...	2345	115	0.290	--	04...	0630	81	--	35
09...	0045	113	--	76	04...	0930	84	--	29
09...	0445	112	--	60	04...	1030	84	0.190	--
09...	1545	110	--	52	04...	1245	86	--	48
09...	1745	112	0.230	--	04...	1445	87	0.200	--
10...	1030	98	0.250	64	04...	1845	88	--	29
10...	1230	103	0.220	--	05...	0845	88	--	26
10...	1430	108	0.230	37	05...	1245	90	0.220	--
10...	1630	109	--	24	05...	1600	88	--	54
11...	0230	103	--	37	05...	1800	--	--	--
11...	1100	93	0.190	--	05...	2400	84	--	25
11...	1415	94	--	24	06...	0400	90	0.200	--
11...	1615	96	0.220	46	06...	0800	83	--	18
11...	1815	97	0.210	--	06...	1400	82	0.170	--
11...	2215	95	--	20	06...	1630	79	--	36
12...	1015	83	0.180	--	06...	1830	77	0.160	--
12...	1215	83	--	18	07...	0030	72	--	16
12...	1400	80	0.170	--	07...	0630	68	--	17
13...	0015	71	0.200	--	07...	1230	--	--	--
13...	0215	64	--	21	07...	1645	66	--	11
13...	2215	63	--	12	08...	0045	60	--	13
14...	0015	60	0.180	--	08...	0845	57	--	10
14...	1600	51	--	13	08...	1045	59	0.120	--
14...	1800	52	0.200	--	08...	1330	58	0.160	--
14...	2000	52	--	11	08...	1500	56	--	14
15...	0800	29	--	8	08...	1700	57	0.120	--
15...	1400	38	0.180	--	08...	2300	53	--	9
15...	1600	43	--	13	09...	0900	49	--	9
15...	2000	44	--	10	09...	1100	49	0.110	--
16...	0900	27	--	8	09...	1900	46	--	10
16...	1400	38	--	9	10...	1300	41	--	11
16...	2000	41	--	7	10...	1500	40	0.120	--
16...	2200	40	0.120	--	22...	1030	18	0.110	4
17...	1515	35	--	9	27...	0615	37	--	46
17...	1715	34	0.120	--	27...	0630	35	0.160	37
17...	1915	34	--	12	MAY				
18...	0715	29	--	7	05...	1400	17	0.230	8
18...	1515	33	0.140	--	10...	1330	17	0.240	--
18...	1715	32	--	3	26...	1300	9.1	0.390	11
19...	1245	26	--	4	JUN				
19...	1515	29	--	7	08...	1415	5.0	--	9
19...	1915	29	--	7	14...	1110	4.3	0.340	8
19...	2115	28	0.140	--	20...	1200	4.3	0.820	8
22...	1616	27	0.140	--	27...	1221	3.3	0.560	6
22...	1715	27	--	18	JUL				
22...	2215	27	--	16	05...	1210	3.3	--	5
23...	0900	27	--	14	06...	1210	2.7	0.740	--
23...	1315	28	--	14	10...	1300	6.8	--	34
23...	1415	28	0.140	--	10...	1330	6.8	--	19
23...	1715	29	--	14	10...	1430	5.8	--	33
23...	2315	29	--	14	11...	1210	3.8	0.280	6
24...	0015	29	0.140	--	15...	0845	17	--	245
28...	1645	41	--	29	15...	0930	22	0.830	210
28...	1715	47	0.310	--	16...	0200	20	0.780	201
28...	2300	44	--	22	16...	0230	60	1.49	625
28...	2315	48	--	36	16...	0330	53	--	219
29...	0015	49	0.280	--	16...	0430	30	0.390	--
29...	0215	43	--	22	16...	0530	23	--	67
29...	0315	40	0.180	--	16...	0630	18	0.390	51
APR					18...	1250	3.9	0.360	9
02...	2130	51	--	20	18...	1330	26	0.760	194
02...	2230	92	0.170	--	18...	1400	29	0.590	142
02...	2330	129	--	221	18...	1430	24	--	83
03...	0030	137	--	1030	18...	1500	20	0.360	--
03...	0130	144	--	473	18...	1530	18	--	42
03...	0330	96	--	120	18...	1600	16	0.300	40

STREAMS TRIBUTARY TO LAKE MICHIGAN

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

DATE	TIME	DIS- CHARGE IN CUBIC FEET PER SECOND (00060)	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	PHOS- PHOROUS TOTAL (MG/L AS P) (00665)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	PHOS- PHOROUS TOTAL (MG/L AS P) (00665)	SEDI- MENT, SUS- PENDED (MG/L) (80154)
JUL 1988						SEP 1988				
25...	1242	--	3.7	--	3	19...	1130	7.7	0.510	50
28...	1342	--	3.4	0.800	--	19...	1940	17	1.55	117
AUG						20...	1315	6.1	0.810	--
01...	1235	--	2.8	0.440	7	20...	1400	5.8	--	41
03...	1830	--	17	--	774	22...	0305	26	0.480	128
03...	1900	--	17	0.720	--	22...	0315	38	--	266
04...	1630	--	16	--	1170	22...	0325	52	1.12	486
04...	1700	--	19	0.990	--	22...	0335	64	--	855
08...	0700	--	17	--	428	22...	0345	74	1.80	941
08...	0730	--	18	0.750	--	22...	0400	85	1.69	911
08...	0800	--	17	--	75	22...	0735	70	0.470	106
08...	1300	--	7.9	0.850	10	22...	0835	74	0.480	92
09...	0615	--	35	1.64	--	22...	1050	36	--	39
09...	0630	--	44	--	684	22...	1250	25	0.470	--
09...	0715	--	31	0.630	--	22...	1650	16	0.420	15
09...	0730	--	25	--	113	22...	1735	19	0.530	68
09...	0800	--	19	0.400	--	22...	1737	19	0.540	85
09...	0830	--	16	--	58	22...	1820	71	0.530	68
15...	1210	4.4	--	1.12	5	22...	1830	88	--	132
20...	1245	9.0	--	1.36	7	22...	1840	95	1.57	918
25...	1010	3.1	--	--	4	22...	1855	105	--	806
25...	1110	3.1	--	0.260	--	22...	1930	113	1.56	938
29...	1240	--	4.0	0.300	1	22...	2030	101	--	753
SEP						22...	2120	78	0.820	--
03...	1655	--	44	1.15	271	22...	2205	58	--	157
03...	1700	--	55	3.13	1310	23...	0115	30	--	52
03...	1705	--	57	5.28	2400	23...	0315	24	0.490	--
03...	1715	--	63	3.29	1260	23...	0715	20	--	22
03...	1820	--	27	1.14	472	23...	0915	20	0.440	--
03...	1930	--	14	0.390	66	23...	1715	16	--	12
04...	0615	--	22	1.36	615	23...	1915	16	0.370	--
04...	0630	--	33	1.48	748	24...	0315	13	--	27
04...	0645	--	44	1.21	509	24...	1030	13	0.370	4
04...	1100	--	17	0.520	46	24...	1115	13	0.340	7
07...	1255	--	4.2	0.400	1	25...	0115	10	0.340	--
18...	0855	--	17	--	720	27...	2315	5.8	--	11
19...	1115	--	7.9	0.510	20					

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	.18	1.6	.39	.34	.66	1.6	1.9	.55	.15	.05	.04	.02
2	.14	.66	.40	.29	.73	4.5	6.1	.48	.18	.04	.04	.03
3	.10	.64	.45	.28	1.1	4.5	47	.42	.15	.04	1.8	9.2
4	.06	.59	.43	.27	1.0	2.1	7.8	.38	.14	.03	3.6	4.8
5	.04	.50	.18	.25	.98	1.3	8.1	.35	.12	.03	.13	.08
6	.04	.46	.16	.23	.97	5.0	5.3	.34	.12	.03	.05	.03
7	.05	.44	.28	.19	1.0	9.4	2.5	.33	.11	.03	.03	.01
8	.06	.51	.69	.19	1.1	26	1.8	.40	.10	.03	.91	.01
9	.06	.52	1.8	.18	1.0	17	1.2	.42	.09	.03	3.1	.01
10	.05	.44	1.2	.17	.97	13	1.2	.42	.09	.11	.11	.01
11	.06	.33	1.3	.20	.97	8.0	.97	.39	.08	.05	.11	.01
12	.06	.26	.96	.22	.98	4.3	.78	.37	.07	.04	.08	.02
13	.06	.21	.78	.22	.98	2.6	.64	.34	.08	.04	.07	.02
14	.06	.16	.72	.21	.97	1.5	.53	.33	.08	.04	.09	.02
15	.07	.12	.62	.21	1.1	1.0	.46	.30	.07	1.3	.06	.02
16	.09	.19	.48	.20	1.1	.77	.40	.31	.07	5.4	.06	.03
17	.14	2.5	.62	.21	.95	.85	.34	.31	.07	.07	.05	.03
18	.15	.76	.58	.24	.77	.44	.29	.29	.06	.98	.05	3.1
19	.16	.22	.52	.27	.74	.37	.26	.28	.06	.14	.05	1.7
20	.17	.16	.55	.33	.65	.54	.23	.27	.07	.05	.17	.77
21	.19	.12	.57	.29	.62	.73	.20	.25	.06	.05	.08	.18
22	.21	.11	.57	.30	.65	1.0	.19	.24	.12	.03	.06	47
23	.21	.16	.59	.29	.62	1.1	.23	.24	.06	.02	.05	3.5
24	.18	.16	.63	.29	.55	1.1	.25	.23	.06	.02	.03	.37
25	.17	.26	.64	.29	.52	1.4	.26	.22	.04	.02	.03	.20
26	.33	.20	.60	.29	.53	1.3	.48	.22	.03	.02	.02	.20
27	.25	.17	.52	.29	.52	1.2	2.2	.20	.04	.03	.02	.18
28	.21	.84	.52	.22	.52	1.9	.91	.18	.17	.03	.01	.17
29	.19	.63	.51	.22	.61	2.4	.73	.17	.13	.03	.01	.14
30	.19	.40	.46	.37	---	2.2	.64	.16	.06	.03	.01	.13
31	.17	---	.43	1.5	---	2.1	---	.16	---	.03	.02	---
TOTAL	4.10	14.32	19.15	9.05	23.86	121.20	93.89	9.55	2.73	8.84	10.94	71.99
MEAN	.13	.48	.62	.29	.82	3.9	3.1	.31	.09	.29	.35	2.4
MAX	.33	2.5	1.8	1.5	1.1	26	47	.55	.18	5.4	3.6	47
MIN	.04	.11	.16	.17	.52	.37	.19	.16	.03	.02	.01	.01

WTR YR 1988 TOTAL 389.62 MEAN 1.1 MAX 47 MIN .01

STREAMS TRIBUTARY TO LAKE MICHIGAN

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

PHOSPHORUS, TOTAL, POUNDS PER DAY, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10	24	18	5.4	13	42	44	23	22	4.6	5.3	4.6
2	10	19	14	4.5	14	75	46	22	17	5.0	5.6	4.4
3	10	18	13	4.4	14	82	105	21	7.7	5.7	9.7	52
4	8.7	15	9.9	4.2	13	59	89	20	7.3	6.3	17	50
5	7.6	12	8.8	3.9	13	46	101	20	6.6	7.9	7.2	7.5
6	9.8	10	7.9	3.6	12	78	78	19	7.0	8.5	3.4	7.1
7	12	9.0	9.4	3.1	13	122	51	18	6.6	7.6	2.3	7.1
8	12	9.9	17	3.0	13	193	39	18	6.1	5.5	21	6.9
9	11	9.3	35	2.9	12	151	29	20	5.8	5.1	30	6.3
10	9.5	7.7	36	2.7	11	130	26	20	6.4	5.0	12	5.1
11	9.5	6.9	21	3.2	11	106	23	19	5.8	4.3	14	4.6
12	8.7	6.5	11	3.4	11	84	20	18	5.5	3.8	14	6.0
13	7.9	6.2	9.5	3.5	11	62	17	17	6.8	3.3	18	6.3
14	7.9	5.6	9.3	3.2	11	48	16	17	6.5	3.3	31	6.0
15	7.9	5.0	8.3	3.3	11	36	15	16	7.4	9.5	26	5.7
16	9.5	5.6	6.8	3.2	12	26	14	17	7.9	27	28	6.4
17	14	33	9.1	3.2	12	23	13	17	9.3	3.0	23	6.3
18	14	18	8.9	3.8	12	22	12	17	9.3	9.9	20	21
19	14	15	8.5	4.1	12	20	11	17	9.9	5.6	18	25
20	14	12	9.1	4.9	11	17	11	17	13	4.1	64	11
21	14	9.1	9.5	4.2	11	17	10	16	8.4	5.4	24	3.5
22	14	8.2	9.5	4.1	12	18	10	15	13	4.8	16	231
23	13	11	9.8	3.9	12	21	12	16	9.2	4.6	11	48
24	11	11	10	3.7	11	22	12	15	9.0	5.7	8.5	24
25	11	10	11	3.6	11	28	12	15	7.3	7.2	4.6	17
26	14	9.5	10	3.6	11	26	16	15	5.9	8.1	4.2	14
27	14	9.1	8.6	3.5	12	23	33	16	6.8	8.8	5.0	11
28	13	16	8.7	3.6	12	30	27	17	15	9.7	4.4	8.6
29	12	21	8.4	4.1	15	42	26	17	5.8	8.0	4.8	7.0
30	12	30	7.6	10	---	41	25	18	4.5	6.5	4.5	6.3
31	10	---	6.8	28	---	44	---	21	---	5.0	5.3	---
TOTAL	346.0	382.6	370.4	145.8	349	1734	943	554	258.8	208.8	461.8	619.7
MEAN	11	13	12	4.7	12	56	31	18	8.6	6.7	15	21
MAX	14	33	36	28	15	193	105	23	22	27	64	231
MIN	7.6	5.0	6.8	2.7	11	17	10	15	4.5	3.0	2.3	3.5

WTR YR 1988 TOTAL 6373.9 MEAN 17 MAX 231 MIN 2.3

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 September 1988.

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

REMARKS.--Discharge estimated based on discharge from upstream station, Silver Creek near Ripon (040734644) adjusted for drainage area. Approximately 2.3 ft³/s of daily flow is effluent from Ripon Waste-water Treatment Plant. Discharge July 31 to Aug. 5, 1987, is in large part the result of draining the millpond in Ripon.

EXTREMES FOR CURRENT PERIOD.--FEBRUARY TO SEPTEMBER 1987: Maximum daily discharge, 164 ft³/s, Apr. 24; minimum daily, 3.0 ft³/s, Aug. 6, 7.

WATER YEAR 1988: Maximum daily discharge, 163 ft³/s, Mar. 9; minimum daily, 1.6 ft³/s, July 31.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	15	40	36	46	61	13	43	9.0
2	---	---	---	---	17	45	33	45	54	13	15	9.5
3	---	---	---	---	18	54	36	42	42	13	11	8.4
4	---	---	---	---	18	59	36	39	33	12	11	7.5
5	---	---	---	---	18	58	37	37	27	12	9.1	6.7
6	---	---	---	---	18	61	37	36	30	13	3.0	5.8
7	---	---	---	---	20	70	37	34	24	15	3.0	5.6
8	---	---	---	---	20	80	36	33	23	14	10	6.1
9	---	---	---	---	20	74	34	30	21	13	5.6	6.1
10	---	---	---	---	20	58	33	28	18	12	4.5	7.6
11	---	---	---	---	20	58	36	45	20	10	3.9	7.6
12	---	---	---	---	21	49	39	36	20	9.5	3.8	7.3
13	---	---	---	---	23	43	39	33	17	10	3.8	6.6
14	---	---	---	---	21	39	57	39	17	10	4.7	7.0
15	---	---	---	---	18	36	68	34	15	11	7.8	6.9
16	---	---	---	---	20	36	73	31	15	10	21	11
17	---	---	---	---	18	36	70	28	15	9.2	20	33
18	---	---	---	---	18	37	62	27	15	8.7	15	21
19	---	---	---	---	18	45	52	33	17	7.9	12	20
20	---	---	---	---	20	46	45	31	15	14	11	17
21	---	---	---	---	21	46	39	30	15	15	10	21
22	---	---	---	---	24	48	89	28	17	12	9.1	24
23	---	---	---	---	27	48	145	27	15	10	7.9	18
24	---	---	---	---	26	46	164	27	15	8.8	8.7	12
25	---	---	---	---	26	48	135	27	15	7.6	8.5	12
26	---	---	---	---	27	49	104	30	15	8.8	8.5	12
27	---	---	---	---	27	48	83	31	14	8.5	8.7	10
28	---	---	---	---	27	45	68	39	13	8.8	15	7.9
29	---	---	---	---	---	49	59	39	15	17	11	7.9
30	---	---	---	---	---	42	51	33	14	13	8.5	8.4
31	---	---	---	---	---	37	---	64	---	43	7.9	---
TOTAL	---	---	---	---	586	1530	1833	1082	647	382.8	322.0	342.9
MEAN	---	---	---	---	20.9	49.4	61.1	34.9	21.6	12.3	10.4	11.4
MAX	---	---	---	---	27	80	164	64	61	43	43	33
MIN	---	---	---	---	15	36	33	27	13	7.6	3.0	5.6
CFSM	---	---	---	---	.39	.92	1.14	.65	.40	.23	.19	.21
IN.	---	---	---	---	.41	1.06	1.27	.75	.45	.27	.22	.24

STREAMS TRIBUTARY TO LAKE MICHIGAN

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

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	10	21	28	8.7	17	24	51	31	7.3	2.9	2.2	3.2
2	10	20	24	7.2	18	45	58	28	9.1	2.6	2.4	2.9
3	10	20	23	6.9	18	54	120	26	7.8	2.4	4.4	9.8
4	8.5	17	17	6.6	17	46	125	24	7.0	2.2	7.8	18
5	7.2	15	15	6.0	15	46	129	23	6.0	2.3	7.2	6.0
6	9.7	13	13	5.4	15	61	119	21	6.1	2.2	3.0	4.5
7	12	12	17	4.5	15	89	98	20	5.6	2.3	1.9	3.8
8	12	15	21	4.4	15	136	83	20	4.8	1.9	8.4	3.5
9	11	15	33	4.2	14	163	70	23	4.4	2.3	13	3.0
10	9.2	13	33	3.8	13	153	58	21	4.8	2.9	5.4	2.3
11	9.2	12	33	4.7	12	142	52	20	4.1	3.0	5.7	1.9
12	8.5	12	28	5.1	12	123	45	18	3.6	2.6	4.7	2.7
13	7.5	12	23	5.3	12	89	40	17	4.5	2.2	5.0	3.0
14	7.5	12	21	4.8	11	68	36	17	4.1	2.2	7.8	2.7
15	7.5	11	18	5.0	12	55	33	15	3.9	7.9	5.4	2.6
16	9.2	13	14	4.7	12	51	31	15	3.6	20	5.6	2.9
17	14	36	18	4.8	12	51	28	15	3.6	3.9	4.1	2.9
18	14	30	17	5.8	12	43	27	14	3.0	10	3.2	7.2
19	14	26	15	6.3	12	39	27	14	2.7	7.3	2.7	9.7
20	14	20	15	7.8	11	33	26	13	3.5	4.4	12	6.9
21	14	15	17	6.6	10	31	24	12	3.2	5.0	5.6	4.4
22	14	13	17	6.4	10	33	24	11	5.4	3.5	4.8	70
23	13	18	17	6.0	11	39	28	11	3.3	2.6	4.7	28
24	11	18	18	5.7	11	42	28	10	3.3	2.7	5.3	17
25	10	18	18	5.6	11	54	28	9.8	2.4	3.0	3.5	13
26	13	17	17	5.4	11	49	30	9.7	1.9	2.7	3.2	11
27	14	15	15	5.3	12	45	45	9.1	2.3	2.4	3.8	8.5
28	13	20	15	5.4	12	48	42	8.4	6.0	2.3	3.0	7.2
29	12	27	14	6.3	15	58	40	7.9	6.1	2.0	3.3	6.0
30	12	31	13	14	---	55	36	7.5	3.6	1.9	3.0	5.6
31	10	---	11	28	---	55	---	7.6	---	1.6	3.8	---
TOTAL	341.0	537	598	206.7	378	2020	1581	499.0	137.0	117.2	155.9	270.2
MEAN	11.0	17.9	19.3	6.67	13.0	65.2	52.7	16.1	4.57	3.78	5.03	9.01
MAX	14	36	33	28	18	163	129	31	9.1	20	13	70
MIN	7.2	11	11	3.8	10	24	24	7.5	1.9	1.6	1.9	1.9
CFSM	.21	.33	.36	.12	.24	1.22	.99	.30	.09	.07	.09	.17
IN.	.24	.37	.42	.14	.26	1.40	1.10	.35	.10	.08	.11	.19

WTR YR 1988 TOTAL 6841.0 MEAN 18.7 MAX 163 MIN 1.6 CFSM .35 IN. 4.76

STREAMS TRIBUTARY TO LAKE MICHIGAN

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

WATER-QUALITY RECORDS

PERIOD OF RECORD.--February 1987 to September 1988.

PERIOD OF DAILY RECORD.--

SUSPENDED-SEDIMENT DISCHARGE: February 1987 to September 1988.

TOTAL-PHOSPHORUS DISCHARGE: February 1987 to September 1988.

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

REMARKS.--Records fair.

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

EXTREMES FOR CURRENT PERIOD.--FEBRUARY TO SEPTEMBER 1987:

SUSPENDED-SEDIMENT DISCHARGE: Maximum daily, 8.2 tons, Mar. 8; minimum daily, 0.4 tons, Aug. 6.

TOTAL-PHOSPHORUS DISCHARGE: Maximum daily, 126 lb, Apr. 24; minimum daily, 1.6 lb, Aug. 6-7.

WATER YEAR 1988:

SUSPENDED-SEDIMENT DISCHARGE: Maximum daily, 9.4 tons, Apr. 6; minimum daily, 0.03 tons, Sept. 10-11, 14-17.

TOTAL-PHOSPHORUS DISCHARGE: Maximum daily, 229 lb, Apr. 5; minimum daily, 0.27 lb, Sept. 11.

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	PHOS- PHOROUS TOTAL (MG/L AS P) (00665)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	DATE	TIME	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	PHOS- PHOROUS TOTAL (MG/L AS P) (00665)	SEDI- MENT, SUS- PENDE (MG/L) (80154)
MAR 1987					JUL 1987				
05...	1545	58	0.180	18	14...	1400	10	0.320	33
APR					21...	0930	15	0.360	43
14...	1030	57	0.120	34	21...	1500	15	0.180	6
20...	1430	45	0.070	41	22...	1400	12	0.300	39
22...	1120	89	0.090	46	31...	1030	43	0.420	18
23...	1410	145	0.080	23	AUG				
24...	1555	164	0.160	34	07...	1500	3.0	0.120	8
29...	1200	59	0.180	41	09...	1400	5.6	0.350	34
MAY					10...	1500	4.5	0.290	43
06...	1400	36	0.170	30	18...	1600	15	--	42
29...	1000	39	0.120	27	27...	0900	8.7	0.280	--
31...	1415	64	0.140	24	28...	1600	15	0.240	--
JUN					SEP				
01...	1430	61	0.200	30	02...	1130	9.5	0.060	9
09...	1500	21	0.040	29	15...	1300	6.9	0.100	--
20...	1146	15	0.190	43	15...	1330	6.9	--	12
22...	1130	17	0.230	34	16...	1401	11	0.120	--
23...	1400	15	0.190	48	17...	1030	33	0.210	19
24...	1300	15	0.240	69	17...	1430	33	0.180	24
29...	1600	15	0.090	20	18...	1100	21	0.200	21
JUL					19...	0730	20	--	4
01...	1305	13	0.190	31	21...	1100	21	0.140	20

STREAMS TRIBUTARY TO LAKE MICHIGAN

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	PHOS- PHOROUS TOTAL (MG/L AS P) (00665)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	DATE	TIME	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	PHOS- PHOROUS TOTAL (MG/L AS P) (00665)	SEDI- MENT, SUS- PENDED (MG/L) (80154)
OCT 1987					APR 1988				
16...	1130	9.2	--	16	12...	1325	39	0.180	34
NOV					25...	1500	135	0.080	22
04...	1030	17	0.120	29	27...	0615	83	--	46
30...	1450	31	0.100	9	MAY				
DEC					10...	1330	28	--	49
22...	1530	17	0.060	12	JUN				
MAR 1988					02...	1600	54	0.170	31
02...	1325	45	0.350	14	06...	1440	30	0.280	--
02...	1705	45	0.360	15	06...	1518	30	--	40
03...	0830	54	0.360	17	08...	1415	23	0.480	--
03...	1415	54	0.360	14	20...	1034	15	0.190	--
04...	1045	46	0.330	12	20...	1130	15	--	25
04...	1330	46	0.320	10	20...	1147	15	--	147
05...	1710	46	0.240	10	27...	1134	14	0.340	--
06...	1235	61	0.250	11	JUL				
07...	1050	89	0.300	15	05...	1147	12	--	83
07...	1540	89	--	31	06...	1147	13	0.370	--
08...	0850	136	0.270	16	11...	1226	10	--	29
08...	1420	136	0.250	16	11...	1249	10	0.250	--
09...	0935	163	0.220	10	18...	1019	8.7	0.340	--
09...	1340	163	0.220	10	18...	1222	8.7	--	31
10...	1400	153	0.190	8	25...	1213	7.6	0.180	26
11...	1100	142	0.190	6	AUG				
12...	1400	123	--	7	01...	1213	43	0.630	--
14...	1100	68	--	6	01...	1220	43	--	66
15...	1340	55	0.160	6	05...	1300	9.1	0.210	38
17...	1550	51	--	3	08...	1240	10	0.450	47
21...	1120	31	0.110	4	15...	1200	7.8	0.240	24
25...	1000	54	0.090	0	22...	1215	9.1	0.230	35
29...	0900	58	0.130	11	29...	1215	11	0.230	21
29...	1515	58	0.120	12	SEP				
30...	1400	55	0.120	13	07...	0945	5.6	0.030	7
APR					19...	1100	20	0.020	5
03...	1430	36	--	22	20...	1400	17	0.360	--
04...	1320	36	--	25	22...	1445	24	--	21
05...	0930	37	--	28	22...	1450	24	0.410	--
06...	1350	37	0.280	148	24...	1050	12	0.350	24
08...	1330	36	0.160	32					

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	.61	1.9	2.1	4.7	4.7	1.0	1.7	.30
2	---	---	---	---	.69	2.2	1.8	4.4	4.4	1.1	.47	.24
3	---	---	---	---	.74	2.6	2.0	3.9	3.4	1.1	.28	.21
4	---	---	---	---	.74	2.8	2.1	3.5	2.6	1.0	.23	.19
5	---	---	---	---	.75	2.9	2.3	3.1	2.2	1.0	.15	.17
6	---	---	---	---	.75	3.8	2.4	2.9	2.4	1.2	.04	.15
7	---	---	---	---	.84	5.8	2.5	2.8	1.9	1.3	.06	.15
8	---	---	---	---	.84	8.2	2.5	2.8	1.8	1.3	.44	.17
9	---	---	---	---	.85	7.2	2.5	2.7	1.6	1.2	.47	.17
10	---	---	---	---	.85	5.1	2.5	2.6	1.4	1.1	.50	.22
11	---	---	---	---	.86	4.6	2.9	4.2	1.5	.94	.46	.23
12	---	---	---	---	.91	3.6	3.3	3.0	1.5	.90	.46	.22
13	---	---	---	---	1.0	2.8	3.4	2.5	1.2	.96	.48	.20
14	---	---	---	---	.92	2.3	5.3	3.1	1.2	.90	.60	.22
15	---	---	---	---	.79	1.9	6.6	2.5	1.0	.91	1.0	.23
16	---	---	---	---	.88	1.8	7.5	2.1	1.1	.89	2.8	.46
17	---	---	---	---	.80	1.8	7.5	1.7	1.3	.87	2.5	1.9
18	---	---	---	---	.80	2.0	6.7	1.5	1.4	.87	1.7	1.0
19	---	---	---	---	.81	2.6	5.7	2.0	1.8	.83	1.3	.29
20	---	---	---	---	.90	2.8	5.0	2.1	1.7	1.5	1.1	.46
21	---	---	---	---	.95	3.0	4.6	1.9	1.5	1.0	.93	1.0
22	---	---	---	---	1.1	3.3	10	1.7	1.7	.97	.79	1.2
23	---	---	---	---	1.2	3.5	10	1.5	1.9	.71	.65	.88
24	---	---	---	---	1.2	3.5	14	1.5	2.6	.39	.75	.56
25	---	---	---	---	1.2	3.8	13	1.5	2.2	.22	.77	.53
26	---	---	---	---	1.3	3.8	10	1.8	1.7	.26	.82	.51
27	---	---	---	---	1.3	3.5	8.5	2.0	1.3	.28	.89	.41
28	---	---	---	---	1.3	3.1	7.2	2.7	.94	.32	1.5	.31
29	---	---	---	---	---	3.2	6.5	2.8	.87	.68	.89	.29
30	---	---	---	---	---	2.6	5.4	2.3	.92	.58	.51	.29
31	---	---	---	---	---	2.2	---	4.3	---	2.0	.35	---
TOTAL	---	---	---	---	25.88	104.2	165.8	82.1	55.73	28.28	25.59	13.16
MEAN	---	---	---	---	.92	3.4	5.5	2.6	1.9	.91	.83	.44
MAX	---	---	---	---	1.3	8.2	14	4.7	4.7	2.0	2.8	1.9
MIN	---	---	---	---	.61	1.8	1.8	1.5	.87	.22	.04	.15

STREAMS TRIBUTARY TO LAKE MICHIGAN

04073468 GREEN LAKE INLET AT COUNTY TRUNK HIGHWAY A NEAR GREEN LAKE, 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	.35	2.3	.49	.28	.90	.55	1.5	3.9	.52	.46	.39	.06
2	.32	2.2	.46	.23	.93	1.6	2.3	3.6	.74	.45	.46	.05
3	.29	1.9	.48	.22	.88	2.2	6.8	3.3	.69	.45	.89	.28
4	.23	1.3	.39	.21	.79	1.4	7.2	3.1	.66	.45	1.5	.86
5	.18	.94	.37	.19	.66	1.2	9.3	3.0	.60	.50	.82	.23
6	.31	.76	.35	.17	.63	1.9	9.4	2.7	.64	.42	.25	.12
7	.47	.65	.53	.15	.60	4.9	8.1	2.6	.49	.36	.14	.07
8	.46	.81	.74	.14	.57	6.1	7.1	2.6	.33	.25	1.0	.06
9	.39	.81	1.3	.14	.51	4.6	6.1	3.0	.25	.26	2.2	.05
10	.31	.70	1.5	.12	.45	3.4	5.2	2.8	.29	.27	.63	.03
11	.29	.65	1.4	.15	.40	2.4	4.7	2.5	.27	.24	.40	.03
12	.25	.65	1.1	.17	.38	2.3	4.1	2.2	.26	.18	.22	.04
13	.21	.65	.81	.17	.36	1.6	3.2	2.0	.36	.13	.34	.04
14	.19	.65	.68	.16	.31	1.1	2.5	1.9	.31	.13	.75	.03
15	.19	.74	.53	.16	.32	.87	2.0	1.6	.28	.61	.37	.03
16	.39	2.2	.38	.15	.31	.62	1.7	1.5	.24	2.0	.29	.03
17	.74	7.6	.50	.16	.29	.45	1.3	1.5	.22	.37	.17	.03
18	.74	4.6	.49	.19	.28	.37	1.1	1.3	.17	.85	.11	.09
19	.68	2.6	.44	.20	.27	.36	.96	1.2	.15	.60	.10	.14
20	.60	1.3	.46	.25	.23	.33	.81	1.1	.72	.35	1.2	.15
21	.54	.64	.53	.21	.20	.34	.68	.97	.66	.39	.60	.15
22	.48	.37	.55	.21	.19	.43	.79	.85	.57	.27	.46	3.7
23	.40	.49	.55	.19	.20	.60	1.1	.81	.33	.19	.41	1.7
24	.30	.49	.58	.18	.19	.77	1.3	.71	.35	.19	.43	1.0
25	.25	.49	.58	.18	.18	1.1	1.7	.66	.26	.21	.27	.65
26	.41	.46	.55	.17	.17	.84	2.7	.63	.22	.22	.23	.42
27	.54	.41	.49	.17	.18	.66	5.5	.56	.28	.22	.25	.25
28	.45	.63	.49	.18	.17	1.0	5.2	.50	.77	.24	.18	.16
29	.35	.99	.45	.23	.22	1.8	5.0	.45	.83	.24	.18	.11
30	.33	.99	.42	.59	---	1.9	4.5	.41	.53	.26	.12	.08
31	.59	---	.36	1.3	---	1.7	---	.47	---	.25	.11	---
TOTAL	12.23	39.97	18.95	7.22	11.77	49.39	113.84	54.42	12.99	12.01	15.47	10.64
MEAN	.39	1.3	.61	.23	.41	1.6	3.8	1.8	.43	.39	.50	.35
MAX	.74	7.6	1.5	1.3	.93	6.1	9.4	3.9	.83	2.0	2.2	3.7
MIN	.18	.37	.35	.12	.17	.33	.68	.41	.15	.13	.10	.03

WTR YR 1988 TOTAL 358.90 MEAN .98 MAX 9.4 MIN .03

PHOSPHORUS, TOTAL, POUNDS PER DAY, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	8.1	36	14	44	61	13	82	3.9
2	---	---	---	---	9.4	41	12	43	49	13	24	3.2
3	---	---	---	---	10	50	13	40	31	13	15	2.6
4	---	---	---	---	10	56	13	36	20	12	13	2.3
5	---	---	---	---	10	57	13	34	14	13	8.8	2.0
6	---	---	---	---	11	65	13	32	12	19	2.4	1.6
7	---	---	---	---	12	84	13	26	8.1	28	2.2	1.6
8	---	---	---	---	12	104	12	20	6.4	27	13	2.1
9	---	---	---	---	12	86	11	14	4.8	24	9.9	2.6
10	---	---	---	---	13	57	11	11	4.0	22	7.2	4.0
11	---	---	---	---	13	49	14	20	4.4	18	4.6	4.1
12	---	---	---	---	14	35	18	19	4.4	17	3.3	3.9
13	---	---	---	---	15	26	22	17	3.7	18	3.8	3.6
14	---	---	---	---	14	20	37	19	3.7	17	5.9	3.8
15	---	---	---	---	13	16	48	15	3.3	19	12	3.8
16	---	---	---	---	14	14	55	13	3.2	18	39	7.4
17	---	---	---	---	13	12	55	11	3.5	17	37	33
18	---	---	---	---	13	12	40	11	5.6	16	27	22
19	---	---	---	---	14	16	26	16	11	15	21	19
20	---	---	---	---	15	17	18	18	15	27	19	14
21	---	---	---	---	16	17	17	16	17	23	17	17
22	---	---	---	---	19	19	42	13	20	18	15	25
23	---	---	---	---	22	19	68	11	16	13	13	18
24	---	---	---	---	21	19	126	10	18	9.1	14	11
25	---	---	---	---	22	21	119	11	16	6.5	13	10
26	---	---	---	---	23	21	94	14	13	8.9	13	9.2
27	---	---	---	---	23	20	77	16	10	11	13	7.0
28	---	---	---	---	24	18	65	23	7.9	14	20	5.1
29	---	---	---	---	---	20	57	25	7.8	32	11	4.7
30	---	---	---	---	---	17	49	23	9.7	27	6.6	4.5
31	---	---	---	---	---	14	---	49	---	94	4.6	---
TOTAL	---	---	---	---	415.5	1058	1172	670	403.5	622.5	490.3	252.0
MEAN	---	---	---	---	15	34	39	22	13	20	16	8.4
MAX	---	---	---	---	24	104	126	49	61	94	82	33
MIN	---	---	---	---	8.1	12	11	10	3.2	6.5	2.2	1.6

STREAMS TRIBUTARY TO LAKE MICHIGAN

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

PHOSPHORUS, TOTAL, POUNDS PER DAY, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.4	24	14	2.8	13	26	29	23	3.8	7.2	7.2	4.0
2	4.7	12	11	2.3	12	79	43	19	9.4	6.2	7.0	3.7
3	4.1	11	10	2.2	12	106	123	16	8.0	5.5	11	16
4	3.0	10	6.9	2.1	10	80	175	14	8.1	4.8	16	34
5	2.2	9.1	5.6	1.9	8.3	64	229	12	7.9	4.8	9.3	5.9
6	2.8	7.4	4.5	1.7	7.7	84	182	10	9.2	4.4	4.4	1.8
7	4.4	6.4	5.7	1.5	7.1	139	115	9.1	11	4.2	3.6	.67
8	5.6	7.5	8.1	1.4	6.6	190	75	12	12	3.2	20	.55
9	4.9	7.1	15	1.4	5.7	194	62	18	11	3.6	39	.45
10	3.8	5.8	17	1.2	4.9	161	53	17	11	4.2	13	.34
11	3.5	5.0	17	1.5	4.2	145	49	15	8.8	4.1	10	.27
12	3.0	4.7	14	1.7	3.9	121	43	13	7.3	3.9	6.9	.37
13	2.4	4.4	11	1.7	3.9	84	37	12	8.4	3.7	9.1	.40
14	2.2	4.1	9.6	1.6	3.6	61	31	12	6.7	4.2	17	.34
15	2.1	3.8	7.9	1.6	3.9	48	27	10	5.6	17	7.5	.32
16	2.8	6.8	5.9	1.5	3.9	42	24	10	4.5	47	6.5	.35
17	4.8	27	7.2	1.6	3.9	39	20	9.8	3.9	8.2	4.2	.33
18	5.4	20	6.6	1.9	3.9	31	18	8.9	2.8	18	2.9	.80
19	6.1	15	5.6	2.0	3.9	26	17	8.6	2.3	12	2.7	13
20	6.6	9.4	5.3	2.5	3.6	21	15	7.8	3.8	6.7	27	14
21	6.3	5.9	5.8	2.1	3.2	18	13	7.0	5.2	7.0	10	9.1
22	5.8	4.4	5.6	2.1	3.2	19	13	6.2	12	4.5	6.3	152
23	5.0	6.2	5.5	1.9	3.6	21	14	6.1	6.1	3.0	5.8	57
24	3.9	6.6	5.8	1.8	3.6	21	13	5.4	4.7	2.9	6.6	32
25	3.4	7.1	5.8	1.8	3.6	27	13	5.1	2.6	3.0	4.4	22
26	5.2	7.1	5.5	1.7	3.6	26	20	4.9	1.8	3.2	4.0	17
27	6.6	6.7	4.9	1.7	3.9	27	45	4.5	4.0	3.3	4.7	12
28	5.7	9.5	4.9	1.8	4.2	31	41	4.1	13	3.8	3.7	9.4
29	4.8	14	4.5	2.8	9.0	39	36	3.7	16	4.0	4.1	7.1
30	4.3	16	4.2	8.5	---	35	30	3.4	9.3	4.5	3.7	6.1
31	5.6	---	3.6	22	---	33	---	3.4	---	4.6	4.7	---
TOTAL	136.4	284.0	244.0	84.3	163.9	2038	1605	311.0	220.2	216.7	282.3	421.29
MEAN	4.4	9.5	7.9	2.7	5.7	66	53	10	7.3	7.0	9.1	14
MAX	6.6	27	17	22	13	194	229	23	16	47	39	152
MIN	2.1	3.8	3.6	1.2	3.2	18	13	3.4	1.8	2.9	2.7	.27

WTR YR 1988 TOTAL 6007.09 MEAN 16 MAX 229 MIN .27

STREAMS TRIBUTARY TO LAKE MICHIGAN

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. 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.--90 years, 1,124 ft³/s, 11.39 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, 2,540 ft³/s, Apr. 6, gage height, 11.97 ft, but may have been more on Mar. 10 during period of ice effect; maximum gage height, 12.72 ft, Mar. 10 (backwater from ice); minimum discharge, 210 ft³/s, June 27, gage height, 7.30 ft.

RATING TABLE (gage height, in feet, and discharge in cubic feet per second).
(Stage-discharge relation affected by ice Dec. 18 to Mar. 13.)

7.3	210	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 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1010	971	1330	1100	800	860	2200	1470	483	311	354	459
2	1000	1010	1350	1000	840	900	2220	1440	506	318	334	446
3	929	1030	1370	960	880	980	2350	1400	477	331	327	465
4	932	1040	1360	920	860	1100	2440	1350	495	330	333	449
5	919	1040	1310	880	860	1200	2490	1240	489	319	412	409
6	868	1020	1400	820	840	1400	2530	1110	460	308	433	422
7	806	1020	1440	780	840	1800	2520	1040	448	294	432	436
8	781	1030	1410	760	840	2000	2490	1020	439	296	457	451
9	804	1020	1420	740	840	2400	2470	1040	372	298	424	423
10	779	1020	1420	720	840	2500	2440	1050	396	309	414	395
11	759	1020	1430	700	820	2500	2400	1000	414	318	427	386
12	752	1030	1440	680	820	2400	2360	1010	404	323	422	393
13	736	1030	1440	680	800	2400	2310	996	408	328	427	365
14	740	1020	1440	680	800	2380	2260	931	395	344	444	361
15	738	1020	1390	680	800	2290	2220	914	381	340	440	355
16	734	1030	1220	680	800	2230	2160	881	330	413	429	353
17	777	1100	1170	680	800	2200	2090	836	321	414	415	377
18	805	1150	1100	680	800	2170	2010	796	321	441	411	389
19	801	1180	1300	680	800	2150	1920	801	339	471	407	440
20	800	1190	1400	700	780	2110	1850	777	330	485	431	494
21	797	1160	1500	720	780	2070	1770	760	300	498	455	490
22	803	1130	1500	700	780	2030	1710	738	310	484	468	622
23	802	1190	1600	700	780	2020	1670	699	288	477	504	748
24	818	1220	1600	700	780	2000	1640	653	294	484	504	898
25	830	1220	1500	680	780	2010	1600	629	311	478	494	992
26	851	1200	1500	680	780	2010	1560	651	241	445	474	1030
27	870	1200	1500	680	780	2000	1550	618	217	450	480	1050
28	866	1210	1400	680	800	2000	1520	564	262	443	490	1030
29	908	1240	1400	680	820	2110	1510	549	273	414	488	1010
30	941	1300	1300	700	---	2160	1490	502	297	387	468	1050
31	936	---	1200	740	---	2190	---	481	---	346	471	---
TOTAL	25892	33041	43140	23180	23540	60570	61750	27946	11001	11897	13469	17188
MEAN	835	1101	1392	748	812	1954	2058	901	367	384	434	573
MAX	1010	1300	1600	1100	880	2500	2530	1470	506	498	504	1050
MIN	734	971	1100	680	780	860	1490	481	217	294	327	353
CFSM	.62	.82	1.04	.56	.61	1.46	1.54	.67	.27	.29	.32	.43
IN.	.72	.92	1.20	.64	.65	1.68	1.71	.78	.31	.33	.37	.48

CAL YR 1987 TOTAL 425089 MEAN 1165 MAX 2390 MIN 604 CFSM .87 IN. 11.80
WTR YR 1988 TOTAL 352614 MEAN 963 MAX 2530 MIN 217 CFSM .72 IN. 9.79

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 periods listed in rating tables below. Records good except those for ice-affected periods, which are fair.

AVERAGE DISCHARGE.--21 years (water years 1967-79, 1981-88), 453 ft³/s, 13.29 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, 10.06 ft, Dec. 20, 21, 24, 1984, backwater from ice; minimum discharge, 119 ft³/s, Nov. 8, 1976, gage height, 7.24 ft.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,160 ft³/s, Apr. 7, gage height, 9.22 ft; minimum discharge, 132 ft³/s, July 8, gage height, 7.29 ft.

RATING TABLES (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Dec. 5, 6, and Dec. 17 to Apr. 1.)

Oct. 1 to April 1

Apr. 2 to Sept. 30

7.5	207	8.5	640	7.3	135	8.5	647
8.0	390	9.0	1,000	7.5	197	9.0	973
				8.0	397	9.5	1,420

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	229	303	380	310	290	290	820	435	216	166	193	217
2	228	320	348	270	290	280	750	422	213	159	181	216
3	227	345	355	280	270	280	879	402	211	154	181	217
4	222	392	345	290	260	290	1020	385	208	149	177	259
5	222	386	360	270	260	300	1030	329	203	146	185	254
6	228	367	360	250	260	310	1110	305	192	141	178	247
7	241	348	346	250	260	320	1160	295	187	137	172	235
8	248	352	337	240	260	350	1120	306	184	138	195	235
9	300	352	360	230	260	370	1060	393	191	201	222	250
10	285	325	375	230	270	390	998	429	178	220	205	237
11	250	318	383	220	260	370	925	407	170	199	196	229
12	231	318	431	220	270	360	856	402	162	180	212	225
13	228	304	428	220	260	350	784	427	157	170	234	228
14	226	299	428	230	260	340	709	435	150	165	275	208
15	227	294	413	240	260	330	663	418	145	164	247	195
16	237	312	352	250	270	330	624	393	143	235	214	199
17	316	446	350	250	270	330	580	368	144	365	223	261
18	374	544	340	250	280	330	546	349	141	276	248	236
19	339	489	360	240	290	330	520	330	155	231	254	263
20	318	445	390	250	270	330	473	320	184	208	238	420
21	317	367	400	250	260	340	429	347	165	247	224	408
22	328	455	400	250	260	350	412	344	177	353	216	364
23	331	535	410	250	260	370	425	335	168	322	255	351
24	337	509	360	260	260	420	441	318	155	277	258	332
25	338	450	330	260	270	560	481	295	153	259	251	316
26	334	425	320	250	280	720	464	283	150	241	251	305
27	350	406	320	250	290	680	468	240	147	230	257	284
28	343	380	330	260	290	720	495	230	161	222	258	267
29	325	363	340	260	290	860	486	235	202	207	242	260
30	314	396	320	270	---	960	464	235	184	200	229	262
31	306	---	330	280	---	880	---	225	---	191	220	---
TOTAL	8799	11545	11301	7830	7830	13440	21192	10637	5196	6553	6891	7980
MEAN	284	385	365	253	270	434	706	343	173	211	222	266
MAX	374	544	431	310	290	960	1160	435	216	365	275	420
MIN	222	294	320	220	260	280	412	225	141	137	172	195
CFSM	.61	.83	.79	.55	.58	.94	1.53	.74	.37	.46	.48	.57
IN.	.71	.93	.91	.63	.63	1.08	1.70	.85	.42	.53	.55	.64

CAL YR 1987	TOTAL 119713	MEAN 328	MAX 591	MIN 187	CFSM .71	IN. 9.62
WTR YR 1988	TOTAL 119194	MEAN 326	MAX 1160	MIN 137	CFSM .70	IN. 9.58

STREAMS TRIBUTARY TO LAKE MICHIGAN

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 1987 TO SEPTEMBER 1988

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)	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)
OCT 1987									
15...	1440	--	227	--	8.50	9.5	120	26	13
NOV									
17...	1215	--	445	215	8.30	7.0	100	22	11
DEC									
16...	1125	--	337	230	8.30	0.0	100	23	11
JAN 1988									
21...	1145	290	--	263	7.80	0.0	120	27	13
FEB									
22...	1115	260	--	285	7.80	0.0	130	30	14
MAR									
15...	1115	330	--	260	8.10	0.0	120	27	13
MAY									
03...	1200	--	406	180	8.43	14.5	89	20	9.5
31...	1345	--	225	223	8.60	25.0	120	26	13
JUN									
28...	1050	--	158	235	8.30	18.5	130	27	14
JUL									
26...	1215	--	239	210	8.60	21.5	110	24	12
AUG									
16...	1050	--	211	215	8.40	24.0	120	27	13
SEP									
15...	1105	--	190	245	8.50	13.5	120	26	14

DATE	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)	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)
OCT 1987									
15...	2.6	5	0.1	1.1	9.6	4.4	0.30	5.0	127
NOV									
17...	2.2	5	0.1	1.0	15	3.1	0.20	5.4	117
DEC									
16...	2.4	5	0.1	1.0	16	2.8	0.20	8.5	118
JAN 1988									
21...	2.5	4	0.1	1.0	12	2.8	0.20	12	143
FEB									
22...	2.7	4	0.1	1.5	10	2.6	0.20	14	144
MAR									
15...	2.7	5	0.1	0.10	10	2.4	0.20	13	137
MAY									
03...	2.1	5	0.1	0.80	12	2.2	0.20	3.5	111
31...	2.5	4	0.1	0.90	9.5	2.6	0.30	6.3	128
JUN									
28...	2.7	4	0.1	0.70	9.9	2.5	0.30	5.9	133
JUL									
26...	2.2	4	0.1	0.60	10	2.2	0.10	8.1	141
AUG									
16...	2.4	4	0.1	0.70	9.3	10	0.10	10	137
SEP									
15...	2.5	4	0.1	1.0	8.8	2.5	<0.10	7.1	134

STREAMS TRIBUTARY TO LAKE MICHIGAN
04075050 WOLF RIVER NEAR LANGLADE, WI--CONTINUED

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	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, AMMONIA TOTAL (MG/L AS N) (00610)	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)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) (01042)
OCT 1987									
15...	131	0.17	77.8	<0.010	<1	<100	<1	<1	5
NOV									
17...	116	0.16	141	0.020	<1	<100	1	1	1
DEC									
16...	122	0.16	107	<0.010	<1	--	--	--	--
JAN 1988									
21...	138	0.19	112	0.060	<1	<100	<1	2	1
FEB									
22...	149	0.20	101	0.060	<1	<100	<1	1	3
MAR									
15...	136	0.19	122	0.040	4	<100	<1	2	4
MAY									
03...	99	0.15	122	0.010	<1	<100	--	--	--
31...	126	0.17	77.8	--	1	--	--	<1	--
JUN									
28...	133	0.18	56.7	0.010	1	<100	<1	1	2
JUL									
26...	120	0.19	91.0	0.020	1	<100	--	--	--
AUG									
16...	139	0.19	78.0	<0.010	2	--	--	--	--
SEP									
15...	130	0.18	68.7	<0.010	1	<100	3	<1	2

DATE	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)	CYANIDE TOTAL (MG/L AS CN) (00720)
OCT 1987									
15...	90	8	10	<0.10	1	<1	<1	<10	--
NOV									
17...	230	<5	40	<0.10	<1	<1	<1	<10	<0.010
DEC									
16...	--	--	--	<0.10	--	<1	--	--	<0.010
JAN 1988									
21...	260	<5	30	<0.10	1	<1	1	<10	<0.010
FEB									
22...	250	<5	50	<0.10	5	<1	<1	<10	<0.010
MAR									
15...	310	<5	30	<0.10	2	<1	1	10	<0.010
MAY									
03...	--	--	--	<0.10	--	<1	--	--	<0.010
31...	--	--	--	<0.10	--	<1	--	--	<0.010
JUN									
28...	150	<5	80	<0.10	6	<1	1	<10	<0.010
JUL									
26...	--	--	--	<0.10	--	<1	--	--	<0.010
AUG									
16...	--	--	--	<0.10	--	<1	--	--	<0.010
SEP									
15...	810	31	20	<0.10	1	<1	<1	<10	<0.010

STREAMS TRIBUTARY TO LAKE MICHIGAN

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.

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: Oct. 3, 7-8, 10-13, 19-31, Nov. 5-15, 17-28, Nov. 30 to Dec. 1, and ice period, Dec. 17 to Mar. 31. Records good except those for estimated daily discharges, which are fair. Minor regulation by power dam upstream.

AVERAGE DISCHARGE.--79 years (1907-8, 1910-88), 762 ft³/s, 12.68 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, 91 ft³/s, Dec. 22, 1939, gage height, 4.67 ft, site and datum then in use, result of ice storage.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,490 ft³/s, Apr. 5, gage height 10.53 ft; minimum daily, 253 ft³/s June 27.

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	359	558	800	540	440	430	1530	822	397	349	361	340
2	427	550	774	450	460	440	1550	755	368	342	363	343
3	380	625	594	400	450	430	1730	701	326	317	381	316
4	324	718	491	430	430	440	1990	710	341	304	386	313
5	374	720	531	470	410	460	1840	669	343	284	422	332
6	382	700	588	450	430	490	1810	580	342	276	456	412
7	400	660	692	440	420	540	1730	534	330	291	389	417
8	420	620	735	420	420	520	1580	613	335	293	331	368
9	416	600	699	410	420	580	1600	603	276	305	351	421
10	440	660	719	410	410	620	1420	690	403	328	452	345
11	520	580	718	400	410	680	1300	737	345	439	468	327
12	440	500	704	400	400	720	1240	732	326	335	464	333
13	400	600	727	410	400	700	1140	671	261	324	526	317
14	397	520	683	420	410	640	1050	705	313	335	675	279
15	404	500	641	440	410	620	990	627	332	352	535	305
16	411	571	721	450	410	620	918	650	325	465	575	329
17	464	760	700	420	430	620	878	635	319	616	477	340
18	622	980	660	430	430	660	839	535	304	706	523	388
19	720	1200	640	440	420	640	835	596	335	680	514	457
20	600	840	800	460	410	620	803	541	315	450	470	515
21	580	640	760	450	440	620	745	481	332	549	481	684
22	620	580	760	440	480	620	709	563	434	411	454	665
23	620	760	780	460	470	680	686	570	314	615	487	454
24	640	840	800	470	440	740	748	558	307	535	561	542
25	620	780	700	440	440	820	806	498	294	456	492	468
26	600	720	520	460	450	1000	828	446	292	461	409	361
27	600	600	460	440	450	1200	859	451	253	449	377	446
28	680	660	500	430	440	1100	909	443	312	414	423	432
29	620	730	600	440	430	1200	953	420	328	370	448	358
30	560	780	580	430	---	1300	890	403	336	369	409	400
31	540	---	600	460	---	1400	---	401	---	368	367	---
TOTAL	15580	20552	20677	13610	12460	22150	34906	18340	9838	12788	14027	12007
MEAN	503	685	667	439	430	715	1164	592	328	413	452	400
MAX	720	1200	800	540	480	1400	1990	822	434	706	675	684
MIN	324	500	460	400	400	430	686	401	253	276	331	279
CFSM	.62	.84	.82	.54	.53	.88	1.43	.73	.40	.51	.55	.49
IN.	.71	.94	.94	.62	.57	1.01	1.59	.84	.45	.58	.64	.55

CAL YR 1987 TOTAL 216153 MEAN 592 MAX 1200 MIN 324 CFSM .73 IN. 9.85
WTR YR 1988 TOTAL 206935 MEAN 565 MAX 1990 MIN 253 CFSM .69 IN. 9.43

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 table below. Records good except those for ice-affected period, which is fair. Gage-height telemeter and data-collection platform at station.

AVERAGE DISCHARGE.--92 years, 1,761 ft³/s, 10.58 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, 4,350 ft³/s Apr. 9, gage height, 7.70 ft; minimum discharge, 404 ft³/s, part of each day, July 8-9, gage height, 0.08 ft.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Dec. 16 to Apr. 1.)

0.1	410	5.0	2,230
1.0	680	6.0	2,760
2.0	1,000	7.0	3,450
4.0	1,740	8.0	4,900

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	752	1110	1770	980	880	840	3100	2080	870	548	541	670
2	746	1100	1850	900	900	840	3280	2040	839	557	523	655
3	718	1100	1900	820	900	860	3460	1950	833	550	503	631
4	725	1120	1900	800	920	860	3680	1840	815	522	466	625
5	739	1100	1730	780	900	860	3910	1740	778	503	445	606
6	719	1090	1480	760	880	880	4080	1590	765	496	454	593
7	670	1130	1410	740	880	900	4210	1450	750	451	516	597
8	656	1190	1370	720	880	960	4290	1420	743	416	573	574
9	673	1190	1340	700	880	1100	4330	1380	693	413	611	530
10	657	1160	1350	680	880	1400	4300	1370	623	484	606	489
11	660	1150	1420	680	880	1700	4220	1450	603	473	560	444
12	673	1130	1530	680	880	1900	4080	1530	566	453	518	506
13	683	1110	1550	680	880	2100	3900	1540	585	507	515	529
14	703	1060	1500	700	880	2200	3690	1450	587	527	551	516
15	728	1020	1450	700	880	2300	3470	1390	556	519	550	510
16	749	1020	1200	720	880	2300	3280	1330	501	578	651	521
17	795	1090	1100	740	900	2200	3110	1270	459	591	684	533
18	828	1230	1100	760	900	2200	2950	1230	462	611	640	491
19	889	1430	1200	760	900	2200	2800	1200	466	655	612	500
20	944	1650	1200	780	900	2200	2640	1180	445	691	567	543
21	996	1740	1100	820	900	2100	2470	1130	445	748	537	578
22	1020	1760	1100	820	900	2000	2290	1080	442	748	536	697
23	1010	1790	1180	860	880	2000	2090	1030	420	723	599	818
24	970	1750	1200	860	880	2000	1940	995	452	691	628	943
25	958	1580	1200	860	880	2100	1890	978	527	663	632	984
26	950	1520	1200	880	860	2200	1820	948	507	708	651	890
27	1020	1520	1100	880	860	2200	1810	914	503	695	687	862
28	1060	1550	1000	880	860	2300	1860	882	518	661	684	821
29	1110	1590	1000	880	840	2500	1990	854	538	633	674	762
30	1120	1640	1000	880	---	2700	2070	864	547	614	673	742
31	1120	---	1000	880	---	2900	---	892	---	582	675	---
TOTAL	26041	39620	41350	24580	25640	55800	93010	40997	17838	18011	18062	19160
MEAN	840	1321	1334	793	884	1800	3100	1322	595	581	583	639
MAX	1120	1790	1900	980	920	2900	4330	2080	870	748	687	984
MIN	656	1020	1000	680	840	840	1810	854	420	413	445	444
CFSM	.37	.58	.59	.35	.39	.80	1.37	.59	.26	.26	.26	.28
IN.	.43	.65	.68	.40	.42	.92	1.53	.67	.29	.30	.30	.32
CAL YR 1987	TOTAL 454137	MEAN 1244	MAX 2770	MIN 626	CFSM .55	IN. 7.48						
WTR YR 1988	TOTAL 420109	MEAN 1148	MAX 4330	MIN 413	CFSM .51	IN. 6.92						

STREAMS TRIBUTARY TO LAKE MICHIGAN

440654089120500 LAKE MORRIS AT MOUNT MORRIS, WI

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.

DRAINAGE AREA.--8.94 mi².

LAKE-STAGE RECORDS

PERIOD OF RECORD.--June 1983 to current year.

GAGE.--Staff gage read at dam outlet by Henry Pagenkopf and Clair Miller.

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, 5.42 ft, May 15, 16, June 29; minimum observed, 4.80 ft Feb. 8.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	5.36	5.38	---	---
2	---	---	---	---	---	---	---	---	5.38	5.36	---	5.31
3	5.20	5.23	---	---	---	---	---	---	5.38	5.34	---	---
4	---	---	---	---	4.82	---	---	---	5.36	5.32	---	---
5	---	---	---	---	---	---	5.32	---	5.34	5.32	5.50	---
6	---	---	---	---	---	---	---	5.28	5.32	5.30	---	---
7	---	---	---	---	---	---	---	---	5.32	5.30	---	---
8	---	5.10	---	---	4.80	---	---	5.30	5.30	5.28	---	---
9	---	---	4.98	---	---	---	---	---	5.28	5.30	---	5.23
10	---	---	---	---	---	---	---	5.33	5.27	5.30	---	---
11	---	---	---	---	---	---	5.04	5.38	5.26	5.32	---	---
12	5.22	---	---	---	---	---	---	5.36	5.28	5.32	5.26	---
13	---	---	---	---	---	---	---	5.36	5.30	5.33	---	---
14	---	---	4.92	---	---	---	---	5.40	5.32	5.34	---	---
15	---	4.92	---	---	---	---	---	5.42	5.32	5.36	---	5.29
16	---	---	---	---	4.84	---	---	5.42	5.31	5.38	---	---
17	---	---	---	---	---	---	---	5.40	5.32	5.38	---	---
18	---	---	---	4.82	---	---	---	5.38	5.20	5.40	---	---
19	---	5.12	---	---	---	---	---	5.32	5.28	5.38	---	---
20	---	---	---	---	---	---	---	5.34	5.30	5.36	5.40	---
21	5.18	---	---	---	---	5.06	---	5.30	5.32	5.32	---	---
22	---	---	---	---	---	---	---	5.26	5.34	5.32	---	---
23	---	5.02	---	---	---	---	---	5.26	5.37	5.30	---	5.70
24	---	---	4.95	---	4.83	---	---	5.28	5.38	5.30	---	---
25	---	---	---	---	---	---	---	5.30	5.38	5.30	5.40	---
26	---	---	---	---	---	---	---	5.32	5.38	5.31	---	---
27	---	---	---	---	---	5.13	---	5.34	5.38	5.32	---	---
28	5.20	---	---	4.82	---	---	---	5.34	5.40	5.28	5.35	---
29	---	---	4.92	---	---	---	---	5.36	5.42	5.30	---	---
30	---	5.08	---	---	---	---	---	5.38	5.38	5.30	---	5.13
31	---	---	---	---	---	---	---	5.36	---	5.32	---	---

STREAMS TRIBUTARY TO LAKE MICHIGAN

440654089120500 LAKE MORRIS AT MOUNT MORRIS, WI--CONTINUED

WATER-QUALITY RECORDS

PERIOD OF RECORD.--June 1983 to current year.

REMARKS.--Lake sampled near center at a lake depth of about 43 feet. Lake ice-covered during February 24 sampling. Water-quality analyses by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, FEBRUARY 24 TO AUGUST 25, 1988
(Milligrams per liter unless otherwise indicated)

	Feb. 24		Apr. 11		June 24		July 26		Aug. 25	
Depth of sample (ft)	1.5	38.0	1.5	41.5	1.5	40.5	1.5	40.5	1.5	40.5
Specific conductance ($\mu\text{S}/\text{cm}$)	378	413	389	411	322	420	339	424	339	438
pH (units)	7.80	7.10	8.30	7.30	8.60	7.40	8.40	7.10	8.10	6.90
Water temperature ($^{\circ}\text{C}$)	0.0	3.0	11.5	4.0	26.5	5.0	26.5	5.0	23.0	5.0
Color (Pt-Co. scale)	---	---	30	5	---	---	---	---	---	---
Turbidity (NTU)	---	---	1.0	0.50	---	---	---	---	---	---
Secchi-disc (meters)	---	---	1.3	---	4.2	---	2.9	---	3.1	---
Dissolved oxygen	9.3	2.7	11.3	0	8.9	0.2	9.1	0	8.5	0
Hardness, total (as CaCO_3)	---	---	170	200	---	---	---	---	---	---
Calcium, dissolved (Ca)	---	---	37	43	---	---	---	---	---	---
Magnesium, dissolved (Mg)	---	---	19	23	---	---	---	---	---	---
Sodium, dissolved (Na)	---	---	1.6	2.0	---	---	---	---	---	---
Potassium, dissolved (K)	---	---	1.0	1.3	---	---	---	---	---	---
Alkalinity, total (as CaCO_3)	---	---	162	198	---	---	---	---	---	---
Sulfate, dissolved (SO_4)	---	---	12	14	---	---	---	---	---	---
Fluoride, total (as F)	---	---	0.1	0.1	---	---	---	---	---	---
Chloride, dissolved (Cl)	---	---	2.0	3.0	---	---	---	---	---	---
Silica, dissolved (SiO_2)	---	---	7.6	14	---	---	---	---	---	---
Solids, dissolved, at 180°C	---	---	194	230	---	---	---	---	---	---
Nitrogen, nitrite plus nitrate, diss (as N)	---	---	0.61	0.83	---	---	---	---	---	---
Nitrogen, ammonia, diss (as N)	---	---	<0.02	0.03	---	---	---	---	---	---
Nitrogen, ammonia plus organic, total (as N)	---	---	0.70	0.20	---	---	---	---	---	---
Total phosphorus (as P)	---	---	0.022	0.012	0.006	0.130	0.006	0.330	0.012	0.360
Phosphorus, ortho, diss (as P)	---	---	0.004	0.003	---	<0.002	---	0.181	---	0.276
Iron, dissolved (Fe) $\mu\text{g}/\text{L}$	---	---	<100	<100	---	---	---	---	---	---
Manganese, dissolved (Mn) $\mu\text{g}/\text{L}$	---	---	<40	<40	---	---	---	---	---	---
Chlorophyll a, phyto. ($\mu\text{g}/\text{L}$)	---	---	10	---	3	---	4	---	5	---

2-24-88

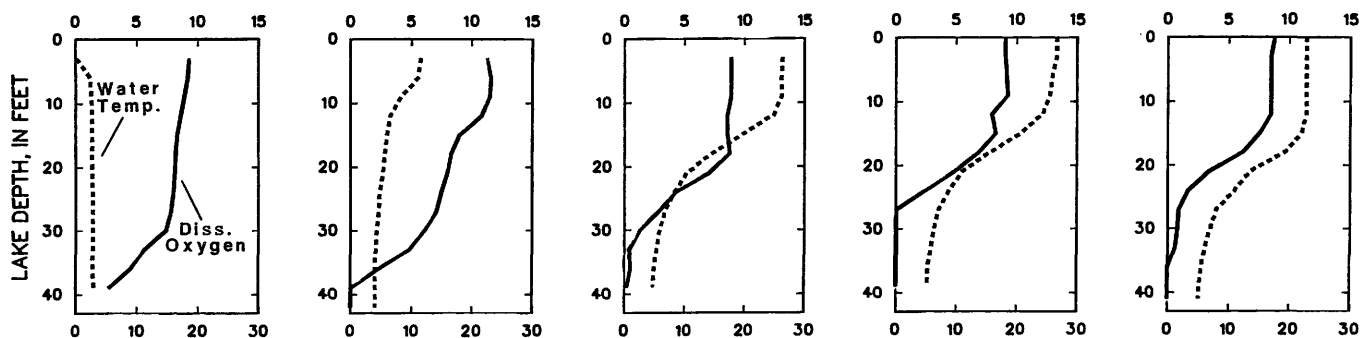
4-11-88

6-24-88

7-26-88

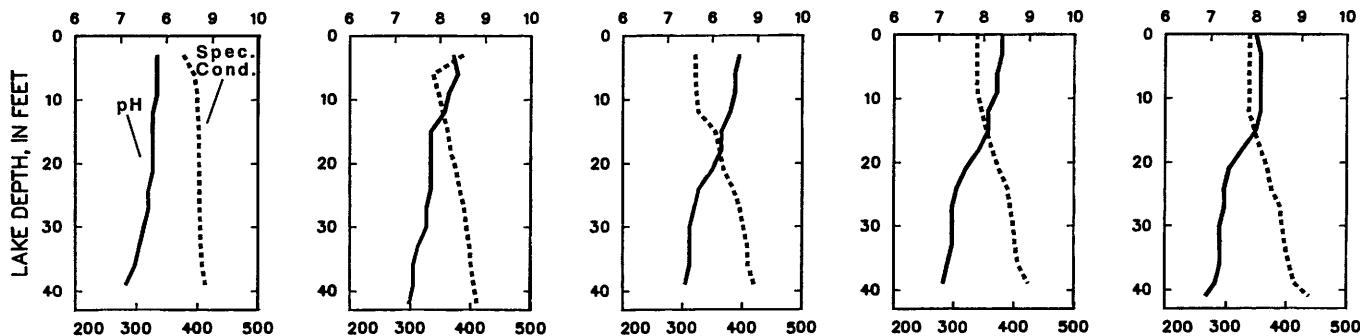
8-25-88

DISSOLVED OXYGEN, IN MILLIGRAMS PER LITER



WATER TEMPERATURE, IN DEGREES CELSIUS

PH, IN STANDARD UNITS



SPECIFIC CONDUCTANCE, IN MICROSIEMENS PER CENTIMETER

STREAMS TRIBUTARY TO LAKE MICHIGAN

04082500 LAKE WINNEBAGO AT OSHKOSH, WI

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.

DRAINAGE AREA.--5,880 mi², at lake outlet at Menasha Dam. Area of Lake Winnebago, 215 mi².

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.

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

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

REMARKS.--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. Oshkosh staff gage gives true level of lake, while Deuchman gage readings are affected by loss of head in the channel between lake and dam. Date-collection platform at station.

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

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 3.23 ft, May 13, local condition due to seiche; minimum, 0.50 ft, Mar. 7.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.54	2.61	2.58	2.28	1.55	.62	1.58	2.92	2.81	2.29	2.15	2.18
2	2.54	2.63	2.56	2.26	1.51	.61	1.61	2.94	2.82	2.27	2.14	2.18
3	2.55	2.63	2.54	2.24	1.47	.59	1.69	2.94	2.78	2.26	2.14	2.23
4	2.49	2.60	2.50	2.22	1.43	.58	1.82	2.95	2.76	2.25	2.14	2.34
5	2.45	2.61	2.52	2.20	1.40	.57	1.89	2.96	2.76	2.23	2.15	2.35
6	2.48	2.60	2.53	2.18	1.36	.56	1.96	2.98	2.76	2.23	2.15	2.33
7	2.50	2.56	2.53	2.15	1.33	.56	2.05	2.96	2.76	2.22	2.14	2.31
8	2.47	2.57	2.51	2.13	1.29	.59	2.07	2.93	2.78	2.21	2.14	2.27
9	2.37	2.55	2.47	2.10	1.26	.63	2.09	2.88	2.69	2.21	2.16	2.29
10	2.45	2.55	2.53	2.08	1.22	.67	2.13	2.99	2.65	2.19	2.15	2.30
11	2.43	2.52	2.49	2.06	1.19	.70	2.20	2.95	2.63	2.20	2.12	2.29
12	2.44	2.54	2.41	2.04	1.15	.73	2.24	2.93	2.62	2.20	2.15	2.27
13	2.44	2.54	2.48	2.02	1.12	.80	2.29	2.94	2.60	2.11	2.13	2.29
14	2.43	2.55	2.46	2.00	1.08	.87	2.34	2.92	2.58	2.14	2.11	2.30
15	2.45	2.54	2.48	---	1.06	.90	2.39	2.83	2.57	2.14	2.15	2.28
16	2.47	2.53	2.42	---	1.03	.94	2.46	2.93	2.58	2.16	2.11	2.23
17	2.51	2.57	2.45	---	1.00	.99	2.47	2.91	2.53	2.19	2.14	2.26
18	2.52	2.60	2.44	---	.97	1.04	2.51	2.88	2.48	2.20	2.32	2.29
19	2.55	2.56	2.42	---	.94	1.09	2.56	2.87	2.47	2.20	2.28	2.28
20	2.52	2.58	2.44	---	.91	1.12	2.58	2.88	2.48	2.19	2.26	2.24
21	2.56	2.59	2.43	---	.88	1.15	2.61	2.89	2.46	2.25	2.27	2.35
22	2.54	2.56	2.41	1.83	.85	1.16	2.68	2.90	2.47	2.23	2.24	2.41
23	2.56	2.56	2.39	1.80	.81	1.19	2.67	2.90	2.45	2.22	2.21	2.52
24	2.55	2.62	2.38	1.78	.78	1.23	2.72	2.90	2.38	2.20	2.22	2.55
25	2.55	2.62	2.38	1.76	.75	1.27	2.73	2.85	2.38	2.23	2.21	2.55
26	2.53	2.60	2.38	1.74	.71	1.31	2.81	2.82	2.38	2.21	2.23	2.56
27	2.56	2.59	2.37	1.71	.69	1.39	2.83	2.82	2.34	2.18	2.20	2.60
28	2.57	2.58	2.36	1.67	.67	1.40	2.86	2.82	2.34	2.18	2.21	2.62
29	2.56	2.56	2.34	1.62	.64	1.45	2.90	2.82	2.35	2.17	2.21	2.54
30	2.56	2.58	2.31	1.58	---	1.52	2.90	2.82	2.31	2.17	2.21	2.56
31	2.58	---	2.28	1.57	---	1.56	---	2.81	---	2.15	2.18	---
MEAN	2.51	2.58	2.44	---	1.07	.96	2.35	2.90	2.57	2.20	2.18	2.36
MAX	2.58	2.63	2.58	---	1.55	1.56	2.90	2.99	2.82	2.29	2.32	2.62
MIN	2.37	2.52	2.28	---	.64	.56	1.58	2.81	2.31	2.11	2.11	2.18

CAL YR 1987 MEAN 2.38 MAX 3.00 MIN .97

STREAMS TRIBUTARY TO LAKE MICHIGAN

04084255 LAKE WINNEBAGO NEAR STOCKBRIDGE, WI

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

DRAINAGE AREA.--5,880 mi², at lake outlet at Menasha Dam. Area of Lake Winnebago, 215 mi².

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, 3.73 ft, Nov. 20, 1985, local condition due to seiche. Minimum observed, 0.30 ft, Mar. 1, 1986.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 3.24 ft, May 12, local condition due to seiche; minimum, 0.49 ft, Mar. 8.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.67	2.56	2.56	2.26	1.53	.59	1.54	2.89	2.79	2.23	2.13	2.19
2	2.56	2.60	2.58	2.23	1.49	.58	1.58	2.90	2.72	2.24	2.15	2.17
3	2.54	2.63	2.48	2.21	1.45	.56	1.71	2.91	2.74	2.24	2.13	2.18
4	2.54	2.68	2.50	2.20	1.41	.55	1.82	2.92	2.74	2.22	2.15	2.24
5	2.53	2.70	2.49	2.18	1.39	.54	1.86	2.94	2.76	2.21	2.21	2.32
6	2.53	2.62	2.47	2.15	1.34	.53	1.94	2.93	2.75	2.20	2.19	2.33
7	2.49	2.55	2.47	2.12	1.30	.53	2.03	2.91	2.73	2.21	2.14	2.32
8	2.46	2.51	2.48	2.10	1.26	.56	2.04	2.90	2.58	2.21	2.13	2.32
9	2.49	2.55	2.58	2.08	1.23	.61	2.07	2.99	2.59	2.18	2.11	2.30
10	2.41	2.50	2.55	2.05	1.20	.64	2.12	2.97	2.62	2.21	2.12	2.26
11	2.45	2.56	2.50	2.03	1.16	.67	2.16	2.93	2.64	2.20	2.12	2.24
12	2.42	2.53	2.62	2.01	1.13	.72	2.22	2.97	2.62	2.13	2.13	2.26
13	2.43	2.52	2.57	2.00	1.09	.79	2.28	2.93	2.61	2.14	2.15	2.29
14	2.44	2.50	2.44	1.97	1.05	.84	2.33	2.89	2.61	2.14	2.18	2.26
15	2.43	2.49	2.36	1.94	1.04	.88	2.42	2.90	2.58	2.09	2.11	2.20
16	2.46	2.51	2.48	1.90	1.00	.92	2.47	2.88	2.50	2.13	2.11	2.16
17	2.57	2.64	2.44	1.88	.97	.97	2.51	2.82	2.46	2.16	2.10	2.24
18	2.55	2.66	2.41	1.85	.93	1.02	2.55	2.83	2.49	2.17	2.14	2.27
19	2.53	2.69	2.39	1.82	.90	1.07	2.58	2.83	2.49	2.18	2.20	2.31
20	2.56	2.66	2.43	1.87	.89	1.10	2.60	2.85	2.45	2.17	2.23	2.42
21	2.60	2.58	2.40	1.84	.84	1.12	2.62	2.85	2.43	2.18	2.20	2.32
22	2.55	2.57	2.38	1.80	.81	1.13	2.55	2.83	2.46	2.19	2.17	2.41
23	2.56	2.60	2.37	1.78	.79	1.17	2.58	2.80	2.40	2.18	2.24	2.55
24	2.55	2.56	2.36	1.75	.75	1.21	2.71	2.77	2.40	2.20	2.31	2.53
25	2.55	2.50	2.36	1.74	.72	1.25	2.75	2.81	2.39	2.18	2.31	2.54
26	2.56	2.53	2.35	1.72	.69	1.33	2.72	2.87	2.31	2.18	2.24	2.53
27	2.61	2.52	2.34	1.68	.66	1.37	2.72	2.83	2.30	2.19	2.22	2.54
28	2.59	2.48	2.33	1.64	.63	1.36	2.85	2.79	2.27	2.19	2.23	2.46
29	2.55	2.55	2.31	1.59	.61	1.45	2.87	2.80	2.23	2.18	2.21	2.47
30	2.54	2.56	2.27	1.55	---	1.51	2.88	2.79	2.22	2.15	2.18	2.52
31	2.52	---	2.27	1.55	---	1.53	---	2.79	---	2.13	2.18	---
MEAN	2.52	2.57	2.44	1.92	1.04	.94	2.34	2.87	2.53	2.18	2.17	2.34
MAX	2.67	2.70	2.62	2.26	1.53	1.53	2.88	2.99	2.79	2.24	2.31	2.55
MIN	2.41	2.48	2.27	1.55	.61	.53	1.54	2.77	2.22	2.09	2.10	2.16
CAL YR 1987	MEAN 2.37	MAX 3.01	MIN .95									
WTR YR 1988	MEAN 2.16	MAX 2.99	MIN .53									

STREAMS TRIBUTARY TO LAKE MICHIGAN

04084445 FOX RIVER AT APPLETON, WI

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.

DRAINAGE AREA.--5,950 mi².

WATER-DISCHARGE RECORDS

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

GAGE.--Acoustical Velocity Meter (AVM) system. Single-path, mid-depth transducer installation. Data are stored using CR-21x datalogger with phone modem connection for daily retrieval.

REMARKS.--Stage-discharge relationship prior to September 30, 1986, is possibly affected by downstream dam gate adjustment, powerhouse operations, and navigation locks. Records prior to September 30, 1986, are based on short-term stage ratings and are considered fair.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 16,300 ft³/s, Oct. 7, 1986; minimum daily, 840 ft³/s, Aug. 17, 1988.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 7,740 ft³/s Apr. 4, stage 6.30 ft; minimum daily, 840 ft³/s, Aug. 17, stage 5.07 ft.

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	2940	2620	5420	3980	5600	3810	6260	3290	1680	920	962	974
2	2610	2690	6140	4140	5480	3740	6300	3300	1550	939	986	948
3	2620	2750	6040	4140	5680	3830	7530	3490	1480	969	981	1110
4	2790	3420	5260	3040	5370	3620	7740	3370	1540	966	973	1340
5	2490	4290	4870	3790	4780	3600	7350	3360	1550	973	985	1070
6	1880	4160	4920	3760	5630	3690	6990	3410	1600	901	997	1030
7	1940	4180	5050	3780	5420	3750	7140	3410	1580	884	922	1070
8	1700	4120	4960	3710	4960	3760	6770	3500	1260	889	943	1130
9	2030	4050	4950	3620	5190	3710	6330	3630	1230	892	937	1040
10	1220	3300	5580	3540	5450	3710	6220	3410	1350	923	918	1020
11	1130	2760	6180	2680	4940	4410	5610	3450	1440	956	926	1030
12	1140	2820	6050	3560	5040	4150	4510	3390	1370	921	975	1020
13	1160	2820	6020	3590	5060	3950	4570	3380	1310	887	979	945
14	1210	2760	5930	3580	4990	3840	4050	3380	1370	871	994	971
15	1160	2770	5560	4160	4690	4160	3320	3565	1340	843	963	971
16	1140	2850	5450	4710	4790	4160	3510	3070	1260	962	932	983
17	1240	3160	4840	4880	4440	3970	3650	2960	1060	939	840	1040
18	1250	3520	4490	4630	5290	3840	3500	2800	1110	903	1210	1050
19	1210	4380	4530	5080	5090	3910	3660	2090	1090	899	1070	1160
20	1230	4040	4590	4920	5100	3950	3630	1690	1140	897	1010	1140
21	1180	4130	4550	4830	5000	4030	3100	1760	1180	940	981	1040
22	1720	4360	4530	4820	4630	4090	3130	1820	1250	989	986	1280
23	2600	4290	4770	4840	4700	4030	2700	1710	921	1004	1110	1380
24	2600	4690	4830	4750	4580	4080	2800	1630	1080	1036	978	1300
25	2570	5020	4530	4730	4290	4190	3010	1660	999	992	884	1310
26	2650	5070	4300	4590	4060	4180	2900	1740	887	979	907	1320
27	2610	5210	4410	4580	4030	4280	2900	1860	870	1028	978	1290
28	2550	5180	4320	5400	4050	4300	3020	1790	893	984	960	1560
29	2560	5350	5160	6180	4040	5160	3180	1750	1000	1018	907	2680
30	2600	5300	5220	6220	---	5980	3230	1730	907	1000	937	2570
31	2530	---	4140	6400	---	6180	---	1740	---	963	959	---
TOTAL	60260	116060	157590	136630	142370	128060	138610	83135	37297	29267	30090	36772
MEAN	1944	3869	5084	4407	4909	4131	4620	2682	1243	944	971	1226
MAX	2940	5350	6180	6400	5680	6180	7740	3630	1680	1040	1210	2680
MIN	1130	2620	4140	2680	4030	3600	2700	1630	870	843	840	945
AC-FT	119500	230200	312600	271000	282400	254000	274900	164900	73980	58050	59680	72940
CFSM	.33	.65	.85	.74	.83	.69	.78	.45	.21	.16	.16	.21

CAL YR 1987 TOTAL 1258050 MEAN 3447 MAX 8080 MIN 1130 AC-FT 2495000 CFSM .58
WTR YR 1988 TOTAL 1096141 MEAN 2995 MAX 7740 MIN 840 AC-FT 2174000 CFSM .50

STREAMS TRIBUTARY TO LAKE MICHIGAN
04084445 FOX RIVER AT APPLETON, WI--CONTINUED
WATER-QUALITY RECORDS

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

PERIOD OF DAILY RECORD.--

SUSPENDED-SEDIMENT DISCHARGE: July 1986 to current year.

WATER TEMPERATURE: October 1986 to current year.

REMARKS.--Suspended-sediment records are considered good, except for periods of estimated record, when the automated sampler was not functioning. Two samples per day were normally collected using the automated samplers, and EWI suspended-sediment measurements were made approximately every two weeks during the open-water period. Suspended-sediment records are considered fair for winter periods due to estimated record, and fewer EWI measurements.

Water-temperature records are considered good to excellent, based on the daily average of 15-minute thermistor probe readings. Daily average temperature values were estimated for Jan. 15-21, Feb. 27 to Mar. 3, and June 13-15, due to a data recorder malfunction.

EXTREMES FOR PERIOD OF RECORD.--

SUSPENDED-SEDIMENT CONCENTRATION--Maximum daily average concentration, 128 mg/L, Mar. 24, 1988; minimum daily average concentration, 5.0 mg/L, Jan. 19, 21-22, and Feb. 25, 1988.

SUSPENDED-SEDIMENT DISCHARGE--Maximum discharge, 1,356 tons, Sept. 24, 1987; minimum discharge, 31 tons, Oct. 12, 13, 1987.

WATER TEMPERATURE: Maximum daily average, 29.0°C Aug. 2, 3, 1987; minimum daily average, 0.5°C on many days during the 1987 water year.

EXTREMES FOR CURRENT YEAR.--

SUSPENDED-SEDIMENT CONCENTRATION--Maximum daily average concentration, 128 mg/L, Mar. 24; minimum daily average concentration, 5.0 mg/L, Jan. 19, 21-22, and Feb. 25.

SUSPENDED-SEDIMENT DISCHARGE--Maximum discharge, 1,918 tons, Apr. 4; minimum discharge, 31 tons, Oct. 12, 13.

WATER TEMPERATURE: Maximum daily average, 28.5°C Aug. 4; minimum daily average, 1.0°C on many days during the January and February.

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	SEDI- MENT, SUS- PENDED (MG/L) (80154)	DATE	TIME	SEDI- MENT, SUS- PENDED (MG/L) (80154)	DATE	TIME	SEDI- MENT, SUS- PENDED (MG/L) (80154)
OCT 1987			OCT 1987			NOV 1987		
01...	0400	19	23...	0400	10	13...	1600	8
01...	1600	22	23...	1600	12	14...	0400	10
02...	0400	22	24...	0400	11	14...	1600	9
02...	1600	45	24...	1600	11	15...	0400	10
03...	0400	16	25...	0400	10	15...	1600	9
03...	1600	21	25...	1600	17	16...	0400	11
04...	0400	12	26...	0400	15	16...	1600	19
04...	1600	20	26...	1600	13	17...	0400	17
05...	0400	17	27...	0400	13	17...	1600	50
05...	1600	19	27...	1600	13	18...	0400	24
06...	0400	13	28...	0400	13	18...	1600	35
06...	1600	15	28...	1600	15	19...	0400	33
07...	0400	14	29...	0400	14	19...	1600	15
07...	1600	10	29...	1600	14	20...	0400	13
08...	0400	8	30...	0400	17	20...	1600	9
08...	1600	9	30...	1600	15	21...	0400	10
09...	0400	10	31...	0400	13	21...	1600	10
09...	1600	12	31...	1600	16	22...	0400	14
10...	0400	8	NOV			22...	1600	10
10...	1600	9	01...	0400	13	23...	0400	11
11...	0400	10	01...	1600	16	23...	1600	11
11...	1600	8	02...	0400	13	24...	0400	11
12...	0400	8	02...	1600	16	24...	1600	11
12...	1600	7	03...	0400	17	25...	0400	10
13...	0400	7	03...	1600	20	25...	1600	12
13...	1600	7	04...	0400	21	26...	0400	13
14...	0400	12	04...	1600	24	26...	1600	11
14...	1600	14	05...	0400	19	27...	0400	11
15...	0400	10	05...	1600	17	27...	1600	10
15...	1600	11	06...	0400	13	28...	0400	10
16...	0400	10	06...	1600	15	28...	1600	10
16...	1600	13	07...	0400	11	29...	0400	11
17...	0400	14	07...	1600	11	29...	1600	10
17...	1600	14	08...	0400	12	30...	0400	9
18...	0400	13	08...	1600	11	30...	1600	10
18...	1600	10	09...	0400	11	DEC		
19...	0400	11	09...	1600	13	01...	0400	9
19...	1600	12	10...	0400	10	01...	1600	10
20...	0400	12	10...	1600	10	02...	0400	11
20...	1600	11	11...	0400	9	02...	1600	12
21...	0400	14	11...	1600	19	03...	0400	10
21...	1600	12	12...	0400	10	04...	0400	9
22...	0400	13	12...	1600	9	04...	1600	9
22...	1600	15	13...	0400	12	05...	0400	9

STREAMS TRIBUTARY TO LAKE MICHIGAN

04084445 FOX RIVER AT APPLETON, WI--CONTINUED

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)	DATE	TIME	SEDI- MENT, SUS- PENDE (MG/L) (80154)
DEC 1987			JAN 1988			MAR 1988		
05...	1600	9	29...	1600	5	28...	1600	22
06...	0400	8	30...	0400	2	29...	0400	34
06...	1600	8	30...	1600	16	29...	1600	33
07...	0400	6	31...	0400	4	30...	0400	32
07...	1600	8	31...	1600	34	30...	1600	22
08...	0400	9	FEB			31...	0400	27
08...	1600	10	01...	0400	5	31...	1600	17
09...	0400	7	14...	1600	87	APR		
09...	1600	10	15...	1600	23	01...	0400	33
10...	0400	9	16...	1600	8	01...	1600	31
10...	1600	12	17...	1600	6	02...	0400	52
11...	0400	9	19...	0400	7	02...	1600	28
12...	0400	18	19...	1600	32	03...	0400	75
12...	1600	12	20...	0400	2	03...	1600	94
13...	0400	11	21...	0400	5	04...	0400	98
13...	1600	10	21...	1600	16	04...	1600	65
14...	0400	10	22...	0400	7	05...	0400	69
14...	1600	11	22...	1600	15	05...	1600	35
15...	0400	11	23...	0400	7	06...	1600	48
15...	1600	14	23...	1600	18	07...	0400	46
16...	0400	13	24...	0400	7	07...	1600	30
16...	1600	12	24...	1600	3	08...	0400	23
17...	0400	9	25...	0400	4	08...	1600	24
17...	1600	8	25...	1600	4	09...	0400	40
18...	0400	7	26...	0400	2	09...	1600	36
18...	1600	7	26...	1600	8	10...	0400	29
19...	0400	7	27...	0400	3	10...	1600	29
19...	1600	6	27...	1600	17	11...	0400	20
20...	0400	5	28...	0400	3	11...	1600	26
20...	1600	7	28...	1600	24	12...	0400	19
21...	0400	7	29...	1600	41	12...	1600	22
21...	1600	8	MAR			13...	0400	72
22...	0400	6	01...	0400	4	13...	1600	24
22...	1600	6	01...	1600	26	14...	0400	44
23...	0400	6	02...	0400	80	14...	1600	24
23...	1600	5	02...	1600	15	15...	0400	31
24...	0400	5	03...	0400	26	15...	1600	17
24...	1600	6	03...	1600	16	16...	0400	14
25...	0400	5	04...	0400	5	16...	1600	24
25...	1600	4	04...	1600	16	17...	0400	9
26...	0400	3	05...	0400	4	17...	1600	26
26...	1600	5	05...	1600	19	18...	0400	21
27...	0400	5	06...	0400	6	18...	1600	27
27...	1600	3	06...	1600	79	19...	0400	29
28...	0400	4	07...	0400	15	19...	1600	26
28...	1600	4	07...	1600	27	20...	0400	22
29...	0400	4	08...	0400	9	20...	1600	29
29...	1600	4	08...	1600	69	21...	0400	26
30...	0400	3	09...	0400	37	21...	1600	33
30...	1600	5	10...	0400	39	22...	0400	22
31...	1600	6	11...	0400	22	22...	1600	27
JAN 1988			12...	0400	88	23...	0400	29
15...	1600	5	12...	1600	57	24...	1600	23
16...	1600	3	13...	0400	56	25...	0400	24
17...	0400	13	13...	1600	30	26...	0400	27
17...	1600	3	14...	0400	37	26...	1600	32
18...	0400	19	14...	1600	65	27...	0400	39
18...	1600	2	15...	0400	15	27...	1600	41
19...	0400	5	15...	1600	13	28...	0400	31
19...	1600	2	16...	0400	28	28...	1600	28
20...	0400	5	16...	1600	11	29...	0400	23
20...	1600	3	17...	0400	30	29...	1600	26
21...	0400	3	17...	1600	13	30...	0400	30
21...	1600	3	18...	0400	41	30...	1600	26
22...	0400	5	18...	1600	10	MAY		
22...	1600	2	20...	0400	58	01...	1600	36
23...	0400	6	20...	1600	22	02...	0400	28
23...	1600	15	21...	0400	121	02...	1600	29
24...	0400	15	21...	1600	9	04...	0400	18
24...	1600	1	22...	0400	19	05...	0400	24
25...	0400	8	22...	1600	12	06...	0400	15
25...	1600	4	23...	0400	14	07...	0400	23
26...	0400	7	23...	1600	15	08...	0400	36
26...	1600	15	24...	0400	130	09...	0400	40
27...	0400	14	24...	1600	88	10...	0400	33
27...	1600	14	26...	1600	52	11...	0400	22
28...	0400	10	27...	0400	118	12...	0400	15
28...	1600	6	27...	1600	17	13...	0400	28
29...	0400	4	28...	0400	38	14...	0400	19

STREAMS TRIBUTARY TO LAKE MICHIGAN
04084445 FOX RIVER AT APPLETON, WI--CONTINUED

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	SEDI- MENT, SUS- PENDEDED (MG/L) (80154)	DATE	TIME	SEDI- MENT, SUS- PENDEDED (MG/L) (80154)	DATE	TIME	SEDI- MENT, SUS- PENDEDED (MG/L) (80154)
MAY 1988			JUL 1988			AUG 1988		
15...	0400	26	06...	0400	31	29...	0400	20
16...	0400	14	07...	0400	26	29...	1600	22
18...	0400	10	09...	0400	24	30...	0400	20
19...	0400	23	12...	1600	24	30...	1600	21
20...	0400	11	13...	1600	28	31...	0400	20
20...	1600	17	14...	1600	24	31...	1600	23
21...	0400	14	15...	1600	30	SEP		
21...	1600	18	16...	1600	26	01...	0400	29
22...	0400	19	17...	1600	27	01...	1600	24
22...	1600	21	18...	1600	24	02...	0400	27
23...	0400	26	19...	1600	24	02...	1600	22
23...	1600	24	20...	1600	31	03...	0400	20
24...	0400	31	21...	1600	22	03...	1600	24
24...	1600	28	22...	1600	27	04...	0400	115
25...	0400	33	23...	1600	31	04...	1600	49
25...	1600	31	24...	1600	30	05...	0400	45
26...	0400	33	25...	1600	27	05...	1600	20
26...	1600	32	26...	1600	25	06...	0400	26
27...	1600	31	27...	1600	24	06...	1600	22
28...	1600	19	28...	1600	29	07...	0400	18
29...	1600	20	29...	1600	36	07...	1600	16
30...	1600	20	30...	1600	42	08...	0400	29
31...	1600	23	31...	1600	33	08...	1600	25
JUN			AUG			09...	0400	19
01...	1600	33	01...	0400	50	09...	1600	15
03...	1600	35	01...	1600	40	10...	0400	21
04...	1600	19	02...	1600	21	10...	1600	20
05...	0400	24	03...	1600	38	11...	0400	19
05...	1600	26	04...	1600	40	11...	1600	22
06...	0400	40	05...	1600	38	12...	0400	23
06...	1600	19	06...	1600	43	12...	1600	16
07...	0400	25	07...	1600	46	13...	0400	22
07...	1600	21	08...	1600	38	13...	1600	20
08...	0400	26	09...	1600	30	14...	0400	21
08...	1600	29	10...	1600	38	14...	1600	19
09...	0400	26	11...	0400	28	15...	0400	18
09...	1600	32	11...	1600	34	15...	1600	20
10...	0400	28	12...	0400	46	16...	0400	23
10...	1600	28	12...	1600	29	16...	1600	23
11...	0400	27	13...	0400	37	17...	0400	20
11...	1600	26	13...	1600	30	17...	1600	20
12...	0400	28	15...	0400	41	18...	0400	19
12...	1600	28	15...	1600	27	18...	1600	23
13...	0400	33	16...	0400	22	19...	0400	21
13...	1600	30	16...	1600	22	19...	1600	23
14...	0400	32	17...	0400	33	20...	0400	31
14...	1600	34	17...	1600	38	20...	1600	39
15...	0400	25	18...	0400	24	21...	0400	26
15...	1600	27	18...	1600	28	21...	1600	18
16...	0400	20	19...	0400	33	22...	0400	25
16...	1600	26	19...	1600	34	22...	1600	25
17...	0400	24	20...	0400	38	23...	0400	35
17...	1600	24	20...	1600	28	23...	1600	23
18...	0400	24	21...	0400	29	24...	0400	16
18...	1600	24	21...	1600	32	24...	1600	16
19...	0400	34	22...	0400	25	25...	0400	14
19...	1600	29	22...	1600	26	25...	1600	20
20...	1600	25	23...	0400	28	26...	0400	22
22...	0400	21	23...	1600	32	26...	1600	28
24...	0400	41	24...	0400	32	27...	0400	20
28...	0400	23	24...	1600	27	27...	1600	27
29...	0400	20	25...	0400	25	28...	0400	22
30...	0400	25	25...	1600	24	28...	1600	33
JUL			26...	0400	27	29...	0400	31
01...	0400	29	26...	1600	32	29...	1600	50
02...	0400	28	27...	0400	30	30...	0400	25
03...	0400	31	28...	0400	25	30...	1600	23
04...	0400	36	28...	1600	24			

STREAMS TRIBUTARY TO LAKE MICHIGAN
04084445 FOX RIVER AT APPLETON, WI--CONTINUED

SEDIMENT, SUSPENDED CONCENTRATION (MG/L), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

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	25	201	18	127	12	179	e8	86	6	121	18	233
2	41	255	18	135	14	223	e8	88	e11	152	56	461
3	23	174	23	169	12	200	e8	89	e11	169	27	289
4	20	155	27	238	12	169	e8	66	e11	159	13	143
5	22	143	22	254	11	145	e8	82	e11	142	15	173
6	18	92	17	193	10	133	e8	81	e11	167	50	407
7	15	78	14	163	9	126	e8	82	e11	161	26	310
8	11	54	15	165	10	134	e8	80	e11	147	46	437
9	13	68	15	161	11	149	e8	78	e11	154	45	448
10	10	34	13	122	13	190	e8	76	e11	162	42	429
11	11	33	17	118	12	214	e8	58	e11	147	46	592
12	10	31	12	97	18	269	e8	77	e11	150	86	844
13	9	31	13	97	13	221	e8	78	e11	200	51	597
14	16	48	12	90	13	214	e8	76	59	620	61	544
15	13	42	12	95	16	234	7	79	28	362	17	243
16	14	44	18	149	16	225	6	83	11	158	24	262
17	17	54	40	308	11	149	10	129	8	110	26	282
18	14	48	35	331	10	120	13	142	e16	225	31	326
19	14	46	29	327	8	101	5	81	24	306	e40	420
20	15	50	15	177	8	102	6	76	e19	258	48	535
21	16	51	13	150	10	116	5	67	13	186	77	688
22	17	77	15	170	8	101	5	75	14	175	19	262
23	14	99.9	13	155	8	101	13	149	15	174	18	279
24	13	95	14	174	7	91	10	129	7	93	128	1141
25	16	109	13	181	6	75	8	113	5	63	e95	1066
26	17	120	15	198	6	70	14	167	7	80	62	765
27	16	114	13	186	6	71	17	193	12	129	80	821
28	17	116	13	184	6	70	10	149	17	193	36	475
29	17	119	14	197	6	84	6	116	29	281	40	537
30	19	131	12	175	6	86	11	195	---	---	33	534
31	18	124	---	---	7	77	24	329	---	---	27	483
TOTAL	---	2836.9	---	5286	---	4439	---	3369	---	5444	---	15026
APRIL			MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	38	637	40	341	21	107	35	85	39	103	32	81
2	48	884	34	302	39	154	34	88	45	118	30	76
3	100	1867	e28	263	42	156	38	99.7	46	122	26	98
4	96	1918	22	214	24	111	43	109	48	124	97	277
5	62	1285	29	241	30	125	e40	105	45	123	39	125
6	54	1018	18	186	35	144	37	89	51	136	29	81
7	46	860	27	253	28	126	31	75	54	131	21	67
8	29	597	43	390	33	111	e30	72	46	116	33	90
9	45	708	47	447	35	115	29	70	36	97	21	64
10	35	592	40	358	34	123	e28	69	46	108	25	67
11	28	431	26	247	32	126	e26	67	37	97	25	69
12	25	348	18	188	34	127	25	65	44	112	24	67
13	57	617	34	275	38	133	34	77	40	111	25	63
14	41	451	23	230	40	142	29	72	54	135	24	63
15	29	265	31	270	30	112	36	78	41	106	23	62
16	23	231	18	153	28	97	31	83	27	76	28	72
17	29	278	11	96	29	85	33	82	43	89	25	72
18	29	279	13	108	36	106	29	72	31	109	26	74
19	33	318	28	137	38	108	29	73	40	112	27	89
20	31	311	17	85	30	94	37	83	40	108	42	116
21	35	283	20	95	26	84	26	74	36	95	27	82
22	30	266	24	119	26	92	45	110	31	86	30	104
23	37	257	30	138	e37	92	37	103	36	106	35	120
24	31	239	36	156	49	134	36	99.6	35	91	20	76
25	30	251	38	170	e38	106	32	86	29	73	21	77
26	36	287	39	181	e38	91	30	80	36	84	30	102
27	48	351	37	178	e38	86	29	83	31	83	28	100
28	36	298	24	123	28	69	35	93	30	77	33	143
29	30	268	24	113	24	68	42	116	26	65	48	313
30	34	298	24	114	30	73	50	129	25	64	29	204
31	---	---	27	121	---	---	40	107	26	69	---	---
TOTAL	---	16693	---	6292	---	3297	---	2694.3	---	3126	---	3094
YEAR		71599										

e Estimated

STREAMS TRIBUTARY TO LAKE MICHIGAN
04084445 FOX RIVER AT APPLETON, WI--CONTINUED

WATER TEMPERATURE, DEGREES CENTIGRADE, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17.1	8.6	3.4	1.1	1.6	2.8	7.6	13.6	25.5	21.0	26.2	21.8
2	15.4	9.3	2.6	1.1	1.1	3.1	7.4	14.9	24.0	21.2	26.8	21.8
3	13.6	10.4	2.5	1.2	1.3	3.4	7.4	16.0	22.9	23.1	27.7	22.5
4	13.5	11.2	2.0	1.2	1.2	3.7	8.9	17.4	26.7	24.1	28.7	20.8
5	14.6	9.8	1.6	1.1	1.0	4.0	8.9	17.6	23.9	24.7	27.5	19.7
6	13.4	7.6	1.5	1.1	1.0	4.5	9.7	18.9	25.7	25.8	26.7	18.8
7	12.6	7.3	1.6	1.2	1.1	5.0	10.2	18.0	26.3	26.8	26.3	19.0
8	11.3	7.7	2.1	1.1	1.1	4.8	10.8	18.3	24.0	27.0	26.7	19.0
9	11.2	7.0	2.7	1.2	1.2	5.3	11.6	18.5	23.1	27.2	25.7	19.2
10	10.5	6.2	2.7	1.2	1.2	5.4	11.7	17.4	22.0	26.6	25.4	19.4
11	9.7	5.8	2.6	1.1	1.1	5.3	11.2	19.3	22.7	26.4	26.5	19.9
12	9.9	5.9	2.4	1.1	1.2	5.0	11.5	19.8	22.3	25.4	27.2	21.1
13	10.3	6.2	1.8	1.1	1.2	4.0	12.2	20.0	22.6	24.3	28.2	21.2
14	11.3	6.4	1.5	1.1	1.3	3.5	11.2	20.1	22.9	25.3	27.5	20.8
15	12.0	6.7	1.2	1.0	1.6	3.3	9.8	17.2	23.2	25.3	27.9	20.4
16	12.3	7.4	1.1	1.0	1.5	3.7	10.0	17.3	23.4	25.2	28.0	20.0
17	12.2	8.7	1.1	1.0	2.1	4.4	10.4	16.6	23.6	24.8	28.6	20.2
18	11.8	7.7	1.1	1.0	2.3	4.7	10.6	16.9	23.9	26.2	26.3	21.5
19	11.8	6.0	1.1	1.1	2.8	4.6	10.1	18.0	24.0	25.5	25.6	21.6
20	11.4	4.4	1.2	1.1	2.6	3.8	10.0	19.1	24.8	25.2	24.9	19.5
21	10.4	3.0	1.2	1.1	1.3	3.4	10.7	20.7	25.9	25.2	24.8	18.4
22	9.3	2.7	1.3	1.2	1.8	4.3	10.3	21.0	26.7	24.5	24.6	17.9
23	8.4	3.8	1.3	1.2	2.1	5.8	8.8	20.8	26.8	24.2	24.2	18.0
24	8.5	3.9	1.3	1.2	1.2	6.3	8.9	20.5	26.2	25.3	24.0	17.9
25	8.7	3.5	1.3	1.1	2.2	7.4	11.0	19.3	26.1	25.4	23.3	18.4
26	8.3	3.2	1.2	1.0	2.0	6.5	11.2	19.4	25.2	25.0	22.6	18.6
27	8.3	3.2	1.4	1.0	2.2	5.6	9.4	20.0	24.5	25.4	21.9	19.0
28	7.9	3.4	1.3	1.0	2.5	6.0	9.5	20.8	23.5	25.9	21.2	17.8
29	7.8	4.1	1.2	1.2	2.8	5.6	11.0	22.4	22.3	26.2	20.8	17.1
30	8.2	4.2	1.2	1.7	---	6.2	12.1	23.1	21.7	27.0	20.8	17.6
31	8.3	---	1.3	2.1	---	7.2	---	24.2	---	26.4	21.4	---
TOTAL	340.0	185.3	51.8	35.9	47.6	148.6	304.1	587.1	726.4	781.6	788.0	588.9
MEAN	11.0	6.2	1.7	1.2	1.6	4.8	10.1	18.9	24.2	25.2	25.4	19.6
MAX	17.1	11.2	3.4	2.1	2.8	7.4	12.2	24.2	26.8	27.2	28.7	22.5
MIN	7.8	2.7	1.1	1.0	1.0	2.8	7.4	13.6	21.7	21.0	20.8	17.1
CAL YR 1987	TOTAL 4446.1											
WTR YR 1988	TOTAL 4585.3											
	MEAN 12.2											
	MAX 29.0											
	MIN .5											
	MEAN 12.5											
	MAX 28.7											
	MIN 1.0											

STREAMS TRIBUTARY TO LAKE MICHIGAN

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

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.

DRAINAGE AREA.--6,010 mi².

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

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

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

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.

COOPERATION.--Figures of daily discharge furnished by U.S. Army Corps of Engineers. Records reviewed by Geological Survey.

AVERAGE DISCHARGE.--92 years, 4,260 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, 8,310 ft³/s, Apr. 4; minimum daily, 871 ft³/s, Aug. 17.

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	3080	2520	6080	4040	6100	4060	6660	3640	1700	980	1130	1100
2	2670	2590	6800	4100	5980	3980	6810	3740	1700	1050	1100	1100
3	2690	2690	6600	4190	6180	4080	7510	4080	1550	1100	1070	1340
4	2800	3610	5770	3900	5610	3860	8310	3770	1710	1020	1160	1560
5	2400	4450	5370	3850	4830	3850	7790	3810	1580	1000	1160	1100
6	1360	4330	5290	3810	5870	3940	7540	3720	2070	950	1110	1100
7	1980	4210	5130	3830	5670	3340	7340	3990	1580	1010	1020	993
8	1960	4280	5090	3760	5200	3350	6980	3860	1160	983	1110	1370
9	1820	4180	5120	3670	5430	3220	6560	4220	1380	985	1060	1020
10	1110	2940	5930	3590	5700	3140	6410	3840	1630	998	1020	1040
11	1220	2910	6740	3540	4990	4120	5500	3950	1470	1050	1140	1080
12	1080	2520	6610	3610	5090	3910	5500	3640	1420	917	1100	1080
13	1240	2830	6520	3640	5110	3670	5070	3800	1420	1000	1100	1080
14	1050	2660	6680	3630	5040	3110	3820	3950	1510	878	1210	996
15	1180	2720	6010	4210	4740	4060	3490	3680	1180	968	1010	973
16	1190	2980	5520	4770	4840	3880	3880	3280	1300	1160	1020	1360
17	1180	3080	4710	4930	4490	3240	3920	3070	1360	967	871	1080
18	1240	3600	4650	4680	5340	4080	3760	2840	1280	885	1170	1180
19	1210	4490	4980	5130	4680	4120	3870	1960	1340	1010	1140	1230
20	1200	4190	4670	4970	4690	4150	3900	1650	1320	1010	1090	1180
21	1170	4240	4650	4880	4580	4350	3140	1950	1320	979	1070	1100
22	1960	4440	4900	4880	4220	4340	3230	1850	1330	1110	1200	1660
23	2490	4590	4850	4900	4290	4200	2870	1990	1220	1100	1280	1520
24	2680	5390	4860	4800	4170	4310	2980	1480	1290	1110	1060	1240
25	2650	4620	4510	4780	3880	4430	3340	1920	1160	1110	942	1360
26	2760	5680	4430	4640	4310	4360	3060	1980	988	1100	1020	1350
27	2490	5420	4510	4630	4280	4390	3120	1960	1060	1070	1020	1700
28	2660	6010	4350	5440	4300	4520	3380	2040	1230	1090	1080	1530
29	2500	5980	5100	6680	4290	6080	3600	1990	1010	1110	1020	3150
30	2540	6080	5340	6720	---	6520	3620	1830	980	1110	986	2720
31	2490	---	4580	6820	---	6440	---	1970	---	1100	1090	---
TOTAL	60050	120230	166350	141020	143900	129100	146960	91450	41248	31910	33559	40292
MEAN	1937	4008	5366	4549	4962	4165	4899	2950	1375	1029	1083	1343
MAX	3080	6080	6800	6820	6180	6520	8310	4220	2070	1160	1280	3150
MIN	1050	2520	4350	3540	3880	3110	2870	1480	980	878	871	973
CAL YR 1987	TOTAL 1316800	MEAN 3608	MAX 9060	MIN 1050								
WTR YR 1988	TOTAL 1146069	MEAN 3131	MAX 8310	MIN 871								

STREAMS TRIBUTARY TO LAKE MICHIGAN

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 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)	TUR- BID- ITY (FTU) (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)
OCT 1987										
21...	0730	1170	440	8.50	8.0	0.50	10.6	749	91	54
MAR 1988										
17...	1000	3240	430	8.00	3.5	2.2	14.0	755	107	K65
JUN										
22...	0845	1330	440	8.50	26.0	9.7	7.5	740	95	120
AUG										
31...	1030	1090	410	8.50	20.5	40	8.4	754	95	25

DATE	STREP- TOCOCCHI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD- NESS TOTAL (MG/L AS CACO3) (00900)	HARD- NESS NONCARB WH WAT TOT FLD MG/L AS CACO3 (00902)	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 1987									
21...	28	190	31	37	23	19	18	0.6	3.0
MAR 1988									
17...	K38	210	28	42	25	13	12	0.4	2.8
JUN									
22...	33	200	37	42	23	20	18	0.6	3.2
AUG									
31...	7	170	34	30	23	24	23	0.8	3.4

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 1987									
21...	183	5	158	30	22	0.20	0.13	240	231
MAR 1988									
17...	210	--	172	26	18	0.20	1.4	268	237
JUN									
22...	201	7	166	34	24	0.40	0.39	242	248
AUG									
31...	166	1	138	40	27	0.20	0.61	245	231

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- PHOROUS TOTAL (MG/L AS P) (00665)	PHOS- PHOROUS DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHOROUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)
OCT 1987									
21...	0.33	758	0.290	0.270	0.240	1.3	0.110	0.050	0.020
MAR 1988									
17...	0.36	2340	<0.100	0.130	0.130	1.0	0.040	0.010	<0.010
JUN									
22...	0.33	869	0.680	0.030	0.060	1.0	0.160	0.020	<0.010
AUG									
31...	0.33	721	0.210	0.130	0.120	2.3	0.100	0.020	<0.010

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

STREAMS TRIBUTARY TO LAKE MICHIGAN

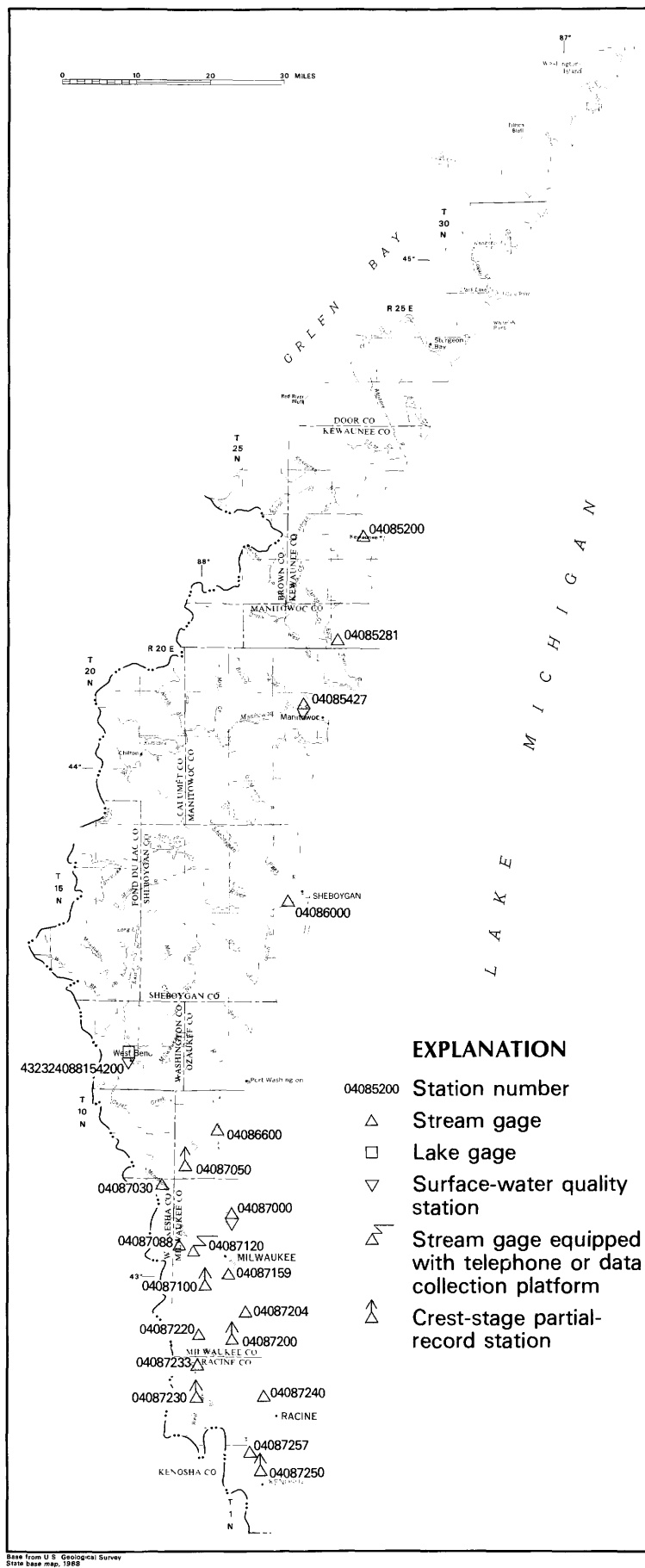
04085000 FOX RIVER AT WRIGHTSTOWN, WI--CONTINUED

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

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)
OCT 1987 21...	0730	1170	20	1	22	<0.5	<1	2	<3	1	14
MAR 1988 17...	1000	3240	20	<1	22	<0.5	<1	<1	<3	1	9
JUN 22...	0845	1330	40	1	29	<0.5	<1	1	<3	1	9
AUG 31...	1030	1090	70	1	23	<0.5	2	<1	<3	1	<3

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 1987 21...	11	<4	3	<0.1	<10	<1	<1	310	<6	9
MAR 1988 17...	<5	<4	24	0.3	<10	4	<1	170	<6	<3
JUN 22...	<5	7	2	0.1	<10	<1	<1	390	<6	10
AUG 31...	<5	6	<1	<0.1	<10	<1	<1	430	<6	12

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)
OCT 1987 21...	0730	1170	440	8.0	12	38	100
MAR 1988 17...	1000	3240	430	3.5	4	35	81
JUN 22...	0845	1330	440	26.0	30	108	92
AUG 31...	1030	1090	410	20.5	29	85	90



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: Aug. 9-10 and ice periods listed in rating table below. Records good except those for ice periods, which are poor.

AVERAGE DISCHARGE.--22 years, 85.8 ft³/s, 9.17 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,500 ft³/s, Mar. 30, 1960, gage height, 16.03 ft (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. 9	1115	(a) *3,600	(a) *16.00	No other peak greater than base discharge.			

(a) Ice jam.

Minimum discharge, 6.9 ft³/s, Aug. 3, gage height, 8.29 ft.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Nov. 19-22, Dec. 15 to Mar. 12, and Mar. 15-22.)

8.2	6.0	9.1	71
8.3	9.0	9.5	137
8.5	18	10.0	263
8.7	31	10.5	448
8.9	48		

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	15	17	84	17	120	20	121	72	17	11	7.8	9.4
2	16	18	63	16	90	21	111	64	16	11	7.5	9.2
3	15	18	48	15	74	22	282	58	16	10	7.2	10
4	14	19	39	14	64	23	333	55	16	9.5	7.5	9.5
5	14	18	34	13	58	25	240	52	15	9.3	9.0	9.5
6	14	17	30	12	52	40	206	49	15	9.3	9.0	9.4
7	14	17	29	12	47	120	199	46	14	9.4	8.1	8.9
8	13	19	30	11	43	400	143	44	14	9.4	8.4	8.6
9	13	21	70	11	40	2900	111	44	14	9.0	8.7	8.5
10	13	20	89	11	37	1900	95	44	13	12	9.3	8.4
11	13	19	76	12	35	1000	86	42	13	16	9.6	8.2
12	13	18	63	16	32	640	79	39	13	13	11	8.1
13	13	18	54	15	30	387	73	38	12	11	12	8.5
14	13	18	44	15	28	285	68	36	12	11	13	8.5
15	13	17	40	15	25	200	64	35	11	13	11	8.5
16	14	19	35	17	23	130	60	34	11	29	9.7	8.5
17	21	35	31	18	23	110	57	32	11	18	9.7	9.9
18	24	45	29	18	22	100	55	31	11	14	11	11
19	21	40	28	21	21	94	52	30	11	12	9.8	13
20	19	25	40	28	20	88	50	29	10	11	9.5	13
21	17	22	48	28	20	80	48	29	9.6	16	9.0	12
22	18	20	45	26	19	76	47	27	10	18	8.7	13
23	20	26	44	25	19	94	60	26	10	14	14	16
24	20	31	45	25	18	151	84	25	10	12	14	15
25	19	35	50	25	18	277	78	23	9.7	12	12	13
26	18	40	45	24	19	349	68	22	9.3	11	10	12
27	19	37	37	24	19	190	105	21	9.4	10	9.9	11
28	20	34	30	25	19	139	165	20	11	9.8	10	11
29	19	60	25	30	20	168	120	20	12	9.1	10	10
30	18	85	22	60	---	188	88	18	12	8.4	10	11
31	17	---	19	150	---	149	---	18	---	8.1	9.8	---
TOTAL	510	828	1366	749	1055	10366	3348	1123	368.0	376.3	306.2	312.6
MEAN	16.5	27.6	44.1	24.2	36.4	334	112	36.2	12.3	12.1	9.88	10.4
MAX	24	85	89	150	120	2900	333	72	17	29	14	16
MIN	13	17	19	11	18	20	47	18	9.3	8.1	7.2	8.1
CFSM	.13	.22	.35	.19	.29	2.63	.88	.29	.10	.10	.08	.08
IN.	.15	.24	.40	.22	.31	3.04	.98	.33	.11	.11	.09	.09

CAL YR 1987 TOTAL 14693.9 MEAN 40.3 MAX 476 MIN 9.6 CFSM .32 IN. 4.30
WTR YR 1988 TOTAL 20708.1 MEAN 56.6 MAX 2900 MIN 7.2 CFSM .45 IN. 6.07

STREAMS TRIBUTARY TO LAKE MICHIGAN

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: Ice periods listed in rating tables below. Records good except those for ice-affected periods, which are poor. Occasional regulation caused by recreation dam 0.3 mi upstream.

AVERAGE DISCHARGE.--16 years, 80.2 ft³/s, 9.90 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,210 ft³/s, Mar. 31, 1979, gage height, 13.75 ft; 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. 9	1445	ice jam	*8.52	Apr. 4	1900	*603	7.97

No other peak greater than base discharge.

Minimum discharge, 3.8 ft³/s, Aug. 5, 8, gage height, 3.89.

RATING TABLES (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Nov. 20, 21, Dec. 15-19, Dec. 26 to Mar. 22.)

Oct. 1 to Mar. 9 (1430)

Mar. 9 (1445) to Sept. 30

4.2	10	4.5	30
4.3	16	5.0	82
4.4	22	5.5	146

3.9	4.1	4.5	41
4.0	7.5	5.0	99
4.1	12	6.0	236
4.2	17	7.0	406
4.3	23	8.0	610

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	19	14	100	20	90	19	159	83	12	9.3	6.7	6.5
2	17	16	82	16	76	20	143	69	12	8.6	6.4	6.4
3	17	18	64	14	62	19	284	59	12	7.5	6.2	6.5
4	17	19	51	12	54	19	528	53	12	7.1	5.3	8.3
5	16	19	43	11	47	20	503	49	12	6.8	4.8	8.7
6	14	18	37	10	42	23	403	44	11	5.6	4.7	8.3
7	13	17	35	9.0	40	45	358	40	10	5.4	4.5	7.6
8	14	17	38	8.4	36	90	267	37	9.4	5.1	4.8	6.6
9	20	22	81	8.0	32	250	198	38	9.7	4.7	5.0	6.6
10	13	24	115	7.6	29	460	151	40	9.9	6.4	4.9	6.1
11	13	22	105	7.6	25	350	128	37	9.9	7.5	5.0	6.0
12	13	20	87	9.6	22	280	111	35	9.8	7.5	5.5	6.3
13	14	19	73	9.0	20	230	99	31	9.2	6.4	7.4	7.8
14	14	19	61	8.2	21	170	90	29	8.3	6.7	7.7	7.7
15	14	18	40	8.0	20	140	81	28	8.1	6.6	6.1	6.5
16	14	19	37	9.6	19	120	75	26	6.8	8.8	5.5	12
17	20	38	35	9.0	19	100	69	25	7.0	11	5.6	11
18	23	54	34	9.0	20	90	63	24	7.7	11	7.6	8.7
19	21	49	40	9.6	19	84	57	23	8.1	10	8.8	11
20	17	35	72	11	18	80	54	21	7.9	10	8.5	14
21	15	22	98	11	17	78	49	20	6.9	12	7.1	13
22	14	27	95	11	19	74	48	20	9.4	14	6.3	16
23	14	30	83	11	19	83	57	19	8.4	13	9.2	21
24	16	36	82	10	18	125	86	18	8.3	11	11	17
25	15	41	112	10	17	189	78	17	7.7	8.8	9.9	13
26	14	52	70	10	18	260	75	16	6.9	9.9	7.7	11
27	16	52	56	10	17	221	104	16	7.1	9.1	7.2	11
28	18	46	43	11	18	176	150	15	8.2	8.5	7.5	9.4
29	17	73	35	12	18	178	139	15	10	8.3	7.7	9.1
30	15	97	30	20	---	194	109	13	10	7.6	7.6	9.1
31	14	---	23	30	---	185	---	13	---	6.7	6.9	---
TOTAL	491	953	1957	352.6	872	4372	4716	973	275.7	260.9	209.1	292.2
MEAN	15.8	31.8	63.1	11.4	30.1	141	157	31.4	9.19	8.42	6.75	9.74
MAX	23	97	115	30	90	460	528	83	12	14	11	21
MIN	13	14	23	7.6	17	19	48	13	6.8	4.7	4.5	6.0
CFSM	.14	.29	.57	.10	.27	1.28	1.43	.29	.08	.08	.06	.09
IN.	.17	.32	.66	.12	.29	1.48	1.59	.33	.09	.09	.07	.10

CAL YR 1987 TOTAL 16620.2 MEAN 45.5 MAX 444 MIN 8.1 CFSM .41 IN. 5.62
WTR YR 1988 TOTAL 15724.5 MEAN 43.0 MAX 528 MIN 4.5 CFSM .39 IN. 5.32

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: Ice periods listed in rating table below. Records good except for estimated daily discharges, which are poor.

AVERAGE DISCHARGE.--16 years, 349 ft³/s, 9.01 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, gage height, 3.61 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. 12	2030	(a) *1,100	(a) *8.46	Apr. 6	1500	1,010	7.05

(a) Backwater from ice.

Minimum discharge, 6.8 ft³/s, July 8, gage height, 3.61 ft.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Nov. 20-23, and Dec. 5 to Mar. 25.)

3.6	5.0	4.5	108
3.8	17	5.0	220
4.0	33	6.0	540
4.2	57	7.0	981

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	59	59	175	50	300	140	585	215	27	13	12	12
2	56	65	165	47	500	160	578	192	29	13	11	11
3	53	78	146	43	450	200	721	172	36	13	10	10
4	54	88	118	41	410	220	953	154	32	11	9.6	25
5	44	92	110	38	320	250	873	141	27	11	9.0	20
6	39	89	100	36	260	310	960	134	25	9.7	8.5	20
7	43	77	92	34	220	420	960	122	25	9.0	7.9	29
8	45	68	84	32	180	580	901	111	24	7.9	8.1	27
9	39	66	100	32	160	880	860	110	22	7.8	10	24
10	32	65	200	30	150	940	820	117	19	11	11	24
11	35	63	220	31	140	1000	788	118	19	12	12	22
12	35	62	230	34	120	1100	750	105	18	11	13	22
13	32	64	240	31	110	1000	714	102	19	10	19	20
14	31	61	200	30	100	960	676	96	20	9.6	17	18
15	31	57	170	29	96	960	643	84	16	9.3	15	16
16	34	54	140	35	84	940	607	80	14	12	14	16
17	38	69	130	42	72	900	564	110	13	13	13	21
18	43	97	120	38	76	880	513	81	14	12	19	26
19	52	113	110	36	80	880	469	66	13	14	20	33
20	50	90	200	42	78	820	408	59	12	14	18	32
21	44	66	190	48	74	780	342	52	11	16	18	26
22	46	74	180	43	70	760	283	52	13	19	17	44
23	47	82	180	39	74	740	234	49	13	18	22	70
24	44	96	210	37	72	740	236	44	11	22	17	68
25	45	107	160	35	70	720	237	40	11	24	15	66
26	47	115	110	33	66	685	218	41	10	20	15	57
27	50	125	86	32	68	654	226	41	11	18	15	52
28	54	129	70	32	76	603	252	42	12	18	13	45
29	61	147	84	33	110	621	257	37	14	16	12	44
30	56	171	60	50	---	650	237	30	14	14	12	41
31	52	---	54	150	---	626	---	28	---	13	12	---
TOTAL	1391	2589	4434	1263	4586	21119	16865	2825	544	421.3	425.1	941
MEAN	44.9	86.3	143	40.7	158	681	562	91.1	18.1	13.6	13.7	31.4
MAX	61	171	240	150	500	1100	960	215	36	24	22	70
MIN	31	54	54	29	66	140	218	28	10	7.8	7.9	10
CFSM	.09	.16	.27	.08	.30	1.30	1.07	.17	.03	.03	.03	.06
IN.	.10	.18	.31	.09	.32	1.49	1.19	.20	.04	.03	.03	.07

CAL YR 1987 TOTAL 64867 MEAN 178 MAX 1400 MIN 19 CFSM .34 IN. 4.59
WTR YR 1988 TOTAL 57403.4 MEAN 157 MAX 1100 MIN 7.8 CFSM .30 IN. 4.06

STREAMS TRIBUTARY TO LAKE MICHIGAN

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 1987 TO SEPTEMBER 1988

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 (FTU) (00076)	OXYGEN, DIS- SOLVED (MG/L) (00300)	BARO- METRIC PRES- SURE (MM HG) (00025)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)
OCT 1987 20...	1330	--	50	750	8.60	9.0	7.6	14.2	746	126
MAR 1988 17...	0715	900	--	450	7.90	0.0	4.8	13.8	760	95
JUN 22...	1200	--	13	640	8.70	30.0	16	9.6	736	132
AUG 31...	1320	--	12	590	8.60	23.0	30	11.0	747	131
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)	HARD- NESS NONCARB WH WAT TOT FLD MG/L AS CACO3 (00902)	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)
OCT 1987 20...	29	35	360	67	70	45	24	13	0.6	4.1
MAR 1988 17...	K13	K60	210	62	48	23	9.1	8	0.3	4.3
JUN 22...	1800	1500	310	54	51	45	19	12	0.5	3.3
AUG 31...	170	71	290	69	45	44	22	14	0.6	2.6
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 1987 20...		312	18	286	45	43	0.20	1.8	410	410
MAR 1988 17...		161	--	132	50	18	0.10	8.7	268	256
JUN 22...		278	20	262	34	33	0.40	17	378	361
AUG 31...		265	7	229	39	43	0.10	7.3	351	339
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- PHOROUS TOTAL (MG/L AS P) (00665)	PHOS- PHOROUS DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHOROUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)
OCT 1987 20...		0.56	55.3	<0.100	0.030	0.030	1.6	0.100	0.030	<0.010
MAR 1988 17...		0.36	651	0.660	0.170	0.190	0.70	0.100	0.070	0.030
JUN 22...		0.51	13.3	0.170	0.020	0.070	1.5	0.300	0.180	0.120
AUG 31...		0.48	11.4	<0.100	0.020	0.010	1.1	0.050	0.030	<0.010

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 1987 TO SEPTEMBER 1988

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 1987 20...	1330	--	50	<10	<1	34	<0.5	1	2	<3	1
MAR 1988 17...	0715	900	--	20	<1	18	<0.5	<1	<1	<3	2
JUN 22...	1200	--	13	<10	3	36	<0.5	<1	1	<3	2
AUG 31...	1320	--	12	<10	1	33	<0.5	2	<1	<3	1

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 1987 20...	13	<5	4	19	<0.1	<10	5	1	430	<6	5
MAR 1988 17...	160	<5	<4	19	<0.1	<10	6	<1	84	<6	5
JUN 22...	16	<5	8	25	<0.1	<10	1	<1	800	<6	24
AUG 31...	7	<5	7	12	<0.1	<10	2	<1	730	<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, DIS- CHARGE, SUS- PENDE (MG/L) (80154)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT 1987 05...	1400	--	39	705	13.5	--	--	--
20...	1330	--	50	750	9.0	87	12	74
NOV 10...	1450	--	65	810	2.0	--	--	--
JAN 1988 07...	1630	--	32	880	0.0	--	--	--
FEB 15...	1605	--	96	480	0.0	--	--	--
MAR 17...	0715	900	--	450	0.0	13	32	83
JUN 15...	1335	--	14	615	29.0	--	--	--
22...	1200	--	13	640	30.0	26	0.91	98
AUG 09...	1555	--	10	560	27.5	--	--	--
31...	1320	--	12	590	23.0	13	0.42	95
SEP 12...	1530	--	21	580	23.0	--	--	--

STREAMS TRIBUTARY TO LAKE MICHIGAN

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.--46 years (water years 1917-24, 1951-88), 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)
Apr. 6	1945	*1,530	*5.75	No other peak greater than base discharge.			
Minimum discharge, 31 ft ³ /s, July 9, 10, gage height, 1.61 ft.							

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Shifting-control method used Mar. 26 to Apr. 2; stage-discharge relation affected by ice Nov. 21-23, Dec. 4-6, 14-23, and Dec. 26 to Mar. 23.)

1.6	30	3.0	270
1.8	50	4.0	570
2.0	80	5.0	992
2.5	165	6.0	1,540

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	135	170	480	180	1200	170	602	281	66	45	38	50
2	127	230	376	160	1100	190	575	257	64	43	37	46
3	131	237	328	140	940	200	925	239	61	37	38	58
4	115	214	260	130	840	220	959	224	53	35	36	94
5	110	194	230	120	700	240	909	210	50	34	55	103
6	107	174	210	110	560	270	1220	197	48	35	41	95
7	105	161	256	100	430	330	1340	185	48	35	39	78
8	101	166	422	96	360	400	1040	173	43	33	39	62
9	97	175	950	94	320	500	834	175	41	31	40	56
10	95	175	931	90	280	560	738	185	43	47	39	52
11	94	165	802	82	240	600	667	184	44	45	49	48
12	90	159	669	86	210	600	604	165	43	45	54	49
13	90	159	560	84	180	580	536	124	43	43	63	47
14	88	156	470	82	160	520	481	112	44	41	82	47
15	88	149	350	80	150	480	424	143	42	43	65	45
16	92	148	270	94	140	440	372	140	40	71	49	44
17	108	196	260	90	130	400	303	132	41	82	43	44
18	116	243	240	86	140	360	275	123	41	82	159	64
19	113	234	300	84	150	340	246	116	40	68	183	84
20	105	215	500	110	140	330	204	111	40	60	150	102
21	102	160	560	100	130	320	191	105	39	59	106	98
22	101	150	400	96	120	310	187	104	51	57	77	223
23	101	170	360	92	140	340	220	110	47	58	101	693
24	109	209	419	86	130	362	281	105	48	58	103	514
25	107	276	623	82	120	395	293	86	42	56	89	321
26	112	406	450	80	120	493	277	84	40	58	79	207
27	120	353	360	78	120	510	314	83	37	52	65	147
28	173	330	320	80	140	480	363	78	38	50	56	122
29	181	600	270	92	160	543	346	69	44	45	52	103
30	164	612	230	150	---	619	310	58	46	42	45	95
31	125	---	200	800	---	644	---	66	---	39	48	---
TOTAL	3502	6986	13056	3834	9550	12746	16036	4424	1367	1529	2120	3791
MEAN	113	233	421	124	329	411	535	143	45.6	49.3	68.4	126
MAX	181	612	950	800	1200	644	1340	281	66	82	183	693
MIN	88	148	200	78	120	170	187	58	37	31	36	44
CFSM	.27	.56	1.01	.30	.79	.98	1.28	.34	.11	.12	.16	.30
IN.	.31	.62	1.16	.34	.85	1.13	1.43	.39	.12	.14	.19	.34
CAL YR 1987	TOTAL 84468	MEAN 231	MAX 1420	MIN 58	CFSM .55	IN. 7.52						
WTR YR 1988	TOTAL 78941	MEAN 216	MAX 1340	MIN 31	CFSM .52	IN. 7.03						

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, 7.72 ft, Sept. 23; minimum observed, 7.32 ft, Aug. 29.

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	GAGE HEIGHT	DATE	GAGE HEIGHT	DATE	GAGE HEIGHT	DATE	GAGE HEIGHT	DATE	GAGE HEIGHT
May 9	7.66	June 1	7.56	June 20	7.40	July 5	7.38	Aug. 15	7.36
23	7.58	10	7.48	25	7.44	19	7.48	29	7.32
25	7.60	15	7.44	29	7.46	28	7.48	Sept. 23	7.72
						Aug. 5	7.41	29	7.70

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 1987 TO SEPTEMBER 1988

DATE	SECCHI DEPTH	DATE	SECCHI DEPTH	DATE	SECCHI DEPTH	DATE	SECCHI DEPTH	DATE	SECCHI DEPTH
May 9	3.2	June 10	2.9	June 25	3.1	July 19	2.7	Aug. 15	3.1
25	4.0	15	3.1	29	3.1	28	2.4	29	3.7
June 1	2.7	20	3.1	July 5	2.5	Aug. 5	2.2	Sept. 11	3.4
								23	3.2

STREAMS TRIBUTARY TO LAKE MICHIGAN

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.--6 years, 534 ft³/s, 11.94 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,640 ft³/s, Sept. 11, 1986, gage height, 11.97 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)
Jan. 31	1600	(a) *2,600	(a) *12.27	No other peak greater than base discharge.			
(a) Backwater from ice.							
Minimum daily, 42 ft ³ /s, July 9.							

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Shifting-control method used May 4 to June 28; stage-discharge relation affected by ice Dec. 29 to Mar. 15.)

5.2	30	7.0	923
5.3	50	8.0	1,520
5.5	105	10.0	2,960
6.0	350		

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	270	263	721	290	2600	290	881	490	100	77	54	59
2	256	352	660	260	2300	320	960	431	106	71	51	54
3	219	374	574	230	2000	350	1110	386	113	67	51	61
4	210	374	459	220	1700	380	1350	344	127	60	55	98
5	190	380	427	200	1300	360	1380	316	130	55	60	101
6	182	351	395	190	960	420	1580	288	124	51	60	123
7	172	303	440	180	700	480	1690	263	115	50	65	99
8	162	291	669	170	540	580	1500	254	105	46	60	86
9	169	287	1010	160	450	700	1270	258	97	42	61	78
10	146	296	1200	150	370	800	1060	272	93	44	62	70
11	156	283	1170	150	320	900	911	283	91	58	70	67
12	157	275	1050	160	280	1000	803	267	86	79	77	66
13	157	269	899	150	250	880	731	244	81	65	75	71
14	153	260	780	150	240	780	650	225	79	58	72	97
15	138	250	631	150	230	720	582	212	79	54	72	70
16	150	237	456	200	230	702	525	207	72	64	71	65
17	192	276	485	350	230	643	474	204	75	80	59	64
18	207	361	436	600	240	503	431	176	76	119	61	66
19	200	374	635	920	270	507	397	151	74	87	62	80
20	197	358	878	1000	310	508	371	138	75	84	87	81
21	203	319	1060	700	270	474	362	129	71	75	86	97
22	201	293	966	500	230	435	348	122	90	76	81	318
23	191	277	863	370	290	418	476	137	113	104	100	587
24	233	298	806	300	280	496	622	142	97	83	97	604
25	181	387	868	230	260	645	578	132	78	85	90	500
26	201	491	837	190	250	703	542	129	68	85	78	489
27	274	481	816	170	250	682	618	124	60	78	73	503
28	272	559	692	150	250	738	695	119	62	71	70	478
29	259	774	600	220	260	729	641	119	69	67	68	438
30	249	786	470	450	---	841	563	109	79	67	65	388
31	237	---	350	1300	---	925	---	104	---	59	63	---
TOTAL	6184	10879	22303	10460	17860	18909	24101	6775	2685	2161	2156	5958
MEAN	199	363	719	337	616	610	803	219	89.5	69.7	69.5	199
MAX	274	786	1200	1300	2600	1000	1690	490	130	119	100	604
MIN	138	237	350	150	230	290	348	104	60	42	51	54
CFSM	.33	.60	1.19	.56	1.01	1.00	1.32	.36	.15	.11	.11	.33
IN.	.38	.67	1.37	.64	1.09	1.16	1.48	.42	.16	.13	.13	.37

CAL YR 1987 TOTAL 139329 MEAN 382 MAX 1580 MIN 83 CFSM .63 IN. 8.54
WTR YR 1988 TOTAL 130431 MEAN 356 MAX 2600 MIN 42 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.--74 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)
Jan. 19	2130	*3,560	*5.14	Feb. 1	0700	3,260	4.96

Minimum discharge, 8.0 ft³/s, Sept. 5, gage height, 1.45 ft, result of regulation.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Nov. 21-23, Dec. 30 to Jan. 18, Jan. 22-31, and Feb. 5 to Mar. 7.)

1.6	35	2.5	412
1.7	54	3.0	756
1.8	81	4.0	1,830
2.0	156	5.0	3,320

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	331	374	864	320	3130	330	957	577	124	101	70	67
2	318	629	770	300	2810	370	1100	519	148	95	71	63
3	292	434	738	280	2540	390	1280	469	123	85	75	64
4	267	440	591	260	2060	410	1430	434	121	81	188	621
5	263	442	489	240	1300	400	1520	403	120	72	115	140
6	253	430	495	220	1100	450	2150	379	118	72	70	122
7	255	416	694	210	900	500	2040	356	113	70	64	123
8	230	380	886	200	640	619	1750	345	108	67	110	103
9	243	359	1290	190	500	809	1460	363	100	63	133	91
10	232	361	1430	180	420	983	1210	378	96	60	80	84
11	219	354	1440	180	370	1050	1010	369	96	63	74	73
12	230	346	1280	180	330	1100	870	387	94	81	79	73
13	231	340	1090	180	290	1060	772	347	95	100	94	69
14	232	334	918	170	270	915	709	317	88	86	93	88
15	230	324	793	170	260	771	628	294	86	81	117	95
16	225	339	563	200	260	691	570	281	84	156	87	77
17	297	376	564	300	270	662	521	271	77	113	82	111
18	276	403	513	700	280	596	484	260	74	126	180	124
19	278	441	638	1270	300	467	448	249	73	145	91	227
20	266	438	1490	1510	380	563	426	235	75	118	70	138
21	271	400	1280	827	310	502	411	222	77	114	95	114
22	283	350	1290	600	270	484	414	211	94	108	93	764
23	266	330	1050	430	340	445	617	200	109	117	296	560
24	297	370	1110	320	320	494	644	189	141	160	115	559
25	279	624	1140	270	300	604	649	174	118	124	112	503
26	286	575	1040	230	280	740	629	168	100	115	97	430
27	340	595	869	200	270	658	763	105	87	114	86	430
28	353	892	839	170	280	813	784	45	119	106	78	421
29	340	991	684	300	300	799	743	48	112	96	74	391
30	327	994	540	700	---	904	654	126	88	87	74	356
31	319	---	400	2000	---	980	---	124	---	77	69	---
TOTAL	8529	14081	27778	13307	21080	20559	27643	8845	3058	3053	3132	7081
MEAN	275	469	896	429	727	663	921	285	102	98.5	101	236
MAX	353	994	1490	2000	3130	1100	2150	577	148	160	296	764
MIN	219	324	400	170	260	330	411	45	73	60	64	63
CFSM	.40	.67	1.29	.62	1.04	.95	1.32	.41	.15	.14	.15	.34
IN.	.46	.75	1.48	.71	1.13	1.10	1.48	.47	.16	.16	.17	.38

CAL YR 1987	TOTAL 173321	MEAN 475	MAX 2160	MIN 108	CFSM .68	IN. 9.26
WTR YR 1988	TOTAL 158146	MEAN 432	MAX 3130	MIN 45	CFSM .62	IN. 8.45

STREAMS TRIBUTARY TO LAKE MICHIGAN

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 1987 TO SEPTEMBER 1988

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 (FTU) (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)
OCT 1987										
20...	0830	268	750	8.40	11.0	6.1	10.6	748	98	K290
MAR 1988										
16...	0945	814	440	8.20	0.5	2.2	15.6	757	109	K17
JUN										
23...	1015	105	830	8.60	24.0	8.3	6.9	757	83	360
SEP										
01...	1100	69	700	8.70	20.0	5.0	9.4	750	105	75
DATE		STREP-TOCOCCI, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS TOTAL (MG/L AS CaCO3) (00900)	HARD-NESS NONCARB WH WAT TOT FLD (MG/L AS CaCO3) (00902)	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)	
OCT 1987										
20...		65	350	63	74	41	27	14	0.6	3.3
MAR 1988										
16...		270	260	41	57	28	17	12	0.5	2.4
JUN										
23...		120	320	66	58	41	45	24	1	3.4
SEP										
01...		33	270	71	43	39	48	27	1	9.7
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 1987										
20...		324	8	280	39	47	0.20	0.95	410	410
MAR 1988										
16...		246	--	202	27	29	0.20	8.2	307	303
JUN										
23...		266	25	260	53	71	0.50	13	451	437
SEP										
01...		218	11	197	60	76	0.30	6.1	405	403
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, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS-PHOROUS DIS-SOLVED (MG/L AS P) (00665)	PHOS-PHOROUS DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHOROUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)
OCT 1987										
20...		0.56	297	0.550	0.030	0.040	0.80	0.060	0.030	0.010
MAR 1988										
16...		0.42	675	0.860	0.090	0.100	0.80	0.050	0.030	<0.010
JUN										
23...		0.61	128	<0.100	0.030	0.080	1.1	0.230	0.120	0.080
SEP										
01...		0.55	75.5	<0.100	0.010	0.030	1.2	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

04087000 MILWAUKEE RIVER AT MILWAUKEE, WI--CONTINUED

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

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 1987 20...	0830	268	<10	1	34	<0.5	<1	2	<3	1	20
MAR 1988 16...	0945	814	<10	<1	25	<0.5	<1	<1	<3	1	61
JUN 23...	1015	105	30	3	39	<0.5	<1	<1	<3	1	16
SEP 01...	1100	69	<10	1	36	<0.5	3	<1	<3	<1	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)
OCT 1987 20...	7	6	4	0.1	<10	2	<1	330	<6	13
MAR 1988 16...	<5	<4	15	<0.1	<10	<1	<1	280	<6	11
JUN 23...	<5	12	8	<0.1	<10	1	<1	1600	<6	11
SEP 01...	<5	12	2	<0.1	<10	<1	<1	1300	<6	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)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY) (80155)	SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT 1987 20...	0830	268	750	11.0	--	--	--
NOV 09...	0950	362	760	5.0	--	--	--
DEC 17...	1430	621	620	0.0	--	--	--
MAR 1988 16...	0945	814	440	0.5	10	22	73
MAY 13...	1100	335	650	19.0	--	--	--
JUN 22...	1550	118	710	28.0	--	--	--
JUN 23...	1015	105	830	24.0	17	4.8	47
AUG 04...	1005	71	1150	27.0	--	--	--
SEP 01...	1100	69	700	20.0	17	3.2	0%
SEP 15...	1045	95	655	20.5	--	--	--

STREAMS TRIBUTARY TO LAKE MICHIGAN

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: Ice periods listed in rating tables 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.--11 years (1976-77, 1980-88) 31.0 ft³/s, 12.13 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)
Jan. 30	1920	(a) *570	(a) *6.27	No other peak greater than base discharge.			

(a) Ice jam.

Minimum, 0.52 ft³/s Aug. 18, gage height, 2.47 ft.

RATING TABLES (gage height, in feet, and discharge, in cubic feet per second).
(Shifting-control method used Feb. 3, 4; stage-discharge relation affected by ice Dec. 5, 16-20, Dec. 31 to Jan. 30, and Feb. 5 to Mar. 1.)

Oct. 1 to Jan. 30

2.9	9.8
3.1	19
3.3	34
3.5	54
3.7	80
4.0	131

Jan. 30 (1920) to Sept. 30

2.4	0.3	3.2	28
2.5	.7	3.4	45
2.6	2.0	3.7	81
2.8	6.4	4.0	131
2.9	9.6	4.5	264
3.0	14	5.0	456

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	15	30	54	25	317	36	45	25	4.1	1.5	1.0	1.1
2	14	29	42	22	223	28	57	22	4.7	1.6	.94	1.1
3	13	25	36	20	108	25	96	20	4.4	1.8	.80	2.5
4	12	23	31	18	80	23	86	19	4.2	1.6	2.3	9.5
5	12	19	26	16	60	19	67	17	4.0	1.5	1.4	3.3
6	11	16	24	15	45	21	80	16	4.1	1.4	1.2	2.5
7	11	17	40	14	35	27	73	15	3.9	1.3	.96	2.1
8	11	16	85	13	29	37	60	13	3.7	1.3	1.3	1.7
9	11	16	131	12	25	45	50	15	3.3	1.3	1.2	1.8
10	10	15	130	11	23	36	40	21	3.7	1.2	1.0	1.7
11	10	14	113	12	21	36	35	18	3.7	.96	.94	1.6
12	10	14	89	13	19	38	31	16	4.9	.95	.86	1.6
13	11	14	58	12	18	35	28	15	3.9	.97	1.2	1.4
14	11	13	44	11	18	28	26	13	2.9	.89	.70	1.3
15	10	13	33	15	17	28	24	12	2.8	.89	.76	1.1
16	13	16	28	25	17	22	22	11	2.7	2.4	.68	1.1
17	19	24	23	44	20	21	20	10	3.6	2.1	.63	2.0
18	17	22	21	78	22	21	18	9.6	3.8	2.0	3.0	3.8
19	16	19	24	150	19	21	16	9.1	3.3	1.5	1.7	7.2
20	15	17	74	250	18	20	17	8.6	2.7	1.6	1.6	5.5
21	13	15	99	170	17	19	17	8.2	2.6	2.9	1.4	3.8
22	13	14	80	90	19	17	19	7.5	4.6	2.3	1.3	39
23	13	15	64	60	23	22	49	7.0	3.2	1.8	6.5	23
24	15	17	66	35	21	26	43	6.4	2.5	3.1	2.2	11
25	14	35	82	24	19	32	34	6.4	4.2	2.0	1.7	7.1
26	16	36	67	20	22	34	31	6.3	1.9	1.5	1.6	5.4
27	17	30	48	18	27	28	39	5.8	1.3	1.4	1.5	4.9
28	16	54	40	17	34	35	41	5.5	1.9	1.1	1.5	4.7
29	15	87	35	250	40	51	35	5.1	1.6	1.0	1.3	4.4
30	14	69	32	380	---	54	29	4.7	1.7	1.1	1.2	4.0
31	14	---	27	416	---	53	---	4.2	---	1.1	1.1	---
TOTAL	412	744	1746	2256	1356	938	1228	372.4	99.9	48.06	45.47	161.2
MEAN	13.3	24.8	56.3	72.8	46.8	30.3	40.9	12.0	3.33	1.55	1.47	5.37
MAX	19	87	131	416	317	54	96	25	4.9	3.1	6.5	39
MIN	10	13	21	11	17	17	16	4.2	1.3	.89	.63	1.1
CFSM	.38	.71	1.62	2.10	1.35	.87	1.18	.35	.10	.04	.04	.15
IN.	.44	.80	1.87	2.42	1.45	1.01	1.32	.40	.11	.05	.05	.17

CAL YR 1987 TOTAL 8669.0 MEAN 23.8 MAX 178 MIN 3.9 CFSM .68 IN. 9.29
WTR YR 1988 TOTAL 9407.03 MEAN 25.7 MAX 416 MIN .63 CFSM .74 IN. 10.08

STREAMS TRIBUTARY TO LAKE MICHIGAN

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 and steel plate weir. Elevation of gage is 690 ft, from topographic map.

REMARKS.--Estimated daily discharges: Ice periods listed in rating tables below. Records good, except those for discharges less than 6 ft³/s and greater than 600 ft³/s and the periods of ice effect, which are poor.

AVERAGE DISCHARGE.--12 years (1976-79, 1981-88), 13.7 ft³/s, 10.22 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, 1,480 ft³/s, Jan. 19, gage height, 6.32 ft; minimum daily discharge, 3.7 ft³/s, Aug. 6 and 7.

RATING TABLES (gage height, in feet, and discharge, in cubic feet per second).
(Shifting-control method used May 21-25 and Sept. 16; stage-discharge relation affected by ice Nov. 21, Dec. 4, 5, 15-18, Jan. 1-16, 22-28, and Feb. 2-26.)

Oct. 1 to Sept. 16 (1530)

Sept. 16 (1535) to Sept. 30

2.0	3.7	2.7	57	2.7	3.7	3.4	64
2.1	6.5	3.0	105	2.8	7.3	3.7	142
2.2	10	3.5	211	2.9	12	4.0	268
2.4	24	4.0	353	3.1	28		

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	8.6	8.9	12	8.2	37	12	16	16	5.4	3.9	4.7	4.7
2	8.2	7.5	9.7	7.6	16	11	70	16	5.8	3.9	4.9	4.7
3	7.7	6.8	11	7.0	13	9.1	61	15	4.8	4.0	6.3	7.7
4	7.7	6.2	9.4	6.8	10	8.1	36	15	4.3	4.0	26	138
5	7.8	5.7	8.4	6.6	9.0	8.3	26	14	4.5	4.1	6.2	12
6	7.3	5.6	7.4	6.4	8.2	8.7	145	14	4.8	4.5	3.7	5.7
7	7.5	11	48	6.2	7.4	10	57	12	4.9	4.6	3.7	5.1
8	7.6	10	44	6.0	7.0	14	32	13	4.7	4.7	31	4.4
9	7.5	6.8	59	5.8	6.6	14	24	17	4.8	4.5	13	4.3
10	7.1	5.5	29	5.8	6.4	11	19	12	4.7	4.3	4.5	4.2
11	7.1	5.4	28	5.6	6.2	11	17	10	4.7	4.4	4.1	4.1
12	7.4	5.7	19	5.6	6.0	14	15	15	4.8	4.4	4.1	4.6
13	7.2	5.5	13	5.6	6.0	12	15	8.9	5.0	4.4	7.6	4.6
14	6.9	5.5	11	5.6	5.8	9.4	15	7.8	5.3	4.7	4.1	4.2
15	6.8	4.9	10	6.0	5.8	8.6	12	8.3	5.2	4.7	15	4.1
16	6.9	13	9.2	10	5.8	8.6	12	7.4	5.2	14	4.1	4.9
17	10	15	8.4	126	6.6	8.6	12	6.3	4.9	4.4	4.2	13
18	6.2	6.7	8.0	141	9.0	8.5	11	5.9	6.1	4.2	17	4.4
19	6.7	5.4	32	261	8.4	8.5	9.9	5.6	4.7	4.1	4.5	37
20	6.0	5.0	106	177	7.2	8.2	10	5.1	4.6	4.2	4.1	13
21	5.9	5.0	45	36	6.0	8.2	10	5.2	4.5	4.1	3.9	4.9
22	7.4	4.8	28	16	7.0	8.2	17	5.9	4.5	4.1	4.2	158
23	6.2	7.2	20	11	7.2	8.7	40	5.9	4.4	4.1	46	34
24	7.0	8.3	40	9.4	7.0	9.3	14	5.4	4.5	9.1	5.2	9.9
25	6.0	41	39	8.2	6.0	17	13	5.4	4.5	4.8	4.3	6.5
26	13	12	22	7.8	8.0	11	26	5.4	4.1	4.5	4.1	6.0
27	8.9	8.1	15	7.6	11	9.0	36	5.5	4.2	4.6	4.1	5.3
28	6.5	45	14	8.4	14	31	22	5.6	12	4.8	4.0	4.4
29	6.1	27	12	18	16	27	17	5.7	7.3	4.9	4.1	4.3
30	6.0	16	10	157	---	32	16	5.4	4.2	4.6	4.4	4.1
31	5.9	---	8.9	123	---	20	---	5.7	---	4.5	4.4	---
TOTAL	227.1	320.5	736.4	1212.2	269.6	385.0	825.9	285.4	153.4	150.1	261.5	522.1
MEAN	7.33	10.7	23.8	39.1	9.30	12.4	27.5	9.21	5.11	4.84	8.44	17.4
MAX	13	45	106	261	37	32	145	17	12	14	46	158
MIN	5.9	4.8	7.4	5.6	5.8	8.1	9.9	5.1	4.1	3.9	3.7	4.1
CFSM	.40	.59	1.31	2.15	.51	.68	1.51	.51	.28	.27	.46	.96
IN.	.46	.66	1.51	2.48	.55	.79	1.69	.58	.31	.31	.53	1.07

CAL YR 1987 TOTAL 5829.4 MEAN 16.0 MAX 178 MIN 3.5 CFSM .88 IN. 11.92
WTR YR 1988 TOTAL 5349.2 MEAN 14.6 MAX 261 MIN 3.7 CFSM .80 IN. 10.93

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: May 28 to July 5 and ice periods listed in rating table below. Records good except those for estimated daily discharges, which are poor. Low flow affected by three sewage treatment plants upstream. CR-21X with telephone connection at station.

AVERAGE DISCHARGE.--27 years, 98.1 ft³/s, 10.83 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) Inside Outside	DATE	TIME	DISCHARGE (ft ³ /s)	GAGE HEIGHT (FT) Inside Outside
Jan. 19	2210	*3,110	*6.96 8.08	Sept. 4	1255	2,380	5.91 6.60
Jan. 31	Unknown	2,300	-- 6.50				

Minimum daily discharge, 9.4 ft³/s, July 10.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Dec. 15-18, Jan. 1-17, Jan. 24 to Feb. 29, and Mar. 3-6.)

0.1	8.8	1.5	166
0.3	15	2.0	260
0.5	24	2.5	402
0.7	38	3.0	630
1.0	80	4.0	1,140

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	58	104	157	70	450	94	146	85	18	13	12	12
2	48	86	128	60	220	86	360	72	20	12	12	11
3	39	67	127	52	150	50	416	64	17	11	16	25
4	36	58	102	48	110	43	296	57	16	10	94	628
5	35	46	79	44	90	40	223	52	16	10	49	83
6	34	38	74	42	70	45	885	47	17	10	15	24
7	36	61	294	41	56	65	458	42	18	11	12	18
8	33	78	310	40	50	105	263	41	17	13	117	16
9	30	49	560	39	46	120	192	60	16	11	85	14
10	28	37	337	38	44	96	150	70	16	9.4	18	13
11	27	34	295	40	43	88	128	51	15	10	14	12
12	27	34	233	42	42	103	111	77	15	13	13	12
13	28	34	178	39	41	96	101	46	15	12	27	12
14	28	33	142	37	41	72	98	36	16	12	20	12
15	28	30	120	39	40	55	78	35	15	13	54	12
16	32	70	110	43	40	53	71	32	15	69	15	11
17	99	127	96	250	42	48	64	30	14	36	14	45
18	44	65	90	193	54	47	59	29	16	14	100	36
19	38	51	207	684	50	47	51	28	14	13	34	170
20	36	42	791	1130	45	46	54	28	14	12	14	66
21	32	35	430	324	44	42	53	27	14	13	12	22
22	45	32	275	232	45	41	69	24	14	14	12	614
23	34	57	217	152	40	45	272	24	13	12	220	259
24	49	48	283	82	35	60	145	23	13	42	22	82
25	35	282	322	60	34	99	108	22	12	25	15	41
26	64	139	234	54	56	87	131	21	12	14	13	27
27	67	104	179	50	66	73	231	22	12	13	12	22
28	41	363	154	48	72	163	174	23	50	13	12	19
29	35	324	137	100	90	189	128	23	20	14	11	18
30	33	200	124	300	---	224	102	20	15	12	12	17
31	30	---	112	1000	---	178	---	18	---	11	11	---
TOTAL	1229	2728	6897	5373	2206	2600	5617	1229	495	497.4	1087	2353
MEAN	39.6	90.9	222	173	76.1	83.9	187	39.6	16.5	16.0	35.1	78.4
MAX	99	363	791	1130	450	224	885	85	50	69	220	628
MIN	27	30	74	37	34	40	51	18	12	9.4	11	11
CFSM	.32	.74	1.81	1.41	.62	.68	1.52	.32	.13	.13	.29	.64
IN.	.37	.83	2.09	1.63	.67	.79	1.70	.37	.15	.15	.33	.71

CAL YR 1987 TOTAL 39137 MEAN 107 MAX 1060 MIN 19 CFSM .87 IN. 11.84
WTR YR 1988 TOTAL 32311.4 MEAN 88.3 MAX 1130 MIN 9.4 CFSM .72 IN. 9.77

STREAMS TRIBUTARY TO LAKE MICHIGAN

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: Feb. 22 to Mar. 2 and ice periods listed in rating table below. Records good except those for estimated daily discharges and those for discharges greater than 500 ft³/s, which are fair.

AVERAGE DISCHARGE.--6 years, 26.3 ft³/s, 17.68 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, 2,560 ft³/s, Jan. 19, gage height, 11.25 ft; minimum discharge, 3.3 ft³/s, Feb. 5, gage height, 5.95 ft, result of freezeup.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Jan. 1-17, 23, 24, 26-28, and Feb. 4, 6-21.)

6.0	4.2	7.0	83
6.2	9.4	7.5	179
6.4	19	8.0	315
6.6	33	9.0	736
6.8	55		

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	8.1	21	11	11	21	16	12	11	14	9.2	12	8.3
2	8.4	9.5	8.8	9.2	15	13	128	11	20	8.4	18	7.8
3	6.4	7.5	48	8.8	12	8.7	49	11	11	8.1	20	20
4	6.5	7.5	12	8.0	11	8.5	27	10	9.0	8.1	96	144
5	7.8	6.8	8.1	7.6	8.9	7.9	21	11	8.3	9.5	81	16
6	7.1	6.7	8.1	7.2	8.6	9.3	322	10	10	10	7.2	9.5
7	8.6	13	96	7.0	9.2	12	34	9.5	11	11	6.4	8.6
8	6.9	14	53	6.8	8.4	21	21	11	12	11	91	8.8
9	6.8	8.7	66	6.6	8.0	12	16	27	11	9.2	97	8.4
10	6.1	7.4	20	6.6	7.4	9.5	14	12	11	8.6	10	7.3
11	5.6	6.7	36	6.4	7.2	9.3	13	10	11	8.9	10	7.1
12	6.5	6.9	15	6.4	6.8	11	13	19	11	10	9.9	9.4
13	7.1	6.7	10	6.2	6.6	7.9	14	9.2	11	11	12	8.3
14	7.2	5.9	9.6	6.2	6.6	7.8	16	7.4	11	11	9.2	8.0
15	7.4	5.5	75	6.2	6.6	7.6	11	8.6	11	11	37	7.8
16	9.2	27	14	7.0	6.6	7.5	9.9	7.6	10	117	11	7.9
17	23	30	11	45	6.8	7.3	9.2	7.5	9.9	13	11	22
18	6.2	8.0	9.1	65	9.6	7.2	9.4	7.4	8.5	11	57	9.4
19	8.3	7.5	66	533	7.4	7.0	9.4	7.5	8.2	11	11	68
20	7.0	6.7	206	157	6.4	7.0	11	7.8	10	9.7	7.3	20
21	6.7	5.4	38	18	5.8	6.8	9.8	7.3	11	12	6.6	8.9
22	13	5.3	28	12	10	7.5	31	6.5	12	9.2	7.7	316
23	7.0	13	19	11	15	8.8	104	7.2	11	6.8	100	52
24	15	13	64	10	6.8	8.9	13	8.5	11	37	9.2	11
25	6.6	95	44	9.2	5.8	15	12	9.3	9.3	19	8.5	9.3
26	24	11	19	15	16	7.3	38	9.7	8.0	9.0	7.9	9.5
27	13	7.0	14	9.4	22	6.1	50	9.0	8.7	8.5	7.1	9.7
28	7.9	133	14	10	25	66	19	9.7	37	9.3	6.5	9.2
29	6.8	21	13	39	30	33	14	8.4	22	10	7.3	8.9
30	6.5	14	12	207	---	47	12	8.1	9.4	8.0	7.6	8.8
31	5.8	---	11	96	---	16	---	11	---	9.6	8.3	---
TOTAL	272.5	530.7	1058.7	1353.8	316.5	419.9	1062.7	310.2	358.3	445.1	790.7	849.9
MEAN	8.79	17.7	34.2	43.7	10.9	13.5	35.4	10.0	11.9	14.4	25.5	28.3
MAX	24	133	206	533	30	66	322	27	37	117	100	316
MIN	5.6	5.3	8.1	6.2	5.8	6.1	9.2	6.5	8.0	6.8	6.4	7.1
CFSM	.44	.88	1.69	2.16	.54	.67	1.75	.50	.59	.71	1.26	1.40
IN.	.50	.98	1.95	2.49	.58	.77	1.96	.57	.66	.82	1.46	1.57

CAL YR 1987 TOTAL 8708.9 MEAN 23.9 MAX 580 MIN 4.4 CFSM 1.18 IN. 16.04
WTR YR 1988 TOTAL 7769.0 MEAN 21.2 MAX 533 MIN 5.3 CFSM 1.05 IN. 14.31

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: 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.--25 years, 22.4 ft³/s, 12.17 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)
Jan. 20	0215	*568	*7.62	Apr. 6	1130	440	6.98
Jan. 30	2130	366	6.54				

Minimum discharge, 0.51 ft³/s, July 14, 15, Aug. 8, gage height, 2.13 ft.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Dec. 29 to Jan. 16, Jan. 24-29 and Feb. 6-17.)

2.14	0.58	3.0	37
2.2	.99	4.0	101
2.3	2.5	5.0	181
2.4	4.9	6.0	290
2.5	8.7	7.0	444
2.6	14		

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	4.7	8.0	22	18	121	27	24	16	2.5	2.3	1.5	.86
2	4.1	6.8	17	16	47	24	76	14	3.0	1.6	.98	.65
3	3.8	5.4	25	14	32	18	128	13	2.6	1.4	.75	9.5
4	3.5	4.3	28	13	23	14	62	13	2.4	1.2	.93	33
5	3.5	3.4	17	11	18	13	40	12	2.2	1.2	4.5	25
6	3.4	3.1	15	10	14	15	334	12	2.2	1.0	6.0	6.0
7	3.6	3.7	78	9.6	11	19	148	12	2.1	1.0	1.8	2.6
8	3.7	4.4	123	9.4	10	28	56	13	2.0	.82	6.8	1.8
9	3.7	4.7	136	9.0	9.4	32	36	17	1.9	.75	18	1.5
10	3.5	3.9	60	8.8	9.0	21	27	17	2.0	.74	7.3	1.3
11	3.4	3.5	48	8.6	8.8	20	23	13	1.9	.86	2.4	1.2
12	3.4	3.6	41	8.4	8.6	21	20	19	1.9	.75	1.5	1.1
13	3.4	3.3	27	8.2	8.2	20	18	14	1.8	.67	1.1	1.0
14	3.4	3.5	22	8.0	8.2	15	18	12	1.7	.58	.85	.77
15	3.5	3.5	25	7.6	8.2	13	15	12	1.6	.62	5.8	1.1
16	3.3	5.2	19	8.4	8.4	11	14	12	1.5	25	4.4	1.1
17	4.2	15	19	49	8.4	11	13	11	1.6	28	1.9	5.2
18	3.7	9.3	18	99	9.8	11	11	11	1.5	6.4	6.1	3.6
19	3.1	5.7	29	154	9.8	11	11	11	1.4	2.7	8.6	5.5
20	2.9	4.3	244	429	9.0	10	10	9.8	1.4	1.9	3.1	11
21	2.8	3.7	149	146	7.8	9.5	10	8.7	1.3	2.4	1.5	4.7
22	3.0	3.7	72	56	10	9.4	12	7.5	1.5	2.5	1.1	93
23	2.9	5.6	50	33	12	10	111	5.8	1.3	1.8	25	97
24	4.4	6.5	78	23	9.7	12	36	5.3	1.3	3.9	9.8	18
25	4.2	48	119	20	7.3	13	23	4.4	1.2	2.3	3.1	7.6
26	5.4	26	59	18	14	13	22	3.8	1.0	1.4	1.7	4.9
27	9.2	14	35	16	20	11	54	3.6	1.0	1.1	1.3	3.4
28	5.3	52	27	13	20	27	41	3.2	3.8	.95	1.0	2.8
29	3.4	72	24	14	28	52	25	2.9	8.4	.77	.85	2.5
30	3.1	29	23	211	---	55	19	2.8	4.6	4.0	.80	2.3
31	3.5	---	20	331	---	35	---	2.5	---	2.9	.90	---
TOTAL	119.0	365.1	1669	1780.0	510.6	600.9	1437	314.3	64.6	103.51	131.36	349.98
MEAN	3.84	12.2	53.8	57.4	17.6	19.4	47.9	10.1	2.15	3.34	4.24	11.7
MAX	9.2	72	244	429	121	55	334	19	8.4	28	25	97
MIN	2.8	3.1	15	7.6	7.3	9.4	10	2.5	1.0	.58	.75	.65
CFSM	.15	.49	2.15	2.30	.70	.78	1.92	.41	.09	.13	.17	.47
IN.	.18	.54	2.48	2.65	.76	.89	2.14	.47	.10	.15	.20	.52

CAL YR 1987 TOTAL 7480.1 MEAN 20.5 MAX 299 MIN 1.8 CFSM .82 IN. 11.13
WTR YR 1988 TOTAL 7445.35 MEAN 20.3 MAX 429 MIN .58 CFSM .81 IN. 11.08

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 periods listed in rating table below. Records fair. Flow affected by urbanization in the drainage basin.

AVERAGE DISCHARGE.--25 years, 44.6 ft³/s, 12.31 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)
Jan. 20	----	(a) * 530	(a) *8.15	No other peak greater than base discharge.			

(a) Backwater from ice.

Minimum daily discharge, 1.6 ft³/s, Aug. 2.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Shifting-control method used Oct. 10 to Dec. 1, Dec. 7-13, 20-27, Mar. 8-10, 12, 13, Apr. 11-13, 25, 29, June 24-28, July 1-16, July 19 to Aug. 4, Aug. 7, 8, 12-14, 17, 18, 21, 22, Aug. 26 to Sept. 3, and Sept. 11-16; stage discharge relation affected by ice Dec. 15-18 and Dec. 28 to Mar. 5.)

1.4	1.2	1.9	8.5	5.0	169
1.5	1.8	2.0	12	6.0	270
1.6	2.5	2.5	47	7.0	444
1.7	3.5	3.0	69	8.0	740
1.8	5.5	4.0	112		

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	13	11	55	39	280	68	59	24	5.1	3.2	1.8	2.2
2	13	18	44	35	130	58	73	23	4.7	2.3	1.6	1.9
3	11	11	42	31	90	40	226	21	4.5	2.2	2.0	3.2
4	8.5	10	47	28	72	29	126	19	4.9	1.8	1.7	19
5	11	8.5	32	26	62	25	79	19	3.8	2.1	28	72
6	10	5.6	22	24	52	23	339	18	3.7	2.1	7.5	14
7	12	6.4	61	22	45	29	371	18	3.5	2.1	2.4	5.1
8	13	8.5	158	20	39	43	116	18	3.5	1.9	2.2	4.2
9	13	14	181	19	35	53	77	19	4.3	2.4	56	5.3
10	16	8.9	118	19	32	40	59	25	3.4	1.9	16	4.0
11	17	6.3	78	18	30	34	50	19	3.2	1.8	4.2	2.6
12	18	5.8	75	18	28	38	43	22	3.1	2.3	3.0	2.3
13	17	5.8	57	17	26	39	38	20	3.0	1.8	2.5	2.3
14	15	5.8	48	17	25	29	36	16	2.8	1.8	3.2	2.3
15	11	5.1	54	17	24	27	31	14	2.9	2.0	6.8	2.3
16	18	6.0	50	19	23	21	25	15	3.0	3.7	10	3.0
17	29	37	44	30	23	21	23	14	3.1	25	3.0	3.7
18	28	23	42	120	24	19	21	13	2.7	4.4	3.0	5.5
19	20	9.0	40	140	25	19	19	11	2.4	2.5	16	16
20	17	7.5	246	470	25	18	18	11	2.3	2.8	4.1	34
21	14	5.3	281	380	21	18	18	10	2.7	2.3	2.4	11
22	17	4.4	119	240	24	18	17	9.2	2.7	2.2	2.3	56
23	23	5.6	83	130	30	18	108	9.3	2.3	2.2	28	207
24	22	7.0	80	110	25	20	63	8.8	2.7	2.4	16	48
25	25	52	139	86	17	27	40	7.7	2.2	2.9	4.4	16
26	26	66	98	70	21	29	31	8.7	2.0	3.3	2.5	12
27	37	39	65	60	50	22	64	7.5	2.2	2.3	2.4	12
28	21	52	52	56	52	32	60	6.6	2.3	1.9	2.2	7.1
29	10	117	50	56	70	86	41	5.6	11	2.0	2.3	4.6
30	10	68	46	180	---	90	30	5.0	6.6	2.1	2.4	3.9
31	7.8	---	44	460	---	86	---	5.1	---	2.1	2.9	---
TOTAL	523.3	629.5	2551	2957	1400	1119	2301	442.5	106.6	95.8	242.8	582.5
MEAN	16.9	21.0	82.3	95.4	48.3	36.1	76.7	14.3	3.55	3.09	7.83	19.4
MAX	37	117	281	470	280	90	371	25	11	25	56	207
MIN	7.8	4.4	22	17	18	17	17	5.0	2.0	1.8	1.6	1.9
CFSM	.34	.43	1.67	1.94	.98	.73	1.56	.29	.07	.06	.16	.39
IN.	.40	.48	1.93	2.24	1.06	.85	1.74	.33	.08	.07	.18	.44

CAL YR 1987 TOTAL 13116.5 MEAN 35.9 MAX 536 MIN 3.6 CFSM .73 IN. 9.92
WTR YR 1988 TOTAL 12951.0 MEAN 35.4 MAX 470 MIN 1.6 CFSM .72 IN. 9.79

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 fair.

AVERAGE DISCHARGE.--25 years, 47.8 ft³/s, 11.39 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)
Jan. 20	2130	(a) 620	(b) *9.84	Apr. 6	2015	*788	9.17
Jan. 31	1745	(a) 740	(b) 9.71				

(a) Estimated mean daily.

(b) Backwater from ice.

Minimum daily discharge, 1.6 ft³/s Aug. 2-4, 29.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Dec. 16-19 and Dec. 30 to Feb. 27.)

1.8	1.5	4.0	109
1.9	2.8	5.0	169
2.0	4.8	6.0	244
2.1	7.4	7.0	337
2.3	14	8.0	485
3.0	50	9.0	730
		10.0	1,140

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	14	7.9	61	54	560	106	87	35	4.8	3.0	1.8	2.1
2	14	8.7	46	50	250	90	99	31	4.8	2.8	1.6	2.4
3	12	9.3	39	44	150	60	232	27	4.7	2.8	1.6	3.5
4	11	9.2	34	36	96	42	172	25	4.4	2.7	1.6	7.2
5	11	8.1	26	31	74	36	125	23	4.0	2.7	1.9	14
6	10	7.2	23	28	64	37	577	21	3.6	2.7	1.8	6.4
7	10	7.2	95	26	56	46	608	20	3.4	2.8	1.7	3.4
8	9.3	7.6	327	24	48	64	260	19	3.4	2.3	1.9	2.6
9	9.0	7.5	403	23	43	78	155	21	3.6	2.2	11	2.1
10	8.5	6.9	268	22	38	55	119	26	3.6	2.4	6.7	2.0
11	7.9	6.6	166	21	34	49	95	22	3.4	2.4	3.5	2.0
12	7.8	6.7	140	20	30	52	75	20	3.3	2.4	2.4	2.0
13	7.9	6.4	100	20	28	46	61	18	3.2	2.5	2.0	2.1
14	7.5	6.0	76	19	26	35	52	16	3.1	2.5	1.8	2.1
15	7.3	5.6	54	19	24	30	44	16	3.1	2.8	1.8	2.3
16	7.4	5.8	64	20	23	26	38	15	3.0	4.6	1.8	2.5
17	8.1	12	50	30	24	25	35	14	3.1	13	1.7	2.8
18	7.9	10	46	150	25	25	31	13	3.0	4.4	2.0	3.0
19	7.4	7.9	42	160	25	24	28	12	3.2	2.8	4.6	3.2
20	7.4	7.1	286	620	22	22	26	11	3.3	2.3	3.0	3.6
21	7.6	6.0	339	580	20	20	23	10	3.3	3.4	1.9	3.7
22	7.5	5.9	210	290	22	19	21	9.7	3.4	8.3	1.7	8.7
23	7.8	6.5	149	160	30	22	90	9.3	2.9	3.8	2.1	57
24	8.2	6.2	148	120	25	24	64	9.0	2.9	2.7	2.4	27
25	8.6	23	279	96	20	30	45	8.2	2.7	2.3	1.8	11
26	8.2	28	201	84	40	30	38	7.8	2.8	2.5	1.7	7.4
27	12	19	125	74	90	26	62	7.1	2.4	1.9	1.8	5.6
28	9.5	38	97	50	100	40	65	6.6	2.8	1.7	1.7	4.7
29	8.3	120	84	43	129	114	50	5.9	3.8	1.7	1.6	4.5
30	7.8	79	70	260	---	141	41	5.4	4.5	1.9	1.8	4.2
31	7.2	---	60	740	---	121	---	5.0	---	2.7	1.8	---
TOTAL	278.1	485.3	4108	3914	2116	1535	3418	489.0	103.5	99.0	76.5	205.1
MEAN	8.97	16.2	133	126	73.0	49.5	114	15.8	3.45	3.19	2.47	6.84
MAX	14	120	403	740	560	141	608	35	4.8	13	11	57
MIN	7.2	5.6	23	19	20	19	21	5.0	2.4	1.7	1.6	2.0
CFSM	.16	.28	2.32	2.22	1.28	.87	2.00	.28	.06	.06	.04	.12
IN.	.18	.32	2.68	2.55	1.38	1.00	2.23	.32	.07	.06	.05	.13

CAL YR 1987 TOTAL 18024.8 MEAN 49.4 MAX 837 MIN 2.6 CFSM .87 IN. 11.76
WTR YR 1988 TOTAL 16827.5 MEAN 46.0 MAX 740 MIN 1.6 CFSM .81 IN. 10.98

STREAMS TRIBUTARY TO LAKE MICHIGAN

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 for periods of ice affect, which are fair.

AVERAGE DISCHARGE.--25 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)
Dec. 22	1300	967	4.57	Feb. 1	1330	*2,090	*5.96
Jan. 22	1815	1,420	5.14	Apr. 8	0245	1,430	5.15

Minimum daily, no flow, July 9-15.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Shifting-control method used Apr. 18-22 and May 2-15; stage-discharge relation affected by ice Dec. 16-18, Jan. 1-11, 27, and Feb. 4-22.)

1.99	0	2.4	18	3.5	290
2.0	.22	2.5	26	4.0	560
2.1	2.5	2.6	37	5.0	1,310
2.2	6.0	2.8	65	6.0	2,130
2.3	11	3.0	116		

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	59	27	214	110	1980	289	341	115	17	5.3	11	2.3
2	46	27	163	100	1540	295	304	97	16	7.9	7.9	2.1
3	40	31	133	84	1080	240	523	85	18	6.7	6.5	3.7
4	38	34	123	70	540	179	657	79	18	5.1	4.6	65
5	36	32	108	62	360	141	595	72	17	4.0	2.6	49
6	34	30	85	56	300	138	1030	69	15	2.2	2.5	85
7	33	29	153	52	230	160	1260	65	14	1.6	9.4	35
8	30	28	465	49	180	212	1370	63	14	.55	13	22
9	29	26	684	49	120	272	854	65	13	.00	18	18
10	28	27	781	48	110	241	486	70	12	.00	34	14
11	26	30	704	48	100	202	324	77	11	.00	37	12
12	24	28	495	50	92	192	250	74	8.8	.00	24	11
13	24	26	352	51	84	192	201	71	6.9	.00	17	8.4
14	24	25	241	49	78	163	165	68	4.8	.00	13	6.4
15	23	24	202	46	70	128	142	63	4.7	.00	8.9	4.7
16	23	23	150	46	66	115	122	58	4.6	1.8	8.4	3.7
17	23	23	140	65	62	104	106	54	3.9	1.4	8.3	3.7
18	21	37	120	153	60	103	87	53	3.5	9.1	9.6	3.2
19	25	48	162	360	62	101	76	50	3.9	16	10	4.4
20	26	36	441	974	66	97	70	45	4.3	13	11	6.7
21	24	29	727	1080	58	90	63	44	4.0	11	14	14
22	23	27	924	1300	60	84	61	41	2.9	8.2	12	54
23	23	25	754	1160	68	89	126	35	2.0	6.1	11	231
24	23	25	541	780	77	94	302	33	2.0	6.8	10	237
25	24	41	620	502	69	107	196	27	2.5	7.4	17	103
26	26	116	671	347	65	119	137	24	1.9	6.5	15	43
27	30	124	579	300	113	113	151	23	1.5	5.1	12	31
28	36	95	374	217	196	112	227	23	1.6	4.3	8.1	25
29	39	219	270	181	228	227	201	21	2.0	3.4	6.5	23
30	32	312	233	458	---	378	146	19	1.7	12	4.5	19
31	28	---	209	1320	---	401	---	17	---	15	3.4	---
TOTAL	920	1604	11818	10167	8114	5378	10573	1700	232.5	160.45	370.2	1140.3
MEAN	29.7	53.5	381	328	280	173	352	54.8	7.75	5.18	11.9	38.0
MAX	59	312	924	1320	1980	401	1370	115	18	16	37	237
MIN	21	23	85	46	58	84	61	17	1.5	.00	2.5	2.1
CFSM	.16	.28	2.01	1.73	1.47	.91	1.85	.29	.04	.03	.06	.20
IN.	.18	.31	2.31	1.99	1.59	1.05	2.07	.33	.05	.03	.07	.22

CAL YR 1987 TOTAL 53080 MEAN 145 MAX 1310 MIN 11 CFSM .77 IN. 10.39
WTR YR 1988 TOTAL 52177.45 MEAN 143 MAX 1980 MIN .00 CFSM .75 IN. 10.22

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.--17 years, 36.8 ft³/s, 12.98 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)
Jan. 20	0115	817	6.58	Apr. 6	0930	*915	*6.94

Minimum daily, 3.3 ft³/s, July 3.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Dec. 31 to Jan. 19, Jan. 24-29, Feb. 5-27.)

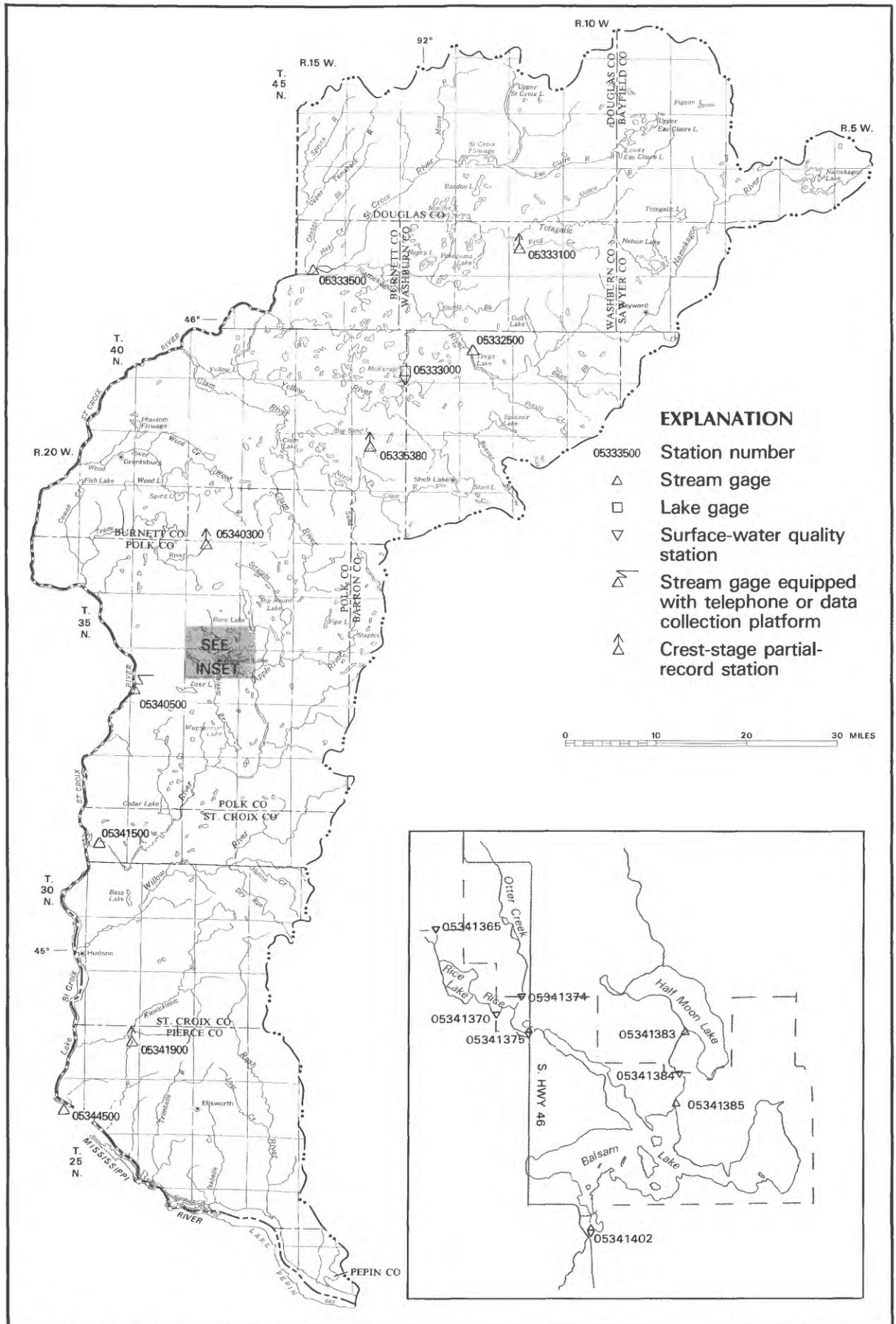
1.6	1.8	2.5	44
1.7	3.8	3.0	93
1.8	6.4	4.0	242
2.0	14	5.0	440
2.2	24	6.0	684

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	15	8.9	43	34	205	50	51	18	9.0	8.0	5.7	5.7
2	16	9.8	35	30	112	44	97	18	8.7	5.9	5.0	6.0
3	11	11	37	26	77	31	167	18	9.0	3.3	6.3	21
4	11	12	34	22	60	25	101	18	8.9	3.5	28	64
5	12	11	27	20	45	22	74	17	8.2	3.8	11	29
6	11	11	24	19	30	23	598	17	7.9	4.5	6.0	13
7	11	9.6	163	18	25	26	287	17	10	5.2	5.2	11
8	7.9	8.8	239	18	22	33	161	15	10	5.6	8.6	9.6
9	8.5	8.9	220	17	20	39	106	13	10	5.8	37	6.5
10	12	6.6	131	17	19	30	77	22	9.7	5.6	14	5.3
11	10	12	99	16	18	27	60	18	8.4	5.1	10	5.3
12	9.4	8.2	84	16	18	28	47	17	7.7	5.3	8.9	5.3
13	10	8.6	59	16	17	26	40	14	7.7	5.3	7.7	5.5
14	11	7.5	48	15	17	23	36	12	7.2	5.5	7.8	5.5
15	9.7	6.9	42	15	17	21	31	15	7.0	5.8	9.3	5.8
16	9.7	8.1	39	15	17	19	27	17	9.6	9.0	8.7	13
17	9.8	12	36	60	19	19	25	17	9.0	11	8.4	9.2
18	10	9.9	34	120	20	19	24	17	8.2	8.0	15	5.9
19	9.8	9.0	38	160	18	18	23	16	6.0	7.9	24	8.9
20	10	9.0	245	566	17	18	22	16	6.0	7.3	11	9.6
21	10	7.7	207	228	16	17	21	15	6.3	20	8.2	8.0
22	9.8	7.0	138	141	17	17	19	14	6.8	7.5	7.9	33
23	10	8.0	96	91	26	19	26	13	7.0	6.0	13	64
24	17	8.2	123	60	20	19	20	13	7.2	6.1	10	17
25	16	48	234	45	17	25	19	13	7.3	7.0	7.7	9.9
26	10	29	139	40	35	23	19	13	7.0	9.3	5.4	7.8
27	16	18	83	35	45	21	32	12	6.4	8.8	5.0	7.8
28	14	43	64	33	41	35	25	11	6.3	8.6	5.0	7.4
29	11	74	53	32	55	63	22	11	15	15	5.0	7.3
30	10	48	48	324	---	95	20	10	12	7.7	5.2	7.4
31	9.3	---	38	399	---	67	---	9.5	---	7.4	5.5	---
TOTAL	347.9	479.7	2900	2648	1065	942	2277	466.5	249.5	224.8	315.5	414.7
MEAN	11.2	16.0	93.5	85.4	36.7	30.4	75.9	15.0	8.32	7.25	10.2	13.8
MAX	17	74	245	566	205	95	598	22	15	20	37	64
MIN	7.9	6.6	24	15	16	17	19	9.5	6.0	3.3	5.0	5.3
CFSM	.29	.42	2.43	2.22	.95	.79	1.97	.39	.22	.19	.26	.36
IN.	.34	.46	2.80	2.56	1.03	.91	2.20	.45	.24	.22	.30	.40

CAL YR 1987 TOTAL 12734.6 MEAN 34.9 MAX 479 MIN 6.1 CFSM .91 IN. 12.30
WTR YR 1988 TOTAL 12330.6 MEAN 33.7 MAX 598 MIN 3.3 CFSM .88 IN. 11.91

UPPER MISSISSIPPI RIVER BASIN RECORDS



ST CROIX RIVER BASIN

ST. CROIX RIVER BASIN

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, revised.

PERIOD OF RECORD.--October 1927 to September 1970. October 1987 to September 1988.

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.--Estimated daily discharges: June 19 and Sept. 19. Diurnal fluctuation caused by Trego powerplant.

COOPERATION.--Records of daily discharge furnished by Northern States Power Co.

AVERAGE DISCHARGE.--44 years, 469 ft³/s, 13.05 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, 1,200 ft³/s, Sept. 22; minimum daily, 214 ft³/s, Aug. 2, 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	285	327	508	385	320	302	573	396	285	275	231	264
2	320	327	469	385	320	323	573	396	285	275	214	264
3	285	327	378	385	320	323	573	437	300	275	214	264
4	285	256	378	316	320	323	612	396	315	275	234	264
5	285	271	378	251	320	323	617	382	315	275	407	264
6	307	266	378	235	320	323	617	378	315	275	275	264
7	307	266	378	235	320	323	617	378	320	275	275	249
8	320	266	374	235	320	323	927	378	285	275	275	249
9	320	262	426	270	285	382	617	378	320	275	275	249
10	320	251	468	270	320	382	617	433	285	275	275	249
11	320	251	468	270	320	433	617	556	285	275	275	249
12	320	297	396	305	320	382	617	556	285	241	275	249
13	378	320	396	305	320	382	588	512	285	241	275	231
14	378	320	396	288	320	382	588	437	285	254	397	275
15	353	320	396	305	320	382	561	437	265	275	320	241
16	378	320	378	305	320	382	481	437	265	254	320	241
17	378	378	288	305	320	472	481	396	249	254	277	241
18	378	320	378	320	276	396	481	396	285	254	285	241
19	378	440	326	320	278	382	481	396	285	254	285	280
20	561	472	326	320	305	382	481	396	285	254	285	340
21	558	472	326	320	305	382	476	396	285	241	285	689
22	498	472	326	320	305	380	476	342	285	254	285	1200
23	455	385	385	320	330	382	476	288	285	275	264	881
24	455	382	382	320	320	380	476	378	285	275	264	881
25	498	382	382	320	320	382	435	320	285	275	277	881
26	417	382	382	320	310	612	472	320	285	275	264	689
27	341	378	382	320	310	462	472	320	285	241	264	689
28	318	320	382	320	310	382	396	320	254	231	264	487
29	318	320	251	320	310	612	396	320	254	231	264	487
30	318	320	382	320	---	518	396	320	275	231	264	487
31	327	---	385	320	---	512	---	320	---	231	264	---
TOTAL	11359	10070	11848	9530	9084	12306	16190	12115	8577	8066	8628	12539
MEAN	366	336	382	307	313	397	540	391	286	260	278	418
MAX	561	472	508	385	330	612	927	556	320	275	407	1200
MIN	285	251	251	235	276	302	396	288	249	231	214	231

CAL YR 1987 TOTAL 140079 MEAN 384 MAX 945 MIN 251
WTR YR 1988 TOTAL 130312 MEAN 356 MAX 1200 MIN 214

ST. CROIX RIVER BASIN

05333000 MCKENZIE LAKE NEAR SPOONER, WI

LAKE-STAGE RECORDS

LOCATION.--Lat 45°55'58", long 92°02'17", in SE 1/4 sec.24, T.40 N., R.14 W., Burnett County, Hydrologic Unit 07030002, at outlet of McKenzie Lake, 10.2 mi northwest of Spooner.

DRAINAGE AREA.--32.3 mi².

PERIOD OF RECORD.--August 1936 to September 1976, April 1985 to current year. Data 1936 to 1976 unpublished in district files.

GAGE.--Staff gage read by Fred Kruger through December 1987, Eugene Muellner thereafter. Elevation of gage is 990 ft, from topographic map.

EXTREMES FOR PERIOD OF RECORD (EXCLUDING 1985 WATER YEAR).--Maximum gage height observed, 1.36 ft May 30, 1937; minimum observed, -0.52 ft Sept. 16, 1950.

EXTREMES FOR CURRENT YEAR.--Maximum gage height observed, 0.26 ft, Mar. 26; minimum observed, -0.33 ft, Aug. 3.

REVISED RECORDS.--The gage datum for water year 1985 is given incorrectly at 990 ft from topographic map; gage datum is unknown.

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	GAGE HEIGHT	DATE	GAGE HEIGHT	DATE	GAGE HEIGHT	DATE	GAGE HEIGHT	DATE	GAGE HEIGHT
Nov. 14	0.14	July 7	-0.28	July 27	-0.26	Aug. 20	-0.14	Sept. 8	-0.28
Mar. 26	0.26	12	-0.23	Aug. 3	-0.33	26	-0.18	10	-0.30
Apr. 28	0.16	21	-0.28	10	-0.17	30	-0.22	17	-0.31

WATER-QUALITY RECORDS

LOCATION.--Lat 45°55'06", long 92°01'54", in SW 1/4 sec.30, T.40 N., R.13 W., Burnett County, Hydrologic Unit 07030002, near center of lake, and 9.8 mi northwest of Spooner.

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

REMARKS.--Secchi disc readings made by Fred Kruger through December 1987, Eugene Muellner thereafter.

SECCHI DISC TRANSPARENCY (IN METERS) WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	SECCHI DEPTH	DATE	SECCHI DEPTH	DATE	SECCHI DEPTH	DATE	SECCHI DEPTH	DATE	SECCHI DEPTH
Nov. 14	3.7	July 7	2.4	July 21	2.2	Aug. 10	1.8	Aug. 30	1.5
Apr. 28	2.9	12	2.6	27	2.1	20	1.2	Sept. 10	1.5
				Aug. 3	2.0	26	1.3	17	1.9

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 periods listed in rating table below. Records good except those for ice-affected periods, which are fair.

AVERAGE DISCHARGE.--71 years (water years 1915-81, 1985-88), 1,309 ft³/s, 11.25 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)
Dec. 25	2100	ice jam	*4.08	Apr. 8	0300	*2,630	2.77

Minimum discharge, 459 ft³/s, July 27, 28, gage height, 0.15 ft.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Dec. 2-6, and Dec. 13 to Mar. 29.)

0.1	460	2.0	1,900
0.4	620	3.0	2,880
1.0	1,020		

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	770	898	1280	980	980	1000	1840	986	901	582	495	592
2	768	864	1200	960	980	1000	1920	980	738	592	486	659
3	800	874	1100	980	980	1000	2150	988	748	572	478	616
4	805	862	1000	1000	960	1000	2270	955	740	565	574	656
5	804	869	980	980	960	1000	2380	879	726	620	661	609
6	853	841	980	960	960	1000	2450	841	712	601	636	602
7	843	820	996	940	960	1000	2450	875	702	558	607	578
8	865	777	978	940	940	1100	2580	935	671	568	653	562
9	838	832	1090	920	940	1100	2500	1250	693	573	727	585
10	849	825	1240	920	940	1100	2380	1700	658	516	662	539
11	818	814	1190	920	940	1100	2290	1680	640	492	672	536
12	802	844	1170	900	920	1100	2080	1570	629	484	628	527
13	829	899	1100	900	920	1200	1960	1580	623	510	702	523
14	837	899	1100	880	920	1100	1830	1490	607	522	729	534
15	853	869	1100	900	920	1100	1760	1400	594	528	725	492
16	854	1000	1000	920	940	1100	1520	1240	593	550	764	512
17	918	1140	920	920	940	1200	1430	1250	588	510	691	601
18	933	1300	960	920	960	1200	1480	1250	590	498	667	580
19	913	1230	980	940	960	1100	1470	1160	613	497	663	640
20	1080	1200	1000	940	960	1100	1280	1090	623	504	640	1450
21	1130	1140	940	920	960	1100	1250	1030	652	496	626	2170
22	1080	1080	900	920	960	1200	1200	992	610	493	635	2250
23	1040	1080	920	920	960	1200	1130	944	659	509	710	2010
24	1050	1080	980	920	980	1300	1130	902	598	508	709	1590
25	1070	1070	980	920	980	1400	1170	832	658	495	660	1410
26	1040	1040	960	920	980	1700	1140	829	616	478	613	1340
27	898	1040	940	920	980	1500	1070	829	577	464	602	1160
28	880	1020	920	940	980	1400	1080	888	602	487	590	902
29	913	1160	920	940	980	1600	984	921	661	477	591	951
30	902	1240	940	960	---	1700	980	858	600	485	647	1080
31	872	---	980	980	---	1740	---	907	---	485	582	---
TOTAL	27907	29607	31744	28980	27740	37440	51154	34031	19622	16219	19825	27256
MEAN	900	987	1024	935	957	1208	1705	1098	654	523	640	909
MAX	1130	1300	1280	1000	980	1740	2580	1700	901	620	764	2250
MIN	768	777	900	880	920	1000	980	829	577	464	478	492
CFSM	.57	.62	.64	.59	.60	.76	1.07	.69	.41	.33	.40	.57
IN.	.65	.69	.74	.68	.65	.88	1.20	.80	.46	.38	.46	.64

CAL YR 1987 TOTAL 377994 MEAN 1036 MAX 1760 MIN 658 CFSM .65 IN. 8.85
WTR YR 1988 TOTAL 351525 MEAN 960 MAX 2580 MIN 464 CFSM .60 IN. 8.23

ST. CROIX RIVER BASIN

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.--86 years, 4,317 ft³/s, 9.39 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, 11,600 ft³/s, Apr. 7, gage height, 6.39 ft; minimum daily, 1,100 ft³/s, July 29.

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

2.3	1,100	4.0	4,950
2.5	1,400	6.0	10,700
3.0	2,350	7.0	13,200

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	2170	2350	3380	2150	2080	2200	7480	2580	2690	1450	1310	1620
2	1780	1950	3270	2400	1990	2090	7220	3030	2370	1380	1260	1590
3	1980	2540	3010	1550	2130	2040	7830	2720	2190	1340	1350	1610
4	1800	2500	2570	1970	2000	2190	8710	2640	1900	1400	1530	1670
5	2040	2370	2290	2060	2040	2180	9640	2730	2150	1410	1570	1570
6	1840	2590	2120	1990	1990	2100	10400	3110	2290	1350	1600	1510
7	2160	2200	2800	2170	1840	2300	10900	2340	1900	1400	1570	1590
8	2070	2330	3220	1990	1810	2660	10800	2410	1880	1360	1670	1570
9	1780	2410	2890	1880	1890	2790	10900	3720	1780	1340	1510	1440
10	1780	2270	3650	1580	2060	3430	10700	4990	1690	1450	1550	1480
11	1880	2270	3820	1820	1870	3840	10100	7470	1680	1450	1630	1480
12	2010	2260	3660	1790	2090	3790	9300	8740	1690	1430	1790	1480
13	1910	2250	3050	1650	1630	3800	8520	8440	1560	1350	2070	1350
14	1910	2320	2460	2310	1760	3740	7610	7850	1550	1500	2060	1450
15	1780	2290	2270	2070	1810	3780	7220	7400	1530	1400	2400	1330
16	2470	2450	2360	2210	2150	3740	6410	6650	1530	1420	2270	1450
17	2040	3210	1920	1920	1890	3720	5870	6010	1520	1420	2220	1600
18	2050	3110	1710	2060	1690	3780	5030	4710	1350	1420	2240	1760
19	2060	3320	2260	2320	2000	3580	4470	5090	1370	1250	1920	1840
20	2210	3340	1650	1870	2190	3340	4800	3940	1530	1280	1770	3020
21	2320	3160	2030	1900	1820	3290	4530	4340	1520	1390	1820	2620
22	2630	2900	2400	2240	1960	3240	3750	3580	1520	1390	1740	4310
23	2500	3180	2420	1950	2040	3430	3670	3280	1520	1340	1850	4210
24	2410	2780	2430	2200	1860	3480	3410	3330	1470	1330	1790	3730
25	2350	2940	2490	1980	2180	4580	3510	2970	1620	1220	1870	4050
26	2470	2940	2400	2070	2110	6230	3430	2510	1370	1220	1800	3420
27	2560	2550	2390	1950	1910	7180	3290	2710	1450	1250	1800	3090
28	2400	2650	2400	1970	1870	8010	3230	2690	1480	1230	1690	3020
29	2240	2860	2250	2240	1790	7640	3010	2570	1500	1100	1680	2990
30	2660	3050	2690	2100	---	7930	3080	2330	1450	1160	1490	2360
31	2370	---	2450	1940	---	7900	---	2650	---	1250	1490	---
TOTAL	66630	79340	80710	62300	56450	124000	198820	129530	51050	41680	54310	66210
MEAN	2149	2645	2604	2010	1947	4000	6627	4178	1702	1345	1752	2207
MAX	2660	3340	3820	2400	2190	8010	10900	8740	2690	1500	2400	4310
MIN	1780	1950	1650	1550	1630	2040	3010	2330	1350	1100	1260	1330
CFSM	.34	.42	.42	.32	.31	.64	1.06	.67	.27	.22	.28	.35
IN.	.40	.47	.48	.37	.34	.74	1.19	.77	.30	.25	.32	.39

CAL YR 1987 TOTAL 1020130 MEAN 2795 MAX 6310 MIN 1510 CFSM .45 IN. 6.08
WTR YR 1988 TOTAL 1011030 MEAN 2762 MAX 10900 MIN 1100 CFSM .44 IN. 6.03

ST. CROIX RIVER BASIN

05341365 RICE CREEK AT MILLTOWN, WI

LOCATION.--Lat 45°30'45", long 92°30'06", in SE 1/4 SW 1/4 sec.17, T.35 N., R.17 W., Polk County, Hydrologic Unit 07030005, at culvert under 210th Avenue, about 1 mi south of Milltown.

DRAINAGE AREA.--2.89 mi².

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)	PHOS- PHOROUS TOTAL (MG/L AS P) (00665)
DEC 1987					
04...	1330	E0.05	476	0.5	0.170
MAY 1988					
09...	1100	0.56	385	11.0	0.610

E Estimated.

ST. CROIX RIVER BASIN

05341370 RICE CREEK AT 155th STREET NEAR MILLTOWN, WI

LOCATION.--Lat 45°29'38", long 92°28'43", in SE 1/4 NW 1/4 sec.28, T.35 N., R.17 W., Polk County, Hydrologic Unit 07030005, at culvert under 155th Street, about 2.5 mi southeast of Milltown.

DRAINAGE AREA.--3.98 mi².

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)	PHOS- PHOROUS TOTAL (MG/L AS P) (00665)
DEC 1987					
04...	1300	2.0	322	2.5	0.010
18...	1308	2.5	348	1.5	<0.010
22...	1100	E2.3	350	1.5	0.010
29...	1315	E2.8	--	--	0.020
JAN 1988					
06...	1155	E2.6	--	--	0.020
13...	1510	E2.8	--	--	0.030
19...	1520	E2.5	--	--	0.020
27...	1540	E2.6	--	--	0.020
FEB					
03...	1430	E2.4	--	--	0.020
10...	1240	E2.4	--	--	0.020
16...	1350	E2.8	400	0.0	0.020
16...	1400	E2.8	400	0.0	0.020
17...	1116	E3.7	--	--	0.020
24...	1152	E2.6	--	--	0.020
MAR					
02...	1215	E3.0	--	--	0.020
09...	1027	E3.5	--	--	0.020
09...	1221	E3.5	--	--	0.030
11...	1335	3.4	318	4.5	0.030
11...	1338	3.4	318	4.5	0.030
16...	1242	E3.3	--	--	0.020
23...	1520	2.8	--	--	0.030
23...	1550	2.8	268	6.0	0.030
30...	1221	E8.0	--	--	0.030
APR					
06...	1625	E6.6	--	--	0.030
14...	1054	E3.7	--	--	0.050
20...	1159	E2.0	--	--	0.020
20...	1627	2.0	161	13.0	0.020
28...	1100	E2.3	--	--	0.020
MAY					
04...	1125	E2.1	--	--	0.030
09...	1130	6.8	175	15.0	0.080
11...	1505	E5.1	--	--	0.040
18...	1610	E2.4	--	--	0.040
25...	1640	E1.9	--	--	0.060
31...	1223	E1.6	--	--	0.070
JUN					
07...	1105	1.4	266	25.5	0.080
08...	1210	E1.4	--	--	0.080
15...	1308	E1.2	--	--	0.070
23...	1125	E0.98	--	--	0.070
29...	1130	E0.80	--	--	0.090
JUL					
06...	1125	E0.50	--	--	0.070
13...	1143	E0.36	--	--	0.060
20...	1050	E0.29	--	--	0.050
27...	1559	E0.26	--	--	0.060
29...	1320	0.25	258	29.0	0.070
AUG					
03...	1110	E0.35	--	--	0.060
04...	1100	E2.2	--	--	0.060
10...	1435	E1.0	--	--	0.070
12...	1450	E1.2	--	--	0.100
17...	1334	E1.7	--	--	0.100
25...	1053	E1.6	--	--	0.090
31...	0810	E1.4	--	--	0.070
SEP					
08...	1226	E1.2	--	--	0.070
14...	1106	E1.1	--	--	0.030
20...	1015	5.2	232	13.5	0.070
20...	1058	5.2	--	--	0.060
28...	1125	E1.9	--	--	0.030

E Estimated.

ST. CROIX RIVER BASIN

05341374 OTTER CREEK NEAR MILLTOWN, WI

LOCATION.--Lat 45°29'52", long 92°28'15", in SE 1/4 SE 1/4 sec.21, T.35 N., R.17 W., Polk County, Hydrologic Unit 07030005, at culvert under 200th Avenue, about 2.8 mi southeast of Milltown.

DRAINAGE AREA.--4.55 mi².

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)	PHOS- PHOROUS TOTAL (MG/L AS P) (00665)
DEC 1987					
04...	1350	0.11	366	1.0	0.060
MAR 1988					
11...	1455	0.40	156	1.0	0.210
23...	1452	0.24	262	0.5	0.090
MAY					
09...	1220	0.53	240	13.5	0.180

ST. CROIX RIVER BASIN

05341375 RICE CREEK NEAR BALSAM LAKE, WI

LOCATION.--Lat 45°29'27", long 92°28'07", in SE 1/4 NE 1/4 sec.28, T.35 N., R.17 W., Polk County, Hydrologic Unit 07030005, on left bank 150 ft upstream from State Highway 46, 0.6 mi downstream from Otter Creek, and 0.3 mi upstream from mouth.

DRAINAGE AREA.--12.5 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--December 1987 to September 1988.

GAGE.--Water-stage recorder. Elevation of gage is 1,150 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Dec. 1-7. Records good except those for estimated daily discharges, which are fair.

EXTREMES FOR CURRENT YEAR.--December 1987 to September 1988: Maximum discharge, 21 ft³/s, Sept. 19, gage height, 2.01 ft; minimum discharge, 1.3 ft³/s, July 11, gage height, 1.10 ft.

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

1.1	1.3	1.6	8.2
1.3	3.7	1.8	14
1.5	6.4	2.0	23

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	---	---	3.8	4.2	3.9	4.3	9.1	4.4	3.5	2.6	1.8	3.0
2	---	---	3.9	4.3	3.9	4.3	8.9	4.3	3.5	2.5	1.7	2.9
3	---	---	4.0	4.5	3.9	4.1	12	4.1	3.4	2.4	2.0	2.8
4	---	---	4.1	4.1	3.9	4.0	10	4.1	3.4	2.1	3.6	3.0
5	---	---	4.0	4.0	3.9	4.0	9.1	3.9	3.3	1.9	3.2	2.7
6	---	---	4.1	4.0	3.9	4.1	8.0	4.0	3.2	1.9	3.2	2.6
7	---	---	4.0	3.8	3.9	4.2	7.3	4.0	3.2	1.8	2.7	2.4
8	---	---	3.9	4.0	3.9	5.1	6.7	6.9	3.1	1.9	2.7	2.4
9	---	---	5.2	3.9	3.9	5.0	6.6	10	3.1	1.9	2.5	2.4
10	---	---	5.5	3.9	4.0	4.8	6.4	7.9	3.1	1.8	2.2	2.4
11	---	---	5.3	4.0	4.0	5.3	6.3	6.9	3.1	1.8	2.2	2.3
12	---	---	5.0	4.2	3.9	5.5	6.2	6.4	3.0	1.8	2.7	2.4
13	---	---	4.5	4.3	3.8	5.4	6.0	6.0	2.8	2.0	3.2	2.3
14	---	---	4.2	4.1	3.9	5.1	5.6	5.4	2.9	1.9	3.5	2.2
15	---	---	4.2	4.2	4.2	4.9	5.3	5.4	2.8	1.8	3.4	2.0
16	---	---	4.1	4.2	4.3	4.8	4.9	5.2	2.7	2.2	3.2	3.1
17	---	---	3.8	4.1	4.6	4.7	4.7	4.7	2.6	1.8	2.9	3.0
18	---	---	4.1	3.9	4.8	4.5	4.4	4.6	2.5	1.8	2.7	2.9
19	---	---	3.9	4.0	4.8	4.4	4.2	4.4	2.8	1.8	2.7	6.1
20	---	---	3.9	4.5	4.4	4.0	4.0	4.5	2.7	1.9	2.8	7.4
21	---	---	3.8	4.3	4.2	4.1	3.9	4.2	2.6	2.1	3.0	5.2
22	---	---	3.6	4.3	4.3	4.3	3.9	4.1	2.6	2.2	3.1	4.5
23	---	---	3.5	4.1	4.0	4.6	4.4	4.1	2.6	2.2	3.2	4.1
24	---	---	3.6	4.3	4.1	7.0	4.4	3.9	2.6	2.2	3.1	3.5
25	---	---	3.6	4.3	4.0	8.5	4.5	3.7	2.5	2.4	2.8	3.1
26	---	---	4.0	4.2	4.0	8.3	4.3	3.8	2.4	2.2	2.6	3.0
27	---	---	4.1	4.2	4.0	8.6	4.5	3.7	2.4	1.9	2.7	3.0
28	---	---	4.2	4.1	4.0	11	4.3	3.7	2.7	1.9	2.7	3.2
29	---	---	4.2	4.2	4.2	12	4.1	3.6	2.5	1.9	2.6	3.5
30	---	---	4.3	4.1	---	11	4.2	3.5	2.6	1.7	2.6	3.3
31	---	---	4.4	4.2	---	11	---	3.5	---	1.8	2.6	---
TOTAL	---	---	128.8	128.5	118.6	182.9	178.2	148.9	86.2	62.1	85.9	96.7
MEAN	---	---	4.15	4.15	4.09	5.90	5.94	4.80	2.87	2.00	2.77	3.22
MAX	---	---	5.5	4.5	4.8	12	12	10	3.5	2.6	3.6	7.4
MIN	---	---	3.5	3.8	3.8	4.0	3.9	3.5	2.4	1.7	1.7	2.0
CFSM	---	---	.33	.33	.33	.47	.48	.38	.23	.16	.22	.26
IN.	---	---	.38	.38	.35	.54	.53	.44	.26	.18	.26	.29

ST. CROIX RIVER BASIN

05341375 RICE CREEK NEAR BALSAM LAKE, WI--CONTINUED

WATER-QUALITY RECORDS

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)	PHOS- PHOROUS TOTAL (MG/L AS P) (00665)
DEC 1987					
04...	1415	E4.1	254	3.0	0.020
18...	1145	4.5	298	2.5	0.010
22...	1040	3.6	296	2.5	0.010
29...	1247	4.2	--	--	0.030
JAN 1988					
06...	1130	4.2	--	--	0.030
13...	1440	4.4	--	--	0.030
19...	1510	3.9	--	--	0.030
27...	1515	4.2	--	--	0.020
FEB					
03...	1415	3.9	--	--	0.020
10...	1220	4.1	--	--	0.020
16...	1145	4.4	325	2.5	0.020
16...	1150	4.4	325	2.5	0.020
17...	1107	4.5	--	--	0.020
24...	1141	4.2	--	--	0.020
MAR					
02...	1208	4.3	--	--	0.030
09...	1216	4.6	--	--	0.040
11...	1220	5.1	268	6.0	0.040
11...	1225	5.2	268	6.0	0.050
16...	1236	4.8	--	--	0.030
23...	1509	5.0	--	--	0.100
23...	1625	5.2	249	7.0	0.100
30...	1214	11	--	--	0.050
APR					
06...	1614	8.2	--	--	0.030
14...	1047	5.7	--	--	0.030
20...	1152	4.0	--	--	0.030
20...	1425	4.0	195	11.0	0.050
28...	1054	4.2	--	--	0.020
MAY					
04...	1118	4.1	--	--	0.040
09...	1300	11	194	13.5	0.170
11...	1500	6.9	--	--	0.040
18...	1605	4.7	--	--	0.040
25...	1633	3.7	--	--	0.050
31...	1216	3.6	--	--	0.060
JUN					
07...	1025	3.2	244	15.0	0.050
08...	1202	3.1	--	--	0.080
15...	1303	2.8	--	--	0.030
23...	1110	2.6	--	--	0.070
29...	1124	2.5	--	--	0.070
JUL					
06...	1117	1.9	--	--	0.050
13...	1135	2.0	--	--	0.050
20...	1042	1.5	--	--	0.090
27...	1551	1.9	--	--	0.080
29...	1155	2.1	232	16.0	0.040
AUG					
03...	1101	1.8	--	--	0.090
04...	1053	2.8	--	--	0.280
10...	1427	2.2	--	--	0.070
12...	1440	2.7	--	--	0.100
17...	1326	2.8	--	--	0.090
25...	1046	2.8	--	--	0.090
31...	0803	2.5	--	--	0.090
SEP					
08...	1221	2.4	--	--	0.060
14...	1059	2.1	--	--	0.070
20...	1020	6.8	212	13.0	0.140
20...	1052	6.9	--	--	0.150
28...	1117	2.8	--	--	0.060

E Estimated.

ST. CROIX RIVER BASIN

05341383 HARDER CREEK AT HALF MOON LAKE OUTLET NEAR BALSAM LAKE, WI

LOCATION.--Lat 45°29'25", long 92°25'13", in SE 1/4 NW 1/4 sec.25, T.35 N., R.17 W., Polk County, Hydrologic Unit 07030005, at outlet of Half Moon Lake, about 3 mi northeast of the village of Balsam Lake.

DRAINAGE AREA.--10.7 mi².

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)	PHOS- PHOROUS TOTAL (MG/L AS P) (00665)
MAY 1988					
09...	1300	9.2	158	14.5	0.020
JUN					
07...	1315	0.31	160	28.0	0.010

05341384 HARDER CREEK NEAR BALSAM LAKE, WI

LOCATION.--Lat 45°28'53", long 92°25'22", in NW 1/4 NW 1/4 sec.36, T.35 N., R.17 W., Polk County, Hydrologic Unit 07030005, at bridge on 190th Avenue, about 2.5 mi northeast of the village of Balsam Lake.

DRAINAGE AREA.--10.9 mi².

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)	PHOS- PHOROUS TOTAL (MG/L AS P) (00665)
DEC 1987					
22...	1200	0.83	174	0.0	<0.010
MAR 1988					
08...	1648	E8.0	176	--	0.010
11...	1545	E14	148	0.0	0.020
23...	1410	8.1	170	1.0	0.020
MAY					
09...	1412	10	148	13.0	0.030
11...	1515	E10	--	--	0.020

05341385 HARDER CREEK AT MOUTH NEAR BALSAM LAKE, WI

LOCATION.--Lat 45°28'38", long 92°25'21", in SW 1/4 NW 1/4 sec.36, T.35 N., R.17 W., Polk County, Hydrologic Unit 07030005, about 2.3 mi northeast of the village of Balsam Lake.

DRAINAGE AREA.--11.1 mi².

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)	PHOS- PHOROUS TOTAL (MG/L AS P) (00665)
MAY 1988					
09...	1200	E11	144	13.0	0.030

E Estimated.

ST. CROIX RIVER BASIN

05341402 BALSAM BRANCH AT BALSAM LAKE, WI

LOCATION.--Lat 45°26'49", long 92°27'01", in SE 1/4 NE 1/4 sec.10, T.34 N., R.17 W., Polk County, Hydrologic Unit 07030005, on right bank 120 ft upstream from State Highway 46 and 400 ft downstream from powerplant of Northwestern Wisconsin Electric Co., in Balsam Lake.

DRAINAGE AREA.--52.8 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--December 1987 to September 1988.

GAGE.--Water-stage recorder. Elevation of gage is 1,100 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Dec. 1-10 and Jan. 15-22. Records good except those for estimated daily discharges, which are fair. Diurnal fluctuation caused by Balsam Lake Powerplant 400 ft upstream.

EXTREMES FOR CURRENT YEAR.--December 1987 to September 1988: Maximum discharge, 32 ft³/s, Mar. 24, 25, 26, gage height, 4.38 ft; maximum gage height, 4.39 ft, Apr. 3, 4, 5, 11, 12; minimum discharge, 0.46 ft³/s, Sept. 15.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Shifting-control method used July 30 to Sept. 30.)

3.49	0.46	4.0	9.3
3.6	1.2	4.1	14
3.7	2.2	4.3	28
3.8	3.7	4.5	51
3.9	6.0		

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	---	---	3.3	8.1	8.9	9.3	31	5.9	5.7	6.0	2.1	.82
2	---	---	3.4	8.2	8.9	9.3	31	5.7	5.8	6.0	2.0	.80
3	---	---	3.4	8.2	8.9	9.3	31	5.7	5.9	5.9	2.3	.78
4	---	---	3.4	15	8.9	6.6	31	5.7	5.7	5.7	2.2	.78
5	---	---	3.5	25	18	1.1	31	5.6	5.7	5.7	2.2	.71
6	---	---	3.5	25	16	1.1	30	5.6	5.7	5.7	2.1	.71
7	---	---	3.6	25	9.8	2.8	30	5.8	5.8	5.8	2.1	.68
8	---	---	3.6	26	9.7	7.5	29	6.1	6.0	5.7	2.0	.70
9	---	---	3.6	27	9.7	6.9	28	6.5	5.9	5.7	1.9	.65
10	---	---	3.7	27	10	6.7	27	6.6	5.8	5.7	1.8	.60
11	---	---	3.8	27	10	7.0	28	6.5	5.7	5.7	1.8	.54
12	---	---	3.9	27	10	7.4	28	6.4	5.7	5.7	1.7	.55
13	---	---	3.9	27	10	7.5	28	6.3	5.7	5.8	1.7	.51
14	---	---	3.9	27	10	7.5	27	6.3	5.7	5.5	1.6	.50
15	---	---	4.0	25	10	7.7	26	6.3	5.7	5.5	1.6	.49
16	---	---	4.1	9.0	10	7.9	26	6.3	5.7	5.5	1.5	.59
17	---	---	4.1	8.2	10	7.9	26	6.3	5.7	5.5	1.5	.65
18	---	---	5.2	8.1	10	8.1	26	6.3	5.7	5.5	1.6	1.0
19	---	---	7.2	8.1	10	8.0	26	6.3	6.0	5.5	1.5	1.4
20	---	---	7.2	8.1	9.7	7.9	26	6.4	5.9	5.5	1.3	1.7
21	---	---	7.2	8.1	9.7	8.2	25	6.3	6.0	5.5	1.1	1.9
22	---	---	7.2	8.1	9.7	8.2	25	6.1	5.9	5.5	1.1	2.0
23	---	---	7.5	8.2	9.7	8.3	25	5.9	5.5	5.5	.94	2.0
24	---	---	7.5	8.2	9.7	18	26	5.7	5.5	5.3	.98	2.2
25	---	---	7.5	14	9.7	32	26	5.7	5.5	5.2	.89	2.4
26	---	---	7.5	24	9.7	32	26	5.7	5.5	5.3	.90	2.3
27	---	---	7.6	19	9.4	31	26	5.7	5.5	5.3	.85	2.6
28	---	---	7.9	8.7	9.3	31	26	5.7	5.7	5.3	.84	3.1
29	---	---	7.9	8.9	9.3	31	15	5.7	5.8	4.1	.79	3.8
30	---	---	7.9	8.9	---	31	6.0	5.7	6.0	2.1	.77	3.9
31	---	---	7.9	8.9	---	31	---	5.7	---	2.1	.75	---
TOTAL	---	---	165.9	494.0	294.7	399.2	792.0	186.5	172.4	164.8	46.41	41.36
MEAN	---	---	5.35	15.9	10.2	12.9	26.4	6.02	5.75	5.32	1.50	1.38
MAX	---	---	7.9	27	18	32	31	6.6	6.0	6.0	2.3	3.9
MIN	---	---	3.3	8.1	8.9	1.1	6.0	5.6	5.5	2.1	.75	.49
CFSM	---	---	.10	.30	.19	.24	.50	.11	.11	.10	.03	.03
IN.	---	---	.12	.35	.21	.28	.56	.13	.12	.12	.03	.03

ST. CROIX RIVER BASIN

05341402 BALSAM BRANCH AT BALSAM LAKE, WI--CONTINUED

WATER-QUALITY RECORDS

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)	PHOS- PHOROUS TOTAL (MG/L AS P) (00665)
DEC 1987					
04...	1430	E3.3	260	3.0	0.020
18...	1015	4.1	222	3.0	<0.010
18...	1016	4.1	222	3.0	<0.010
22...	1016	7.2	240	3.0	<0.010
29...	1232	7.9	--	--	0.020
JAN 1988					
06...	1115	25	--	--	0.020
13...	1420	27	--	--	0.020
19...	1455	E8.1	--	--	0.020
27...	1450	24	--	--	0.010
FEB					
03...	1400	8.9	--	--	0.010
10...	1205	10	--	--	0.010
16...	0955	10	238	1.5	0.020
16...	1000	10	238	1.5	0.020
17...	1056	10	--	--	0.010
24...	1130	9.7	--	--	0.010
MAR					
02...	1155	9.3	--	--	0.010
09...	1204	6.9	--	--	0.020
11...	1120	6.9	232	4.0	0.010
16...	1224	7.9	--	--	0.010
23...	1340	8.2	224	3.5	0.020
23...	1500	8.2	--	--	0.010
30...	1150	31	--	--	0.010
APR					
06...	1602	30	--	--	0.020
14...	1035	27	--	--	0.010
20...	1105	26	202	8.5	0.020
20...	1140	26	--	--	0.010
28...	1042	26	--	--	0.010
MAY					
04...	1110	5.7	--	--	0.020
09...	1400	6.6	224	16.0	0.020
11...	1450	6.6	--	--	0.020
18...	1550	6.3	--	--	0.010
25...	1618	5.7	--	--	0.010
31...	1204	5.7	--	--	0.010
JUN					
07...	0910	5.7	190	24.0	0.020
08...	1147	6.0	--	--	0.020
15...	1250	5.7	--	--	0.020
23...	1042	5.5	--	--	0.020
29...	1112	5.7	--	--	0.020
JUL					
06...	1100	5.7	--	--	0.020
13...	1110	6.0	--	--	0.030
29...	1010	5.2	184	26.0	<0.010
AUG					
17...	1313	1.5	--	--	0.030
25...	1032	0.91	--	--	0.030
31...	0750	0.77	--	--	0.030
SEP					
08...	1210	0.71	--	--	0.030
14...	1045	0.50	--	--	0.020
20...	1040	1.8	--	--	0.020
20...	1310	1.8	204	16.5	0.020
28...	1100	2.8	--	--	0.020

E Estimated.

ST. CROIX RIVER BASIN

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.--Estimated daily discharges: None. 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.--71 years, 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, 536 ft³/s, Mar. 11; minimum daily, 52 ft³/s, July 30.

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	190	248	316	122	204	163	433	273	185	150	67	94
2	190	210	326	218	163	190	425	235	177	163	84	97
3	190	176	313	150	163	190	406	187	172	163	76	97
4	219	136	258	204	201	150	385	227	174	153	105	97
5	193	163	307	177	177	171	379	230	152	146	215	97
6	245	245	333	218	150	183	340	175	146	124	196	237
7	204	287	358	231	170	203	388	151	145	140	216	163
8	204	226	272	204	102	258	438	207	142	106	244	184
9	190	195	313	204	163	353	433	274	145	129	182	194
10	210	176	326	204	150	490	408	258	121	132	190	142
11	210	286	367	231	136	536	398	294	147	114	174	110
12	213	245	331	177	136	501	416	371	135	118	135	187
13	136	204	333	190	162	466	308	368	118	130	230	102
14	204	219	425	150	164	451	190	360	156	120	172	87
15	190	190	299	177	159	468	150	382	137	112	105	101
16	218	203	286	181	150	354	265	417	108	133	136	113
17	224	218	245	182	136	315	279	269	130	115	157	115
18	219	231	177	181	163	272	331	258	127	127	145	120
19	265	245	254	177	177	279	245	270	111	124	148	188
20	230	245	302	204	136	264	194	204	167	129	138	286
21	218	255	290	177	150	255	266	263	140	245	139	387
22	326	219	258	190	203	252	246	248	138	212	135	535
23	326	192	258	190	136	267	244	240	160	118	139	379
24	326	245	283	163	122	224	275	260	119	108	138	420
25	330	245	270	204	177	439	288	202	148	82	131	269
26	326	263	231	163	136	361	114	177	130	111	140	268
27	286	244	221	190	136	423	192	155	146	99	135	412
28	313	230	231	150	147	351	210	147	151	71	125	320
29	286	290	313	163	180	404	176	156	139	71	124	319
30	272	316	272	198	---	437	215	178	165	52	117	307
31	255	---	231	234	---	442	---	231	---	89	110	---
TOTAL	7408	6847	8999	5804	4549	10112	9037	7667	4331	3886	4548	6427
MEAN	239	228	290	187	157	326	301	247	144	125	147	214
MAX	330	316	425	234	204	536	438	417	185	245	244	535
MIN	136	136	177	122	102	150	114	147	108	52	67	87

CAL YR 1987 TOTAL 109927 MEAN 301 MAX 690 MIN 136
WTR YR 1988 TOTAL 79615 MEAN 218 MAX 536 MIN 52

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.--60 years, 17,240 ft³/s, 5.23 in/yr; median of yearly mean discharges, 16,500 ft³/s, 5.00 in/yr.

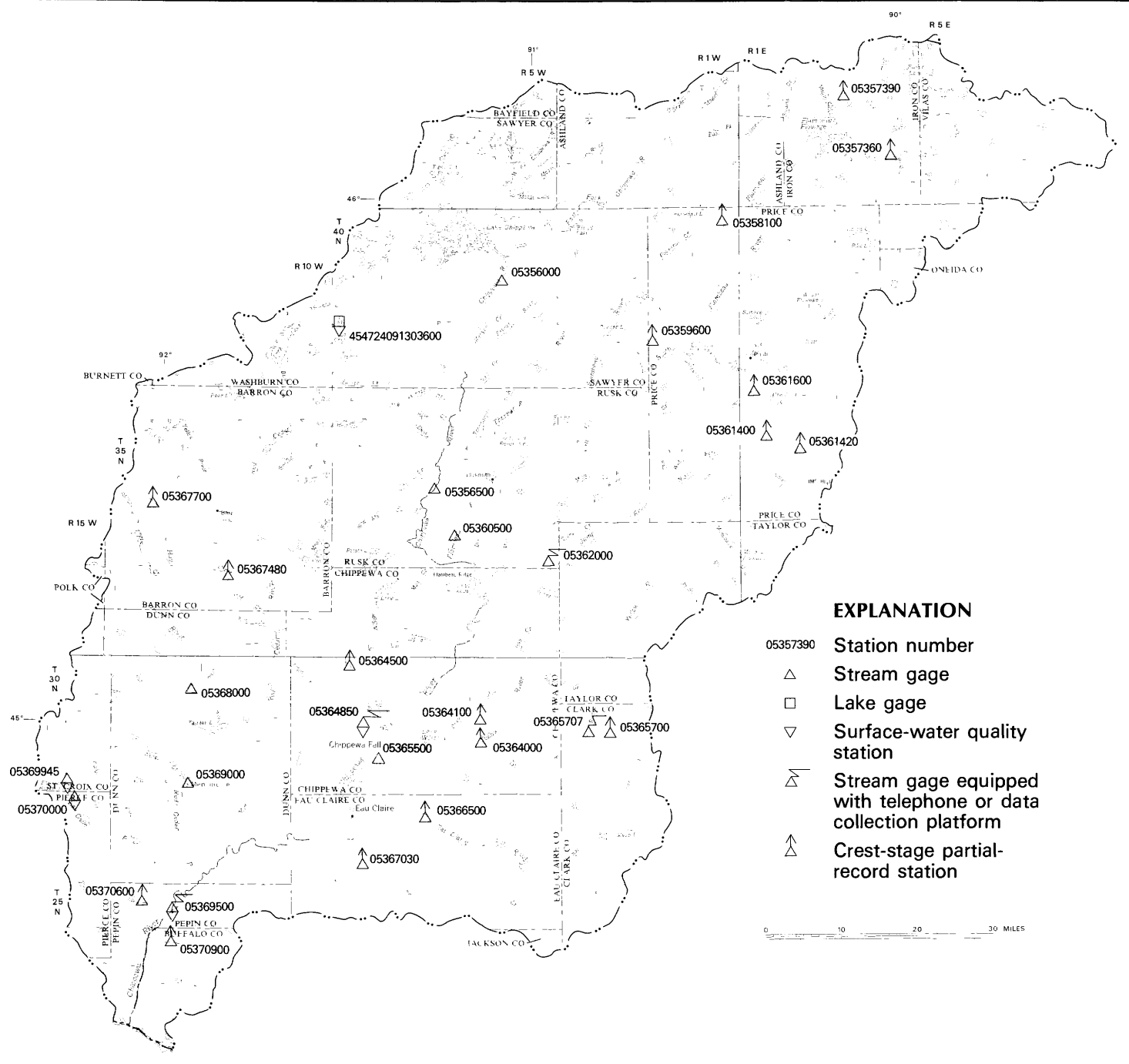
EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 228,000 ft³/s, Apr. 18, 1965, gage height, 43.11 ft; minimum daily, 1,380 ft³/s, July 13, 1940; minimum gage height, 15.08 ft, Aug. 29, 1934, present datum.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 28,200 ft³/s, Apr. 9, 12; maximum gage height, 27.54 ft, Apr. 9; minimum daily discharge, 2,700 ft³/s, July 31; minimum gage height, 24.49 ft, May 24.

DISCHARGE, IN 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	8290	8440	8550	7730	6330	6640	25000	12300	9120	3770	2810	6430
2	8260	8000	10000	6990	6810	7040	23300	12600	8770	3800	2900	6050
3	7900	7150	9850	6260	6010	7130	22500	13300	7750	3610	2920	5690
4	8060	8160	9420	5440	6030	6970	22900	13600	8040	3740	3190	5850
5	7640	7920	8870	7100	6060	7180	24000	14000	7330	3450	3650	5500
6	7320	8240	7400	7290	6730	7290	24900	12700	7140	3530	4020	5510
7	7120	8330	7000	5830	6310	7400	26100	13100	6910	3400	3620	5370
8	7810	7590	8110	6820	6120	8250	26800	11900	6140	3440	3810	4950
9	6840	7890	8430	6330	6000	8990	28200	11800	5970	3320	3940	4690
10	6940	8270	8740	6820	6530	9850	27800	13100	5850	3280	3810	4840
11	7240	7600	9370	6660	6740	11600	27700	15200	5810	3390	3820	4740
12	6930	8430	9760	6500	6560	13400	28200	18100	5460	3390	3760	4460
13	7120	7700	10200	6510	5950	15000	26700	19200	5460	3470	3790	4280
14	7340	7720	9690	6200	6210	15600	25600	18900	4730	3340	4130	4270
15	6780	7690	8880	6840	5660	15500	23900	18400	4730	3490	4510	4780
16	7200	8230	8140	6150	6190	14500	22800	18000	4730	3280	4900	4050
17	7720	7390	8250	6070	6320	14200	22400	17300	4490	3200	5810	4590
18	7350	8850	6870	7120	5980	15500	22000	15800	4630	3340	5780	4480
19	7770	8910	6020	6490	6250	15800	18700	14200	4290	3520	4820	4940
20	7470	9460	6900	6600	6900	15800	17700	14600	4240	3200	5010	5530
21	7380	9140	7040	6220	7080	14800	18600	12800	4440	3260	4740	6320
22	7450	9240	7150	6000	6260	13700	17800	13300	4540	3600	6340	6420
23	8020	8570	7590	6510	6210	13200	17000	12700	4500	3470	6320	8220
24	7880	9010	7560	6140	7000	13700	16300	11000	4070	3240	7330	8250
25	7940	8350	8010	6210	5920	14400	15500	11700	4120	3180	7550	7090
26	7630	8490	7920	5520	6300	16000	15300	10500	4320	3010	7950	7450
27	7930	8420	7930	5860	6300	18800	14400	10400	4050	2920	7030	7270
28	8090	8270	6820	5100	6630	20800	13900	9920	4130	2960	7350	8240
29	8070	8420	6610	5740	6270	22200	13300	9770	3930	2960	6670	8700
30	7660	8500	7140	6320	---	22900	12600	9390	4370	2730	6130	8320
31	8960	---	8100	6240	---	23700	---	9370	---	2700	6090	---
TOTAL	236110	248380	252320	197610	183660	417840	641900	418950	164060	102990	154500	177280
MEAN	7616	8279	8139	6375	6333	13480	21400	13510	5469	3322	4984	5909
MAX	8960	9460	10200	7730	7080	23700	28200	19200	9120	3800	7950	8700
MIN	6780	7150	6020	5100	5660	6640	12600	9370	3930	2700	2810	4050
CFSM	.17	.18	.18	.14	.14	.30	.48	.30	.12	.07	.11	.13
IN.	.20	.21	.21	.16	.15	.35	.53	.35	.14	.09	.13	.15

CAL YR 1987 TOTAL 4491740 MEAN 12310 MAX 29400 MIN 6020 CFSM .27 IN. 3.73
WTR YR 1988 TOTAL 3195600 MEAN 8731 MAX 28200 MIN 2700 CFSM .19 IN. 2.65



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.--76 years, 721 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, 1,940 ft³/s, Apr. 16, gage height, 6.56 ft; minimum discharge, 48 ft³/s, Feb. 20, gage height 3.60 ft.

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

3.7	66	5.0	660
4.0	134	6.0	1,430
4.3	248	7.0	2,400
4.6	399		

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	140	643	372	679	214	159	391	230	226	246	243	316
2	141	642	419	698	335	158	390	230	237	236	240	247
3	142	764	351	736	492	159	399	230	236	235	239	247
4	141	818	351	643	471	157	538	231	235	234	254	245
5	141	762	712	603	215	158	735	233	234	234	242	245
6	142	696	1180	501	188	158	1020	234	234	236	240	245
7	149	650	1180	604	191	158	1090	237	234	254	240	342
8	145	648	990	584	204	160	1180	241	281	239	249	316
9	155	560	1150	583	170	159	1230	245	235	239	238	241
10	152	473	663	583	293	159	1220	241	238	237	238	241
11	153	301	983	601	409	273	1640	238	238	237	240	241
12	153	172	981	639	393	425	1910	239	237	238	243	241
13	154	171	979	603	386	171	1900	236	238	241	394	242
14	152	172	928	585	383	161	1900	238	238	237	242	241
15	159	172	937	588	232	161	1900	235	237	281	240	242
16	164	175	924	563	158	160	1910	233	207	289	238	659
17	159	258	920	560	158	161	1890	233	236	247	335	278
18	156	318	841	563	158	267	1470	233	234	242	313	274
19	155	762	837	542	80	356	915	237	238	242	240	277
20	155	563	841	529	122	356	710	230	231	243	239	286
21	338	225	833	529	214	356	710	231	231	243	238	377
22	353	225	815	529	159	426	429	229	228	241	243	274
23	153	278	811	528	215	353	235	227	230	241	244	343
24	152	341	744	529	159	361	234	227	230	241	349	271
25	152	613	808	528	159	383	231	230	229	244	308	270
26	153	155	793	528	158	381	230	261	230	455	243	271
27	151	152	720	528	158	370	229	333	230	247	243	269
28	353	154	724	528	158	374	230	336	232	246	243	368
29	426	163	730	418	158	383	229	336	230	247	243	343
30	641	270	740	518	---	387	229	311	313	243	242	271
31	641	---	722	245	---	389	---	285	---	244	345	---
TOTAL	6521	12296	24979	17395	6790	8239	27324	7710	7107	7779	8088	8723
MEAN	210	410	806	561	234	266	911	249	237	251	261	291
MAX	641	818	1180	736	492	426	1910	336	313	455	394	659
MIN	140	152	351	245	80	157	229	227	207	234	238	241

CAL YR 1987 TOTAL 107170 MEAN 294 MAX 1180 MIN 100
WTR YR 1988 TOTAL 142951 MEAN 391 MAX 1910 MIN 80

CHIPPEWA RIVER BASIN

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 CURRENT YEAR.--Maximum gage-height observed, 5.76 ft, May 12; minimum observed, 4.78 ft, Sept. 15, 16.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.02	5.06	---	---	---	---	---	5.66	5.56	5.28	5.00	4.92
2	5.04	5.08	---	---	---	---	---	5.66	5.62	5.26	5.00	4.92
3	5.02	5.08	---	---	---	---	---	5.66	5.62	5.26	5.02	4.92
4	5.00	5.08	---	---	---	---	---	5.64	5.60	5.24	5.10	4.90
5	5.00	5.08	---	---	---	---	---	5.64	5.60	5.24	5.10	4.90
6	5.02	5.08	---	---	---	---	---	5.64	5.58	5.22	5.08	4.90
7	5.02	5.10	---	---	---	---	---	5.64	5.58	5.20	5.06	4.88
8	5.00	5.10	---	---	---	---	---	5.62	5.56	5.18	5.10	4.86
9	5.00	5.10	---	---	---	---	---	5.72	5.54	5.16	5.10	4.84
10	4.98	5.08	---	---	---	---	---	5.74	5.52	5.14	5.08	4.84
11	4.96	5.08	---	---	---	---	---	5.74	5.50	5.12	5.08	4.84
12	4.94	5.08	---	---	---	---	---	5.76	5.48	5.10	5.10	4.82
13	4.94	---	---	---	---	---	---	5.74	5.46	5.08	5.12	4.80
14	4.94	---	---	---	---	---	---	5.72	---	5.08	5.14	4.80
15	4.98	---	---	---	---	---	5.60	5.70	---	5.06	5.12	4.78
16	5.02	---	---	---	---	---	5.60	5.70	5.42	5.24	5.10	4.78
17	5.04	---	---	---	---	---	5.62	5.68	---	5.24	5.12	4.84
18	5.06	---	---	---	---	---	5.62	5.68	5.40	5.22	5.08	4.86
19	5.06	---	---	---	---	---	5.62	5.68	5.40	5.20	5.06	4.84
20	5.06	---	---	---	---	---	5.62	5.68	---	5.20	5.04	5.12
21	5.08	---	---	---	---	---	5.63	5.68	---	5.20	5.04	5.14
22	5.08	---	---	---	---	---	5.64	5.66	---	5.18	5.02	5.10
23	5.08	---	---	---	---	---	5.66	5.64	---	5.18	5.04	5.10
24	5.10	---	---	---	---	---	5.66	5.64	---	5.16	5.04	5.08
25	5.08	---	---	---	---	---	5.66	5.64	5.30	5.14	5.02	5.08
26	5.08	---	---	---	---	---	5.68	5.62	5.30	5.12	5.00	5.10
27	5.06	---	---	---	---	---	5.70	5.60	---	5.10	4.98	5.10
28	5.06	---	---	---	---	---	5.70	5.58	---	5.06	4.96	5.08
29	5.06	---	---	---	---	---	5.68	5.58	5.30	5.04	4.94	5.10
30	5.06	---	---	---	---	---	5.68	5.56	5.28	5.02	4.92	5.12
31	5.06	---	---	---	---	---	---	5.56	---	5.02	4.90	---
MEAN	5.03	---	---	---	---	---	---	5.66	---	5.16	5.05	4.95
MAX	5.10	---	---	---	---	---	---	5.76	---	5.28	5.14	5.14
MIN	4.94	---	---	---	---	---	---	5.56	---	5.02	4.90	4.78

WATER-QUALITY RECORDS

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

REMARKS.--Lake sampled near center at a lake depth of about 45 ft. Lake ice-covered during March 7 sampling. Water-quality analyses by Wisconsin State Laboratory of Hygiene. Additional water-quality data for Big Sissabagama Lake on page 360.

WATER-QUALITY DATA, MARCH 7 TO AUGUST 18, 1988
(Milligrams per liter unless otherwise indicated)

	Mar. 07		Apr. 21		June 16		July 25		Aug. 18	
Depth of sample (ft)	1.5	49.0	1.5	46.0	1.5	48.0	1.5	46.0	1.5	46.0
Specific conductance ($\mu\text{S}/\text{cm}$)	54	66	72	73	78	94	57	99	63	98
pH (units)	7.53	7.13	7.41	7.30	8.00	6.70	8.30	7.00	8.60	7.00
Water temperature ($^{\circ}\text{C}$)	0.5	5.0	7.0	6.5	23.0	13.0	26.0	13.0	26.0	14.0
Color (Pt-Co. scale)	---	---	10	15	---	---	---	---	---	---
Turbidity (NTU)	---	---	1.1	1.1	---	---	---	---	---	---
Secchi-disc (meters)	---	---	2.7	---	3.6	---	2.8	---	2.0	---
Dissolved oxygen	11.8	0.1	10.3	10.2	8.0	0.6	7.6	0	7.8	0
Hardness, total (as CaCO_3)	---	---	33	32	---	---	---	---	---	---
Calcium, dissolved (Ca)	---	---	8.6	8.5	---	---	---	---	---	---
Magnesium, dissolved (Mg)	---	---	2.7	2.7	---	---	---	---	---	---
Sodium, dissolved (Na)	---	---	1.5	1.6	---	---	---	---	---	---
Potassium, dissolved (K)	---	---	0.80	0.80	---	---	---	---	---	---
Alkalinity, total (as CaCO_3)	---	---	34	34	---	---	---	---	---	---
Sulfate, dissolved (SO_4)	---	---	3.4	3.4	---	---	---	---	---	---
Fluoride, total (as F)	---	---	0.0	0.0	---	---	---	---	---	---
Chloride, dissolved (Cl)	---	---	<1.0	<1.0	---	---	---	---	---	---
Silica, dissolved (SiO_2)	---	---	8.1	8.0	---	---	---	---	---	---
Solids, dissolved, at 180°C	---	---	56	56	---	---	---	---	---	---
Nitrogen, nitrite plus nitrate, diss (as N)	---	---	0.06	0.07	---	---	---	---	---	---
Nitrogen, ammonia, diss (as N)	---	---	0.03	0.03	---	---	---	---	---	---
Nitrogen, ammonia plus organic, total (as N)	---	---	0.30	0.40	---	---	---	---	---	---
Total phosphorus (as P)	---	---	0.022	0.020	0.013	0.189	0.019	0.220	0.027	0.240
Phosphorus, ortho, diss (as P)	---	---	0.003	0.003	---	---	---	---	---	0.200
Iron, dissolved (Fe) $\mu\text{g}/\text{L}$	---	---	<100	<100	---	---	---	---	---	---
Manganese, dissolved (Mn) $\mu\text{g}/\text{L}$	---	---	63	65	---	---	---	---	---	---
Chlorophyll a, phyto. ($\mu\text{g}/\text{L}$)	---	---	5	---	6	---	6	---	20	---

3-7-88

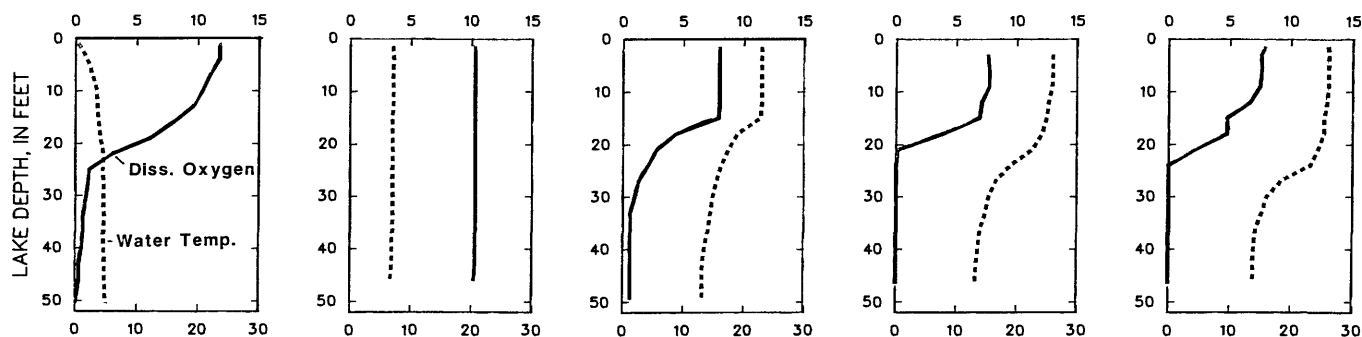
4-21-88

6-16-88

7-25-88

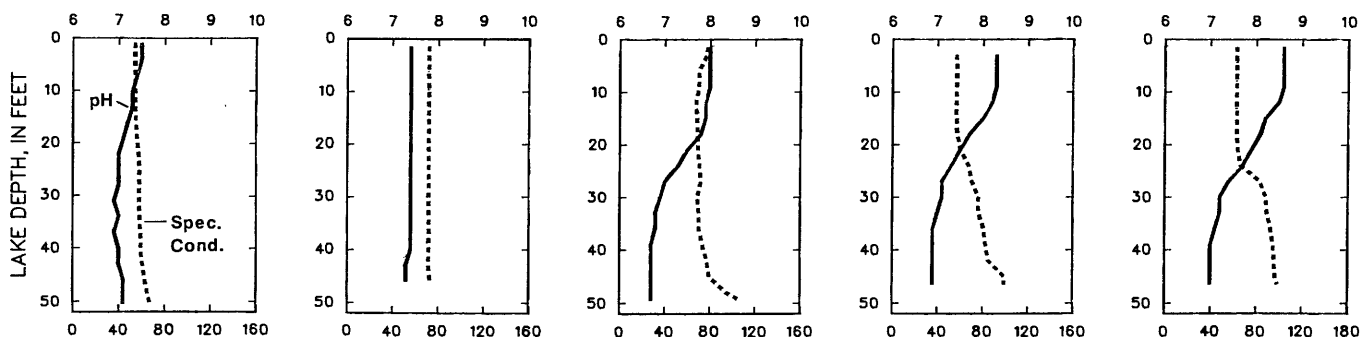
8-18-88

DISSOLVED OXYGEN, IN MILLIGRAMS PER LITER



WATER TEMPERATURE, IN DEGREES CELSIUS

PH, IN STANDARD UNITS



SPECIFIC CONDUCTANCE, IN MICROSIEMENS PER CENTIMETER

CHIPPEWA RIVER BASIN

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: Ice period listed in rating table below. Records good except those for ice-affected period, which is fair. Flow from 48 percent of the drainage area regulated by Moose Lake and Lake Chippewa.

AVERAGE DISCHARGE.--74 years, 1,473 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, 3,300 ft³/s (estimated), Mar. 26; maximum gage height, 6.82 ft, Mar. 26 (backwater from ice); maximum discharge during open water, 2,850 ft³/s, Apr. 7, gage height, 4.53 ft; minimum, 220 ft³/s, July 28, 29, gage height, 1.19 ft.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Dec. 6 to Apr. 1.)

1.2	246	4.0	2,380
2.0	761	6.0	4,300

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	325	877	1010	980	640	420	2800	655	503	445	365	503
2	320	887	1020	900	500	420	2400	587	434	346	343	572
3	348	915	959	940	470	420	2390	571	546	395	387	442
4	348	1020	828	960	760	420	2630	640	484	353	528	456
5	350	1100	695	900	740	420	2730	537	529	334	688	433
6	355	1040	780	840	500	420	2670	559	432	383	546	416
7	360	970	1000	760	450	420	2710	521	477	292	505	410
8	360	875	1400	840	420	420	2440	561	400	406	481	488
9	360	905	1200	780	400	470	2410	666	460	364	490	449
10	374	777	1300	840	410	560	2280	798	461	402	465	394
11	354	685	1100	840	370	620	2110	793	391	334	430	385
12	341	580	1300	800	600	800	2590	761	444	377	447	377
13	351	479	1100	840	600	1000	2550	742	374	357	518	376
14	360	414	1200	860	600	860	2500	725	443	432	672	370
15	398	421	1200	860	580	740	2430	693	371	342	509	374
16	595	468	1200	860	540	700	2390	669	435	1320	482	389
17	910	587	1100	820	490	660	2340	633	372	1320	473	804
18	871	899	1100	800	440	640	2290	586	385	841	544	492
19	702	1040	1000	780	400	700	1630	582	399	635	499	528
20	623	1290	1000	780	390	720	1160	540	431	536	454	989
21	577	985	980	780	380	700	1060	605	405	611	419	1210
22	753	649	960	780	370	660	1040	489	360	525	436	1020
23	729	616	960	780	450	740	811	493	420	487	492	724
24	566	602	1000	780	370	940	725	546	362	479	490	738
25	540	682	1000	780	440	1300	776	450	427	443	532	582
26	510	894	940	760	440	3300	794	453	376	379	514	559
27	495	505	960	760	430	3100	722	543	371	646	463	536
28	476	482	1000	760	430	2900	705	534	368	368	432	518
29	679	686	1000	780	430	2800	716	553	437	360	419	639
30	760	1020	980	780	---	3000	623	565	416	408	432	553
31	916	---	960	800	---	3100	---	534	---	386	403	---
TOTAL	16006	23350	32232	25520	14040	34370	55422	18584	12713	15306	14858	16726
MEAN	516	778	1040	823	484	1109	1847	599	424	494	479	558
MAX	916	1290	1400	980	760	3300	2800	798	546	1320	688	1210
MIN	320	414	695	760	370	420	623	450	360	292	343	370

CAL YR 1987 TOTAL 236870 MEAN 649 MAX 2070 MIN 320
WTR YR 1988 TOTAL 279127 MEAN 763 MAX 3300 MIN 292

CHIPPEWA RIVER BASIN

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: None, except for 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.--37 years, 1,832 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, 5,630 ft³/s, Apr. 4, gage height, 6.09 ft; minimum, 371 ft³/s, Oct. 20, June 29, gage height, 2.35 ft.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Dec. 15 to Mar. 26.)

2.4	400	5.0	3,480
3.0	833	6.0	5,440
4.0	1,920		

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	584	645	1550	780	760	660	2570	826	711	564	641	812
2	551	1070	1450	720	800	780	3350	920	683	485	741	717
3	610	1080	1230	760	900	720	3130	863	627	483	718	772
4	732	1070	823	800	800	680	3330	967	793	535	1270	760
5	777	954	933	840	660	640	4270	815	627	541	1210	746
6	682	982	1000	800	800	680	4290	885	594	501	1220	695
7	721	914	1200	740	720	740	4100	780	624	492	967	838
8	692	987	913	700	680	720	4160	697	642	461	843	654
9	616	720	1090	760	660	760	4140	1040	647	578	775	558
10	649	689	1360	760	560	780	2830	1910	542	543	696	742
11	673	858	1430	800	680	840	2890	2060	511	497	664	675
12	662	956	1590	840	740	800	3180	1960	489	479	713	629
13	656	853	1590	800	700	1100	2570	1520	487	471	865	607
14	644	898	1520	760	680	900	2990	1430	479	553	1190	552
15	689	536	1400	740	640	880	3150	1210	449	505	1480	558
16	1070	655	1200	800	620	720	3050	1260	564	918	1470	603
17	1210	923	1100	780	620	760	2500	1190	609	1260	1050	659
18	1550	1030	1000	740	740	880	2160	800	519	865	1040	1130
19	1430	1440	740	840	660	800	1860	1040	544	728	1110	668
20	1260	1410	900	860	660	560	2090	885	582	684	842	940
21	1080	1090	1000	880	580	600	1470	792	595	613	657	1110
22	1360	912	1200	900	480	680	1060	811	614	609	772	1240
23	1220	1190	1100	960	430	640	1240	813	560	603	932	1000
24	1150	1060	1100	760	440	760	1130	721	528	523	973	1000
25	1050	1080	1100	820	460	1000	1140	716	628	527	916	818
26	1180	827	1100	860	480	1700	1270	731	466	533	845	775
27	850	880	1100	800	500	2340	1280	649	419	552	984	791
28	1040	696	1100	780	450	2980	1240	721	420	579	746	649
29	1500	1090	1200	820	500	2900	1210	704	459	536	661	722
30	1640	1230	1000	800	---	1900	1290	730	746	665	704	771
31	629	---	840	700	---	2440	---	725	---	589	698	---
TOTAL	29157	28725	35859	24700	18400	33340	74940	31171	17158	18472	28393	23191
MEAN	941	957	1157	797	634	1075	2498	1006	572	596	916	773
MAX	1640	1440	1590	960	900	2980	4290	2060	793	1260	1480	1240
MIN	551	536	740	700	430	560	1060	649	419	461	641	552

CAL YR 1987 TOTAL 333327 MEAN 913 MAX 2170 MIN 467
WTR YR 1988 TOTAL 363506 MEAN 993 MAX 4290 MIN 419

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 1175: Drainage area. 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).

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 periods listed in rating table below. Records good except for ice-affected periods, which are poor. Data-collection platform at station.

AVERAGE DISCHARGE.--73 years, 518 ft³/s, 12.21 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. 26	0300	ice jam	*10.64	Apr. 4	1000	*2,530	7.22

Minimum discharge, 27 ft³/s, July 30, gage height 2.89 ft.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Shifting-control method used Aug. 19 to Sept. 30; stage-discharge relation affected by ice Nov. 21-23, Dec. 3-7, and Dec. 13 to Apr. 2.)

2.8	24	4.5	475
2.9	33	5.0	727
3.0	45	6.0	1,410
3.2	72	7.0	2,290
3.5	142	8.0	3,460
4.0	291		

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	75	261	889	120	84	78	2300	395	77	53	30	38
2	70	250	675	110	82	78	2300	338	82	46	31	41
3	65	256	520	110	80	80	2380	284	164	41	32	36
4	68	328	440	100	78	82	2510	232	160	37	43	34
5	74	443	340	92	76	84	2420	202	117	33	38	34
6	80	424	330	84	74	92	2420	180	93	32	38	33
7	83	373	320	78	74	98	2370	169	78	32	38	33
8	91	330	300	74	72	110	2020	164	69	30	41	33
9	89	319	321	70	72	120	1620	379	67	36	38	32
10	86	301	512	68	70	130	1340	1020	60	47	35	30
11	79	265	623	68	70	210	1170	1030	58	47	34	33
12	73	249	609	66	68	400	972	843	51	47	39	34
13	72	245	520	68	68	380	797	761	47	47	43	35
14	72	285	420	70	68	340	650	605	46	43	50	33
15	85	282	360	72	68	360	524	472	46	45	54	28
16	148	284	330	74	70	340	429	396	46	61	60	35
17	475	331	310	76	70	320	393	344	46	69	55	38
18	599	685	270	78	70	290	356	304	45	94	49	36
19	526	893	240	78	72	280	328	265	45	67	41	48
20	433	717	230	78	72	270	299	237	44	53	35	62
21	365	490	220	76	72	260	275	209	42	50	34	81
22	343	460	210	76	74	250	250	184	42	47	37	113
23	345	460	200	74	74	290	247	162	42	42	43	114
24	340	460	190	72	74	400	265	144	41	40	41	100
25	328	463	180	72	76	620	294	126	39	37	47	83
26	323	428	170	74	76	2000	306	111	36	37	52	67
27	328	394	170	74	76	1900	343	102	36	35	51	58
28	350	382	160	76	76	1800	450	96	40	33	46	56
29	340	513	150	78	78	1800	508	92	41	30	42	56
30	314	889	140	80	---	1900	452	87	44	28	40	52
31	282	---	130	82	---	2400	---	84	---	29	36	---
TOTAL	7001	12460	10479	2468	2134	17762	30988	10017	1844	1368	1293	1506
MEAN	226	415	338	79.6	73.6	573	1033	323	61.5	44.1	41.7	50.2
MAX	599	893	889	120	84	2400	2510	1030	164	94	60	114
MIN	65	245	130	66	68	78	247	84	36	28	30	28
CFSM	.39	.72	.59	.14	.13	.99	1.79	.56	.11	.08	.07	.09
IN.	.45	.80	.68	.16	.14	1.15	2.00	.65	.12	.09	.08	.10

CAL YR 1987 TOTAL 84381.9 MEAN 231 MAX 1180 MIN 46 CFSM .40 IN. 5.45
WTR YR 1988 TOTAL 99320 MEAN 271 MAX 2510 MIN 28 CFSM .47 IN. 6.41

CHIPPEWA RIVER BASIN

05364850 DUNCAN CREEK TRIBUTARY NEAR TILDEN, WI

LOCATION.--Lat 44°59'20", long 91°26'52", in SW 1/4 SW 1/4 sec.14, T.29 N., R.9 W., Chippewa County, Hydrologic Unit 07050005, on right bank 15 ft downstream from town road, approximately 0.4 mi upstream from U.S. Highway 53, and 1.4 mi southwest of Tilden.

DRAINAGE AREA.--4.17 mi².

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Elevation of gage is 940 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Dec. 27 to Feb. 23. Records good above 5 ft³/s and fair below.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 49 ft³/s, July 28, 1987, gage height, 4.50 ft; minimum, 0.65 ft³/s, July 28, 1988.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 26 ft³/s, Sept. 19, gage height, 4.03 ft; minimum, 0.65 ft³/s, July 28.

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	1.6	1.1	1.4	1.6	1.3	4.1	1.5	1.3	1.1	1.0	.74	.99
2	1.6	1.1	1.4	1.5	1.3	4.9	1.6	1.3	1.3	1.0	.70	.96
3	1.6	1.4	1.4	1.5	1.3	3.0	2.3	1.2	1.2	.94	.79	.91
4	1.6	1.2	1.3	1.5	1.3	2.4	1.8	1.2	1.1	.93	1.1	.90
5	1.6	1.0	1.4	1.4	1.3	2.3	1.7	1.2	1.1	.90	.92	.88
6	1.6	1.0	1.4	1.4	1.3	4.8	1.7	1.2	1.1	.90	.84	.85
7	1.5	1.0	1.5	1.4	1.3	3.9	1.6	1.2	1.1	.89	.80	.88
8	1.5	1.1	1.6	1.3	1.3	3.6	1.5	1.4	1.0	.91	1.5	.88
9	1.5	1.0	2.5	1.3	1.2	2.9	1.5	2.1	1.0	1.0	1.1	.88
10	1.4	1.0	1.8	1.3	1.2	2.7	1.5	1.5	1.0	1.0	.80	.88
11	1.4	1.0	1.7	1.3	1.2	2.6	1.5	1.3	1.0	.93	.90	.88
12	1.4	1.1	1.7	1.3	1.2	2.0	1.5	1.3	.97	.91	1.1	.88
13	1.4	1.1	1.6	1.3	1.2	1.6	1.4	1.2	.97	.94	.99	.90
14	1.4	1.0	1.6	1.3	1.2	1.5	1.4	1.2	.97	.87	.93	.88
15	2.2	1.1	1.6	1.3	1.2	1.5	1.4	1.2	.94	.88	.91	.89
16	2.8	1.3	1.6	1.3	1.2	1.5	1.4	1.2	.98	1.1	.89	1.1
17	2.0	2.4	1.6	1.2	1.2	1.5	1.4	1.1	.98	.89	.86	1.1
18	1.4	1.8	1.6	1.2	1.3	1.5	1.3	1.1	.99	.87	.84	1.7
19	1.3	1.3	1.7	1.2	1.3	1.4	1.3	1.1	1.0	.84	.86	7.1
20	1.3	1.2	1.7	1.2	1.3	1.4	1.3	1.2	1.0	.83	.84	7.5
21	1.3	1.2	1.7	1.2	1.4	1.4	1.3	1.1	1.1	.86	.83	2.0
22	1.2	1.2	1.8	1.2	1.4	1.6	1.3	1.1	1.1	.80	.92	1.6
23	1.3	1.4	1.8	1.2	1.4	1.9	1.7	1.1	1.1	.77	1.1	1.6
24	1.2	1.3	1.8	1.2	1.4	3.6	1.4	1.1	1.1	.78	.89	1.5
25	1.1	1.3	1.9	1.2	1.4	3.4	1.3	1.1	1.1	.84	.85	1.4
26	1.1	1.3	1.8	1.2	1.5	2.2	1.4	1.1	1.1	.80	.83	1.3
27	1.1	1.3	1.7	1.2	1.6	1.7	2.0	1.1	1.1	.73	.88	1.2
28	1.1	1.6	1.7	1.2	1.9	1.7	1.5	1.1	1.3	.69	.85	1.3
29	1.0	2.0	1.6	1.3	2.4	1.7	1.4	1.1	1.2	.67	.83	1.5
30	1.0	1.5	1.6	1.4	---	1.5	1.3	1.1	1.1	.68	.85	1.2
31	1.0	---	1.6	1.4	---	1.5	---	1.1	---	.74	.86	---
TOTAL	44.5	38.3	51.1	40.5	39.5	73.3	45.2	37.6	32.10	26.89	28.10	46.54
MEAN	1.44	1.28	1.65	1.31	1.36	2.36	1.51	1.21	1.07	.87	.91	1.55
MAX	2.8	2.4	2.5	1.6	2.4	4.9	2.3	2.1	1.3	1.1	1.5	7.5
MIN	1.0	1.0	1.3	1.2	1.2	1.4	1.3	1.1	.94	.67	.70	.85

CAL YR 1987 TOTAL 754.8 MEAN 2.07 MAX 17 MIN 1.0
WTR YR 1988 TOTAL 503.63 MEAN 1.38 MAX 7.5 MIN .67

CHIPPEWA RIVER BASIN

05364850 DUNCAN CREEK TRIBUTARY NEAR TILDEN, WI--CONTINUED

WATER-QUALITY RECORDS

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

PERIOD OF DAILY RECORD.--

SUSPENDED SEDIMENT DISCHARGE: December 1986 to current year.

TOTAL PHOSPHORUS DISCHARGE: December 1986 to current year.

TOTAL AMMONIA NITROGEN DISCHARGE: December 1986 to current year.

WATER TEMPERATURE: May 1987 to current year.

DISSOLVED OXYGEN: May 1987 to current year.

INSTRUMENTATION.--Water-quality sampler since December 1986. Water-quality monitor since May 1987.

EXTREMES FOR PERIOD OF RECORD.--

SUSPENDED-SEDIMENT DISCHARGE: Maximum daily, 11 tons, Sept. 19, 1988; minimum daily, 0.01 ton, Apr. 29, 1988.

TOTAL PHOSPHORUS DISCHARGE: Maximum daily, 297 lbs, Sept. 19, 1988; minimum daily, 0.16 lbs, Dec. 1, 1987.

TOTAL AMMONIA NITROGEN DISCHARGE: Maximum daily, 95 lbs, Mar. 2, 1988; minimum daily, 0.05 lbs, July 15, 1988.

WATER TEMPERATURE: Maximum observed, 26.5°C, Aug. 1, 1988; minimum observed, 0.5°C, Jan. 10-14, 1988.

DISSOLVED OXYGEN: Maximum observed, 15.5 mg/L, June 25, 1988; minimum observed, 1.3 mg/L, Aug. 2, 1987.

EXTREMES FOR CURRENT YEAR.--

SUSPENDED-SEDIMENT DISCHARGE: Maximum daily, 11 tons, Sept. 19; minimum daily, 0.01 ton, Apr. 29.

TOTAL PHOSPHORUS DISCHARGE: Maximum daily, 297 lbs, Sept. 19; minimum daily, 0.16 lbs, Dec. 1.

TOTAL AMMONIA NITROGEN DISCHARGE: Maximum daily, 95 lbs, Mar. 2; minimum daily, 0.05 lbs, July 15.

WATER TEMPERATURE: Maximum observed, 26.5°C, Aug. 1; minimum observed, 0.5°C, Jan. 10-14.

DISSOLVED OXYGEN: Maximum observed, 15.5 mg/L, June 25; minimum observed, 1.5 mg/L, Aug. 8.

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

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)	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 1987						MAY 1988				
29...	1225	--	1.0	138	6.0	04...	1120	1.2	155	13.0
DEC						JUN				
02...	1400	--	1.2	140	--	14...	1340	1.0	130	20.0
JAN 1988						JUL				
15...	1050	1.3	--	140	1.0	27...	1130	0.76	145	20.0
FEB						SEP				
29...	1205	--	2.1	209	2.5	20...	0845	7.9	193	13.0
MAR										
22...	1100	--	1.4	150	4.0					

DATE	TIME	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)	PHOS- PHOROUS TOTAL (MG/L AS P) (00665)	SEDI- MENT, SUS- PENDE (MG/L) (80154)
OCT 1987						
15...	1200	--	1.9	0.140	0.820	41
15...	1545	--	2.5	0.130	0.680	29
15...	1800	--	3.1	0.300	1.10	29
16...	1800	--	2.5	0.170	0.800	32
17...	1800	--	1.9	0.080	1.00	--
29...	1225	--	1.0	0.040	0.260	19
NOV						
17...	0715	--	2.1	0.270	0.680	41
17...	1100	--	2.7	0.250	0.720	85
20...	1040	--	1.1	0.040	0.310	15
28...	2130	--	2.4	--	--	75
30...	0950	--	1.5	--	--	9
DEC						
01...	0950	--	1.4	0.070	0.010	--
02...	1400	--	1.2	0.030	0.270	4
09...	0430	--	2.6	0.350	0.810	45
09...	0620	--	2.8	--	--	195
11...	1530	--	1.7	0.050	0.500	61
JAN 1988						
15...	0115	1.3	--	--	--	7
15...	1050	1.3	--	0.140	0.220	7
FEB						
29...	1205	--	2.1	3.90	1.30	32

CHIPPEWA RIVER BASIN

05364850 DUNCAN CREEK TRIBUTARY NEAR TILDEN, WI--CONTINUED

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)	PHOS- PHOROUS TOTAL (MG/L AS P) (00665)	SEDI- MENT, SUS- PENDE (MG/L) (80154)
MAR 1988					
01...	1415	3.2	4.60	0.190	41
01...	1600	4.0	4.70	2.10	72
01...	1730	4.8	4.30	1.80	120
01...	1915	5.9	3.90	0.150	96
01...	2030	7.4	3.70	0.160	127
02...	0945	4.8	3.70	0.160	101
04...	1025	2.4	2.60	0.120	13
22...	1100	1.4	0.070	0.260	6
24...	1745	3.2	0.560	0.670	703
24...	1815	4.9	1.30	0.920	656
24...	1830	6.6	1.40	1.10	635
24...	1900	8.8	2.10	1.10	--
24...	2245	11	2.60	2.20	544
25...	0115	6.8	2.90	1.50	427
25...	0315	4.4	2.50	1.30	232
25...	0730	3.1	2.30	1.20	145
25...	1900	2.7	--	--	920
29...	1500	1.7	0.130	0.400	6
APR					
03...	1100	2.4	--	--	434
03...	1300	2.3	--	--	530
03...	1900	2.2	--	--	332
04...	0930	1.8	--	--	137
28...	1100	1.5	0.010	0.290	3
MAY					
04...	1120	1.2	0.030	0.040	9
08...	2345	2.3	0.430	1.20	--
10...	1330	1.4	0.070	0.430	34
JUN					
14...	1340	1.0	0.160	0.490	41
29...	0900	1.3	0.280	0.680	--
JUL					
15...	2400	1.2	<0.010	0.580	141
19...	1700	0.86	0.130	0.400	26
27...	1130	0.76	0.070	0.430	--
AUG					
04...	0500	0.84	1.00	0.100	--
04...	1710	1.2	0.410	8.00	--
04...	1730	1.2	0.400	5.40	26
09...	0930	1.1	0.160	3.40	28
17...	0905	0.88	0.300	0.720	45
SEP					
19...	0745	1.7	0.130	5.00	1180
19...	1015	1.5	6.40	--	--
19...	1415	1.4	0.570	5.60	1070
19...	1515	1.7	0.990	14.0	3960
19...	1530	1.9	0.930	11.0	2770
19...	1545	2.2	0.930	7.80	2950
19...	1715	7.7	0.170	2.20	590
19...	1745	8.1	0.160	4.70	720
19...	1815	9.5	0.330	3.00	565
20...	0145	17	0.100	2.60	335
20...	0500	11	0.130	3.00	322
20...	0840	8.0	0.140	1.50	--
20...	0844	7.9	0.110	1.60	--
20...	0845	7.9	0.210	1.20	214
20...	0847	7.9	0.120	1.50	170
20...	0848	7.9	0.130	1.40	117
21...	1215	1.8	0.070	0.540	16

CHIPPEWA RIVER BASIN

05364850 DUNCAN CREEK TRIBUTARY NEAR TILDEN, 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	.04	.05	.02	.03	.03	.94	.04	.02	.09	.07	.24	.11
2	.04	.06	.02	.03	.03	1.2	.31	.02	.42	.07	.26	.11
3	.04	.13	.02	.03	.03	.29	2.3	.03	.24	.06	.18	.10
4	.04	.06	.02	.03	.03	.10	.77	.03	.12	.06	.12	.10
5	.04	.06	.02	.03	.03	.22	.55	.03	.12	.06	.07	.10
6	.04	.05	.02	.03	.03	1.5	.46	.03	.12	.06	.06	.10
7	.04	.06	.02	.03	.03	.77	.38	.03	.11	.06	.06	.10
8	.04	.06	.03	.03	.03	.36	.32	.31	.11	.06	.54	.10
9	.04	.05	.36	.03	.03	.08	.27	1.2	.11	.07	.12	.10
10	.04	.05	.10	.03	.03	.07	.24	.17	.11	.07	.06	.10
11	.04	.05	.23	.03	.03	.06	.20	.12	.11	.06	.08	.10
12	.04	.06	.28	.02	.03	.05	.17	.11	.11	.06	.10	.10
13	.04	.06	.26	.02	.03	.04	.15	.11	.11	.06	.10	.10
14	.04	.05	.25	.02	.03	.03	.13	.11	.11	.06	.09	.10
15	.12	.06	.26	.02	.03	.03	.11	.11	.10	.07	.10	.10
16	.18	.06	.26	.02	.03	.03	.10	.10	.11	.09	.10	.12
17	.10	.42	.25	.02	.03	.03	.08	.10	.11	.06	.10	.12
18	.06	.13	.26	.02	.03	.03	.07	.10	.11	.06	.10	.62
19	.05	.07	.27	.02	.03	.03	.06	.10	.11	.06	.10	11
20	.06	.05	.27	.02	.03	.02	.05	.10	.11	.06	.10	4.3
21	.06	.05	.27	.02	.04	.02	.04	.10	.12	.07	.10	.12
22	.05	.05	.27	.02	.04	.37	.04	.10	.12	.08	.11	.07
23	.06	.06	.28	.02	.04	.95	.04	.10	.12	.08	.13	.06
24	.06	.05	.28	.02	.04	4.3	.03	.10	.12	.10	.10	.05
25	.05	.05	.28	.02	.04	3.9	.03	.10	.12	.12	.10	.05
26	.05	.05	.28	.02	.04	2.4	.04	.10	.12	.13	.10	.04
27	.05	.05	.26	.03	.04	.50	1.1	.10	.12	.13	.10	.04
28	.06	.16	.26	.03	.11	.13	.06	.09	.35	.14	.10	.04
29	.05	.18	.24	.03	.26	.04	.01	.09	.26	.15	.10	.04
30	.05	.04	.24	.03	---	.03	.02	.09	.07	.17	.10	.03
31	.05	---	.24	.03	---	.03	---	.09	---	.22	.10	---
TOTAL	1.72	2.38	6.12	0.78	1.25	18.55	8.17	3.99	4.16	2.67	3.82	18.22
MEAN	.06	.08	.20	.03	.04	.60	.27	.13	.14	.09	.12	.61
MAX	.18	.42	.36	.03	.26	4.3	2.3	1.2	.42	.22	.54	.11
MIN	.04	.04	.02	.02	.03	.02	.01	.02	.07	.06	.06	.03
CAL YR 1987	TOTAL 73.81		MEAN .20	MAX 9.1	MIN .02							
WTR YR 1988	TOTAL 71.83		MEAN .20	MAX 11	MIN .01							

PHOSPHORUS, TOTAL, POUNDS PER DAY, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.39	1.50	.16	1.96	1.54	18.2	3.31	.76	2.49	2.35	1.73	3.79
2	2.38	1.52	1.39	1.83	1.54	16.6	3.52	.53	4.59	2.31	1.62	3.68
3	2.33	3.58	2.02	1.83	1.54	7.19	4.08	.37	3.36	2.14	3.42	3.49
4	2.33	2.13	1.95	1.82	1.54	1.77	1.24	.28	2.66	2.11	30.3	3.47
5	2.29	1.83	1.99	1.70	1.54	5.42	1.20	.27	2.62	2.04	6.03	3.37
6	2.31	1.78	2.04	1.69	1.54	31.8	1.22	.27	2.61	2.02	1.36	3.26
7	2.19	1.78	2.12	1.69	1.54	14.6	1.18	.26	2.56	1.99	1.30	3.37
8	2.19	1.79	2.42	1.57	1.54	5.93	1.20	1.64	2.56	2.04	45.0	3.37
9	2.12	1.67	9.86	1.56	1.43	3.40	1.23	7.71	2.55	2.29	19.9	3.35
10	2.04	1.61	4.92	1.56	1.43	3.11	1.26	3.65	2.56	2.23	3.03	3.36
11	2.04	1.57	4.63	1.56	1.43	3.06	1.28	3.02	2.58	2.05	3.41	3.34
12	2.04	1.70	4.53	1.55	1.43	2.42	1.33	2.92	2.52	2.00	10.1	3.36
13	2.04	1.69	4.26	1.55	1.43	1.93	1.37	2.80	2.55	2.05	2.28	3.40
14	2.04	1.48	4.19	1.55	1.43	1.86	1.37	2.78	2.55	1.89	2.45	3.34
15	9.29	1.62	4.29	1.54	1.43	1.86	1.41	2.82	2.47	1.95	2.75	3.38
16	13.7	1.78	4.32	1.54	1.43	1.92	1.49	2.73	2.56	2.52	3.08	10.1
17	7.99	10.1	4.22	1.43	1.43	1.97	1.51	2.65	2.51	1.93	3.33	4.32
18	2.27	4.46	4.36	1.43	1.54	1.97	1.55	2.64	2.51	1.87	3.27	43.6
19	1.83	2.47	4.50	1.43	1.54	1.94	1.60	2.67	2.62	1.82	3.33	297
20	1.83	2.03	4.63	1.43	1.54	1.89	1.65	2.67	2.57	1.82	3.27	88.2
21	1.83	1.97	4.61	1.43	1.66	1.92	1.68	2.65	2.65	1.89	3.24	6.71
22	1.68	2.05	4.65	1.43	1.66	2.75	1.80	2.61	2.73	1.78	5.72	4.78
23	1.83	2.31	4.72	1.43	1.66	3.37	2.75	2.64	2.69	1.72	13.9	4.52
24	1.68	2.16	4.85	1.43	1.72	22.0	2.06	2.60	2.75	1.77	3.44	4.27
25	1.54	2.14	4.87	1.43	1.71	22.8	1.80	2.64	2.65	1.91	3.29	4.19
26	1.54	2.16	4.76	1.43	1.81	10.9	1.99	2.64	2.59	1.84	3.22	3.81
27	1.54	2.19	4.44	1.43	1.86	6.40	4.86	2.66	2.67	1.70	3.41	3.57
28	1.54	3.78	4.43	1.43	3.73	4.98	2.44	2.64	4.67	1.59	3.27	3.68
29	1.40	6.08	4.16	1.54	13.4	3.98	1.53	2.62	4.32	1.57	3.20	4.28
30	1.47	.57	4.16	1.66	---	3.31	1.07	2.54	2.49	1.58	3.27	3.60
31	1.42	---	4.15	1.66	---	3.32	---	2.49	---	1.73	3.32	---
TOTAL	85.11	73.50	122.60	48.52	59.02	214.57	55.98	72.17	84.21	60.50	200.24	537.96
MEAN	2.75	2.45	3.95	1.57	2.04	6.92	1.87	2.33	2.81	1.95	6.46	17.9
MAX	13.7	10.1	9.86	1.96	13.4	31.8	4.86	7.71	4.67	2.52	45.0	297
MIN	1.40	.57	.16	1.43	1.43	1.77	1.07	.26	2.47	1.57	1.30	3.26
CAL YR 1987	TOTAL 2395.85		MEAN 6.56	MAX 190	MIN .16							
WTR YR 1988	TOTAL 1614.38		MEAN 4.41	MAX 297	MIN .16							

CHIPPEWA RIVER BASIN

05364850 DUNCAN CREEK TRIBUTARY NEAR TILDEN, WI--CONTINUED

NITROGEN, AMMONIA, TOTAL, POUNDS PER DAY, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.44	.23	.47	1.2	1.0	80.0	.69	.12	.68	.32	.28	.65
2	.44	.23	.25	1.1	1.0	95.1	1.7	.14	.82	.28	.26	.59
3	.43	.81	.22	1.1	1.0	48.2	9.9	.17	.79	.23	.41	.53
4	.43	.29	.22	1.1	1.0	31.7	.96	.20	.77	.20	3.3	.50
5	.42	.22	.22	1.0	1.0	23.2	.82	.20	.77	.17	1.6	.46
6	.43	.22	.23	1.0	1.0	52.7	.73	.20	.77	.15	1.1	.42
7	.40	.22	.24	1.0	1.0	23.2	.63	.19	.77	.13	.82	.40
8	.40	.23	.61	.97	1.0	9.0	.56	.75	.78	.12	3.3	.38
9	.39	.22	2.8	.97	.94	6.5	.51	3.6	.78	.12	1.5	.36
10	.38	.22	.81	.97	.94	5.1	.46	.70	.80	.11	.68	.34
11	.38	.22	.51	.97	.95	4.3	.41	.50	.81	.09	.74	.32
12	.38	.24	.45	.98	.95	3.0	.38	.50	.80	.08	1.8	.30
13	.38	.24	.43	.98	.95	2.0	.34	.49	.82	.07	1.6	.29
14	.38	.22	.42	.98	.95	1.7	.31	.50	.83	.06	1.5	.27
15	2.1	.24	.44	.98	.95	1.4	.28	.52	.77	.05	1.5	.25
16	3.2	.27	.44	.98	.95	1.3	.26	.51	.76	.81	1.4	.99
17	1.3	2.8	.43	.91	.96	1.1	.23	.51	.71	.41	1.4	.42
18	.58	.88	.45	.91	1.0	.97	.21	.52	.67	.48	1.3	2.9
19	.51	.40	.47	.91	1.0	.82	.19	.54	.67	.56	1.2	27.4
20	.48	.27	.48	.91	1.0	.69	.17	.55	.62	.55	1.1	5.1
21	.45	.25	.48	.92	1.1	.60	.16	.56	.61	.52	1.0	.83
22	.39	.26	.49	.92	1.1	3.0	.22	.56	.60	.45	1.1	.60
23	.40	.30	.50	.92	1.1	6.1	6.5	.58	.56	.40	1.2	.60
24	.35	.28	.51	.92	1.2	33.1	1.2	.59	.54	.37	.94	.57
25	.30	.28	.52	.92	1.2	40.2	.26	.61	.50	.37	.85	.53
26	.28	.28	.51	.92	1.2	13.1	.54	.63	.47	.33	.78	.49
27	.27	.28	.48	.92	1.3	5.1	7.2	.65	.46	.28	.78	.45
28	.25	.74	.48	.93	6.6	2.6	.16	.66	2.0	.26	.71	.49
29	.22	1.2	.45	1.0	38.2	1.4	.09	.67	1.7	.25	.65	.57
30	.23	.57	.45	1.1	---	.94	.10	.66	.38	.26	.63	.45
31	.22	---	.45	1.1	---	.81	---	.67	---	.26	.60	---
TOTAL	17.21	13.11	15.91	30.49	72.54	498.93	36.17	18.25	23.01	8.74	36.03	48.45
MEAN	.56	.44	.51	.98	2.5	16.1	1.2	.59	.77	.28	1.2	1.6
MAX	3.2	2.8	2.8	1.2	38.2	95.1	9.9	3.6	2.0	.81	3.3	27.4
MIN	.22	.22	.22	.91	.94	.60	.09	.12	.38	.05	.26	.25

CAL YR 1987 TOTAL 512.41 MEAN 1.4 MAX 58.0 MIN .18

WATER TEMPERATURE, DEGREES CENTIGRADE, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	13.0	10.5	12.0	9.0	7.5	8.0	3.0	2.0	2.5	3.0	3.0	3.0
2	11.0	8.5	9.5	11.0	9.0	10.0	4.0	1.5	3.0	2.5	2.5	2.5
3	11.0	6.5	8.5	13.0	11.0	12.0	4.5	4.0	4.0	2.5	2.5	2.5
4	12.5	8.0	10.0	13.0	8.5	11.5	4.0	3.5	4.0	2.5	2.0	2.5
5	11.5	10.5	11.0	8.0	5.5	6.5	4.0	3.5	4.0	2.0	1.5	2.0
6	10.5	8.5	10.0	7.5	5.0	6.0	4.0	3.5	3.5	1.5	1.0	1.5
7	10.5	7.5	8.5	7.5	4.5	6.0	4.5	4.0	4.0	1.0	1.0	1.0
8	8.0	6.5	7.5	8.5	5.0	7.0	5.0	4.5	4.5	1.0	1.0	1.0
9	8.0	7.0	7.5	5.5	3.5	4.5	5.0	4.5	5.0	1.0	1.0	1.0
10	7.5	5.5	7.0	5.0	2.5	3.5	5.0	4.5	5.0	1.0	.5	1.0
11	8.0	4.0	6.0	5.5	2.5	4.0	5.0	5.0	5.0	.5	.5	.5
12	9.5	5.0	7.0	6.0	3.5	5.0	5.0	4.0	4.5	.5	.5	.5
13	10.0	5.5	8.0	7.5	5.0	6.0	4.0	4.0	4.0	.5	.5	.5
14	10.5	8.5	9.5	6.5	4.0	5.5	4.0	3.5	4.0	1.0	.5	.5
15	10.0	9.5	9.5	8.5	5.5	7.0	3.5	3.0	3.5	1.0	1.0	1.0
16	11.5	9.5	10.5	10.0	8.5	9.0	3.5	3.5	3.5	1.5	1.0	1.5
17	10.5	8.5	10.0	9.5	4.0	7.5	3.5	3.5	3.5	1.5	1.5	1.5
18	10.0	7.0	8.5	4.5	3.0	4.0	3.5	3.5	3.5	1.5	1.5	1.5
19	9.5	6.0	8.0	5.0	2.5	3.5	3.5	3.5	3.5	2.0	1.5	1.5
20	7.5	6.0	6.5	2.5	1.0	2.0	3.5	3.5	3.5	2.0	1.5	2.0
21	8.0	5.0	6.5	3.0	1.5	2.0	3.5	3.5	3.5	2.0	2.0	2.0
22	7.0	5.0	6.0	4.0	1.5	3.0	3.5	3.5	3.5	2.0	2.0	2.0
23	7.0	5.5	6.0	4.0	4.0	4.0	3.5	3.5	3.5	2.0	2.0	2.0
24	8.5	6.0	7.0	4.5	3.0	4.0	3.5	3.5	3.5	2.0	2.0	2.0
25	8.0	4.5	6.0	4.5	3.5	4.0	3.5	3.5	3.5	2.0	2.0	2.0
26	7.0	5.5	6.5	4.5	3.5	4.0	3.5	3.5	3.5	2.0	2.0	2.0
27	7.5	5.0	6.0	4.5	3.5	4.0	3.5	3.0	3.5	2.5	2.0	2.5
28	8.0	5.5	6.5	4.5	3.5	4.0	3.5	3.0	3.5	2.5	2.5	2.5
29	7.5	4.5	6.0	5.0	3.5	4.5	3.5	3.0	3.5	2.5	2.5	2.5
30	9.0	5.5	7.0	4.0	3.0	3.5	3.5	3.0	3.5	2.5	2.5	2.5
31	8.5	5.5	7.0	---	---	---	3.5	3.0	3.0	2.5	2.5	2.5
MONTH	13.0	4.0	7.9	13.0	1.0	5.5	5.0	1.5	3.7	3.0	.5	1.7

WATER TEMPERATURE, DEGREES CENTIGRADE, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	2.5	2.5	2.5	3.0	2.5	2.5	8.5	6.0	7.0	14.5	10.5	12.5
2	2.5	2.5	2.5	2.5	2.0	2.5	7.5	6.5	7.0	15.5	11.0	13.0
3	2.5	2.5	2.5	2.5	2.5	2.5	9.5	7.0	8.0	15.5	11.5	13.5
4	2.5	2.5	2.5	3.0	2.5	3.0	12.0	8.5	10.0	15.0	11.5	13.5
5	2.5	2.5	2.5	3.5	3.0	3.0	11.0	9.5	10.5	16.5	12.0	14.0
6	2.5	2.5	2.5	4.0	3.0	3.0	10.5	8.5	9.5	16.5	13.0	15.0
7	2.5	2.5	2.5	4.0	3.0	3.0	11.5	7.5	9.5	15.5	14.0	14.5
8	2.5	2.5	2.5	4.0	3.5	3.5	12.0	9.5	10.5	16.0	14.0	15.0
9	2.5	2.5	2.5	5.0	3.5	4.0	11.0	9.5	10.5	15.0	14.0	14.5
10	2.5	2.5	2.5	5.5	4.0	4.5	10.0	8.0	9.0	17.0	13.0	15.0
11	2.5	2.5	2.5	6.0	5.0	5.5	11.0	7.5	9.0	16.0	13.5	14.5
12	2.5	2.5	2.5	6.0	4.0	5.0	11.5	7.5	9.5	16.5	14.0	15.0
13	2.5	2.5	2.5	4.0	4.0	4.0	11.0	9.0	10.0	16.5	13.5	15.0
14	2.5	2.5	2.5	4.0	3.5	4.0	9.0	7.0	8.0	15.5	13.0	14.5
15	3.0	2.5	2.5	4.0	3.5	4.0	9.0	6.5	7.5	17.0	15.0	16.0
16	3.0	2.5	3.0	4.5	4.0	4.0	10.5	6.5	8.5	16.5	15.0	15.5
17	3.0	3.0	3.0	4.5	4.0	4.5	9.0	7.5	8.5	17.0	13.0	15.0
18	3.0	3.0	3.0	4.5	4.0	4.5	8.5	6.5	7.0	18.5	14.5	16.5
19	3.0	3.0	3.0	4.5	4.0	4.0	8.5	6.5	7.0	19.0	16.0	17.5
20	3.0	2.5	3.0	4.0	4.0	4.0	9.0	6.5	7.5	21.0	16.5	18.5
21	2.5	2.5	2.5	4.0	4.0	4.0	9.0	6.5	7.5	22.0	18.0	20.0
22	3.0	2.5	3.0	5.0	4.0	4.5	8.0	7.0	7.5	21.5	19.0	20.5
23	3.0	2.5	2.5	6.5	5.0	5.5	7.5	6.5	7.0	22.0	18.5	20.5
24	2.5	2.5	2.5	6.5	5.5	6.0	9.5	6.5	8.0	20.0	18.5	19.5
25	2.5	2.5	2.5	7.0	5.5	6.0	10.5	8.0	9.5	19.5	17.0	18.0
26	3.0	2.5	2.5	7.0	5.0	5.5	9.0	7.5	8.0	18.5	16.0	17.0
27	3.0	2.5	3.0	5.5	4.5	5.0	9.5	6.5	7.5	19.0	17.5	18.0
28	3.0	3.0	3.0	6.0	5.0	5.5	11.5	7.0	9.0	19.5	17.5	18.5
29	3.0	2.5	3.0	6.5	5.5	6.0	13.0	8.0	10.5	20.0	18.0	19.0
30	---	---	---	6.5	5.0	6.0	13.5	9.5	11.5	19.0	17.0	18.0
31	---	---	---	8.0	6.0	7.0	---	---	---	19.0	17.0	18.0
MONTH	3.0	2.5	2.7	8.0	2.0	4.4	13.5	6.0	8.7	22.0	10.5	16.3
	JUNE			JULY			AUGUST			SEPTEMBER		
1	19.0	17.0	18.0	20.5	18.5	19.5	26.5	25.0	25.5	18.5	17.5	18.0
2	18.5	17.0	17.5	21.0	18.5	20.0	25.5	24.5	25.0	18.5	17.0	18.0
3	17.5	15.5	16.5	22.0	19.5	20.5	24.0	23.0	23.5	18.5	17.5	17.5
4	18.5	16.0	17.0	22.5	20.0	21.0	23.0	22.0	22.0	17.5	17.0	17.5
5	19.0	16.0	17.5	23.0	20.5	22.0	21.5	20.5	21.0	16.5	15.0	16.0
6	19.0	17.0	18.0	23.5	21.5	22.5	21.0	19.5	20.5	15.0	13.5	14.5
7	19.0	16.5	18.0	24.0	22.0	23.0	21.0	19.5	20.5	15.0	13.5	14.5
8	18.5	16.0	17.0	24.0	22.5	23.0	21.5	20.5	21.0	16.0	14.5	15.0
9	16.5	14.5	15.5	23.5	22.0	22.5	21.0	20.0	20.5	15.0	14.0	14.5
10	19.5	14.5	16.0	23.0	21.5	22.5	21.5	19.5	20.5	15.0	13.5	14.5
11	18.5	16.0	17.5	21.5	20.0	20.5	22.5	20.0	21.0	16.0	14.5	15.0
12	20.0	17.5	18.5	20.5	18.5	19.5	24.0	21.5	22.5	16.5	15.5	16.0
13	21.5	19.5	20.0	22.0	19.5	20.5	24.0	23.0	23.5	15.5	14.0	14.5
14	22.5	21.0	21.5	21.5	20.0	21.0	24.0	22.5	23.0	14.5	13.5	14.0
15	22.0	20.5	21.0	23.0	20.5	21.5	23.5	21.5	22.5	14.0	13.5	13.5
16	20.5	19.5	20.5	23.0	21.5	22.0	25.0	23.0	24.0	15.0	14.0	14.5
17	20.5	19.0	20.0	22.0	20.0	21.0	25.5	24.0	24.5	15.5	14.5	15.0
18	21.0	16.5	20.0	21.5	20.5	21.0	25.0	22.5	23.5	17.0	15.5	16.0
19	22.5	20.5	21.5	20.5	19.0	20.0	22.5	21.5	22.0	18.0	16.5	17.0
20	22.0	20.5	21.5	20.0	19.0	20.0	22.0	21.0	21.5	16.5	14.5	15.5
21	21.5	20.0	20.5	21.0	19.5	20.0	22.5	21.0	21.5	15.0	14.5	14.5
22	21.5	20.5	21.0	21.5	20.0	20.5	22.0	21.0	21.5	15.5	15.0	15.0
23	21.0	19.5	20.0	21.5	20.0	21.0	21.0	20.5	21.0	15.0	13.5	14.0
24	21.5	19.5	20.5	22.0	20.5	21.5	20.5	19.5	20.0	13.0	12.0	13.0
25	24.0	21.0	22.5	21.5	20.5	21.0	20.0	19.0	19.5	13.0	12.5	13.0
26	23.0	21.5	22.5	21.0	19.5	20.5	19.0	18.0	18.5	14.5	13.0	13.5
27	22.5	21.0	21.5	22.5	20.5	21.5	19.0	18.0	18.5	14.5	13.0	14.0
28	22.0	20.5	21.0	23.5	21.5	22.5	18.0	16.5	17.5	13.0	12.0	12.5
29	21.5	19.5	20.5	24.5	22.5	23.5	17.5	16.5	17.0	13.0	12.0	12.5
30	21.0	18.5	20.0	25.0	24.0	24.5	17.5	16.0	16.5	14.5	13.0	13.5
31	---	---	---	25.5	23.5	24.5	18.0	16.5	17.0	---	---	---
MONTH	24.0	14.5	19.4	25.5	18.5	21.4	26.5	16.0	21.2	18.5	12.0	14.9
YEAR	MAXIMUM	26.5	MINIMUM	.5	MEAN	10.7						

CHIPPEWA RIVER BASIN

05364850 DUNCAN CREEK TRIBUTARY NEAR TILDEN, WI--CONTINUED

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	---	---	---	---	---	---	6.8	3.9	5.4	7.0	4.9	5.8
2	---	---	---	---	---	---	6.1	3.4	4.3	6.9	4.9	5.9
3	---	---	---	---	---	---	6.4	2.9	4.1	7.7	5.3	6.3
4	---	---	---	---	---	---	4.2	2.1	3.0	8.0	5.5	6.6
5	---	---	---	---	---	---	6.4	3.0	4.4	8.4	6.1	7.2
6	---	---	---	---	---	---	5.7	3.4	4.4	8.9	6.6	7.5
7	---	---	---	---	---	---	5.9	3.2	4.4	9.0	6.5	7.5
8	---	---	---	---	---	---	5.5	1.5	3.2	8.7	5.8	7.1
9	---	---	---	---	---	---	5.0	2.9	3.7	9.0	6.3	7.4
10	---	---	---	---	---	---	6.1	3.2	4.4	9.3	6.2	7.4
11	---	---	---	---	---	---	6.0	3.2	4.2	8.5	5.1	7.0
12	---	---	---	8.5	4.9	6.4	5.6	2.2	3.4	7.6	5.0	6.2
13	---	---	---	9.4	4.4	6.6	4.6	2.5	3.5	8.7	5.8	7.2
14	---	---	---	9.1	5.1	6.3	5.4	2.7	3.9	9.0	6.1	7.2
15	9.1	6.6	8.2	8.7	4.5	5.9	4.1	2.3	3.3	7.9	6.0	6.7
16	10.5	6.9	9.1	7.8	2.0	4.9	4.2	2.0	3.0	7.1	5.1	6.2
17	11.4	7.3	9.1	8.4	5.4	6.8	4.6	2.4	3.6	6.9	4.6	5.8
18	12.5	6.0	8.9	12.6	6.9	9.0	5.3	3.4	4.2	5.9	2.0	4.1
19	12.1	5.2	8.6	11.6	4.4	7.6	5.9	4.1	4.8	7.1	3.3	4.2
20	14.9	5.4	9.7	7.6	4.6	5.8	6.0	3.5	4.8	6.0	4.3	5.1
21	14.2	5.7	8.9	7.2	4.6	5.5	6.2	3.0	4.4	7.2	5.1	6.0
22	---	---	---	7.0	4.7	5.6	5.3	3.7	4.5	6.2	5.1	5.7
23	---	---	---	7.1	4.2	5.3	6.6	4.1	5.0	7.3	5.6	6.4
24	12.0	5.1	7.9	7.0	3.6	5.3	7.2	4.4	5.7	7.8	6.0	6.8
25	15.5	5.4	9.2	7.3	4.4	5.5	7.5	4.7	5.9	7.6	5.9	6.6
26	14.2	5.9	9.9	8.4	4.5	6.2	7.7	5.1	6.0	7.3	4.3	6.2
27	---	---	---	7.8	4.0	5.7	7.7	4.9	6.2	7.5	5.1	6.4
28	---	---	---	8.0	4.4	5.6	8.3	5.5	6.9	8.9	6.5	7.6
29	---	---	---	7.8	4.0	5.3	9.0	6.2	7.3	8.3	6.6	7.1
30	---	---	---	6.6	3.5	4.9	7.6	5.6	6.7	8.1	5.7	6.8
31	---	---	---	7.7	3.6	5.4	7.9	3.6	6.1	---	---	---
MONTH	---	---	---	---	---	---	9.0	1.5	4.7	9.3	2.0	6.5

CHIPPEWA RIVER BASIN

05364850 DUNCAN CREEK TRIBUTARY NEAR TILDEN, WI--CONTINUED

PRECIPITATION QUANTITY

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

GAGE.--Micrologger.

REMARKS.--Records good.

EXTREMES FOR CURRENT YEAR.--Maximum daily rainfall, 2.65 in., Sept. 19.

RAINFALL ACCUMULATED (INCHES), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	---	---	---	---	---	.00	.00	.00	.00	.01	.52
2	.01	---	---	---	---	---	.00	.00	.41	.00	.13	.00
3	.01	---	---	---	---	---	.00	.00	.00	.00	.49	.01
4	.00	---	---	---	---	---	.00	.00	.00	.00	.65	.06
5	.02	---	---	---	---	---	.06	.00	.00	.00	.00	.00
6	.02	---	---	---	---	---	.00	.00	.00	.00	.00	.00
7	.02	---	---	---	---	---	.00	.00	.00	.00	.28	.00
8	.00	---	---	---	---	---	.00	1.08	.00	.02	1.21	.00
9	.01	---	---	---	---	---	.03	.17	.00	.25	.00	.00
10	.00	---	---	---	---	---	.00	.00	.00	.00	.00	.00
11	.00	---	---	---	---	---	.00	.00	.00	.00	.32	.00
12	.00	---	---	---	---	---	.00	.00	.00	.00	.41	.00
13	.01	---	---	---	---	---	.01	.00	.00	.20	.00	.00
14	.00	---	---	---	---	---	.00	.08	.00	.00	.00	.00
15	1.10	---	---	---	---	---	.00	.01	.00	.61	.00	.00
16	.57	---	---	---	---	---	.00	.00	.00	.00	.00	.57
17	.15	---	---	---	---	---	.00	.00	.00	.00	.00	.00
18	.03	---	---	---	---	---	.00	.00	.00	.00	.00	.88
19	.01	---	---	---	---	---	.00	.00	.10	.00	.00	2.65
20	.00	---	---	---	---	---	.00	.00	.00	.00	.00	.04
21	.00	---	---	---	---	---	.00	.00	.00	.00	.00	---
22	.05	---	---	---	---	---	.21	.00	.00	.00	.48	---
23	.00	---	---	---	---	---	.08	.00	.01	.00	.04	---
24	.00	---	---	---	---	---	.00	.00	.07	.00	.02	---
25	.00	---	---	---	---	---	.00	.00	.00	.00	.01	---
26	.00	---	---	---	---	---	.45	.00	.00	.00	.00	---
27	.06	---	---	---	---	---	.38	.02	.00	.00	.16	---
28	.00	---	---	---	---	---	.00	.02	.69	.00	.00	---
29	.01	---	---	---	---	---	.00	.00	.00	.00	.00	.00
30	.00	---	---	---	---	---	.00	.00	.00	.00	.00	.00
31	.00	---	---	---	---	---	---	.00	---	.11	.00	---
TOTAL	2.08	---	---	---	---	---	1.22	1.38	1.28	1.19	4.21	---

CHIPPEWA RIVER BASIN

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: Mar. 7-17. 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.--97 years (1889-1983, 1987-88), 5,091 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, 14,900 ft³/s, Apr. 7, gage height, 9.30 ft; minimum daily, 279 ft³/s, June 25.

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

1.3	254	4.0	2,800
1.5	325	6.0	6,400
2.0	585	9.0	14,000
3.0	1,440		

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	1900	1930	6800	2460	2250	1460	11900	3090	2290	1630	2010	1800
2	719	3530	4450	2290	1500	3390	12200	3200	2220	542	1460	2120
3	637	3050	5120	1300	2160	2110	11900	2490	1280	377	1830	330
4	340	3460	3610	2590	1890	2080	11900	2530	470	627	1610	700
5	1790	3170	2200	2290	2100	2290	11900	1800	1160	2040	1740	1710
6	1100	4670	1860	3080	853	1480	12300	3140	2680	2140	771	1480
7	2400	2830	4590	2730	788	2580	13900	1270	1910	2780	1820	1370
8	1820	3310	4260	2440	1980	3700	13100	1200	993	770	2540	2640
9	1570	2160	4070	1220	1600	5650	11800	3480	529	362	1530	1580
10	583	2600	4940	1410	1550	4400	9420	3600	883	493	1370	610
11	1240	1690	6860	4490	1740	4900	7150	5180	631	878	2370	522
12	2480	3450	5330	2860	1950	6200	6780	5050	327	433	2070	1000
13	1060	2480	5020	3330	532	6000	8730	4010	2540	1260	312	1130
14	1160	1080	4910	2780	711	3400	6570	4300	2640	845	569	819
15	1560	1190	4010	2640	1880	4650	8370	2360	700	3020	3050	879
16	3340	3310	3420	1530	2430	2250	6590	3030	569	419	3320	2020
17	2940	3500	3580	2380	1340	3100	6920	3630	472	992	2650	303
18	4150	4440	3570	3210	1020	2960	5450	1270	821	2510	1290	2200
19	5510	4510	1720	2630	1770	1900	4790	2990	605	2090	1430	2670
20	4130	6070	2310	2300	692	1570	4940	2930	1360	945	1560	2920
21	3530	3670	3530	1570	350	3350	3060	1080	1380	1660	1310	2550
22	2960	2750	3830	1640	1340	2820	3440	951	951	933	2380	3750
23	2950	3620	4380	607	1640	3300	2920	2400	1420	310	303	2870
24	3500	3910	3180	787	1370	4580	2720	2640	1280	687	1090	387
25	1110	3130	2670	2310	1260	6600	3000	1170	279	1680	2020	1040
26	3940	2280	2980	1980	845	8030	2970	1470	463	1490	1980	2540
27	2810	3340	2260	1880	353	8100	3880	1390	695	1180	512	2070
28	3700	3610	3530	1920	457	8510	4270	1350	1430	1160	516	1870
29	2970	3070	2560	1430	1700	12400	3810	1150	1040	1490	1030	1840
30	3410	3930	3270	1100	---	11300	3250	626	846	299	1110	1310
31	2060	---	2130	1260	---	9830	---	2870	---	295	1990	---
TOTAL	73369	95740	116950	66444	40051	144890	219930	77647	34864	36337	49543	49030
MEAN	2367	3191	3773	2143	1381	4674	7331	2505	1162	1172	1598	1634
MAX	5510	6070	6860	4490	2430	12400	13900	5180	2680	3020	3320	3750
MIN	340	1080	1720	607	350	1460	2720	626	279	295	303	303

CAL YR 1987 TOTAL 932641 MEAN 2555 MAX 9350 MIN 317
WTR YR 1988 TOTAL 1004795 MEAN 2745 MAX 13900 MIN 279

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. 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 ice-affected period 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, 2,030 ft³/s, Mar. 25, gage height, 6.60 ft; minimum discharge, 0.02 ft³/s, July 30,31, gage height, 1.11 ft.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Dec. 15 to Mar. 23.)

1.11	0.02	1.36	2.0	2.4	69
1.15	.11	1.4	3.2	3.0	154
1.20	.35	1.5	6.0	3.5	258
1.26	.74	1.7	14	4.0	400
1.32	1.4	2.0	31	5.0	800
				6.0	1,430

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	3.6	13	86	8.0	6.8	8.6	88	24	2.9	.40	.08	.44
2	3.7	13	52	7.2	5.8	30	80	19	2.9	.35	.07	.32
3	2.8	25	35	6.6	5.0	64	124	15	4.1	.32	.04	.35
4	2.5	56	28	6.0	4.6	50	122	12	4.3	.26	.28	.38
5	2.1	45	22	5.4	4.5	35	107	10	3.4	.23	.30	.41
6	2.2	29	16	4.9	4.4	52	191	8.8	2.5	.18	.18	.35
7	2.7	23	13	4.5	4.5	86	135	7.8	2.0	.15	.11	.34
8	2.5	22	13	4.5	4.7	140	91	26	1.9	.18	.59	.26
9	2.6	18	92	5.0	4.8	250	64	116	1.7	.30	.65	.20
10	2.6	14	119	5.8	4.7	400	53	113	1.5	.29	.46	.19
11	2.4	11	95	7.0	4.6	290	45	65	1.2	.24	.35	.15
12	2.4	10	74	7.2	4.6	190	34	37	1.0	.19	.36	.15
13	2.9	9.8	51	6.4	4.5	130	28	25	.91	.29	.36	.15
14	3.0	9.7	35	5.8	4.9	86	23	20	.76	.40	.41	.14
15	5.1	9.5	25	6.8	5.8	64	18	15	.73	.93	.34	.11
16	29	11	20	8.0	7.0	50	15	13	.66	.85	.25	.17
17	75	62	18	7.4	8.4	39	13	11	.66	.76	.19	.34
18	75	172	17	6.6	9.8	32	12	8.9	.66	.53	.15	1.1
19	47	131	14	5.8	8.8	26	10	8.0	.70	.42	.22	1.5
20	30	67	14	5.8	7.4	21	9.0	7.2	.73	.39	.25	3.0
21	25	44	14	6.0	7.0	17	7.9	8.3	.66	.34	.25	2.0
22	22	25	13	5.8	7.4	14	7.5	6.7	.63	.30	.42	2.4
23	24	60	13	5.4	6.8	33	12	5.6	.52	.29	.94	1.9
24	26	92	12	5.0	6.6	342	20	4.7	.50	.25	.75	1.4
25	27	71	12	4.8	6.2	1140	18	4.0	.44	.19	.62	1.2
26	22	49	11	4.7	6.2	526	15	3.1	.35	.15	.46	1.1
27	20	37	10	4.6	6.4	236	54	2.8	.35	.15	.49	1.0
28	20	37	10	4.5	6.8	152	75	2.4	.46	.11	.50	.96
29	17	146	9.6	4.9	8.0	152	50	2.0	.51	.08	.51	1.1
30	15	140	9.0	5.6	---	117	33	3.3	.42	.05	.46	1.1
31	12	---	8.6	8.0	---	104	---	4.0	---	.03	.46	---
TOTAL	529.1	1452.0	961.2	184.0	177.0	4876.6	1554.4	608.6	40.05	9.60	11.50	24.21
MEAN	17.1	48.4	31.0	5.94	6.10	157	51.8	19.6	1.33	.31	.37	.81
MAX	75	172	119	8.0	9.8	1140	191	116	4.3	.93	.94	3.0
MIN	2.1	9.5	8.6	4.5	4.4	8.6	7.5	2.0	.35	.03	.04	.11
CFSM	.33	.95	.61	.12	.12	3.08	1.02	.38	.03	.01	.01	.02
IN.	.39	1.06	.70	.13	.13	3.56	1.13	.44	.03	.01	.01	.02

CAL YR 1987 TOTAL 9520.7 MEAN 26.1 MAX 376 MIN 1.1 CFSM .51 IN. 6.94
WTR YR 1988 TOTAL 10428.26 MEAN 28.5 MAX 1140 MIN .03 CFSM .56 IN. 7.61

CHIPPEWA RIVER BASIN

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.

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.--38 years, 308 ft³/s, 10.01 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. 9	1000	*1,140	*6.52				

Minimum discharge, 127 ft³/s, July 30, 31, gage height, 2.89 ft.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Shifting-control method used Mar. 14-18; stage-discharge relation affected by ice Dec. 16 to Mar. 4.)

2.9	128	5.0	590
3.0	143	6.0	930
4.0	330	7.0	1,360

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	207	223	294	220	240	310	334	233	178	151	135	144
2	205	231	269	210	220	320	325	227	182	149	132	151
3	204	235	259	210	210	320	372	223	197	146	134	149
4	205	241	241	210	210	310	455	220	194	145	152	151
5	203	235	241	210	210	278	431	217	186	142	170	148
6	199	230	248	210	210	294	389	211	179	139	156	145
7	201	227	243	210	210	448	359	207	174	137	148	143
8	206	225	243	210	210	757	341	220	172	135	153	140
9	205	221	303	210	210	1120	328	288	168	141	154	138
10	202	219	391	210	210	937	315	342	167	143	146	137
11	201	220	340	210	210	751	303	288	166	139	150	137
12	215	222	311	210	210	640	296	253	163	135	171	137
13	209	222	290	210	210	466	290	239	160	143	169	138
14	202	221	271	210	220	384	284	228	159	152	159	137
15	212	218	260	220	220	363	278	222	157	146	154	136
16	272	222	270	230	220	340	271	221	156	144	150	148
17	310	245	250	230	230	325	267	213	155	140	145	173
18	282	292	260	230	240	318	261	208	154	140	142	191
19	250	270	260	230	260	311	256	208	159	139	143	239
20	237	250	250	230	250	302	253	213	168	140	144	449
21	227	235	250	230	220	288	249	212	160	145	143	569
22	226	237	240	220	270	290	245	208	158	146	144	344
23	229	232	240	210	250	304	251	206	154	144	153	280
24	229	231	240	210	240	348	259	202	152	141	153	246
25	225	227	230	210	250	689	252	197	150	139	147	228
26	222	225	210	210	270	810	243	194	146	136	144	216
27	221	223	220	210	290	580	254	191	144	134	144	210
28	219	231	230	210	300	430	263	188	154	132	144	209
29	218	310	230	220	300	389	251	187	169	129	142	229
30	217	332	220	230	---	372	240	186	158	128	141	235
31	217	---	220	250	---	351	---	181	---	131	140	---
TOTAL	6877	7152	8024	6730	6800	14145	8915	6833	4939	4351	4602	6097
MEAN	222	238	259	217	234	456	297	220	165	140	148	203
MAX	310	332	391	250	300	1120	455	342	197	152	171	569
MIN	199	218	210	210	210	278	240	181	144	128	132	136
CFSM	.53	.57	.62	.52	.56	1.09	.71	.53	.39	.34	.36	.49
IN.	.61	.64	.71	.60	.61	1.26	.79	.61	.44	.39	.41	.54

CAL YR 1987 TOTAL 91212 MEAN 250 MAX 645 MIN 183 CFSM .60 IN. 8.12
WTR YR 1988 TOTAL 85465 MEAN 234 MAX 1120 MIN 128 CFSM .56 IN. 7.61

CHIPPEWA RIVER BASIN

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.--No estimated daily discharges. Records good. Flow regulated by powerplants at Menomonie and Cedar Falls.

AVERAGE DISCHARGE.--76 years, 1,275 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, 4,160 ft³/s, Apr. 5, gage height, 3.97 ft; minimum, 21 ft³/s, Dec. 1, gage height, 0.66 ft; minimum daily, 476 ft³/s, July 22.

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

1.4	416	3.0	2,350
2.0	987	4.0	4,220
2.5	1,600		

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	1010	1180	1440	843	1000	1290	1680	1020	783	650	542	645
2	796	1150	1440	752	959	1600	1660	1070	848	624	553	658
3	885	1260	1260	813	988	1290	1760	973	929	642	543	617
4	823	1290	1190	959	947	1270	2020	1010	1050	630	562	719
5	929	1230	1060	758	966	1320	1940	823	841	632	603	610
6	856	1060	1230	866	855	1360	1830	988	874	629	655	706
7	929	1160	1230	774	860	1580	1800	1030	895	633	651	630
8	914	1130	1320	835	1020	2100	1870	1050	813	631	896	668
9	965	1150	1540	790	771	2460	1570	1210	698	595	653	617
10	880	1090	1770	813	868	3070	1560	1690	700	590	639	594
11	974	1200	1780	828	801	2990	1510	1440	743	558	660	598
12	649	1140	1550	934	906	2710	1260	1030	664	531	712	618
13	708	1240	1400	768	765	1880	1310	987	705	539	737	608
14	1330	1330	1160	845	796	2020	1170	1000	709	537	742	603
15	1200	1280	1280	979	871	1560	1080	906	690	665	731	616
16	1250	1190	1200	861	971	1640	1120	993	667	615	675	694
17	1500	1840	997	931	846	1410	1020	922	612	610	634	804
18	1420	1680	1050	930	913	1360	930	939	614	593	642	1050
19	1390	1460	967	1040	991	1440	958	921	756	579	608	1280
20	1210	1580	1140	1040	859	1190	1040	880	624	536	603	1530
21	984	1330	1120	1020	919	1360	851	912	668	513	591	2320
22	1100	1110	1240	1070	880	1260	1090	882	668	476	595	1790
23	1440	1210	1340	1010	953	1230	1020	878	637	567	600	1480
24	1300	1230	1100	900	899	1530	1120	884	734	541	600	1260
25	1120	1150	1250	1000	899	2100	1020	808	621	552	602	1140
26	1210	1200	977	994	916	2700	1080	878	614	549	608	930
27	1240	1180	647	879	881	2420	1200	779	609	604	608	920
28	1200	1450	1120	1000	960	1940	1420	968	627	521	617	1080
29	1130	1410	1150	1010	1090	1910	1270	846	606	548	602	1030
30	1140	1650	1160	967	---	1660	1050	814	621	547	655	1010
31	1070	---	1150	1030	---	1560	---	873	---	543	601	---
TOTAL	33552	38560	38258	28239	26350	55210	40209	30404	21620	17980	19720	27825
MEAN	1082	1285	1234	911	909	1781	1340	981	721	580	636	927
MAX	1500	1840	1780	1070	1090	3070	2020	1690	1050	665	896	2320
MIN	649	1060	647	752	765	1190	851	779	606	476	542	594

CAL YR 1987 TOTAL 397348 MEAN 1089 MAX 2410 MIN 550
WTR YR 1988 TOTAL 377927 MEAN 1033 MAX 3070 MIN 476

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: June 27, 28, July 11, 12, 18, 24, 25, 31, Aug. 1, and ice period listed in rating table below. Records good except for estimated daily discharges and July 3-5, 10, 13-15, 26, 28, and Aug. 2, 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.--60 years, 7,655 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, 16,900 ft³/s, Apr. 9, gage height, 6.54 ft; maximum gage height, 6.79 ft (backwater from ice); minimum observed, 1,690 ft³/s, Aug. 1, but may have been less during July, gage height, 0.45 ft.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Shifting-control method used Sept. 21-30; stage-discharge relation affected by ice Jan. 2 to Mar. 10.)

0.4	1,690	4.0	9,150
0.7	2,170	6.0	15,100
1.0	2,650	8.0	22,400
2.0	4,360		

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

DAY	GCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3060	4100	7180	4460	5200	4800	13200	5980	4150	2220	1700	2850
2	3530	4110	8890	4400	5200	5600	14800	6300	4070	2670	2090	3220
3	2600	5250	7170	4200	5000	7000	14700	5870	4280	2030	2830	2870
4	2450	5580	6920	3900	5000	8200	14800	4650	3350	1950	2940	2220
5	2590	5370	5790	4100	5000	7800	15300	5280	2780	1920	3000	2030
6	2790	5330	4500	5000	4900	7400	15200	3820	2570	2420	2530	2830
7	2770	6240	4700	4900	4600	7200	15800	4700	3690	3330	2150	2770
8	3750	5070	6440	4800	4300	7000	16400	3890	3510	3600	3360	2700
9	3510	5350	6930	4700	4200	7600	16200	4390	3430	2230	4140	3290
10	3280	4570	6340	4200	4300	9800	13700	5970	2420	1990	2800	2910
11	2480	4590	8620	3800	4300	11100	11000	7600	2280	1800	2730	2070
12	2580	4250	8560	4400	4400	10600	10100	8050	2270	1700	3460	1930
13	3730	4940	8760	5400	4500	10600	10600	7350	2210	1960	3260	2010
14	2510	4450	7070	5200	3900	8870	10200	6180	3040	2080	2380	2300
15	3540	3190	7650	5000	3600	8450	9450	5960	3780	2020	2090	1970
16	3740	3520	6590	4900	4500	7030	9260	4910	2730	3580	3580	2230
17	5430	5640	5700	4800	5600	6330	9610	5460	2240	2260	4180	2770
18	5690	6260	5630	4900	5200	6060	7570	5180	2150	1900	3630	2550
19	6630	6800	5950	5400	5400	6070	7560	4160	2210	3480	2770	3550
20	6510	6040	4240	6200	5000	4750	6710	4400	2320	3000	2780	5270
21	5980	6240	5270	6000	4400	4530	6680	4600	2270	2800	2420	6100
22	6000	6190	5360	5600	3900	5860	5170	3720	2620	2290	2780	5630
23	5030	5390	5970	4700	3500	6210	5790	3330	2800	2190	2930	5720
24	4990	5910	6450	4600	4100	6040	5510	3880	2510	1900	2460	4960
25	5450	5890	5450	4700	4700	8100	5120	4230	2740	1800	2270	3230
26	3580	5540	4990	4900	5000	12400	5160	3240	2120	2240	2960	3500
27	5690	4690	5120	5200	5200	14500	5880	3360	e1900	2480	2810	4320
28	4950	5580	4780	5000	4800	14500	6400	3390	e1900	2510	2040	3920
29	5570	6450	5640	4900	4700	14000	7480	3050	2330	2190	1910	3960
30	4770	5900	4990	4500	---	15600	6940	3050	2280	2300	2050	3890
31	5430	---	5150	4900	---	13500	---	2680	---	e1800	2490	---
TOTAL	130610	158430	192800	149660	134400	267500	302290	148630	82950	72640	85520	99570
MEAN	4213	5281	6219	4828	4634	8629	10080	4795	2765	2343	2759	3319
MAX	6630	6800	8890	6200	5600	15600	16400	8050	4280	3600	4180	6100
MIN	2450	3190	4240	3800	3500	4530	5120	2680	1900	1700	1700	1930

CAL YR 1987 TOTAL 1726490 MEAN 4730 MAX 14300 MIN 2220
WTR YR 1988 TOTAL 1825000 MEAN 4986 MAX 16400 MIN 1700

CHIPPEWA RIVER BASIN

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 1987 TO SEPTEMBER 1988

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 (FTU) (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)
OCT 1987										
13...	1030	4670	164	7.90	8.0	3.6	11.9	763	100	120
DEC										
16...	1150	6900	164	7.60	0.0	1.3	14.0	768	95	K20
MAR 1988										
15...	1200	7750	162	7.60	0.5	3.9	13.1	767	90	K3
APR										
25...	1150	4890	126	8.10	10.0	1.4	12.0	760	107	26
JUN										
07...	1345	4170	140	8.30	24.0	2.8	9.6	761	114	60
AUG										
23...	1205	3420	154	8.70	22.0	3.2	10.5	763	120	500
DATE		STREP- TOCOCCHI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD- NESS TOTAL (MG/L AS CACO3) (00900)	HARD- NESS NONCARB WH WAT TOT FLD MG/L AS CACO3 (00902)	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)	
OCT 1987										
13...		760	71	9	18	6.4	5.2	13	0.3	1.5
DEC										
16...		95	61	8	15	5.7	4.7	14	0.3	1.7
MAR 1988										
15...		67	63	9	16	5.6	4.6	13	0.3	2.8
APR										
25...		170	53	9	13	5.0	3.9	13	0.2	1.7
JUN										
07...	1200		61	6	15	5.7	5.4	16	0.3	1.4
AUG										
23...	K1800		73	10	18	6.9	5.2	13	0.3	1.2
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 1987										
13...		73	--	60	11	8.4	0.20	4.9	98	95
DEC										
16...		62	--	50	19	7.9	0.20	9.7	102	98
MAR 1988										
15...		62	--	51	15	6.7	0.10	12	104	100
APR										
25...		51	--	42	16	5.8	0.10	8.0	84	83
JUN										
07...		64	--	52	14	6.5	0.30	5.1	86	88
AUG										
23...		74	5	62	10	6.2	0.10	6.7	96	93
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- PHOROUS TOTAL (MG/L AS P) (00665)	PHOS- PHOROUS DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHOROUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)
OCT 1987										
13...		0.13	1240	0.540	0.010	0.010	1.2	0.090	0.030	0.020
DEC										
16...		0.14	1900	0.540	0.080	0.070	0.50	0.040	0.030	0.020
MAR 1988										
15...		0.14	2180	0.820	0.260	0.240	1.1	0.110	0.070	0.050
APR										
25...		0.11	1110	0.530	<0.010	0.030	0.40	0.080	0.030	0.020
JUN										
07...		0.12	968	0.330	<0.010	0.010	1.2	0.070	0.040	<0.010
AUG										
23...		0.13	886	0.240	<0.010	0.080	1.0	0.150	0.050	0.040

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 1987 TO SEPTEMBER 1988

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 1987											
13...	1030	4670	10	<1	17	<0.5	<1	1	<3	1	93
MAR 1988											
15...	1200	7750	30	<1	22	<0.5	<1	1	<3	3	330
APR											
25...	1150	4890	20	<1	15	<0.5	<1	1	<3	2	220
AUG											
23...	1205	3420	<10	1	15	<0.5	2	<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)
OCT 1987										
13...	<5	<4	6	<0.1	<10	<1	<1	38	<6	<3
MAR 1988										
15...	<5	<4	32	<0.1	<10	<1	<1	33	<6	22
APR										
25...	<5	<4	16	<0.1	<10	<1	<1	27	<6	5
AUG										
23...	<5	<4	2	<0.1	<10	<1	<1	38	<6	<3

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 YT-90) (80050)	GROSS BETA, SUSP. TOTAL (PCI/L AS YT-90) (80060)	RADIUM 226, DIS- SOLVED, RADON METHOD (PCI/L) (09511)
OCT 1987									
13...	1030	4670	<0.4	<0.4	1.5	<0.4	1.3	<0.4	0.03
JUN 1988									
07...	1345	4170	0.4	<0.4	1.8	<0.4	1.5	<0.4	0.04

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- PENDEED (MG/L) (80154)	SEDI- MENT, DIS- CHARGE, SUS- PENDEED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT 1987							
13...	1030	4670	164	8.0	--	--	--
DEC							
03...	1215	7150	182	2.5	--	--	--
16...	1150	6900	164	0.0	--	--	--
JAN 1988							
26...	1405	5100	195	0.0	--	--	--
MAR							
15...	1200	7750	162	0.5	23	481	30
APR							
25...	1150	4890	126	10.0	13	172	53
JUN							
07...	1345	4170	140	24.0	15	169	85
JUL							
26...	1100	2180	194	24.5	--	--	--
AUG							
23...	1205	3420	154	22.0	16	148	81
30...	1350	1940	227	24.0	--	--	--

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.--No estimated daily discharges. Records good below 300 ft³/s, poor above 300 ft³/s, and fair October through February.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 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; minimum discharge, 5.1 ft³/s, Mar. 7, 1982, gage height, 2.21 ft.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 411 ft³/s, Mar. 25, gage height, 3.77 ft, from rating curve extended above 140 ft³/s on basis of indirect measurement of peak flow; minimum discharge, 3.1 ft³/s, Feb. 20.

RATING TABLES (gage height, in feet, and discharge, in cubic feet per second).
(Shifting-control method used Oct. 1 to Mar. 1.)

Oct. 1 to Mar. 1 (1945)

1.4	6.5	2.0	32
1.6	12	2.3	56
1.8	20	2.5	79

Mar. 1 (2000) to Sept. 30

1.2	5.9	2.5	79
1.4	10	2.9	148
1.8	22	3.5	311
2.1	39		

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	9.6	9.7	15	9.0	7.7	66	15	10	9.2	8.7	8.3	8.1
2	9.8	9.8	13	9.7	7.8	155	15	9.7	9.5	8.7	8.0	8.1
3	9.9	11	12	9.2	8.1	60	29	9.7	9.4	8.8	8.3	7.8
4	10	10	12	7.9	7.8	26	32	9.6	9.2	8.8	9.7	8.0
5	9.6	9.8	12	7.5	7.7	20	22	9.5	9.1	8.6	8.8	7.8
6	9.5	9.8	13	8.0	8.0	43	18	9.5	9.0	8.6	8.3	7.6
7	9.6	9.8	13	8.0	8.5	133	16	9.5	9.0	8.5	8.6	7.6
8	9.1	10	14	8.9	8.1	262	14	14	8.7	8.6	11	7.6
9	9.9	9.8	62	8.2	7.9	84	13	198	8.5	9.2	9.1	7.6
10	9.6	9.5	39	8.0	7.6	46	12	62	8.5	9.0	8.5	7.4
11	9.9	9.6	24	9.0	7.6	39	12	18	8.6	8.7	9.1	7.5
12	9.8	9.6	23	9.1	7.8	37	12	13	8.5	8.6	8.9	7.6
13	9.5	9.7	16	8.3	7.8	20	12	12	8.4	9.4	8.5	7.4
14	9.3	9.6	13	8.6	8.2	18	12	11	8.4	8.9	8.3	7.3
15	10	9.6	12	9.3	7.8	17	11	11	8.4	8.7	8.0	7.2
16	8.9	10	12	9.4	7.9	15	11	11	8.4	8.5	8.0	8.3
17	8.3	11	12	9.2	7.6	15	11	10	8.4	8.4	7.9	8.0
18	8.8	13	12	9.0	7.7	15	11	10	8.5	8.4	7.8	7.2
19	8.1	13	11	9.3	7.8	15	11	11	10	8.3	7.8	12
20	7.6	12	11	9.7	7.2	15	11	10	11	8.6	7.8	135
21	7.6	12	11	8.8	7.2	14	10	10	8.7	8.7	7.8	22
22	8.0	13	11	9.1	7.7	14	10	10	8.7	8.3	8.2	13
23	7.9	14	11	9.0	7.1	25	11	10	8.3	8.3	8.5	10
24	8.2	14	11	9.1	7.0	63	10	9.9	8.8	8.3	7.9	9.7
25	8.3	15	10	8.7	7.0	206	10	9.8	8.9	8.2	7.7	9.6
26	8.6	15	9.7	8.4	7.4	48	9.7	9.9	8.9	8.0	7.6	9.4
27	9.0	16	10	8.5	7.2	21	11	10	8.9	8.2	7.7	9.2
28	9.0	19	10	8.5	8.0	19	13	9.9	8.7	8.1	7.8	9.2
29	9.3	43	9.9	9.1	11	22	11	9.7	8.8	8.0	7.6	9.7
30	9.2	26	10	9.0	---	19	10	9.4	8.8	8.1	7.6	9.2
31	9.6	---	9.5	8.6	---	16	---	9.4	---	8.4	7.6	---
TOTAL	281.5	393.3	464.1	272.1	226.2	1568	405.7	566.5	266.2	264.6	256.7	460.9
MEAN	9.08	13.1	15.0	8.78	7.80	50.6	13.5	18.3	8.87	8.54	8.28	15.4
MAX	10	43	62	9.7	11	262	32	198	11	9.4	11	135
MIN	7.6	9.5	9.5	7.5	7.0	14	9.7	9.4	8.3	8.0	7.6	7.2
CFSM	.19	.27	.31	.18	.16	1.06	.28	.38	.19	.18	.17	.32
IN.	.22	.31	.36	.21	.18	1.22	.32	.44	.21	.21	.20	.36

CAL YR 1987 TOTAL 5536.2 MEAN 15.2 MAX 573 MIN 6.7 CFSM .32 IN. 4.30
WTR YR 1988 TOTAL 5425.8 MEAN 14.8 MAX 262 MIN 7.0 CFSM .31 IN. 4.21

CHIPPEWA RIVER BASIN

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, except for May and June, which were rated poor.

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 February and March, 1988.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum temperature, 27.5°C June 19, 20; minimum, 0.0°C for several days in February and March.

WATER TEMPERATURE, DEGREES CENTIGRADE, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	12.5	11.0	11.5	8.0	7.5	8.0	2.0	1.5	2.0	.5	.5	.5
2	11.5	9.0	10.5	9.5	8.0	9.0	2.5	1.5	2.0	.5	.5	.5
3	10.0	8.0	9.0	11.0	10.0	10.5	3.0	1.5	2.5	.5	.5	.5
4	11.0	8.5	10.0	11.0	8.5	10.5	1.5	.5	1.0	1.0	.5	.5
5	10.5	10.5	10.5	8.5	6.0	7.0	2.0	1.0	1.5	---	---	---
6	10.0	9.5	10.0	7.0	5.5	6.0	3.0	2.0	2.5	---	---	---
7	9.0	8.0	9.0	6.5	5.5	6.0	3.5	3.0	3.0	---	---	---
8	8.5	7.5	8.0	7.5	5.5	7.0	4.5	3.5	4.0	---	---	---
9	8.5	7.5	8.0	5.5	4.0	5.0	4.5	1.0	2.5	---	---	---
10	8.0	7.0	7.5	4.0	3.0	3.5	2.5	1.0	1.5	---	---	---
11	7.5	5.5	6.5	4.0	2.5	3.5	3.0	2.0	2.5	---	---	---
12	8.0	6.0	7.0	5.0	3.0	4.0	2.5	1.0	1.5	---	---	---
13	9.0	6.5	7.5	5.5	4.5	5.0	1.5	1.0	1.0	---	---	---
14	10.0	8.5	9.0	5.5	4.0	5.0	1.5	1.0	1.0	---	---	---
15	10.0	9.5	9.5	7.0	5.5	6.0	1.0	.5	1.0	---	---	---
16	11.0	10.0	10.5	8.5	7.0	8.0	1.0	.5	1.0	---	---	---
17	10.5	9.0	10.0	8.5	5.0	7.0	.5	.5	.5	---	---	---
18	9.0	8.0	8.5	5.0	4.0	4.5	1.0	.5	.5	---	---	---
19	8.0	7.0	7.5	4.5	3.5	4.0	1.0	.5	.5	---	---	---
20	7.5	6.0	7.0	3.0	1.5	2.0	1.0	1.0	1.0	---	---	---
21	6.5	5.5	6.0	2.5	1.0	2.0	1.0	.5	1.0	---	---	---
22	6.5	6.0	6.0	4.0	2.5	3.0	2.0	1.0	1.5	---	---	---
23	6.5	6.0	6.5	4.5	4.0	4.5	2.0	1.0	1.5	---	---	---
24	7.5	6.0	6.5	4.0	3.0	3.5	2.5	2.0	2.0	---	---	---
25	7.0	5.5	6.0	4.5	3.5	4.0	2.0	.5	1.5	---	---	---
26	7.0	6.0	6.5	4.0	3.5	4.0	1.0	.5	.5	---	---	---
27	7.0	5.5	6.0	4.5	4.0	4.0	.5	.5	.5	---	---	---
28	7.0	6.0	6.5	4.5	4.0	4.0	1.0	.5	.5	1.0	.5	.5
29	7.5	5.5	6.5	4.5	2.0	3.0	1.0	.5	1.0	.5	.5	.5
30	7.5	6.0	6.5	2.0	1.5	1.5	1.0	.5	1.0	1.0	.5	.5
31	7.5	5.5	6.5	---	---	---	1.0	.5	.5	1.0	.5	.5
MONTH	12.5	5.5	8.0	11.0	1.0	5.2	4.5	.5	1.4	---	---	---

05369945 EAU GALLE RIVER AT LOW-WATER BRIDGE AT SPRING VALLEY, WI--CONTINUED

WATER TEMPERATURE, DEGREES CENTIGRADE, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	.5	.5	.5	2.0	.0	.5	9.0	5.0	7.0	18.0	11.5	14.5
2	.5	.5	.5	4.0	.5	1.5	7.5	6.5	7.5	19.0	11.5	15.0
3	.5	.5	.5	3.0	.0	1.5	9.0	7.0	8.0	19.0	11.5	15.0
4	.5	.5	.5	2.5	.5	1.0	12.0	7.5	10.0	19.0	12.0	15.5
5	.5	.5	.5	3.5	.5	1.5	11.0	9.5	10.5	20.0	12.0	16.0
6	.5	.5	.5	3.5	1.0	2.0	11.5	7.5	9.5	19.5	12.5	16.5
7	.5	.0	.5	5.0	1.5	3.0	12.5	7.5	10.0	19.0	15.0	17.5
8	1.0	.5	.5	5.0	1.5	3.0	15.0	9.0	12.0	18.0	15.5	17.0
9	.5	.0	.5	2.0	.0	1.0	12.5	9.0	10.5	16.0	12.0	13.5
10	.5	.0	.5	2.0	.0	1.0	10.0	7.0	8.5	19.0	11.0	14.5
11	.5	.0	.5	---	---	---	11.0	6.0	8.5	18.0	11.5	15.0
12	.5	.5	.5	---	---	---	12.0	7.0	9.5	18.5	11.5	15.0
13	.5	.5	.5	---	---	---	12.0	8.5	10.0	18.0	10.5	14.5
14	.5	.5	.5	---	---	---	9.5	7.0	8.0	14.0	10.0	12.0
15	1.0	.5	1.0	---	---	---	10.0	5.5	7.5	17.0	11.5	14.0
16	1.5	.5	1.0	4.5	1.0	3.0	11.0	6.5	8.5	14.0	11.0	12.0
17	1.0	.5	.5	5.0	2.5	4.0	10.0	7.5	9.0	17.0	9.0	12.0
18	1.0	.5	.5	5.0	2.5	3.5	9.0	5.0	7.0	19.0	10.5	14.0
19	1.0	.0	.5	3.5	2.0	3.0	9.5	5.0	7.0	18.0	13.0	16.0
20	1.0	.5	.5	2.5	1.0	1.5	10.0	6.5	8.0	21.0	13.5	17.5
21	1.0	.0	.5	3.5	.5	2.0	9.0	6.0	7.5	22.5	17.0	19.5
22	1.5	.5	.5	5.5	2.5	4.0	8.0	6.0	7.5	21.0	18.0	19.5
23	2.0	.5	1.0	7.0	4.5	5.5	7.5	5.5	6.5	22.5	17.0	19.5
24	2.5	1.0	1.5	5.0	2.5	3.5	10.5	5.0	7.5	20.5	17.0	19.0
25	3.0	1.0	2.0	5.0	.5	2.5	10.5	8.0	9.0	19.0	12.0	16.0
26	3.0	.5	1.5	4.0	1.5	2.5	9.0	7.0	8.0	22.5	16.0	18.5
27	2.0	.0	.5	5.5	1.0	3.0	9.5	5.5	7.5	23.5	18.5	21.0
28	.5	.0	.0	5.0	4.5	5.0	12.5	6.5	9.5	24.5	19.0	21.5
29	1.0	.0	.5	6.5	3.5	5.0	15.5	8.0	11.0	25.5	20.0	22.5
30	---	---	---	7.5	3.0	5.0	16.0	9.5	12.0	25.5	20.5	23.0
31	---	---	---	8.0	5.5	6.5	---	---	---	26.5	20.5	23.5
MONTH	3.0	.0	.7	---	---	---	16.0	5.0	8.7	26.5	9.0	16.8
JUNE			JULY			AUGUST			SEPTEMBER			
1	26.0	20.5	23.5	18.5	15.0	17.0	22.5	20.0	21.0	16.0	14.5	15.5
2	25.0	19.5	21.5	18.0	16.0	17.0	23.0	20.5	22.0	15.5	13.5	14.5
3	21.5	17.0	19.0	19.5	16.0	17.5	22.5	20.5	21.5	14.5	13.5	14.0
4	23.5	17.5	20.0	21.0	16.5	18.5	21.5	20.0	20.5	15.5	13.5	14.5
5	25.0	18.5	21.5	21.5	18.5	20.0	21.0	19.0	20.0	14.0	12.5	13.5
6	25.5	19.5	22.5	22.5	19.5	21.0	21.5	18.5	20.0	14.0	11.5	12.5
7	25.5	19.0	22.0	23.5	20.0	21.5	22.0	19.0	20.5	14.0	11.5	13.0
8	24.0	19.5	21.0	22.0	21.0	21.5	21.0	19.5	20.0	14.5	13.0	13.5
9	19.0	15.5	17.5	21.0	19.5	20.0	21.0	18.5	19.5	13.5	11.5	12.5
10	20.0	14.5	17.0	21.0	18.5	20.0	20.0	17.5	19.0	13.5	11.5	12.5
11	21.5	16.0	18.5	19.5	17.5	18.5	20.5	17.5	19.0	15.5	12.0	14.0
12	22.5	17.0	19.5	20.0	16.5	18.0	21.5	18.5	20.0	15.0	13.5	14.5
13	23.0	19.0	20.5	22.0	18.0	19.5	20.5	19.0	20.0	13.5	11.5	12.5
14	25.5	20.0	22.5	21.5	18.5	20.0	21.0	18.5	19.5	14.0	11.5	12.5
15	24.0	20.0	22.0	24.0	19.5	21.5	21.5	18.5	20.0	12.5	12.0	12.5
16	22.5	17.5	20.0	23.5	21.0	22.0	23.0	19.5	21.0	14.0	12.5	13.0
17	23.0	17.5	20.0	21.0	19.5	20.0	23.0	20.5	21.5	14.5	12.5	13.5
18	24.5	18.5	21.0	21.5	19.0	20.0	21.5	18.5	20.5	18.0	13.0	15.5
19	27.5	22.0	24.0	19.5	17.5	18.0	18.5	17.0	18.0	17.0	14.5	16.5
20	27.5	21.0	24.0	17.5	16.5	17.0	19.0	17.0	18.0	14.5	12.5	13.0
21	26.5	21.0	23.5	18.5	15.5	17.0	18.0	17.5	18.0	14.0	12.0	13.0
22	25.5	21.5	23.0	20.5	16.5	18.5	17.5	16.0	17.0	14.0	13.0	13.5
23	24.0	19.5	21.0	20.5	17.5	19.0	18.0	15.5	16.5	13.0	11.5	12.5
24	25.5	18.0	20.5	20.5	18.0	19.0	18.0	16.0	17.0	13.0	10.5	12.0
25	27.0	23.0	24.5	20.5	17.5	19.0	17.5	16.0	17.0	13.0	11.0	12.5
26	25.0	20.0	22.0	20.5	17.5	18.5	17.0	15.0	16.0	15.0	12.5	13.5
27	23.5	18.0	20.5	22.0	18.0	20.0	17.0	15.5	16.0	14.5	13.0	13.5
28	22.5	18.5	20.5	22.0	19.0	20.5	15.5	13.5	14.5	13.0	11.5	12.0
29	19.5	17.0	18.5	22.0	19.5	20.5	15.0	13.0	14.0	12.5	11.5	11.5
30	18.5	15.5	17.0	22.5	19.5	21.0	15.5	12.5	14.0	14.0	12.0	13.0
31	---	---	---	21.5	19.0	20.5	16.0	13.5	14.5	---	---	---
MONTH	27.5	14.5	20.9	24.0	15.0	19.4	23.0	12.5	18.6	18.0	10.5	13.3

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 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: None. Records good. Low flow slightly regulated and high flow completely regulated by flood-control dam 770 ft upstream.

AVERAGE DISCHARGE.--20 years (1969-88), 33.4 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, 252 ft³/s, Mar. 25, gage height, 15.03 ft; minimum discharge, 4.3 ft³/s, Oct. 23, gage height, 12.81 ft.

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

13.1	7.4	14.1	40
13.3	10	14.3	62
13.5	13	14.6	120
13.7	18	15.0	240
13.9	27		

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	17	8.6	35	16	15	25	24	18	14	13	12	13
2	15	8.6	26	16	15	110	22	17	15	13	11	14
3	15	8.8	22	16	15	78	29	16	15	13	12	13
4	16	8.7	19	15	15	44	44	16	15	13	15	14
5	17	8.7	18	15	15	33	37	16	14	13	14	13
6	17	8.7	18	15	15	33	31	16	14	13	12	13
7	16	8.7	18	15	15	101	27	16	13	12	12	12
8	16	9.9	18	15	15	203	24	20	13	12	22	12
9	16	12	54	15	15	123	22	132	13	14	17	12
10	16	14	78	15	15	60	21	125	13	15	14	12
11	15	15	45	15	15	50	20	46	13	13	15	12
12	15	15	38	16	15	48	17	30	13	13	15	12
13	16	15	31	16	15	35	19	23	13	14	14	12
14	16	15	25	16	15	28	20	20	14	14	13	12
15	19	15	22	16	15	25	18	20	14	13	12	12
16	24	17	20	16	15	23	17	18	13	13	12	15
17	20	20	19	16	15	21	18	18	13	12	12	15
18	19	21	20	16	15	20	17	17	13	12	11	47
19	18	22	19	16	15	21	17	17	19	12	11	47
20	17	19	18	18	15	21	17	17	24	13	11	115
21	39	18	18	17	15	20	17	17	18	13	11	66
22	77	17	18	16	15	19	17	17	16	13	13	34
23	40	17	17	16	15	24	20	17	15	12	15	24
24	8.3	17	18	16	14	46	19	16	14	12	13	20
25	8.4	16	17	16	14	186	18	16	14	12	13	18
26	8.4	16	17	16	14	80	17	16	13	11	11	17
27	8.4	16	17	15	15	40	20	16	13	11	12	17
28	8.4	19	17	15	15	30	20	16	13	11	12	22
29	8.4	53	17	15	17	29	21	16	13	11	12	26
30	8.4	57	17	16	---	30	19	15	13	11	12	27
31	8.4	---	17	15	---	26	---	15	---	11	12	---
TOTAL	563.1	516.7	753	487	434	1632	649	795	430	388	403	698
MEAN	18.2	17.2	24.3	15.7	15.0	52.6	21.6	25.6	14.3	12.5	13.0	23.3
MAX	77	57	78	18	17	203	44	132	24	15	22	115
MIN	8.3	8.6	17	15	14	19	17	15	13	11	11	12

CAL YR 1987 TOTAL 8005.8 MEAN 21.9 MAX 326 MIN 8.3
WTR YR 1988 TOTAL 7748.8 MEAN 21.2 MAX 203 MIN 8.3

CHIPPEWA RIVER BASIN

05370000 EAU GALLE RIVER AT SPRING VALLEY, WI--CONTINUED

WATER-QUALITY RECORDS

PERIOD OF RECORD.--June 1978 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: June 1978 to current year.

WATER TEMPERATURES: June 1978 to current year.

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 are good.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: Maximum, 27.5°C Aug. 11, 1982; minimum, 0.0°C Mar. 30, 31, 1982, and many days during February and March 1984, and Nov. 20, 21, 1985.

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.--

WATER TEMPERATURES: Maximum, 26.0°C June 20; minimum, 1.5°C Dec. 3, 4, but may have been lower during period of missing record.

SPECIFIC CONDUCTANCE: Maximum observed, 480 microsiemens/cm (field observation) Jan. 26, but may have been higher during period of missing record; minimum, 207 microsiemens/cm Dec. 11.

WATER TEMPERATURE, DEGREES CENTIGRADE, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	16.5	15.0	15.0	7.5	7.5	7.5	2.5	2.0	2.0	---	---	---
2	15.0	14.0	14.0	7.5	7.5	7.5	2.5	2.0	2.0	---	---	---
3	14.0	13.5	13.5	8.5	7.5	7.5	2.5	1.5	1.5	---	---	---
4	14.0	13.5	13.5	9.5	8.0	8.0	2.5	1.5	1.5	---	---	---
5	13.5	13.5	13.5	8.5	8.0	8.0	2.5	2.0	2.0	---	---	---
6	13.0	12.0	12.0	8.0	7.5	7.5	2.5	2.5	2.5	---	---	---
7	12.5	12.0	12.0	8.0	7.5	7.5	2.5	2.5	2.5	---	---	---
8	17.0	11.5	11.5	7.5	7.5	7.5	2.5	2.5	2.5	---	---	---
9	11.5	10.5	10.5	7.5	7.0	7.0	2.5	2.5	2.5	---	---	---
10	10.5	10.0	10.0	7.0	6.0	6.0	2.5	2.5	2.5	---	---	---
11	10.0	9.5	9.5	6.5	6.0	6.0	2.5	2.5	2.5	---	---	---
12	---	---	---	6.5	5.5	5.5	3.0	2.5	2.5	---	---	---
13	---	---	---	6.5	6.0	6.0	2.5	2.5	2.5	---	---	---
14	---	---	---	6.0	5.5	5.5	2.5	2.5	2.5	---	---	---
15	10.0	10.0	10.0	6.0	5.5	5.5	2.5	2.5	2.5	---	---	---
16	10.5	10.0	10.0	6.5	6.0	6.0	3.0	2.5	2.5	---	---	---
17	10.5	10.0	10.0	7.0	5.5	5.5	3.5	2.5	2.5	---	---	---
18	10.0	10.0	10.0	6.0	5.5	5.5	2.5	2.5	2.5	---	---	---
19	10.0	9.0	9.0	5.5	4.5	4.5	3.0	2.5	2.5	---	---	---
20	9.5	8.5	8.5	4.5	3.0	3.0	2.5	2.5	2.5	---	---	---
21	8.5	8.5	8.5	4.5	4.0	4.0	2.5	2.5	2.5	---	---	---
22	8.5	8.0	8.0	4.5	3.5	3.5	2.5	2.5	2.5	---	---	---
23	8.0	8.0	8.0	4.0	3.5	3.5	2.5	2.5	2.5	---	---	---
24	8.0	8.0	8.0	4.0	3.5	3.5	2.5	2.5	2.5	---	---	---
25	8.0	7.5	7.5	3.5	3.5	3.5	---	---	---	---	---	---
26	7.5	7.5	7.5	3.5	3.5	3.5	---	---	---	---	---	---
27	7.5	7.0	7.0	3.5	3.0	3.0	---	---	---	---	---	---
28	7.5	7.0	7.0	3.0	3.0	3.0	---	---	---	---	---	---
29	7.5	7.0	7.0	3.5	3.0	3.0	---	---	---	---	---	---
30	8.0	7.0	7.0	3.0	2.5	2.5	---	---	---	---	---	---
31	7.5	7.5	7.5	---	---	---	---	---	---	---	---	---
MONTH	---	---	---	9.5	2.5	5.3	---	---	---	---	---	---

CHIPPEWA RIVER BASIN

05370000 EAU GALLE RIVER AT SPRING VALLEY, WI--CONTINUED

WATER TEMPERATURE, DEGREES CENTIGRADE, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	---	---	---	3.0	2.5	2.5	5.5	5.0	5.0	12.0	10.5	10.5
2	---	---	---	3.0	2.0	2.0	5.0	5.0	5.0	12.5	11.5	11.5
3	---	---	---	3.5	2.0	2.0	5.5	5.0	5.0	12.5	12.0	12.0
4	---	---	---	3.5	2.0	2.0	6.5	5.5	5.5	14.0	12.5	12.5
5	---	---	---	3.5	3.0	3.0	6.5	5.5	5.5	15.0	13.0	13.0
6	---	---	---	3.0	3.0	3.0	8.0	5.0	5.0	14.5	13.5	13.5
7	---	---	---	3.0	2.5	2.5	7.5	6.0	6.0	14.0	12.5	12.5
8	---	---	---	2.5	1.5	1.5	7.5	6.5	6.5	15.5	13.5	13.5
9	---	---	---	2.5	1.5	1.5	9.5	7.5	7.5	16.5	15.5	15.5
10	---	---	---	2.5	2.0	2.0	10.0	8.5	8.5	17.0	15.0	15.0
11	---	---	---	3.0	2.5	2.5	10.5	8.5	8.5	15.5	14.5	14.5
12	---	---	---	4.0	3.0	3.0	10.5	9.0	9.0	16.5	15.0	15.0
13	---	---	---	4.5	3.0	3.0	12.0	9.5	9.5	16.5	14.0	14.0
14	---	---	---	5.0	3.0	3.0	10.5	10.0	10.0	15.0	14.0	14.0
15	---	---	---	4.0	3.0	3.0	10.5	9.0	9.0	17.0	14.5	14.5
16	---	---	---	3.0	3.0	3.0	10.5	9.5	9.5	16.0	14.5	14.5
17	---	---	---	3.0	3.0	3.0	10.0	9.5	9.5	15.5	14.5	14.5
18	---	---	---	3.0	3.0	3.0	10.0	9.0	9.0	15.5	15.0	15.0
19	---	---	---	3.5	3.0	3.0	10.5	9.0	9.0	16.0	15.5	15.5
20	---	---	---	3.5	3.0	3.0	10.5	9.0	9.0	18.5	15.5	15.5
21	---	---	---	4.0	3.0	3.0	10.5	9.5	9.5	17.5	16.5	16.5
22	---	---	---	3.5	3.0	3.0	9.5	9.0	9.0	18.5	17.0	17.0
23	---	---	---	3.0	3.0	3.0	9.0	8.5	8.5	18.5	17.0	17.0
24	---	---	---	3.0	3.0	3.0	9.5	8.5	8.5	18.0	17.5	17.5
25	---	---	---	3.5	3.0	3.0	11.0	9.0	9.0	18.0	16.5	16.5
26	3.0	3.0	3.0	4.0	3.0	3.0	10.0	9.5	9.5	18.5	16.5	16.5
27	3.0	2.5	2.5	4.5	3.5	3.5	10.0	8.5	8.5	19.0	17.0	17.0
28	3.0	3.0	3.0	4.0	4.0	4.0	11.0	9.0	9.0	19.0	17.5	17.5
29	3.0	2.5	2.5	5.0	4.0	4.0	12.5	10.0	10.0	19.0	18.5	18.5
30	---	---	---	5.0	4.5	4.5	12.5	11.0	11.0	19.5	18.5	18.5
31	---	---	---	5.0	4.5	4.5	---	---	---	19.5	19.0	19.0
MONTH	---	---	---	5.0	1.5	2.9	12.5	5.0	8.1	19.5	10.5	15.1
	JUNE			JULY			AUGUST			SEPTEMBER		
1	21.5	19.0	19.0	22.0	20.0	20.0	23.0	21.5	21.5	19.0	18.0	18.0
2	20.0	19.5	19.5	22.0	20.5	20.5	23.5	21.0	21.0	19.5	18.0	18.0
3	20.0	19.0	19.0	22.0	20.5	20.5	23.5	21.5	21.5	19.0	18.0	18.0
4	20.5	19.0	19.0	21.5	20.5	20.5	24.5	22.0	22.0	19.5	17.5	17.5
5	21.0	19.5	19.5	22.5	20.5	20.5	24.0	22.0	22.0	18.5	17.5	17.5
6	20.5	19.5	19.5	22.5	20.5	20.5	23.0	22.0	22.0	18.5	17.0	17.0
7	21.5	19.0	19.0	22.5	21.0	21.0	24.0	21.5	21.5	17.5	17.0	17.0
8	20.5	19.0	19.0	23.5	21.5	21.5	25.0	24.0	24.0	17.5	17.0	17.0
9	19.0	18.5	18.5	24.0	21.5	21.5	25.0	23.5	23.5	18.0	16.5	16.5
10	19.5	18.5	18.5	23.5	22.0	22.0	24.5	22.0	22.0	17.5	16.5	16.5
11	20.0	18.5	18.5	22.5	21.5	21.5	25.0	22.0	22.0	17.5	16.5	16.5
12	19.5	18.5	18.5	22.0	20.5	20.5	24.5	23.0	23.0	17.5	16.5	16.5
13	20.5	19.0	19.0	24.0	20.5	20.5	23.5	23.0	23.0	17.0	16.5	16.5
14	21.0	19.0	19.0	24.5	21.5	21.5	24.5	22.5	22.5	17.0	16.0	16.0
15	20.5	19.0	19.0	24.5	21.5	21.5	24.0	22.0	22.0	17.0	16.0	16.0
16	21.0	19.0	19.0	23.5	22.0	22.0	24.5	23.0	23.0	17.0	16.0	16.0
17	20.5	19.5	19.5	23.0	21.5	21.5	25.0	23.0	23.0	17.0	16.0	16.0
18	21.0	19.0	19.0	22.5	21.5	21.5	24.5	22.0	22.0	18.0	17.0	17.0
19	24.0	20.0	20.0	22.0	21.5	21.5	23.5	22.0	22.0	18.5	17.5	17.5
20	26.0	22.5	22.5	22.0	21.0	21.0	23.0	22.0	22.0	17.5	16.0	16.0
21	24.5	22.0	22.0	23.0	21.0	21.0	23.5	21.5	21.5	16.0	15.0	15.0
22	23.0	21.5	21.5	23.5	21.0	21.0	23.5	22.0	22.0	16.0	15.0	15.0
23	22.0	20.5	20.5	22.5	20.5	20.5	25.0	21.0	21.0	16.0	14.5	14.5
24	22.5	20.5	20.5	22.0	21.0	21.0	24.0	20.5	20.5	15.0	14.0	14.0
25	22.5	21.0	21.0	22.0	21.0	21.0	23.5	20.5	20.5	15.5	14.0	14.0
26	22.5	21.0	21.0	22.0	21.0	21.0	21.0	20.0	20.0	15.5	14.0	14.0
27	23.0	20.5	20.5	22.5	20.5	20.5	22.0	19.5	19.5	15.5	14.5	14.5
28	21.5	21.0	21.0	22.5	21.0	21.0	21.0	19.0	19.0	15.0	14.0	14.0
29	21.5	20.0	20.0	22.0	20.5	20.5	19.5	18.5	18.5	14.0	14.0	14.0
30	21.5	20.0	20.0	23.0	21.0	21.0	19.5	18.0	18.0	15.0	13.5	13.5
31	---	---	---	23.0	21.0	21.0	18.5	18.0	18.0	---	---	---
MONTH	26.0	18.5	19.7	24.5	20.0	21.0	25.0	18.0	21.4	19.5	13.5	16.0

CHIPPEWA RIVER BASIN

05370000 EAU GALLE RIVER AT SPRING VALLEY, WI--CONTINUED

SPECIFIC CONDUCTANCE, US/CM AT 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

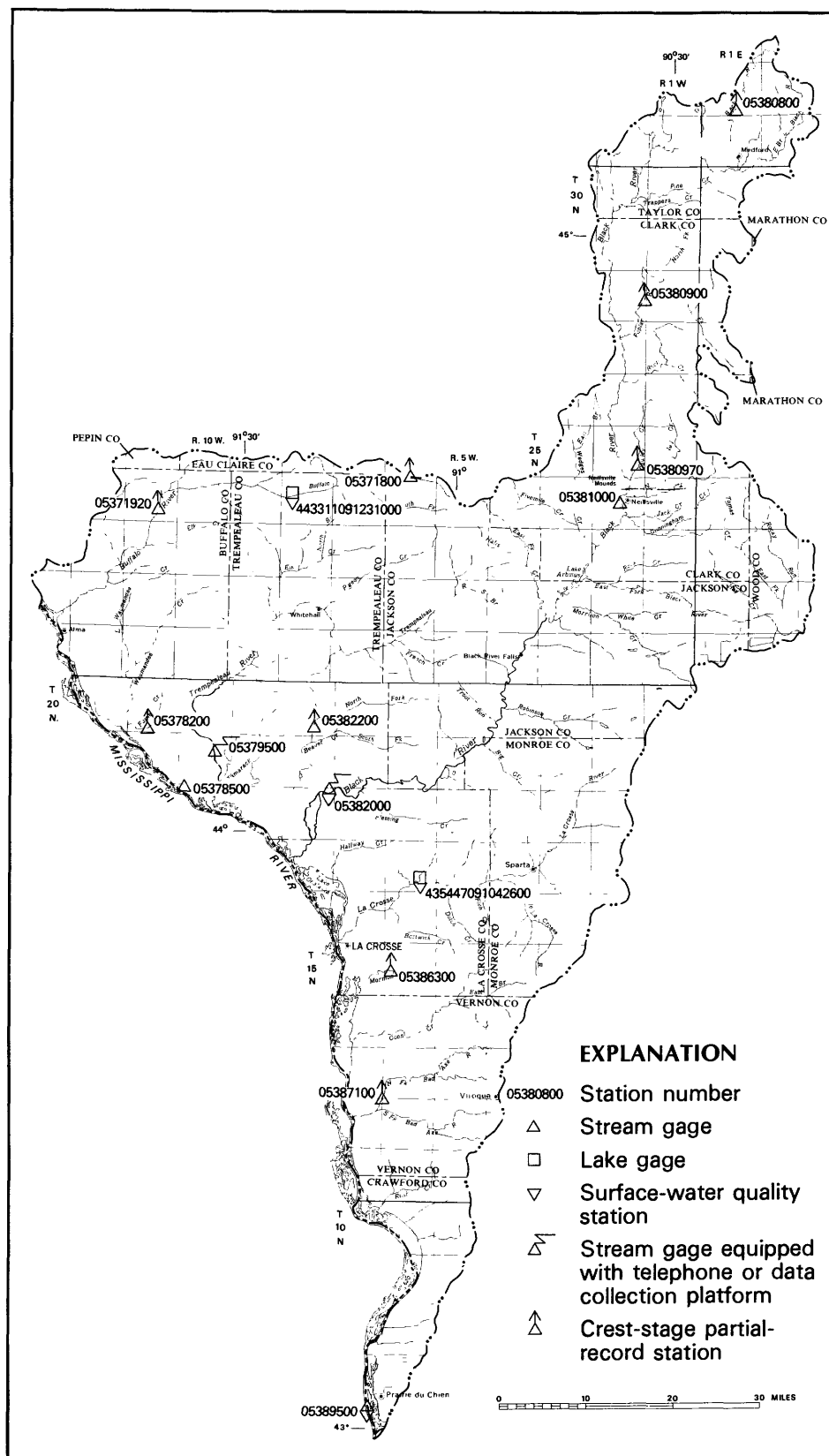
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	348	324	339	365	364	365	373	365	370	---	---	---
2	339	330	335	365	361	363	364	359	362	---	---	---
3	341	333	337	364	359	362	365	351	361	---	---	---
4	344	338	340	372	364	367	371	359	365	---	---	---
5	340	333	336	374	366	371	372	352	364	---	---	---
6	345	336	339	369	363	368	367	364	365	---	---	---
7	347	338	343	369	367	368	365	363	364	---	---	---
8	349	341	346	371	365	369	364	360	363	---	---	---
9	349	344	346	371	368	370	363	304	347	---	---	---
10	352	345	348	371	364	369	289	217	241	---	---	---
11	354	341	348	371	364	369	219	207	214	---	---	---
12	---	---	---	371	363	368	226	209	214	---	---	---
13	---	---	---	371	363	368	251	228	237	---	---	---
14	---	---	---	372	367	370	327	250	298	---	---	---
15	349	345	348	372	368	370	329	321	326	---	---	---
16	348	340	344	372	368	370	348	326	331	---	---	---
17	349	342	346	378	371	373	356	336	347	---	---	---
18	352	342	347	386	368	377	353	340	344	---	---	---
19	354	342	348	384	365	374	359	345	350	---	---	---
20	357	352	354	390	374	385	354	341	348	---	---	---
21	357	352	354	388	366	380	356	344	351	---	---	---
22	357	350	354	384	366	376	359	345	354	---	---	---
23	361	349	353	384	374	376	363	352	358	---	---	---
24	361	354	358	388	374	382	364	357	359	---	---	---
25	364	353	359	383	373	377	---	---	---	---	---	---
26	364	357	361	386	376	381	---	---	---	---	---	---
27	364	357	361	383	377	381	---	---	---	---	---	---
28	364	357	362	382	372	377	---	---	---	---	---	---
29	365	356	361	373	369	371	---	---	---	---	---	---
30	364	355	360	376	369	373	---	---	---	---	---	---
31	365	360	363	---	---	---	---	---	---	---	---	---
MONTH	---	---	---	390	359	372	---	---	---	---	---	---
FEBRUARY			MARCH			APRIL			MAY			
1	---	---	---	---	---	---	297	272	285	300	291	294
2	---	---	---	---	---	---	288	278	283	302	294	297
3	---	---	---	---	---	---	281	267	276	302	297	299
4	---	---	---	---	---	---	289	234	266	300	296	298
5	---	---	---	---	---	---	280	246	259	304	294	298
6	---	---	---	---	---	---	294	267	281	302	296	298
7	---	---	---	---	---	---	311	295	303	303	298	300
8	---	---	---	---	---	---	331	297	312	304	295	298
9	---	---	---	---	---	---	313	298	305	294	288	291
10	---	---	---	---	---	---	317	299	308	287	278	283
11	---	---	---	---	---	---	318	296	308	279	272	275
12	---	---	---	---	---	---	315	300	307	283	268	274
13	---	---	---	---	---	---	312	293	301	284	271	278
14	---	---	---	---	---	---	300	289	294	282	274	279
15	---	---	---	---	---	---	317	294	304	290	274	281
16	---	---	---	328	305	319	313	296	305	287	278	283
17	---	---	---	328	313	322	310	299	303	291	283	287
18	---	---	---	333	316	326	326	303	312	299	291	293
19	---	---	---	337	323	330	322	301	311	300	293	295
20	---	---	---	346	331	336	313	296	307	301	293	297
21	---	---	---	354	325	338	313	297	305	301	295	298
22	---	---	---	339	321	331	311	304	309	304	298	301
23	---	---	---	334	311	324	310	299	306	305	302	303
24	---	---	---	322	306	317	310	295	303	309	305	307
25	---	---	---	320	262	290	306	280	295	311	306	308
26	---	---	---	274	259	266	295	288	292	312	305	309
27	---	---	---	274	261	267	299	286	292	312	306	309
28	---	---	---	283	271	275	303	287	294	313	307	310
29	---	---	---	291	276	285	297	288	293	314	310	313
30	---	---	---	293	274	283	300	291	294	314	307	311
31	---	---	---	290	277	284	---	---	---	313	306	310
MONTH	---	---	---	---	---	---	331	234	297	314	268	296

CHIPPEWA RIVER BASIN

05370000 EAU GALLE RIVER AT SPRING VALLEY, WI--CONTINUED

SPECIFIC CONDUCTANCE, US/CM AT 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	311	305	308	328	323	327	335	321	330	350	340	345
2	309	301	306	326	319	322	337	324	331	348	342	345
3	312	305	307	323	317	320	334	325	328	351	340	345
4	313	307	310	323	315	320	329	314	319	352	327	342
5	314	308	311	323	312	317	329	320	324	356	341	348
6	320	309	314	319	304	313	341	329	333	356	345	352
7	321	316	319	315	308	312	342	315	333	362	346	355
8	327	319	322	316	306	311	312	292	301	355	346	350
9	330	323	327	312	290	301	320	300	310	356	341	351
10	333	325	328	311	297	302	334	313	323	357	341	351
11	329	323	327	317	307	311	333	303	317	360	346	353
12	329	322	325	323	310	315	327	310	319	361	349	354
13	329	321	326	325	303	311	326	311	320	361	352	356
14	328	319	324	317	310	313	333	312	323	364	351	359
15	329	322	326	316	305	311	338	324	330	366	358	363
16	328	324	326	344	300	313	336	324	332	366	351	360
17	331	326	328	319	312	317	339	329	335	363	353	358
18	328	325	326	322	314	318	345	338	341	363	340	350
19	328	292	309	326	316	321	351	345	347	348	331	339
20	299	291	296	325	314	320	364	339	349	329	267	297
21	306	297	302	326	317	320	358	344	348	302	275	289
22	312	303	307	328	321	325	358	344	351	313	299	305
23	316	310	313	330	318	325	369	321	349	323	314	318
24	317	311	314	328	316	323	344	310	332	329	322	325
25	322	312	316	330	320	324	341	310	325	336	327	333
26	324	317	321	332	327	329	344	330	336	340	335	339
27	322	317	319	336	325	331	346	322	335	343	340	342
28	328	317	323	336	322	329	343	319	336	349	340	344
29	333	324	328	333	326	330	348	338	342	351	348	349
30	331	325	328	341	326	333	351	342	347	351	347	349
31	---	---	---	341	320	332	350	341	347	---	---	---
MONTH	333	291	318	344	290	319	369	292	332	366	267	342



TREMPEALEAU-BLACK RIVER BASIN

BUFFALO RIVER BASIN

443311091231000 CRYSTAL LAKE AT STRUM, WI

LAKE-STAGE RECORDS

LOCATION.--Lat 44°33'11", long 91°23'10", in SW 1/4 sec.17, T.24 N., R.8 W., Trempealeau County, Hydrologic Unit 07040003, at Strum.

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

GAGE.--Staff gage read by LaVerne Anderson. Elevation of gage is 870.56 ft, revised, National Geodetic Vertical Datum of 1929.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height observed, 15.3 ft, Aug. 15, 1986; minimum observed, 13.3 ft, June 14, 1986.

EXTREMES FOR CURRENT YEAR.--Maximum gage height observed, 14.56 ft, June 6; minimum observed, 14.40 ft, July 6 and Aug. 20.

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE		GAGE HEIGHT	DATE		GAGE HEIGHT	DATE		GAGE HEIGHT	DATE		GAGE HEIGHT
June 6	14.56	June 21	14.44	July 6	14.40	July 22	14.44	Aug. 5	14.42		
13	14.52	27	14.42	12	14.44	30	14.42	11	14.42		
								20	14.40		

WATER-QUALITY RECORDS

LOCATION.--Lat 44°33'16", long 91°23'09", in SW 1/4 sec.17, T.24 N., R.8 W., Trempealeau County, Hydrologic Unit 07040003, near center of lake, at Strum.

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

REMARKS.--Secchi disc readings made by LaVerne Anderson.

SECCHI DISC TRANSPARENCY (IN METERS) WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE		SECCHI DEPTH	DATE		SECCHI DEPTH	DATE		SECCHI DEPTH	DATE		SECCHI DEPTH
June 6		1.0	June 21		0.7	July 6		0.6	July 22		0.8
13		0.8	27		0.7	12		0.7	30		0.7
									Aug. 5		0.7
									11		0.8
									20		0.8

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.--60 years, 27,830 ft³/s, 6.38 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, 46,800 ft³/s, Apr. 11, gage height, 6.97 ft; minimum daily discharge, 5,500 ft³/s, July 5; minimum gage height, 4.74 ft, Dec. 8.

DISCHARGE, IN 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	13600	19400	21400	17100	13800	13500	42600	25000	14500	6800	6500	10600
2	13500	19300	23000	12000	13700	14100	41500	24400	13800	6300	6500	10400
3	14200	17700	23400	12900	13700	15100	41600	24200	13900	6400	6400	13400
4	13800	17400	24200	13600	13700	25100	41700	24100	13900	6500	6300	11500
5	13100	17500	25900	13500	13700	27100	41600	24200	13900	5500	6700	10600
6	12900	17500	22900	13800	13500	23800	43100	23300	13900	6500	7800	9470
7	13400	17800	20200	13200	13500	21200	43700	22600	13300	6500	7800	9180
8	13100	17800	16600	13200	13500	20600	43400	21500	10900	6600	7500	8530
9	11800	18300	16400	12500	12600	22900	43200	21300	9500	6700	10500	8210
10	12300	18200	16800	12600	12600	26200	44900	22500	8800	6800	11000	7600
11	12000	17500	17700	12700	12600	30000	46400	23800	8100	7100	10600	7500
12	12100	16500	21000	12900	12600	33500	45800	25900	8100	8300	11000	7200
13	13100	16400	25300	12900	12600	35100	43900	28000	8200	7400	10900	7700
14	13700	16800	25200	12900	12700	33000	42300	29700	8100	7000	10300	8200
15	16300	17200	25400	12900	12700	31200	40800	29400	7600	7100	10200	8100
16	19300	16900	23300	13500	12800	29100	39100	29000	7500	7500	10000	7790
17	19600	17100	20900	13600	12800	28500	38300	28800	7300	8400	9800	10300
18	18600	17700	17700	13700	12900	27400	36400	27500	6700	8400	9500	12000
19	19200	18100	14300	13700	13200	26700	34000	25800	6900	9000	9700	11400
20	18200	19100	13900	14600	13200	26300	32000	24400	8400	8900	9800	14400
21	18100	20800	14100	14900	13200	25800	29700	24400	9300	8900	9900	14700
22	17200	21900	15500	14900	13100	24300	28300	23300	8900	8700	9900	17900
23	17100	25700	18400	14800	13200	23200	28700	21500	8800	8500	10200	18000
24	16900	21900	22500	14800	13200	23900	28400	16500	8400	7700	15500	17800
25	17500	15400	21700	14700	13200	23900	27000	12400	7600	7200	14400	13800
26	17300	19600	21300	14700	13100	26500	25300	14800	8100	7200	13000	13000
27	16900	22400	18300	14500	13100	29000	25700	15200	7900	6600	12700	11900
28	17500	20500	16600	14200	13200	33100	25200	16000	7900	6500	12300	12100
29	17400	18200	16600	14000	13100	38000	24700	16200	7100	6500	11600	12100
30	17700	20700	18000	13500	---	40300	24700	16100	7100	6500	11100	16600
31	18600	---	18300	13700	---	42200	---	15900	---	6500	9270	---
TOTAL	486000	561300	616800	426500	380800	840600	1094000	697700	284400	224500	308670	341980
MEAN	15680	18710	19900	13760	13130	27120	36470	22510	9480	7242	9957	11400
MAX	19600	25700	25900	17100	13800	42200	46400	29700	14500	9000	15500	18000
MIN	11800	15400	13900	12000	12600	13500	24700	12400	6700	5500	6300	7200
CFSM	.26	.32	.34	.23	.22	.46	.62	.38	.16	.12	.17	.19
IN.	.31	.35	.39	.27	.24	.53	.69	.44	.18	.14	.19	.21
CAL YR 1987	TOTAL 7716500	MEAN 21140	MAX 39200	MIN 11800	CFSM .36	IN. 4.85						
WTR YR 1988	TOTAL 6263250	MEAN 17110	MAX 46400	MIN 5500	CFSM .29	IN. 3.94						

TREMPEALEAU RIVER BASIN

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: Ice period, Dec. 17 to Mar. 6, and Aug. 3-15. Records good except for estimated daily discharges, which are fair. Gage-height telemeter and data-collection platform at station.

AVERAGE DISCHARGE.--59 years (1915-19, 1935-88), 431 ft³/s, 9.10 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. 9	0300	*2,290	*8.40	Mar. 26	2300	1,450	6.84

Minimum discharge, 209 ft³/s, July 30, gage height, 3.12 ft.

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	342	376	603	400	440	700	597	538	317	273	224	224
2	340	390	521	370	430	1000	575	499	312	266	225	231
3	339	398	486	380	410	1200	676	472	311	259	220	233
4	340	397	460	400	380	1100	741	451	306	252	230	244
5	341	390	449	390	360	1000	684	436	302	248	230	250
6	346	378	434	370	340	1200	688	422	295	246	230	248
7	348	372	428	360	340	1460	706	413	292	242	230	244
8	349	374	430	340	340	1860	635	416	288	240	240	234
9	350	377	548	340	330	1750	565	606	285	249	280	229
10	347	376	674	360	330	1140	538	738	282	254	260	225
11	346	374	609	370	330	923	519	620	279	268	260	225
12	347	370	547	370	340	836	500	527	279	275	280	225
13	350	368	506	380	340	782	486	472	275	270	290	225
14	349	367	476	340	340	641	473	448	272	276	300	226
15	349	367	461	350	340	573	461	437	267	270	300	227
16	390	370	456	360	350	540	453	417	265	279	259	233
17	448	427	450	380	360	525	444	404	263	300	242	272
18	423	590	440	360	380	520	440	390	262	293	236	292
19	398	587	440	350	400	513	433	382	263	276	231	318
20	379	499	440	340	430	499	427	377	266	268	242	540
21	374	447	430	340	400	482	423	374	262	271	237	464
22	371	426	440	330	350	474	424	370	260	270	240	536
23	372	422	450	330	370	494	467	364	252	261	270	610
24	372	440	430	330	380	543	508	356	270	249	277	489
25	372	447	410	330	370	1030	513	346	286	244	263	414
26	373	429	380	320	380	1380	493	338	267	236	242	355
27	374	419	390	310	440	1160	626	337	257	234	239	323
28	372	452	400	320	520	846	780	340	257	229	243	304
29	369	669	420	330	600	795	770	339	313	225	240	306
30	366	732	430	360	---	752	631	331	286	221	237	305
31	362	---	440	410	---	656	---	325	---	219	233	---
TOTAL	11298	13030	14478	11020	11120	27374	16676	13285	8391	7963	7730	9251
MEAN	364	434	467	355	383	883	556	429	280	257	249	308
MAX	448	732	674	410	600	1860	780	738	317	300	300	610
MIN	339	367	380	310	330	474	423	325	252	219	220	224
CFSM	.57	.68	.73	.55	.60	1.37	.86	.67	.43	.40	.39	.48
IN.	.65	.75	.84	.64	.64	1.58	.96	.77	.49	.46	.45	.54

CAL YR 1987 TOTAL 174930 MEAN 479 MAX 2660 MIN 317 CFSM .75 IN. 10.12
WTR YR 1988 TOTAL 151616 MEAN 414 MAX 1860 MIN 219 CFSM .64 IN. 8.77

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 periods listed in rating table below. Records good except those for ice-affected periods, which are fair.

AVERAGE DISCHARGE.--78 years (1906-8, 1914-88), 597 ft³/s, 10.82 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. 25	0545	*10,300	*12.21	No other peak greater than base discharge.			
Minimum, 10 ft ³ /s, Aug. 3, gage height, 2.33 ft.							

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Dec. 4-7, and Dec. 13 to Mar. 11.)

2.28	11	4.0	392
2.3	12	5.0	850
2.4	20	6.0	1,500
2.6	41	7.0	2,370
3.0	104	9.0	4,740
3.5	224	11.0	7,940

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	88	266	1230	180	100	250	1640	784	88	29	12	33
2	84	251	908	160	100	500	1460	580	83	31	12	29
3	75	261	622	160	98	560	1800	449	94	28	11	28
4	73	347	420	170	96	600	1960	367	86	26	11	27
5	73	497	300	140	92	580	1780	312	82	24	17	33
6	75	516	250	110	88	640	1950	267	88	22	17	31
7	76	439	270	90	84	900	2140	237	85	20	15	28
8	76	377	273	72	80	1500	1710	227	78	17	18	25
9	76	347	745	60	76	2800	1290	385	69	17	17	23
10	77	326	1400	47	74	4500	986	634	61	19	16	27
11	79	283	1270	38	72	3500	802	802	55	19	20	29
12	82	248	1030	49	70	2720	661	689	50	18	33	27
13	83	228	740	66	68	1970	563	547	47	18	33	24
14	83	211	520	84	66	1440	481	438	41	18	39	22
15	81	200	340	96	66	1210	417	365	38	20	44	21
16	85	199	260	100	70	913	365	306	35	30	44	29
17	230	246	240	110	74	736	330	263	32	60	37	39
18	627	889	230	110	82	634	299	228	33	81	30	36
19	703	1520	200	120	92	508	270	199	31	60	26	67
20	588	1180	220	130	100	434	248	178	31	48	23	118
21	465	750	250	120	100	374	228	163	30	44	21	129
22	399	529	250	120	110	373	217	147	30	43	32	147
23	386	581	240	110	110	469	264	132	28	36	54	139
24	390	888	230	110	110	900	395	120	27	32	44	120
25	410	936	210	110	110	6920	385	109	25	27	39	99
26	395	778	180	100	110	6840	368	101	22	24	37	86
27	366	619	170	90	120	4140	768	92	22	21	37	77
28	352	522	190	92	120	3710	1570	91	27	20	36	67
29	339	732	220	92	180	2960	1400	94	27	17	43	66
30	317	1210	210	96	---	2530	1110	95	28	14	41	61
31	286	---	200	100	---	2090	---	94	---	13	37	---
TOTAL	7519	16376	13818	3232	2718	58201	27857	9495	1473	896	896	1687
MEAN	243	546	446	104	93.7	1877	929	306	49.1	28.9	28.9	56.2
MAX	703	1520	1400	180	180	6920	2140	802	94	81	54	147
MIN	73	199	170	38	66	250	217	91	22	13	11	21
CFSM	.32	.73	.60	.14	.13	2.51	1.24	.41	.07	.04	.04	.08
IN.	.37	.81	.69	.16	.13	2.89	1.38	.47	.07	.04	.04	.08

CAL YR 1987 TOTAL 117118 MEAN 321 MAX 2000 MIN 44 CFSM .43 IN. 5.82
WTR YR 1988 TOTAL 144168 MEAN 394 MAX 6920 MIN 11 CFSM .53 IN. 7.16

BLACK RIVER BASIN

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: May 26, June 15 to July 27, and ice-affected period, Dec. 15 to Mar. 11. Records good except for estimated daily discharges, which are fair. 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 at station.

AVERAGE DISCHARGE.--56 years, 1,747 ft³/s, 11.41 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. 27	1600	*11,000	*10.57				

Minimum discharge, 320 ft³/s, Sept. 15, gage height, 1.54 ft.

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	601	770	1830	1100	700	740	4450	3850	474	460	344	362
2	614	781	2170	1100	720	800	3740	2780	553	440	349	355
3	620	803	2110	1100	700	860	3420	2070	524	430	357	357
4	597	809	1800	1000	680	840	3960	1940	502	430	370	382
5	533	796	1690	920	680	880	4010	1780	492	420	384	390
6	555	799	1580	840	680	1000	4050	1650	422	420	373	383
7	621	963	1510	760	660	1300	3890	1360	417	420	364	367
8	640	994	1320	700	660	1500	3890	1280	461	430	383	352
9	608	941	1340	660	640	1900	3470	1210	423	440	394	350
10	630	984	1380	640	640	2500	2830	1350	414	450	401	346
11	595	1050	1800	640	620	3400	2600	2110	385	430	388	345
12	530	868	2690	660	600	4330	2180	2440	429	430	382	342
13	568	808	2460	640	580	4730	2020	2220	371	440	379	338
14	693	809	1920	640	560	4710	1950	1850	365	440	395	338
15	707	724	1900	620	540	3850	1860	1720	350	420	402	333
16	722	609	1800	620	540	3300	1690	1570	350	490	388	332
17	842	663	1700	640	560	2340	1450	1480	360	600	370	400
18	792	904	1600	680	560	2330	1360	1090	360	500	364	655
19	830	1130	1600	700	560	2230	1350	1080	380	430	365	627
20	1180	1440	1300	680	560	1970	1200	938	420	390	360	715
21	1310	1710	1300	660	580	1790	1260	870	450	370	353	664
22	1210	1740	1300	640	580	1680	1140	872	440	370	374	736
23	1100	1570	1400	640	600	1690	1170	770	410	390	454	910
24	1020	1430	1300	620	600	2230	1210	636	380	380	505	978
25	902	1520	1200	620	620	3900	1300	668	380	370	435	909
26	901	1510	1200	620	620	6670	1390	640	410	370	401	839
27	732	1560	1200	620	640	10400	1750	640	440	360	394	768
28	596	1640	1200	620	640	9460	2040	619	460	362	391	854
29	546	1770	1100	620	660	7910	3300	558	480	362	379	866
30	637	1780	1100	620	---	6500	4140	490	500	359	370	853
31	745	---	1100	660	---	5190	---	472	---	348	366	---
TOTAL	23177	33875	48900	22280	17980	102930	74070	43003	12802	12951	11934	16446
MEAN	748	1129	1577	719	620	3320	2469	1387	427	418	385	548
MAX	1310	1780	2690	1100	720	10400	4450	3850	553	600	505	978
MIN	530	609	1100	620	540	740	1140	472	350	348	344	332
CFSM	.36	.54	.76	.35	.30	1.60	1.19	.67	.21	.20	.19	.26
IN.	.41	.61	.87	.40	.32	1.84	1.32	.77	.23	.23	.21	.29

CAL YR 1987 TOTAL 448634 MEAN 1229 MAX 4890 MIN 498 CFSM .59 IN. 8.02
WTR YR 1988 TOTAL 420348 MEAN 1148 MAX 10400 MIN 332 CFSM .55 IN. 7.52

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 1987 TO SEPTEMBER 1988

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPECIFIC CONDUCTANCE (US/CM) (00095)	PH (STANDARD UNITS) (00400)	TEMPERATURE WATER (DEG C) (00010)	TURBIDITY (FTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	BAROMETRIC PRESSURE (MM HG) (00025)	OXYGEN, DIS-SOLVED (PERCENT SATURATION) (00301)	COLIFORM, FECAL, UM-MF (COLS./100 ML) (31625)	STREPTOCOCCI, FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARDNESS TOTAL (MG/L AS CaCO3) (00900)
NOV 1987												
24...	1330	1420	95	7.60	9.0	3.3	11.8	750	104	K80	K310	63
JAN 1988												
27...	1220	616	162	7.40	0.0	3.0	12.5	771	85	K12	55	60
MAR												
16...	1130	3410	110	7.50	1.0	4.7	13.4	771	93	K21	120	33
APR												
26...	1300	1290	114	7.40	10.0	2.3	11.0	761	98	28	180	46
JUN												
08...	1150	449	137	8.40	22.5	2.9	8.5	761	98	350	260	60
AUG												
24...	1125	523	140	8.20	19.5	3.6	8.9	765	97	>600	K1100	64

DATE	HARDNESS NONCARB WH WAT TOT FLD (MG/L AS CaCO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS Ca) (00915)	MAGNESIUM, DIS-SOLVED (MG/L AS Mg) (00925)	SODIUM, DIS-SOLVED (MG/L AS Na) (00930)	SODIUM PERCENT (00932)	SODIUM ADSORPTION RATIO (00931)	POTASSIUM, DIS-SOLVED (MG/L AS K) (00935)	BICARBONATE WATER DIS IT FIELD (MG/L AS HCO3) (00453)	ALKALINITY WAT DIS TOT IT FIELD (MG/L AS CaCO3) (39086)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLORIDE, DIS-SOLVED (MG/L AS Cl) (00940)	FLUORIDE, DIS-SOLVED (MG/L AS F) (00950)
NOV 1987												
24...	15	15	6.1	4.8	14	0.3	2.9	56	46	18	12	0.10
JAN 1988												
27...	14	14	6.2	3.5	11	0.2	2.4	56	46	16	5.9	0.20
MAR												
16...	7	7.7	3.4	2.7	13	0.2	5.1	30	24	17	6.4	0.10
APR												
26...	10	11	4.6	3.0	12	0.2	2.2	42	34	16	5.9	0.10
JUN												
08...	8	14	6.2	3.6	11	0.2	1.8	60	50	13	5.5	0.30
AUG												
24...	11	15	6.5	3.2	9	0.2	2.2	63	52	12	5.7	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 CONSTITUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITROGEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITROGEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITROGEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOSPHOROUS TOTAL (MG/L AS P) (00665)	PHOSPHOROUS, DIS-SOLVED (MG/L AS P) (00666)	PHOSPHOROUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)
NOV 1987												
24...	9.2	98	100	0.13	376	0.540	0.050	0.040	0.50	0.100	0.060	0.050
JAN 1988												
27...	13	88	94	0.12	146	1.00	0.100	0.120	0.40	0.100	0.060	0.040
MAR												
16...	7.8	72	70	0.10	663	0.650	0.440	0.430	1.2	0.170	0.110	0.060
APR												
26...	6.9	73	74	0.10	254	0.410	<0.010	0.030	0.50	0.080	0.060	0.040
JUN												
08...	7.6	80	85	0.11	97.0	0.280	<0.010	0.020	0.70	0.160	0.050	0.040
AUG												
24...	8.8	92	87	0.13	130	0.360	0.020	<0.010	0.70	0.170	0.060	0.040

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

BLACK RIVER BASIN

05382000 BLACK RIVER NEAR GALESVILLE, WI--CONTINUED

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

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 1987 24...	1330	1420	30	<1	18	<0.5	<1	<1	<3	3	280
MAR 1988 16...	1130	3410	60	<1	25	<0.5	<1	<1	<3	2	410
APR 26...	1300	1290	30	<1	21	<0.5	<1	<1	<3	2	350
AUG 24...	1125	523	<10	<1	18	<0.5	<1	<1	<3	1	53

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 1987 24...	<5	<4	17	0.2	<10	3	<1	36	<6	9
MAR 1988 16...	<5	<4	25	<0.1	<10	<1	<1	24	<6	<3
APR 26...	<5	<4	18	<0.1	<10	4	<1	27	<6	32
AUG 24...	<5	<4	21	<0.1	<10	3	<1	34	<6	18

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)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT 1987 07...	1240	547	145	11.0	--	--	--
NOV 24...	1330	1420	95	9.0	13	50	88
JAN 1988 27...	1220	616	162	0.0	6	10	82
MAR 16...	1130	3410	110	1.0	36	331	54
APR 26...	1300	1290	114	10.0	34	118	41
MAY 27...	0935	600	132	20.0	--	--	--
JUN 08...	1150	449	137	22.5	14	17	94
JUL 27...	0845	363	152	23.5	--	--	--
AUG 24...	1125	523	140	19.5	42	59	94
SEP 13...	1300	327	160	19.5	--	--	--

LA CROSSE RIVER BASIN

435447091042600 NESHONOC LAKE AT WEST SALEM, WI

LAKE-STAGE RECORDS

LOCATION.--Lat 43°54'47", long 91°04'26", in NE 1/4 sec.34, T.17 N., R.6 W., LaCrosse County, Hydrologic Unit 07040006, at U.S. Highway 16 over Neshonoc Lake, at West Salem.

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

GAGE.--Staff gage read by Gary Willinger. Elevation of gage is 699 ft, from topographic map.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height observed, 8.70 ft, July 31, 1987; minimum observed, 7.02 ft, June 15, 1987.

EXTREMES FOR CURRENT YEAR.--Maximum gage height observed, 7.82 ft, Oct. 4; minimum observed, 7.32 ft, May 25.

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	GAGE HEIGHT	DATE	GAGE HEIGHT	DATE	GAGE HEIGHT	DATE	GAGE HEIGHT	DATE	GAGE HEIGHT
Oct. 4	7.82	May 18	7.52	June 17	7.42	July 15	7.42	Aug. 8	7.52
Apr. 25	7.72	25	7.32	25	7.47	23	7.44	18	7.47
May 6	7.67	June 6	7.47	July 3	7.52	31	7.50	26	7.42
								Sept. 3	7.57

WATER-QUALITY RECORDS

LOCATION.--Lat 43°54'47", long 91°04'26", in NE 1/4 sec.34, T.17 N., R.6 W., LaCrosse County, Hydrologic Unit 07040006, at U.S. Highway 16 over Neshonoc Lake, at West Salem.

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

REMARKS.--Secchi disc readings made by Gary Willinger.

SECCHI DISC TRANSPARENCY (IN METERS) WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	SECCHI DEPTH	DATE	SECCHI DEPTH	DATE	SECCHI DEPTH	DATE	SECCHI DEPTH	DATE	SECCHI DEPTH
Oct. 4	0.7	May 18	0.6	June 17	0.4	July 15	0.4	Aug. 8	0.4
Apr. 25	0.6	25	0.5	25	0.3	23	0.4	18	0.4
May 6	0.7	June 6	0.4	July 3	0.6	31	0.4	26	0.5
								Sept. 3	0.5

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: Dec. 26 to Mar. 13, May 14 to June 8, and July 25 to Aug. 8. 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.--52 years, 35,470 ft³/s, 7.14 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, 57,200 ft³/s, Apr. 2; maximum gage height, 9.84 ft, Apr.1; minimum daily discharge, 8,990 ft³/s, Sept. 15; minimum gage height, 5.95 ft Sept. 17.

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	19100	22600	29000	19000	18000	18000	56800	30300	20000	11200	10000	14900
2	17500	23700	28800	18000	18000	19000	57200	31700	19000	11400	10000	14000
3	17900	24400	28400	18000	17000	21000	56900	33800	17000	11500	9000	14800
4	17000	24400	28800	17000	17000	23000	55500	34300	16000	10900	9000	14700
5	16100	24000	28500	16000	17000	25000	52500	32800	16000	9730	9000	16200
6	16700	22800	27000	15500	17000	27000	51200	29700	16000	10200	9000	16300
7	16400	21300	27100	15500	17000	29000	49700	26400	16000	10200	9500	15800
8	17100	21000	26600	16000	17000	30000	49700	24800	15100	10300	11000	13900
9	16900	21100	26200	16000	17000	32000	50300	25800	14400	9940	13800	12100
10	16800	21500	25500	16000	16500	34000	52000	27000	13800	11000	15200	11500
11	16900	21500	23800	16000	16500	37000	53100	28100	12800	12200	15200	11700
12	15900	21300	24100	16000	16500	40000	53400	29900	12400	12300	15500	10100
13	16200	21200	25100	16000	16500	43000	52800	31100	11600	13100	16100	10400
14	16000	21400	27100	16000	16500	43800	52100	32000	11900	11700	15600	10200
15	16900	20900	30400	16000	16500	44500	49700	33000	9760	13100	15600	8990
16	20200	20500	31700	16000	16000	43700	47100	35000	9850	11800	15500	10100
17	25600	21100	28200	16500	16000	41400	45000	36000	10500	12100	15000	11100
18	26400	22800	27000	17000	16000	39000	42600	36000	11700	11600	13000	13600
19	25400	23600	24400	17000	16000	37400	39500	35000	11000	10900	12500	18100
20	23700	24000	24500	17000	16500	35700	37300	32000	10600	11000	12200	21600
21	22100	23900	22900	18000	17000	32900	35800	30000	12600	10800	13000	23800
22	21600	23600	20400	18500	17000	30200	34700	28000	12600	11100	13000	25900
23	21600	24800	19500	18500	17000	28600	35000	25000	13000	11700	15700	28100
24	21500	26300	21200	18500	17000	27600	35200	21000	13900	11900	18300	26700
25	21600	26400	24200	18500	17000	28300	34200	18000	12900	12000	18500	23400
26	21800	26300	25000	18500	17000	29300	31500	15000	12900	12500	18600	19700
27	21600	24700	25000	18000	17000	33100	31300	14000	13600	11500	18200	17300
28	21800	24200	24000	18000	17000	37700	30300	15000	12500	10500	16600	17800
29	21900	25900	23000	18000	17500	46200	29400	17000	11500	10000	15100	18500
30	21800	28300	21000	18000	---	49900	29400	18000	11700	9500	15300	18900
31	21900	---	19000	18000	---	54100	---	20000	---	10000	15300	---
TOTAL	613900	699500	787400	531000	488000	1061400	1331200	845700	402610	347670	429300	490190
MEAN	19800	23320	25400	17130	16830	34240	44370	27280	13420	11220	13850	16340
MAX	26400	28300	31700	19000	18000	54100	57200	36000	20000	13100	18600	28100
MIN	15900	20500	19000	15500	16000	18000	29400	14000	9760	9500	9000	8990
CFSM	.29	.35	.38	.25	.25	.51	.66	.40	.20	.17	.21	.24
IN.	.34	.39	.43	.29	.27	.58	.73	.47	.22	.19	.24	.27

CAL YR 1987 TOTAL 10052500 MEAN 27540 MAX 51400 MIN 10100 CFSM .41 IN. 5.54
WTR YR 1988 TOTAL 8027870 MEAN 21930 MAX 57200 MIN 8990 CFSM .32 IN. 4.42

MISSISSIPPI RIVER MAIN STEM

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 and Dec. 2, 6, 8-11, 1987.

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, 108 mg/L May 11; minimum daily mean, 1 mg/L Dec. 2, 6, 8-11.

SEDIMENT LOADS: Maximum daily, 11,100 tons Apr. 12; minimum daily, 64 tons Dec. 11.

SPECIFIC CONDUCTANCE MICROSIEMENS/CM AT 25 DEG C, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
INSTANTANEOUS VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	375	---	410	---	---	---	---	400	---	---
2	---	---	---	---	---	---	---	320	380	---	340	380
3	---	400	---	---	---	---	340	---	---	---	---	---
4	420	---	---	380	---	420	---	---	---	400	---	---
5	---	---	---	---	430	---	---	300	400	---	340	370
6	410	---	380	---	---	---	345	---	---	---	---	---
7	---	---	---	---	---	410	---	---	---	---	---	---
8	---	400	---	420	450	---	---	---	395	385	340	380
9	---	---	---	---	---	---	---	320	---	---	---	---
10	---	---	---	---	---	---	---	---	---	---	---	---
11	420	---	375	430	---	360	---	320	---	---	---	---
12	---	390	---	---	445	---	350	---	430	380	---	---
13	---	---	---	---	---	---	---	---	---	---	340	380
14	420	---	---	---	---	375	370	---	---	---	---	---
15	---	400	365	450	450	---	---	---	---	---	---	---
16	---	---	---	---	---	---	---	350	---	380	345	380
17	---	---	---	---	---	---	---	---	420	---	---	---
18	---	390	370	445	---	350	335	345	---	---	---	---
19	420	---	---	---	435	---	---	---	---	---	350	400
20	---	---	---	---	---	---	350	---	---	355	---	---
21	---	---	380	---	---	365	---	---	420	---	---	---
22	430	390	---	420	440	---	---	---	---	---	380	400
23	---	---	---	---	---	---	---	---	---	340	---	---
24	---	---	360	---	---	---	---	360	405	---	---	---
25	420	390	---	420	---	350	---	---	---	---	375	390
26	---	---	---	---	440	---	334	---	---	350	---	---
27	---	---	---	---	---	---	340	---	---	---	---	360
28	420	---	---	---	430	350	---	365	400	---	375	---
29	---	---	380	420	---	---	---	---	---	340	---	---
30	395	380	---	---	---	---	---	---	---	---	---	360
31	---	---	---	---	---	375	---	380	---	---	---	---

MISSISSIPPI RIVER MAIN STEM

05389500 MISSISSIPPI RIVER AT MCGREGOR, IA--CONTINUED

WATER-QUALITY RECORDS

WATER TEMPERATURE, DEGREES CENTIGRADE, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
INSTANTANEOUS VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	.0	---	.0	---	---	---	---	26.0	---	---
2	---	---	---	---	---	---	---	15.0	26.0	---	26.0	22.0
3	---	6.0	---	---	---	---	9.0	---	---	---	---	---
4	13.0	---	---	.0	---	1.5	---	---	---	26.5	---	---
5	---	---	---	---	.0	---	---	16.0	26.0	---	23.0	22.0
6	13.0	---	3.0	---	---	---	10.0	---	---	---	---	---
7	---	---	---	---	---	2.0	---	---	---	---	---	---
8	---	6.0	---	.0	.0	---	---	---	26.0	24.0	26.0	22.0
9	---	---	---	---	---	---	---	17.0	---	---	---	---
10	---	---	---	---	---	---	---	---	---	---	---	---
11	9.0	---	3.0	.0	---	2.0	---	18.0	---	---	---	---
12	---	5.0	---	---	.0	---	11.0	---	---	25.0	---	---
13	---	---	---	---	---	---	---	---	26.0	---	27.0	19.5
14	10.0	---	---	---	---	2.0	11.0	---	---	---	---	---
15	---	4.5	.0	.0	.0	---	---	---	---	---	---	---
16	---	---	---	---	---	---	---	18.0	---	25.0	28.0	20.0
17	---	---	---	---	---	---	---	---	26.0	---	---	---
18	---	5.0	.0	.0	---	2.0	11.0	18.0	---	---	---	---
19	9.0	---	---	---	.0	---	---	---	---	---	27.0	21.0
20	---	---	---	---	---	---	8.0	---	---	27.0	---	---
21	---	---	.0	---	---	3.0	---	---	26.0	---	---	---
22	8.0	5.0	---	.0	.0	---	---	---	---	---	26.0	21.0
23	---	---	---	---	---	---	---	---	---	26.5	---	---
24	---	---	.0	---	---	---	---	20.0	25.5	---	---	---
25	6.0	4.0	---	.0	---	6.0	---	---	---	---	26.5	21.0
26	---	---	---	---	.0	---	9.0	---	---	26.0	---	---
27	---	---	---	---	---	---	9.0	---	---	---	---	21.0
28	6.0	---	---	---	1.0	8.0	---	18.0	27.0	---	27.0	---
29	---	---	.0	.0	---	---	---	---	---	27.5	---	---
30	6.0	4.0	---	---	---	---	---	---	---	---	---	18.0
31	---	---	---	---	---	7.5	---	26.0	---	---	---	---

SUSPENDED-SEDIMENT, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MEAN CONCEN- TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN- TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN- TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN- TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN- TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN- TRATION (MG/L)	LOADS (T/DAY)
OCTOBER			NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	10	516	14	854	2	157	3	154	3	146	6	292
2	10	472	16	1020	1	78	3	146	3	146	7	359
3	9	435	18	1190	2	153	3	146	3	138	7	397
4	9	413	16	1050	3	233	3	138	4	184	7	435
5	8	348	14	907	2	154	3	130	4	184	7	472
6	21	947	15	923	1	73	3	126	3	138	7	510
7	38	1680	12	690	2	146	4	167	3	138	6	470
8	20	923	7	397	1	72	4	173	3	138	6	486
9	21	958	8	456	1	71	5	216	3	138	6	518
10	19	862	12	697	1	69	6	259	2	89	6	551
11	14	639	11	639	1	64	7	302	3	134	6	599
12	13	558	10	575	2	130	6	259	3	134	8	864
13	15	656	10	572	2	136	5	216	3	134	11	1280
14	17	734	10	578	8	585	5	216	3	134	25	2960
15	16	730	10	564	16	1310	4	173	2	89	32	3840
16	17	927	10	553	21	1800	4	173	2	86	31	3660
17	41	2830	9	513	12	914	4	178	2	86	20	2240
18	42	2990	9	554	5	364	4	184	2	86	11	1160
19	17	1170	18	1150	14	922	3	138	2	86	10	1010
20	13	832	10	648	17	1120	3	138	2	89	10	964
21	12	716	7	452	7	433	2	97	2	92	10	888
22	19	1110	9	573	4	220	2	100	2	92	10	815
23	15	875	11	737	4	211	2	100	3	138	10	772
24	8	464	11	781	2	114	2	100	3	138	12	894
25	7	408	10	713	2	131	2	100	4	184	23	1760
26	7	412	9	639	2	135	3	150	4	184	28	2220
27	7	408	8	534	3	202	3	146	4	184	38	3400
28	8	471	6	392	3	194	3	146	5	229	51	5190
29	8	473	4	280	3	186	3	146	5	236	64	7980
30	11	647	3	229	3	170	3	146	---	---	50	6740
31	13	769	---	---	3	154	3	146	---	---	30	4380
TOTAL	---	26373	---	19860	---	10701	---	5009	---	3974	---	58106

MISSISSIPPI RIVER MAIN STEM

05389500 MISSISSIPPI RIVER AT MCGREGOR, IA--CONTINUED

WATER-QUALITY RECORDS

SUSPENDED-SEDIMENT, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

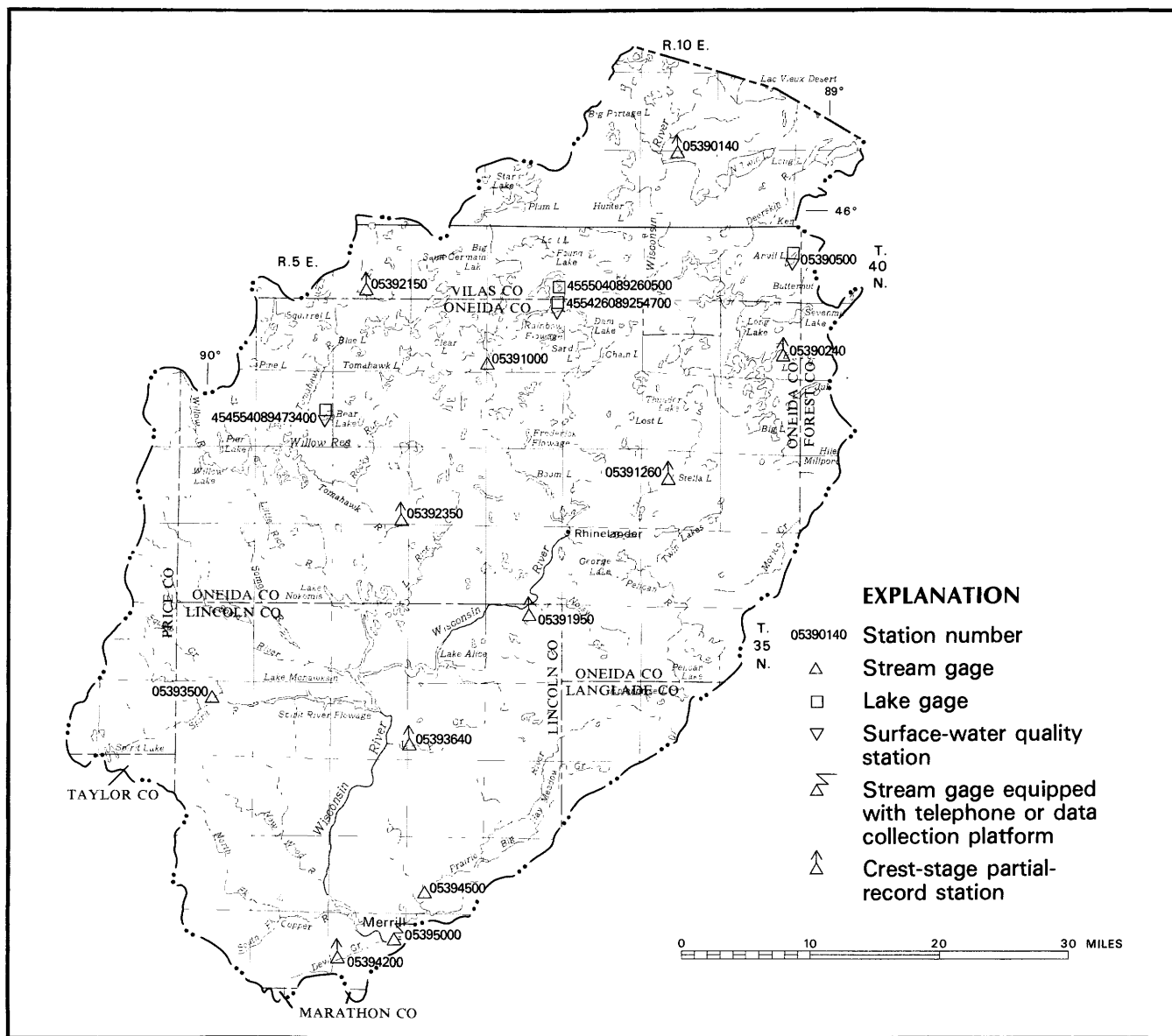
DAY	MEAN CONCEN- TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN- TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN- TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN- TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN- TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN- TRATION (MG/L)	LOADS (T/DAY)
APRIL			MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	27	4140	18	1470	30	1620	22	665	15	405	28	1130
2	26	4020	20	1710	23	1180	21	646	21	567	30	1130
3	24	3690	28	2560	20	918	18	559	25	607	30	1200
4	24	3600	26	2410	19	821	12	353	27	656	30	1190
5	33	4680	20	1770	17	734	12	315	31	753	29	1270
6	43	5940	18	1440	16	691	11	303	28	680	34	1500
7	42	5640	15	1070	16	691	11	303	20	513	38	1620
8	39	5230	15	1000	15	612	11	306	19	564	27	1010
9	42	5700	20	1390	15	583	10	268	35	1300	24	784
10	52	7300	57	4160	15	559	11	327	46	1890	22	683
11	65	9320	108	8190	14	484	16	527	38	1560	24	758
12	77	11100	89	7180	13	435	21	697	25	1050	43	1170
13	73	10400	46	3860	50	1570	25	884	19	826	33	927
14	74	10400	30	2590	49	1570	24	758	26	1100	23	633
15	50	6710	25	2230	37	975	21	743	27	1140	15	364
16	37	4710	21	1980	30	798	17	542	24	1000	8	218
17	28	3400	21	2040	24	680	18	588	22	891	6	180
18	24	2760	21	2040	23	727	32	1000	18	632	12	441
19	24	2560	20	1890	23	683	30	883	17	574	19	929
20	23	2320	20	1730	22	630	25	742	16	527	27	1570
21	23	2220	19	1540	22	748	17	496	28	983	25	1610
22	23	2150	18	1360	21	714	16	480	60	2110	18	1260
23	22	2080	17	1150	20	702	20	632	72	3050	16	1210
24	22	2090	16	907	20	751	30	964	37	1830	26	1870
25	22	2030	16	778	20	697	26	842	19	949	94	5940
26	21	1790	16	648	21	731	25	844	19	954	77	4100
27	21	1770	23	869	23	845	33	1020	24	1180	30	1400
28	20	1640	47	1900	23	776	29	822	31	1390	20	961
29	20	1590	53	2430	22	683	23	621	36	1470	12	599
30	19	1510	45	2190	22	695	21	539	35	1450	18	919
31	---	---	38	2050	---	---	16	432	32	1320	---	---
TOTAL	---	132490	---	68532	---	24303	---	19101	---	33921	---	38576
TOTAL LOAD FOR YEAR:			440946	TONS.								

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	TEMPER- ATURE WATER (DEG C) (00010)	STREAM- FLOW, INSTAN- TANEOUS (CFS) (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 1987						
07...	1230	13.0	13100	43	1520	94
APR 1988						
08...	1305	12.5	48900	40	5280	96
JUN						
08...	1200	27.0	13500	19	693	92
JUL						
20...	1110	28.0	11200	30	907	86
SEP						
01...	1035	22.0	13100	27	955	98

PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	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)	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM (80171)	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM (80172)
OCT 1987												
07...	1230	13100	6	5	9	29	71	82	86	91	99	100
APR 1988												
08...	1305	48900	5	5	13	48	76	86	89	92	95	100
SEP												
01...	1035	13100	6	1	3	21	82	97	99	99	100	



Base from U.S. Geological Survey
State base map, 1968

UPPER WISCONSIN RIVER BASIN

LAKE-STAGE RECORDS

EXTREMES FOR CURRENT YEAR.--Maximum gage height observed, 4.03 ft, May 1; minimum observed, 3.07 ft, Sept. 18.

DATE	GAGE HEIGHT		DATE	GAGE HEIGHT		DATE	GAGE HEIGHT		DATE	GAGE HEIGHT	
Oct. 3	4.00		May 1	4.03		June 13	3.50		July 21	3.21	
18	4.01		11	3.99		20	3.40		30	3.09	
Nov. 8	3.96		29	3.76		July 3	3.24		Aug. 6	3.19	
17	3.98		June 5	3.68		14	3.19		23	3.10	

[illegible]

WISCONSIN RIVER BASIN

455426089254700 ALMA LAKE NEAR ST. GERMAIN, WI

LAKE-STAGE RECORDS

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, 9.68 ft, Sept. 6, 29, 30, 31, 1988.

EXTREMES FOR CURRENT YEAR.--Maximum gage height observed, 10.40 ft, May 1, 2, 9, 10; minimum observed, 9.68 ft, July 6, 29-31.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10.33	10.36	---	---	---	---	---	10.40	10.18	9.78	---	---
2	10.32	10.36	---	---	---	---	---	10.40	10.20	9.76	---	---
3	10.31	10.35	---	---	---	---	---	10.38	10.19	9.74	---	---
4	10.30	10.35	---	---	---	---	---	10.38	10.18	9.72	---	---
5	10.29	10.35	---	---	---	---	---	10.38	10.17	9.70	---	---
6	10.31	10.35	---	---	---	---	---	10.37	10.16	9.68	---	---
7	10.33	10.35	---	---	---	---	---	10.36	10.15	9.69	---	---
8	10.33	10.34	---	---	---	---	---	10.36	10.14	9.86	---	---
9	10.32	10.34	---	---	---	---	---	10.40	10.12	9.88	---	---
10	10.32	10.34	---	---	---	---	---	10.40	10.10	9.88	---	---
11	10.32	10.33	---	---	---	---	---	10.39	10.08	9.84	---	---
12	10.32	10.33	---	---	---	---	---	10.38	10.06	9.84	---	---
13	10.32	10.33	---	---	---	---	---	10.38	10.04	9.82	---	---
14	10.32	10.33	---	---	---	---	---	10.37	10.02	9.80	---	---
15	10.33	10.33	---	---	---	---	---	10.36	10.00	9.84	---	---
16	10.34	10.32	---	---	---	---	---	10.35	9.98	9.84	---	---
17	10.37	10.34	---	---	---	---	---	10.34	9.96	9.82	---	---
18	10.39	10.35	---	---	---	---	---	10.32	9.94	9.81	---	---
19	10.39	---	---	---	---	---	---	10.30	10.00	9.80	---	---
20	10.39	---	---	---	---	---	---	10.32	9.99	9.78	---	---
21	10.39	---	---	---	---	---	---	10.30	9.98	9.78	---	---
22	10.39	---	---	---	---	---	---	10.32	9.96	9.78	---	---
23	10.39	---	---	---	---	---	---	10.31	9.94	9.76	---	---
24	10.38	---	---	---	---	---	---	10.30	9.92	9.75	---	---
25	10.38	---	---	---	---	---	---	10.28	9.90	9.74	---	---
26	10.38	---	---	---	---	---	---	10.26	9.88	9.74	---	---
27	10.38	---	---	---	---	---	---	10.24	9.86	9.72	---	---
28	10.37	---	---	---	---	---	---	10.22	9.85	9.70	---	---
29	10.37	---	---	---	---	---	---	10.20	9.82	9.68	---	---
30	10.37	---	---	---	---	---	---	10.19	9.80	9.68	---	---
31	10.37	---	---	---	---	---	---	10.18	---	9.68	---	---
MEAN	10.35	---	---	---	---	---	---	10.33	10.02	9.77	---	---
MAX	10.39	---	---	---	---	---	---	10.40	10.20	9.88	---	---
MIN	10.29	---	---	---	---	---	---	10.18	9.80	9.68	---	---

WATER-QUALITY RECORDS

LOCATION.--Lat 45°54'36", long 89°25'43", in NE 1/4 sec.36, 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 current year.

REMARKS.--Secchi disc readings made by John P. Seibel.

SECCHI DISC TRANSPARENCY (IN METERS) WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	SECCHI DEPTH	DATE	SECCHI DEPTH	DATE	SECCHI DEPTH	DATE	SECCHI DEPTH	DATE	SECCHI DEPTH
Oct. 7	2.1	Nov. 7	2.1	May 19	5.2	June 29	4.3	July 19	2.9
24	2.1	May 2	4.6	June 5	4.6	July 12	2.7	24	2.7

WISCONSIN RIVER BASIN

455504089260500 MOON LAKE NEAR ST. GERMAIN, WI

WATER-QUALITY RECORDS

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 current year.

REMARKS.--Secchi disc readings made by John P. Seibel and John Schunk.

SECCHI DISC TRANSPARENCY (IN METERS) WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	SECCHI DEPTH	DATE	SECCHI DEPTH	DATE	SECCHI DEPTH	DATE	SECCHI DEPTH	DATE	SECCHI DEPTH
Oct. 7	2.7	May 19	4.6	June 17	5.3	July 8	4.9	July 24	4.7
24	2.7	June 3	5.8	23	5.2	12	4.4	27	4.7
Nov. 11	2.7	5	4.7	29	5.6	19	4.6	Aug. 10	5.3
May 2	4.3	10	5.2	July 1	5.0	22	5.1	15	5.7

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.--52 years, 697 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, 733 ft³/s, Feb. 17, 18, gage height, 2.61 ft; minimum daily, 185 ft³/s, Oct. 21.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Shifting-control method used Oct. 1-26, Nov. 2-26, and Aug. 11 to Sept. 22.)

0.6	176	2.0	515
1.0	261	3.0	889

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	264	315	324	701	646	683	353	314	343	241	256	251
2	230	282	324	697	653	700	358	326	325	228	286	273
3	213	258	323	698	675	692	365	326	329	228	266	254
4	247	233	380	695	705	683	275	322	332	228	237	263
5	266	214	423	693	702	678	216	322	332	227	241	275
6	253	242	410	691	701	670	220	323	329	227	241	210
7	238	274	407	683	698	662	230	323	302	225	231	191
8	235	277	409	676	696	658	236	328	283	224	230	231
9	252	279	413	676	686	652	239	340	280	249	230	287
10	269	281	418	679	680	649	239	343	279	278	228	292
11	269	281	541	677	679	645	240	340	276	258	247	309
12	271	280	622	674	677	640	241	332	275	225	264	315
13	270	276	621	676	677	634	239	324	273	224	264	307
14	273	277	617	678	674	630	234	324	274	224	274	298
15	277	275	611	677	670	624	279	324	271	228	252	293
16	264	275	611	676	670	621	312	321	267	228	225	310
17	271	256	613	672	698	617	356	323	267	232	219	324
18	244	249	609	671	728	611	379	323	265	235	215	322
19	204	247	600	668	723	605	383	323	268	246	215	291
20	188	247	602	665	714	600	386	323	269	243	216	223
21	185	252	669	666	716	595	385	324	271	242	216	232
22	246	233	713	665	708	589	396	337	265	222	239	311
23	289	211	713	661	702	642	408	342	265	204	259	348
24	294	211	713	662	696	680	408	332	266	217	246	341
25	296	231	713	659	692	493	406	318	262	235	227	339
26	294	251	713	658	686	363	343	305	261	240	242	333
27	297	278	710	655	679	361	319	322	262	255	250	338
28	306	308	709	645	674	357	301	335	262	268	250	345
29	316	323	709	639	662	349	254	335	262	271	251	345
30	318	325	712	638	---	346	270	361	262	269	251	346
31	313	---	707	638	---	348	---	372	---	240	251	---
TOTAL	8152	7941	17659	20809	19967	18077	9270	10207	8477	7361	7519	8797
MEAN	263	265	570	671	689	583	309	329	283	237	243	293
MAX	318	325	713	701	728	700	408	372	343	278	286	348
MIN	185	211	323	638	646	346	216	305	261	204	215	191

CAL YR 1987 TOTAL 150765 MEAN 413 MAX 888 MIN 182
WTR YR 1988 TOTAL 144236 MEAN 394 MAX 728 MIN 185

WISCONSIN RIVER BASIN

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 1562 ft, from topographic map.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height observed, 8.67 ft, Oct. 7 and 9, 1986; minimum observed, 7.50 ft, May 17, 1987.

EXTREMES FOR CURRENT YEAR.--Maximum gage height observed, 8.29 ft, Apr. 10; minimum observed, 7.63 ft, July 17.

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	GAGE HEIGHT	DATE	GAGE HEIGHT	DATE	GAGE HEIGHT	DATE	GAGE HEIGHT	DATE	GAGE HEIGHT
Oct. 30	7.78	May 2	8.17	June 15	7.76	July 17	7.63	Aug. 26	7.69
Apr. 10	8.29	June 10	7.83	18	7.75	Aug. 2	7.64	Sept. 3	7.77
21	8.21	12	7.79	30	7.67	12	7.66	4	7.76
30	8.18	13	7.78	July 9	7.65	23	7.71	21	7.81

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 1987 TO SEPTEMBER 1988

DATE	SECCHI DEPTH	DATE	SECCHI DEPTH	DATE	SECCHI DEPTH	DATE	SECCHI DEPTH	DATE	SECCHI DEPTH
Oct. 14	4.3	May 8	4.5	June 26	2.4	Aug. 6	2.9	Sept. 5	3.2
Nov. 1	4.4	25	4.5	July 9	2.6	16	2.9	18	4.1
Apr. 24	4.3	June 5	4.7	24	3.2				

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

AVERAGE DISCHARGE.--46 years, 86.0 ft³/s, 14.31 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. 31	1500	ice jam	*5.87	Apr. 4	0300	*664	4.51

Minimum discharge, 2.8 ft³/s, part of each day July 30, 31, Aug. 1-4, gage height, 1.00 ft.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Dec. 3-8, Dec. 12 to Apr. 1.)

0.9	2.0	2.0	58
1.0	3.2	2.5	122
1.1	4.8	3.0	215
1.2	7.0	4.0	480
1.4	14	5.0	870
1.7	31		

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	8.7	42	138	26	17	16	360	82	10	5.1	2.8	4.7
2	10	44	112	24	17	15	468	68	9.9	4.5	2.8	4.5
3	12	58	94	24	16	15	566	57	9.9	4.2	2.8	16
4	11	99	70	25	16	15	629	51	9.4	3.7	3.0	28
5	9.7	89	62	22	15	16	526	49	8.4	3.4	3.1	19
6	9.8	72	56	21	15	16	529	43	7.6	3.1	3.8	13
7	13	61	50	20	14	17	462	36	7.1	3.0	3.5	10
8	13	66	50	18	14	17	345	31	6.6	3.0	4.0	8.3
9	13	64	72	18	14	17	268	80	6.5	4.2	6.1	6.9
10	13	53	102	18	14	20	228	131	6.1	8.4	5.6	6.4
11	12	48	94	18	14	23	187	103	5.8	6.1	6.0	5.9
12	11	44	84	19	14	33	152	86	5.4	4.8	4.7	5.3
13	11	43	70	19	14	50	129	81	5.2	4.3	5.4	4.6
14	10	40	62	20	15	47	110	68	5.1	4.3	7.7	4.5
15	14	39	54	20	15	48	102	57	4.4	4.1	7.6	4.4
16	73	43	49	21	15	44	83	48	4.9	4.7	6.1	4.4
17	101	90	45	21	15	42	74	41	4.6	6.1	5.0	5.6
18	95	179	42	20	15	41	67	35	4.2	5.5	4.3	5.9
19	72	143	41	20	16	38	59	31	4.9	4.9	3.9	7.1
20	57	102	41	19	16	37	51	27	5.2	4.6	3.7	21
21	56	88	42	19	15	36	45	24	4.8	4.5	3.6	22
22	60	73	42	19	15	37	42	23	4.5	4.7	4.0	17
23	60	75	40	18	16	41	44	21	4.6	4.6	9.2	12
24	59	88	38	18	16	48	54	19	5.2	4.2	12	10
25	54	79	37	18	15	60	65	16	4.5	3.9	8.3	8.1
26	53	72	33	17	15	500	66	15	3.9	3.5	6.5	6.6
27	67	64	30	17	16	450	77	14	3.4	3.2	6.2	8.6
28	66	62	28	17	16	350	138	13	4.5	3.0	6.5	9.7
29	57	141	29	16	16	300	133	14	7.1	2.9	6.1	11
30	50	190	29	17	---	350	102	13	6.7	2.9	5.6	14
31	45	---	28	18	---	400	---	12	---	2.9	4.9	---
TOTAL	1196.2	2351	1764	607	441	3139	6161	1389	180.4	132.3	164.8	304.5
MEAN	38.6	78.4	56.9	19.6	15.2	101	205	44.8	6.01	4.27	5.32	10.1
MAX	101	190	138	26	17	500	629	131	10	8.4	12	28
MIN	8.7	39	28	16	14	15	42	12	3.4	2.9	2.8	4.4
CFSM	.47	.96	.70	.24	.19	1.24	2.52	.55	.07	.05	.07	.12
IN.	.55	1.07	.80	.28	.20	1.43	2.81	.63	.08	.06	.08	.14
CAL YR 1987	TOTAL 14240.6	MEAN 39.0	MAX 190	MIN 4.2	CFSM .48	IN. 6.49						
WTR YR 1988	TOTAL 17830.2	MEAN 48.7	MAX 629	MIN 2.8	CFSM .60	IN. 8.13						

WISCONSIN RIVER BASIN

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. 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: June 16-24, and ice periods listed in table below. Records good except those for estimated daily discharges, which are fair.

AVERAGE DISCHARGE.--66 years (1914-31, 1939-88), 180 ft³/s, 13.28 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)
Apr. 4	2015	*690	*4.16				

Minimum daily, 60 ft³/s, June 18, July 7.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Dec. 6, 7, 9, 13-17, Dec. 19 to Mar. 13, Mar. 15, 16, and Mar. 19-21.)

1.8	54	3.0	296
2.0	81	4.0	626
2.5	171	5.0	1,080

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	82	114	200	86	86	82	465	155	75	70	66	70
2	86	127	161	88	82	82	479	142	77	67	67	70
3	87	143	138	90	84	78	584	135	82	64	66	143
4	88	182	128	90	80	80	675	128	77	62	68	159
5	91	182	120	82	76	86	655	122	75	61	76	120
6	88	160	110	80	74	80	613	116	75	61	73	103
7	95	142	110	76	76	84	564	113	72	60	69	90
8	95	144	119	78	80	94	486	113	70	65	98	93
9	94	143	140	82	78	110	397	165	70	99	89	109
10	92	135	168	80	78	170	330	205	78	107	74	85
11	90	128	172	80	78	190	288	206	72	91	69	77
12	89	121	170	82	80	150	257	171	67	79	66	74
13	88	116	150	84	82	130	218	163	67	72	68	72
14	88	114	130	80	76	120	198	155	66	68	80	74
15	93	112	120	86	76	110	182	141	71	67	83	77
16	115	122	120	90	78	110	165	128	66	120	84	82
17	161	217	110	94	80	110	152	119	62	121	71	93
18	176	318	106	92	86	107	144	110	60	101	70	87
19	159	307	110	96	80	100	138	103	64	87	74	112
20	142	226	120	94	76	98	129	99	70	81	71	197
21	130	186	120	92	72	98	120	105	66	112	68	205
22	125	171	110	88	78	98	112	103	68	160	71	171
23	122	174	120	90	76	99	119	95	70	186	92	139
24	121	181	120	86	74	114	136	96	66	158	96	117
25	119	173	110	84	74	440	153	90	64	121	93	103
26	123	163	98	82	78	518	156	89	64	98	85	95
27	132	145	110	80	78	383	162	88	63	87	84	91
28	128	151	110	78	78	354	196	87	78	77	87	87
29	123	179	100	80	80	421	196	86	87	71	79	87
30	120	206	110	88	---	443	172	84	75	70	78	89
31	115	---	94	94	---	459	---	78	---	67	74	---
TOTAL	3457	4982	3904	2652	2274	5598	8641	3790	2117	2810	2389	3171
MEAN	112	166	126	85.5	78.4	181	288	122	70.6	90.6	77.1	106
MAX	176	318	200	96	86	518	675	206	87	186	98	205
MIN	82	112	94	76	72	78	112	78	60	60	66	70
CFSM	.61	.90	.68	.46	.43	.98	1.57	.66	.38	.49	.42	.57
IN.	.70	1.01	.79	.54	.46	1.13	1.75	.77	.43	.57	.48	.64

CAL YR 1987	TOTAL 45587	MEAN 125	MAX 318	MIN 72	CFSM .68	IN. 9.22
WTR YR 1988	TOTAL 45785	MEAN 125	MAX 675	MIN 60	CFSM .68	IN. 9.26

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, non-recording gage at present datum.

REMARKS.--Estimated daily discharges: 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.--85 years, 2,673 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, 7,440 ft³/s, Apr. 5, gage height, 7.92 ft; minimum daily, 576 ft³/s, July 4.

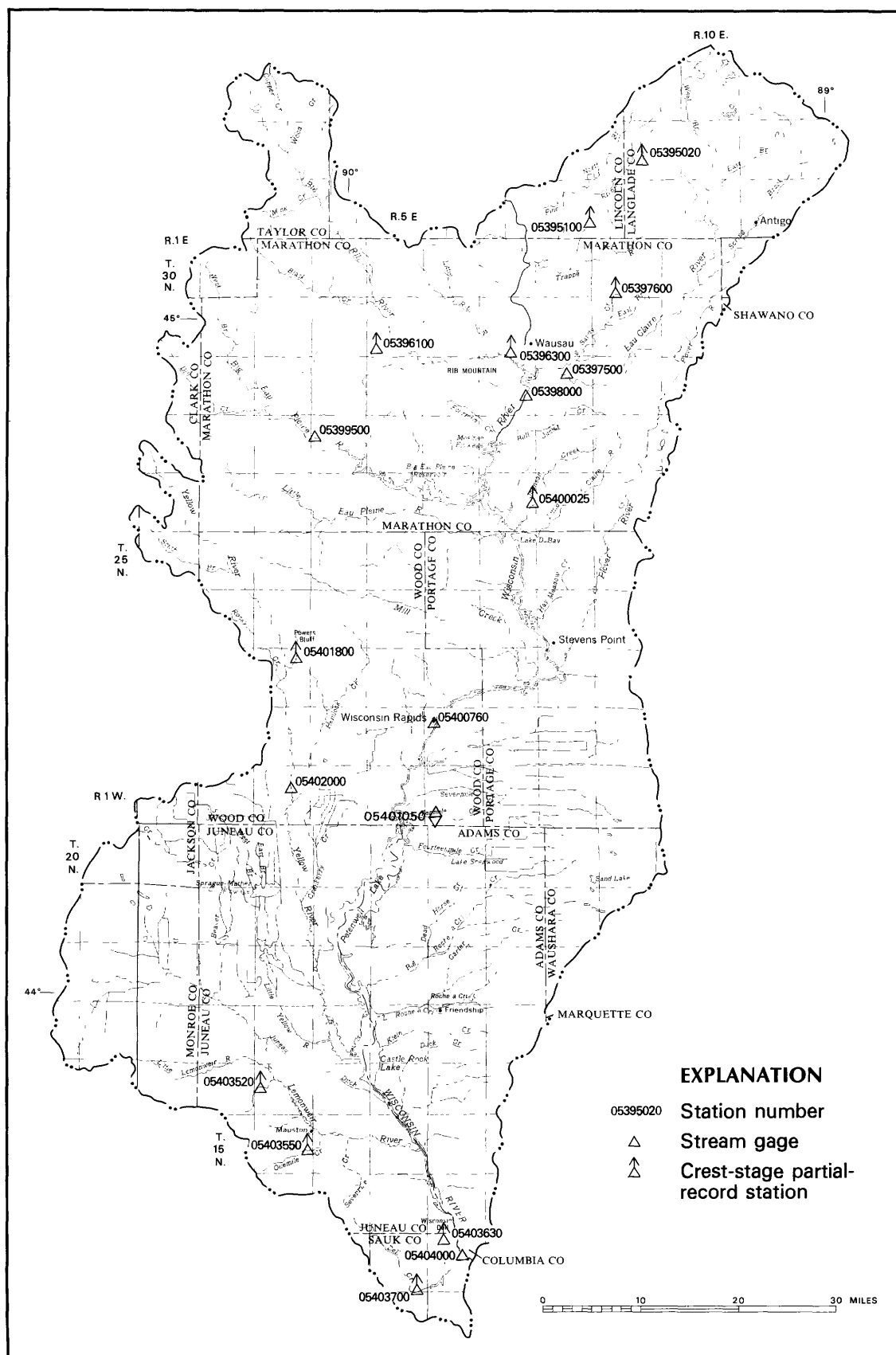
RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Dec. 27 to Mar. 24.)

3.4	520	6.0	3,640
4.0	1,040	8.0	7,640
5.0	2,120		

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	789	1110	2060	1900	1900	1900	4810	1750	850	748	747	629
2	933	1240	1640	1900	1900	1800	4960	1640	1040	674	724	773
3	861	1190	1650	1900	1900	1800	5480	1760	1030	642	667	1750
4	752	1690	1400	1700	1800	1900	5760	1520	1010	576	676	1130
5	934	1530	1720	1500	1800	1900	6570	1400	1070	582	690	1010
6	1080	1300	1540	1600	1800	1900	5870	1220	954	579	767	923
7	869	1210	1160	1800	1800	1800	5480	1540	957	628	898	966
8	742	1040	1510	1800	1800	2000	4970	1390	894	655	1050	858
9	720	924	1720	1800	1800	2200	4320	1520	682	965	894	852
10	870	1080	1690	1800	1800	2400	3820	1820	917	983	726	845
11	863	1100	1560	1700	1800	2500	2770	1790	958	744	686	705
12	797	1320	1680	1900	1800	2100	2730	1890	886	612	878	697
13	732	1250	1980	2000	1900	1800	2470	1730	777	625	836	703
14	762	1270	1790	1800	1900	1700	2480	1700	722	622	842	662
15	1000	904	1840	1800	1800	1800	2060	1420	611	698	811	630
16	1430	860	1920	1900	1800	2000	1910	1590	660	900	765	769
17	1500	1710	1800	1900	1900	2000	2060	1370	664	867	760	1120
18	1210	1990	1780	1800	1900	1900	1960	1390	633	831	750	985
19	1050	2310	1940	1700	2000	1900	1860	1370	804	695	700	1310
20	1220	1820	1980	1900	1900	1800	1710	1120	752	739	686	1520
21	1230	1270	1910	2100	1800	1700	1750	1350	890	781	699	1810
22	1540	1160	1650	2100	1800	1700	1730	1170	826	930	758	1260
23	1230	1430	1730	1900	1800	1500	1810	1330	659	903	990	1180
24	924	1490	2040	1900	1900	1800	1400	1330	677	680	803	835
25	841	1450	2040	1900	2000	4850	1750	1250	758	641	748	847
26	868	1330	2060	1800	1900	5260	1790	1160	635	594	689	920
27	1320	1190	2000	1900	1900	5050	2010	1320	622	708	687	1220
28	1360	1070	2000	2000	1700	3300	2250	1210	792	711	801	988
29	976	1630	1900	2100	1800	4510	2250	1210	746	649	761	892
30	1050	1890	2000	2100	---	4650	2040	1120	823	729	642	1130
31	999	---	2000	1900	---	4360	---	1170	---	768	624	---
TOTAL	31452	40758	55690	57800	53600	77780	92830	44550	24299	22459	23755	29919
MEAN	1015	1359	1796	1865	1848	2509	3094	1437	810	724	766	997
MAX	1540	2310	2060	2100	2000	5260	6570	1890	1070	983	1050	1810
MIN	720	860	1160	1500	1700	1500	1400	1120	611	576	624	629

CAL YR 1987 TOTAL 532532 MEAN 1459 MAX 2800 MIN 686
WTR YR 1988 TOTAL 554892 MEAN 1516 MAX 6570 MIN 576



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 tables below. Records good except for ice-affected period, which is fair.

AVERAGE DISCHARGE.--61 years, 252 ft³/s, 9.13 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. 29	1400	(a) *1,200	(a) *9.49				
(a) Ice jam.							
Minimum daily discharge, 34 ft ³ /s, July 8.							

RATING TABLES (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Nov. 21 to Apr. 1.)

Oct. 1 to Mar. 31				Apr. 1 to Sept. 30			
0.8	54	2.0	407	0.7	32	2.0	371
1.0	81	3.0	900	0.9	58	3.0	797
1.2	120	4.0	1,400	1.2	116	4.0	1,340
1.5	207			1.5	196		

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	64	109	220	100	96	110	1000	225	70	59	44	61
2	66	108	200	100	88	110	782	193	67	54	41	57
3	67	122	190	100	88	110	961	172	64	49	40	57
4	71	164	180	100	88	110	1030	156	62	44	40	56
5	71	178	180	94	84	120	1050	144	61	42	41	58
6	71	169	180	90	80	130	1020	136	59	38	44	62
7	72	147	180	86	78	150	915	128	56	36	43	60
8	86	137	190	88	80	190	792	125	55	34	47	57
9	74	132	220	92	82	270	613	198	53	35	52	54
10	72	128	240	86	82	340	494	264	53	40	75	51
11	71	128	240	90	82	400	424	245	51	46	70	50
12	70	117	230	94	82	360	371	207	50	50	69	52
13	69	108	210	96	82	320	322	188	47	46	66	52
14	69	101	200	90	84	290	290	176	46	47	71	50
15	68	100	180	94	86	260	262	160	48	43	75	48
16	70	104	170	98	88	240	239	144	46	51	74	51
17	91	173	160	100	92	220	218	131	46	162	66	59
18	137	367	150	98	98	210	200	121	44	228	61	70
19	168	429	140	96	96	200	187	114	46	146	61	83
20	139	351	140	96	94	200	172	106	47	104	57	103
21	122	330	150	92	86	200	163	87	52	87	54	150
22	115	350	150	88	92	200	155	97	52	77	56	149
23	116	320	140	88	94	220	162	93	53	79	74	130
24	117	290	130	88	86	300	190	88	53	83	97	113
25	119	240	120	88	90	660	233	83	48	73	96	102
26	123	210	110	86	100	1000	241	79	44	65	83	89
27	133	190	120	84	100	800	240	77	42	60	75	79
28	139	180	120	86	100	760	295	75	48	55	71	71
29	134	180	110	86	100	1200	304	80	61	50	70	69
30	122	200	110	94	---	1100	266	74	61	46	69	68
31	115	---	110	100	---	900	---	71	---	45	64	---
TOTAL	3021	5862	5170	2868	2578	11680	13591	4237	1585	2074	1946	2211
MEAN	97.5	195	167	92.5	88.9	377	453	137	52.8	66.9	62.8	73.7
MAX	168	429	240	100	100	1200	1050	264	70	228	97	150
MIN	64	100	110	84	78	110	155	71	42	34	40	48
CFSM	.26	.52	.44	.25	.24	1.00	1.21	.36	.14	.18	.17	.20
IN.	.30	.58	.51	.28	.26	1.16	1.35	.42	.16	.21	.19	.22

CAL YR 1987 TOTAL 51217 MEAN 140 MAX 459 MIN 57 CFSM .37 IN. 5.08
WTR YR 1988 TOTAL 56823 MEAN 155 MAX 1200 MIN 34 CFSM .41 IN. 5.64

05398000 WISCONSIN RIVER AT ROTHSCILD, WI

LOCATION.--Lat 44°53'09", long 89°38'05", in sec.26, T.28 N., R.7 E., Marathon County, Hydrologic Unit 07070002, on left bank at Rothschild, 0.5 mi downstream from Rothschild Dam, 1.7 mi north of bridge on U.S. Highway 51, 2.0 mi downstream from Eau Claire River, and 5.0 mi upstream from Black Creek.

DRAINAGE AREA.--4,020 mi².

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

REVISED RECORDS.--WDR WI-77-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,125.86 ft above National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1975, at datum 10.00 ft higher. Auxiliary water-stage recorder in Mosinee Pond 8 mi downstream. Prior to July 23, 1964, nonrecording auxiliary gage at same site and datum, read hourly.

REMARKS.--Estimated daily discharges: January 1, 2, and ice-affected periods, Jan. 3-20, 22, 23, 25-31, and Feb. 2-23, 25, 27, 28. Records good except for estimated daily discharges, which are fair. Flow regulated by 20 reservoirs and 12 powerplants upstream from station.

AVERAGE DISCHARGE.--44 years, 3,533 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 49,200 ft³/s, Apr. 12, 1965, Mar. 31, 1967, gage height, 18.46 ft, datum then in use; minimum daily, 575 ft³/s, June 16, 1988.

EXTREMES OUTSIDE THE PERIOD OF RECORD.--Flood of Sept. 1, 1941, reached stage of 22.3 ft, datum then in use, from tailwater data at Rothschild dam, discharge, 75,000 ft³/s from rating curve extended above 45,000 ft³/s.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 14,400 ft³/s, Mar. 26, gage height, 19.63 ft; minimum daily, 575 ft³/s, June 16.

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	853	1190	3320	2000	1860	1810	8700	3210	1230	993	930	887
2	1000	1450	2990	1900	2200	1950	8150	2900	997	849	969	992
3	924	1720	2480	2000	2100	1700	10000	2560	1050	865	748	1270
4	876	2040	1880	2100	2100	2210	10900	2380	1140	864	657	1580
5	838	2400	2170	1900	2000	1830	10600	2160	1250	814	903	1310
6	1210	1780	1990	1600	2100	2380	9790	1740	1520	775	815	1040
7	1050	1640	1990	1900	2000	1890	9500	1580	1060	807	936	1240
8	827	1590	1860	2000	2000	2280	7960	2060	958	785	1160	1050
9	924	1170	2260	1900	1900	4780	7100	2800	714	853	1130	1040
10	807	1190	2880	1900	1800	5000	5990	2740	817	1230	938	990
11	880	1400	2960	1800	1800	5650	5090	3470	954	831	809	957
12	1010	1360	2790	1900	1900	5200	4830	2870	1060	830	914	776
13	968	1680	2970	2100	1900	3950	4040	2860	1060	824	1120	913
14	890	1340	2960	2000	2000	2990	3950	2700	1150	821	1040	747
15	877	1270	2250	1900	1900	2810	3610	1780	726	804	1010	699
16	1360	1120	2660	2000	1800	2820	2840	2530	575	1030	995	906
17	1910	2120	2370	2100	1900	2940	2680	1730	628	1090	828	1380
18	1960	4230	2180	2000	2000	2610	2890	1890	721	1200	882	1140
19	1550	3730	2170	2000	2000	2680	2700	1840	871	949	865	1710
20	1370	3590	2480	2000	2000	2680	2400	1570	825	890	848	1980
21	1650	2380	2560	2140	2000	1740	2310	1120	962	1340	785	2550
22	1780	1610	2400	2400	1900	2140	2730	1150	971	1150	1080	1960
23	1700	2050	2190	2000	1900	2010	2240	1920	842	1140	1160	1520
24	1280	2590	2570	1820	2000	2160	2530	1450	702	1180	1020	1170
25	1040	2700	2570	2200	2200	7870	2640	1510	753	928	1020	1090
26	1160	2240	2180	2100	1920	13700	3180	1220	790	816	915	1080
27	1490	2000	1900	2000	2200	10200	2880	1380	779	754	896	1140
28	1810	1640	2770	2200	1800	8030	4070	1150	909	989	853	1380
29	1560	1880	2440	2300	1530	9280	4220	1260	883	966	955	1060
30	1130	3400	2220	2300	---	10000	4110	1320	830	710	912	1290
31	1270	---	2830	2000	---	9620	---	1440	---	857	784	---
TOTAL	37954	60500	76240	62460	56710	136910	154630	62290	27727	28934	28877	36847
MEAN	1224	2017	2459	2015	1956	4416	5154	2009	924	933	932	1228
MAX	1960	4230	3320	2400	2200	13700	10900	3470	1520	1340	1160	2550
MIN	807	1120	1860	1600	1530	1700	2240	1120	575	710	657	699

CAL YR 1987 TOTAL 709787 MEAN 1945 MAX 4830 MIN 725
WTR YR 1988 TOTAL 770079 MEAN 2104 MAX 13700 MIN 575

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: Apr. 30 to May 13, Sept. 8-14, and ice periods listed in rating table below. Records good except for estimated daily discharges, which are fair.

AVERAGE DISCHARGE.--62 years (1914-25, 1937-88), 176 ft³/s, 10.67 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. 25	Unknown	ice jam	*13.92	Mar. 26	----	(a) *1,600	ice jam

(a) Estimated, mean daily discharge.

Minimum discharge, 0.94 ft³/s, July 14, 15.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Rate of change of stage used as factor Nov. 29, Apr. 7, 27; shifting-control method used Sept. 23; stage-discharge relation affected by ice Dec. 5, and Dec. 10 to Mar. 27.)

2.1	1.1	2.6	17	4.0	175
2.2	2.6	2.8	30	5.0	375
2.3	5.0	3.0	48	6.0	670
2.4	8.0	3.5	104	7.0	1,050
				9.0	2,140

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	9.8	37	334	19	16	17	269	170	9.8	3.4	5.4	2.5
2	12	39	190	17	15	19	256	120	9.8	3.3	4.9	2.4
3	11	96	143	16	13	21	657	110	10	3.8	4.2	2.4
4	12	139	114	15	12	23	573	94	9.2	3.5	5.4	2.1
5	11	134	94	14	12	27	404	84	9.1	3.4	4.3	1.8
6	13	93	74	13	12	40	517	78	8.8	2.8	4.2	2.3
7	15	70	58	13	12	120	430	70	8.0	2.3	4.5	1.7
8	17	61	52	12	12	700	261	62	8.0	2.0	5.7	1.7
9	18	61	153	12	12	1100	187	240	5.8	1.8	5.9	1.6
10	15	64	310	13	12	1200	154	220	5.4	1.7	6.5	1.5
11	14	52	230	13	12	900	129	150	5.1	1.6	10	1.4
12	14	42	180	13	12	700	105	100	5.0	1.5	8.6	1.3
13	13	38	140	14	12	500	89	76	4.7	1.5	7.6	1.4
14	16	35	110	14	12	370	78	60	4.2	1.2	7.5	1.4
15	16	34	100	15	12	300	68	53	3.6	1.2	6.0	1.3
16	18	36	88	16	13	230	61	44	3.5	1.3	4.6	1.5
17	20	154	78	17	13	180	53	37	3.4	2.6	4.8	3.2
18	61	576	70	17	14	140	48	32	3.3	4.4	6.1	3.8
19	63	387	62	16	15	120	42	30	3.5	5.3	6.9	10
20	43	210	58	16	16	100	36	26	3.6	4.8	6.4	24
21	34	125	50	15	15	90	32	23	3.5	4.1	4.5	15
22	32	104	45	15	15	80	31	20	3.4	3.7	4.9	13
23	37	141	40	14	16	78	53	17	3.1	3.1	11	9.1
24	44	306	38	14	16	140	117	15	3.1	2.8	7.9	7.4
25	56	211	34	14	16	1500	138	13	2.8	3.9	6.2	5.5
26	57	150	30	13	16	1600	102	11	2.6	3.2	7.0	4.3
27	51	117	26	13	16	500	243	11	2.5	2.6	5.8	4.4
28	52	103	24	13	16	399	747	11	3.1	2.2	4.7	4.0
29	50	387	22	14	16	595	584	13	3.5	1.9	3.6	4.2
30	45	545	20	16	---	482	290	13	3.5	1.8	3.0	4.4
31	39	---	20	17	---	320	---	12	---	1.3	2.7	---
TOTAL	908.8	4547	2987	453	401	12591	6754	2015	154.9	84.0	180.8	140.6
MEAN	29.3	152	96.4	14.6	13.8	406	225	65.0	5.16	2.71	5.83	4.69
MAX	63	576	334	19	16	1600	747	240	10	5.3	11	24
MIN	9.8	34	20	12	12	17	31	11	2.5	1.2	2.7	1.3
CFSM	.13	.68	.43	.07	.06	1.81	1.01	.29	.02	.01	.03	.02
IN.	.15	.76	.50	.08	.07	2.09	1.12	.33	.03	.01	.03	.02

CAL YR 1987 TOTAL 25922.9 MEAN 71.0 MAX 1000 MIN 7.2 CFSM .32 IN. 4.31
WTR YR 1988 TOTAL 31217.1 MEAN 85.3 MAX 1600 MIN 1.2 CFSM .38 IN. 5.18

WISCONSIN RIVER BASIN

05400760 WISCONSIN RIVER AT WISCONSIN RAPIDS, WI

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.

DRAINAGE AREA.--5,420 mi².

PERIOD OF RECORD.--May 1914 to March 1950 (published as "near Nekoosa"), October 1957 to current year.

REVISED RECORDS.--WSP 1308: 1915(M).

GAGE.--Water-stage recorders on headwater and tailwater. Elevation of powerplant pond is 1,010 ft and datum of powerplant gages is 0.00 ft above 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 1987 to September 1988, were as follows:

Oct. 1-19	100	June 13-30	100	July 15	79	Sept. 2	75	Sept. 20-25	100
Oct. 20	34	July 1-13	100	July 16-28	100	Sept. 3-18	100	Sept. 26	27
June 12	1	July 14	83	July 29	27	Sept. 19	88		

COOPERATION.--Figures of daily discharges were provided by Consolidated Water Power Company and Wisconsin River Improvement Company. Records were reviewed by the Geological Survey.

AVERAGE DISCHARGE.--66 years (1915-49, 1958-88), 4,973 ft³/s.

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, 18,400 ft³/s, Mar. 26; minimum daily, 673 ft³/s, July 4.

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	754	1794	3262	2566	2556	2848	10257	5345	1700	1443	1008	952
2	674	1762	3179	2488	2593	2330	9205	3211	1993	1088	1031	1112
3	995	1797	3201	2472	2587	2536	10196	2949	2156	1263	1003	1197
4	1041	2189	3166	2498	2671	2548	12665	3193	2163	673	1049	2108
5	1011	2994	2878	2406	2812	2628	13324	3302	2255	725	983	2133
6	1027	2868	2896	2449	2768	2628	13333	3259	2223	1008	981	1566
7	1082	2377	2684	2216	2708	2641	12282	3196	1924	1054	1046	1142
8	1255	1973	2547	2022	2620	3188	10889	2659	1663	868	1126	1177
9	1213	1746	2599	2018	2759	4930	9993	2952	1356	813	1376	1155
10	1276	1445	2506	2052	2589	5521	8747	3763	1242	893	1189	1077
11	1188	1346	3167	2067	2686	7253	6851	3693	1013	1067	1113	961
12	1232	1336	3185	2099	2718	10407	5063	3524	1027	1100	1067	938
13	1185	1886	3009	2496	2709	8143	5069	3747	957	1100	1041	1005
14	1160	1888	3831	2550	2711	4491	4815	3851	1247	1016	1122	974
15	1195	1836	3946	2493	2720	4529	4247	3716	1329	1268	1143	981
16	1228	2021	3838	2521	2687	4791	3513	3539	1215	1315	1252	1072
17	2105	2910	3409	2384	2741	4282	3168	3494	915	1284	1334	962
18	2176	4936	2818	2255	2704	4005	3243	3342	704	1363	1329	1227
19	1884	4347	2766	2335	2786	3967	3192	3184	839	1363	1257	1674
20	1714	4209	2761	2435	2911	3878	2668	2360	813	1240	1361	2768
21	1986	3900	2766	2461	2965	3788	2486	2144	763	1284	1356	2709
22	2157	2608	2846	2492	3008	3712	2543	1664	785	1461	1428	3210
23	2107	2517	2868	2499	3027	3299	2519	1502	763	1431	1767	2571
24	2242	2685	2834	2465	3023	3434	2486	1411	864	1362	1774	2064
25	2046	3271	3012	2284	2987	6980	2545	1419	967	1426	2008	1224
26	2023	2991	2701	2339	2973	14339	2793	1437	1112	1240	1570	1487
27	1705	2773	2681	2336	2941	13197	4436	1456	1242	894	1015	1446
28	2017	2751	2686	2243	2888	11754	4836	1381	1224	870	943	1614
29	2199	2593	2795	2478	2741	11060	6372	1428	1403	939	912	1523
30	2152	3513	2724	2466	---	13014	6980	1426	1387	1008	830	1339
31	1613	---	2786	2535	---	10796	---	1440	---	940	937	---
TOTAL	47642	77262	92347	73420	80589	182917	190716	84987	39244	34799	37351	45368
MEAN	1537	2575	2979	2368	2779	5901	6357	2742	1308	1123	1205	1512
MAX	2240	4940	3950	2570	3030	14300	13300	5340	2250	1460	2010	3210
MIN	674	1340	2510	2020	2560	2330	2490	1380	704	673	830	938

CAL YR 1987 TOTAL 903669 MEAN 2476 MAX 7350 MIN 674
WTR YR 1988 TOTAL 986642 MEAN 2696 MAX 14300 MIN 673

WISCONSIN RIVER BASIN

05401050 · TENMILE CREEK NEAR NEKOOSA, WI

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.

DRAINAGE AREA.--73.3 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Occasional low-flow measurements, water years 1962-63. October 1963 to September 1979, October 1987 to September 1988.

REVISED RECORDS.--WDR WI-77-1: Drainage area.

GAGE.--Non-recording gage. Datum of gage is 967.39 ft above National Geodetic Vertical Datum of 1929. Prior to May 13, 1964, nonrecording gage, and May 13, 1964 to Sept. 30, 1979, recording 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 and June through September, which are fair. Approximately 40 mi of drainage ditches and 22 check dams are used to control the water table in the basin. Sprinkler irrigation from ground-water sources affects natural flow of creek.

AVERAGE DISCHARGE.--17 years (1964-79, 1988), 59.5 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 456 ft³/s, Mar. 31, 1979, gage height, 6.62 ft; minimum, 9.5 ft³/s, Dec. 16, 1964.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 104 ft³/s, Mar. 10, gage height, 4.75 ft; minimum daily, 17 ft³/s, Aug. 16, 17, 21, 29, 31, and Sept. 1, 2.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Shifting-control method used June 23 to Sept. 30; stage-discharge relation affected by ice Jan. 1-14 and Feb. 5-15.)

3.7	16	4.5	76
3.8	20	5.0	136
4.0	32		

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	33	37	57	38	35	32	86	76	50	25	21	17
2	33	37	57	43	34	32	86	73	51	25	21	17
3	32	38	57	42	37	33	93	71	50	24	19	18
4	32	38	55	40	35	35	101	67	49	24	19	19
5	32	37	51	38	39	35	99	67	48	24	19	19
6	32	37	53	37	38	37	97	66	46	23	18	19
7	32	38	57	36	38	41	92	65	46	22	18	20
8	32	39	55	35	37	56	89	66	45	22	20	21
9	32	39	57	34	37	76	87	69	44	23	19	21
10	31	39	57	34	37	89	85	70	44	25	19	20
11	31	38	59	33	36	94	84	67	43	26	19	20
12	32	40	58	32	36	93	82	65	40	25	19	21
13	32	39	58	32	36	85	81	64	39	24	20	22
14	32	39	57	33	35	81	78	63	38	24	20	23
15	32	39	57	35	35	81	76	63	38	25	18	24
16	33	39	57	34	33	79	75	61	36	25	17	23
17	34	45	51	34	32	78	74	60	34	25	17	24
18	33	48	49	34	32	76	73	59	32	24	21	25
19	33	51	53	35	32	75	71	59	32	23	20	27
20	36	50	55	35	32	73	70	59	31	23	18	29
21	34	44	50	34	31	71	69	58	32	23	17	33
22	34	51	56	34	32	70	68	57	32	23	20	42
23	33	55	55	34	31	71	70	56	32	23	21	37
24	34	52	56	35	31	73	71	54	34	23	19	32
25	33	52	54	35	31	84	70	54	33	24	18	30
26	34	52	44	33	31	88	69	58	32	23	18	29
27	34	52	46	33	30	86	73	55	27	23	18	29
28	34	52	52	34	31	86	76	54	29	23	18	29
29	34	54	51	33	32	90	78	53	31	22	17	30
30	37	56	51	33	---	92	77	51	27	22	18	29
31	35	---	50	35	---	88	---	50	---	23	17	---
TOTAL	1025	1327	1675	1087	986	2180	2400	1910	1145	733	583	749
MEAN	33.1	44.2	54.0	35.1	34.0	70.3	80.0	61.6	38.2	23.6	18.8	25.0
MAX	37	56	59	43	39	94	101	76	51	26	21	42
MIN	31	37	44	32	30	32	68	50	27	22	17	17

WTR YR 1988 TOTAL 15800 MEAN 43.2 MAX 101 MIN 17

WISCONSIN RIVER BASIN

05401050 TENMILE CREEK NEAR NEKOOSA, WI--CONTINUED
(NATIONAL STREAM-QUALITY ACCOUNTING NETWORK STATION)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1987 to September 1988.

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

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 (FTU) (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)	
OCT 1987	22...	1205	34	270	7.90	5.5	3.2	10.4	736	85	K7	>1000	140
DEC	02...	1300	57	317	8.00	2.5	4.1	11.8	735	90	K14	38	160
FEB 1988	24...	1215	32	267	7.40	2.0	3.1	12.4	740	92	--	--	140
MAY	10...	1220	69	335	8.00	13.5	4.1	9.4	734	94	520	115	170
JUN	08...	1650	45	286	8.30	16.0	7.9	8.6	758	88	270	380	150
AUG	24...	1725	20	208	8.00	16.0	3.3	8.7	755	89	160	260	110
DATE		HARD- NESS NONCARB WH WAT TOT FLD MG/L AS CACO3 (00902)	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 1987	22...	31	32	14	2.2	3	0.1	2.3	138	113	15	6.9	0.10
DEC	02...	42	38	17	2.4	3	0.1	1.3	141	116	22	7.0	0.20
FEB 1988	24...	30	33	14	3.0	4	0.1	9.0	130	106	15	13	0.20
MAY	10...	42	39	17	2.5	3	0.1	1.1	148	122	30	9.0	0.20
JUN	08...	29	36	15	2.4	3	0.1	0.90	147	120	18	6.3	0.30
AUG	24...	17	27	11	2.0	4	0.1	0.60	114	94	16	2.8	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- PHOROUS TOTAL (MG/L AS P) (00665)	PHOS- PHOROUS DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHOROUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)
OCT 1987	22...	12	159	158	0.22	14.5	1.90	0.040	0.050	0.50	0.020	0.030	0.020
DEC	02...	12	193	188	0.26	29.7	3.20	0.040	0.100	0.80	0.020	<0.010	<0.010
FEB 1988	24...	12	183	173	0.25	15.6	1.70	0.090	0.090	0.50	0.040	0.010	0.020
MAY	10...	9.1	192	184	0.26	35.8	2.50	0.040	0.050	0.80	0.020	<0.010	<0.010
JUN	08...	11	169	171	0.23	20.5	1.60	0.060	0.060	1.0	0.030	0.020	<0.010
AUG	24...	13	133	132	0.18	7.18	0.250	0.040	0.020	0.70	0.030	0.010	<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 1987 TO SEPTEMBER 1988

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 1987 22...	1205	34	<10	<1	16	<0.5	<1	1	<3	2	250
FEB 1988 24...	1215	32	120	<1	14	<0.5	<1	<1	<3	3	210
MAY 10...	1220	69	<10	<1	16	<0.5	<1	<1	<3	1	310
AUG 24...	1725	20	<10	1	18	<0.5	<1	<1	<3	1	720

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 1987 22...	<5	5	100	<0.1	<10	2	<1	36	<6	6
FEB 1988 24...	<5	8	110	<0.1	<10	2	<1	37	<6	21
MAY 10...	<5	8	45	<0.1	<10	7	<1	42	<6	24
AUG 24...	<5	<4	100	0.1	<10	<1	<1	34	<6	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)	SEDI- MENT, SUS- PENDEDED (MG/L) (80154)	SEDI- MENT, DIS- CHARGE, SUS- PENDEDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT 1987 22...	1205	34	270	5.5	29	2.6	27
DEC 02...	1300	57	317	2.5	20	3.1	48
FEB 1988 24...	1215	32	267	2.0	11	0.94	83
MAY 10...	1220	69	335	13.5	17	0.0	55
JUN 08...	1650	45	286	16.0	24	2.9	43
AUG 24...	1725	20	208	16.0	7	0.38	84

WISCONSIN RIVER BASIN

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: Ice-affected period of Dec. 5, 6, and Dec. 17 to Mar. 21. Records fair. There is a large recreation dam about 5.0 mi upstream.

AVERAGE DISCHARGE.--44 years, 158 ft³/s, 9.98 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. 11	----	(a) 1,300	ice jam	Mar. 26	1315	*2,680	11.15
				Mar. 26	1515	--	*11.24

(a) Estimated, daily mean discharge.

Minimum daily discharge, 2.8 ft³/s, Sept. 11.

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	38	45	196	16	17	17	468	350	11	4.7	3.7	3.6
2	32	45	201	15	15	18	323	221	14	4.4	3.2	3.8
3	38	44	167	14	14	19	308	146	15	4.0	3.1	3.9
4	26	45	137	14	13	21	486	105	14	3.8	3.3	4.0
5	24	49	110	13	13	25	495	81	13	3.5	3.6	4.1
6	19	51	82	13	13	30	427	64	13	3.5	3.4	4.0
7	14	56	64	13	12	50	376	53	11	3.6	3.2	3.5
8	12	59	56	13	12	160	335	48	11	3.7	4.1	3.3
9	11	61	57	13	12	700	274	57	11	4.7	4.4	3.3
10	14	58	103	13	12	1200	207	300	11	5.7	4.0	3.0
11	15	54	293	13	12	1300	162	267	11	5.3	3.9	2.8
12	15	53	262	13	12	900	133	150	9.6	4.7	4.0	3.0
13	15	50	251	13	11	680	110	116	6.8	4.7	4.3	3.7
14	14	48	190	13	11	500	93	83	7.1	4.8	4.3	3.9
15	15	46	150	13	11	330	78	63	7.6	5.5	4.3	4.2
16	16	47	117	15	11	220	68	50	7.3	5.7	4.1	4.6
17	19	56	100	16	12	160	60	41	7.4	6.1	3.8	5.8
18	20	72	82	15	14	140	54	34	7.0	6.0	4.0	11
19	18	115	66	15	17	120	47	30	6.8	5.6	4.0	14
20	16	139	56	14	19	100	42	26	6.5	5.6	3.3	16
21	14	116	48	13	17	96	40	24	6.6	5.9	3.1	15
22	16	89	40	13	16	88	36	21	6.5	5.7	3.3	17
23	15	79	34	12	15	85	40	19	6.1	4.0	5.8	26
24	15	82	29	12	15	99	46	16	5.5	4.2	5.2	28
25	18	93	26	12	15	422	66	15	5.1	4.3	4.7	18
26	20	104	24	12	15	2300	99	13	4.6	4.2	4.3	11
27	25	99	22	12	15	1480	126	13	4.6	4.6	4.4	6.4
28	32	90	20	12	16	819	363	13	5.0	4.5	4.7	7.8
29	35	91	19	12	16	729	680	12	6.2	4.2	4.4	13
30	39	136	18	13	---	840	554	11	5.4	4.0	4.5	15
31	44	---	17	18	---	676	---	10	---	3.8	3.8	---
TOTAL	664	2172	3037	418	403	14324	6596	2452	256.7	145.0	124.2	262.7
MEAN	21.4	72.4	98.0	13.5	13.9	462	220	79.1	8.56	4.68	4.01	8.76
MAX	44	139	293	18	19	2300	680	350	15	6.1	5.8	28
MIN	11	44	17	12	11	17	36	10	4.6	3.5	3.1	2.8
CFSM	.10	.34	.46	.06	.06	2.15	1.02	.37	.04	.02	.02	.04
IN.	.11	.38	.53	.07	.07	2.48	1.14	.42	.04	.03	.02	.05

CAL YR 1987 TOTAL 28537.1 MEAN 78.2 MAX 1040 MIN 9.1 CFSM .36 IN. 4.94
WTR YR 1988 TOTAL 30854.6 MEAN 84.3 MAX 2300 MIN 2.8 CFSM .39 IN. 5.34

WISCONSIN RIVER BASIN

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: July 4-14, Aug. 9-18, and ice-affected period, Dec. 31 to Mar. 2. Records good, except those for ice-affected period and June 29 to Aug. 19, which are 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.--54 years, 6,823 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, 13,800 ft³/s, Apr. 10, gage height, 8.39 ft; minimum daily, 1,100 ft³/s Aug. 13.

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	1920	2410	5940	3400	4700	4600	7330	6390	2070	1340	1560	1390
2	2120	3230	5600	3700	4400	4500	7210	6510	2340	1600	1320	1330
3	1970	3400	5490	4700	4900	4520	7170	6140	2580	1690	1240	1750
4	2120	3430	5550	4200	4900	4500	6980	5130	2460	1600	1230	2010
5	2000	3900	5350	3700	5000	4350	6980	5720	2470	1400	1630	2060
6	1750	4110	4560	4400	5000	4850	7190	6050	2440	1300	1240	2020
7	1960	3750	4740	4200	5000	5220	7000	6040	2320	1300	1170	2100
8	1870	3230	4950	3900	5000	5450	7130	6050	2150	1400	1310	1570
9	1700	2980	5070	3700	5000	6020	9990	5940	2250	1400	1500	1690
10	1800	2990	4990	3700	5000	7190	13100	5440	2220	1600	1200	1900
11	1860	2610	5470	3700	5000	8070	13200	5980	2110	1500	1300	1820
12	1770	2350	6160	3800	4900	9840	9320	6000	2020	1300	1200	1830
13	1860	2650	4930	3900	4900	11100	8250	5840	2010	1200	1100	1570
14	1670	3200	5100	4300	5200	9090	8020	5680	1550	1200	1200	1400
15	2350	3330	5560	4500	5600	7960	7620	5210	1820	1310	1300	1450
16	2540	3460	5950	4600	5200	8070	7240	5250	1540	1740	1200	1310
17	2860	3740	6050	4800	5400	8050	6840	5180	1410	2140	1300	1340
18	4010	5070	5010	4800	5600	7990	6490	5240	1440	2330	1600	1620
19	4050	6400	5100	4700	5000	7850	6460	5180	1550	2310	2040	2400
20	4050	5640	4690	4900	4600	7860	6010	4550	1310	2110	2060	2340
21	4040	5440	5620	4900	4200	7600	4860	4400	1400	2160	2070	3960
22	3360	4900	5400	4800	5400	7450	5010	4030	1600	2200	2060	4880
23	3380	4080	5970	4900	4200	7510	4880	3610	1320	2230	2430	6360
24	3380	4410	6180	4900	4400	7260	4290	3400	1370	2180	2440	6480
25	3130	4620	6280	4800	4400	7390	4490	3090	1420	2400	2480	3700
26	3000	4760	6130	3700	4900	7610	4490	2690	1360	2190	2180	2650
27	2580	4490	6140	4500	4500	8330	4980	2760	1320	1880	2150	2510
28	3020	4680	6000	4800	4600	8050	6260	2730	1570	1540	1950	2440
29	3350	5100	5400	4800	4600	7770	5890	2590	1820	1450	1820	2460
30	3290	5860	4910	4900	---	7660	6280	2590	1540	1570	1760	2360
31	3080	---	4400	4800	---	7500	---	2580	---	1520	1620	---
TOTAL	81840	120220	168690	135400	141500	221210	210960	147990	54780	53090	50660	72700
MEAN	2640	4007	5442	4368	4879	7136	7032	4774	1826	1713	1634	2423
MAX	4050	6400	6280	4900	5600	11100	13200	6510	2580	2400	2480	6480
MIN	1670	2350	4400	3400	4200	4350	4290	2580	1310	1200	1100	1310
CAL YR	1987	TOTAL 1539110		MEAN 4217	MAX 9140	MIN 1670						
WTR YR	1988	TOTAL 1459040		MEAN 3986	MAX 13200	MIN 1100						

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.

EXTREMES FOR CURRENT YEAR.--Maximum gage height observed, 7.42 ft, Nov. 29; minimum observed, 7.00 ft, June 18 and 26.

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	GAGE HEIGHT	DATE	GAGE HEIGHT	DATE	GAGE HEIGHT	DATE	GAGE HEIGHT	DATE	GAGE HEIGHT
Oct. 10	7.12	Nov. 15	7.22	Apr. 16	7.24	June 5	7.08	July 30	7.06
11	7.16	22	7.28	May 7	7.20	11	7.06	Aug. 14	7.10
18	7.24	29	7.42	16	7.20	18	7.00	28	7.12
24	7.22	Dec. 5	7.30	22	7.06	26	7.00	Sept. 5	7.06
Nov. 3	7.30	13	7.30	30	7.12	July 8	7.06	11	7.06
						18	7.16	18	7.20

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 1987 TO SEPTEMBER 1988

DATE	SECCHI DEPTH	DATE	SECCHI DEPTH	DATE	SECCHI DEPTH	DATE	SECCHI DEPTH	DATE	SECCHI DEPTH
Oct. 10	0.9	Nov. 15	1.2	Apr. 16	1.2	June 5	1.5	July 30	0.8
11	1.1	22	1.2	May 7	2.4	11	0.9	Aug. 14	0.8
18	1.5	29	1.8	15	3.4	18	0.9	28	0.9
24	1.5	Dec. 5	3.7	22	3.7	26	0.9	Sept. 5	0.9
Nov. 3	1.5	13	3.7	30	2.7	July 8	0.9	11	0.9
						18	0.8	18	0.8

WISCONSIN RIVER BASIN

05404500 DEVILS LAKE NEAR BARABOO, WI

LAKE-STAGE RECORDS

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.

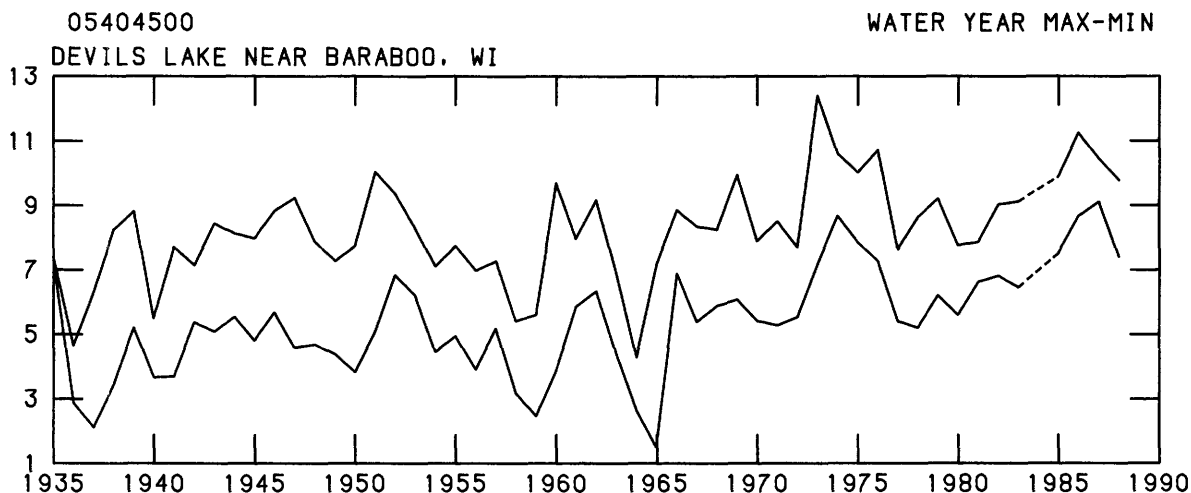
EXTREMES FOR PERIOD OF RECORD.--Maximum gage height observed, 12.40 ft, May 31, June 1, 1973; minimum observed, 1.49 ft Feb. 8, 1965.

EXTREMES FOR CURRENT YEAR.--Maximum gage height observed, 9.79 ft, Apr. 28; minimum observed, 7.35 ft, July 11.

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	GAGE HEIGHT	DATE	GAGE HEIGHT	DATE	GAGE HEIGHT	DATE	GAGE HEIGHT	DATE	GAGE HEIGHT
Oct. 3	8.78	Nov. 19	8.47	Apr. 19	9.73	June 15	8.90	Aug. 1	8.12
9	8.78	Dec. 2	8.57	28	9.79	20	8.73	2	8.17
14	8.70	8	8.60	May 6	9.76	July 1	8.51	23	8.05
Nov. 6	8.48	21	7.80	16	9.69	11	7.35	Sept. 21	7.53
12	8.42	Apr. 4	9.76	24	9.52	22	8.35		

STAGE, IN FEET ABOVE ARBITRARY DATUM



WATER-QUALITY RECORDS

LOCATION.--43°25'00", long 89°44'00", in NW 1/4 sec.24, T.11 N., R.6 E., Sauk County, Hydrologic Unit 07070004, near center of lake, and 3.6 mi south of Baraboo.

PERIOD OF RECORD.--July 1982 to current year; July 1982 to September 1984 data at Devils Lake State Park office files.

REMARKS.--Secchi disc readings made by Dale Soltis through November 1987; Paul Garrison thereafter.

SECCHI DISC TRANSPARENCY (IN METERS) WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	SECCHI DEPTH	DATE	SECCHI DEPTH	DATE	SECCHI DEPTH	DATE	SECCHI DEPTH	DATE	SECCHI DEPTH
Oct. 6	3.0	Nov. 11	5.8	June 15	7.6	Aug. 4	8.8	Sept. 15	2.1
14	4.0	25	5.1	23	7.5	11	6.7	24	2.1
22	5.2	May 26	7.4	July 7	7.2	18	7.0	29	2.2
28	5.8	June 8	8.1	21	8.0	Sept. 1	2.9		

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: June 21 to July 13 and ice periods listed in rating tables below. Records good except those for estimated daily discharges, which are fair. Apparent occasional regulation at low flow by dams upstream.

AVERAGE DISCHARGE.--53 years (1915-21, 1943-88), 380 ft³/s, 8.47 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, 1,220 ft³/s, Mar. 9, gage height, 11.20 ft; minimum daily discharge, 121 ft³/s, June 7 and July 31.

RATING TABLES (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Dec. 18-21, Dec. 29 to Feb. 16, and Feb. 21, 25.)

Oct. 1 to Mar. 16

Mar. 17 to Sept. 30

6.9	212	9.0	697	6.5	109	9.0	682
7.0	235	11.0	1,170	7.0	205	11.0	1,160

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	237	313	726	310	800	458	690	424	198	250	140	148
2	236	327	695	300	900	627	574	338	192	180	133	150
3	231	366	589	290	840	715	741	295	164	180	123	143
4	233	374	451	270	800	715	737	275	179	180	154	138
5	235	356	385	240	780	660	664	258	204	180	240	140
6	237	325	356	220	740	585	669	244	195	170	191	150
7	240	304	336	200	660	551	599	238	121	170	181	162
8	245	293	347	190	540	728	500	238	141	170	178	166
9	249	283	433	180	500	1070	435	307	158	170	189	162
10	249	290	534	170	450	1140	384	358	165	170	193	145
11	246	296	559	170	400	1090	353	409	142	230	183	131
12	241	293	551	170	370	1090	332	431	164	240	181	137
13	241	283	497	170	350	955	321	389	148	180	157	142
14	244	276	435	170	340	746	306	334	149	177	169	133
15	246	275	399	180	330	598	293	308	157	156	153	136
16	250	280	364	180	320	491	282	281	144	203	156	138
17	277	381	263	190	315	412	267	265	157	220	145	147
18	290	530	260	190	304	387	249	258	146	225	183	157
19	312	604	280	190	290	374	245	244	139	194	185	205
20	311	567	330	190	280	359	242	236	154	179	212	257
21	301	461	380	190	280	340	239	227	150	171	205	294
22	286	367	398	190	270	326	239	221	140	168	178	423
23	279	332	411	190	285	325	261	214	130	172	187	511
24	282	320	403	190	273	343	290	210	150	177	185	600
25	285	331	414	190	270	479	318	194	150	196	209	609
26	291	337	410	180	268	674	310	190	140	162	221	563
27	303	341	359	170	279	720	344	192	160	165	206	399
28	303	388	316	180	295	737	446	185	170	159	166	262
29	300	573	340	190	348	987	525	193	170	155	161	215
30	297	712	330	210	---	988	512	190	270	146	160	202
31	291	---	320	600	---	823	---	185	---	121	167	---
TOTAL	8268	11178	12871	6650	12877	20493	12367	8331	4847	5616	5491	7165
MEAN	267	373	415	215	444	661	412	269	162	181	177	239
MAX	312	712	726	600	900	1140	741	431	270	250	240	609
MIN	231	275	260	170	268	325	239	185	121	121	123	131
CFSM	.44	.61	.68	.35	.73	1.09	.68	.44	.27	.30	.29	.39
IN.	.51	.68	.79	.41	.79	1.25	.76	.51	.30	.34	.34	.44

CAL YR 1987 TOTAL 133243 MEAN 365 MAX 1410 MIN 194 CFSM .60 IN. 8.14
WTR YR 1988 TOTAL 116154 MEAN 317 MAX 1140 MIN 121 CFSM .52 IN. 7.10

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.

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 period listed in rating table below. Records good, except those for May to July, which are fair.

AVERAGE DISCHARGE.--34 years, 33.6 ft³/s, 10.66 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)
Jan. 31	1515	*140	2.63	June 29	0615	(a)	*2.79

(a) Backwater from weeds.

Minimum daily discharge, 24 ft³/s, Sept. 14-16 and 18.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second.
(Shifting-control method used Apr. 16 to Aug. 7; stage-discharge relation
affected by ice Jan. 4-10.)

1.6	17	2.0	63
1.7	25	2.6	139

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	31	41	54	40	91	51	46	31	29	32	29	25
2	30	37	52	40	68	51	48	30	29	33	29	26
3	29	37	49	39	60	45	65	30	35	31	32	27
4	29	35	44	38	55	42	60	30	34	30	31	26
5	30	34	42	36	51	41	53	30	29	29	31	26
6	31	38	40	34	49	43	53	30	29	29	28	26
7	31	39	42	34	47	46	48	30	30	31	27	26
8	30	44	45	34	45	54	45	33	29	31	33	26
9	30	41	73	34	44	50	43	38	28	30	41	26
10	32	38	59	34	44	45	43	37	28	35	36	25
11	38	37	55	34	43	44	42	38	29	31	32	30
12	37	37	51	34	42	44	41	38	28	30	30	27
13	34	36	48	34	41	42	41	33	27	34	28	26
14	33	36	46	33	41	41	41	32	27	29	29	24
15	33	36	46	34	41	40	38	31	38	28	32	24
16	35	37	46	35	41	39	38	31	37	47	27	24
17	39	67	43	37	40	39	37	31	30	35	25	26
18	34	54	41	39	39	39	36	29	30	31	27	24
19	34	45	43	46	40	38	35	29	28	31	27	29
20	33	40	55	56	40	38	35	37	28	31	30	30
21	33	37	49	50	38	37	34	35	28	33	28	26
22	33	35	48	48	39	37	34	32	32	31	28	41
23	33	36	46	45	38	38	42	31	29	30	45	45
24	36	36	48	43	37	41	38	30	29	30	30	32
25	36	37	51	43	37	57	35	30	28	31	28	28
26	37	36	49	40	40	49	35	30	27	30	27	27
27	38	36	46	39	44	45	43	28	39	31	25	27
28	35	57	45	38	47	51	40	28	37	30	25	27
29	34	68	45	38	51	67	35	28	44	30	25	28
30	34	57	44	66	---	56	33	29	33	30	25	27
31	33	---	43	129	---	49	---	29	---	29	25	---
TOTAL	1035	1244	1488	1324	1333	1399	1257	978	928	973	915	831
MEAN	33.4	41.5	48.0	42.7	46.0	45.1	41.9	31.5	30.9	31.4	29.5	27.7
MAX	39	68	73	129	91	67	65	38	44	47	45	45
MIN	29	34	40	33	37	37	33	28	27	28	25	24
CFSM	.73	.91	1.05	.94	1.01	.99	.92	.69	.68	.69	.65	.61
IN.	.84	1.01	1.21	1.08	1.09	1.14	1.03	.80	.76	.79	.75	.68

CAL YR 1987 TOTAL 14267 MEAN 39.1 MAX 97 MIN 24 CFSM .86 IN. 11.64
WTR YR 1988 TOTAL 13705 MEAN 37.4 MAX 129 MIN 24 CFSM .82 IN. 11.18

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: Apr. 8-19 and ice period listed in rating table 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.--75 years (1914-88), 8,714 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, gage height, 0.04 ft.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 13,200 ft³/s, Mar. 14, gage height, 3.51 ft; maximum gage height, 4.14 ft (backwater from ice); minimum discharge, 1,240 ft³/s July 4, gage height, 0.04 ft.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Jan. 1 to Mar. 9.)

0.1	1,420	2.0	7,260
1.0	4,120	4.0	15,300

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	3610	5440	8220	7600	8400	6600	11100	8350	4120	3300	2170	2900
2	2610	5160	8210	6000	8200	6800	10700	8880	4000	2720	2020	2250
3	3270	4640	8680	4500	8000	7200	10400	8880	4330	1460	1690	1540
4	3310	4820	8320	5000	7600	7600	11200	8810	3770	1660	1900	1660
5	2960	5590	7720	6800	8400	7600	10900	8280	3590	2530	2560	2430
6	3280	5580	7630	6400	8400	7400	10300	7340	3770	2710	2280	3430
7	3700	5700	7150	5600	8400	7400	10700	7770	4070	2470	3220	2220
8	3310	5840	6810	6200	8600	9200	10000	8080	4130	2280	2590	2790
9	2530	5820	7120	6400	9600	9000	11000	8270	4270	1900	2390	2920
10	2610	5230	7550	5800	9000	10400	10000	8360	3710	1800	2260	2670
11	3290	4900	7690	5400	8600	10200	12000	8550	3240	2170	2310	2150
12	2590	4720	7610	5200	8600	11000	13000	7690	3010	2490	2170	2250
13	3230	4310	7980	5800	9200	12500	13000	7740	3150	2300	1990	2440
14	3290	4030	8620	5800	9200	13000	12000	8730	3320	2200	2000	2350
15	2810	4290	7650	5600	9000	13100	11000	8110	3470	1810	1820	2230
16	3420	5030	7810	6000	8600	11300	11000	7380	3030	2280	2000	1830
17	3700	5800	7750	7200	8800	10400	10000	7280	2680	2700	1860	1650
18	4220	6540	7000	6600	7400	10500	10000	7210	2630	2900	1760	1650
19	4890	6460	6720	7000	7200	10100	9200	7250	2580	3060	1900	1850
20	5510	7020	6800	7400	7800	10200	8830	7250	2300	4520	2430	2720
21	5710	8800	7650	7600	7200	10100	8890	7070	2220	4100	2480	3540
22	5470	7830	7210	7200	6600	9960	8330	6750	2520	3850	2710	4480
23	5490	7190	7690	7200	6200	9860	7690	6260	2230	3010	3770	6500
24	5300	6700	8360	7000	7400	9470	7490	6000	2460	3220	3890	8080
25	5160	6930	8690	7200	6800	10400	7200	5170	2460	3670	3760	8140
26	5140	6700	8970	7200	6000	10100	6270	4980	2290	3980	3420	8230
27	4940	6530	8040	7200	6000	10400	7870	4380	2340	3430	3380	6150
28	4540	6870	7230	7400	6200	11000	7490	4590	1770	3200	3640	4720
29	4420	7560	7660	6800	6400	12100	8570	4660	1840	3160	3190	4630
30	4710	7840	8730	7000	---	11800	8270	4620	3430	2580	2730	3870
31	5070	---	8190	7400	---	11500	---	4250	---	1920	3290	---
TOTAL	124090	179870	241460	201500	227800	308190	294400	218940	92730	85380	79580	104270
MEAN	4003	5996	7789	6500	7855	9942	9813	7063	3091	2754	2567	3476
MAX	5710	8800	8970	7600	9600	13100	13000	8880	4330	4520	3890	8230
MIN	2530	4030	6720	4500	6000	6600	6270	4250	1770	1460	1690	1540
CAL YR 1987	TOTAL 2282790		MEAN 6254	MAX 11200	MIN 2530							
WTR YR 1988	TOTAL 2158210		MEAN 5897	MAX 13100	MIN 1460							

WISCONSIN RIVER BASIN

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 begin in October 1974.

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (000061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (000095)	PH (STAND-ARD) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TUR-BID-ITY (FTU) (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)
OCT 1987										
21...	0900	5740	310	8.50	7.0	3.4	11.2	753	93	--
DEC										
10...	1015	7310	300	8.30	2.5	4.5	12.8	743	96	480
MAR 1988										
10...	0930	10800	310	7.90	2.5	4.3	12.1	741	91	--
APR										
19...	1045	9200	255	8.50	10.0	5.4	11.7	748	106	K1
JUN										
21...	1045	2190	320	8.40	27.0	3.8	8.0	744	103	93
AUG										
30...	1130	2650	280	8.60	20.0	2.0	10.6	747	119	180
DATE		STREP-TOCOCCEI, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	HARD-NESS NONCARB WH WAT TOT FLD MG/L AS CACO3 (00902)	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)	
OCT 1987										
21...		34	140	15	31	15	9.2	12	0.3	2.1
DEC										
10...		810	140	24	31	14	11	15	0.4	2.5
MAR 1988										
10...		170	130	25	29	13	11	16	0.4	2.5
APR										
19...		K3	99	14	23	10	9.7	17	0.4	2.7
JUN										
21...		36	150	13	32	16	6.7	9	0.2	2.1
AUG										
30...		95	150	23	32	17	8.1	10	0.3	3.2
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 1987										
21...		146	6	121	13	13	0.10	1.3	169	160
DEC										
10...		131	1	110	21	20	0.20	4.5	195	174
MAR 1988										
10...		143	--	117	23	15	0.20	10	174	169
APR										
19...		128	3	110	19	13	0.20	5.5	149	137
JUN										
21...		165	6	144	17	11	0.20	6.3	168	173
AUG										
30...		131	12	128	17	11	0.10	1.9	164	167
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-PHOROUS TOTAL (MG/L AS P) (00665)	PHOS-PHOROUS DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHOROUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)
OCT 1987										
21...		0.23	2620	0.220	0.020	0.020	0.90	0.040	<0.010	<0.010
DEC										
10...		0.27	3850	0.780	0.090	0.090	0.70	0.060	0.010	0.010
MAR 1988										
10...		0.24	5070	1.00	0.160	0.160	0.90	0.080	0.050	0.030
APR										
19...		0.20	3700	0.550	0.010	0.040	--	--	0.100	0.020
JUN										
21...		0.23	993	0.450	0.040	<0.010	0.80	0.040	0.030	0.010
AUG										
30...		0.22	1170	0.140	<0.010	0.010	1.1	0.040	0.010	<0.010

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 1987 TO SEPTEMBER 1988

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 1987 21...	0900	5740	<10	<1	23	<0.5	<1	<1	<3	<1	14
MAR 1988 10...	0930	10800	20	<1	26	<0.5	<1	<1	<3	2	290
APR 19...	1045	9200	10	<1	17	<0.5	<1	<1	<3	2	220
AUG 30...	1130	2650	10	<1	22	<0.5	<1	<1	<3	2	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)
OCT 1987 21...	5	<4	6	<0.1	<10	<1	<1	48	<6	13
MAR 1988 10...	<5	<4	23	<0.1	<10	<1	<1	44	<6	11
APR 19...	<5	<4	6	<0.1	<10	2	<1	38	<6	4
AUG 30...	<5	4	3	<0.1	<10	2	<1	51	<6	11

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)
OCT 1987 21...	0900	5740	310	7.0	19	294	46
DEC 10...	1015	7310	300	2.5	25	493	43
MAR 1988 10...	0930	10800	310	2.5	34	991	53
APR 19...	1045	9200	255	10.0	21	522	84
JUN 21...	1045	2190	320	27.0	26	154	83
AUG 30...	1130	2650	280	20.0	19	136	94

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: Ice periods listed in rating table below. Records good except those for ice-affected periods, which are poor. Gage-height telemeter at station.

AVERAGE DISCHARGE.--50 years, 178 ft³/s, 9.09 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)
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Mar. 8	0945	(a) 940	(a) *7.26				
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(a) Backwater from ice.

Minimum daily discharge, 73 ft³/s, Aug. 3.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Dec. 16-21, and Dec. 27 to Mar. 14.)

2.0	66	4.0	359
3.0	188	6.0	813

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	129	168	208	130	260	330	200	150	103	102	79	88
2	140	178	182	130	230	350	194	144	103	99	75	87
3	138	153	175	130	200	300	208	140	103	99	73	86
4	129	153	168	130	180	280	205	136	104	99	76	90
5	136	141	155	130	160	270	193	138	102	96	89	94
6	133	136	162	130	150	320	189	133	101	94	85	92
7	126	133	159	120	140	540	183	132	101	93	79	91
8	147	143	162	130	130	800	175	139	100	92	100	89
9	131	155	189	130	130	520	169	180	99	94	105	87
10	132	136	196	130	130	300	165	174	100	118	93	86
11	126	138	184	130	130	280	165	152	99	117	87	86
12	134	135	185	140	130	260	160	141	98	101	85	86
13	132	143	164	140	130	230	157	136	97	95	81	85
14	136	140	161	140	130	200	155	132	96	94	81	84
15	133	133	151	140	130	192	150	131	93	89	83	84
16	137	142	150	140	130	182	148	128	94	99	82	84
17	158	224	150	140	140	178	148	128	95	102	78	90
18	146	236	140	150	140	173	146	125	96	93	83	109
19	144	171	150	150	140	169	143	123	96	88	120	158
20	132	158	170	150	130	167	142	122	104	88	94	279
21	138	141	190	150	130	161	142	121	97	109	88	149
22	137	156	181	150	130	160	140	118	94	102	90	211
23	139	154	165	140	130	176	148	117	90	95	146	483
24	138	156	162	140	140	191	156	113	92	93	119	169
25	134	149	158	140	140	516	147	110	93	101	99	127
26	141	152	131	130	150	288	143	111	87	94	94	115
27	139	146	150	130	170	219	190	111	90	91	92	107
28	140	182	150	130	180	234	219	111	91	88	99	101
29	138	335	150	130	220	338	170	108	126	84	95	101
30	136	251	140	170	---	246	156	105	123	83	91	104
31	132	---	140	240	---	213	---	104	---	81	90	---
TOTAL	4231	4938	5078	4360	4430	8783	5006	4013	2967	2973	2831	3702
MEAN	136	165	164	141	153	283	167	129	98.9	95.9	91.3	123
MAX	158	335	208	240	260	800	219	180	126	118	146	483
MIN	126	133	131	120	130	160	140	104	87	81	73	84
CFSM	.51	.62	.62	.53	.57	1.07	.63	.49	.37	.36	.34	.46
IN.	.59	.69	.71	.61	.62	1.23	.70	.56	.41	.42	.40	.52

CAL YR 1987	TOTAL 61422	MEAN 168	MAX 864	MIN 92	CFSM .63	IN. 8.59
WTR YR 1988	TOTAL 53312	MEAN 146	MAX 800	MIN 73	CFSM .55	IN. 7.46

WISCONSIN RIVER BASIN

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. 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 periods listed in rating table below. Records good except for ice-affected periods, which are fair. Gage-height telemeter at station.

AVERAGE DISCHARGE.--55 years, 485 ft³/s, 9.59 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)
Mar. 10	1100	*1,160	*10.14				

Minimum discharge, 243 ft³/s, Aug. 4, gage height, 5.32 ft.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Shifting-control method used Oct. 1 to Dec. 16 and Dec. 22-27; stage-discharge relation affected by ice Dec. 17-21 and Dec. 28 to Mar. 7.)

5.3	240	9.0	886
6.0	352	10.0	1,120
7.0	512	11.0	1,400
8.0	688		

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	366	390	594	410	420	500	624	473	344	331	255	265
2	380	409	524	410	460	560	589	455	341	311	251	262
3	365	439	487	410	450	580	577	441	339	295	248	260
4	374	428	462	400	430	540	585	430	333	291	253	261
5	380	406	447	390	390	500	584	424	331	288	268	265
6	372	395	432	380	370	480	558	419	329	284	270	269
7	378	385	428	370	350	540	537	412	326	279	270	269
8	375	391	434	370	350	756	527	421	323	275	303	265
9	372	392	447	360	340	1030	509	514	319	272	320	262
10	379	393	464	350	340	1150	497	545	316	297	314	256
11	370	394	486	350	340	907	491	517	315	332	296	253
12	370	382	483	350	340	747	486	482	315	339	278	253
13	369	383	467	350	340	712	478	450	313	317	267	250
14	377	382	452	350	340	666	471	431	310	304	264	249
15	378	384	436	360	340	600	464	420	306	297	264	246
16	384	387	432	370	340	556	456	412	301	294	266	246
17	395	429	380	380	350	536	451	407	298	295	261	250
18	407	486	330	390	350	525	447	402	302	300	254	260
19	408	529	400	390	350	517	442	397	302	291	267	300
20	397	480	430	390	340	506	440	392	306	280	310	414
21	389	432	440	370	340	493	439	388	308	279	303	494
22	381	418	439	370	340	476	439	383	307	288	275	504
23	385	406	445	360	340	482	447	379	297	300	305	515
24	386	416	442	360	340	499	466	372	292	285	337	646
25	386	413	433	360	340	621	469	364	292	287	347	594
26	386	411	427	360	350	837	459	360	289	311	300	403
27	386	403	354	350	370	823	474	359	283	291	279	359
28	390	421	470	340	410	658	506	359	279	276	279	337
29	387	481	440	340	450	673	548	358	289	269	280	327
30	386	588	430	360	---	762	517	355	300	264	279	325
31	383	---	420	390	---	709	---	349	---	259	271	---
TOTAL	11841	12653	13755	11490	10610	19941	14977	12870	9305	9081	8734	9859
MEAN	382	422	444	371	366	643	499	415	310	293	282	329
MAX	408	588	594	410	460	1150	624	545	344	339	347	646
MIN	365	382	330	340	340	476	439	349	279	259	248	246
CFSM	.56	.61	.65	.54	.53	.94	.73	.60	.45	.43	.41	.48
IN.	.64	.69	.74	.62	.57	1.08	.81	.70	.50	.49	.47	.53
CAL YR 1987	TOTAL 170425	MEAN 467	MAX 1230	MIN 330	CFSM .68	IN. 9.23						
WTR YR 1988	TOTAL 145116	MEAN 396	MAX 1150	MIN 246	CFSM .58	IN. 7.86						

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 Nkomis 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.

WISCONSIN RIVER BASIN

RESERVOIRS IN WISCONSIN RIVER BASIN--CONTINUED

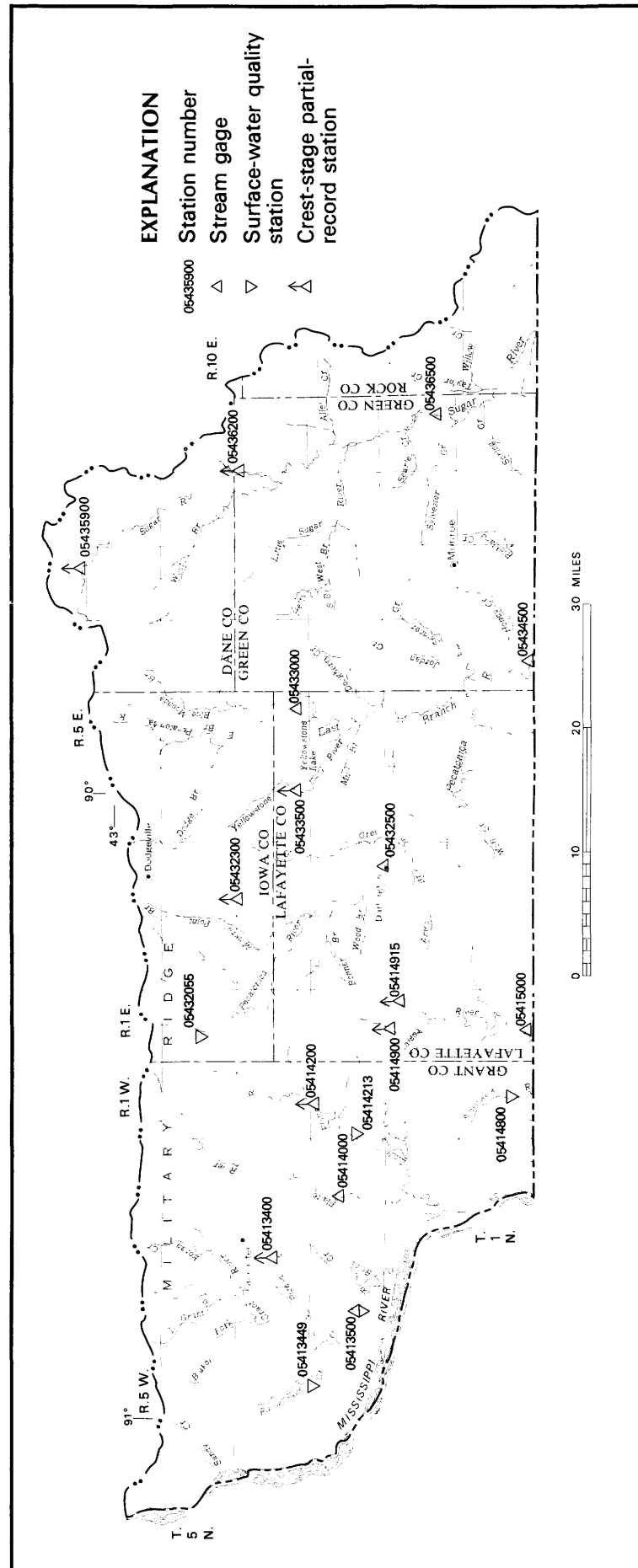
- 05399600 Big Eau Pleine Reservoir on Big Eau Pleine River, lat 44°43'52", long 89°45'35", in SW 1/4 sec.14, T.26 N., R.6 E., Marathon County, 3.0 mi northeast of Dancy, used as a reservoir since 1937, has a capacity of 4,457,000,000 ft³. Drainage area, 363 mi².
- 05400295 Lake Dubay on Wisconsin River, 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 1987 to SEPTEMBER 1988

	LAC VIEUX DESERT	TWIN LAKES	BUCKATABON LAKE	SEVENMILE LAKE	LOWER NINEMILE LAKE	BURNT ROLLWAYS RESERVOIR	LONG LAKE	DEERSKIN LAKE
SEPT. 30.....	123	67	114	56	101	389	161	12
OCT. 31.....	171	80	113	65	102	530	152	13
NOV. 30.....	167	97	110	59	96	511	163	14
DEC. 31.....	119	87	76	35	44	270	123	11
JAN. 31.....	54	83	50	12	34	10	69	10
FEB. 29.....	4	81	33	0	7	0	58	9
MAR. 31.....	67	114	67	23	57	58	93	11
APR. 30.....	145	161	106	54	95	478	241	15
MAY 31.....	123	150	114	62	103	565	238	16
JUNE 30.....	100	112	112	64	96	460	215	14
JULY 31.....	54	94	112	60	92	414	193	14
AUG. 31.....	79	104	115	64	103	426	196	17
SEPT. 30.....	123	126	114	65	103	562	229	16

	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.....	294	57	156	263	774	79	92	277
OCT. 31.....	322	68	157	270	1,004	91	122	332
NOV. 30.....	359	67	131	261	1,651	132	100	367
DEC. 31.....	354	37	51	215	2,079	161	32	224
JAN. 31.....	252	11	14	174	1,816	216	20	98
FEB. 29.....	19	14	5	149	1,140	224	15	15
MAR. 31.....	180	39	30	198	626	271	75	115
APR. 30.....	340	52	131	263	1,142	284	130	182
MAY 31.....	367	52	158	269	1,037	269	135	198
JUNE 30.....	331	36	151	256	743	216	104	159
JULY 31.....	307	29	158	263	724	261	90	138
AUG. 31.....	302	43	158	270	941	254	108	193
SEPT. 30.....	321	50	158	272	1,178	266	137	255

	SQUIRREL LAKE	WILLOW RESERVOIR	LAKE NOKOMIS	SPIRIT RIVER FLOWAGE	BIG EAU PLEINE RESERVOIR	LAKE DUBAY	PETENWELL FLOWAGE	CASTLE ROCK FLOWAGE
SEPT. 30.....	140	1,162	848	253	2,410	4,138	17,756	5,890
OCT. 31.....	94	1,314	1,013	302	2,219	4,144	17,729	5,863
NOV. 30.....	118	1,540	1,448	531	2,736	4,079	17,756	5,942
DEC. 31.....	74	1,916	1,551	638	3,078	4,128	16,892	5,664
JAN. 31.....	30	1,657	1,288	455	2,517	4,201	15,051	5,456
FEB. 29.....	7	1,217	902	281	1,797	3,233	13,778	3,609
MAR. 31.....	55	1,177	942	590	3,747	3,846	16,226	4,028
APR. 30.....	87	1,758	1,295	699	4,412	4,497	18,160	6,262
MAY 31.....	93	1,777	1,180	604	4,115	4,479	17,782	5,903
JUNE 30.....	77	1,534	1,019	390	3,503	4,213	17,720	5,876
JULY 31.....	57	1,318	1,069	298	2,969	4,163	17,597	5,818
AUG. 31.....	64	1,265	906	210	2,467	4,175	17,580	5,837
SEPT. 30.....	79	1,310	999	268	2,190	4,166	17,676	5,857



PECATONICA-SUGAR RIVER BASIN

Base from U S Geological Survey
State base map, 1968

GRANT 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.

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

REMARKS.--Estimated daily discharges: May 28 to July 5, 1988, and ice periods, Dec. 16-19, 1987, and Dec. 27, 1987, to Feb. 28, 1988. Records good except for estimated daily discharges, which are fair.

EXTREMES FOR CURRENT PERIOD.--June 5 to September 1987: Maximum discharge, 1,060 ft³/s, July 30, gage height, 6.23 ft; minimum daily, 13 ft³/s, June 16, June 27 to July 5, and July 11.

Water year 1988: Maximum discharge, 387 ft³/s, Feb. 28, gage height, 4.49 ft; minimum daily, 9.6 ft³/s, Sept. 13.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

[illegible]

GRANT RIVER BASIN

05413449 RATTLESNAKE CREEK NEAR NORTH ANDOVER, WI--CONTINUED

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	15	18	22	21	70	78	24	14	12	11	11	10
2	15	16	21	20	54	57	25	14	12	11	10	10
3	15	16	21	20	45	39	26	13	12	11	10	11
4	15	16	20	19	38	34	25	13	12	11	19	14
5	16	15	20	19	32	33	25	13	12	11	30	11
6	16	14	20	18	29	38	23	13	12	11	14	10
7	15	15	20	18	28	38	22	12	12	11	11	9.9
8	15	16	22	18	27	43	22	18	12	11	13	10
9	15	15	30	18	26	36	21	22	12	11	12	9.8
10	14	14	24	18	25	31	20	15	12	13	11	9.7
11	14	14	24	18	24	31	19	13	12	12	11	9.7
12	15	15	22	18	24	32	19	13	12	12	11	9.9
13	15	15	21	18	24	27	19	12	12	12	11	9.6
14	15	15	21	17	24	27	19	12	12	12	11	10
15	15	15	20	17	24	27	18	13	12	12	10	9.9
16	16	18	20	17	24	26	18	12	12	12	10	10
17	17	38	20	17	24	26	18	12	12	12	9.9	11
18	16	21	20	17	24	26	17	12	12	12	10	11
19	15	19	21	18	24	25	16	12	11	11	11	31
20	14	18	27	24	23	25	17	13	11	11	10	26
21	14	18	36	21	23	23	17	13	11	11	10	14
22	14	18	23	20	23	22	17	13	11	11	11	37
23	14	19	22	19	23	23	18	13	11	11	14	24
24	14	18	24	19	23	25	17	13	11	11	12	14
25	14	19	24	18	23	37	16	13	11	11	11	12
26	15	18	23	17	30	26	17	13	11	11	10	11
27	15	18	23	17	70	24	20	13	11	11	11	11
28	14	31	23	17	150	31	16	13	11	11	11	10
29	14	30	22	18	136	31	15	13	11	11	10	11
30	14	24	22	90	---	26	15	12	11	11	10	11
31	14	---	21	110	---	25	---	12	---	10	10	---
TOTAL	459	556	699	736	1114	992	581	412	348	350	365.9	398.5
MEAN	14.8	18.5	22.5	23.7	38.4	32.0	19.4	13.3	11.6	11.3	11.8	13.3
MAX	17	38	36	110	150	78	26	22	12	13	30	37
MIN	14	14	20	17	23	22	15	12	11	10	9.9	9.6

WTR YR 1988 TOTAL 7011.4 MEAN 19.2 MAX 150 MIN 9.6

GRANT RIVER BASIN

05413449 RATTLESNAKE CREEK NEAR NORTH ANDOVER, 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.

REMARKS.--Water-quality analysis by the State Lab of Hygiene.

EXTREMES FOR PERIOD OF RECORD.--

WATER TEMPERATURE: Maximum observed, 31.5°C July 15, 1988; minimum observed, 0.0°C Nov. 21, 1987, Dec. 4, 16, 17, 20-21, 26, 31, 1987.

DISSOLVED OXYGEN: Maximum observed, 18.3 mg/L Apr. 29, 1988; minimum observed, 0.0 mg/L Sept. 17, 1987.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum observed, 31.5°C July 15; minimum observed, 0.0°C Nov. 21, Dec. 4, 16, 17, 20-21, 26, 31.

DISSOLVED OXYGEN: Maximum observed, 18.3 mg/L Apr. 29; minimum observed, 3.4 mg/L June 22.

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH (STAND- ARD UNITS) (00400)	PH LAB (STAND- ARD UNITS) (00403)	TEMPER- ATURE WATER (DEG C) (00010)	TUR- BID- ITY (FTU) (00076)	OXYGEN, DIS- SOLVED (MG/L) (00300)	RESIDUE TOTAL AT 105 DEG. C, PENDEED (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- PHOROUS TOTAL (MG/L AS P) (00665)
FEB 1988											
19...	1030	26	--	8.00	--	5.6	--	20	6.40	0.510	--
MAR											
01...	1130	52	8.00	8.00	--	32	--	118	--	--	--
01...	1131	52	8.00	8.00	--	30	--	114	--	--	--
01...	1132	52	8.10	--	--	--	--	--	--	2.00	--
01...	1133	52	8.10	--	--	--	--	--	--	2.00	--
01...	1146	54	7.80	7.80	--	28	--	104	--	--	--
01...	1147	54	7.70	--	--	--	--	--	--	2.00	--
APR											
07...	1330	22	8.50	8.40	12.0	2.7	13.2	7	4.70	0.020	0.110
MAY											
26...	1110	13	8.30	8.30	18.0	4.1	12.2	9	3.50	0.030	0.200
AUG											
04...	2115	57	--	8.20	--	39	--	388	--	0.120	--
05...	0530	33	--	7.50	--	39	--	304	--	2.20	--
SEP											
19...	1200	25	--	8.30	--	15	--	75	--	0.060	--
19...	1340	37	--	8.20	--	16	--	212	--	0.200	--
19...	1341	37	--	8.00	--	31	--	178	--	0.200	--
19...	1400	41	--	8.20	--	43	--	248	--	0.240	--
19...	1530	62	--	8.20	--	51	--	436	--	0.330	--
20...	0445	33	--	7.90	--	48	--	184	--	2.30	--
22...	0800	34	--	8.00	--	120	--	114	--	0.500	--
22...	0830	48	--	8.20	--	60	--	258	--	0.460	--

05413449 RATTLESNAKE CREEK NEAR NORTH ANDOVER, WI--CONTINUED

WATER TEMPERATURE, DEGREES CENTIGRADE, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	15.5	11.5	13.5	10.0	8.5	9.0	4.0	3.0	3.5	.5	.5	.5
2	14.5	9.5	11.5	13.0	10.0	11.5	3.0	2.5	3.0	.5	.5	.5
3	11.5	7.5	9.5	14.5	12.0	13.5	3.5	2.0	3.0	.5	.5	.5
4	13.0	8.5	10.5	13.5	10.0	12.5	1.5	.0	1.0	.5	.5	.5
5	13.5	12.0	12.5	9.5	5.5	7.0	1.5	.5	1.0	.5	.5	.5
6	12.0	9.5	11.0	6.0	4.5	5.5	2.5	1.5	2.0	.5	.5	.5
7	10.5	8.0	9.0	6.0	4.5	5.5	3.5	2.5	3.0	.5	.5	.5
8	9.5	6.0	8.0	8.0	6.0	7.0	6.0	3.5	4.5	.5	.5	.5
9	9.0	7.5	8.0	6.5	3.5	5.0	6.5	5.5	6.0	.5	.5	.5
10	8.0	6.0	7.5	3.5	2.0	3.0	5.5	4.5	4.5	.5	.5	.5
11	7.0	4.0	5.5	4.0	2.0	3.0	6.0	4.5	5.5	.5	.5	.5
12	8.0	4.0	6.0	5.0	2.5	4.0	5.0	2.0	3.0	.5	.5	.5
13	9.5	5.5	7.5	7.0	4.5	5.5	3.0	2.0	2.5	.5	.5	.5
14	10.5	9.0	9.5	6.5	4.5	5.5	2.0	1.0	1.5	.5	.5	.5
15	12.0	9.0	10.5	9.0	5.5	7.0	1.0	.5	.5	.5	.5	.5
16	11.5	11.0	11.5	10.0	9.0	9.5	1.0	.0	.5	.5	.5	.5
17	11.0	9.0	10.0	10.0	7.5	9.0	.5	.0	.5	.5	.5	.5
18	10.0	7.5	9.0	7.0	4.5	5.5	.5	.5	.5	.5	.5	.5
19	10.0	8.0	9.0	5.0	4.0	4.5	1.0	.5	.5	.5	.5	.5
20	8.5	5.5	7.0	4.0	.5	2.0	1.0	.0	.5	.5	.5	.5
21	6.5	4.0	5.0	1.5	.0	1.0	1.0	.0	.5	.5	.5	.5
22	8.0	5.5	6.5	4.5	1.0	2.5	1.5	.5	1.0	.5	.5	.5
23	8.0	6.0	7.0	5.5	4.5	5.0	2.5	.5	1.5	.5	.5	.5
24	8.0	6.0	7.0	5.0	4.5	5.0	3.5	2.5	3.0	.5	.5	.5
25	6.5	4.0	5.5	4.5	3.5	4.0	3.0	1.0	2.5	.5	.5	.5
26	6.0	4.5	5.5	5.0	4.0	4.5	1.0	.0	.5	.5	.5	.5
27	6.5	4.5	5.5	4.5	4.5	4.5	1.0	.5	.5	.5	.5	.5
28	6.5	4.0	5.5	5.5	4.5	5.0	.5	.5	.5	.5	.5	.5
29	7.5	5.5	6.5	6.0	5.5	6.0	.5	.5	.5	.5	.5	.5
30	8.0	5.0	6.5	6.0	4.0	5.0	1.0	.5	.5	.5	.5	.5
31	8.5	6.5	7.5	---	---	---	.5	.0	.5	.5	.5	.5
MONTH	15.5	4.0	8.2	14.5	.0	5.9	6.5	.0	1.9	.5	.5	.5
	FEBRUARY			MARCH			APRIL			MAY		
1	.5	.5	.5	4.0	.5	2.0	12.0	8.0	10.0	17.5	11.5	14.5
2	.5	.5	.5	4.0	1.5	2.5	10.5	9.0	9.5	18.5	12.0	15.0
3	.5	.5	.5	3.5	1.0	2.5	11.5	9.0	10.0	18.0	12.0	15.0
4	.5	.5	.5	4.0	.5	2.0	16.0	9.5	12.5	17.0	11.5	14.0
5	.5	.5	.5	5.0	1.5	3.0	15.5	12.0	14.0	18.5	12.0	15.0
6	.5	.5	.5	7.0	2.5	5.0	13.5	9.5	11.5	19.0	12.0	15.5
7	.5	.5	.5	6.5	4.0	5.0	14.0	8.0	11.0	17.5	13.5	15.5
8	.5	.5	.5	9.0	6.0	7.0	15.5	10.0	12.5	15.5	13.5	14.5
9	.5	.5	.5	7.5	5.0	6.0	15.0	11.5	13.0	13.5	11.5	12.0
10	.5	.5	.5	7.5	3.5	5.5	11.5	8.0	9.0	18.5	10.5	14.0
11	.5	.5	.5	8.0	5.0	7.0	13.0	6.0	9.0	19.5	13.5	16.5
12	.5	.5	.5	7.5	4.0	6.0	14.0	8.0	11.0	22.0	15.5	18.5
13	.5	.5	.5	4.0	1.0	2.5	13.0	9.5	11.5	21.0	15.5	18.0
14	.5	.5	.5	2.0	.5	1.0	12.0	7.5	9.5	20.5	14.0	17.0
15	.5	.5	.5	2.5	.5	1.5	12.0	6.5	9.0	22.5	17.0	19.5
16	.5	.5	.5	5.0	1.5	3.0	13.5	7.0	10.0	18.5	14.0	15.5
17	.5	.5	.5	5.5	3.0	4.5	15.0	9.5	11.5	19.5	11.5	15.0
18	.5	.5	.5	6.5	2.5	4.5	12.5	7.5	10.0	21.0	13.5	17.0
19	1.0	.5	.5	6.0	3.0	4.5	12.0	6.0	8.5	21.0	15.0	18.0
20	1.0	.5	.5	7.0	3.0	5.0	12.5	7.5	9.5	22.5	15.5	19.0
21	.5	.5	.5	7.5	3.5	5.5	9.5	6.5	7.0	23.0	16.5	19.5
22	1.0	.5	.5	9.5	4.5	7.0	7.0	6.5	6.5	22.5	18.0	20.0
23	1.0	.5	.5	11.5	8.0	9.5	7.0	5.5	6.5	21.5	18.5	20.0
24	1.0	.5	.5	9.0	7.5	8.0	11.5	4.5	8.0	21.5	16.0	18.5
25	1.0	.5	.5	11.5	7.5	9.5	15.5	8.5	12.0	21.0	14.0	17.5
26	1.0	.5	.5	9.5	4.0	6.5	13.5	8.0	11.0	22.0	14.5	18.0
27	1.0	.5	.5	8.5	2.5	5.0	8.0	5.5	7.0	22.5	17.5	20.0
28	1.0	.5	.5	8.5	7.0	8.0	13.5	5.5	9.0	25.0	18.5	21.5
29	1.0	.5	1.0	8.5	6.0	7.0	16.0	8.5	12.0	25.5	19.0	22.0
30	---	---	---	10.0	4.0	7.0	17.0	10.0	13.5	25.5	19.0	22.5
31	---	---	---	11.5	6.5	9.0	---	---	---	26.0	19.0	22.5
MONTH	1.0	.5	.5	11.5	.5	5.2	17.0	4.5	10.2	26.0	10.5	17.5

GRANT RIVER BASIN

05413449 RATTLESNAKE CREEK NEAR NORTH ANDOVER, WI--CONTINUED

WATER TEMPERATURE, DEGREES CENTIGRADE, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	26.0	19.5	23.0	23.5	17.0	20.0	29.5	24.0	26.5	---	---	---
2	25.5	20.0	22.5	25.0	18.0	21.5	30.0	24.5	27.0	---	---	---
3	24.5	19.0	21.5	25.5	19.0	22.0	30.0	24.5	27.0	---	---	---
4	23.5	17.0	20.5	26.5	19.5	23.0	28.5	24.5	26.5	---	---	---
5	24.5	17.5	21.0	27.5	21.0	24.0	28.0	23.5	25.5	---	---	---
6	25.0	18.5	21.5	28.5	22.5	25.5	28.0	22.0	24.5	---	---	---
7	25.5	18.5	22.0	30.0	24.0	26.5	28.0	21.5	25.0	---	---	---
8	25.0	20.0	22.5	30.0	24.5	27.0	28.5	24.0	26.0	---	---	---
9	22.0	16.5	19.5	26.5	23.0	25.0	28.5	24.5	26.0	---	---	---
10	22.0	15.5	19.0	26.5	22.5	24.5	28.5	22.0	25.0	---	---	---
11	23.0	16.0	19.5	24.5	21.0	23.0	---	---	---	---	---	---
12	24.5	18.0	21.0	27.0	20.0	23.0	---	---	---	---	---	---
13	26.0	19.5	22.5	29.0	21.5	25.0	---	---	---	---	---	---
14	25.5	20.5	23.0	30.5	24.5	27.0	---	---	---	---	---	---
15	26.5	21.5	23.5	31.5	25.0	28.0	---	---	---	---	---	---
16	25.0	19.5	22.0	30.0	25.5	28.0	---	---	---	---	---	---
17	22.5	18.5	20.5	30.0	24.0	27.0	---	---	---	---	---	---
18	25.5	19.0	22.0	28.5	24.0	26.0	---	---	---	---	---	---
19	24.0	21.0	22.5	26.5	21.5	24.0	---	---	---	---	---	---
20	28.5	21.0	24.5	25.5	21.0	23.0	---	---	---	---	---	---
21	29.5	24.0	26.5	24.0	19.5	21.5	---	---	---	---	---	---
22	29.5	24.5	27.0	25.5	18.5	22.0	---	---	---	---	---	---
23	27.0	22.5	25.0	26.0	19.5	22.5	---	---	---	---	---	---
24	27.0	21.5	24.5	26.0	21.0	23.5	---	---	---	16.5	12.5	14.5
25	29.0	23.5	26.0	27.0	21.0	24.0	---	---	---	17.5	12.5	15.0
26	26.5	22.0	24.0	26.5	20.0	23.0	---	---	---	18.5	14.0	16.0
27	26.0	20.0	22.5	28.0	20.5	24.0	---	---	---	18.5	15.5	17.0
28	26.0	20.0	23.0	28.5	22.0	25.0	---	---	---	16.5	14.5	15.0
29	23.5	19.5	21.0	28.5	23.0	25.5	---	---	---	17.5	14.0	15.5
30	23.0	16.5	19.5	29.5	23.5	26.0	---	---	---	18.5	15.0	17.0
31	---	---	---	29.0	22.5	25.5	---	---	---	---	---	---
MONTH	29.5	15.5	22.4	31.5	17.0	24.4	---	---	---	---	---	---

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER				NOVEMBER			DECEMBER			JANUARY		
1	11.7	8.0	9.5	10.0	8.7	9.5	13.3	11.4	12.2	---	---	---
2	11.8	8.0	9.8	12.0	8.1	9.6	13.6	12.0	12.6	---	---	---
3	12.7	9.7	10.9	11.5	7.2	8.9	---	---	---	---	---	---
4	12.4	9.0	10.6	11.5	7.8	9.3	---	---	---	---	---	---
5	11.9	8.7	9.7	12.8	9.0	10.8	---	---	---	---	---	---
6	12.2	8.9	10.1	13.3	10.6	11.5	---	---	---	---	---	---
7	12.9	9.7	10.9	11.4	9.1	10.4	---	---	---	---	---	---
8	13.5	10.0	11.2	10.5	8.1	9.2	---	---	---	---	---	---
9	13.4	9.9	11.1	12.0	9.1	10.4	---	---	---	---	---	---
10	13.3	10.1	11.3	12.7	10.3	11.4	---	---	---	---	---	---
11	13.8	10.6	11.8	13.0	11.1	11.7	---	---	---	---	---	---
12	13.6	10.4	11.7	13.0	10.8	11.7	---	---	---	---	---	---
13	13.7	9.9	11.3	13.4	10.8	11.6	---	---	---	---	---	---
14	12.3	9.5	10.5	13.2	10.9	11.8	---	---	---	---	---	---
15	13.5	9.2	10.7	13.1	10.3	11.5	---	---	---	---	---	---
16	9.9	8.8	9.2	10.3	9.5	9.9	---	---	---	---	---	---
17	12.6	8.9	10.2	9.7	7.8	8.7	---	---	---	---	---	---
18	12.8	9.4	10.6	12.3	9.4	11.0	---	---	---	---	---	---
19	13.1	9.4	10.6	12.9	11.1	11.7	---	---	---	---	---	---
20	12.6	9.6	10.8	13.7	11.5	12.6	---	---	---	---	---	---
21	13.6	10.5	11.7	14.2	12.4	13.1	---	---	---	---	---	---
22	13.0	10.2	11.2	13.4	11.3	12.4	---	---	---	---	---	---
23	13.7	10.0	11.3	11.5	10.7	11.1	---	---	---	---	---	---
24	13.5	10.1	11.3	12.6	11.2	11.7	---	---	---	---	---	---
25	13.8	10.4	11.7	13.1	11.4	12.1	---	---	---	---	---	---
26	11.9	10.4	10.9	12.6	11.4	11.9	---	---	---	---	---	---
27	13.5	10.4	11.3	12.6	11.4	11.8	---	---	---	---	---	---
28	14.0	10.4	11.7	11.5	9.9	11.0	---	---	---	---	---	---
29	13.4	9.6	11.1	10.7	9.7	10.3	---	---	---	---	---	---
30	13.5	10.1	11.2	11.9	10.5	11.2	---	---	---	---	---	---
31	13.7	9.8	11.1	---	---	---	---	---	---	---	---	---
MONTH	14.0	8.0	10.9	14.2	7.2	11.0	---	---	---	---	---	---

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY				MARCH			APRIL			MAY		
1	---	---	---	---	---	---	13.1	9.0	10.8	17.8	7.6	11.6
2	---	---	---	---	---	---	11.4	8.8	9.8	17.6	7.4	11.5
3	---	---	---	---	---	---	12.4	8.8	10.2	17.3	7.3	11.3
4	---	---	---	---	---	---	12.8	7.6	9.9	17.4	7.4	11.6
5	---	---	---	---	---	---	12.6	7.4	9.1	17.1	7.2	11.2
6	---	---	---	---	---	---	12.8	7.6	9.8	16.7	6.9	10.8
7	---	---	---	---	---	---	13.2	8.0	10.1	16.6	6.6	10.4
8	---	---	---	---	---	---	13.3	7.5	9.8	13.1	6.9	8.7
9	---	---	---	---	---	---	13.4	7.4	9.5	8.2	6.7	7.5
10	---	---	---	---	---	---	13.1	7.7	9.9	13.6	6.6	9.9
11	---	---	---	---	---	---	13.8	8.4	10.6	13.8	6.2	9.3
12	---	---	---	---	---	---	14.3	8.1	10.5	13.4	5.6	8.9
13	---	---	---	---	---	---	14.3	7.9	10.2	13.5	5.5	9.0
14	---	---	---	---	---	---	15.0	8.3	11.1	13.7	6.2	9.5
15	---	---	---	---	---	---	15.4	9.2	11.6	13.2	6.1	8.8
16	---	---	---	---	---	---	15.8	8.9	11.7	12.0	6.1	8.9
17	---	---	---	---	---	---	15.8	8.7	11.3	14.0	7.1	10.5
18	---	---	---	---	---	---	15.9	8.7	11.7	13.6	6.4	9.7
19	---	---	---	---	---	---	---	---	---	12.5	6.0	9.0
20	---	---	---	---	---	---	16.1	9.4	11.6	12.9	5.7	8.8
21	---	---	---	---	---	---	15.8	9.5	12.0	12.8	5.6	8.7
22	---	---	---	---	---	---	14.7	10.3	12.0	13.2	5.4	8.6
23	---	---	---	---	---	---	15.8	10.6	12.5	13.0	5.5	8.8
24	---	---	---	---	---	---	17.5	9.6	13.0	14.2	6.3	9.7
25	---	---	---	---	---	---	17.8	8.3	12.4	14.6	6.7	10.2
26	---	---	---	---	---	---	13.8	7.9	10.4	14.7	6.6	10.1
27	---	---	---	---	---	---	16.3	10.0	12.6	14.5	6.1	9.6
28	---	---	---	---	---	---	18.2	9.2	13.1	14.8	5.6	9.6
29	---	---	---	---	---	---	18.3	8.5	12.5	14.8	5.2	9.3
30	---	---	---	14.5	10.6	12.7	18.0	8.0	11.9	14.8	5.0	9.3
31	---	---	---	13.9	9.7	11.6	---	---	---	14.7	4.9	9.1
MONTH	---	---	---	---	---	---	---	---	---	17.8	4.9	9.7
JUNE				JULY			AUGUST			SEPTEMBER		
1	14.1	4.8	8.9	15.6	6.7	10.6	---	---	---	---	---	---
2	14.4	4.7	9.0	15.3	6.2	10.1	---	---	---	---	---	---
3	14.7	5.0	9.3	15.2	5.6	9.7	---	---	---	---	---	---
4	15.1	5.6	9.8	14.7	5.3	9.3	---	---	---	---	---	---
5	15.2	5.5	9.8	14.5	4.8	9.0	---	---	---	---	---	---
6	15.1	5.1	9.5	14.7	4.7	9.0	---	---	---	---	---	---
7	15.0	4.9	9.4	14.7	4.6	8.8	---	---	---	---	---	---
8	15.0	4.5	9.3	14.8	4.6	9.0	---	---	---	---	---	---
9	14.0	5.4	9.4	12.8	5.0	8.4	---	---	---	---	---	---
10	14.3	5.6	9.5	13.4	5.6	8.7	---	---	---	---	---	---
11	14.6	5.6	9.5	12.9	6.0	9.1	---	---	---	---	---	---
12	14.9	5.2	9.4	13.5	6.2	9.3	---	---	---	---	---	---
13	15.0	4.8	9.2	12.8	5.5	8.5	---	---	---	---	---	---
14	14.9	4.3	9.1	11.6	5.0	7.7	---	---	---	---	---	---
15	14.8	4.3	9.0	11.1	4.6	7.2	---	---	---	---	---	---
16	15.3	4.7	9.4	---	---	---	---	---	---	---	---	---
17	15.5	5.2	9.8	---	---	---	---	---	---	---	---	---
18	16.8	5.9	10.4	---	---	---	---	---	---	---	---	---
19	14.9	5.0	8.8	---	---	---	---	---	---	---	---	---
20	15.1	4.6	9.4	---	---	---	---	---	---	8.7	4.9	7.2
21	14.8	3.8	8.6	---	---	---	---	---	---	9.9	7.1	8.2
22	14.1	3.4	8.0	---	---	---	---	---	---	8.0	3.9	6.3
23	14.9	3.9	8.6	---	---	---	---	---	---	8.0	5.4	7.0
24	15.0	4.4	8.5	---	---	---	---	---	---	9.7	7.2	8.3
25	14.2	4.4	8.6	---	---	---	---	---	---	10.3	7.8	8.9
26	15.3	4.4	9.4	---	---	---	---	---	---	10.6	7.5	8.8
27	15.4	5.4	9.8	---	---	---	---	---	---	11.1	7.4	8.8
28	15.6	5.7	9.8	---	---	---	---	---	---	10.5	7.6	9.0
29	13.9	5.4	9.2	---	---	---	---	---	---	12.1	8.1	9.7
30	15.6	7.2	10.8	---	---	---	---	---	---	---	---	---
31	---	---	---	---	---	---	---	---	---	---	---	---
MONTH	16.8	3.4	9.3	---	---	---	---	---	---	---	---	---

GRANT RIVER BASIN

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, 1.57 in., Sept. 19.

RAINFALL ACCUMULATED (INCHES), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.01	.03	.00	---	---	---	.00	.01	.00	.00	.00	.00
2	.00	.07	.00	---	---	---	.09	.01	.00	.00	.00	.00
3	.01	.00	.00	---	---	---	.00	.01	.00	.00	.00	.97
4	.00	.00	---	---	---	---	.00	.01	.00	.00	.50	.15
5	.00	.00	---	---	---	---	.00	.00	.00	.00	.11	.00
6	.00	.00	---	---	---	---	.00	.00	.00	.00	.00	.00
7	.00	.19	---	---	---	---	.00	.00	.00	.00	.00	.00
8	.00	.10	---	---	---	---	.00	1.06	.00	.00	.73	.00
9	.00	.00	---	---	---	---	.00	.18	.00	.49	.00	.00
10	.00	.00	---	---	---	---	.01	.00	.00	.37	.00	.00
11	.00	.00	---	---	---	---	.00	.02	.00	.00	.00	.00
12	.00	.00	---	---	---	---	.00	.00	.00	.00	.00	.00
13	.00	.00	---	---	---	---	.07	.00	.00	.42	.00	.00
14	.03	.00	---	---	---	---	.00	.00	.00	.01	.00	.00
15	.00	.18	---	---	---	---	.00	.00	.00	.00	.00	.00
16	.42	.73	---	---	---	---	.00	.00	.00	.42	.00	.11
17	.00	.51	---	---	---	---	.00	.00	.00	.00	.00	.00
18	.00	.01	---	---	---	---	.00	.00	.00	.00	.00	.00
19	.00	.01	---	---	---	---	.00	.00	.02	.00	.00	1.57
20	.02	.00	---	---	---	---	.22	.00	.00	.03	.00	.01
21	.00	.01	---	---	---	.00	.05	.00	.00	.01	.00	.30
22	.00	.00	---	---	---	.00	.06	.00	.04	.00	.86	1.12
23	.00	.01	---	---	---	.00	.15	.00	.00	.00	.01	.00
24	.05	.05	---	---	---	.59	.00	.00	.09	.02	.00	.00
25	.00	.14	---	---	---	.01	.00	.00	.00	.00	.00	.00
26	.06	.00	---	---	---	.00	.48	.00	.00	.00	.00	.00
27	.00	.04	---	---	---	.00	.08	.00	.00	.00	.03	.00
28	.00	.89	---	---	---	.70	.00	.00	.13	.00	.00	.00
29	.00	.03	---	---	---	.00	.00	.00	.01	.00	.00	.07
30	.00	.00	---	---	---	.00	.00	.00	.00	.00	.02	.00
31	.52	---	---	---	---	.00	---	.00	---	.00	.00	---
TOTAL	1.12	3.00	---	---	---	---	1.21	1.30	0.29	1.77	2.26	4.30

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 tables below. Records good except for ice-affected periods, which are fair.

AVERAGE DISCHARGE.--54 years, 168 ft³/s, 8.48 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. 31	----	(a) *830	(a) *11.74				

(a) Backwater from ice.

Minimum discharge, 82 ft³/s, Sept. 13-16, gage height, 4.61 ft.

RATING TABLES (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Dec. 17-23 and Dec. 28 to Mar. 5.)

Oct. 1 to Mar. 1 (2400)				Mar. 2 (0015) to Sept. 30			
4.9	112	6.0	213	4.6	81	6.0	220
5.0	120	7.0	322	5.0	120	8.0	442

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	124	133	165	150	520	520	186	151	123	104	93	85
2	122	128	158	150	360	420	185	151	124	104	92	84
3	118	121	155	140	300	330	193	151	122	103	89	84
4	119	119	148	140	250	250	186	149	120	103	89	94
5	121	115	144	130	210	200	181	150	121	100	166	94
6	120	112	142	130	190	210	177	151	120	100	115	87
7	118	114	142	120	180	261	169	151	119	99	97	86
8	117	122	144	120	180	286	167	150	119	98	101	85
9	116	119	171	110	170	287	166	215	117	98	107	84
10	115	115	167	110	170	232	163	179	115	106	97	84
11	114	114	159	110	160	216	163	158	114	111	94	83
12	115	115	159	110	160	215	162	153	115	104	93	84
13	117	116	150	110	160	201	161	150	114	102	90	82
14	117	115	145	110	160	184	161	146	112	104	91	82
15	117	115	146	110	150	182	158	147	111	101	91	82
16	119	123	140	110	150	179	157	143	110	108	89	82
17	130	215	140	110	150	176	157	143	108	111	87	86
18	122	186	140	110	150	174	157	143	109	102	86	85
19	117	148	150	130	150	172	156	140	110	101	88	106
20	116	139	190	160	140	171	158	139	110	99	88	181
21	115	133	170	150	140	166	160	138	109	100	87	114
22	115	134	160	130	140	164	160	137	106	99	90	178
23	115	136	150	120	140	167	165	135	106	98	117	305
24	115	133	150	120	140	168	165	134	105	97	105	124
25	114	132	157	110	140	222	159	130	107	97	91	103
26	114	132	147	110	160	190	159	130	105	97	88	97
27	117	128	141	110	280	175	183	130	103	95	88	94
28	115	156	170	120	300	190	168	130	102	94	88	91
29	114	242	180	130	500	233	159	129	104	94	86	92
30	114	180	170	200	---	202	155	127	106	95	86	93
31	114	---	160	740	---	191	---	125	---	94	86	---
TOTAL	3636	4090	4810	4510	6000	6934	4996	4505	3366	3118	2955	3111
MEAN	117	136	155	145	207	224	167	145	112	101	95.3	104
MAX	130	242	190	740	520	520	193	215	124	111	166	305
MIN	114	112	140	110	140	164	155	125	102	94	86	82
CFSM	.44	.51	.58	.54	.77	.83	.62	.54	.42	.37	.35	.39
IN.	.50	.57	.67	.62	.83	.96	.69	.62	.47	.43	.41	.43
CAL YR 1987	TOTAL 52610	MEAN 144	MAX 887	MIN 100	CFSM .54	IN. 7.28						
WTR YR 1988	TOTAL 52031	MEAN 142	MAX 740	MIN 82	CFSM .53	IN. 7.20						

GRANT RIVER BASIN

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 (Dec. 28 through Mar. 5) are poor. Monthly load values are good.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SUSPENDED-SEDIMENT CONCENTRATIONS: Maximum daily mean, 6,450 mg/L, June 17, 1978; minimum daily mean, 7 mg/L, on many days. 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 daily mean, 1,500 mg/L, Jan. 31, minimum daily mean, 20 mg/L, Apr. 18. Maximum observed, 2,100 mg/L, Aug. 5; minimum observed, 19 mg/L, Apr. 18.
SUSPENDED-SEDIMENT DISCHARGE: Maximum daily, 3,000 tons, Jan. 31; minimum daily, 7.8 tons, Nov. 16.

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SEDI- MENT, SUS- PENDE (MG/L) (80154)
OCT 1987				JUN 1988			
01...	0750	124	90	01...	0905	123	150
05...	1750	122	68	03...	1945	122	158
06...	1415	120	34	06...	0900	120	113
06...	1430	120	35	09...	0910	117	167
08...	0750	117	53	13...	0745	115	137
10...	0825	115	158	16...	0810	110	127
21...	1330	115	29	20...	1000	111	110
NOV				20...	1001	111	104
02...	0845	129	90	22...	1005	107	66
16...	1150	122	25	22...	1350	102	61
16...	1200	122	19	22...	1415	105	78
30...	1445	177	54	28...	0815	102	138
DEC				30...	0730	106	168
09...	0900	160	72	JUL			
JAN 1988				05...	0855	100	147
04...	1430	140	40	07...	0845	99	170
FEB				11...	0845	113	167
15...	1145	150	55	14...	0820	105	179
MAR				18...	1925	101	200
11...	0930	218	97	21...	1920	102	189
12...	0840	218	156	26...	1920	96	173
17...	1530	177	79	29...	1925	93	168
21...	1330	166	223	AUG			
25...	1325	247	80	01...	1845	92	142
28...	1600	193	92	04...	0820	88	175
31...	1125	192	86	05...	1030	241	718
31...	1310	192	77	05...	1039	246	2100
APR				09...	0805	111	173
04...	1455	186	104	12...	0730	93	189
07...	0745	186	86	15...	0800	91	164
11...	0745	186	71	18...	0815	85	148
14...	0810	186	66	22...	0845	86	137
18...	1350	156	19	25...	0910	91	115
20...	1000	156	24	29...	1105	86	90
21...	0750	156	48	SEP			
25...	0750	158	37	01...	0815	85	119
28...	0825	169	66	02...	1000	84	88
MAY				02...	1001	84	70
02...	0755	151	38	06...	1420	86	53
05...	0755	149	51	09...	0740	85	115
09...	0750	223	195	12...	1245	85	52
12...	0755	153	146	13...	0845	83	85
16...	0855	143	204	16...	0735	82	104
19...	0830	141	177	19...	1325	106	107
23...	0840	135	167	22...	0900	116	357
26...	0900	129	175	26...	0855	97	99
				29...	0800	91	99

GRANT RIVER BASIN

05413500 GRANT RIVER AT BURTON, WI--CONTINUED

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

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 (FTU) (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)	
OCT 1987											
21...	1330	115	640	8.50	6.5	4.0	12.5	757	103	--	
DEC											
09...	0900	160	660	8.40	5.0	13	11.4	740	92	2100	
MAR 1988											
11...	0930	218	715	8.40	4.0	18	12.0	739	95	-	
APR											
20...	1000	156	630	8.30	9.0	2.7	10.6	737	95	47	
JUN											
20...	1000	111	615	8.20	22.0	18	7.6	749	89	510	
SEP											
02...	1000	84	610	8.30	19.5	21	7.8	750	87	550	
DATE		STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD- NESS TOTAL (MG/L AS CACO3) (00900)	HARD- NESS NONCARB WH WAT TOT FLD MG/L AS CACO3 (00902)	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)	
OCT 1987											
21...	26	350	99	80	37	7.6	4	0.2	2.9	346	
DEC											
09...	7800	350	50	83	35	8.1	5	0.2	2.8	366	
MAR 1988											
11...	350	340	47	79	34	7.6	5	0.2	2.8	371	
APR											
20...	220	330	42	71	36	7.3	5	0.2	1.7	335	
JUN											
20...	260	320	38	70	36	7.4	5	0.2	1.8	344	
SEP											
02...	1100	340	53	73	38	7.8	5	0.2	2.2	344	
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)
OCT 1987											
21...	14	308	24	16	0.10	9.2	360	344	0.49	112	
DEC											
09...	8	301	25	18	0.30	13	377	385	0.51	163	
MAR 1988											
11...	11	323	24	16	0.20	12	365	370	0.50	215	
APR											
20...	--	274	28	15	0.20	4.7	343	334	0.47	144	
JUN											
20...	--	282	24	15	0.20	9.5	355	345	0.48	106	
SEP											
02...	6	292	26	15	0.10	11	355	357	0.48	80.5	
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- PHOROUS TOTAL (MG/L AS P) (00665)	PHOS- PHOROUS DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHOROUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	
OCT 1987											
21...	3.20	0.020	0.030	<0.20	0.090	0.070	0.070	29	67		
DEC											
09...	4.10	0.130	0.170	0.80	0.250	0.130	0.110	72	77		
MAR 1988											
11...	4.40	0.080	0.090	0.70	0.140	0.120	0.090	97	86		
APR											
20...	--	--	--	--	--	--	--	24	88		
JUN											
20...	2.30	0.040	0.020	0.80	0.150	0.110	0.100	110	98		
SEP											
02...	2.70	0.030	0.040	0.60	0.250	0.140	0.130	88	91		

GRANT RIVER BASIN

05413500 GRANT RIVER AT BURTON, WI--CONTINUED

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

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 1987 21...	1330	115	<10	<1	66	<0.5	<1	<1	<3	<1	7
MAR 1988 11...	0930	218	<10	<1	62	<0.5	<1	<1	<3	1	3
APR 20...	1000	156	<10	<1	58	<0.5	<1	<1	<3	<1	10
SEP 02...	1000	84	<10	1	68	<0.5	3	<1	<3	1	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)
OCT 1987 21...	18	6	45	<0.1	<10	<1	<1	78	<6	7
MAR 1988 11...	<5	9	43	<0.1	<10	2	<1	79	<6	<3
APR 20...	6	8	83	<0.1	<10	2	<1	74	<6	5
SEP 02...	<5	5	18	<0.1	<10	<1	<1	78	<6	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)
OCT 1987 06...	1415	120	650	11.5
21...	1330	115	640	6.5
NOV 16...	1155	123	620	9.0
DEC 09...	0900	160	660	5.0
JAN 1988 04...	1424	132	725	0.0
FEB 15...	1140	157	670	0.0
MAR 11...	0930	218	715	4.0
31...	1315	198	625	9.0
APR 20...	1000	156	630	9.0
MAY 10...	1530	177	590	17.0
JUN 20...	1000	111	615	22.0
22...	1350	102	590	28.5
AUG 05...	1405	269	584	25.5
SEP 02...	1000	84	610	19.5
12...	1245	85	600	20.0

GRANT RIVER BASIN

05413500 GRANT RIVER AT BURTON, WI--CONTINUED

SEDIMENT, SUSPENDED CONCENTRATION (MG/L), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

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	88	30	83	30	55	25	60	24	900	1260	900	1260
2	83	28	88	30	57	24	50	20	500	486	600	680
3	78	25	82	27	59	25	40	15	350	284	400	356
4	74	24	74	24	61	24	40	15	200	135	200	135
5	68	22	68	21	63	25	40	14	100	57	100	54
6	41	13	62	19	65	25	40	14	80	41	100	57
7	44	14	56	17	68	26	40	13	60	29	100	70
8	60	19	52	17	70	27	41	13	52	25	100	77
9	101	32	47	15	72	33	41	12	52	24	100	77
10	149	46	43	13	72	32	41	12	53	24	100	63
11	133	41	39	12	72	31	42	12	53	23	106	62
12	115	36	36	11	72	31	42	13	54	23	147	86
13	99	31	33	10	71	29	42	13	54	23	135	73
14	85	27	30	9.2	71	28	43	13	54	24	119	59
15	73	23	27	8.4	71	28	43	13	55	22	104	51
16	63	20	24	7.8	71	27	43	13	53	21	92	44
17	54	19	73	46	71	27	44	13	51	21	81	38
18	46	15	64	33	71	27	44	13	49	20	70	33
19	40	13	49	20	100	40	60	21	47	19	61	29
20	34	11	48	18	110	56	100	43	45	17	54	25
21	30	9.4	47	17	100	46	80	32	43	16	47	21
22	32	9.9	46	17	80	35	60	21	41	16	41	18
23	35	11	45	16	70	28	46	15	40	15	36	16
24	39	12	44	16	70	28	46	15	38	14	32	15
25	43	13	43	15	70	30	47	14	37	14	79	49
26	47	14	42	15	70	28	47	14	35	15	105	54
27	52	16	41	14	70	27	47	14	350	265	99	47
28	57	18	52	23	70	32	48	15	500	405	93	48
29	63	19	95	63	70	34	48	17	900	1210	90	57
30	69	21	59	28	70	32	250	135	---	---	88	48
31	76	23	---	---	70	30	1500	3000	---	---	114	59
TOTAL	---	655.3	---	612.4	---	940	---	3611	---	4548	---	3761
APRIL			MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	138	69	43	17	151	50	163	46	145	36	107	25
2	126	63	39	16	154	51	159	44	150	37	73	17
3	115	60	42	17	157	52	155	43	163	39	66	15
4	105	53	47	19	145	47	151	42	174	42	61	16
5	98	48	50	20	127	41	150	40	504	288	57	15
6	91	43	47	19	117	38	160	43	237	74	55	13
7	85	39	43	18	131	42	169	45	212	55	69	16
8	81	37	51	21	149	48	169	45	190	52	92	21
9	78	35	227	137	164	52	168	44	175	51	113	26
10	74	33	223	108	158	49	168	48	179	47	113	26
11	71	31	177	76	150	46	168	50	184	47	112	25
12	69	30	150	62	143	44	171	48	187	47	107	24
13	67	29	161	65	137	42	175	48	179	44	88	20
14	62	27	175	69	133	40	179	50	170	42	92	20
15	47	20	190	75	130	39	184	50	163	40	99	22
16	35	15	201	78	127	38	189	55	158	38	101	22
17	26	11	193	75	122	36	193	58	153	36	88	20
18	20	8.6	184	71	118	35	198	54	148	34	76	18
19	22	9.1	177	67	114	34	197	54	145	34	109	32
20	28	12	174	65	103	31	194	52	142	34	224	110
21	46	20	171	64	82	24	190	51	139	33	182	56
22	45	19	169	63	73	21	187	50	136	33	466	291
23	42	18	167	61	85	24	183	49	128	40	424	411
24	39	17	170	61	94	27	180	47	121	34	171	58
25	38	16	172	61	104	30	177	46	114	28	128	36
26	46	20	174	61	115	32	174	46	108	26	101	26
27	56	28	170	60	127	35	172	44	102	24	99	25
28	64	29	165	58	140	39	170	43	96	23	99	24
29	56	24	161	56	155	44	169	43	92	21	98	24
30	49	21	157	54	167	48	162	41	100	23	91	23
31	---	---	153	51	---	---	153	39	110	25	---	---
TOTAL	---	884.7	---	1745	---	1179	---	1458	---	1427	---	1477

TOTAL LOAD FOR YEAR: 22298 TONS.

PLATTE RIVER BASIN

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 for ice-affected periods, which are fair.

AVERAGE DISCHARGE.--54 years, 99.9 ft³/s, 9.55 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)
Jan. 31	----	(a) *380	(a) *5.66				

(a) Backwater from ice.

Minimum daily discharge, 43 ft³/s, Sept. 2, 11, 12.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Shifting-control method used Oct. 17 to Dec. 14 and Dec. 20-26; stage-discharge relation affected by ice Dec. 15-19 and Dec. 27 to Mar. 3.)

3.5	35	4.0	104
3.7	60	4.5	213

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	67	88	102	56	230	190	133	90	63	56	45	44
2	65	74	97	74	170	170	129	88	65	57	44	43
3	63	68	94	68	130	150	130	87	64	55	46	45
4	64	65	89	66	120	131	126	86	64	54	62	45
5	66	61	86	64	110	125	120	85	62	54	121	45
6	65	58	86	62	110	130	116	84	62	54	69	47
7	64	60	86	60	110	156	111	83	62	52	57	45
8	62	65	87	58	110	187	109	85	61	51	60	45
9	63	62	105	58	110	175	105	94	59	51	63	45
10	62	58	99	56	100	144	103	89	59	60	54	44
11	61	58	99	56	100	135	102	82	59	59	56	43
12	62	59	100	54	100	134	100	81	60	55	52	43
13	63	59	94	54	100	120	100	81	60	53	49	44
14	63	59	90	54	100	111	99	79	57	56	49	44
15	63	58	90	54	100	110	96	79	55	56	47	44
16	66	68	84	54	98	108	95	75	55	66	49	44
17	73	125	84	56	96	106	95	75	56	64	48	50
18	66	103	86	56	94	103	95	73	58	63	45	49
19	63	87	92	60	92	102	93	73	58	59	47	67
20	61	81	113	76	88	101	95	72	57	57	47	74
21	61	75	98	70	86	98	95	72	57	58	45	58
22	60	74	96	64	84	98	95	71	55	55	50	126
23	61	75	92	62	82	99	100	71	54	55	71	118
24	61	72	89	60	80	103	98	70	54	53	56	69
25	60	71	92	58	80	141	93	69	58	54	48	59
26	61	71	86	56	80	119	95	69	56	54	47	56
27	63	69	82	56	90	110	110	70	54	50	46	56
28	60	95	80	54	120	120	101	70	53	50	48	56
29	60	129	90	60	140	175	94	68	59	46	46	52
30	60	109	84	80	---	151	90	67	58	46	46	52
31	63	---	70	320	---	140	---	65	---	46	45	---
TOTAL	1952	2256	2822	2136	3110	4042	3123	2403	1754	1699	1658	1652
MEAN	63.0	75.2	91.0	68.9	107	130	104	77.5	58.5	54.8	53.5	55.1
MAX	73	129	113	320	230	190	133	94	65	66	121	126
MIN	60	58	70	54	80	98	90	65	53	46	44	43
CFM	.44	.53	.64	.49	.76	.92	.73	.55	.41	.39	.38	.39
IN.	.51	.59	.74	.56	.81	1.06	.82	.63	.46	.45	.43	.43
CAL YR 1987	TOTAL 29669	MEAN 81.3	MAX 246	MIN 42	CFM .57	IN. 7.77						
WTR YR 1988	TOTAL 28607	MEAN 78.2	MAX 320	MIN 43	CFM .55	IN. 7.49						

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 current year.

GAGE.--Water-stage recorder. Elevation of gage is 760 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 fair.

EXTREMES FOR CURRENT PERIOD.--June 11 to September 1987: Maximum discharge, 175 ft³/s, July 31, gage height, 8.10 ft; maximum gage height, 8.10 ft, July 31 and Aug. 8; minimum, 24 ft³/s, July 8, gage height, 7.07 ft.

Water year 1988: Maximum discharge, 472 ft³/s, Sept. 22, gage height, 8.90 ft; maximum gage height, 9.08 ft, Jan. 31 (backwater from ice); minimum daily, 17 ft³/s, July 31 to Aug. 3, Aug. 11, 13, 15-21, and Sept. 2, 3, 6, 9-11, 13-15.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	---	31	40	29
2	---	---	---	---	---	---	---	---	---	30	35	29
3	---	---	---	---	---	---	---	---	---	33	33	28
4	---	---	---	---	---	---	---	---	---	30	32	28
5	---	---	---	---	---	---	---	---	---	30	31	28
6	---	---	---	---	---	---	---	---	---	30	32	28
7	---	---	---	---	---	---	---	---	---	30	32	28
8	---	---	---	---	---	---	---	---	---	25	121	41
9	---	---	---	---	---	---	---	---	---	33	60	30
10	---	---	---	---	---	---	---	---	---	29	40	29
11	---	---	---	---	---	---	---	---	38	29	37	30
12	---	---	---	---	---	---	---	---	38	28	35	30
13	---	---	---	---	---	---	---	---	35	27	34	32
14	---	---	---	---	---	---	---	---	35	27	33	32
15	---	---	---	---	---	---	---	---	34	35	29	33
16	---	---	---	---	---	---	---	---	35	31	30	33
17	---	---	---	---	---	---	---	---	35	33	32	34
18	---	---	---	---	---	---	---	---	35	33	32	34
19	---	---	---	---	---	---	---	---	38	33	33	31
20	---	---	---	---	---	---	---	---	40	33	33	31
21	---	---	---	---	---	---	---	---	38	33	35	31
22	---	---	---	---	---	---	---	---	37	30	31	30
23	---	---	---	---	---	---	---	---	35	28	28	30
24	---	---	---	---	---	---	---	---	34	28	27	29
25	---	---	---	---	---	---	---	---	37	29	29	29
26	---	---	---	---	---	---	---	---	35	31	51	29
27	---	---	---	---	---	---	---	---	32	38	42	29
28	---	---	---	---	---	---	---	---	32	36	34	29
29	---	---	---	---	---	---	---	---	33	32	34	29
30	---	---	---	---	---	---	---	---	32	49	31	28
31	---	---	---	---	---	---	---	---	---	112	30	---
TOTAL	---	---	---	---	---	---	---	---	---	1056	1156	911
MEAN	---	---	---	---	---	---	---	---	---	34.1	37.3	30.4
MAX	---	---	---	---	---	---	---	---	---	112	121	41
MIN	---	---	---	---	---	---	---	---	---	25	27	28
CFSM	---	---	---	---	---	---	---	---	---	.43	.47	.38
IN.	---	---	---	---	---	---	---	---	---	.49	.54	.43

PLATTE RIVER BASIN

05414213 LITTLE PLATTE RIVER NEAR PLATTEVILLE, WI--CONTINUED

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Shifting-control method used June 24 to Aug. 16, 1988 and Sept. 14-18, 27-30, 1988; stage-discharge relation affected by ice Dec. 17-19, 1987, and Dec. 27, 1987 to Feb. 25, 1988.)

6.9	15	7.7	79
7.1	24	8.0	146
7.4	45	8.5	294

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	28	35	39	36	130	156	64	39	29	26	17	18
2	28	30	36	36	90	121	65	38	29	26	17	17
3	27	28	37	36	74	81	69	37	28	26	17	17
4	28	27	35	36	68	71	63	37	28	25	18	18
5	28	26	34	35	64	68	61	37	28	25	23	18
6	28	26	34	34	62	72	61	36	28	25	18	17
7	27	27	34	34	62	82	57	35	28	25	18	18
8	27	28	36	34	60	94	56	42	28	24	19	18
9	27	27	50	33	60	85	54	50	27	24	19	17
10	26	26	42	33	58	75	50	41	27	28	18	17
11	26	26	41	33	58	71	50	37	27	25	17	17
12	27	27	39	33	58	71	48	36	28	23	18	18
13	27	27	37	32	56	63	47	35	27	22	17	17
14	27	27	36	32	56	59	47	33	27	23	18	17
15	27	27	43	32	56	60	43	34	28	22	17	17
16	29	33	34	32	54	58	43	32	28	75	17	19
17	30	63	33	32	54	56	44	33	28	28	17	19
18	28	39	32	32	54	55	42	34	29	21	17	19
19	27	34	38	34	54	54	40	34	29	20	17	40
20	27	32	52	44	54	54	44	33	30	19	17	31
21	27	30	45	40	54	53	42	33	29	19	17	22
22	27	31	42	35	54	48	43	32	30	19	20	124
23	27	31	40	33	46	44	50	31	28	19	30	40
24	27	30	41	32	42	51	43	30	28	19	20	24
25	26	31	43	31	48	71	42	30	29	20	19	21
26	27	30	39	31	58	55	44	30	27	19	18	20
27	28	30	39	30	88	50	53	30	27	18	18	20
28	26	52	38	30	129	63	46	30	27	18	18	19
29	27	53	38	30	193	91	41	29	34	18	18	19
30	26	42	37	45	---	74	40	30	27	18	18	19
31	27	---	37	170	---	68	---	30	---	17	18	---
TOTAL	844	975	1201	1190	1994	2174	1492	1068	847	736	570	717
MEAN	27.2	32.5	38.7	38.4	68.8	70.1	49.7	34.5	28.2	23.7	18.4	23.9
MAX	30	63	52	170	193	156	69	50	34	75	30	124
MIN	26	26	32	30	42	44	40	29	27	17	17	17
CFSM	.34	.41	.49	.48	.86	.88	.62	.43	.35	.30	.23	.30
IN.	.39	.46	.56	.56	.93	1.01	.70	.50	.40	.34	.27	.33

WTR YR 1988 TOTAL 13808 MEAN 37.7 MAX 193 MIN 17 CFSM .47 IN. 6.44

PLATTE RIVER BASIN

05414213 LITTLE PLATTE RIVER NEAR PLATTEVILLE, 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 1987.

REMARKS.--Water-quality analysis by the State Lab of Hygiene.

EXTREMES FOR PERIOD OF RECORD.--

WATER TEMPERATURE: Maximum observed, 32.0°C July 15, 1988; minimum observed, 0.0°C on many days during the 1988 water year.

DISSOLVED OXYGEN: Maximum observed, 18.8 mg/L May 5, 1988; minimum observed, 3.1 mg/L July 8-9, 1988.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum observed, 32.0°C July 15; minimum observed, 0.0°C on many days.

DISSOLVED OXYGEN: Maximum observed, 18.8 mg/L May 5; minimum observed, 3.1 mg/L July 8-9.

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH (STAND- ARD UNITS) (00400)	PH LAB (STAND- ARD UNITS) (00403)	TEMPER- ATURE WATER (DEG C) (00010)	TUR- BID- ITY (FTU) (00076)	OXYGEN, DIS- SOLVED (MG/L) (00300)	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- PHOROUS TOTAL (MG/L AS P) (00665)
NOV 1987											
17...	0300	65	--	8.10	--	61	--	424	--	0.150	--
18...	0920	38	--	8.10	--	36	--	98	--	1.40	--
JAN 1988											
31...	0515	341	--	7.60	--	110	--	560	--	1.90	--
31...	1130	435	--	7.80	--	100	--	636	--	1.70	--
31...	2000	590	--	7.80	--	80	--	316	--	1.10	--
FEB											
01...	0445	353	--	7.90	--	41	--	130	--	0.840	--
22...	1015	59	--	8.20	--	8.2	--	38	7.60	0.150	--
27...	1430	86	8.10	8.10	--	27	--	77	--	--	--
27...	1431	86	8.10	--	--	--	--	--	--	1.40	--
27...	1440	85	8.10	8.10	--	28	--	87	--	--	--
27...	1441	85	8.10	8.10	--	27	--	86	--	--	--
27...	1445	84	8.10	--	--	--	--	--	--	1.40	--
27...	1446	84	8.10	--	--	--	--	--	--	1.30	--
28...	1700	141	--	7.90	--	32	--	158	--	1.30	--
28...	1800	208	--	7.80	--	37	--	740	--	1.50	--
29...	1800	217	--	7.80	--	78	--	652	--	1.40	--
MAR											
01...	1300	104	8.20	8.00	--	72	--	296	--	--	--
01...	1301	104	8.00	7.90	--	76	8.2	288	--	--	--
01...	1302	104	8.10	--	--	--	--	--	--	1.10	--
01...	1303	104	8.10	--	--	--	--	--	--	1.10	--
01...	1304	103	7.90	--	--	--	--	--	--	1.10	--
APR											
06...	1345	63	8.60	8.50	14.0	6.8	12.0	29	5.90	0.050	3.02
MAY											
26...	1535	30	8.50	8.70	19.0	3.0	13.2	11	5.10	0.030	0.300
JUN											
29...	0245	73	--	8.20	21.0	20	6.3	136	--	<0.020	--
JUL											
16...	0700	262	--	8.10	--	31	--	288	--	<0.100	--
16...	0715	265	--	8.00	--	70	--	1230	--	0.400	--
16...	0930	113	--	7.70	--	70	--	2400	--	0.600	--
16...	2315	51	--	7.70	--	57	--	768	--	1.60	--
AUG											
23...	0145	40	--	8.20	--	37	--	212	--	0.050	--
SEP											
19...	0530	55	--	8.20	--	30	--	296	--	<0.020	--
19...	1415	90	--	8.20	--	24	--	244	--	0.040	--
22...	0800	57	--	7.80	--	260	--	3150	--	0.280	--
22...	0845	332	--	7.70	--	350	--	2070	--	0.310	--
22...	0945	472	--	7.70	--	210	--	1160	--	0.390	--
22...	1130	258	--	7.60	--	260	--	930	--	0.670	--
22...	1606	135	--	7.50	--	170	--	570	--	1.10	--
22...	1607	135	--	7.60	--	160	--	520	--	1.20	--
22...	1610	134	--	7.60	--	160	--	450	--	1.30	--
22...	2330	71	--	7.70	--	150	--	490	--	0.800	--

PLATTE RIVER BASIN

05414213 LITTLE PLATTE RIVER NEAR PLATTEVILLE, WI--CONTINUED

WATER TEMPERATURE, DEGREES CENTIGRADE, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	---	---	---	10.0	8.5	9.5	4.5	3.0	4.0	.0	.0	.0
2	14.0	8.5	11.0	13.0	10.0	11.5	3.0	2.5	2.5	.0	.0	.0
3	12.0	6.0	9.0	15.0	11.0	13.0	3.5	1.0	2.5	.0	.0	.0
4	13.5	6.5	10.0	14.5	9.5	12.5	2.0	.0	1.0	.0	.0	.0
5	14.5	10.5	12.0	9.5	5.0	7.5	2.0	.0	1.0	.0	.0	.0
6	12.0	9.0	10.5	6.5	3.5	5.5	2.5	.5	1.5	.0	.0	.0
7	10.5	7.0	9.0	6.5	4.0	5.0	3.5	2.0	3.0	.0	.0	.0
8	10.0	4.5	7.5	8.5	6.5	7.5	6.0	3.5	4.5	.0	.0	.0
9	10.0	6.5	8.0	6.5	3.5	5.5	6.5	5.5	6.0	.0	.0	.0
10	8.5	6.0	7.5	4.5	1.0	3.0	5.5	4.0	4.5	.0	.0	.0
11	8.5	3.0	6.0	5.0	1.0	3.0	6.5	4.0	5.0	.0	.0	.0
12	10.0	3.0	6.5	6.0	1.5	4.0	4.5	2.0	3.0	.0	.0	.0
13	11.5	4.5	8.0	6.5	3.5	5.0	2.5	1.5	2.0	.0	.0	.0
14	10.5	8.5	9.5	7.5	3.0	5.5	2.0	1.0	1.5	.0	.0	.0
15	13.0	9.5	11.0	9.5	5.5	7.5	.5	.0	.0	.0	.0	.0
16	12.0	11.0	11.5	10.5	9.0	10.0	1.0	.0	.0	.0	.0	.0
17	11.0	8.5	10.0	10.5	7.5	9.5	.0	.0	.0	.0	.0	.0
18	11.5	6.5	9.0	7.5	5.0	6.5	.0	.0	.0	.0	.0	.0
19	11.0	7.5	9.5	6.5	4.0	5.0	1.0	.0	.5	.0	.0	.0
20	9.0	5.5	6.5	4.0	1.0	2.5	1.5	.0	.5	.0	.0	.0
21	8.0	3.5	5.5	2.5	.5	1.0	1.0	.0	.5	.0	.0	.0
22	9.0	5.0	7.0	4.5	.5	2.5	2.0	.5	1.0	.0	.0	.0
23	7.5	5.5	6.5	5.5	4.5	5.0	2.0	.5	1.0	.0	.0	.0
24	8.0	5.5	6.5	5.0	4.5	4.5	3.0	1.0	2.0	.0	.0	.0
25	7.5	2.5	5.0	5.0	3.5	4.0	3.0	1.0	2.5	.0	.0	.0
26	6.5	3.5	5.0	5.0	4.0	4.5	1.0	.0	.5	.0	.0	.0
27	7.5	3.5	5.5	4.5	4.0	4.5	.0	.0	.0	.0	.0	.0
28	7.0	2.5	5.0	6.0	4.5	5.0	.0	.0	.0	.0	.0	.0
29	8.0	4.5	6.5	6.5	5.5	6.0	.0	.0	.0	.0	.0	.0
30	9.5	4.0	6.5	6.0	4.5	5.5	.0	.0	.0	.0	.0	.0
31	9.0	5.5	7.5	---	---	---	.0	.0	.0	.5	.0	.0
MONTH	---	---	---	15.0	.5	6.0	6.5	.0	1.6	.5	.0	.0
	FEBRUARY			MARCH			APRIL			MAY		
1	.0	.0	.0	2.5	.0	1.0	11.0	7.0	9.0	19.5	10.5	14.5
2	.0	.0	.0	2.5	.0	1.0	10.0	8.0	9.0	19.5	11.5	15.5
3	.0	.0	.0	4.0	1.0	2.0	10.5	8.5	9.5	19.5	11.5	15.0
4	.0	.0	.0	5.0	.0	2.5	16.0	9.0	12.0	18.5	11.0	14.5
5	.0	.0	.0	6.0	1.0	3.0	17.5	11.5	14.0	20.0	11.5	15.5
6	.0	.0	.0	7.5	2.0	4.5	14.5	9.5	12.0	21.0	11.5	16.0
7	.0	.0	.0	7.5	3.5	5.5	15.0	7.5	11.0	18.5	13.0	16.0
8	.0	.0	.0	9.5	6.0	7.5	16.0	9.5	12.5	18.5	14.0	16.0
9	.0	.0	.0	7.0	4.5	6.0	17.0	10.5	13.5	14.0	12.0	13.0
10	.0	.0	.0	8.5	3.0	5.5	12.5	8.5	10.0	19.5	10.5	15.0
11	.0	.0	.0	9.0	4.5	6.5	14.0	6.5	10.0	21.5	13.0	17.0
12	.0	.0	.0	7.5	4.5	6.5	15.5	7.5	11.0	23.5	15.0	19.0
13	.0	.0	.0	4.5	1.0	2.5	15.0	8.5	11.5	22.0	15.5	19.0
14	.0	.0	.0	2.5	.0	1.0	13.5	7.5	10.0	21.5	13.5	17.5
15	.0	.0	.0	2.5	.0	1.5	13.0	6.0	9.5	24.0	17.0	20.0
16	.5	.0	.0	6.0	1.0	3.5	14.5	6.0	10.0	18.5	14.5	16.0
17	.5	.0	.0	6.0	3.0	4.5	15.5	8.0	11.5	21.0	12.0	16.5
18	.5	.0	.0	8.0	2.0	4.5	13.5	6.5	10.0	22.5	13.0	18.0
19	.5	.0	.0	7.5	2.0	4.5	13.5	5.0	8.5	23.5	14.5	19.0
20	.5	.0	.0	7.0	2.5	4.5	12.0	6.5	9.0	24.5	15.0	19.5
21	.0	.0	.0	8.0	2.0	5.0	8.5	5.5	7.0	25.0	16.0	20.5
22	.5	.0	.0	11.0	3.5	7.0	7.0	6.0	6.5	24.0	17.5	20.5
23	.5	.0	.0	12.5	7.5	10.0	7.5	6.0	6.5	23.0	17.0	20.0
24	.5	.0	.0	10.5	7.5	8.5	13.5	4.5	9.0	22.5	15.5	18.5
25	.5	.0	.0	13.0	8.0	10.0	17.5	8.0	12.5	22.0	13.0	17.5
26	1.0	.0	.5	9.5	4.0	7.0	13.5	8.0	11.0	22.5	13.0	18.0
27	2.0	.0	1.0	9.5	2.5	6.0	8.0	6.0	6.5	23.5	16.5	20.0
28	2.0	.0	1.0	8.5	7.0	7.5	14.0	4.5	9.0	25.5	17.5	21.5
29	2.5	.0	1.0	8.5	6.0	7.0	17.5	7.5	12.5	25.5	17.5	21.5
30	---	---	---	10.0	4.0	7.0	18.5	9.5	14.0	26.5	18.5	22.5
31	---	---	---	11.5	5.5	8.5	---	---	---	27.0	18.5	23.0
MONTH	2.5	.0	.1	13.0	.0	5.2	18.5	4.5	10.3	27.0	10.5	17.9

WATER TEMPERATURE, DEGREES CENTIGRADE, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

[illegible]

PLATTE RIVER BASIN

05414213 LITTLE PLATTE RIVER NEAR PLATTEVILLE, WI--CONTINUED

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY				MARCH			APRIL			MAY		
1	---	---	---	---	---	---	---	---	---	18.4	8.1	12.2
2	---	---	---	---	---	---	---	---	---	18.2	7.9	11.9
3	---	---	---	---	---	---	---	---	---	18.4	7.9	11.9
4	---	---	---	---	---	---	---	---	---	18.3	8.1	12.0
5	---	---	---	---	---	---	---	---	---	18.8	7.5	12.0
6	---	---	---	---	---	---	---	---	---	18.4	7.0	11.6
7	---	---	---	---	---	---	11.6	7.9	9.3	16.6	7.1	10.6
8	---	---	---	---	---	---	11.4	7.8	9.2	14.6	7.1	9.3
9	---	---	---	---	---	---	11.4	7.8	9.0	10.4	7.4	8.8
10	---	---	---	---	---	---	11.3	8.1	9.7	13.0	7.3	9.7
11	---	---	---	---	---	---	12.2	8.7	10.1	12.0	6.9	9.1
12	---	---	---	---	---	---	12.7	8.5	10.2	10.9	6.6	8.4
13	---	---	---	---	---	---	13.0	8.6	10.1	10.8	6.5	8.1
14	---	---	---	---	---	---	13.5	8.8	10.8	10.0	6.4	8.0
15	---	---	---	---	---	---	14.2	9.5	11.3	9.7	6.4	7.6
16	---	---	---	---	---	---	14.6	9.1	11.4	9.6	6.6	8.3
17	---	---	---	---	---	---	14.6	9.2	11.2	11.3	7.4	9.2
18	---	---	---	---	---	---	15.2	9.4	11.7	11.2	7.1	8.9
19	---	---	---	---	---	---	15.3	9.7	11.5	11.4	6.9	8.9
20	---	---	---	---	---	---	15.6	9.8	11.8	11.0	6.7	8.5
21	---	---	---	---	---	---	15.8	9.8	12.4	11.2	6.5	8.5
22	---	---	---	---	---	---	15.0	10.7	12.2	11.0	6.5	8.4
23	---	---	---	15.1	9.4	11.5	15.2	10.9	12.4	11.6	6.7	8.6
24	---	---	---	12.5	8.9	10.2	17.7	9.5	13.2	12.1	7.1	9.1
25	---	---	---	10.0	7.1	8.8	17.8	8.0	12.3	12.8	7.5	9.6
26	---	---	---	13.3	8.0	10.8	13.6	8.0	10.6	13.3	7.3	9.8
27	---	---	---	13.8	10.0	11.8	15.0	9.9	12.4	13.3	7.1	9.5
28	---	---	---	---	---	---	18.4	9.0	13.2	13.5	6.6	9.3
29	---	---	---	---	---	---	18.2	7.9	12.2	13.4	6.4	9.2
30	---	---	---	---	---	---	18.6	8.0	12.0	13.7	6.2	9.2
31	---	---	---	---	---	---	---	---	---	13.9	6.1	9.1
MONTH	---	---	---	---	---	---	---	---	---	18.8	6.1	9.5
JUNE				JULY			AUGUST			SEPTEMBER		
1	13.5	6.0	9.0	14.3	5.2	9.2	11.2	5.0	7.2	---	---	---
2	13.9	6.0	9.2	14.5	4.8	8.9	11.0	5.0	7.2	---	---	---
3	14.0	6.2	9.2	15.4	4.9	9.0	10.9	4.9	7.1	---	---	---
4	14.0	6.3	9.3	15.7	4.7	8.9	10.7	4.9	6.7	---	---	---
5	13.9	5.9	9.1	15.6	4.5	9.1	10.9	5.5	7.8	---	---	---
6	13.5	5.6	8.7	15.7	4.2	8.8	13.0	7.1	9.3	---	---	---
7	13.3	5.2	8.5	14.9	3.8	8.2	14.4	7.6	10.4	---	---	---
8	13.2	5.2	8.5	14.6	3.1	7.8	14.3	8.4	10.6	---	---	---
9	13.2	6.0	8.9	13.5	3.1	7.4	12.7	8.7	10.3	---	---	---
10	13.5	6.4	9.3	12.1	3.4	6.6	11.4	8.7	9.8	---	---	---
11	13.5	6.0	9.1	11.9	4.0	7.2	---	---	---	---	---	---
12	13.6	5.6	8.9	13.0	4.3	7.7	---	---	---	---	---	---
13	13.6	5.3	8.7	13.3	4.0	7.5	---	---	---	---	---	---
14	13.7	5.2	8.7	13.3	3.8	7.2	---	---	---	---	---	---
15	13.6	5.1	8.4	13.1	3.7	7.1	---	---	---	---	---	---
16	13.7	5.2	8.6	---	---	---	13.6	5.0	8.5	---	---	---
17	13.0	5.4	8.9	---	---	---	10.1	6.8	9.5	---	---	---
18	14.4	5.4	9.0	---	---	---	---	---	---	---	---	---
19	12.5	5.4	8.1	9.3	5.2	6.8	---	---	---	---	---	---
20	14.0	4.6	8.6	9.3	5.4	7.0	---	---	---	---	---	---
21	13.6	4.5	8.2	9.7	5.9	7.4	---	---	---	---	---	---
22	13.7	4.5	7.7	10.6	5.7	7.7	---	---	---	---	---	---
23	14.1	4.7	8.5	10.6	5.6	7.6	---	---	---	---	---	---
24	14.1	4.9	8.2	10.8	5.6	7.5	---	---	---	9.4	7.3	8.2
25	13.9	4.6	8.1	10.9	5.6	7.5	---	---	---	9.8	7.1	8.4
26	14.4	4.6	8.7	11.5	5.6	7.8	---	---	---	---	---	---
27	14.6	5.3	9.0	11.6	5.4	7.8	---	---	---	---	---	---
28	15.1	5.5	9.3	11.9	5.5	7.8	---	---	---	---	---	---
29	11.8	5.4	7.9	12.1	5.5	8.0	---	---	---	---	---	---
30	14.0	5.6	9.2	11.9	5.5	7.6	---	---	---	---	---	---
31	---	---	---	11.9	5.1	7.8	---	---	---	---	---	---
MONTH	15.1	4.5	8.7	---	---	---	---	---	---	---	---	---

PLATTE RIVER BASIN

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 good.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily rainfall, 2.22 in., Sept. 22, 1988.

EXTREMES FOR CURRENT YEAR.--Maximum daily rainfall, 2.22 in., Sept. 22.

RAINFALL ACCUMULATED (INCHES), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.02	.14	.00	---	---	---	.01	.00	.00	.00	.00	.00
2	.00	.03	.00	---	---	---	.26	.00	.00	.00	.00	.00
3	.00	.00	.18	---	---	---	.03	.00	.00	.00	.00	.00
4	.00	.01	.00	---	---	---	.00	.00	.00	.00	.47	.01
5	.00	.00	---	---	---	---	.02	.00	.00	.00	.13	.00
6	.00	.00	---	---	---	---	.03	.00	.00	.00	.00	.00
7	.00	.12	---	---	---	---	.00	.00	.00	.00	.00	.00
8	.01	.07	---	---	---	---	.00	.42	.00	.00	.54	.00
9	.00	.01	---	---	---	---	.00	.20	.00	.19	.00	.00
10	.00	.04	---	---	---	---	.01	.00	.00	.29	.00	.00
11	.00	.06	---	---	---	---	.00	.02	.00	.00	.00	.00
12	.00	.00	---	---	---	---	.00	.00	.00	.00	.00	.02
13	.00	.00	---	---	---	---	.09	.00	.00	.00	.00	.00
14	.02	.00	---	---	---	---	.00	.00	.00	.09	.00	.00
15	.00	.09	---	---	---	---	.01	.00	.00	.00	.00	.00
16	.45	.86	---	---	---	---	.00	.00	.00	1.81	.00	.27
17	.00	.60	---	---	---	---	.00	.00	.00	.00	.00	.01
18	.01	.02	---	---	---	---	.00	.00	.00	.04	.00	.12
19	.00	.00	---	---	---	---	.00	.00	.04	.00	.00	1.69
20	.02	.00	---	---	---	---	.24	.00	.00	.00	.00	.06
21	.01	.00	---	---	---	---	.05	.00	.00	.00	.00	.30
22	.00	.00	---	---	---	.00	.44	.00	.03	.00	.89	2.22
23	.00	.02	---	---	---	.00	.08	.00	.00	.00	.01	.01
24	.13	.12	---	---	---	.87	.00	.00	.07	.05	.00	.01
25	.01	.07	---	---	---	.01	.00	.00	.00	.01	.00	.00
26	.10	.00	---	---	---	.00	.45	.00	.00	.00	.00	.00
27	.00	.10	---	---	---	.01	.20	.00	.00	.00	.00	.00
28	.00	1.01	---	---	---	.82	.00	.00	.35	.00	.00	.00
29	.01	.04	---	---	---	.07	.01	.00	.06	.00	.01	.00
30	.00	.01	---	---	---	.00	.00	.00	.00	.00	.01	.00
31	.55	---	---	---	---	.00	---	.00	---	.00	.00	---
TOTAL	1.34	3.42	---	---	---	---	1.93	0.64	0.55	2.48	2.06	4.72

SINSINAWA RIVER BASIN

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 current year.

GAGE.--Water-stage recorder. Elevation of gage is 790 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 fair.

EXTREMES FOR CURRENT PERIOD.--June 23 to September 1987: Maximum discharge, 61 ft³/s, Aug. 26, gage height, 3.27 ft; minimum, 10 ft³/s, July 20-24, 26, Aug. 2-7, 24, Sept. 10, 12-14, 25-26, 28-30, gage height, 2.47 ft.

Water year 1988: Maximum discharge, 187 ft³/s, Feb. 26, gage height, 4.22 ft; maximum gage height, 5.90 ft, Jan. 30 (backwater from ice); minimum daily, 6.9 ft³/s, Sept. 10, 13-15.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	---	12	11	11
2	---	---	---	---	---	---	---	---	---	12	10	11
3	---	---	---	---	---	---	---	---	---	12	11	11
4	---	---	---	---	---	---	---	---	---	12	11	11
5	---	---	---	---	---	---	---	---	---	12	10	11
6	---	---	---	---	---	---	---	---	---	12	10	11
7	---	---	---	---	---	---	---	---	---	12	10	11
8	---	---	---	---	---	---	---	---	---	12	30	11
9	---	---	---	---	---	---	---	---	---	12	13	11
10	---	---	---	---	---	---	---	---	---	11	11	10
11	---	---	---	---	---	---	---	---	---	11	11	11
12	---	---	---	---	---	---	---	---	---	11	11	11
13	---	---	---	---	---	---	---	---	---	11	11	11
14	---	---	---	---	---	---	---	---	---	11	11	10
15	---	---	---	---	---	---	---	---	---	13	11	11
16	---	---	---	---	---	---	---	---	---	11	12	11
17	---	---	---	---	---	---	---	---	---	11	12	13
18	---	---	---	---	---	---	---	---	---	11	17	11
19	---	---	---	---	---	---	---	---	---	11	11	11
20	---	---	---	---	---	---	---	---	---	10	11	11
21	---	---	---	---	---	---	---	---	---	10	13	11
22	---	---	---	---	---	---	---	---	---	10	11	11
23	---	---	---	---	---	---	---	---	12	10	11	11
24	---	---	---	---	---	---	---	---	12	10	10	11
25	---	---	---	---	---	---	---	---	13	11	11	10
26	---	---	---	---	---	---	---	---	12	10	39	10
27	---	---	---	---	---	---	---	---	12	11	16	11
28	---	---	---	---	---	---	---	---	12	11	13	10
29	---	---	---	---	---	---	---	---	12	11	12	10
30	---	---	---	---	---	---	---	---	12	17	12	10
31	---	---	---	---	---	---	---	---	---	12	11	---
TOTAL	---	---	---	---	---	---	---	---	---	353	404	325
MEAN	---	---	---	---	---	---	---	---	---	11.4	13.0	10.8
MAX	---	---	---	---	---	---	---	---	---	17	39	13
MIN	---	---	---	---	---	---	---	---	---	10	10	10
CFSM	---	---	---	---	---	---	---	---	---	.46	.52	.44
IN.	---	---	---	---	---	---	---	---	---	.53	.60	.49

SINSINAWA RIVER BASIN

05414800 SINSINAWA RIVER NEAR HAZEL GREEN, WI--CONTINUED

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Dec. 16-19, 1987, Dec. 26, 1987 to
Feb. 17, 1988, and Feb. 21-23, 1988.)

2.3	5.7	2.9	32
2.4	8.2	3.0	39
2.5	11	3.2	55
2.6	15	3.4	74
2.7	20	3.6	97
2.8	26		

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	10	12	13	11	22	20	17	12	11	9.3	7.8	7.1
2	10	11	12	11	20	18	18	11	11	9.2	7.8	7.1
3	9.8	11	12	11	16	16	19	11	10	9.2	7.6	7.1
4	10	11	11	11	16	15	17	11	10	8.8	7.8	7.1
5	10	10	11	11	15	15	17	11	10	8.7	8.6	7.1
6	10	10	12	11	15	16	16	11	11	8.6	7.6	7.0
7	10	10	12	11	14	16	15	11	11	8.4	7.6	7.1
8	10	11	13	11	14	17	15	12	11	8.3	8.2	7.0
9	10	10	18	11	14	16	14	12	10	8.3	8.0	7.0
10	9.8	9.8	14	11	14	15	14	11	10	9.2	7.6	6.9
11	10	10	14	12	14	15	14	10	11	8.5	7.6	7.0
12	10	10	13	12	14	16	14	11	11	8.3	7.6	7.1
13	10	11	12	12	14	14	14	10	11	8.3	7.5	6.9
14	10	10	12	12	14	14	13	10	11	8.3	7.6	6.9
15	11	10	10	13	14	14	13	11	11	8.2	7.4	6.9
16	12	12	11	13	14	14	13	9.8	11	11	7.3	7.3
17	11	23	11	13	14	14	13	10	11	8.5	7.3	8.1
18	10	12	11	14	14	14	13	9.9	12	9.3	7.2	7.4
19	10	12	13	16	15	14	13	10	12	8.9	7.4	10
20	10	11	18	20	14	14	13	10	12	8.2	7.2	8.1
21	9.9	11	14	15	14	14	13	10	11	8.1	7.1	7.5
22	10	11	14	13	14	14	13	10	11	7.9	8.7	12
23	10	11	13	12	13	14	15	10	10	7.9	12	8.4
24	10	11	15	12	13	16	13	9.9	10	8.1	7.5	7.6
25	10	11	14	11	13	19	12	10	11	8.7	7.3	7.6
26	11	11	12	12	48	15	13	10	9.7	7.9	7.2	7.6
27	11	11	11	13	32	14	14	10	9.7	7.9	7.4	7.6
28	10	23	11	13	36	24	13	10	9.8	7.8	7.3	7.4
29	11	16	11	13	26	30	12	10	10	7.9	7.0	7.5
30	10	13	11	80	---	20	12	10	9.6	7.9	7.2	7.6
31	10	---	10	50	---	18	---	10	---	7.8	7.1	---
TOTAL	316.5	355.8	389	491	510	505	425	324.6	319.8	263.4	238.5	227.0
MEAN	10.2	11.9	12.5	15.8	17.6	16.3	14.2	10.5	10.7	8.50	7.69	7.57
MAX	12	23	18	80	48	30	19	12	12	11	12	12
MIN	9.8	9.8	10	11	13	14	12	9.8	9.6	7.8	7.0	6.9
CFSM	.41	.48	.50	.64	.71	.65	.57	.42	.43	.34	.31	.30
IN.	.47	.53	.58	.73	.76	.75	.63	.48	.48	.39	.36	.34

WTR YR 1988 TOTAL 4365.6 MEAN 11.9 MAX 80 MIN 6.9 CFSM .48 IN. 6.52

SINSINAWA RIVER BASIN

05414800 SINSINAWA RNEAR HAZEL GREEN, 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 1987.

REMARKS.--Water-quality analysis by the State Lab of Hygiene.

EXTREMES FOR PERIOD OF RECORD.--

WATER TEMPERATURE: Maximum observed, 31.0°C Aug. 15-16, 1988; minimum observed, 0.00°C on many days during the 1988 water year.

DISSOLVED OXYGEN: Maximum observed, 17.5 mg/L Apr. 29, 1988; minimum observed, 1.4 mg/L Aug. 23, 1988.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum observed, 31.0°C Aug. 15-16; minimum observed, 0.00°C on many days.

DISSOLVED OXYGEN: Maximum observed, 17.5 mg/L Apr. 29; minimum observed, 1.4 mg/L Aug. 23.

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH (STAND- ARD UNITS) (00400)	PH LAB (STAND- ARD UNITS) (00403)	TEMPER- ATURE WATER (DEG C) (00010)	TUR- BID- ITY (FTU) (00076)	OXYGEN, DIS- SOLVED (MG/L) (00300)	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- PHOROUS TOTAL (MG/L AS P) (00665)
NOV 1987											
17...	0100	19	--	8.10	--	41	--	130	--	0.330	--
17...	0200	27	--	8.10	--	46	--	246	--	0.370	--
18...	1100	12	--	8.10	--	31	--	70	--	0.470	--
JAN 1988											
30...	1100	104	--	7.50	--	6.5	--	408	--	2.00	--
30...	1400	236	--	7.60	--	110	--	852	--	1.50	--
30...	1530	309	--	7.30	--	380	--	2780	--	2.60	--
30...	1545	321	--	7.30	--	400	--	2910	--	2.30	--
30...	1915	492	--	7.30	--	500	--	2950	--	2.30	--
31...	0930	118	--	7.40	--	82	--	1010	--	1.80	--
FEB											
19...	1200	14	--	8.10	--	9.6	--	29	6.30	0.360	--
26...	1530	40	--	8.20	2.5	55	--	334	--	0.400	--
26...	1645	87	--	8.00	2.5	160	--	932	--	1.40	--
26...	1745	161	--	7.80	1.5	340	--	1860	--	1.90	--
26...	1815	185	--	7.80	1.5	350	--	2120	--	1.50	--
26...	2100	112	--	7.50	0.5	320	--	1400	--	2.90	--
27...	0230	33	--	7.50	0.5	140	--	380	--	2.80	--
27...	1115	20	7.80	--	--	--	--	--	--	2.00	--
27...	1116	20	7.90	7.90	--	32	--	73	--	--	--
27...	1125	20	7.90	--	--	--	--	--	--	2.00	--
27...	1126	20	8.00	7.90	--	40	--	100	--	--	--
27...	1127	20	8.00	7.90	--	37	--	104	--	--	--
27...	1128	20	7.90	--	--	--	--	--	--	2.00	--
27...	1815	42	--	7.80	--	39	--	182	--	1.60	--
27...	1900	60	--	7.80	--	24	--	300	--	1.60	--
28...	1630	43	--	8.00	--	29	--	132	--	1.30	--
28...	1700	60	--	8.00	--	49	--	264	--	1.50	--
28...	1730	85	--	7.90	--	22	--	436	--	1.50	--
29...	1800	40	--	8.10	--	30	--	138	--	0.800	--
APR											
07...	1020	15	8.40	8.30	9.0	5.6	11.0	15	5.60	0.040	0.100
MAY											
26...	0940	10	8.20	8.20	15.0	10	10.0	26	4.60	0.090	0.120
AUG											
22...	2359	19	--	8.10	--	54	--	248	--	0.240	--

SINSINAWA RIVER BASIN

05414800 SINSINAWA RIVER NEAR HAZEL GREEN, WI--CONTINUED

WATER TEMPERATURE, DEGREES CENTIGRADE, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER				NOVEMBER			DECEMBER			JANUARY		
1	15.0	11.0	13.0	11.0	9.0	10.0	4.5	3.5	4.0	.0	.0	.0
2	15.0	8.5	11.5	13.0	11.0	12.0	3.5	2.5	3.0	.0	.0	.0
3	10.0	6.5	8.5	14.5	12.5	13.5	3.5	2.5	3.0	.0	.0	.0
4	12.5	8.5	10.5	14.0	11.5	13.0	2.5	1.0	1.5	.0	.0	.0
5	14.0	11.5	12.5	11.0	7.0	8.5	2.5	1.5	2.0	.0	.0	.0
6	13.0	9.5	11.0	7.0	5.5	6.0	3.0	2.0	2.5	.0	.0	.0
7	9.5	7.5	9.0	7.0	5.5	6.0	4.0	3.0	3.5	.0	.0	.0
8	9.0	6.5	8.0	9.0	7.0	8.5	7.0	4.0	5.0	.0	.0	.0
9	9.0	7.5	8.5	8.5	5.5	6.5	7.5	6.0	7.0	.0	.0	.0
10	8.5	6.5	7.5	5.5	3.5	4.5	6.0	4.5	5.0	.0	.0	.0
11	7.0	4.0	6.0	5.0	3.0	4.5	6.5	4.5	5.5	.0	.0	.0
12	8.5	4.5	6.5	6.5	4.0	5.0	5.5	2.5	3.5	.0	.0	.0
13	10.0	6.0	8.0	7.5	6.0	6.5	3.5	2.0	2.5	.0	.0	.0
14	10.0	9.0	9.5	7.5	6.0	7.0	3.0	2.0	2.5	.0	.0	.0
15	12.5	9.5	11.0	10.0	7.0	8.5	1.5	.0	.5	.0	.0	.0
16	12.0	11.0	11.5	10.5	10.0	10.0	.5	.0	.0	.0	.0	.0
17	11.0	9.0	10.0	10.5	7.5	9.5	.5	.0	.0	.0	.0	.0
18	10.5	7.0	9.0	7.5	6.0	6.5	.5	.0	.0	.5	.0	.0
19	10.5	9.0	10.0	6.5	4.5	5.5	.5	.0	.5	.5	.0	.0
20	10.0	6.5	8.0	5.0	2.0	3.0	1.0	.0	.5	.5	.0	.0
21	7.0	4.5	6.0	2.5	1.0	2.0	1.5	.0	.5	1.0	.0	.5
22	9.0	6.0	7.5	6.0	1.5	3.0	3.0	1.5	2.5	1.0	.5	1.0
23	8.0	6.0	7.0	6.5	5.5	6.0	3.5	2.0	3.0	.5	.0	.0
24	8.0	6.5	7.0	5.5	5.0	5.0	4.0	3.5	4.0	.0	.0	.0
25	7.0	4.5	6.0	5.0	4.0	4.5	3.5	1.5	3.0	.0	.0	.0
26	6.5	5.5	6.0	5.0	4.5	4.5	1.5	.5	1.0	.0	.0	.0
27	7.5	5.5	6.5	5.0	4.5	5.0	1.0	.0	.5	---	---	---
28	7.0	5.0	6.5	6.5	4.5	5.5	.5	.0	.0	.0	.0	.0
29	8.0	6.5	7.5	6.5	6.0	6.5	.5	.0	.0	.0	.0	.0
30	9.0	6.0	7.5	6.5	4.5	5.5	1.0	.0	.5	.5	.0	.0
31	9.0	7.5	8.5	---	---	---	.5	.0	.0	3.0	.5	1.5
MONTH	15.0	4.0	8.6	14.5	1.0	6.7	7.5	.0	2.2	---	---	---
FEBRUARY				MARCH			APRIL			MAY		
1	1.5	.0	.5	7.0	2.5	4.5	12.0	7.0	10.0	19.0	10.5	15.0
2	.0	.0	.0	5.5	3.0	4.5	11.0	8.0	9.5	19.0	11.0	15.0
3	.5	.5	.5	4.5	1.0	3.0	12.0	9.0	10.5	19.0	10.5	15.0
4	.5	.0	.0	5.5	.5	3.0	18.0	9.5	13.5	17.0	10.0	13.5
5	.0	.0	.0	6.5	1.5	4.0	17.5	11.5	14.5	20.0	11.0	15.5
6	.0	.0	.0	8.5	2.5	5.5	14.0	8.5	11.5	20.0	11.0	16.0
7	.0	.0	.0	8.5	4.0	6.5	16.0	6.5	11.5	18.5	12.5	15.5
8	.0	.0	.0	10.5	6.5	8.5	16.5	9.5	13.0	18.0	13.0	15.5
9	.0	.0	.0	7.5	5.0	6.0	16.5	10.0	13.5	13.5	11.5	12.5
10	.0	.0	.0	9.0	3.0	6.0	13.0	7.5	8.5	20.0	10.5	15.0
11	.0	.0	.0	9.5	5.0	7.5	14.5	5.5	9.5	21.0	12.5	17.0
12	.0	.0	.0	8.5	4.0	6.5	16.0	7.0	11.5	23.0	15.0	19.0
13	.0	.0	.0	4.0	1.0	2.0	14.5	8.5	12.0	21.5	15.0	18.5
14	.5	.0	.0	2.0	.5	1.0	13.0	6.5	10.0	21.0	13.0	17.5
15	.5	.0	.0	2.5	.0	1.5	13.0	5.5	9.5	23.5	17.0	20.0
16	.5	.0	.5	6.0	1.5	3.5	14.5	5.5	10.0	18.5	14.0	15.5
17	.5	.0	.5	6.5	3.0	5.0	16.0	8.0	11.5	21.0	11.5	16.0
18	2.5	.5	1.5	8.0	2.5	5.5	13.0	6.0	9.5	22.0	13.5	18.0
19	4.0	1.5	2.5	7.5	2.5	5.5	13.0	4.5	9.0	23.0	14.5	19.0
20	3.0	.0	2.0	8.0	2.5	5.5	11.5	6.5	8.5	24.0	15.5	19.5
21	.5	.0	.0	8.0	3.0	6.0	8.5	4.5	6.0	24.0	16.5	20.5
22	2.5	.5	1.5	11.0	3.5	7.5	6.5	5.5	6.0	22.5	17.5	20.5
23	1.5	.0	.5	13.0	8.0	10.5	7.0	5.0	6.0	21.0	16.0	18.5
24	1.5	.0	.5	11.5	7.5	9.5	13.5	4.5	9.0	21.5	15.0	18.0
25	1.5	.0	.5	13.5	8.0	11.0	17.5	8.5	13.0	20.5	12.5	17.0
26	3.5	.0	1.0	10.0	4.5	7.0	15.0	7.0	10.5	21.5	13.5	17.5
27	6.0	.0	2.5	10.0	2.0	6.5	7.5	5.0	6.0	21.5	15.5	19.0
28	6.0	.5	2.5	9.5	7.0	8.0	15.0	4.5	9.5	24.5	17.0	20.5
29	7.5	.5	4.0	9.0	6.0	7.5	17.5	8.0	12.5	24.0	17.5	21.0
30	---	---	---	12.5	3.5	8.0	18.5	9.5	14.0	25.0	18.0	21.5
31	---	---	---	13.0	6.0	9.5	---	---	---	25.5	18.0	22.0
MONTH	7.5	.0	.7	13.5	.0	6.0	18.5	4.5	10.3	25.5	10.0	17.6

SINSINAWA RIVER BASIN

05414800 SINSINAWA RIVER NEAR HAZEL GREEN, WI--CONTINUED

WATER TEMPERATURE, DEGREES CENTIGRADE, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	26.0	19.0	22.5	23.0	16.0	19.5	29.5	24.0	26.5	22.5	18.5	20.5
2	25.0	19.5	22.5	25.0	18.0	21.5	29.5	24.0	26.5	23.0	19.5	21.0
3	24.0	17.5	21.0	25.5	18.5	22.0	29.5	24.0	26.5	23.0	20.0	21.5
4	23.5	16.0	20.0	26.0	19.0	22.5	28.5	24.0	26.0	20.5	18.0	19.0
5	24.5	17.0	21.0	27.0	20.0	23.5	27.5	22.5	25.0	18.0	15.0	16.5
6	25.5	18.0	22.0	28.0	21.5	25.0	26.5	19.5	23.0	18.0	13.5	16.0
7	26.0	18.5	22.5	28.0	22.0	25.5	26.0	19.5	23.0	18.5	14.5	16.5
8	25.0	19.0	22.0	28.0	22.0	25.5	27.5	22.5	24.5	19.0	15.5	17.0
9	22.0	15.0	18.5	27.5	21.5	24.5	28.0	23.0	25.5	19.0	15.5	17.5
10	22.5	15.0	19.0	26.0	22.0	24.0	27.0	21.0	24.0	19.0	15.5	17.0
11	23.5	15.5	19.5	25.0	20.0	23.0	29.0	22.5	26.0	20.0	16.5	18.0
12	24.5	17.0	21.0	26.5	19.0	23.0	28.5	23.5	26.0	21.5	18.5	19.5
13	25.5	18.5	22.0	28.5	21.0	25.0	27.0	23.5	25.5	21.0	18.0	19.0
14	26.0	20.0	23.0	30.0	24.0	27.0	30.0	23.5	26.5	19.0	15.5	17.5
15	26.0	20.5	23.0	30.5	24.5	27.5	31.0	24.5	28.0	18.5	16.5	17.5
16	25.5	18.5	22.0	28.0	24.0	26.0	31.0	25.5	28.5	17.5	16.0	16.5
17	21.5	18.0	20.0	30.0	23.5	27.0	30.5	25.5	28.0	20.5	16.5	18.0
18	25.0	18.5	21.5	28.0	24.0	26.0	28.5	25.0	26.5	20.0	18.5	19.0
19	23.0	20.0	21.5	27.0	21.5	24.5	25.5	22.5	24.0	20.0	16.0	19.0
20	28.5	20.0	24.5	24.5	21.5	22.5	25.5	20.0	22.5	16.0	13.5	14.5
21	28.5	24.0	26.5	25.0	19.5	22.0	24.0	20.5	22.5	15.5	11.5	14.0
22	29.5	23.0	26.0	26.5	19.0	22.5	22.5	20.0	20.5	20.5	15.0	17.5
23	27.0	21.5	24.5	27.0	20.0	23.5	23.5	19.0	21.0	19.0	15.0	17.0
24	25.5	20.0	23.0	27.0	21.5	24.0	23.0	19.5	21.5	17.5	12.0	14.5
25	29.0	22.5	25.5	27.0	21.0	24.0	22.5	19.0	20.5	17.5	13.0	15.0
26	25.5	20.5	23.5	26.5	20.0	23.5	22.0	17.5	20.0	18.0	14.5	16.0
27	25.5	18.5	22.0	27.5	20.5	24.5	20.5	19.0	19.5	18.5	15.5	16.5
28	25.5	19.0	22.5	28.0	22.0	25.0	20.5	16.5	18.5	16.5	15.0	15.5
29	22.0	18.0	20.0	27.0	22.0	25.0	21.0	17.0	19.0	18.0	14.5	16.0
30	22.5	14.5	19.0	29.0	22.5	25.5	22.5	18.5	20.0	---	---	---
31	---	---	---	28.0	21.5	25.0	22.5	18.0	20.0	---	---	---
MONTH	29.5	14.5	22.0	30.5	16.0	24.2	31.0	16.5	23.7	---	---	---

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	11.0	7.5	9.2	10.3	8.2	9.1	13.5	11.4	12.2	---	---	---
2	10.7	7.4	9.2	10.7	7.8	8.8	13.6	11.8	12.5	---	---	---
3	12.1	9.1	10.5	11.4	7.4	8.9	---	---	---	---	---	---
4	11.8	8.5	9.9	11.6	7.3	9.0	---	---	---	---	---	---
5	11.4	8.3	9.2	13.0	8.5	10.6	---	---	---	---	---	---
6	10.7	8.3	9.4	12.7	10.0	11.1	---	---	---	---	---	---
7	12.2	9.6	10.5	11.4	9.7	10.5	---	---	---	---	---	---
8	12.8	9.6	10.8	11.3	9.3	9.9	---	---	---	---	---	---
9	12.2	9.4	10.6	13.0	9.3	11.1	---	---	---	---	---	---
10	11.8	9.9	10.6	13.5	10.6	11.8	---	---	---	---	---	---
11	12.9	10.0	11.2	13.6	10.9	12.0	---	---	---	---	---	---
12	13.0	9.7	11.1	13.6	10.5	11.9	---	---	---	---	---	---
13	13.1	9.4	10.9	12.5	9.9	11.1	---	---	---	---	---	---
14	11.7	9.1	10.1	12.1	9.7	10.5	---	---	---	---	---	---
15	12.4	8.8	10.1	12.4	9.3	10.6	---	---	---	---	---	---
16	9.6	8.4	8.9	9.8	8.7	9.2	---	---	---	---	---	---
17	10.3	8.2	8.9	9.2	8.0	8.5	---	---	---	---	---	---
18	10.5	8.0	9.0	12.1	9.2	10.7	---	---	---	---	---	---
19	10.8	7.9	9.0	13.0	10.5	11.5	---	---	---	---	---	---
20	10.5	8.3	9.4	13.6	10.7	12.2	---	---	---	---	---	---
21	12.3	9.9	10.8	13.6	10.5	12.0	---	---	---	---	---	---
22	11.9	9.4	10.3	12.0	9.5	10.9	---	---	---	---	---	---
23	12.1	9.3	10.5	10.2	9.2	9.8	---	---	---	---	---	---
24	11.1	9.3	10.0	11.3	10.0	10.6	---	---	---	---	---	---
25	11.9	9.2	10.2	12.1	10.5	11.1	---	---	---	---	---	---
26	10.6	9.1	9.6	11.8	10.7	11.1	---	---	---	---	---	---
27	12.2	9.3	10.3	11.8	10.9	11.2	---	---	---	---	---	---
28	12.7	9.4	10.8	11.1	9.6	10.5	---	---	---	---	---	---
29	12.7	9.4	10.6	10.4	9.3	9.9	---	---	---	---	---	---
30	13.2	9.1	10.7	11.7	10.3	11.1	---	---	---	---	---	---
31	12.1	8.8	10.1	---	---	---	---	---	---	---	---	---
MONTH	13.2	7.4	10.1	13.6	7.3	10.6	---	---	---	---	---	---

SINSINAWA RIVER BASIN

05414800 SINSINAWA RIVER NEAR HAZEL GREEN, WI--CONTINUED

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	---	---	---	---	13.6	8.5	10.6	15.9	6.5	10.5
2	---	---	---	---	---	---	12.6	8.1	9.9	15.4	6.5	10.4
3	---	---	---	---	---	---	12.5	8.0	9.5	14.8	6.6	10.2
4	---	---	---	---	---	---	13.7	7.1	10.0	14.5	6.9	10.3
5	---	---	---	---	---	---	13.8	7.1	9.5	14.1	6.5	10.0
6	---	---	---	---	---	---	13.2	7.4	10.0	13.6	6.4	9.7
7	---	---	---	---	---	---	14.1	6.9	10.2	13.7	6.5	9.6
8	---	---	---	---	---	---	14.1	6.7	9.7	13.0	7.3	9.1
9	---	---	---	---	---	---	14.4	6.6	9.6	12.0	7.6	9.6
10	---	---	---	---	---	---	11.8	6.7	9.3	13.6	6.4	10.3
11	---	---	---	---	---	---	12.6	7.2	9.8	13.2	6.3	9.5
12	---	---	---	---	---	---	13.1	7.0	9.7	12.1	5.5	8.5
13	---	---	---	---	---	---	13.1	7.0	9.4	12.9	5.5	9.0
14	---	---	---	---	---	---	13.5	7.5	10.3	13.2	6.3	9.5
15	---	---	---	---	---	---	13.8	8.2	10.7	12.7	6.1	8.8
16	---	---	---	---	---	---	14.5	7.7	10.9	12.2	6.3	9.3
17	---	---	---	---	---	---	14.7	7.7	10.7	13.8	6.6	10.2
18	---	---	---	---	---	---	15.0	8.4	11.4	13.5	6.2	9.4
19	---	---	---	---	---	---	15.4	8.7	11.9	13.3	6.1	9.3
20	---	---	---	---	---	---	15.5	8.7	11.4	13.3	5.7	9.1
21	---	---	---	---	---	---	15.3	9.2	12.0	13.0	5.3	8.7
22	---	---	---	16.8	8.6	12.5	14.8	10.3	11.9	12.7	5.3	8.4
23	---	---	---	17.1	8.6	12.0	13.8	9.5	11.4	12.4	5.9	8.5
24	---	---	---	14.5	8.3	10.5	15.7	7.8	11.7	13.1	6.2	9.3
25	---	---	---	11.0	7.7	9.0	16.3	6.8	11.1	13.5	6.4	9.6
26	---	---	---	14.4	8.2	11.1	13.1	6.7	9.9	12.6	5.8	8.9
27	---	---	---	14.1	8.6	11.4	15.2	9.6	12.2	12.3	5.7	8.5
28	---	---	---	12.2	7.5	9.8	17.2	7.8	12.6	12.4	5.1	8.4
29	---	---	---	9.5	7.5	8.5	17.5	6.9	11.8	12.0	5.1	8.3
30	---	---	---	12.7	8.6	10.5	16.2	6.6	10.9	12.3	5.0	8.2
31	---	---	---	13.3	8.5	10.6	---	---	---	12.5	4.9	8.3
MONTH	---	---	---	---	---	---	17.5	6.6	10.7	15.9	4.9	9.3
		JUNE			JULY			AUGUST			SEPTEMBER	
1	11.9	4.4	7.8	12.8	6.0	9.0	8.4	3.4	5.6	11.2	6.0	8.0
2	11.0	4.4	7.3	12.9	5.4	8.8	8.5	3.7	5.6	11.4	5.8	8.0
3	11.5	5.0	7.9	13.0	5.3	8.7	9.0	4.0	6.0	11.6	5.9	8.2
4	11.7	5.2	8.2	13.3	5.2	8.7	8.8	4.1	5.6	10.7	6.0	8.3
5	11.6	4.9	8.0	13.2	5.0	8.5	9.1	4.6	6.5	12.0	7.5	9.5
6	11.5	4.8	7.7	11.7	4.6	7.7	10.1	5.3	7.2	12.9	7.3	9.7
7	11.1	4.4	7.5	11.3	4.5	7.4	10.2	5.2	7.2	12.6	6.9	9.0
8	10.9	4.3	7.3	11.1	4.4	7.3	9.7	5.0	6.5	12.0	6.4	8.6
9	11.4	5.7	8.2	10.6	4.5	7.1	9.7	4.9	6.7	---	---	---
10	11.8	5.7	8.4	10.5	4.7	6.9	10.2	5.3	7.3	---	---	---
11	12.0	5.2	8.4	10.8	5.1	7.6	10.2	5.0	7.1	---	---	---
12	11.9	5.0	8.1	11.1	5.0	7.7	10.3	4.9	7.0	---	---	---
13	11.7	4.9	7.9	10.7	4.3	7.1	9.6	5.0	6.8	---	---	---
14	11.6	4.8	7.8	10.2	3.9	6.6	9.2	4.6	6.7	---	---	---
15	11.8	4.9	7.8	9.1	3.5	5.9	9.0	4.3	6.1	---	---	---
16	12.0	5.0	8.1	7.2	3.3	4.9	9.1	4.3	6.1	---	---	---
17	12.1	5.2	8.3	7.7	2.8	4.8	9.5	4.5	6.3	---	---	---
18	11.9	5.0	8.1	8.5	2.7	4.9	8.7	4.4	6.0	---	---	---
19	10.4	4.9	7.2	8.8	3.1	5.8	8.8	4.9	6.6	---	---	---
20	10.7	3.7	7.3	9.2	3.9	6.3	9.6	5.9	7.3	11.2	6.9	8.5
21	9.9	3.7	6.5	11.1	4.9	7.7	9.5	5.8	7.3	12.3	7.1	9.1
22	9.9	3.9	6.4	12.5	6.5	9.0	7.9	5.9	6.8	8.5	5.5	7.0
23	10.6	4.2	7.2	12.9	6.3	9.0	7.1	1.4	4.7	8.7	5.3	6.4
24	---	9	7.2	12.6	6	8.7	7.4	3.6	5.1	10.0	5.6	7.4
25	10.5	4.7	7.3	12.4	6.6	8.9	8.3	3.7	6.0	10.2	5.7	7.5
26	11.3	4.6	7.8	---	---	---	9.6	5.6	7.3	10.6	5.8	7.5
27	11.8	5.5	8.3	---	---	---	9.1	5.7	7.2	10.1	5.6	7.3
28	11.6	5.4	8.0	---	---	---	10.8	6.9	8.5	9.3	5.8	7.4
29	11.0	5.6	8.0	9.5	4.7	6.7	10.9	6.9	8.4	11.1	6.5	8.3
30	12.3	6.2	9.2	9.4	4.7	6.6	10.9	6.6	8.0	---	---	---
31	---	---	---	9.2	4.1	6.4	11.2	6.3	8.2	---	---	---
MONTH	12.3	3.7	7.8	---	---	---	11.2	1.4	6.7	---	---	---

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, 1.82 in., Aug. 22.

RAINFALL ACCUMULATED (INCHES), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.01	.24	.00	---	---	---	.01	.00	.00	.00	.00	.00
2	.00	.02	.00	---	---	---	.35	.00	.00	.00	.00	.00
3	.01	.00	.00	---	---	---	.09	.00	.00	.00	.00	.00
4	.00	.00	---	---	---	---	.01	.00	.00	.00	.29	.00
5	.00	.00	---	---	---	---	.10	.00	.00	.00	.41	.01
6	.00	.00	---	---	---	---	.04	.00	.00	.00	.00	.00
7	.00	.12	---	---	---	---	.00	.00	.00	.00	.00	.00
8	.00	.02	---	---	---	---	.00	.55	.00	.00	.52	.00
9	.00	.01	---	---	---	---	.00	.14	.00	.53	.00	.00
10	.00	.01	---	---	---	---	.00	.00	.00	.05	.00	.00
11	.01	.03	---	---	---	---	.00	.25	.00	.00	.00	.00
12	.00	.00	---	---	---	---	.00	.02	.00	.00	.00	.00
13	.00	.00	---	---	---	---	.02	.00	.00	.00	.00	.00
14	.02	.00	---	---	---	---	.00	.00	.00	.00	.00	.00
15	.01	.06	---	---	---	---	.00	.00	.00	.00	.00	.00
16	.53	.85	---	---	---	---	.00	.00	.00	.65	.00	.17
17	.00	.77	---	---	---	---	.00	.00	.00	.00	.00	.66
18	.00	.03	---	---	---	---	.00	.00	.05	.47	.00	.15
19	.00	.00	---	---	---	---	.00	.00	.01	.00	.00	.97
20	.02	.00	---	---	---	---	.16	.00	.00	.06	.00	.07
21	.00	.00	---	---	---	.00	.13	.00	.00	.00	.00	.06
22	.00	.00	---	---	---	.00	.45	.00	.02	.00	1.82	.75
23	.01	.00	---	---	---	.00	.06	.09	.00	.00	.02	.01
24	.11	.09	---	---	---	.65	.00	.00	.04	.16	.00	.00
25	.00	.13	---	---	---	.01	.00	.00	.00	.11	.00	.00
26	.14	.00	---	---	---	.00	.26	.00	.00	.00	.00	.00
27	.00	.09	---	---	---	.01	.15	.00	.00	.00	.00	.00
28	.00	1.09	---	---	---	1.15	.00	.00	.00	.00	.00	.00
29	.00	.03	---	---	---	.06	.00	.00	.27	.00	.00	.00
30	.00	.00	---	---	---	.00	.00	.00	.00	.00	.03	.00
31	.00	---	---	---	---	.00	---	.00	---	.00	.00	---
TOTAL	0.87	3.59	---	---	---	---	1.83	1.05	0.39	2.03	3.09	2.85

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, which are fair. Gage-height telemeter at station.

AVERAGE DISCHARGE.--49 years, 79.7 ft³/s, 8.66 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)
Jan. 31	----	(a) *1,300	(a) *9.22				

(a) Backwater from ice.

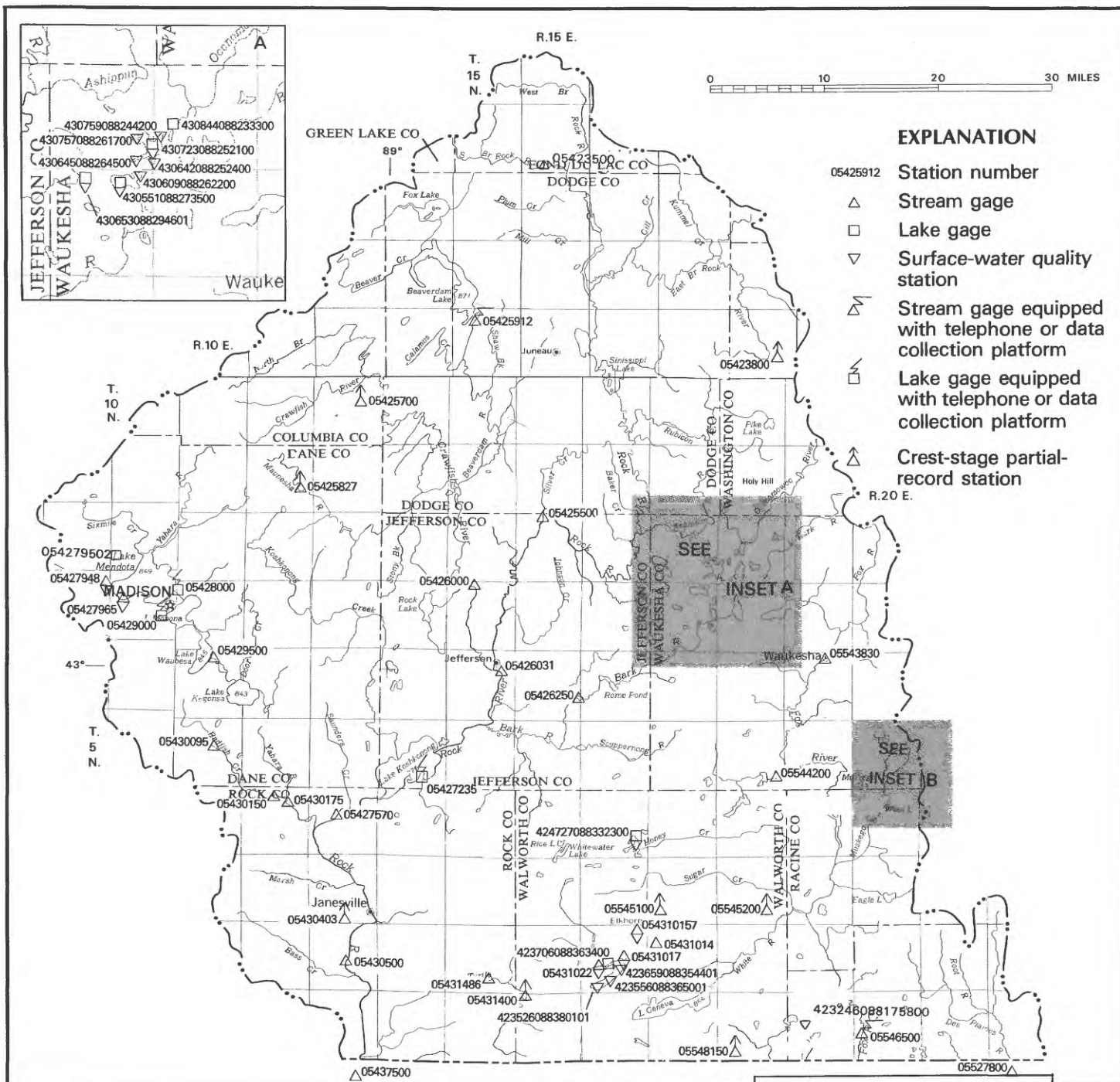
Minimum discharge, 23 ft³/s, Aug. 18.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Dec. 16-21 and Dec. 27 to Mar. 4.)

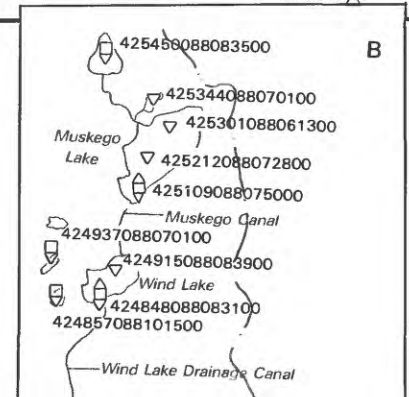
2.5	22	3.5	156
3.0	77	4.0	264

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	56	59	80	56	250	180	110	68	51	37	28	29
2	56	62	74	52	180	120	110	67	52	37	27	29
3	53	60	75	49	160	100	127	66	51	37	26	29
4	53	59	69	48	140	98	112	66	52	36	28	30
5	56	56	69	46	130	99	106	67	52	35	40	30
6	58	55	65	45	130	100	105	67	52	34	32	30
7	55	57	66	44	130	106	97	68	51	36	28	30
8	53	59	69	44	130	117	93	74	50	36	31	30
9	53	56	98	44	130	113	90	92	47	35	32	30
10	52	53	90	44	120	101	86	77	47	47	32	29
11	52	53	86	44	120	99	87	69	47	42	30	29
12	56	56	82	44	120	102	85	69	47	39	30	29
13	58	59	75	44	120	95	84	67	47	38	28	28
14	55	56	71	43	120	87	82	66	46	37	28	28
15	56	54	65	43	120	90	79	70	44	35	27	28
16	59	60	64	44	120	87	78	64	43	37	26	30
17	65	115	62	45	110	85	78	66	44	44	25	39
18	58	85	66	46	110	85	77	65	46	37	24	34
19	56	68	78	47	110	84	74	64	47	37	25	46
20	55	63	90	70	110	83	75	64	45	35	28	47
21	54	61	110	62	110	80	77	62	43	38	27	37
22	54	61	86	54	110	80	76	59	42	35	30	59
23	55	62	80	50	110	83	89	57	40	34	59	70
24	56	58	82	48	100	84	79	55	40	34	38	41
25	55	61	88	47	100	110	73	52	41	37	31	36
26	56	59	79	46	110	93	73	53	37	36	30	34
27	59	58	76	46	140	85	84	53	37	34	30	33
28	55	93	68	45	150	97	79	52	37	33	31	33
29	54	120	74	45	160	190	73	51	40	31	30	34
30	54	89	70	220	---	133	70	51	41	30	30	34
31	53	---	62	600	---	117	---	50	---	29	30	---
TOTAL	1720	1967	2369	2205	3750	3183	2608	1971	1359	1122	941	1045
MEAN	55.5	65.6	76.4	71.1	129	103	86.9	63.6	45.3	36.2	30.4	34.8
MAX	65	120	110	600	250	190	127	92	52	47	59	70
MIN	52	53	62	43	100	80	70	50	37	29	24	28
CFSM	.44	.52	.61	.57	1.03	.82	.70	.51	.36	.29	.24	.28
IN.	.51	.59	.71	.66	1.12	.95	.78	.59	.40	.33	.28	.31
CAL YR 1987	TOTAL 29963	MEAN 82.1	MAX 498	MIN 52	CFSM .66	IN. 8.92						
WTR YR 1988	TOTAL 24240	MEAN 66.2	MAX 600	MIN 24	CFSM .53	IN. 7.21						



ROCK-FOX RIVER BASIN



ROCK RIVER BASIN

430844088233300 NORTH LAKE NEAR NORTH LAKE, WI

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 miles southwest of North Lake.

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

GAGE.--Staff gage read by Peter J. Mihelich. 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, 10.69 ft, May 1; minimum observed, 9.75 ft, July 11-14.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	10.69	10.12	9.82	9.87	9.87
2	10.50	---	---	---	---	---	---	10.65	10.11	9.82	9.85	9.87
3	10.46	---	---	---	---	---	---	10.61	10.09	9.82	9.82	9.87
4	10.42	---	---	---	---	---	---	10.54	10.05	9.82	9.81	9.87
5	10.38	---	---	---	---	---	---	10.49	10.04	9.82	9.80	9.95
6	10.36	---	---	---	---	---	---	10.45	10.03	9.81	9.80	9.95
7	10.34	---	---	---	---	---	---	10.39	10.03	9.80	9.80	9.91
8	10.32	---	---	---	---	---	---	10.39	10.01	9.79	9.80	9.89
9	10.30	---	---	---	---	---	---	10.39	10.00	9.78	9.82	9.88
10	10.28	---	---	---	---	---	---	10.43	9.97	9.76	9.85	9.88
11	10.26	---	---	---	---	---	---	10.43	9.93	9.75	9.85	9.88
12	10.24	---	---	---	---	---	---	10.43	9.92	9.75	9.85	9.88
13	10.24	---	---	---	---	---	---	10.43	9.91	9.75	9.85	9.88
14	10.24	---	---	---	---	---	---	10.43	9.90	9.75	9.85	9.88
15	10.24	---	---	---	---	---	---	10.43	9.89	9.85	9.85	9.88
16	10.24	---	---	---	---	---	---	10.44	9.88	9.85	9.85	9.89
17	10.26	---	---	---	---	---	---	10.44	---	9.85	9.85	9.95
18	10.26	---	---	---	---	---	---	10.36	9.87	9.85	9.85	9.95
19	10.26	---	---	---	---	---	---	10.35	9.85	9.85	9.85	10.15
20	10.26	---	---	---	---	---	---	10.33	9.85	9.85	9.85	10.13
21	10.26	---	---	---	---	---	---	10.33	9.84	9.91	9.85	10.09
22	10.26	---	---	---	---	---	---	10.31	9.83	9.95	9.85	10.15
23	10.26	---	---	---	---	---	---	10.29	9.82	9.95	9.88	10.21
24	10.26	---	---	---	---	---	---	10.27	9.82	9.95	9.88	10.15
25	10.26	---	---	---	---	---	---	10.23	9.82	9.95	9.88	10.11
26	10.28	---	---	---	---	---	---	10.19	9.82	9.95	9.88	10.10
27	10.28	---	---	---	---	---	---	10.15	9.82	9.92	9.88	10.09
28	---	---	---	---	---	---	---	10.15	9.82	9.90	9.88	10.09
29	---	---	---	---	---	---	---	10.15	9.82	9.90	9.88	10.09
30	---	---	---	---	---	---	---	10.14	9.82	9.89	9.88	10.08
31	---	---	---	---	---	---	---	10.13	---	9.88	9.87	---
MEAN	---	---	---	---	---	---	---	10.37	---	9.85	9.85	9.99
MAX	---	---	---	---	---	---	---	10.69	---	9.95	9.88	10.21
MIN	---	---	---	---	---	---	---	10.13	---	9.75	9.80	9.87

ROCK RIVER BASIN

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. Lake levels drawn down below dam crest in late September to repair dam crest. Repairs started Sept. 29.

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, 4.90 ft, Apr. 14; minimum observed, 3.48 ft, Aug. 31.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

[illegible]

430723088252100 OKAUCHEE LAKE AT OKAUCHEE, WI--CONTINUED

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 93 feet. Lake ice-covered during Feb. 17 sampling. Water-quality analyses by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, FEBRUARY 17 TO AUGUST 22, 1988
(Milligrams per liter unless otherwise indicated)

	Feb. 17		Apr. 19		June 17		July 19		Aug. 22	
Depth of sample (ft)	1.5	90.0	1.5	88.0	1.5	88.5	1.5	88.0	1.5	84.0
Specific conductance ($\mu\text{S}/\text{cm}$)	541	570	534	528	487	538	467	526	454	529
pH (units)	7.60	7.60	7.80	8.20	8.50	7.70	8.40	7.50	8.50	7.50
Water temperature ($^{\circ}\text{C}$)	2.0	2.5	8.0	7.0	22.0	7.0	26.0	8.0	25.0	7.5
Color (Pt-Co. scale)	---	---	15	15	---	---	---	---	---	---
Turbidity (NTU)	---	---	0.70	1.8	---	---	---	---	---	---
Secchi-disc (meters)	---	---	2.9	1.5	1.5	---	3.5	---	1.7	---
Dissolved oxygen	14.5	6.0	11.8	11.3	9.2	0	8.2	0	8.1	0
Hardness, total (as CaCO_3)	---	---	260	270	---	---	---	---	---	---
Calcium, dissolved (Ca)	---	---	52	54	---	---	---	---	---	---
Magnesium, Dissolved (Mg)	---	---	31	32	---	---	---	---	---	---
Sodium, dissolved (Na)	---	---	8.8	8.8	---	---	---	---	---	---
Potassium, dissolved (K)	---	---	2.4	2.3	---	---	---	---	---	---
Alkalinity, total (as CaCO_3)	---	---	236	234	---	---	---	---	---	---
Sulfate, dissolved (SO_4)	---	---	27	27	---	---	---	---	---	---
Fluoride, total (as F)	---	---	0.1	0.1	---	---	---	---	---	---
Chloride, dissolved (Cl)	---	---	20	20	---	---	---	---	---	---
Silica, dissolved (SiO_2)	---	---	3.5	3.7	---	---	---	---	---	---
Solids, dissolved, at 180°C	---	---	312	304	---	---	---	---	---	---
Nitrogen, nitrite plus nitrate, diss (as N)	---	---	0.36	0.36	---	---	---	---	---	---
Nitrogen, ammonia, diss (as N)	---	---	0.04	0.04	---	---	---	---	---	---
Nitrogen, ammonia plus organic, total (as N)	---	---	0.60	0.50	---	---	---	---	---	---
Total phosphorus (as P)	---	---	0.018	0.016	0.008	0.024	0.005	<0.020	0.234	0.050
Phosphorus, ortho, diss (as P)	---	---	0.003	0.004	---	---	---	0.007	---	0.026
Iron, dissolved (Fe) $\mu\text{g}/\text{L}$	---	---	<100	<100	---	---	---	---	---	---
Manganese, dissolved (Mn) $\mu\text{g}/\text{L}$	---	---	<40	<40	---	---	---	---	---	---
Chlorophyll a, phyto. ($\mu\text{g}/\text{L}$)	---	---	3	---	5	---	<5	---	3	---

2-17-88

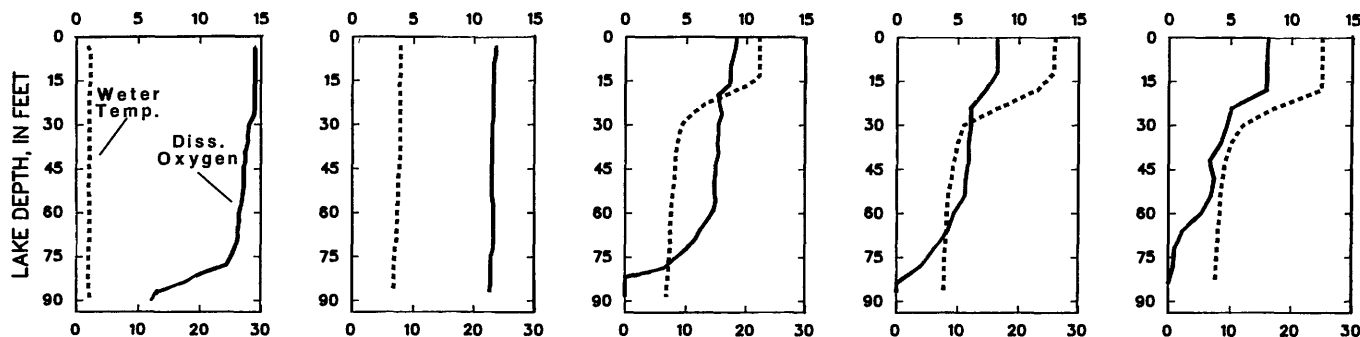
4-19-88

6-17-88

7-19-88

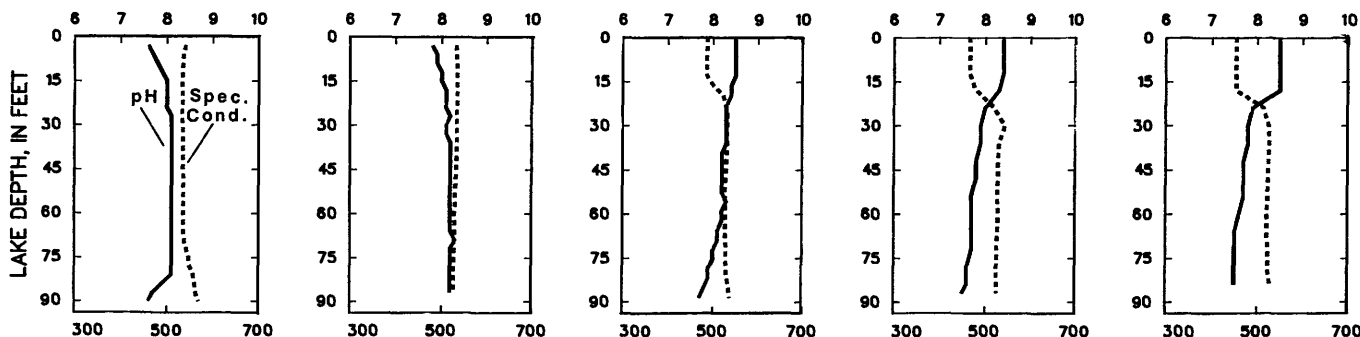
8-22-88

DISSOLVED OXYGEN, IN MILLIGRAMS PER LITER



WATER TEMPERATURE, IN DEGREES CELSIUS

PH, IN STANDARD UNITS



SPECIFIC CONDUCTANCE, IN MICROSIEMENS PER CENTIMETER

ROCK RIVER BASIN
WATER-QUALITY RECORDS

43075908824200 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 19 TO AUGUST 22, 1988
(Milligrams per liter unless otherwise indicated)

	Apr. 19	June 17	July 19	Aug. 22
Depth of sample (ft)	1.5	1.5	1.5	1.5
Specific conductance (μS/cm)	560	505	482	452
pH (units)	8.00	8.50	8.30	8.60
Water temperature (°C)	8.5	22.5	27.0	24.5
Secchi-disc (meters)	---	1.3	1.7	1.5
Dissolved oxygen	12.2	8.0	7.6	8.8
Total phosphorus (as P)	0.012	0.014	0.009	0.216
Chlorophyll a, phyto. (μg/L)	5	4	6	4

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 19 TO AUGUST 22, 1988
(Milligrams per liter unless otherwise indicated)

	Apr. 19	June 17	July 19	Aug. 22
Depth of sample (ft)	1.5	1.5	1.5	1.5
Specific conductance (μS/cm)	529	435	436	418
pH (units)	8.20	8.80	8.40	8.70
Water temperature (°C)	10.0	24.0	28.0	25.0
Secchi-disc (meters)	---	2.6	2.2	1.7
Dissolved oxygen	11.6	9.7	7.6	8.4
Total phosphorus (as P)	0.012	0.012	0.009	0.164
Chlorophyll a, phyto. (μg/L)	---	3	<5	7

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 19 TO AUGUST 22, 1988
(Milligrams per liter unless otherwise indicated)

	Apr. 19	June 17	July 19	Aug. 22
Depth of sample (ft)	1.5	1.5	1.5	1.5
Specific conductance (μS/cm)	534	472	473	441
pH (units)	8.00	8.60	8.00	8.60
Water temperature (°C)	9.0	23.5	27.5	25.0
Secchi-disc (meters)	---	1.7	2.2	1.5
Dissolved oxygen	11.9	9.9	7.2	8.8
Total phosphorus (as P)	0.012	0.010	0.009	0.014
Chlorophyll a, phyto. (μg/L)	---	4	6	7

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 19 TO AUGUST 22, 1988
(Milligrams per liter unless otherwise indicated)

	Apr. 19	June 17	July 19	Aug. 22
Depth of sample (ft)	1.5	1.5	1.5	1.5
Specific conductance (μS/cm)	532	438	449	452
pH (units)	8.10	8.80	8.30	8.50
Water temperature (°C)	7.5	22.0	27.0	24.5
Secchi-disc (meters)	---	1.3	3.4	1.7
Dissolved oxygen	12.6	10.7	8.0	8.4
Total phosphorus (as P)	0.010	0.016	0.005	0.010
Chlorophyll a, phyto. (μg/L)	---	---	<5	3

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 070900001, at Oconomowoc.

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

GAGE.--Staff gage at outlet read by Martha Ibach.

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, 8.16 ft, July 24, 30; minimum observed, 7.23 ft, Feb. 17.

[illegible]

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 17 sampling. Water-quality analyses by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, FEBRUARY 17 TO AUGUST 16, 1988
(Milligrams per liter unless otherwise indicated)

	Feb. 17		Apr. 15		June 23		July 19		Aug. 16	
Depth of sample (ft)	1.5	57.0	1.5	55.5	1.5	58.0	1.5	60.0	1.5	61.0
Specific conductance ($\mu\text{S}/\text{cm}$)	541	554	528	528	517	541	482	547	473	559
pH (units)	7.40	7.80	8.20	8.20	8.50	7.90	8.30	7.30	8.40	7.20
Water temperature ($^{\circ}\text{C}$)	1.0	2.5	8.0	8.0	24.0	8.5	27.0	8.0	29.0	8.5
Color (Pt-Co. scale)	---	---	4	8	---	---	---	---	---	---
Turbidity (NTU)	---	---	0.40	0.40	---	---	---	---	---	---
Secchi-disc (meters)	---	---	3.2	---	3.1	---	1.6	---	3.0	---
Dissolved oxygen	13.2	8.0	11.3	11.3	8.7	2.9	8.4	0.5	8.3	0
Hardness, total (as CaCO_3)	---	---	250	250	---	---	---	---	---	---
Calcium, dissolved (Ca)	---	---	49	48	---	---	---	---	---	---
Magnesium, Dissolved (Mg)	---	---	32	32	---	---	---	---	---	---
Sodium, dissolved (Na)	---	---	10	10	---	---	---	---	---	---
Potassium, dissolved (K)	---	---	2.1	2.1	---	---	---	---	---	---
Alkalinity, total (as CaCO_3)	---	---	224	224	---	---	---	---	---	---
Sulfate, dissolved (SO_4)	---	---	27	29	---	---	---	---	---	---
Fluoride, dissolved (F)	---	---	0.10	0.10	---	---	---	---	---	---
Chloride, dissolved (Cl)	---	---	22	22	---	---	---	---	---	---
Silica, dissolved (SiO_2)	---	---	5.2	5.1	---	---	---	---	---	---
Solids, dissolved, at 180°C	---	---	291	291	---	---	---	---	---	---
Nitrogen, nitrite, total (as N)	---	---	<0.010	<0.010	---	---	---	---	---	---
Nitrogen, nitrite + nitrate, total	---	---	0.300	0.300	---	---	---	---	---	---
Nitrogen, ammonia, total (as N)	---	---	0.070	0.060	---	---	---	---	---	---
Nitrogen, organic, total (as N)	---	---	0.43	0.54	---	---	---	---	---	---
Nitrogen, total (as N)	---	---	0.80	0.90	---	---	---	---	---	---
Total phosphorus (as P)	---	---	0.002	0.011	0.004	0.005	0.005	0.060	0.007	0.028
Phosphorus, ortho, diss (as P)	---	---	<0.001	<0.001	---	0.005	---	0.035	---	0.008
Iron, dissolved (Fe) $\mu\text{g}/\text{L}$	---	---	25	6	---	---	---	---	---	---
Manganese, dissolved (Mn) $\mu\text{g}/\text{L}$	---	---	1	<1	---	---	---	---	---	---
Chlorophyll a, phyto. ($\mu\text{g}/\text{L}$)	---	---	<5	---	<5	---	2	---	<5	---

2-17-88

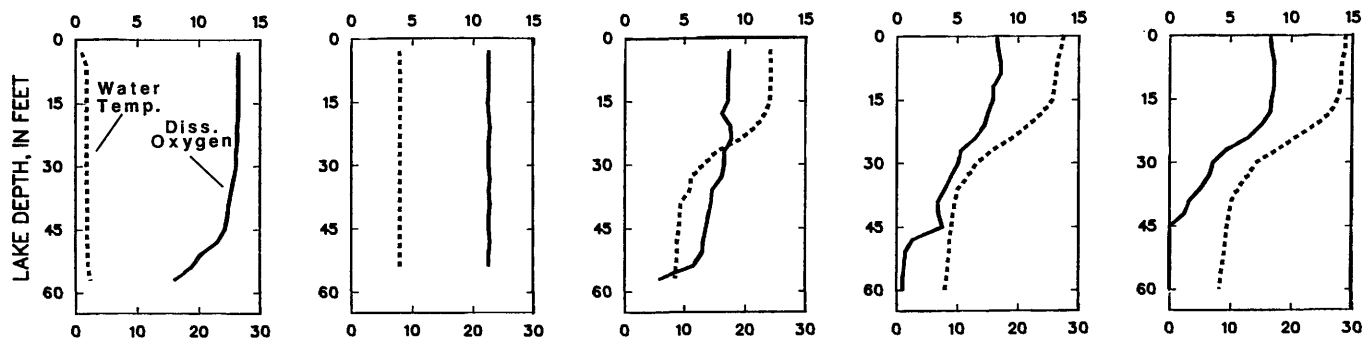
4-15-88

6-23-88

7-19-88

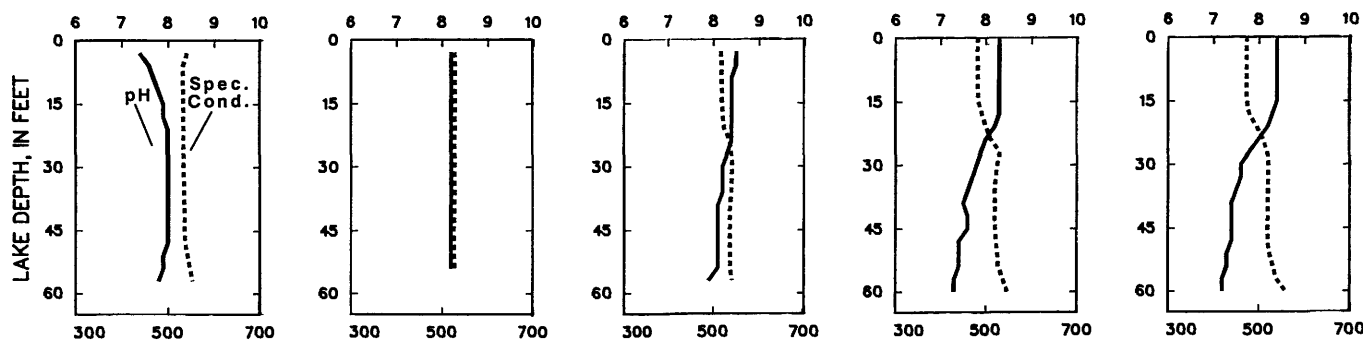
8-16-88

DISSOLVED OXYGEN, IN MILLIGRAMS PER LITER



WATER TEMPERATURE, IN DEGREES CELSIUS

PH, IN STANDARD UNITS



SPECIFIC CONDUCTANCE, IN MICROSIEMENS PER CENTIMETER

ROCK RIVER BASIN

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 17 sampling. Water-quality analyses by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, FEBRUARY 17 TO AUGUST 16, 1988
(Milligrams per liter unless otherwise indicated)

	Feb. 17		Apr. 15		June 23		July 19		Aug. 16	
Depth of sample (ft)	1.5	48.0	1.5	46.5	1.5	48.0	1.5	48.0	1.5	47.5
Specific conductance (μS/cm)	566	591	558	554	540	586	511	587	498	604
pH (units)	7.90	7.50	8.00	7.90	8.50	7.70	8.20	7.20	8.30	7.10
Water temperature (°C)	1.0	3.0	8.5	6.0	24.5	8.5	27.0	8.5	28.5	8.5
Secchi-disc (meters)	---	---	3.3	---	2.8	---	1.9	---	3.8	---
Dissolved oxygen	12.4	2.5	11.4	10.6	8.7	0.1	8.2	0.2	8.7	0
Nitrogen, nitrate, total (as N)	---	---	0.490	0.390	---	---	---	---	---	---
Nitrogen, nitrite, total (as N)	---	---	0.010	0.010	---	---	---	---	---	---
Nitrogen, nitrite + nitrate, total	---	---	0.500	0.400	---	---	---	---	---	---
Nitrogen, ammonia, total (as N)	---	---	0.080	0.090	---	---	---	---	---	---
Nitrogen, organic, total (as N)	---	---	0.52	0.51	---	---	---	---	---	---
Nitrogen, total (as N)	---	---	1.1	1.0	---	---	---	---	---	---
Total phosphorus (as P)	---	---	0.004	0.003	0.004	0.025	0.004	0.040	0.006	0.038
Phosphorus, ortho, diss (as P)	---	---	<0.001	<0.001	---	0.005	---	0.004	---	0.004
Chlorophyll a, phyto. (μg/L)	---	---	<5	---	<5	---	<5	---	<5	---

2-17-88

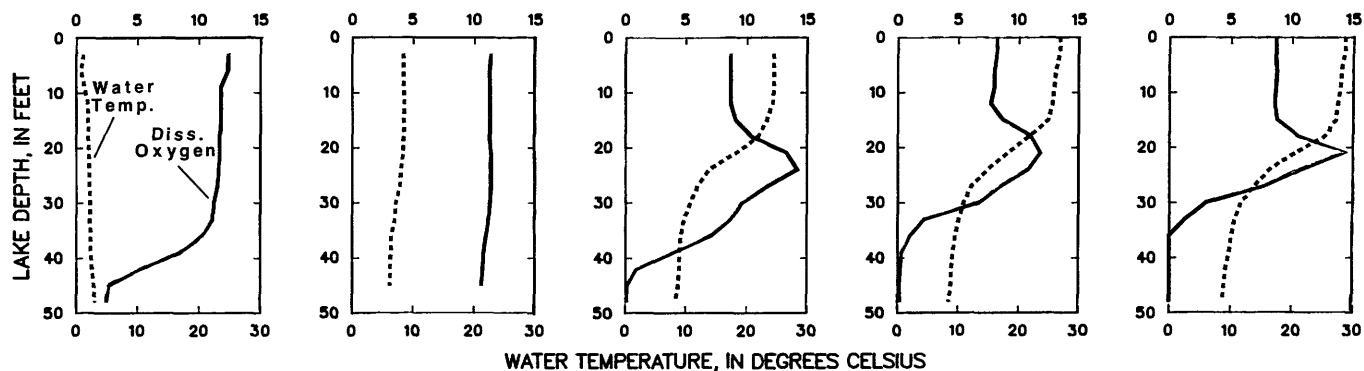
4-15-88

6-23-88

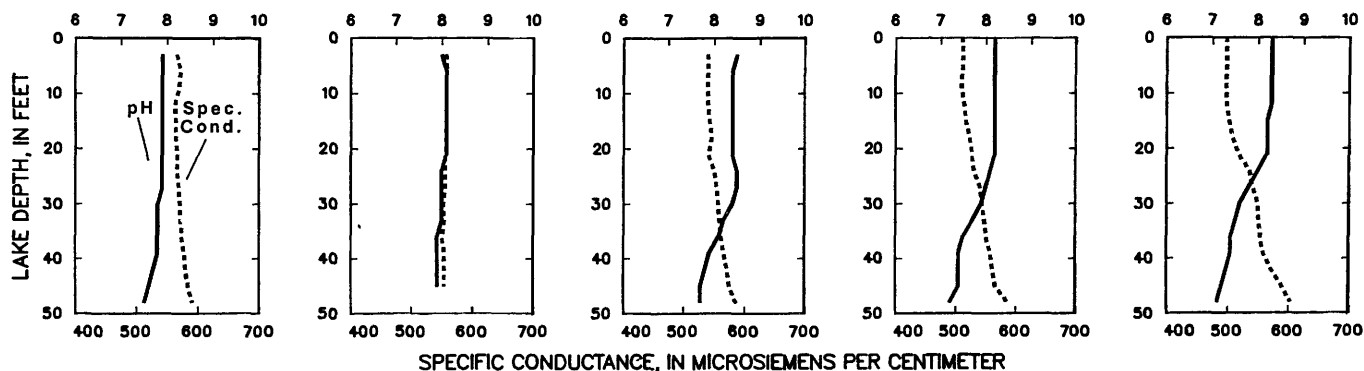
7-19-88

8-16-88

DISSOLVED OXYGEN, IN MILLIGRAMS PER LITER



PH, IN STANDARD UNITS



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., Waushara 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, 9.06 ft, Feb. 19; minimum observed, 7.82 ft, Sept. 12.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

[illegible]

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 Feb. 17 sampling. Water-quality analyses by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, FEBRUARY 17 TO AUGUST 16, 1988
(Milligrams per liter unless otherwise indicated)

	Feb. 17		Apr. 15		June 08		July 07		Aug. 16	
Depth of sample (ft)	1.5	48.0	1.5	47.5	1.5	49.5	1.5	48.5	1.5	48.5
Specific conductance ($\mu\text{S}/\text{cm}$)	532	581	524	523	454	527	450	536	460	540
pH (units)	8.20	7.20	8.20	7.80	9.00	7.80	8.70	7.30	8.50	7.30
Water temperature ($^{\circ}\text{C}$)	1.0	2.5	10.0	4.5	24.5	6.5	28.0	6.5	28.5	7.0
Color (Pt-Co. scale)	---	---	9	8	---	---	---	---	---	---
Turbidity (NTU)	---	---	4.2	0.40	---	---	---	---	---	---
Secchi-disc (meters)	---	---	2.4	---	2.7	---	4.1	---	4.8	---
Dissolved oxygen	12.5	6.4	10.9	7.8	11.3	0	9.9	0	7.9	0
Hardness, total (as CaCO_3)	---	---	250	250	---	---	---	---	---	---
Calcium, dissolved (Ca)	---	---	47	47	---	---	---	---	---	---
Magnesium, Dissolved (Mg)	---	---	32	32	---	---	---	---	---	---
Sodium, dissolved (Na)	---	---	11	11	---	---	---	---	---	---
Potassium, dissolved (K)	---	---	2.1	2.1	---	---	---	---	---	---
Alkalinity, (as CaCO_3)	---	---	223	219	---	---	---	---	---	---
Sulfate, dissolved (SO_4)	---	---	29	27	---	---	---	---	---	---
Fluoride, dissolved (F)	---	---	0.10	0.10	---	---	---	---	---	---
Chloride, dissolved (Cl)	---	---	23	24	---	---	---	---	---	---
Silica, dissolved (SiO_2)	---	---	32	4.7	---	---	---	---	---	---
Solids, dissolved, at 180°C	---	---	289	290	---	---	---	---	---	---
Nitrogen, nitrite, total (as N)	---	---	<0.010	<0.010	---	---	---	---	---	---
Nitrogen, nitrite + nitrate, total	---	---	0.200	0.200	---	---	---	---	---	---
Nitrogen, ammonia, total (as N)	---	---	0.020	0.080	---	---	---	---	---	---
Nitrogen, organic, total (as N)	---	---	0.38	0.42	---	---	---	---	---	---
Nitrogen, total (as N)	---	---	0.60	0.70	---	---	---	---	---	---
Total phosphorus (as P)	---	---	0.003	0.003	0.004	0.005	0.009	0.041	0.012	0.154
Phosphorus, ortho, diss (as P)	---	---	<0.001	<0.001	---	0.003	---	0.031	---	0.122
Iron, dissolved (Fe) $\mu\text{g}/\text{L}$	---	---	<3	<3	---	---	---	---	---	---
Manganese, dissolved (Mn) $\mu\text{g}/\text{L}$	---	---	<1	7	---	---	---	---	---	---
Chlorophyll a, phyto. ($\mu\text{g}/\text{L}$)	---	---	4	---	2	---	<5	---	<5	---

2-17-88

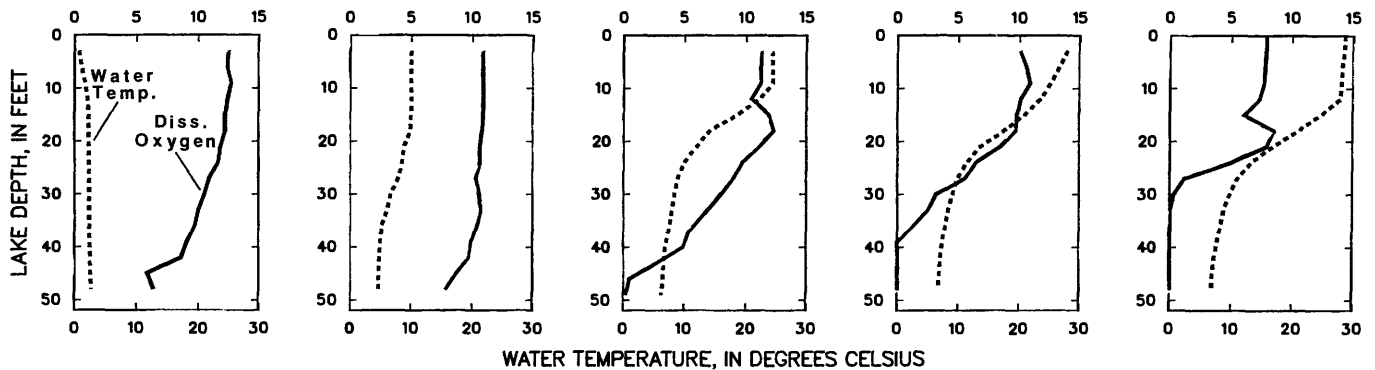
4-15-88

6-8-88

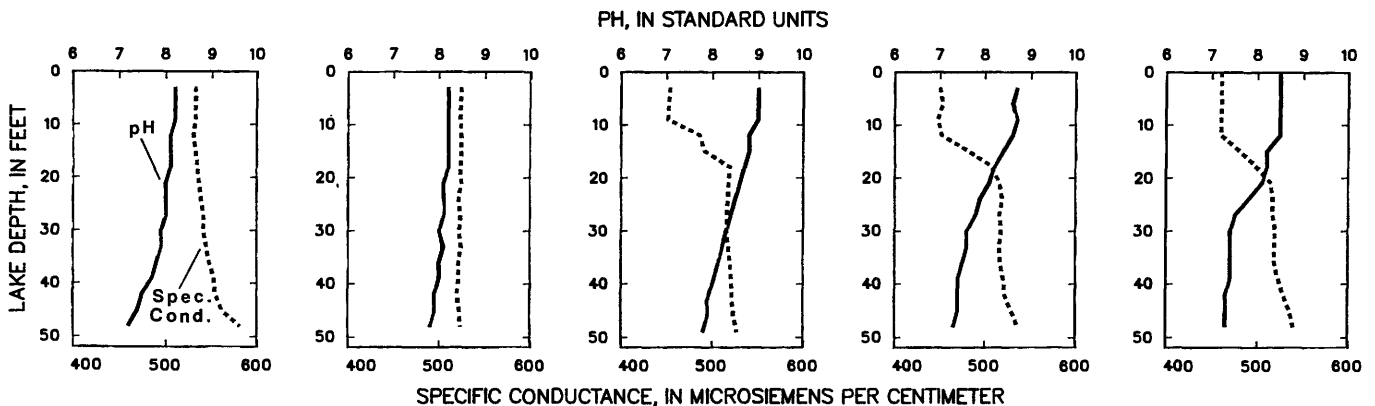
7-7-88

8-16-88

DISSOLVED OXYGEN, IN MILLIGRAMS PER LITER



WATER TEMPERATURE, IN DEGREES CELSIUS



SPECIFIC CONDUCTANCE, IN MICROSIEMENS PER CENTIMETER

ROCK 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, revised.

PERIOD OF RECORD.--October 1948 to September 1969. March 1987 to current year. Monthly discharge only for October 1948, published in WSP 1308.

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: Ice periods listed in rating table preceding 1988 water year data. Records good except those for ice-affected periods and those above 100 ft³/s, which are poor.

AVERAGE DISCHARGE.--22 years (1949-69, 1988), 23.7 ft³/s, 5.06 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 PERIOD.--March to September 1987: 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)
Aug. 16	2000	*330	*5.06				

Minimum discharge, 2.1 ft³/s, Aug. 7, 8.

Water Year 1988:

DATE	TIME	DISCHARGE (ft ³ /s)	GAGE HEIGHT (ft)	DATE	TIME	DISCHARGE (ft ³ /s)	GAGE HEIGHT (ft)
Mar. 8	2045	*218	*4.07				

Minimum daily discharge, 0.52 ft³/s, Aug. 15.

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

Mar. 1 to July 23, 1987

July 24, 1987 to Sept. 30, 1987

2.0	1.9	2.5	29	1.7	0.35	2.1	11
2.1	5.0	2.7	47	1.75	.80	2.2	16
2.2	9.3	3.0	81	1.8	1.8	2.5	42
2.3	15	3.4	138	1.9	4.2	3.0	105
2.4	21	3.8	191	2.0	7.0	4.0	211

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	51	34	40	38	7.0	8.2	13
2	---	---	---	---	---	55	33	40	33	8.1	7.9	13
3	---	---	---	---	---	47	33	39	28	9.3	5.0	11
4	---	---	---	---	---	43	31	36	24	7.5	3.3	9.9
5	---	---	---	---	---	39	32	34	22	7.6	3.8	8.9
6	---	---	---	---	---	44	32	32	21	8.5	2.9	8.3
7	---	---	---	---	---	51	31	30	20	9.8	2.6	7.7
8	---	---	---	---	---	57	30	29	18	9.1	22	7.4
9	---	---	---	---	---	52	29	27	17	8.2	9.7	6.8
10	---	---	---	---	---	40	29	26	16	11	8.2	6.6
11	---	---	---	---	---	41	31	27	18	6.9	5.9	6.5
12	---	---	---	---	---	34	36	26	17	10	5.3	6.2
13	---	---	---	---	---	32	34	25	15	6.2	5.2	7.7
14	---	---	---	---	---	32	64	30	14	5.5	5.0	6.4
15	---	---	---	---	---	29	86	27	13	8.2	5.4	6.7
16	---	---	---	---	---	30	72	26	12	5.2	76	11
17	---	---	---	---	---	30	59	24	11	4.9	182	18
18	---	---	---	---	---	31	50	56	11	4.3	89	17
19	---	---	---	---	---	48	43	53	10	3.8	43	23
20	---	---	---	---	---	50	38	43	10	11	28	26
21	---	---	---	---	---	46	36	41	14	8.8	20	23
22	---	---	---	---	---	43	136	35	13	6.3	14	20
23	---	---	---	---	---	42	186	33	11	5.8	11	17
24	---	---	---	---	---	42	139	31	10	5.5	10	15
25	---	---	---	---	---	43	92	31	9.8	4.0	9.2	13
26	---	---	---	---	---	47	71	38	9.0	4.8	9.6	11
27	---	---	---	---	---	48	60	86	8.0	3.8	9.1	10
28	---	---	---	---	---	43	52	81	7.9	3.8	36	12
29	---	---	---	---	---	42	47	77	7.8	7.2	23	10
30	---	---	---	---	---	37	41	56	7.4	4.7	14	9.8
31	---	---	---	---	---	34	---	45	---	5.8	11	---
TOTAL	---	---	---	---	---	1303	1687	1224	465.9	212.6	685.3	361.9
MEAN	---	---	---	---	---	42.0	56.2	39.5	15.5	6.86	22.1	12.1
MAX	---	---	---	---	---	57	186	86	38	11	182	26
MIN	---	---	---	---	---	29	29	24	7.4	3.8	2.6	6.2

05423500 SOUTH BRANCH ROCK RIVER AT WAUPUN, WI--CONTINUED

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Dec. 30, 31, Jan. 1-29, and Feb. 3-23.)

1.7	0.35	2.1	11
1.75	.80	2.2	16
1.8	1.8	2.5	42
1.9	4.2	3.0	105
2.0	7.0	4.0	211

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	9.6	41	36	19	72	65	58	34	6.8	2.3	.99	.71
2	8.3	28	31	16	46	81	65	30	7.7	1.8	1.1	.76
3	8.0	24	28	15	40	76	132	28	8.2	1.7	1.0	.91
4	8.2	21	23	14	30	65	130	26	8.2	1.7	.99	3.7
5	8.0	17	21	13	22	62	111	24	7.7	1.4	1.7	1.4
6	8.2	15	21	12	20	85	107	23	6.7	1.2	1.8	.72
7	8.1	14	23	11	18	130	88	22	5.7	1.1	.90	.91
8	8.2	15	30	10	16	190	75	21	5.4	.78	1.1	1.0
9	7.9	14	77	9.6	14	193	67	24	5.2	.67	1.6	.79
10	7.3	14	65	9.6	13	146	59	25	5.4	1.2	.82	.64
11	7.2	13	58	9.8	12	126	55	23	5.0	1.0	.79	.62
12	7.6	13	51	10	12	112	52	21	4.5	.70	.70	.75
13	7.4	13	43	10	12	87	48	19	4.5	2.1	1.4	.80
14	7.9	12	38	10	12	68	45	18	4.3	4.5	1.5	.76
15	7.0	12	30	10	12	61	42	19	3.8	6.5	.52	.86
16	9.0	15	28	10	12	55	40	17	3.5	8.9	.55	1.6
17	11	39	28	10	12	57	38	16	3.4	2.2	.65	2.1
18	10	32	29	11	12	52	36	14	3.4	5.2	11	5.3
19	9.8	26	31	12	12	49	33	13	3.1	2.5	2.9	11
20	9.8	21	39	13	11	44	32	13	3.0	2.1	1.4	3.3
21	9.6	18	36	12	10	41	31	12	3.3	4.8	.98	1.6
22	10	17	36	12	10	41	31	11	12	2.8	1.1	97
23	9.9	22	33	12	11	44	40	11	3.5	2.1	5.8	108
24	11	21	36	11	11	47	41	9.7	2.9	3.0	1.7	45
25	11	21	42	11	11	56	38	9.1	2.4	3.5	1.4	28
26	12	22	36	10	13	56	39	8.8	1.8	1.7	1.3	21
27	12	22	34	12	21	49	50	8.6	1.8	1.6	2.0	15
28	11	26	33	12	33	51	51	7.8	5.2	1.5	1.4	11
29	10	36	28	13	48	72	46	7.4	4.2	1.4	.76	8.8
30	9.7	40	26	29	---	74	40	6.9	2.6	1.4	.76	7.5
31	9.0	---	23	127	---	66	---	7.0	---	.97	.78	---
TOTAL	283.7	644	1093	496.0	578	2401	1720	529.3	145.2	74.32	51.39	381.53
MEAN	9.15	21.5	35.3	16.0	19.9	77.5	57.3	17.1	4.84	2.40	1.66	12.7
MAX	12	41	77	127	72	193	132	34	12	8.9	11	108
MIN	7.0	12	21	9.6	10	41	31	6.9	1.8	.67	.52	.62

WTR YR 1988 TOTAL 8397.44 MEAN 22.9 MAX 193 MIN .52

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: 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 Sinissippi, and other dams in the basin.

AVERAGE DISCHARGE.--51 years, (1932-70, 1977-88), 476 ft³/s, 6.67 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)
Dec. 9	1300	1,130	3.17	Mar. 10	1945	*1,320	3.38
Jan. 31	1100	ice jam	*4.20	Apr. 6	2215	*1,320	3.38

Minimum daily discharge, 11 ft³/s, Aug. 4.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Dec. 6-8, Dec. 18 to Feb. 26, and Mar. 3-5.)

0.5	9.1	1.5	143
0.6	15	2.0	311
0.8	30	2.5	594
1.0	52	3.0	977
1.2	78	4.0	1,970

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	252	298	676	500	900	325	1060	911	78	32	15	19
2	234	311	740	560	760	356	1080	882	71	28	14	20
3	204	347	798	540	700	450	1210	839	65	25	13	30
4	237	372	836	520	660	580	1250	684	64	24	11	28
5	210	357	801	480	640	720	1220	464	61	23	19	28
6	187	343	820	460	600	808	1270	339	56	22	15	31
7	174	353	800	440	580	877	1290	346	52	20	14	29
8	186	369	880	420	560	1020	1220	371	49	18	17	24
9	175	358	1030	400	540	1200	1200	373	46	17	17	21
10	165	371	1060	390	540	1250	1200	365	45	28	19	20
11	164	412	1020	380	520	1280	1230	319	43	21	19	20
12	157	441	1000	400	520	1210	1250	298	41	19	19	18
13	144	444	976	380	520	1180	1250	302	38	19	22	15
14	141	432	950	360	520	1150	1260	311	34	18	19	15
15	148	411	833	360	500	1130	1250	321	31	18	18	16
16	143	394	589	350	500	1110	1250	338	31	37	17	16
17	141	447	598	340	500	1120	1220	340	29	37	16	19
18	163	422	600	330	490	1110	1200	333	28	34	25	20
19	176	352	700	320	480	1110	1170	313	26	34	26	35
20	175	303	800	320	470	1100	1130	279	24	36	22	31
21	173	321	840	310	450	1080	1080	215	22	39	21	30
22	179	338	840	300	430	1080	1050	158	23	35	22	82
23	170	333	860	290	420	1080	1070	132	21	30	41	96
24	173	329	880	290	410	1110	1060	118	22	27	33	110
25	186	355	900	280	390	1080	1010	116	26	29	31	134
26	194	386	800	270	370	1050	979	118	29	26	28	137
27	200	404	700	270	367	993	974	114	28	25	29	108
28	228	463	640	260	358	963	980	105	32	23	25	81
29	244	548	600	270	327	1010	955	101	47	22	22	66
30	244	612	560	300	---	1050	929	93	37	20	21	57
31	264	---	520	1000	---	1070	---	86	---	16	22	---
TOTAL	5831	11626	24647	12090	15022	30652	34297	10084	1199	802	652	1356
MEAN	188	388	795	390	518	989	1143	325	40.0	25.9	21.0	45.2
MAX	264	612	1060	1000	900	1280	1290	911	78	39	41	137
MIN	141	298	520	260	327	325	929	86	21	16	11	15
CFSM	.19	.40	.82	.40	.53	1.02	1.18	.34	.04	.03	.02	.05
IN.	.22	.45	.95	.46	.58	1.18	1.32	.39	.05	.03	.03	.05

CAL YR 1987 TOTAL 181527 MEAN 497 MAX 1560 MIN 59 CFSM .51 IN. 6.97
WTR YR 1988 TOTAL 148258 MEAN 405 MAX 1290 MIN 11 CFSM .42 IN. 5.69

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. Datum of gage is 839.42 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Estimated daily discharges: None. Records good. Flow regulated by dam 0.8 mi upstream.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 754 ft³/s, Sept. 26, 1986, gage height, 9.35 ft; minimum daily, 0.68 ft³/s, Feb. 14, 1987.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 296 ft³/s, Sept. 22, gage height, 7.61 ft; minimum daily, 1.0 ft³/s, Oct. 27.

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

5.40	0.85	6.3	66
5.5	2.6	6.6	110
5.6	5.4	7.0	177
5.8	15	8.0	386
6.0	32		

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	117	4.3	107	65	7.8	19	16	152	6.4	4.6	1.4	3.8
2	157	9.0	103	66	13	14	24	144	5.9	3.6	1.5	4.6
3	115	1.5	105	65	14	15	19	135	5.1	3.0	2.9	5.4
4	101	32	104	63	14	12	20	132	4.5	1.8	3.5	11
5	111	51	103	62	14	7.7	25	74	4.5	2.0	4.8	6.2
6	129	68	104	61	14	7.6	40	27	5.6	2.3	3.7	4.9
7	130	83	104	42	14	8.0	69	21	7.4	3.0	2.4	3.0
8	92	87	105	12	19	7.6	122	19	6.3	3.1	2.3	2.6
9	102	91	108	12	84	6.6	132	28	7.3	2.0	5.7	3.4
10	96	90	85	13	21	6.7	146	35	6.6	3.7	2.7	2.8
11	94	89	45	13	32	6.6	156	23	6.1	2.4	3.5	1.9
12	86	90	46	14	32	5.9	180	15	4.5	1.7	2.8	3.4
13	82	91	44	14	32	5.1	178	12	4.9	2.7	2.7	3.9
14	80	90	44	9.6	32	11	188	7.1	4.7	3.5	3.0	2.6
15	76	88	93	5.1	33	19	214	11	4.4	3.9	2.6	1.5
16	72	91	120	5.5	32	11	207	10	3.3	6.9	2.0	3.2
17	82	96	99	6.5	33	6.6	211	8.4	3.3	2.4	2.4	5.7
18	71	103	48	6.2	24	7.4	202	8.0	2.7	3.8	11	7.2
19	71	102	25	10	13	8.8	181	9.1	1.7	2.4	3.0	8.5
20	25	102	49	69	12	8.8	175	9.6	4.0	3.6	2.5	7.6
21	1.4	98	55	59	12	9.3	148	9.3	6.3	4.3	1.7	3.7
22	1.7	98	55	36	12	9.2	128	9.2	7.0	3.2	1.5	28
23	1.2	100	56	9.3	12	9.1	145	9.7	2.9	1.9	4.3	5.6
24	2.0	99	59	34	12	10	131	9.2	3.4	2.2	2.2	2.2
25	1.1	101	61	88	12	13	127	8.6	4.6	2.9	2.6	4.7
26	2.2	101	63	113	13	16	124	8.1	3.1	2.2	2.0	3.2
27	1.0	99	65	111	13	15	139	7.2	2.7	2.6	2.3	1.4
28	3.9	99	66	110	13	17	146	6.6	6.8	2.6	2.2	3.4
29	1.6	101	66	71	13	15	162	6.7	7.9	1.5	1.9	4.7
30	1.5	106	67	8.9	---	15	158	6.6	5.1	1.7	3.3	3.7
31	1.5	---	72	4.4	---	16	---	6.9	---	1.3	4.0	---
TOTAL	1908.1	2460.8	2326	1258.5	601.8	339.0	3913	968.3	149.0	88.8	94.4	153.8
MEAN	61.6	82.0	75.0	40.6	20.8	10.9	130	31.2	4.97	2.86	3.05	5.13
MAX	157	106	120	113	84	19	214	152	7.9	6.9	11	28
MIN	1.0	1.5	25	4.4	7.8	5.1	16	6.6	1.7	1.3	1.4	1.4
CAL YR 1987	TOTAL 32510.28	MEAN 89.1	MAX 206	MIN .68								
WTR YR 1988	TOTAL 14261.5	MEAN 39.0	MAX 214	MIN 1.0								

ROCK RIVER BASIN

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 period listed in rating tables below. Records good except for ice-affected period, which is poor. Some diurnal fluctuation at lower flows, due to manipulation of gates on small dams upstream.

AVERAGE DISCHARGE.--57 years, 398 ft³/s, 7.09 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)
Feb. 4	1100	ice jam	*5.27	Apr. 6	1500	*1,270	4.48
Mar. 13	0800	1,250	4.45				

Minimum daily discharge, 24 ft³/s, Sept. 19.

RATING TABLES (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Dec. 17 to Mar. 6.)

Oct. 1 to Apr. 6 (1400)				Apr. 6 (1500) to Sept. 30			
2.2	171	4.0	1,030	1.5	29	3.0	510
2.5	282	5.0	1,510	1.7	52	3.5	778
3.0	510			2.0	110	4.0	1,030
				2.5	283	4.5	1,280

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	506	234	638	500	800	400	731	647	108	70	32	29
2	548	238	653	450	900	480	726	619	106	69	31	34
3	459	235	696	400	1000	560	803	589	102	66	40	46
4	423	269	619	360	900	700	867	569	96	60	39	65
5	406	297	598	330	800	800	976	524	91	51	55	58
6	403	276	563	310	700	900	1190	483	85	47	47	46
7	393	274	530	270	640	966	1150	467	80	43	35	36
8	345	291	592	260	600	1010	1150	397	82	39	38	26
9	325	309	681	240	640	1110	1140	373	81	40	47	47
10	326	315	750	220	600	1110	1160	406	72	47	41	46
11	311	311	819	210	560	1150	1120	389	69	57	44	38
12	291	310	890	210	500	1190	1060	374	63	57	45	37
13	274	318	908	190	470	1230	980	375	57	47	37	47
14	250	318	915	180	440	1170	935	357	50	49	41	41
15	255	310	910	170	410	1100	883	328	55	48	51	34
16	249	291	1000	180	390	1020	814	326	65	47	39	27
17	262	332	920	180	380	946	753	307	62	61	34	32
18	257	402	820	190	380	897	750	270	50	61	43	36
19	268	445	860	200	360	843	687	255	38	65	46	24
20	275	513	900	260	350	777	643	243	42	67	44	38
21	280	476	860	250	340	695	609	223	46	71	38	63
22	240	453	860	220	250	616	582	218	39	69	35	71
23	238	465	840	200	350	598	621	208	48	66	52	106
24	231	467	840	220	350	562	622	185	40	62	59	98
25	215	487	840	250	350	511	604	165	36	62	55	103
26	210	478	820	280	350	576	640	126	55	61	51	91
27	231	465	800	280	350	588	667	109	55	55	47	107
28	233	475	740	270	350	559	663	115	50	48	49	102
29	230	507	700	250	380	634	661	114	68	35	48	83
30	231	580	600	260	---	664	658	113	70	35	38	77
31	231	---	540	700	---	701	---	111	---	39	31	---
TOTAL	9396	11141	23702	8490	14890	25063	24845	9985	1961	1694	1332	1688
MEAN	303	371	765	274	513	808	828	322	65.4	54.6	43.0	56.3
MAX	548	580	1000	700	1000	1230	1190	647	108	71	59	107
MIN	210	234	530	170	250	400	582	109	36	35	31	24
CFSM	.40	.49	1.00	.36	.67	1.06	1.09	.42	.09	.07	.06	.07
IN.	.46	.54	1.16	.41	.73	1.22	1.21	.49	.10	.08	.07	.08

CAL YR 1987 TOTAL 164862 MEAN 452 MAX 1460 MIN 95 CFSM .59 IN. 8.05
WTR YR 1988 TOTAL 134187 MEAN 367 MAX 1230 MIN 24 CFSM .48 IN. 6.55

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, Dec. 17 to Mar. 7. Records good except for ice-affected periods and discharges less than 200 ft³/s, which are poor.

AVERAGE DISCHARGE.--10 years, 1,451 ft³/s, 10.65 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, 2,610 ft³/s, Apr. 6, gage height, 4.79 ft; maximum gage height, 6.28 ft, Feb. 1 and 2 (backwater from ice); minimum daily discharge, 42 ft³/s, Aug. 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	994	569	1520	1100	2100	800	1950	1700	252	146	95	97
2	924	610	1620	1100	2000	900	1960	1650	207	151	89	98
3	816	674	1670	1000	1900	1100	2160	1620	186	135	68	84
4	763	723	1680	940	1800	1300	2270	1530	192	133	85	75
5	718	766	1600	860	1600	1600	2330	1420	187	126	79	84
6	700	748	1670	820	1400	1800	2490	995	183	127	73	84
7	634	721	1630	760	1400	2000	2530	824	182	132	73	115
8	565	748	1770	740	1300	2220	2530	828	171	134	55	120
9	563	755	1950	700	1300	2360	2480	868	149	133	67	81
10	546	759	2180	660	1200	2420	2430	891	149	110	67	78
11	524	782	2240	640	1200	2450	2390	821	170	107	81	84
12	514	811	2260	660	1200	2480	2340	792	180	90	83	100
13	493	833	2240	620	1100	2450	2300	740	182	134	104	74
14	492	838	2170	580	1100	2340	2250	691	190	107	106	66
15	492	819	1830	580	1000	2270	2210	691	160	124	60	50
16	492	803	1480	560	1000	2240	2170	676	154	116	88	65
17	497	914	1500	560	1000	2180	2150	646	132	128	98	103
18	491	999	1500	560	980	2110	2120	618	162	116	42	92
19	502	1020	1600	560	960	2010	2040	584	176	116	44	151
20	515	1020	1700	620	920	1930	1980	555	134	110	46	185
21	526	954	1900	600	880	1860	1890	495	157	109	48	116
22	514	940	1900	560	840	1800	1770	428	151	102	51	182
23	490	945	1900	540	840	1780	1840	363	100	98	105	219
24	478	948	1900	540	820	1730	1860	317	147	108	109	210
25	474	950	1900	560	800	1750	1840	286	122	100	110	213
26	477	976	1800	600	780	1720	1780	300	78	93	91	251
27	500	981	1600	600	780	1710	1800	282	93	113	85	229
28	511	1040	1500	580	780	1680	1810	274	121	112	88	206
29	524	1160	1400	560	780	1770	1790	262	152	110	74	186
30	539	1310	1300	600	---	1860	1740	248	145	72	90	184
31	547	---	1200	1900	---	1920	---	247	---	84	101	---
TOTAL	17815	26116	54110	22260	33760	58540	63200	22642	4764	3576	2455	3882
MEAN	575	871	1745	718	1164	1888	2107	730	159	115	79.2	129
MAX	994	1310	2260	1900	2100	2480	2530	1700	252	151	110	251
MIN	474	569	1200	540	780	800	1740	247	78	72	42	50
CFSM	.31	.47	.94	.39	.63	1.02	1.14	.39	.09	.06	.04	.07
IN.	.36	.53	1.09	.45	.68	1.18	1.27	.46	.10	.07	.05	.08
CAL YR 1987	TOTAL 379698	MEAN 1040	MAX 2920	MIN 204	CFSM .56	IN. 7.64						
WTR YR 1988	TOTAL 313120	MEAN 856	MAX 2530	MIN 42	CFSM .46	IN. 6.30						

ROCK RIVER BASIN

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

AVERAGE DISCHARGE.--7 years (1981-82, 1984-88), 94.3 ft³/s, 10.50 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, 222 ft³/s, Apr. 8, gage height, 1.68 ft; minimum, 3.0 ft³/s, Aug. 4.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Shifting-control method used Aug. 4 to Sept. 28; stage-discharge relation affected by ice Dec. 4, 5, 16-20, Dec. 26 to Jan. 28, and Feb. 3-17, 21-23.)

0.2	3.1	0.7	28
0.3	4.8	1.0	73
0.4	7.5	1.5	171
0.5	12	2.0	293
0.6	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	74	58	59	94	166	107	172	107	26	13	4.1	9.5
2	56	58	67	84	183	110	169	98	23	8.7	4.0	8.6
3	44	58	79	82	170	109	170	90	22	7.2	3.8	12
4	46	57	84	80	150	107	157	87	23	8.2	3.6	9.8
5	46	53	82	78	130	105	168	74	21	8.5	3.7	5.5
6	38	56	82	76	120	111	191	58	18	7.2	3.7	6.2
7	37	59	88	74	110	110	207	84	15	6.8	3.7	11
8	43	61	99	72	100	102	220	84	15	6.2	4.2	12
9	46	63	126	70	100	111	211	78	15	5.8	5.5	7.2
10	55	62	129	70	100	128	195	75	14	6.0	6.1	6.1
11	51	71	155	70	100	135	191	58	17	6.2	5.9	5.8
12	48	74	184	72	98	139	177	58	16	6.1	5.6	6.8
13	45	70	157	72	98	131	124	68	8.8	5.9	5.4	10
14	44	62	138	70	96	124	122	84	8.3	5.5	5.1	5.4
15	43	61	96	70	96	113	131	76	6.1	5.2	4.8	6.0
16	45	64	94	70	96	97	122	36	5.7	7.2	4.7	7.1
17	47	80	92	70	96	99	121	53	7.5	13	4.5	8.5
18	47	70	92	72	94	99	108	56	8.2	16	6.0	9.4
19	47	72	94	76	90	98	109	63	7.5	11	6.3	16
20	48	71	120	110	85	94	82	59	7.4	10	5.4	25
21	47	75	136	110	82	95	79	58	7.6	9.5	5.2	11
22	50	75	149	110	80	99	81	54	7.0	8.9	5.2	22
23	49	74	147	100	80	94	99	46	7.3	8.3	8.6	37
24	49	73	145	100	80	91	101	37	8.0	7.4	7.0	37
25	49	105	147	96	79	95	109	22	8.1	6.8	6.4	33
26	49	133	130	92	80	94	125	16	6.8	6.7	5.8	29
27	50	109	120	90	83	97	136	25	6.7	6.3	7.2	26
28	52	102	120	90	90	119	127	36	7.3	5.7	8.8	26
29	53	105	110	89	97	150	125	30	27	5.1	13	28
30	53	86	110	114	---	154	110	22	28	4.7	12	24
31	54	---	100	168	---	157	---	22	---	4.5	12	---
TOTAL	1505	2217	3531	2691	3029	3474	4239	1814	398.3	237.6	187.3	460.9
MEAN	48.5	73.9	114	86.8	104	112	141	58.5	13.3	7.66	6.04	15.4
MAX	74	133	184	168	183	157	220	107	28	16	13	37
MIN	37	53	59	70	79	91	79	16	5.7	4.5	3.6	5.4
CFSM	.40	.61	.93	.71	.86	.92	1.16	.48	.11	.06	.05	.13
IN.	.46	.68	1.08	.82	.92	1.06	1.29	.55	.12	.07	.06	.14

CAL YR 1987 TOTAL 31297 MEAN 85.7 MAX 223 MIN 15 CFSM .70 IN. 9.54
WTR YR 1988 TOTAL 23784.1 MEAN 65.0 MAX 220 MIN 3.6 CFSM .53 IN. 7.25

ROCK RIVER BASIN

05427235 LAKE KOSHKONONG NEAR NEWVILLE, WI

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 Pottawatom Trail Bridge at Bingham Point Estates, and 4.5 mi northeast of Newville.

DRAINAGE AREA.--2,560 mi², at lake outlet. Area of Lake Koshkonong, 16.3 mi².

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

GAGE.--Water-stage recorder. Datum of gage is 770.00 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Estimated daily lake levels: March 22-28, July 4, 16-23, Aug. 4, 19-23. Records good, except for estimated days, which are fair. Lake level regulated by dam at Indianford. Gage-height telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height, 8.32 ft, Apr. 10, 1988; minimum, 5.74 ft, June 26, 1988.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 8.32 ft, Apr. 10; minimum, 5.74 ft, June 26.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.75	6.36	6.80	7.54	7.44	6.61	7.61	7.42	6.12	5.91	5.93	5.89
2	6.77	6.38	6.85	7.46	7.73	6.61	7.64	7.36	6.09	5.92	5.92	5.89
3	6.62	6.40	6.95	7.38	7.98	6.63	7.71	7.31	6.05	5.93	5.91	5.90
4	6.55	6.39	6.99	7.30	8.15	6.66	7.79	7.29	6.03	5.93	5.94	5.95
5	6.52	6.37	7.00	7.23	8.20	6.71	7.88	7.20	6.02	5.93	5.98	5.92
6	6.49	6.30	7.01	7.16	8.24	6.79	8.10	7.10	6.02	5.93	5.95	5.90
7	6.44	6.29	7.05	7.08	8.21	6.88	8.10	6.97	6.00	5.92	5.93	5.91
8	6.34	6.30	7.09	6.99	8.13	7.04	8.16	6.82	5.97	5.92	5.96	5.90
9	6.30	6.29	7.21	6.89	8.03	7.23	8.21	6.80	5.92	5.91	5.97	5.92
10	6.26	6.27	7.31	6.80	7.94	7.40	8.27	6.75	5.91	5.93	5.97	5.90
11	6.23	6.25	7.43	6.72	7.85	7.55	8.23	6.66	5.92	5.92	5.97	5.90
12	6.21	6.26	7.57	6.66	7.76	7.64	8.21	6.65	5.93	5.89	5.95	5.92
13	6.20	6.27	7.63	6.59	7.68	7.73	8.19	6.64	5.93	5.89	5.92	5.93
14	6.18	6.28	7.66	6.53	7.60	7.78	8.16	6.58	5.94	5.94	5.92	5.91
15	6.18	6.27	7.75	6.49	7.52	7.79	8.10	6.54	5.95	5.92	5.94	5.88
16	6.17	6.28	7.65	6.44	7.44	7.78	8.01	6.49	5.93	5.98	5.93	5.87
17	6.21	6.39	7.55	6.40	7.38	7.75	7.99	6.41	5.91	5.97	5.93	5.90
18	6.19	6.45	7.48	6.37	7.31	7.73	7.91	6.37	5.91	5.98	5.94	5.90
19	6.20	6.51	7.46	6.38	7.24	7.70	7.80	6.34	5.91	5.98	5.94	5.93
20	6.24	6.55	7.53	6.47	7.17	7.66	7.74	6.25	5.91	5.99	5.95	6.02
21	6.26	6.50	7.55	6.52	7.10	7.61	7.66	6.19	5.91	5.99	5.96	5.98
22	6.25	6.49	7.58	6.61	7.03	7.59	7.59	6.13	5.93	5.98	5.96	6.05
23	6.26	6.53	7.62	6.71	6.95	7.57	7.60	6.05	5.90	5.97	5.97	6.15
24	6.25	6.52	7.66	6.80	6.87	7.55	7.54	6.00	5.88	5.96	5.98	6.14
25	6.26	6.54	7.69	6.87	6.81	7.53	7.51	5.96	5.90	5.99	5.98	6.16
26	6.27	6.52	7.70	6.90	6.73	7.53	7.48	5.96	5.84	5.97	5.94	6.17
27	6.31	6.52	7.72	6.91	6.67	7.54	7.50	5.99	5.84	5.97	5.92	6.18
28	6.30	6.56	7.72	6.92	6.63	7.54	7.48	6.03	5.85	5.97	5.93	6.14
29	6.31	6.63	7.69	6.90	6.61	7.55	7.46	6.05	5.91	5.96	5.92	6.15
30	6.33	6.72	7.66	6.91	---	7.56	7.44	6.08	5.91	5.96	5.90	6.16
31	6.32	---	7.62	7.13	---	7.59	---	6.11	---	5.94	5.90	---
MEAN	6.33	6.41	7.43	6.84	7.46	7.38	7.84	6.53	5.94	5.95	5.94	5.98
MAX	6.77	6.72	7.75	7.54	8.24	7.79	8.27	7.42	6.12	5.99	5.98	6.18
MIN	6.17	6.25	6.80	6.37	6.61	6.61	7.44	5.96	5.84	5.89	5.90	5.87

WTR YR 1988 MEAN 6.67 MAX 8.27 MIN 5.84

ROCK RIVER BASIN

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.--Estimated daily discharges: July 7 and 8. Records fair. Natural flow of stream affected by dam in Indianford. Discharge is adjusted for flow through wicket gates.

AVERAGE DISCHARGE.--13 years, 1,875 ft³/s, 9.68 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, 3,970 ft³/s, Dec. 15, gage height, 13.68 ft; minimum daily discharge, 39 ft³/s, June 19.

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	1440	705	1620	2200	2450	1440	2780	2280	373	180	120	111
2	1590	684	1630	2250	2800	1490	2790	2240	465	162	113	110
3	1500	851	1840	2230	3060	1550	2820	2190	384	144	122	137
4	1310	1050	1790	2070	3240	1560	2890	2160	325	146	105	182
5	1190	1060	1780	1910	3200	1580	3050	2070	298	152	126	167
6	1240	1060	1870	1890	3130	1630	3450	1970	288	145	123	133
7	1260	1070	1920	1800	3220	1810	3350	1780	281	120	116	103
8	1150	1110	1940	1730	3250	1900	3400	1560	379	110	131	89
9	1030	1090	1930	1640	3130	2200	3440	1390	204	114	148	127
10	900	1100	2190	1530	3050	2430	3570	1560	138	129	153	142
11	765	994	2310	1460	2960	2590	3570	1480	107	135	129	136
12	727	999	2320	1360	2800	2640	3460	1360	95	148	125	130
13	710	1050	2510	1340	2610	2800	3330	1420	91	88	89	145
14	675	1090	2670	1280	2570	2880	3260	1310	70	138	90	144
15	712	1070	2780	1250	2480	2910	3130	1190	107	122	152	155
16	684	1050	2380	1190	2370	2890	2980	1230	124	195	113	113
17	664	966	2180	1200	2300	2890	2810	1210	112	181	98	94
18	612	1130	2200	1190	2200	2850	2880	1190	70	190	203	116
19	622	1170	2260	1240	2130	2820	2730	1140	39	200	188	84
20	553	1290	2400	1240	2040	2820	2610	1100	84	211	147	80
21	586	1270	2470	1320	1890	2760	2520	1060	58	209	135	193
22	582	1240	2550	1370	1840	2670	2570	1070	132	197	117	226
23	627	1200	2610	1520	1740	2550	2490	801	183	182	134	273
24	652	1350	2660	1620	1670	2540	2410	675	99	164	129	296
25	633	1420	2690	1690	1620	2400	2310	556	119	193	120	292
26	622	1400	2720	1740	1520	2430	2410	256	169	190	140	273
27	644	1400	2730	1720	1540	2550	2340	153	130	154	138	330
28	663	1460	2800	1760	1440	2500	2360	212	164	154	138	438
29	690	1410	2750	1730	1440	2580	2340	245	234	141	149	321
30	682	1520	2660	1710	---	2630	2310	270	215	165	124	306
31	718	---	2470	1990	---	2720	---	286	---	140	104	---
TOTAL	26433	34209	71630	50170	69690	74010	86360	37414	5537	4899	4019	5446
MEAN	853	1140	2311	1618	2403	2387	2879	1207	185	158	130	182
MAX	1590	1520	2800	2250	3250	2910	3570	2280	465	211	203	438
MIN	553	684	1620	1190	1440	1440	2310	153	39	88	89	80
CFSM	.32	.43	.88	.62	.91	.91	1.09	.46	.07	.06	.05	.07
IN.	.37	.48	1.01	.71	.99	1.05	1.22	.53	.08	.07	.06	.08
CAL YR 1987	TOTAL 538778	MEAN 1476	MAX 3900	MIN 342	CFSM .56	IN. 7.62						
WTR YR 1988	TOTAL 469817	MEAN 1284	MAX 3570	MIN 39	CFSM .49	IN. 6.65						

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, parshall flume, and concrete control. Datum of gage is 901.5 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Estimated daily discharges: Jan. 5 to Feb. 2. Records good except for Jan. 5 to Feb. 2, May 29 to June 7, and June 28 to July 7, which are poor.

AVERAGE DISCHARGE.--14 years, 4.14 ft³/s, 3.29 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, 0.29 ft³/s, Jan. 26, 1978, gage height, 3.56 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. 31	Unknown	*75	*5.45				

Minimum daily discharge, 0.63 ft³/s Sept. 9.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Shifting-control method used May 30 to June 7, June 29 to July 7.)

3.7	0.58	4.5	5.3
4.0	1.4	4.6	9.6
4.2	2.2	4.8	20
4.3	2.8	5.0	34
4.4	3.7	5.3	60

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	1.5	1.8	4.3	2.4	20	7.9	3.3	2.0	1.2	1.1	1.2	.88
2	1.5	1.5	3.4	2.2	8.7	5.7	9.9	1.9	1.2	1.1	1.1	.87
3	1.4	1.5	3.0	2.3	5.8	3.9	28	1.8	1.2	.78	1.2	.90
4	1.5	1.4	2.7	2.0	4.2	3.1	12	1.8	1.2	.77	1.2	.88
5	1.5	1.3	2.5	1.7	3.4	2.9	5.7	1.7	1.2	.78	1.3	.85
6	1.5	1.2	2.3	1.6	2.9	3.2	5.7	1.7	1.2	.95	1.1	.81
7	1.6	2.2	2.4	1.5	2.8	3.8	4.3	1.7	1.3	1.0	1.0	.75
8	1.5	1.9	3.8	1.5	2.4	5.3	4.0	2.5	1.1	.99	1.6	.71
9	1.5	1.5	23	1.5	2.3	4.3	3.4	3.0	1.1	.91	1.2	.63
10	1.5	1.3	9.0	1.6	2.1	3.5	2.7	2.0	1.2	3.1	1.2	.66
11	1.5	1.3	6.9	1.7	2.0	3.1	2.7	1.8	1.1	1.2	1.2	.66
12	1.5	1.3	5.1	1.7	1.9	3.4	2.5	2.2	1.2	1.1	1.1	.68
13	1.6	1.3	3.8	1.6	1.8	2.9	2.4	1.7	1.1	1.0	1.1	.68
14	1.5	1.3	3.2	1.6	1.8	2.5	2.3	1.6	1.1	1.0	1.1	.65
15	1.5	1.2	2.4	1.6	1.8	2.4	2.1	1.6	1.1	.98	1.5	.64
16	2.0	1.7	2.7	1.7	1.8	2.3	2.0	1.5	1.0	12	1.0	.75
17	2.2	16	2.7	1.8	1.8	2.4	2.0	1.5	1.1	2.4	.91	.97
18	1.7	4.4	2.5	1.9	1.9	2.3	1.9	1.5	1.1	1.3	1.4	.86
19	1.6	3.0	2.8	2.0	1.9	2.3	1.8	1.5	1.1	1.2	1.0	8.7
20	1.5	2.4	4.2	3.4	1.8	2.2	1.8	1.5	1.1	1.1	.98	3.0
21	1.7	2.1	3.6	3.3	1.6	2.0	1.8	1.4	1.1	2.2	.89	1.2
22	2.3	1.9	3.5	3.1	1.9	2.0	1.9	1.4	1.3	1.2	1.2	19
23	2.8	2.0	3.2	2.9	1.8	2.2	3.7	1.4	1.1	1.2	15	9.5
24	3.4	1.8	3.6	2.7	1.6	3.0	2.1	1.3	1.1	1.2	1.2	1.5
25	2.7	2.1	4.4	2.6	1.5	4.7	1.9	1.3	1.1	1.2	.94	1.1
26	2.5	2.1	4.1	2.4	3.5	3.2	2.5	1.3	.98	1.3	.86	1.1
27	1.5	2.1	3.4	2.2	4.3	2.7	3.5	1.2	.99	1.6	.83	1.1
28	1.4	18	3.0	2.2	6.5	7.2	2.9	1.2	2.0	1.3	.84	1.1
29	1.3	16	3.0	2.3	8.7	13	2.4	1.2	3.7	1.3	.81	1.0
30	1.3	6.3	2.8	30	---	4.9	2.2	1.2	1.3	1.3	.84	.94
31	1.3	---	2.6	60	---	3.8	---	1.2	---	1.3	.88	---
TOTAL	53.8	103.9	129.9	151.0	104.5	118.1	125.4	50.6	37.57	49.86	47.68	63.07
MEAN	1.74	3.46	4.19	4.87	3.60	3.81	4.18	1.63	1.25	1.61	1.54	2.10
MAX	3.4	18	23	60	20	13	28	3.0	3.7	12	15	19
MIN	1.3	1.2	2.3	1.5	1.5	2.0	1.8	1.2	.98	.77	.81	.63
CFSM	.09	.19	.23	.27	.20	.21	.23	.09	.07	.09	.08	.11
IN.	.11	.21	.26	.31	.21	.24	.25	.10	.08	.10	.10	.13

CAL YR 1987 TOTAL 1056.3 MEAN 2.89 MAX 45 MIN 1.0 CFSM .16 IN. 2.15
WTR YR 1988 TOTAL 1035.38 MEAN 2.83 MAX 60 MIN .63 CFSM .15 IN. 2.10

ROCK RIVER BASIN

05427948 PHEASANT BRANCH AT MIDDLETON, WI--CONTINUED

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1974 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (MG/L) (80154)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY) (80155)	DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (MG/L) (80154)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY) (80155)
NOV 1987					JUL 1988				
17...	0015	14	120	4.5	16...	1000	14	274	10
17...	0215	22	256	15	16...	1400	31	213	18
17...	0615	10	72	1.9	16...	1500	37	722	72
17...	0815	20	346	19	16...	1700	17	276	13
17...	0915	25	442	30	16...	2100	11	493	15
17...	1315	21	386	22	AUG				
17...	1630	15	247	10	03...	1400	1.1	93	0.28
17...	1930	12	196	6.4	07...	1545	1.0	97	0.26
18...	1002	4.3	32	0.37	08...	0800	3.1	52	0.44
28...	1300	13	213	7.5	08...	0845	5.7	83	1.3
28...	1330	17	159	7.3	08...	2030	2.2	8	0.05
28...	1530	29	399	31	12...	1030	1.1	19	0.06
28...	1830	42	885	100	14...	1600	1.1	30	0.09
28...	2330	33	492	44	15...	0200	1.0	23	0.06
29...	0330	23	286	18	15...	0945	2.1	63	0.36
29...	0930	16	161	7.0	15...	1215	1.3	36	0.13
MAR 1988					22...	2400	19	253	13
24...	2330	20	141	7.6	23...	0100	38	1140	117
25...	0030	14	1160	44	23...	0415	21	180	10
28...	1300	14	283	11	23...	0615	34	1590	146
29...	0015	18	310	15	23...	0946	16	689	30
29...	0345	19	250	13	23...	0947	16	685	30
29...	1015	13	179	6.3	SEP				
APR					19...	0600	17	358	16
02...	1600	14	102	3.9	19...	1100	25	1110	75
02...	1915	16	271	12	19...	1515	8.7	601	14
02...	2200	29	1190	93	19...	1730	7.0	448	8.5
02...	2400	44	1840	219	20...	0200	3.3	244	2.2
03...	0600	31	877	73	20...	0400	6.6	240	4.3
JUN					20...	0800	3.4	229	2.1
28...	2215	6.6	254	4.5	22...	0315	4.3	594	6.9
28...	2230	7.0	128	2.4	22...	0515	14	389	15
28...	2330	17	213	9.8	22...	0715	6.6	427	7.6
29...	0030	17	742	34	22...	1015	30	602	49
29...	0230	6.6	185	3.3	22...	1129	29	297	23
29...	1130	4.7	195	2.5	22...	1130	29	285	22
JUL					22...	1315	39	1290	136
10...	1045	16	87	3.8	22...	1615	26	778	55
10...	1100	20	113	6.1	22...	1915	16	477	21
10...	1200	14	450	17	23...	0115	24	535	35
16...	0730	17	110	5.0	23...	1215	7.4	304	6.1
16...	0800	41	960	106	23...	1730	3.7	140	1.4

ROCK RIVER BASIN

05427948 PHEASANT BRANCH AT MIDDLETON, WI--CONTINUED

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

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, 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)	PHOS- PHOROUS TOTAL (MG/L AS P) (00665)	PHOS- PHOROUS DIS- SOLVED (MG/L AS P) (00666)
NOV 1987									
17...	0115	22	1.50	0.130	2.3	2.4	3.9	0.180	0.120
17...	0515	8.7	1.50	0.110	0.89	1.0	2.5	0.450	0.260
17...	0915	25	3.60	0.050	3.1	3.2	6.8	0.490	0.250
17...	0916	25	3.70	0.110	0.69	0.80	4.5	0.470	0.260
17...	1530	17	5.30	1.90	4.1	6.0	11	1.00	0.960
17...	2030	10	7.80	1.10	3.5	4.6	12	1.10	0.960
28...	1430	26	2.60	0.090	2.2	2.3	4.9	0.270	0.130
28...	1730	42	5.40	0.070	2.3	2.4	7.8	0.380	0.180
29...	0030	30	8.90	0.450	2.7	3.2	12	0.830	0.690
29...	0830	17	12.0	0.550	3.5	4.1	16	0.800	0.860
30...	1445	5.7	13.0	0.240	1.8	2.0	15	0.500	0.340
MAR 1988									
24...	2400	20	2.20	0.320	2.0	2.3	4.5	0.420	0.280
28...	2300	15	5.80	0.320	1.7	2.0	7.8	0.440	0.160
29...	0415	19	6.00	0.740	3.0	3.7	9.7	0.900	0.450
29...	1045	13	7.70	0.890	2.9	3.8	11	0.980	0.650
APR									
02...	1700	15	2.40	0.170	1.9	2.1	4.5	0.940	0.220
02...	2100	29	3.20	0.210	2.4	2.6	5.8	0.910	0.170
02...	2300	43	4.10	0.170	3.0	3.2	7.3	1.40	0.190
03...	0700	29	6.30	0.560	4.1	4.7	11	1.80	0.680
03...	1200	20	0.800	0.460	3.3	3.8	4.6	1.10	0.540
03...	2000	25	7.80	0.490	2.6	3.1	11	1.10	0.600
JUL									
16...	0730	17	0.100	0.150	2.0	2.2	2.3	0.410	0.110
16...	0900	27	1.00	0.170	2.6	2.8	3.8	1.60	0.520
16...	1500	37	1.10	0.070	2.9	3.0	4.1	1.30	0.330
16...	1900	16	3.00	0.110	1.8	1.9	4.9	0.260	0.170
AUG									
22...	2400	19	1.30	0.140	0.86	1.0	2.3	0.130	0.090
23...	0200	36	0.600	0.110	0.79	0.90	1.5	1.10	0.280
23...	0415	21	1.60	0.080	1.0	1.1	2.7	0.260	0.200
23...	0515	33	0.700	0.100	0.70	0.80	1.5	0.500	0.170
23...	0945	16	1.30	0.100	0.70	0.80	2.1	0.470	0.200
23...	0946	16	1.30	0.110	0.59	0.70	2.0	0.410	0.210
SEP									
22...	0415	6.2	1.40	0.650	0.75	1.4	2.8	0.710	0.270
22...	0915	27	0.900	0.350	0.45	0.80	1.7	0.740	0.230
22...	1215	38	0.800	0.470	0.13	0.60	1.4	1.20	0.190
22...	1815	17	2.80	0.260	0.64	0.90	3.7	0.630	0.170

ROCK RIVER BASIN

054279502 GRABER POND AT MIDDLETON, WI

LOCATION.--Lat 43°07'11", long 89°30'25', in SW 1/4 SE 1/4 sec.35, T.8 N., R.8 E., Dane County, Hydrologic Unit 07090001, on south side of pond along Graver Road, in Middleton.

DRAINAGE AREA.--0.60 mi². Area of Graber Pond, 0.02 mi².

WATER-STAGE RECORDS

PERIOD OF RECORD.--April to September 1988.

GAGE.--Water-stage recorder. Datum of gage is 896.77 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Estimated daily mean gage height: Apr. 12, 17, 18, 23, 30, and May 1-4. Records good except estimated daily mean gage heights, which are fair.

EXTREMES.--April to September 1988: Maximum gage height, 4.94 ft Apr. 12-13; minimum, 4.07 ft June 28.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	4.82	4.38	4.33	4.21	4.31
2	---	---	---	---	---	---	---	4.80	4.36	4.32	4.20	4.30
3	---	---	---	---	---	---	---	4.78	4.36	4.29	4.19	4.32
4	---	---	---	---	---	---	---	4.75	4.35	4.26	4.18	4.31
5	---	---	---	---	---	---	---	4.74	4.33	4.23	4.17	4.30
6	---	---	---	---	---	---	---	4.73	4.32	4.22	4.17	4.28
7	---	---	---	---	---	---	---	4.73	4.30	4.21	4.16	4.27
8	---	---	---	---	---	---	---	4.71	4.28	4.19	4.18	4.26
9	---	---	---	---	---	---	---	4.71	4.27	4.16	4.19	4.25
10	---	---	---	---	---	---	---	4.75	4.26	4.21	4.20	4.24
11	---	---	---	---	---	---	---	4.76	4.26	4.25	4.20	4.23
12	---	---	---	---	---	---	4.94	4.76	4.25	4.24	4.20	4.23
13	---	---	---	---	---	---	4.94	4.75	4.23	4.22	4.18	4.22
14	---	---	---	---	---	---	4.92	4.73	4.22	4.20	4.17	4.21
15	---	---	---	---	---	---	4.89	4.71	4.21	4.19	4.16	4.20
16	---	---	---	---	---	---	4.88	4.68	4.19	4.28	4.16	4.19
17	---	---	---	---	---	---	4.86	4.66	4.19	4.34	4.15	4.20
18	---	---	---	---	---	---	4.83	4.65	4.18	4.34	4.17	4.21
19	---	---	---	---	---	---	4.80	4.63	4.17	4.34	4.19	4.38
20	---	---	---	---	---	---	4.79	4.62	4.16	4.33	4.19	4.44
21	---	---	---	---	---	---	4.77	4.60	4.15	4.35	4.19	4.45
22	---	---	---	---	---	---	4.76	4.58	4.12	4.36	4.19	4.59
23	---	---	---	---	---	---	4.81	4.54	4.11	4.34	4.40	4.71
24	---	---	---	---	---	---	---	4.52	4.11	4.32	4.40	4.71
25	---	---	---	---	---	---	---	4.51	4.11	4.29	4.40	4.70
26	---	---	---	---	---	---	---	4.50	4.11	4.28	4.38	4.68
27	---	---	---	---	---	---	---	4.48	4.10	4.27	4.37	4.65
28	---	---	---	---	---	---	---	4.47	4.10	4.26	4.36	4.62
29	---	---	---	---	---	---	---	4.45	4.34	4.25	4.34	4.62
30	---	---	---	---	---	---	4.83	4.43	4.34	4.23	4.34	4.61
31	---	---	---	---	---	---	---	4.39	---	4.22	4.33	---
TOTAL	---	---	---	---	---	---	---	143.94	126.86	132.32	131.32	131.69
MEAN	---	---	---	---	---	---	---	4.64	4.23	4.27	4.24	4.39
MAX	---	---	---	---	---	---	---	4.82	4.38	4.36	4.40	4.71
MIN	---	---	---	---	---	---	---	4.39	4.10	4.16	4.15	4.19

ROCK RIVER BASIN

054279502 GRABER POND AT MIDDLETON, WI--CONTINUED

PRECIPITATION QUANTITY

PERIOD OF RECORD.--Apr. 6 to Sept. 30, 1988.

GAGE.--Digital recorder.

REMARKS.--Estimated daily rainfall: May 13-19. Records good except estimated daily rainfall, which is fair.

EXTREMES FOR CURRENT YEAR: Maximum daily rainfall, 1.82 in., June 28.

RAINFALL ACCUMULATED (INCHES), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	.00	.00	.00	.00	.00
2	---	---	---	---	---	---	---	.00	.00	.00	.00	.30
3	---	---	---	---	---	---	---	.00	.00	.00	.00	.00
4	---	---	---	---	---	---	---	.00	.00	.00	.13	.10
5	---	---	---	---	---	---	---	.00	.00	.01	.05	.00
6	---	---	---	---	---	---	.19	.00	.00	.00	.01	.01
7	---	---	---	---	---	---	.01	.00	.00	.00	.00	.00
8	---	---	---	---	---	---	.00	.51	.00	.00	.58	.00
9	---	---	---	---	---	---	.00	.26	.00	.06	.00	.00
10	---	---	---	---	---	---	.00	.01	.00	.73	.00	.00
11	---	---	---	---	---	---	.05	.17	.00	.00	.00	.00
12	---	---	---	---	---	---	.00	.03	.00	.00	.01	.00
13	---	---	---	---	---	---	.05	.00	.00	.01	.01	.00
14	---	---	---	---	---	---	.00	.01	.00	.01	.00	.00
15	---	---	---	---	---	---	.00	.02	.00	.00	.10	.00
16	---	---	---	---	---	---	.00	.00	.00	1.22	.01	.13
17	---	---	---	---	---	---	.00	.00	.00	.00	.00	.11
18	---	---	---	---	---	---	.00	.00	.00	.00	.41	.67
19	---	---	---	---	---	---	.00	.00	.00	.00	.00	.88
20	---	---	---	---	---	---	.07	.00	.00	.15	.01	.15
21	---	---	---	---	---	---	.00	.00	.00	.26	.00	.10
22	---	---	---	---	---	---	.40	.00	.11	.00	1.33	1.77
23	---	---	---	---	---	---	.47	.00	.00	.00	.23	.00
24	---	---	---	---	---	---	.00	.00	.00	.04	.00	.00
25	---	---	---	---	---	---	.00	.00	.00	.01	.00	.00
26	---	---	---	---	---	---	.39	.00	.00	.00	.00	.00
27	---	---	---	---	---	---	.13	.00	.00	.00	.03	.00
28	---	---	---	---	---	---	.00	.00	1.82	.00	.00	.14
29	---	---	---	---	---	---	.01	.00	.28	.00	.00	.01
30	---	---	---	---	---	---	.00	.00	.00	.00	.01	.00
31	---	---	---	---	---	---	---	.00	---	.00	.00	---
TOTAL	---	---	---	---	---	---	---	1.01	2.21	2.50	2.92	4.37

ROCK RIVER BASIN

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: Nov. 19-30, Jan. 12-28, Aug. 11-12 and 16-23.. Records are good except those for estimated daily discharges and for flow less than 0.3 ft³/s, which are poor.

AVERAGE DISCHARGE.--12 years (1977-88), 1.37 ft³/s, 5.65 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, 138 ft³/s, Sept. 19, gage height, 2.06 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	0.8	6.7
0.5	0.55	0.9	12
0.6	1.8	1.0	18
0.7	3.8	1.1	26

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	.00	2.3	.19	.02	.23	1.6	.00	.00	.00	.08	.00	.00
2	.00	.29	.12	.00	.04	.67	16	.15	.00	.00	.00	5.0
3	.00	.02	.30	.00	.03	.20	7.5	.68	.00	.00	.33	.79
4	.00	.00	.19	.00	.00	.17	.48	.38	.00	.00	.55	1.0
5	.00	.00	.13	.00	.00	.30	.81	.00	.00	.00	.31	.08
6	.08	.00	.12	.00	.00	.97	4.3	.00	.00	.00	.00	.03
7	.13	6.9	1.1	.00	.03	1.6	.15	.00	.00	.00	.00	.00
8	.00	.95	6.6	.00	.06	2.1	.06	4.3	.02	.00	2.8	.00
9	.00	.28	9.7	.00	.06	.37	.05	3.6	.00	.05	.45	.00
10	.00	.06	.16	.00	.06	.29	.00	.62	.00	4.8	.04	.00
11	.00	.00	3.0	.00	.06	.28	.09	2.0	.00	.08	.00	.00
12	.00	.01	.09	.00	.06	.53	.02	1.9	.00	.06	.00	.00
13	.00	.00	.00	.00	.09	.13	.00	.18	.02	.00	.99	.00
14	.00	.00	.06	.00	.12	.06	.02	.01	.00	.00	.06	.00
15	.00	.00	.03	.10	.16	.02	.00	.00	.00	.00	4.8	.00
16	2.8	6.7	.00	.40	.15	.03	.00	.00	.00	10	.04	.47
17	.94	17	.00	.60	.34	.06	.00	.00	.02	.01	.00	1.0
18	.04	.29	.00	.80	1.1	.03	.00	.00	.00	.02	.00	3.7
19	.06	.00	3.5	1.0	.51	.05	.00	.00	.00	.16	.00	19
20	.06	.00	3.8	.30	.18	.05	.12	.00	.00	.01	.00	2.2
21	.04	.00	.43	.04	.00	.03	.01	.00	.00	1.5	.00	.04
22	.32	.00	.49	.00	.58	.16	2.8	.00	2.0	.01	.00	24
23	.14	.00	.30	.00	.08	.18	10	.00	.06	.00	.74	1.2
24	1.7	.05	4.8	.00	.01	3.9	.30	.00	.22	.00	.07	.00
25	.30	.20	.86	.00	.00	2.0	.16	.00	.00	.03	.07	.00
26	1.9	.02	.14	.00	2.6	.00	3.3	.00	.00	.00	.01	.00
27	.35	.00	.13	.00	1.6	.00	2.8	.00	.00	.00	.00	.00
28	.06	20	.07	.00	1.7	12	.23	.00	12	.00	.00	.48
29	.33	1.0	.02	.98	2.6	1.6	.09	.00	11	.00	.00	.00
30	.13	.30	.13	19	---	.16	.00	.00	.00	.00	.00	.00
31	.04	---	.17	12	---	.00	---	.00	---	.00	.00	---
TOTAL	9.42	56.37	36.63	35.24	12.45	29.54	49.29	13.82	25.34	16.81	11.26	58.99
MEAN	.30	1.88	1.18	1.14	.43	.95	1.64	.45	.84	.54	.36	1.97
MAX	2.8	20	9.7	19	2.6	12	16	4.3	12	10	4.8	24
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
CFSM	.09	.57	.36	.35	.13	.29	.50	.14	.26	.16	.11	.60
IN.	.11	.64	.41	.40	.14	.33	.56	.16	.29	.19	.13	.67

CAL YR 1987 TOTAL 449.59 MEAN 1.23 MAX 30 MIN .00 CFSM .37 IN. 5.08
WTR YR 1988 TOTAL 355.16 MEAN .97 MAX 24 MIN .00 CFSM .29 IN. 4.02

ROCK RIVER BASIN

05427965 SPRING HARBOR STORM SEWER AT MADISON, WI--CONTINUED

WATER-QUALITY RECORDS

PERIOD OF RECORD.--February 1976 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	FEET TIME	DIS- CHARGE, INST. CUBIC SUS- PER SECOND (00061)	SEDI- MENT, DIS- CHARGE, SUS- PEN- DEDED (MG/L) (80154)	SEDI- MENT, DIS- CHARGE, PEN- DEDED (T/DAY) (80155)	DATE	FEET TIME	DIS- CHARGE, INST. CUBIC SUS- PER SECOND (00061)	SEDI- MENT, DIS- CHARGE, SUS- PEN- DEDED (MG/L) (80154)	SEDI- MENT, DIS- CHARGE, PEN- DEDED (T/DAY) (80155)
NOV 1987					APR 1988				
07...	1650	9.6	88	2.3	22...	2345	41	250	28
07...	1720	50	262	35	23...	0115	50	109	15
07...	1750	71	305	58	23...	0345	14	81	3.1
07...	1850	41	209	23	23...	1205	8.7	33	0.78
07...	2050	7.2	201	3.9	JUN				
DEC					28...	2025	29	507	40
08...	1645	8.4	153	3.5	28...	2125	58	1030	162
08...	1750	22	386	23	28...	2225	86	312	72
08...	2250	9.6	178	4.6	28...	2325	87	212	50
08...	2350	22	221	13	29...	0225	53	162	23
09...	0150	33	349	31	29...	0555	9.1	81	2.0
09...	0450	44	249	30	JUL				
09...	0620	18	195	9.5	16...	0625	8.2	190	4.2
JAN 1988					16...	0655	85	514	118
30...	0715	9.6	50	1.3	16...	0725	98	696	184
30...	1115	22	109	6.5	16...	0755	57	697	107
30...	1345	33	266	24	16...	0825	44	622	74
30...	1715	26	95	6.7	16...	1330	7.7	144	3.0
30...	2015	27	83	6.1	SEP				
MAR					02...	1945	8.7	383	9.0
24...	2210	9.6	1050	27	02...	2050	58	616	96
24...	2240	54	1370	200	02...	2320	8.2	147	3.3
24...	2340	29	803	63	18...	2010	8.2	78	1.7
25...	0140	6.4	204	3.5	18...	2040	59	711	113
28...	0805	8.7	467	11	18...	2240	9.6	60	1.6
28...	0835	37	361	36	19...	0325	14	121	4.6
28...	0905	48	627	81	19...	0355	78	380	80
28...	1035	16	198	8.6	19...	0425	130	292	102
28...	1205	45	324	39	19...	0555	46	198	25
28...	1535	6.1	193	3.2	19...	0755	36	223	22
APR					19...	1025	9.1	97	2.4
02...	1445	20	1270	69	22...	0635	6.4	39	0.67
02...	1515	67	2020	365	22...	0740	72	251	49
02...	1745	17	238	11	22...	0910	72	206	40
02...	1845	30	177	14	22...	1040	37	262	26
02...	1945	23	559	35	22...	1145	28	215	16
02...	2015	89	897	216	22...	1315	6.4	172	3.0
02...	2145	40	908	98	22...	1415	44	409	49
02...	2215	65	540	95	22...	1715	7.2	419	8.1
02...	2345	30	418	34	22...	2005	65	298	52
03...	0215	14	258	9.8	23...	0005	11	280	8.3
22...	2000	7.2	392	7.6					

ROCK RIVER BASIN

05428000 LAKE MENDOTA AT MADISON, WI

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.

DRAINAGE AREA.--233 mi². Area of Lake Mendota, 15.2 mi².

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, 10.18 ft, May 15; minimum, 8.76 ft, Feb. 28.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10.02	9.41	9.66	9.76	9.28	8.82	9.62	10.04	9.93	9.69	9.63	9.46
2	10.03	9.41	9.60	9.72	9.30	8.86	9.66	10.04	9.92	9.68	9.61	9.47
3	9.97	9.42	9.56	9.70	9.30	8.90	9.78	10.03	9.90	9.67	9.60	9.51
4	9.95	9.45	9.51	9.67	9.29	8.92	9.84	10.03	9.89	9.67	9.60	9.52
5	9.94	9.45	9.45	9.64	9.27	8.94	9.87	10.02	9.89	9.65	9.62	9.50
6	9.95	9.42	9.39	9.62	9.25	8.97	9.96	10.02	9.88	9.66	9.60	9.48
7	9.94	9.43	9.39	9.59	9.23	9.00	9.94	10.00	9.88	9.65	9.56	9.46
8	9.90	9.48	9.42	9.56	9.21	9.04	9.96	10.0	9.85	9.64	9.59	9.44
9	9.90	9.49	9.50	9.53	9.20	9.08	9.97	10.07	9.83	9.63	9.61	9.45
10	9.88	9.48	9.53	9.50	9.18	9.12	9.98	10.10	9.81	9.67	9.59	9.44
11	9.84	9.48	9.57	9.46	9.16	9.14	9.98	10.10	9.80	9.68	9.59	9.43
12	9.80	9.48	9.62	9.44	9.14	9.17	9.99	10.11	9.78	9.66	9.59	9.44
13	9.76	9.49	9.62	9.41	9.11	9.20	10.0	10.11	9.77	9.64	9.57	9.44
14	9.72	9.50	9.62	9.39	9.09	9.22	10.01	10.10	9.75	9.64	9.57	9.42
15	9.70	9.49	9.72	9.36	9.07	9.24	10.02	10.10	9.75	9.63	9.58	9.41
16	9.68	9.52	9.73	9.33	9.06	9.25	10.0	10.09	9.73	9.68	9.57	9.39
17	9.69	9.64	9.72	9.31	9.03	9.26	9.99	10.07	9.71	9.73	9.58	9.42
18	9.65	9.67	9.72	9.30	9.01	9.27	9.98	10.06	9.70	9.74	9.56	9.43
19	9.62	9.69	9.75	9.30	8.99	9.29	9.97	10.05	9.68	9.74	9.56	9.48
20	9.60	9.69	9.86	9.36	8.97	9.30	9.95	10.05	9.67	9.73	9.54	9.54
21	9.56	9.64	9.86	9.35	8.94	9.31	9.92	10.04	9.67	9.74	9.52	9.51
22	9.51	9.63	9.86	9.34	8.91	9.31	9.90	10.02	9.68	9.73	9.49	9.60
23	9.48	9.64	9.86	9.32	8.89	9.33	9.96	10.01	9.66	9.72	9.61	9.69
24	9.47	9.63	9.85	9.31	8.86	9.35	9.97	9.99	9.63	9.72	9.62	9.68
25	9.44	9.64	9.85	9.30	8.84	9.40	9.97	9.97	9.65	9.72	9.60	9.69
26	9.42	9.62	9.82	9.29	8.81	9.42	9.98	9.97	9.62	9.70	9.55	9.68
27	9.42	9.60	9.80	9.27	8.80	9.42	10.04	9.95	9.60	9.70	9.54	9.68
28	9.39	9.63	9.82	9.25	8.78	9.48	10.04	9.95	9.61	9.68	9.54	9.67
29	9.38	9.69	9.81	9.22	8.78	9.57	10.03	9.95	9.73	9.66	9.51	9.67
30	9.38	9.69	9.78	9.22	---	9.58	10.03	9.94	9.72	9.66	9.49	9.68
31	9.37	---	9.80	9.24	---	9.61	---	9.94	---	9.64	9.48	---
MEAN	9.69	9.55	9.68	9.42	9.06	9.22	9.94	10.03	9.76	9.68	9.57	9.52
MAX	10.03	9.69	9.86	9.76	9.30	9.61	10.04	10.11	9.93	9.74	9.63	9.69
MIN	9.37	9.41	9.39	9.22	8.78	8.82	9.62	9.94	9.60	9.63	9.48	9.39
CAL YR 1987	MEAN 9.66	MAX 10.38	MIN 8.65									
WTR YR 1988	MEAN 9.60	MAX 10.11	MIN 8.78									

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 5.40 ft. Dec. 7; minimum, 4.21 ft. Mar. 26 and 27.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.05	4.91	4.99	5.04	5.33	4.87	4.26	5.13	4.96	4.90	4.84	4.72
2	4.96	4.89	5.07	5.06	5.33	4.80	4.28	5.12	4.98	4.89	4.82	4.72
3	4.91	4.87	5.16	5.07	5.33	4.74	4.39	5.12	4.96	4.88	4.82	4.78
4	4.88	4.82	5.21	5.08	5.31	4.69	4.45	5.10	4.95	4.88	4.81	4.78
5	4.83	4.74	5.27	5.08	5.29	4.64	4.46	5.06	4.93	4.88	4.80	4.76
6	4.78	4.71	5.33	5.08	5.27	4.60	4.48	5.05	4.93	4.88	4.78	4.76
7	4.73	4.70	5.38	5.08	5.25	4.57	4.49	5.04	4.92	4.87	4.78	4.76
8	4.72	4.71	5.29	5.08	5.23	4.56	4.50	5.07	4.93	4.85	4.79	4.75
9	4.68	4.66	5.27	5.08	5.22	4.54	4.51	5.11	4.88	4.84	4.80	4.72
10	4.65	4.62	5.23	5.08	5.20	4.52	4.49	5.11	4.86	4.90	4.80	4.73
11	4.68	4.58	5.20	5.08	5.18	4.51	4.49	5.12	4.85	4.88	4.79	4.73
12	4.72	4.55	5.12	5.09	5.17	4.49	4.49	5.14	4.85	4.88	4.79	4.73
13	4.76	4.53	5.06	5.08	5.14	4.45	4.48	5.13	4.85	4.87	4.80	4.71
14	4.79	4.51	5.01	5.08	5.12	4.42	4.48	5.14	4.84	4.86	4.79	4.70
15	4.82	4.49	4.99	5.08	5.10	4.40	4.49	5.12	4.83	4.86	4.81	4.71
16	4.86	4.49	4.96	5.09	5.09	4.38	4.53	5.09	4.83	4.96	4.81	4.72
17	4.91	4.55	4.95	5.10	5.07	4.35	4.56	5.08	4.84	5.02	4.79	4.72
18	4.93	4.52	4.93	5.11	5.06	4.33	4.58	5.07	4.84	5.01	4.82	4.74
19	4.94	4.48	4.92	5.14	5.06	4.30	4.62	5.07	4.84	4.99	4.84	4.81
20	4.94	4.44	4.94	5.26	5.04	4.29	4.70	5.06	4.84	4.97	4.81	4.81
21	4.93	4.46	4.92	5.26	5.03	4.27	4.78	5.05	4.83	5.00	4.81	4.82
22	4.96	4.48	4.92	5.25	5.01	4.27	4.88	5.05	4.82	4.99	4.80	4.92
23	4.96	4.49	4.92	5.25	4.99	4.24	4.99	5.02	4.83	4.98	4.87	5.00
24	4.99	4.50	4.97	5.24	4.97	4.25	5.04	4.99	4.82	4.96	4.83	5.01
25	5.01	4.53	5.01	5.24	4.96	4.26	5.08	4.95	4.80	4.95	4.80	5.01
26	5.03	4.58	5.02	5.23	4.95	4.22	5.12	4.92	4.79	4.93	4.78	5.01
27	5.04	4.62	5.03	5.23	4.94	4.21	5.14	4.92	4.77	4.91	4.79	5.01
28	5.03	4.73	5.09	5.22	4.94	4.27	5.16	4.93	4.80	4.89	4.76	5.02
29	4.99	4.85	5.12	5.21	4.93	4.29	5.17	4.94	4.95	4.88	4.75	5.01
30	4.95	4.90	5.13	5.22	---	4.28	5.15	4.95	4.91	4.87	4.75	5.01
31	4.92	---	5.11	5.29	---	4.27	---	4.96	---	4.86	4.73	---
MEAN	4.88	4.63	5.08	5.14	5.12	4.43	4.67	5.05	4.87	4.91	4.80	4.82
MAX	5.05	4.91	5.38	5.29	5.33	4.87	5.17	5.14	4.98	5.02	4.87	5.02
MIN	4.65	4.44	4.92	5.04	4.93	4.21	4.26	4.92	4.77	4.84	4.73	4.70

ROCK RIVER BASIN

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.--No estimated daily discharges. Records fair. Flow regulated by dams at outlets of Lake Mendota and Lake Waubesa. The Madison Metropolitan Sewerage District diverted an average of 53 ft³/s of effluent into the Badfish Creek basin during 1988 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.--58 years, 157 ft³/s, 6.52 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, 330 ft³/s, Feb. 2, gage height, 5.02 ft; maximum gage height, 5.07 ft, Dec. 9, backwater from aquatic vegetation; minimum, 2.9 ft³/s Sept. 15.

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	191	182	214	253	323	244	130	197	37	21	35	8.1
2	188	182	224	246	327	237	135	190	40	19	34	7.5
3	171	178	241	245	323	227	160	200	28	19	30	9.1
4	156	179	253	245	320	215	177	207	18	19	28	8.1
5	151	178	262	245	319	205	181	204	23	15	21	6.4
6	147	163	269	247	323	198	193	162	21	13	13	7.5
7	140	156	284	250	314	191	168	82	23	15	21	7.1
8	126	159	287	250	309	189	124	70	31	22	14	6.3
9	118	159	296	254	308	188	125	68	22	20	8.8	5.7
10	111	153	289	255	303	184	120	72	20	17	9.6	5.8
11	109	146	278	256	301	179	124	74	12	14	9.6	12
12	110	141	272	259	296	180	125	106	11	15	9.5	20
13	113	139	258	262	293	181	83	127	10	13	9.3	22
14	118	136	241	261	289	183	52	154	9.8	18	9.5	12
15	126	131	227	261	288	179	32	149	11	14	11	3.7
16	134	128	213	262	283	174	24	140	13	21	11	3.3
17	148	148	228	264	278	169	22	133	19	33	9.9	4.8
18	154	154	224	268	273	166	19	133	13	34	8.9	19
19	159	153	220	270	270	165	18	130	19	38	12	11
20	164	154	228	295	271	161	20	128	27	33	11	13
21	170	140	218	298	268	155	34	125	14	56	12	11
22	169	132	213	297	263	150	40	120	19	65	14	22
23	170	134	208	294	260	151	56	112	19	63	24	35
24	176	135	210	297	255	154	64	102	9.2	59	21	30
25	178	142	218	298	251	164	116	92	9.4	57	30	37
26	183	145	222	308	248	169	150	50	11	54	19	30
27	191	148	224	302	248	164	160	19	17	57	11	31
28	192	165	238	298	247	152	196	24	15	53	17	24
29	188	192	245	293	247	151	210	28	27	47	10	24
30	184	206	245	292	---	155	206	29	26	43	8.7	25
31	180	---	249	309	---	140	---	34	---	35	9.0	---
TOTAL	4815	4658	7498	8434	8298	5520	3264	3461	574.4	1002	491.8	461.4
MEAN	155	155	242	272	286	178	109	112	19.1	32.3	15.9	15.4
MAX	192	206	296	309	327	244	210	207	40	65	35	37
MIN	109	128	208	245	247	140	18	19	9.2	13	8.7	3.3
CFSM	.47	.47	.74	.83	.88	.54	.33	.34	.06	.10	.05	.05
IN.	.55	.53	.85	.96	.94	.63	.37	.39	.07	.11	.06	.05

CAL YR 1987 TOTAL 61094.9 MEAN 167 MAX 309 MIN 4.9 CFSM .51 IN. 6.95
WTR YR 1988 TOTAL 48477.6 MEAN 132 MAX 327 MIN 3.3 CFSM .41 IN. 5.51

ROCK RIVER BASIN

05430095 BADFISH CREEK AT COUNTY HIGHWAY A NEAR STOUGHTON, WI

LOCATION.--Lat 42°53'37", long 89°17'55", in NW 1/4 SE 1/4 sec.15, T.5 N., R.10 E., Dane County, Hydrologic Unit 07090001, on right bank 75 ft upstream from bridge on County Highway A, 4.4 mi southwest of Stoughton, and 9.5 mi upstream from mouth.

DRAINAGE AREA.--41.9 mi², of which 1.5 mi² is noncontributing.

PERIOD OF RECORD.--May 1956 to September 1966, December 1985 to September 1988 (discontinued). Published as Badfish Creek near Stoughton, May 1956 to September 1966.

GAGE.--Water-stage recorder. Datum of gage is 873.05 ft above National Geodetic Vertical Datum of 1929. May 1956 to September 1966, site 0.5 mi downstream at same datum.

REMARKS.--Estimated daily discharges: Jan. 1-8. Records are fair. Approximately 76 percent of flow is effluent from Nine Springs treatment plant. (Data provided by Madison Metropolitan Sewerage District.) The Sewerage District began discharging into the basin in December 1958.

AVERAGE DISCHARGE.--9 years (water years 1960-66, 1987-88), 56.6 ft³/s, since effluent discharged into basin.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 871 ft³/s, Jan. 13, 1960, gage height, 4.60 ft; minimum, 3.4 ft³/s, Nov. 26, 1958, result of freezeup.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 215 ft³/s, Jan. 31, gage height, 4.87 ft; minimum daily, 58 ft³/s, Jan. 9, 11, Sept. 11, 18, 25.

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	67	65	76	65	87	71	80	70	66	67	65	66
2	67	66	74	62	76	71	88	72	65	66	66	65
3	65	67	75	62	73	70	129	74	65	65	66	64
4	64	65	74	63	71	70	98	74	63	66	67	61
5	66	65	72	64	69	69	89	75	61	70	67	60
6	67	64	72	65	68	69	101	75	65	75	64	63
7	68	64	76	64	66	71	88	73	67	78	62	62
8	68	64	82	64	68	74	84	73	66	76	65	62
9	68	64	126	58	67	72	81	79	65	74	67	62
10	66	63	94	61	68	72	77	78	65	74	67	60
11	65	62	91	58	67	73	79	76	65	76	68	58
12	66	62	85	63	67	71	78	78	64	76	68	59
13	67	62	80	63	66	70	78	77	68	74	66	60
14	66	61	80	63	66	71	76	74	72	77	66	59
15	67	59	81	63	67	71	75	73	73	73	72	60
16	67	61	78	63	68	72	72	74	73	74	74	60
17	66	73	77	63	68	72	71	75	71	68	73	60
18	64	65	77	65	68	73	72	74	70	70	77	58
19	65	64	78	68	69	72	72	74	66	71	75	63
20	66	64	88	86	67	71	73	74	71	70	72	63
21	66	62	83	72	66	74	72	72	68	69	69	61
22	66	61	79	70	68	75	73	69	64	68	72	71
23	66	64	77	67	68	76	88	72	62	66	81	66
24	66	66	77	65	68	78	75	71	61	64	74	61
25	64	67	75	67	68	85	73	70	62	68	72	58
26	65	66	71	66	70	79	75	71	59	66	72	61
27	67	64	69	66	69	77	80	69	61	67	69	61
28	66	88	72	66	68	88	77	67	65	68	66	61
29	65	84	70	67	70	91	74	63	73	68	68	61
30	66	78	70	103	---	85	72	61	66	66	68	61
31	65	---	69	172	---	82	---	64	---	63	68	---
TOTAL	2047	1980	2448	2164	2001	2315	2420	2241	1982	2173	2146	1847
MEAN	66.0	66.0	79.0	69.8	69.0	74.7	80.7	72.3	66.1	70.1	69.2	61.6
MAX	68	88	126	172	87	91	129	79	73	78	81	71
MIN	64	59	69	58	66	69	71	61	59	63	62	58

CAL YR 1987 TOTAL 25267 MEAN 69.2 MAX 137 MIN 55
WTR YR 1988 TOTAL 25764 MEAN 70.4 MAX 172 MIN 58

ROCK RIVER BASIN

05430150 BADFISH CREEK NEAR COOKSVILLE, WI

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.

DRAINAGE AREA.--82.6 mi².

PERIOD OF RECORD.--July 1977 to current year.

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

REMARKS.--Estimated daily discharges: May 4-9 and ice periods listed in rating table below. Records good except those for estimated daily discharges, which are fair. Approximately 52 percent of flow is effluent from Nine Springs treatment plant. (Data provided by Madison Metropolitan Sewerage District.)

AVERAGE DISCHARGE.--11 years, 103 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, 494 ft³/s, Jan. 31, gage height, 6.67 ft; minimum daily, 73 ft³/s, July 24.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Shifting-control method used May 31 to June 28; stage-discharge relation affected by ice Jan. 1-12, 14, 15, 27, and Feb. 5-7.)

4.5	64	5.0	152
4.7	98	6.0	340
		7.0	562

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	90	96	119	110	219	114	114	125	91	99	75	92
2	90	98	109	100	164	115	133	124	91	92	80	91
3	81	97	106	98	145	110	261	110	89	81	88	90
4	79	95	102	96	132	107	207	110	87	75	92	83
5	82	93	96	96	120	103	170	110	83	79	94	82
6	110	93	94	96	120	101	210	110	86	86	82	88
7	108	91	97	94	120	112	173	110	98	87	74	90
8	97	94	108	94	110	125	148	110	96	84	76	90
9	92	93	219	96	109	119	141	120	95	80	87	88
10	87	94	153	98	107	111	131	114	93	81	85	83
11	85	92	136	100	107	109	132	105	93	81	85	78
12	88	91	121	100	106	108	132	106	90	84	84	80
13	91	92	110	94	100	101	134	103	92	81	79	81
14	89	87	107	96	101	100	133	94	98	92	79	77
15	89	86	110	94	103	101	132	92	99	82	88	77
16	92	88	107	90	104	99	124	88	95	89	91	78
17	93	137	105	94	103	101	114	89	96	82	87	78
18	86	110	104	103	106	101	112	87	94	81	103	74
19	86	100	106	114	108	98	112	85	91	87	98	87
20	88	95	151	200	104	94	114	87	93	85	83	87
21	89	86	136	159	98	98	110	84	100	86	77	80
22	88	83	127	141	105	100	114	82	97	82	83	99
23	88	88	120	124	105	102	167	85	91	76	111	105
24	89	89	121	116	100	102	137	89	89	73	95	79
25	85	96	129	115	99	125	128	90	88	91	90	74
26	88	93	114	114	107	110	125	90	80	85	87	80
27	93	84	109	96	109	102	138	91	77	83	86	83
28	90	137	114	107	106	128	135	87	86	84	83	79
29	91	174	112	109	112	148	122	83	126	83	85	81
30	95	130	109	220	---	128	122	79	101	81	94	81
31	93	---	108	430	---	120	---	82	---	74	95	---
TOTAL	2792	2982	3659	3794	3329	3392	4225	3021	2785	2586	2696	2515
MEAN	90.1	99.4	118	122	115	109	141	97.5	92.8	83.4	87.0	83.8
MAX	110	174	219	430	219	148	261	125	126	99	111	105
MIN	79	83	94	90	98	94	110	79	77	73	74	74

CAL YR 1987 TOTAL 37009 MEAN 101 MAX 219 MIN 67
WTR YR 1988 TOTAL 37776 MEAN 103 MAX 430 MIN 73

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. Datum of gage is 792.7 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Estimated daily discharges: Ice periods listed in rating table below. Records good except for ice-affected periods, which are fair. Diurnal fluctuation caused by powerplant at Stebbensville 1.5 mi upstream, and additional regulation from other dams and powerplants upstream.

AVERAGE DISCHARGE.--11 years, 369 ft³/s, 9.69 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, 1,300 ft³/s, Jan. 31, gage height, 5.83 ft; maximum gage height, 6.01 ft, Jan. 6, backwater from ice; minimum daily, 101 ft³/s, Sept. 5.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Jan. 1-18, 26, 27, and Feb. 5-17.)

3.0	86	4.5	554
3.5	202	5.0	794
4.0	358	6.0	1,410

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	446	365	348	410	906	459	166	404	281	122	108	113
2	425	380	354	400	772	457	412	295	182	119	114	112
3	402	375	465	390	548	495	825	330	139	115	121	109
4	400	381	450	390	522	492	550	398	136	111	125	104
5	403	377	447	380	e520	455	487	436	132	114	130	101
6	372	376	470	370	520	438	533	396	133	123	119	105
7	396	374	494	370	500	443	521	394	141	124	112	108
8	379	375	503	370	500	481	436	269	137	124	112	108
9	361	367	629	370	500	485	426	303	133	122	119	108
10	370	313	618	370	500	473	415	300	132	122	118	106
11	376	277	582	380	500	463	307	389	130	120	117	106
12	271	203	586	390	500	457	314	344	125	125	117	106
13	196	265	536	380	500	460	314	311	127	123	113	108
14	321	319	542	380	520	459	352	164	127	133	113	105
15	291	359	545	380	520	440	311	246	127	126	118	104
16	291	367	536	390	520	443	254	289	135	132	120	105
17	289	433	452	400	520	436	162	285	136	128	117	104
18	270	406	374	440	534	438	160	295	127	120	134	102
19	268	393	422	467	512	434	160	257	126	124	127	112
20	276	376	467	615	498	375	224	285	121	121	115	114
21	277	370	575	540	476	245	319	290	129	123	109	107
22	294	256	583	525	503	303	170	252	127	120	109	121
23	261	276	522	502	484	346	231	241	123	115	131	130
24	288	262	502	502	475	391	258	245	122	113	117	111
25	296	294	556	501	480	348	167	295	121	126	113	106
26	342	302	515	490	484	407	323	269	113	119	113	108
27	429	299	475	480	495	424	309	139	112	117	112	112
28	381	419	473	489	399	449	318	135	122	118	108	109
29	379	377	482	502	508	469	313	131	146	117	110	112
30	367	362	410	647	---	447	441	130	124	115	113	111
31	360	---	415	1140	---	236	---	233	---	110	114	---
TOTAL	10477	10298	15328	14360	15216	13148	10173	8750	4066	3741	3618	3267
MEAN	338	343	494	463	525	424	339	282	136	121	117	109
MAX	446	433	629	1140	906	495	825	436	281	133	134	130
MIN	196	203	348	370	399	236	160	130	112	110	108	101
CFSM	.65	.66	.96	.90	1.01	.82	.66	.55	.26	.23	.23	.21
IN.	.75	.74	1.10	1.03	1.09	.95	.73	.63	.29	.27	.26	.24

CAL YR 1987 TOTAL 128862 MEAN 353 MAX 629 MIN 140 CFSM .68 IN. 9.27
WTR YR 1988 TOTAL 112442 MEAN 307 MAX 1140 MIN 101 CFSM .59 IN. 8.09

ROCK RIVER BASIN

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 period listed in rating table below. Records are good except those for ice-affected period and periods of discharge below 800 ft³/s, which are fair. Diurnal fluctuation caused by powerplants above station.

AVERAGE DISCHARGE.--74 years, 1,859 ft³/s, 7.56 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, 4,210 ft³/s, Apr. 6, gage height, 7.00 ft; maximum gage height, 10.82 ft, Feb. 9, backwater from ice; minimum daily, 307 ft³/s, Sept. 1.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Jan. 1 to Feb. 18.)

2.2	260	4.0	1,440
2.5	420	5.0	2,220
3.0	740	7.0	4,210

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	2090	1350	2180	2800	3400	2030	3000	3020	648	365	321	307
2	2060	1340	2150	2800	3600	1990	3090	2920	854	387	322	367
3	2050	1360	2340	2800	3800	2050	3610	2750	755	368	324	347
4	1900	1520	2500	2700	3900	2110	3660	2750	643	361	346	342
5	1800	1640	2390	2500	3900	2080	3580	2710	580	382	352	382
6	1760	1610	2470	2400	3800	2090	4040	2600	586	342	345	353
7	1730	1620	2610	2400	3900	2190	3970	2420	586	385	340	356
8	1730	1660	2630	2300	3900	2380	3990	2180	607	335	382	353
9	1610	1660	2740	2200	3800	2580	3970	2030	630	324	464	333
10	1570	1660	2930	2100	3700	2830	4030	1990	390	364	391	357
11	1430	1510	3140	1900	3600	3040	4070	2060	352	346	371	361
12	1370	1470	3090	1900	3500	3150	3910	2020	387	353	348	357
13	1180	1500	3180	1900	3300	3260	3800	1850	366	342	369	349
14	1210	1540	3340	1800	3200	3430	3760	1820	339	330	316	349
15	1230	1600	3630	1700	3100	3420	3790	1680	340	366	349	361
16	1250	1620	3170	1700	3000	3400	3620	1550	385	466	387	364
17	1260	1720	2850	1700	2900	3400	3290	1680	444	456	365	365
18	1220	1700	2800	1700	2800	3350	3280	1580	381	403	427	339
19	1180	1700	2890	1800	2770	3320	3210	1600	389	388	503	413
20	1130	1820	3120	1900	2670	3310	3060	1520	362	396	396	328
21	1050	1830	3210	2000	2470	3070	3210	1480	396	393	389	393
22	1140	1800	3350	2000	2480	3060	3070	1460	312	423	390	509
23	1160	1690	3350	2100	2350	2980	3220	1460	414	373	419	632
24	1160	1730	3350	2200	2180	3020	3030	1150	391	361	371	420
25	1190	1900	3420	2300	2220	2920	2890	1080	369	400	358	501
26	1250	1900	3460	2300	2170	2810	2900	941	368	431	355	595
27	1310	1890	3440	2300	2150	2980	3100	475	372	364	369	496
28	1330	2080	3490	2300	2030	3100	3000	342	352	353	369	624
29	1300	2140	3390	2300	1920	3200	2970	455	532	370	351	643
30	1330	2080	3280	2400	---	3150	2970	463	442	352	357	572
31	1330	---	3080	3200	---	3120	---	638	---	370	397	---
TOTAL	44310	50640	92970	68400	88510	88820	103090	52674	13972	11649	11543	12468
MEAN	1429	1688	2999	2206	3052	2865	3436	1699	466	376	372	416
MAX	2090	2140	3630	3200	3900	3430	4070	3020	854	466	503	643
MIN	1050	1340	2150	1700	1920	1990	2890	342	312	324	316	307
CFSM	.43	.51	.90	.66	.91	.86	1.03	.51	.14	.11	.11	.12
IN.	.49	.56	1.04	.76	.99	.99	1.15	.59	.16	.13	.13	.14

CAL YR 1987 TOTAL 714185 MEAN 1957 MAX 4550 MIN 492 CFSM .59 IN. 7.95
WTR YR 1988 TOTAL 639046 MEAN 1746 MAX 4070 MIN 307 CFSM .52 IN. 7.12

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 Mounds 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: July 27-31, Aug. 1-5, 11-13, and ice periods listed below. Records good except for estimated daily discharges, which are fair.

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, 64 ft³/s, Apr. 6, gage height, 7.25 ft; minimum daily, 0.04 ft³/s, July 8-10, Sept. 13-15.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Shifting-control method used July 1 to Sept. 30; stage-discharge relation affected by ice Dec. 17-20 and Dec. 31 to Mar. 6.)

4.8	0.02	5.9	7.8
5.0	.12	6.1	11
5.1	.38	6.3	14
5.2	.61	6.5	19
5.3	1.2	6.7	26
5.5	3.2	7.0	46
5.7	5.4		

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	.25	.30	5.1	2.1	25	3.1	11	4.1	.20	.07	.08	.05
2	.26	.23	4.0	1.5	10	3.3	10	3.5	.20	.07	.08	.05
3	.77	.29	3.4	1.0	5.0	2.3	13	3.1	.19	.07	.07	.05
4	.24	.30	2.5	.70	3.6	2.0	11	2.7	.18	.06	.07	.07
5	.24	.26	1.9	.54	3.0	1.8	8.8	2.4	.17	.06	.15	.07
6	.25	.22	1.8	.47	2.5	2.1	34	2.2	.15	.05	.20	.06
7	.30	.20	3.0	.42	2.2	2.4	20	2.0	.14	.05	.17	.06
8	.19	.22	11	.38	1.9	3.2	13	2.0	.14	.04	.24	.05
9	.24	.23	25	.34	1.7	3.3	9.9	2.5	.14	.04	.28	.05
10	.22	.20	14	.32	1.6	2.5	7.8	2.4	.13	.04	.13	.05
11	.15	.20	10	.30	1.5	2.5	6.6	1.6	.13	.05	.11	.05
12	.15	.22	8.0	.28	1.4	3.2	5.5	1.9	.12	.05	.09	.05
13	.19	.24	5.6	.27	1.3	2.7	4.6	1.6	.11	.05	.08	.04
14	.20	.24	4.3	.26	1.2	2.1	4.1	1.3	.11	.07	.13	.04
15	.20	.19	2.8	.25	1.2	1.9	3.4	1.4	.11	.07	.13	.04
16	.22	.33	.69	.30	1.1	1.8	2.9	1.1	.11	.14	.10	.05
17	.24	1.0	.45	.60	1.1	1.9	2.9	.98	.11	.10	.09	.05
18	.22	.89	.30	1.4	1.5	2.0	2.4	.85	.10	.09	.12	.08
19	.21	.67	.23	4.0	1.9	2.1	2.1	.87	.09	.08	.11	.07
20	.66	.52	8.0	21	1.8	2.0	2.1	.78	.08	.10	.10	.07
21	.15	.55	12	12	1.0	1.6	1.9	.70	.07	.15	.09	.06
22	.18	.44	10	7.2	3.0	1.6	1.9	.62	.07	.13	.08	.18
23	.16	.56	8.5	4.7	4.5	2.1	13	.58	.07	.12	.10	.31
24	.22	.36	11	2.1	2.0	2.1	8.2	.52	.07	.12	.07	.26
25	.24	1.4	19	1.1	1.2	3.3	6.2	.39	.06	.19	.06	.24
26	.26	1.0	13	.72	2.0	3.2	5.3	.39	.05	.14	.06	.19
27	.34	.94	9.0	.60	3.5	2.5	7.0	.39	.06	.12	.06	.18
28	.33	3.9	7.3	.50	3.2	7.7	7.0	.35	.07	.11	.07	.17
29	.30	6.7	6.3	.44	3.1	16	5.7	.30	.11	.10	.06	.17
30	.26	5.8	4.7	37	---	15	4.8	.25	.07	.09	.06	.16
31	.30	---	3.5	45	---	14	---	.22	---	.08	.05	---
TOTAL	8.14	28.60	216.37	147.79	94.0	117.3	236.1	43.99	3.41	2.70	3.29	3.02
MEAN	.26	.95	6.98	4.77	3.24	3.78	7.87	1.42	.11	.087	.11	.10
MAX	.77	6.7	25	45	25	16	34	4.1	.20	.19	.28	.31
MIN	.15	.19	.23	.25	1.0	1.6	1.9	.22	.05	.04	.05	.04
CFSM	.03	.11	.78	.53	.36	.42	.88	.16	.01	.01	.01	.01
IN.	.03	.12	.90	.61	.39	.49	.98	.18	.01	.01	.01	.01

CAL YR 1987 TOTAL 1143.49 MEAN 3.13 MAX 70 MIN .03 CFSM .35 IN. 4.75
WTR YR 1988 TOTAL 904.71 MEAN 2.47 MAX 45 MIN .04 CFSM .28 IN. 3.76

ROCK RIVER BASIN

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 State Highway 15, 1.1 mi upstream from Delavan Lake inlet at Mounds 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: Oct. 21-24, Mar. 29 to Apr. 6, and ice periods listed in rating table below. Records good except for estimated daily discharges, which are fair.

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 observed 52 ft³/s, Apr. 23, gage height, 7.25 ft; maximum gage height, 8.24 ft Jan. 20, backwater from ice; minimum daily, 0.13 ft³/s, Aug. 7, 21, Sept. 10, 11.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Shifting-control method used Oct. 1, 7-11, 25; stage-discharge relation affected by ice Dec. 16-18, and Jan. 2 to Feb. 26.)

4.9	0.11	5.6	4.8
5.0	.20	5.8	8.2
5.1	.33	6.0	12
5.2	.50	6.5	25
5.3	.85	7.0	41
5.4	1.8	8.0	84
5.5	3.2		

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	.70	.53	2.6	1.4	10	2.7	8.8	2.5	.59	.32	.22	.15
2	1.1	.69	1.4	1.2	5.0	2.8	8.0	2.4	.51	.31	.19	.15
3	.60	.51	1.5	1.0	4.0	2.1	12	2.0	.51	.29	.17	.34
4	.57	.44	.93	.90	3.2	1.7	9.0	2.0	.49	.31	.21	1.1
5	.65	.42	.95	.80	2.7	1.6	10	1.6	.48	.32	.61	.20
6	.76	.43	.86	.68	2.4	1.9	35	1.4	.59	.31	.15	.18
7	.69	.43	4.5	.60	2.3	2.1	8.9	1.3	.56	.31	.13	.14
8	.55	.48	7.9	.54	2.1	2.9	6.0	1.6	.56	.31	.38	.14
9	.49	.46	11	.52	1.9	2.8	4.8	2.9	.48	.28	1.0	.15
10	.46	.44	4.4	.50	1.7	2.1	4.2	1.8	.48	.28	.21	.13
11	.39	.42	3.9	.49	1.6	2.1	3.6	1.3	.46	.30	.19	.13
12	.44	.45	2.5	.48	1.6	2.5	3.0	2.1	.46	.28	.18	.26
13	.46	.46	1.6	.47	1.5	2.1	2.7	1.3	.58	.25	.14	.17
14	.42	.39	1.5	.46	1.4	1.9	2.6	1.0	.51	.26	.14	.15
15	.43	.37	1.1	.45	1.4	1.7	2.2	1.1	.50	.19	.48	.14
16	.54	2.7	1.0	.50	1.3	1.7	1.9	1.3	.44	4.6	.16	.17
17	.89	2.9	.94	.70	1.2	1.8	1.9	1.2	.46	.31	.15	.17
18	.39	.68	.90	1.0	1.4	1.8	1.8	.95	.42	.27	1.8	.34
19	.45	.60	2.9	2.5	1.7	1.8	1.6	.93	.39	.29	.27	.95
20	.66	.52	11	10	1.4	1.7	1.6	.83	.43	.72	.18	.33
21	.50	.48	7.2	5.0	1.3	1.7	1.3	.73	.42	.74	.13	.16
22	.45	.52	5.2	3.0	3.0	1.7	1.4	.64	.40	.27	.17	3.7
23	.40	.86	3.8	2.0	2.5	1.8	13	.68	.38	.20	.56	1.8
24	.44	.72	6.8	1.5	1.7	2.0	4.7	.65	.37	.18	.16	.18
25	.48	3.9	8.9	1.2	1.4	3.5	3.6	.58	.35	.57	.16	.15
26	1.3	.90	4.8	1.0	3.8	3.0	3.0	.59	.32	.25	.17	.18
27	.68	.72	3.2	.90	3.1	2.4	5.8	.57	.37	.25	.17	.20
28	.44	8.0	2.8	.80	2.8	10	5.2	.53	1.1	.17	.15	.18
29	.43	3.9	2.4	.72	3.1	15	3.6	.49	2.3	.19	.17	.17
30	.42	4.3	2.2	1.5	---	12	2.9	.48	.33	.16	.18	.17
31	.40	---	1.8	30	---	10	---	.54	---	.17	.17	---
TOTAL	17.58	38.62	112.48	72.81	72.5	104.9	174.1	37.99	16.24	13.66	9.15	12.38
MEAN	.57	1.29	3.63	2.35	2.50	3.38	5.80	1.23	.54	.44	.30	.41
MAX	1.3	8.0	11	30	10	15	35	2.9	2.3	4.6	1.8	3.7
MIN	.39	.37	.86	.45	1.2	1.6	1.3	.48	.32	.16	.13	.13
CFSM	.13	.30	.84	.54	.58	.78	1.34	.28	.12	.10	.07	.10
IN.	.15	.33	.96	.62	.62	.90	1.49	.33	.14	.12	.08	.11
CAL YR 1987	TOTAL 845.54	MEAN 2.32	MAX 58	MIN .11	CFSM .53	IN. 7.25						
WTR YR 1988	TOTAL 682.41	MEAN 1.86	MAX 35	MIN .13	CFSM .43	IN. 5.85						

ROCK RIVER BASIN

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.

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.

SUSPENDED-SEDIMENT DISCHARGE: Maximum daily, 58 tons Nov. 1, 1984; minimum daily, 0.01 ton on many days from 1984 to 1988.

TOTAL PHOSPHORUS CONCENTRATIONS: Maximum observed, 8.20 mg/L Aug. 7, 1984; minimum observed, 0.04 mg/L Oct. 12, 1984, Mar. 29 and Apr. 7, 1988.

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, 1,190 mg/L Mar. 28; minimum observed, 9 mg/L Apr. 23.

SUSPENDED-SEDIMENT DISCHARGE: Maximum daily, 26 tons Apr. 6; minimum daily, 0.01 ton Aug. 6-7, Sept. 21.

TOTAL PHOSPHORUS CONCENTRATIONS: Maximum observed, 1.20 mg/L Jan. 21; minimum observed, 0.04 mg/L Mar. 29 and Apr. 7.

TOTAL PHOSPHORUS DISCHARGE: Maximum daily, 49.2 lb Apr. 6; minimum daily, 0.04 lb Sept. 15.

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	PHOS- PHOROUS TOTAL (MG/L AS P) (00665)	SEDI- MENT, TOTAL SUS- PENDE (MG/L) (80154)	DATE	TIME	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	PHOS- PHOROUS TOTAL (MG/L AS P) (00665)	SEDI- MENT, TOTAL SUS- PENDE (MG/L) (80154)
OCT 1987					JAN 1988				
01...	1044	0.42	--	35	19...	0515	10	--	462
01...	1045	0.42	0.120	--	19...	0600	10	0.230	--
12...	0930	0.32	--	57	19...	0800	10	0.260	--
19...	0850	0.40	--	76	19...	0915	10	--	527
NOV					19...	1130	10	0.140	--
18...	1002	0.67	0.100	32	19...	1200	10	--	374
28...	1400	17	0.220	--	19...	1315	10	0.300	--
28...	1415	18	--	310	19...	1400	10	--	229
28...	1430	21	--	339	19...	1600	10	--	143
28...	1445	22	0.200	--	19...	1645	10	0.340	--
28...	1500	25	--	376	19...	1800	10	--	95
28...	1530	28	--	739	19...	1930	10	--	68
28...	1545	28	0.230	--	19...	2030	10	0.350	--
28...	1600	27	--	220	19...	2230	10	--	71
28...	1630	24	--	170	19...	2300	10	--	75
28...	1645	22	0.290	--	20...	0115	5.0	0.340	--
28...	1700	20	--	128	20...	0300	5.0	--	61
28...	1730	18	--	98	20...	0600	5.0	0.290	--
28...	1745	17	0.150	--	20...	0645	5.0	--	52
28...	1800	16	--	77	20...	1100	5.0	0.260	41
28...	1830	15	0.210	--	20...	1230	5.0	--	40
28...	1845	14	--	49	20...	1300	5.0	--	82
30...	0805	3.9	0.090	324	20...	1330	5.0	0.270	--
DEC					20...	1345	--	--	--
08...	1915	14	0.210	119	20...	1400	5.0	--	73
08...	1930	14	--	134	20...	1430	5.0	--	64
08...	1945	13	--	146	20...	1500	5.0	0.210	--
08...	2000	13	--	126	20...	1530	5.0	--	58
08...	2345	14	0.250	--	21...	1515	3.0	--	59
08...	2400	15	--	109	21...	1520	3.0	1.20	--
09...	0030	17	--	108	30...	0730	1.5	0.340	--
09...	0045	17	0.330	--	30...	0800	1.5	--	129
09...	0100	17	--	103	30...	0900	1.5	--	158
09...	0145	17	0.210	--	30...	1000	1.5	--	167
09...	0200	17	--	95	30...	1030	1.5	0.330	--
09...	0230	18	0.290	--	30...	1100	1.5	--	214
09...	0300	19	--	64	30...	1200	1.5	--	227
09...	0315	19	0.250	--	30...	1230	1.5	0.360	--
09...	0400	17	--	45	30...	1300	1.5	--	259
09...	0445	15	0.230	--	30...	1400	1.5	--	266
09...	0500	15	--	48	30...	1430	1.5	0.190	--
09...	0730	14	0.230	40	30...	1500	1.5	--	213
21...	0815	7.4	--	56	30...	1530	1.5	--	173
30...	1024	2.0	--	19	30...	1600	1.5	0.290	--
30...	1025	2.0	0.050	--	30...	1630	1.5	--	150

ROCK RIVER BASIN

054310157 JACKSON CREEK TRIBUTARY NEAR ELKHORN, WI--CONTINUED

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	DIS- CHARGE IN CUBIC FEET PER SECOND (00060)	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	PHOS- PHOROUS TOTAL (MG/L AS P) (00665)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	DATE	TIME	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	PHOS- PHOROUS TOTAL (MG/L AS P) (00665)	SEDI- MENT, SUS- PENDE (MG/L) (80154)
FEB 1988						APR 1988				
01...	0931	10	--	0.220	52	07...	0330	10	0.040	--
18...	1040	1.4	--	--	37	07...	0400	10	--	18
18...	1045	1.4	--	0.070	--	07...	1800	7.9	0.100	17
MAR						07...	1801	--	0.100	--
22...	1001	--	--	0.070	--	23...	0200	48	0.420	282
22...	1005	--	1.5	0.050	21	23...	0215	42	--	259
28...	1000	--	11	0.670	1190	23...	0245	35	0.500	255
28...	1030	--	17	--	954	23...	0315	35	--	197
28...	1100	--	17	0.380	561	23...	0345	28	--	180
28...	1101	--	17	0.300	--	23...	0415	24	0.530	--
28...	1130	--	16	--	376	23...	0445	22	--	128
28...	1200	--	14	0.320	282	23...	0545	18	--	70
28...	1300	--	16	--	252	23...	0615	17	0.440	--
28...	1400	--	14	0.340	142	23...	0645	15	--	54
28...	1500	--	12	0.220	77	23...	0745	14	--	40
28...	1630	--	12	0.190	81	23...	0815	13	0.250	--
28...	1730	--	21	--	113	23...	0845	12	--	32
28...	1800	--	23	0.210	--	23...	0945	11	--	26
28...	1830	--	24	--	479	23...	1015	11	0.180	--
28...	1900	--	21	0.150	--	23...	1045	10	--	23
28...	2000	--	18	--	274	23...	1145	9.4	--	17
28...	2030	--	18	0.070	--	23...	1245	9.0	--	13
28...	2100	--	17	--	138	23...	1315	8.9	0.140	--
28...	2200	--	16	0.070	--	23...	1345	8.4	--	9
28...	2230	--	15	--	129	MAY				
28...	2330	--	14	0.180	--	05...	1120	1.7	--	44
28...	2400	--	14	--	106	05...	1220	2.0	0.070	--
29...	0100	15	--	--	97	JUN				
29...	0130	15	--	0.210	--	16...	1325	0.44	0.270	73
29...	0230	15	--	--	94	JUL				
29...	0300	15	--	0.080	--	12...	1114	0.30	--	48
29...	0400	15	--	--	73	12...	1315	0.27	0.150	--
29...	0500	15	--	0.060	--	16...	1530	17	--	301
29...	0530	15	--	--	86	16...	1600	23	--	268
29...	1000	15	--	0.040	55	16...	1630	40	0.570	--
29...	1015	15	--	0.110	87	16...	1700	33	--	111
29...	1045	15	--	--	71	16...	1730	22	0.450	--
29...	1145	15	--	--	57	16...	1800	15	0.570	53
29...	1215	15	--	0.200	111	16...	1830	11	0.350	--
29...	1515	15	--	0.060	51	16...	1900	8.9	0.450	38
APR						16...	1930	7.0	0.240	--
06...	1100	35	--	0.550	114	16...	2000	--	0.350	--
06...	1105	35	--	0.450	--	16...	2100	--	0.240	--
06...	1400	35	--	0.320	--	18...	1410	0.35	0.290	--
06...	1430	--	--	0.240	--	25...	0900	0.42	--	48
06...	1435	35	--	0.250	--	25...	0905	0.41	0.290	--
06...	1436	35	--	--	53	AUG				
06...	1500	35	--	--	48	08...	2400	11	0.240	63
06...	1600	35	--	--	46	15...	1105	0.63	0.060	--
06...	1630	35	--	0.190	--	18...	1635	5.2	0.230	--
06...	1700	35	--	--	41	30...	1025	0.15	--	67
06...	1710	35	--	0.200	38	30...	1027	0.15	0.080	--
06...	1800	35	--	--	44	SEP				
06...	1830	35	--	0.150	--	18...	1200	0.46	0.410	67
06...	1930	35	--	--	50	19...	0935	2.0	0.220	--
06...	2030	35	--	--	30	22...	1030	4.1	0.440	52
06...	2100	35	--	0.200	--	22...	1100	12	--	48
06...	2130	35	--	--	28	22...	1130	12	0.240	40
06...	2230	35	--	0.130	--	22...	1200	16	0.280	38
06...	2300	35	--	--	27	22...	1230	19	--	34
06...	2400	35	--	--	27	22...	1300	18	0.230	35
07...	0030	--	12	0.130	--	22...	1330	14	--	46
07...	0200	--	11	--	23	22...	1400	10	0.410	72
07...	0300	--	11	--	20	23...	1040	0.53	0.220	49

ROCK RIVER BASIN

054310157 JACKSON CREEK TRIBUTARY NEAR ELKHORN, WI--CONTINUED

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

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	.06	.07	.18	.05	1.4	.20	1.6	.21	.09	.04	.02	.03
2	.10	.09	.15	.05	.66	.21	1.3	.20	.08	.04	.02	.03
3	.06	.07	.14	.04	.52	.15	3.0	.19	.08	.04	.02	.06
4	.06	.06	.08	.03	.40	.12	1.7	.19	.08	.04	.02	.15
5	.07	.05	.08	.03	.33	.12	2.1	.18	.08	.04	.05	.03
6	.09	.05	.07	.03	.29	.13	26	.16	.10	.04	.01	.03
7	.08	.05	.64	.02	.27	.14	.42	.14	.09	.04	.01	.02
8	.07	.05	1.0	.02	.24	.20	.25	.21	.10	.04	.04	.02
9	.06	.05	1.4	.02	.22	.18	.19	.50	.08	.03	.18	.03
10	.06	.05	.28	.02	.19	.14	.16	.19	.08	.03	.02	.02
11	.06	.04	.24	.02	.17	.13	.13	.11	.08	.04	.02	.02
12	.07	.05	.15	.02	.17	.16	.11	.30	.08	.03	.02	.04
13	.07	.04	.09	.02	.16	.13	.09	.16	.10	.03	.02	.03
14	.07	.04	.09	.02	.14	.11	.09	.13	.09	.03	.02	.03
15	.07	.03	.06	.02	.14	.10	.07	.15	.09	.02	.06	.02
16	.09	.50	.06	.03	.13	.10	.06	.18	.08	1.6	.02	.03
17	.16	.32	.05	.04	.12	.10	.06	.17	.08	.02	.02	.03
18	.07	.06	.05	.09	.13	.10	.05	.13	.07	.02	.23	.05
19	.09	.05	.21	6.2	.16	.10	.04	.13	.06	.02	.04	.13
20	.13	.04	1.5	.73	.13	.09	.04	.12	.07	.12	.02	.03
21	.09	.04	1.0	.45	.12	.09	.03	.10	.06	.06	.02	.01
22	.08	.04	.54	.28	.26	.09	.04	.09	.06	.02	.02	.43
23	.07	.07	.30	.19	.22	.09	3.5	.10	.05	.02	.08	.18
24	.07	.06	.80	.14	.14	.09	.09	.09	.05	.02	.02	.02
25	.08	.53	1.1	.11	.12	.16	.06	.09	.04	.07	.02	.02
26	.21	.02	.56	.09	.31	.13	.07	.09	.04	.03	.03	.02
27	.11	.02	.30	.07	.25	.10	.32	.09	.04	.03	.03	.02
28	.07	3.5	.21	.06	.22	6.4	.30	.08	.21	.02	.03	.02
29	.06	.22	.14	.08	.24	2.5	.25	.08	.60	.02	.03	.02
30	.06	.38	.11	.58	---	3.0	.22	.08	.04	.02	.03	.02
31	.06	---	.09	6.8	---	e2.0	---	.09	---	.02	.03	---
TOTAL	2.55	6.64	11.67	16.35	7.85	17.36	42.34	4.73	2.85	2.64	1.20	1.59
MEAN	.08	.22	.38	.53	.27	.56	1.4	.15	.09	.09	.04	.05
MAX	.21	3.5	1.5	6.8	1.4	6.4	26	.50	.60	1.6	.23	.43
MIN	.06	.02	.05	.02	.12	.09	.03	.08	.04	.02	.01	.01

CAL YR 1987 TOTAL 258.44 MEAN .71 MAX 38 MIN .01
WTR YR 1988 TOTAL 117.77 MEAN .32 MAX 26 MIN .01

PHOSPHORUS, TOTAL, POUNDS PER DAY, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.44	.26	1.15	.37	12.2	.90	8.00	1.00	.53	.33	.22	.06
2	.68	.34	.57	.32	5.52	.93	6.00	.95	.47	.31	.17	.06
3	.38	.25	.56	.27	4.13	.68	19.0	.79	.49	.29	.15	.13
4	.36	.21	.32	.24	3.09	.55	8.50	.75	.48	.30	.17	1.26
5	.41	.20	.30	.22	2.44	.52	11.0	.62	.50	.31	.47	.12
6	.47	.20	.25	.18	2.02	.61	49.2	.55	.62	.29	.11	.09
7	.42	.20	3.10	.16	1.81	.66	3.60	.51	.61	.28	.09	.07
8	.33	.22	6.59	.15	1.55	.91	3.15	.67	.64	.28	.32	.06
9	.30	.21	12.8	.14	1.31	.85	2.39	.90	.56	.24	1.14	.06
10	.28	.20	2.63	.13	1.10	.65	2.02	.65	.58	.23	.15	.05
11	.23	.19	2.02	.13	.96	.63	1.63	.61	.58	.25	.11	.05
12	.26	.20	1.25	.13	.90	.74	1.29	.70	.59	.23	.09	.09
13	.27	.20	.77	.13	.79	.63	1.12	.62	.76	.20	.06	.06
14	.24	.17	.69	.12	.69	.54	1.02	.51	.69	.20	.05	.05
15	.24	.16	.47	.14	.65	.48	.82	.59	.70	.15	.16	.04
16	.31	2.29	.43	.19	.56	.47	.70	.72	.64	10.0	.05	.05
17	.50	2.36	.39	.27	.48	.51	.66	.68	.65	.31	.04	.05
18	.22	.37	.36	.68	.53	.51	.58	.55	.58	.34	2.62	.48
19	.25	.31	1.10	13.5	.64	.50	.49	.55	.52	.33	.22	1.40
20	.36	.26	4.19	7.80	.52	.47	.47	.51	.57	.79	.13	.29
21	.27	.23	2.56	14.9	.48	.47	.37	.46	.54	.75	.09	.08
22	.24	.24	1.80	10.0	.95	.45	.39	.42	.50	.21	.11	5.91
23	.21	.39	1.28	5.51	.80	.47	21.8	.46	.47	.14	.70	2.39
24	.23	.33	2.20	3.18	.60	.49	2.24	.45	.45	.12	.10	.21
25	.25	2.68	2.81	1.94	.49	.85	1.54	.41	.41	.98	.09	.18
26	.70	.46	1.48	1.26	1.20	.70	1.28	.44	.37	.37	.09	.21
27	.35	.33	.96	.82	1.07	.54	2.42	.43	.41	.34	.08	.23
28	.23	8.27	.81	.56	.95	11.0	2.13	.42	1.56	.22	.07	.21
29	.22	2.22	.66	.45	1.03	30.0	1.46	.40	3.45	.23	.08	.19
30	.21	2.32	.59	2.39	---	19.0	1.18	.41	.35	.18	.08	.19
31	.20	---	.49	45.9	---	11.0	---	.47	---	.17	.07	---
TOTAL	10.06	26.27	55.58	112.18	49.46	87.71	156.45	18.20	20.27	19.37	8.08	14.32
MEAN	.32	.88	1.79	3.62	1.71	2.83	5.21	.59	.68	.62	.26	.48
MAX	.70	8.27	12.8	45.9	12.2	30.0	49.2	1.00	3.45	10.0	2.62	5.91
MIN	.20	.16	.25	.12	.48	.45	.37	.40	.35	.12	.04	.04

CAL YR 1987 TOTAL 1212.86 MEAN 3.32 MAX 133 MIN .03
WTR YR 1988 TOTAL 577.95 MEAN 1.58 MAX 49.2 MIN .04

ROCK RIVER BASIN

05431017 DELAVAN LAKE INLET AT U.S. 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 right bank at U.S. Highway 50 bridge, and 1.0 mi east of Lake Lawn.

DRAINAGE AREA.--21.8 mi².

WATER-DISCHARGE RECORDS

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

GAGE.--Staff gage and reference point. Staff gage destroyed by bridge construction in the fall of 1987. Reference point established in March 1988. Elevation of gage is 927 ft, from topographic map.

REMARKS.--1984 and 1985 water year discharges are unpublished, but available and were estimated based on discharges upstream at Jackson Creek at Petrie Road near Elkhorn (05431014) and Jackson Creek tributary near Elkhorn (054310157). In water year 1988, daily mean discharges were also estimated based on discharges from upstream stations 05431014 and 054310157. Records poor.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 823 ft³/s, Mar. 10, 1986; minimum daily (estimated), 0.38 ft³/s, Aug. 7, 1987.

EXTREMES FOR CURRENT YEAR.--Maximum daily (estimated), 118 ft³/s, Jan. 31; minimum daily (estimated), 0.22 ft³/s, Sept. 15.

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	1.2	1.1	13	5.5	59	8.8	30	10	.98	.46	.38	.25
2	1.6	1.1	9.2	4.1	24	9.2	28	9.2	.90	.45	.35	.25
3	2.1	1.1	8.1	3.0	14	6.6	37	8.0	.88	.43	.31	.44
4	1.0	1.0	5.8	2.3	10	5.6	30	7.3	.84	.43	.35	1.2
5	1.1	.93	4.7	1.8	8.6	5.1	27	6.3	.81	.44	.90	.34
6	1.2	.86	4.4	1.6	7.3	6.0	101	5.7	.88	.41	.54	.30
7	1.3	.82	10	1.4	6.6	6.8	48	5.2	.83	.41	.46	.26
8	.92	.91	29	1.3	5.8	9.1	31	5.5	.83	.39	.85	.24
9	.96	.91	60	1.2	5.2	9.2	24	7.8	.75	.36	1.6	.25
10	.89	.83	32	1.1	4.8	7.0	19	6.5	.73	.36	.46	.23
11	.68	.81	23	1.1	4.5	7.0	16	4.4	.71	.40	.40	.23
12	.73	.88	18	1.0	4.3	8.7	14	5.8	.69	.38	.36	.36
13	.83	.93	13	1.0	4.0	7.4	12	4.4	.79	.35	.30	.25
14	.81	.86	9.9	.97	3.7	6.0	11	3.5	.72	.40	.39	.23
15	.82	.74	6.6	.94	3.7	5.4	8.8	3.8	.71	.33	.73	.22
16	.97	3.3	2.4	1.1	3.4	5.2	7.6	3.4	.65	4.9	.36	.27
17	1.4	4.8	1.8	1.9	3.4	5.5	7.6	3.1	.67	.51	.33	.27
18	.82	2.4	1.5	3.7	4.3	5.7	6.5	2.6	.62	.45	2.0	.50
19	.86	1.9	3.4	10	5.4	5.9	5.7	2.6	.57	.45	.48	1.1
20	2.0	1.5	27	51	4.9	5.6	5.7	2.4	.59	.92	.38	.47
21	.79	1.6	31	28	3.2	4.8	5.0	2.1	.56	1.0	.31	.28
22	.80	1.4	25	17	8.8	4.8	5.1	1.8	.54	.52	.33	4.0
23	.71	2.0	20	11	11	5.9	38	1.8	.52	.43	.76	2.4
24	.87	1.4	28	5.6	5.6	6.1	21	1.7	.51	.41	.30	.69
25	.95	6.6	46	3.4	3.7	9.9	16	1.3	.47	.94	.28	.62
26	1.8	2.8	30	2.4	7.7	9.2	13	1.4	.42	.52	.29	.55
27	1.3	2.6	21	2.1	9.9	7.3	19	1.3	.49	.48	.29	.55
28	1.1	16	17	1.8	9.0	25	19	1.2	1.2	.38	.29	.51
29	1.0	17	15	1.6	9.2	46	15	1.1	2.5	.39	.29	.50
30	.93	16	11	74	---	41	12	.97	.47	.34	.30	.48
31	.99	---	8.6	118	---	37	---	.97	---	.33	.27	---
TOTAL	33.43	95.08	535.4	360.91	255.0	332.8	633.0	123.14	22.83	18.97	15.64	18.24
MEAN	1.08	3.17	17.3	11.6	8.79	10.7	21.1	3.97	.76	.61	.50	.61
MAX	2.1	17	60	118	59	46	101	10	2.5	4.9	2.0	4.0
MIN	.68	.74	1.5	.94	3.2	4.8	5.0	.97	.42	.33	.27	.22
AC-FT	66	189	1060	716	506	660	1260	244	45	38	31	36

CAL YR 1987 TOTAL 3237.01 MEAN 8.87 MAX 163 MIN .38 AC-FT 6420
WTR YR 1988 TOTAL 2444.44 MEAN 6.68 MAX 118 MIN .22 AC-FT 4850

05431017 DELAVAN LAKE INLET AT U.S. HIGHWAY 50 AT LAKE LAWN, WI--CONTINUED

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1983 to current year.

PERIOD OF DAILY RECORD.--

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.

COOPERATION.--Observer furnished by Delavan Lake Sanitary District.

EXTREMES FOR PERIOD OF RECORD.--

TOTAL PHOSPHORUS CONCENTRATIONS: Maximum observed, 3.8 mg/L May 27, 1985; minimum observed, 0.02 mg/L Apr. 10, 1988.

TOTAL PHOSPHORUS DISCHARGE: Maximum daily, 1,088 lb Feb. 13, 1984; minimum daily, 0.22 lb Sept. 27, 1987.

EXTREMES FOR CURRENT YEAR.--

TOTAL PHOSPHORUS CONCENTRATIONS: Maximum observed, 0.49 mg/L July 16; minimum observed, 0.02 mg/L Apr. 10.

TOTAL PHOSPHORUS DISCHARGE: Maximum daily, 96 lb Jan. 13; minimum daily, 0.24 lb Nov. 15, Aug. 13.

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	PHOS- PHOROUS TOTAL (MG/L AS P) (00665)
OCT 1987			
01...	0850	1.2	0.070
NOV			
18...	0959	2.4	0.060
30...	1040	16	0.130
DEC			
09...	0830	60	0.130
30...	0910	11	0.070
FEB 1988			
01...	1035	59	0.170
01...	1430	59	0.260
02...	0840	24	0.240
18...	0925	4.3	0.050
22...	0950	8.8	0.050
MAR			
22...	0920	4.8	0.080
28...	1355	25	0.040
28...	1445	25	0.070
29...	0900	46	0.080
29...	1505	46	0.070
30...	0900	41	0.150
30...	1315	41	0.110
31...	1120	37	0.030
APR			
06...	1145	101	0.110
06...	1745	101	0.140
07...	1840	48	0.090
08...	1225	31	0.110
08...	1515	31	0.110
09...	0925	24	0.030
10...	0730	19	0.020
MAY			
05...	1040	6.3	0.110
JUN			
16...	1115	0.65	--
JUL			
12...	1155	0.38	0.270
16...	2100	4.9	0.490
18...	0835	0.45	0.370
25...	1040	0.94	0.400
AUG			
15...	1140	0.73	0.120
18...	1715	2.0	0.380
30...	1215	0.30	0.270
SEP			
19...	1015	1.1	0.250
23...	1140	2.4	0.220
23...	1545	2.4	0.240
24...	0840	0.69	0.380
24...	1545	0.69	0.220

[illegible]

ROCK RIVER BASIN

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 January 21 sampling.

WATER-QUALITY DATA, OCTOBER 21, 1987 TO MAY 18, 1988
(Milligrams per liter unless otherwise indicated)

	Oct. 21		Jan. 21		Apr. 28		May 18		
Depth of sample (ft)	1.5	30.5	1.5	33.5	1.5	29.5	1.5	27.0	30.5
Specific conductance (μS/cm)	508	509	504	530	528	527	532	535	540
pH (units)	8.30	8.30	7.00	7.80	8.10	8.10	8.50	8.30	8.00
Water temperature (°C)	11.0	11.0	1.5	1.5	9.0	8.5	16.0	14.0	13.0
Secchi-disc (meters)	0.7		6.1		3.2		3.1		
Dissolved oxygen	8.3	8.0	12.6	12.6	10.0	9.8	10.7	9.3	5.6
Silica, dissolved (SiO ₂)	---	---	---	---	0.50	0.60	---	---	---
Nitrogen, nitrate, total (as N)	---	---	---	---	0.480	0.380	---	---	---
Nitrogen, nitrite, total (as N)	---	---	---	---	0.020	0.020	---	---	---
Nitrogen, nitrite + nitrate, total	---	---	---	---	0.500	0.400	---	---	---
Nitrogen, ammonia, total (as N)	---	---	---	---	0.310	0.310	---	---	---
Nitrogen, organic, total (as N)	---	---	---	---	0.59	0.79	---	---	---
Nitrogen, total (as N)	---	---	---	---	1.4	1.5	---	---	---
Total phosphorus (as P)	0.087	0.092	0.076	0.085	0.068	0.065	0.051	0.049	0.070
Phosphorus, ortho, diss (as P)	0.049	0.061	0.064	0.076	0.053	0.052	0.025	0.025	0.047
Chlorophyll a, phyto. (μg/L)	16	---	1.4	---	1.3	---	8.1	---	---

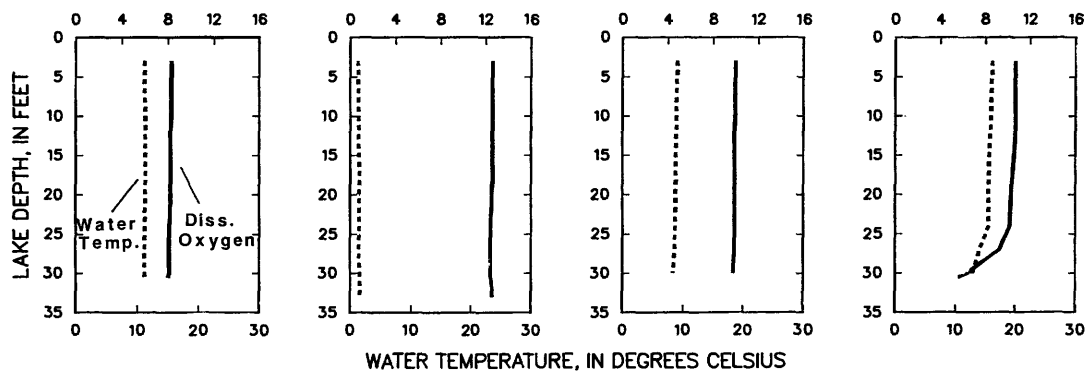
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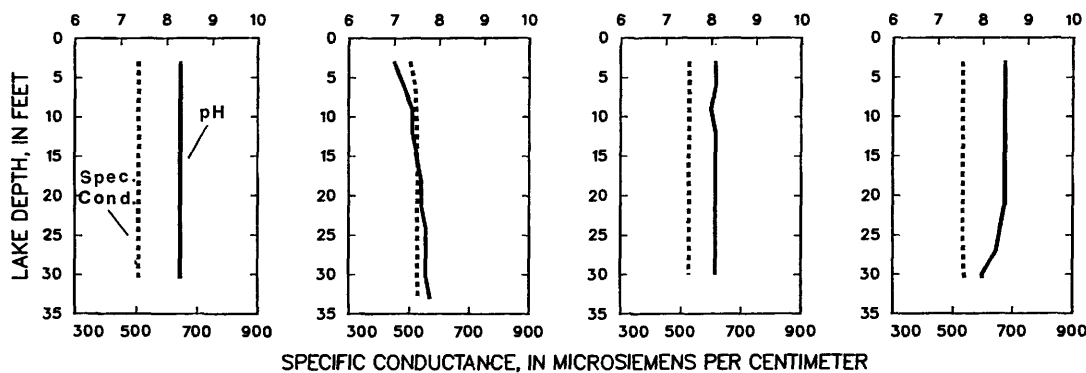
5-18-88

DISSOLVED OXYGEN, IN MILLIGRAMS PER LITER



WATER TEMPERATURE, IN DEGREES CELSIUS

PH, IN STANDARD UNITS



SPECIFIC CONDUCTANCE, IN MICROSIEMENS PER CENTIMETER

ROCK RIVER BASIN

423526088380101 DELAVAN LAKE AT SW END NEAR DELAVAN LAKE, WI--CONTINUED

WATER-QUALITY DATA, JUNE 16 TO AUGUST 12, 1988
(Milligrams per liter unless otherwise indicated)

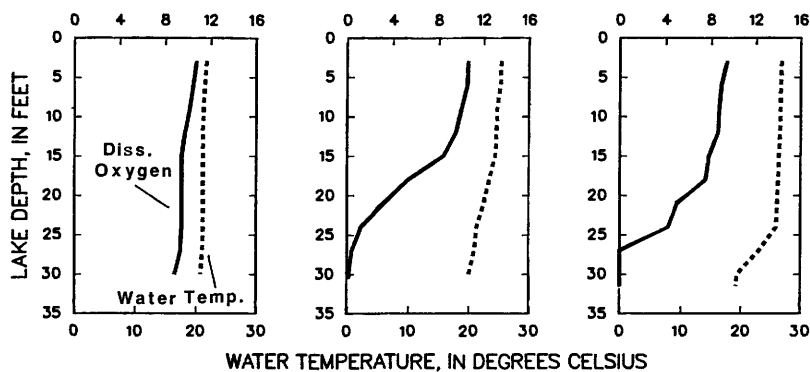
	June 16		July 11				Aug. 12			
Depth of sample (ft)	1.5	29.0	1.5	18.0	24.0	30.5	1.5	24.0	27.0	31.5
Specific conductance ($\mu\text{S}/\text{cm}$)	518	526	494	514	529	537	483	496	520	550
pH (units)	8.80	8.70	8.70	8.30	7.90	7.80	8.80	8.40	7.70	7.40
Water temperature ($^{\circ}\text{C}$)	22.0	21.0	25.5	23.5	21.5	20.0	27.0	26.0	23.0	19.0
Secchi-disc (meters)		1.7		1.4				1.7		
Dissolved oxygen	10.7	8.8	10.6	5.3	1.2	0	9.4	4.2	0.1	0.1
Total phosphorus (as P)	0.022	0.031	0.018	0.024	0.022	0.065	0.024	0.022	0.018	0.104
Phosphorus, ortho, diss (as P)	<0.001	0.002	<0.001	<0.001	0.004	0.050	<0.001	<0.001	<0.001	0.089
Chlorophyll a, phyto. ($\mu\text{g}/\text{L}$)	9.9	---	16	---	---	---	15	---	---	---

6-16-88

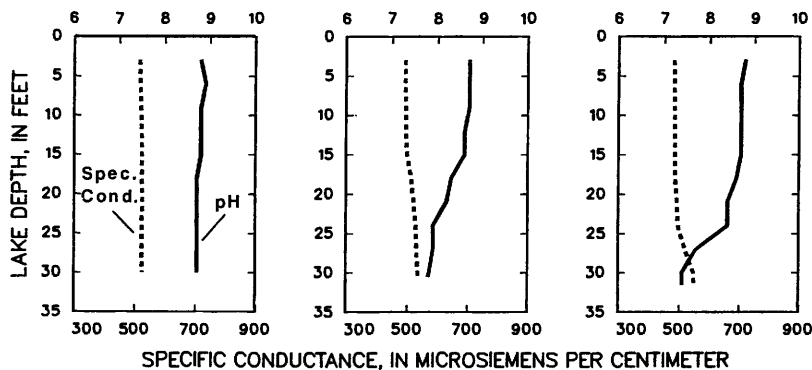
7-11-88

8-12-88

DISSOLVED OXYGEN, IN MILLIGRAMS PER LITER



PH, IN STANDARD UNITS



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 January 21 sampling.

WATER-QUALITY DATA, OCTOBER 21, 1987 TO MAY 18, 1988
(Milligrams per liter unless otherwise indicated)

	Oct. 21		Jan. 21		Apr. 28		May 18			
Depth of sample (ft)	1.5	52.5	1.5	53.5	1.5	53.5	1.5	24.0	39.0	53.5
Specific conductance (μS/cm)	507	506	508	728	529	525	530	533	538	549
pH (units)	8.30	8.30	7.40	7.20	8.00	8.10	8.50	8.30	8.00	7.70
Water temperature (°C)	11.5	11.5	0.5	3.0	9.0	8.5	16.0	15.0	11.5	10.5
Secchi-disc (meters)	0.7		7.3		3.2		3.6			
Dissolved oxygen	8.4	8.3	12.5	2.2	9.9	9.7	10.5	9.4	6.3	2.7
Silica, dissolved (SiO ₂)	---	---	---	---	---	0.60	---	---	---	---
Nitrogen, nitrate, total (as N)	---	---	---	---	---	0.480	---	---	---	---
Nitrogen, nitrite, total (as N)	---	---	---	---	---	0.020	---	---	---	---
Nitrogen, nitrite + nitrate, total	---	---	---	---	---	0.500	---	---	---	---
Nitrogen, ammonia, total (as N)	---	---	---	---	---	0.320	---	---	---	---
Nitrogen, organic, total (as N)	---	---	---	---	---	0.68	---	---	---	---
Nitrogen, total (as N)	---	---	---	---	---	1.5	---	---	---	---
Total phosphorus (as P)	0.101	0.092	0.081	0.169	---	0.078	0.053	0.072	0.099	0.239
Phosphorus, ortho, diss (as P)	0.045	0.052	0.071	0.147	---	0.056	0.032	0.034	0.080	0.202
Chlorophyll a, phyto. (μg/L)	22	---	1.6	---	1.2	---	8.4	---	---	---

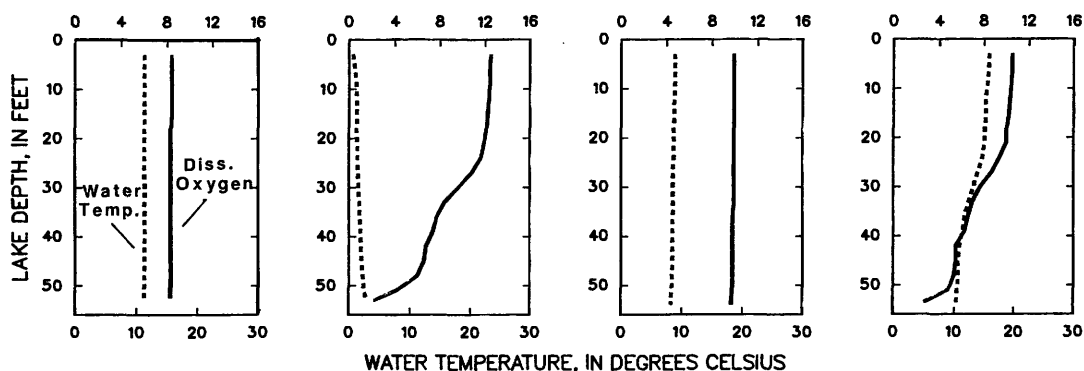
10-21-87

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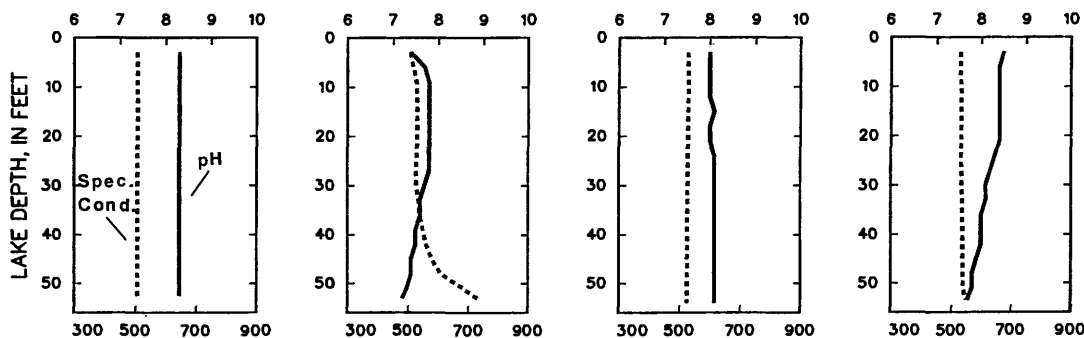
5-18-88

DISSOLVED OXYGEN, IN MILLIGRAMS PER LITER



WATER TEMPERATURE, IN DEGREES CELSIUS

PH, IN STANDARD UNITS



SPECIFIC CONDUCTANCE, IN MICROSIEMENS PER CENTIMETER

ROCK RIVER BASIN

423556088365001 DELAVAN LAKE AT CENTER NEAR DELAVAN LAKE, WI--CONTINUED

WATER-QUALITY DATA, JUNE 16 TO AUGUST 12, 1988
(Milligrams per liter unless otherwise indicated)

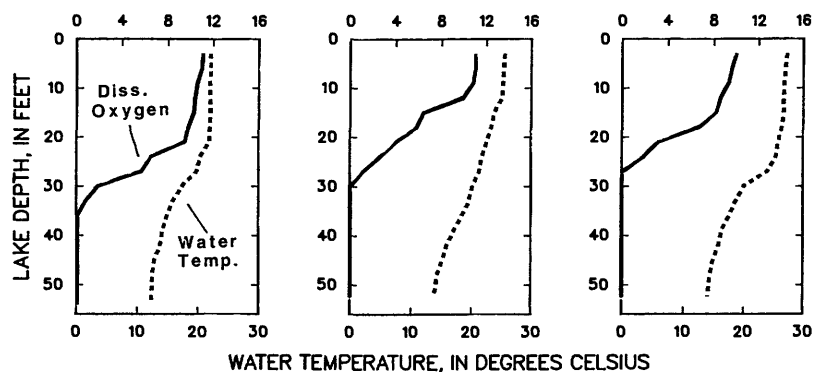
	June 16				July 11				Aug. 12			
Depth of sample (ft)	1.5	21.0	36.0	53.5	1.5	15.0	27.0	52.5	1.5	18.0	24.0	52.5
Specific conductance ($\mu\text{S}/\text{cm}$)	515	517	550	563	489	511	529	574	482	488	504	618
pH (units)	8.90	8.80	7.80	7.60	8.80	8.50	7.90	7.40	8.80	8.60	8.10	7.10
Water temperature ($^{\circ}\text{C}$)	22.0	22.0	15.0	12.5	25.5	24.0	21.5	13.5	27.5	26.5	25.5	14.0
Secchi-disc (meters)	1.3				1.2				1.6			
Dissolved oxygen	11.1	9.5	0.1	0.1	11.0	6.4	1.1	0	10.0	6.7	1.9	0
Total phosphorus (as P)	0.019	0.024	0.180	0.420	0.018	0.016	0.025	0.450	0.018	0.021	0.021	0.634
Phosphorus, ortho, diss (as P)	---	0.006	0.190	0.460	<0.001	<0.001	0.003	0.410	<0.001	<0.001	<0.001	0.610
Chlorophyll a, phyto. ($\mu\text{g}/\text{L}$)	14	---	---	---	29	---	---	---	17	---	---	---

6-16-88

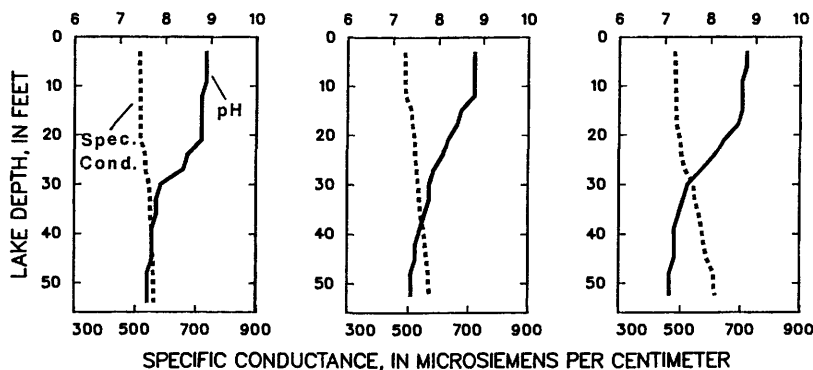
7-11-88

8-12-88

DISSOLVED OXYGEN, IN MILLIGRAMS PER LITER



PH, IN STANDARD UNITS



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 January 21 sampling.

WATER-QUALITY DATA, OCTOBER 21, 1987 TO MAY 18, 1988
(Milligrams per liter unless otherwise indicated)

	Oct. 21		Jan. 21		Apr. 28		May 18	
Depth of sample (ft)	1.5	33.5	1.5	32.5	1.5	31.5	1.5	31.5
Specific conductance (μS/cm)	508	508	525	539	529	530	534	537
pH (units)	8.40	8.30	7.90	8.10	8.30	8.20	8.40	8.10
Water temperature (°C)	11.0	11.0	1.5	2.0	8.5	8.5	15.5	14.0
Secchi-disc (meters)	0.9		4.8		2.2		3.6	
Dissolved oxygen	9.1	8.9	12.9	12.8	10.0	9.8	10.1	6.8
Silica, dissolved (SiO ₂)	---	---	---	---	0.50	0.60	---	---
Nitrogen, nitrate, total (as N)	---	---	---	---	0.480	0.480	---	---
Nitrogen, nitrite, total (as N)	---	---	---	---	0.020	0.020	---	---
Nitrogen, nitrite + nitrate, total	---	---	---	---	0.500	0.500	---	---
Nitrogen, ammonia, total (as N)	---	---	---	---	0.320	0.310	---	---
Nitrogen, organic, total (as N)	---	---	---	---	0.68	0.69	---	---
Nitrogen, total (as N)	---	---	---	---	1.5	1.5	---	---
Total phosphorus (as P)	0.081	0.060	0.081	0.083	0.064	0.067	0.059	0.069
Phosphorus, ortho, diss (as P)	0.038	0.060	0.066	0.071	0.053	0.051	0.030	0.042
Chlorophyll a, phyto. (μg/L)	22	---	6.1	---	1.8	---	4.7	---

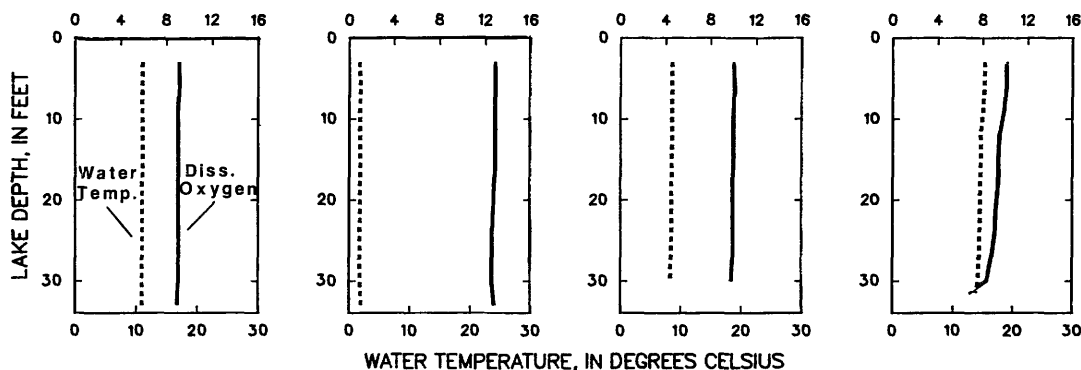
10-21-87

1-21-88

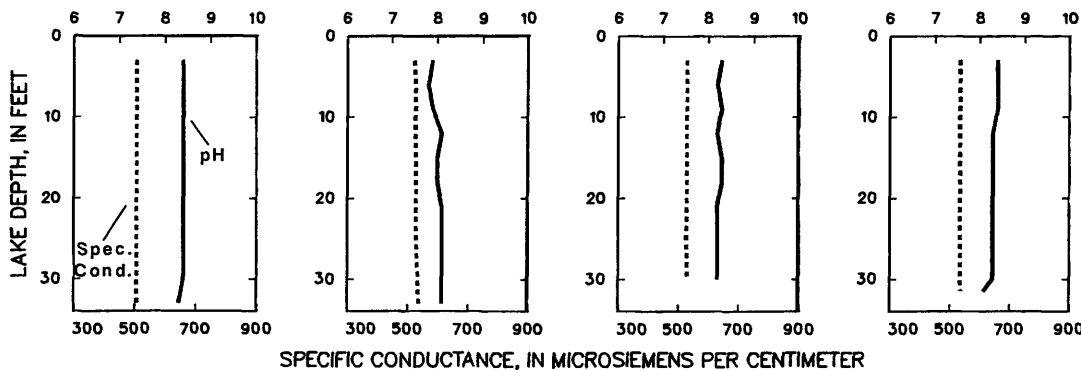
4-28-88

5-18-88

DISSOLVED OXYGEN, IN MILLIGRAMS PER LITER



PH, IN STANDARD UNITS



SPECIFIC CONDUCTANCE, IN MICROSIEMENS PER CENTIMETER

ROCK RIVER BASIN

423659088354401 DELAVAN LAKE AT NORTH END NEAR LAKE LAWN, WI--CONTINUED

WATER-QUALITY DATA, JUNE 16 TO AUGUST 12, 1988
(Milligrams per liter unless otherwise indicated)

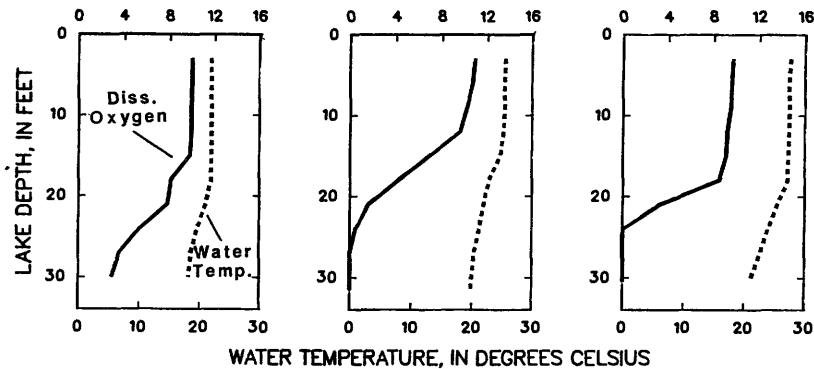
	June 16				July 11				Aug. 12			
Depth of sample (ft)	1.5	21.0	27.0	29.5	1.5	15.0	24.0	31.5	1.5	18.0	24.0	30.5
Specific conductance ($\mu\text{S}/\text{cm}$)	512	527	541	543	487	503	530	536	481	484	515	536
pH (units)	8.80	8.60	8.10	8.10	8.90	8.60	7.90	7.90	8.80	8.70	7.90	7.50
Water temperature ($^{\circ}\text{C}$)	22.0	21.0	18.5	18.0	25.5	24.5	21.0	20.0	27.5	27.0	24.0	21.0
Secchi-disc (meters)	1.3				1.0				1.3			
Dissolved oxygen	10.0	7.8	3.6	2.9	10.9	6.9	0.5	0	9.7	8.5	0	0
Total phosphorus (as P)	0.025	0.034	0.028	0.062	0.022	0.022	0.022	0.078	0.029	0.024	0.020	0.023
Phosphorus, ortho, diss (as P)	0.003	0.027	0.006	0.032	0.006	0.005	0.009	0.053	0.002	<0.001	<0.001	<0.001
Chlorophyll a, phyto. ($\mu\text{g}/\text{L}$)	19	---	---	---	37	---	---	---	21	---	---	---

6-16-88

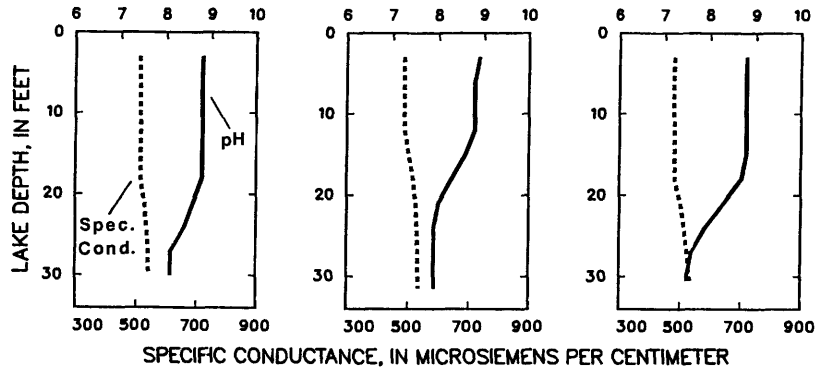
7-11-88

8-12-88

DISSOLVED OXYGEN, IN MILLIGRAMS PER LITER



PH, IN STANDARD UNITS



ROCK RIVER BASIN

423706088363400 DELAVAN LAKE NEAR DELAVAN, WI

LOCATION.--Lat 42°37'06", long 88°36'34", in SW 1/4 NE 1/4 sec.21, T.2 N., R.16 E., Walworth County, Hydrologic Unit 07090001, at upstream right wingwall of bridge, on North Shore Drive, 0.7 mi northeast of outlet, and 2.0 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.--Staff gage read by Delavan Lake Sanitary District personnel. Datum of gage is 922.92 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Lake levels controlled by Town of Delavan. Lake levels drawn down about 0.75 ft during winter operation from October to May.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height observed, 5.85 ft, Sept. 30, 1986; minimum observed, 3.78 ft, Dec. 9, 1983.

EXTREMES FOR CURRENT YEAR.--Maximum gage height observed, 4.96 ft, Apr. 8, 12, 28; minimum observed, 4.15 ft, Jan. 17.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.92	4.50	4.40	4.46	4.66	4.20	4.60	4.90	4.84	4.49	4.46	4.28
2	4.92	4.50	4.39	4.46	4.65	4.20	4.60	4.90	4.84	4.45	4.44	4.26
3	4.88	4.50	4.38	4.44	4.60	4.20	4.68	4.90	4.84	4.44	4.44	4.30
4	4.86	4.49	4.38	4.38	4.56	4.20	4.70	4.88	4.84	4.42	4.40	4.27
5	4.82	4.45	4.38	4.38	4.56	4.26	4.72	4.88	4.80	4.46	4.47	4.29
6	4.80	4.45	4.38	4.38	4.56	4.28	4.82	4.88	4.80	4.44	4.44	4.28
7	4.78	4.43	4.40	4.38	4.56	4.24	4.92	4.88	4.78	4.42	4.42	4.28
8	4.78	4.42	4.40	4.34	4.35	4.24	4.96	4.88	4.78	4.42	4.40	4.25
9	4.78	4.40	4.43	4.34	4.35	4.30	4.80	4.88	4.76	4.38	4.50	4.24
10	4.76	4.38	4.50	---	4.35	4.30	4.80	4.90	4.68	4.36	4.50	4.24
11	4.75	4.36	4.50	4.20	4.34	4.32	4.80	4.90	4.70	4.38	4.49	4.22
12	4.73	4.34	4.47	4.20	4.34	4.30	4.96	4.92	4.69	4.37	4.48	4.22
13	4.70	4.34	4.47	4.20	4.29	4.30	4.92	4.92	4.69	4.36	4.48	4.22
14	4.68	4.32	4.45	4.18	4.28	4.35	4.92	4.90	4.67	4.36	4.44	4.20
15	4.70	4.31	4.48	4.18	4.28	4.32	4.92	4.90	4.67	4.34	4.49	4.20
16	4.69	4.30	4.46	4.18	4.25	4.35	4.88	4.90	4.67	4.32	4.46	4.20
17	4.69	4.30	4.42	4.15	4.25	4.34	4.86	4.90	4.62	4.56	4.46	4.18
18	4.68	4.35	4.40	4.20	4.22	4.32	4.86	4.95	4.62	4.52	4.44	4.18
19	4.70	4.35	4.46	4.23	4.20	4.32	4.85	4.95	4.58	4.54	4.50	4.20
20	4.68	4.32	4.49	4.40	4.21	4.32	4.85	4.93	4.60	4.52	4.48	4.20
21	4.66	4.30	4.50	4.48	4.19	4.32	4.85	4.90	4.58	4.52	4.44	4.20
22	4.65	4.30	4.46	4.48	4.19	4.32	4.85	4.90	4.57	4.54	4.46	4.21
23	4.60	4.30	4.46	4.47	4.19	4.32	4.90	4.90	4.57	4.50	4.44	4.28
24	4.59	4.28	4.48	---	4.20	4.30	4.92	4.88	4.54	4.50	4.42	4.28
25	4.58	4.30	4.48	4.40	4.20	4.35	4.92	4.88	4.50	4.56	4.39	4.28
26	4.55	4.31	4.49	4.32	4.20	4.32	4.95	4.88	4.50	4.56	4.38	4.28
27	4.56	4.30	4.49	4.32	4.20	4.33	4.95	4.86	4.48	4.56	4.38	4.25
28	4.55	4.32	4.50	4.26	4.20	4.40	4.96	4.86	4.48	4.52	4.34	4.25
29	4.55	4.37	4.50	4.20	4.20	4.46	4.94	4.86	4.52	4.49	4.34	4.22
30	4.53	4.38	4.49	4.16	---	4.56	4.92	4.85	4.50	4.48	4.32	4.22
31	4.50	---	4.49	4.46	---	4.60	---	4.85	---	4.48	4.32	---
MEAN	4.70	4.37	4.45	---	4.33	4.32	4.85	4.89	4.66	4.46	4.43	4.24
MAX	4.92	4.50	4.50	---	4.66	4.60	4.96	4.95	4.84	4.56	4.50	4.30
MIN	4.50	4.28	4.38	---	4.19	4.20	4.60	4.85	4.48	4.32	4.32	4.18

CAL YR 1987 MEAN 4.64 MAX 5.28 MIN 4.14

ROCK RIVER BASIN

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. Elevation of gage is 920 ft, from topographic map

REMARKS.--Estimated daily discharges: June 16-30 and July 1-12, 17-21. Records good except for estimated daily discharges, which are fair.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 228 ft³/s Oct. 1, 1986, gage height, 7.92 ft; minimum daily discharge, 0.01 ft³/s on several days during the 1987 water year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 93 ft³/s Feb. 1, gage height, 6.63 ft; minimum daily discharge, 0.07 ft³/s June 4-5.

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

5.07	0.01	5.40	4.6
5.10	0.15	5.50	7.9
5.15	0.57	6.00	40
5.20	1.1	6.50	78
5.30	2.5	7.00	124

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	7.2	22	17	34	91	13	19	25	.19	.18	.33	.13
2	6.6	22	17	32	90	13	20	26	.21	.15	.36	.20
3	6.5	21	17	31	87	13	21	27	.16	.14	.33	.27
4	6.4	21	17	29	82	13	21	27	.07	.13	.32	.23
5	5.9	21	16	28	77	13	22	27	.07	.13	.28	.15
6	5.5	21	16	26	72	14	23	10	.11	.12	.27	.13
7	5.4	20	16	25	68	14	25	.40	.14	.12	.27	.12
8	5.2	20	18	24	47	14	26	.45	.18	.11	.30	.12
9	5.2	20	26	23	33	14	26	.45	.13	.11	.19	.12
10	4.6	20	33	22	32	15	26	.65	.10	.11	.19	.11
11	4.6	18	39	22	32	15	26	.93	.11	.25	.21	.10
12	4.6	17	39	21	31	14	25	1.1	.13	.19	.31	.09
13	4.2	17	39	19	31	13	24	1.0	.12	.15	.31	.08
14	4.1	17	39	9.8	30	13	25	.95	.13	.13	.31	.10
15	4.1	17	44	3.0	29	14	25	.85	.18	.20	.27	.10
16	4.1	17	40	2.9	29	13	26	.77	.19	3.4	.27	.10
17	3.4	16	39	2.9	28	14	25	.73	.18	.20	.27	.14
18	3.1	17	38	2.9	28	14	25	.70	.18	.16	.24	.17
19	13	16	37	3.4	17	13	24	.66	.17	.14	.10	.29
20	27	17	39	40	12	13	25	.70	.17	.13	.11	.29
21	26	16	39	65	12	14	24	.72	.16	.25	.10	.23
22	26	16	39	66	13	14	24	.76	.16	.15	.12	.26
23	25	15	38	64	12	13	25	.79	.15	.11	.20	.19
24	25	15	38	64	12	14	24	.50	.15	.10	.19	.17
25	24	16	38	61	12	13	23	.36	.14	.13	.15	.15
26	24	16	38	58	13	13	24	.19	.14	.12	.12	.15
27	24	16	38	55	12	13	23	.15	.13	.15	.19	.15
28	23	17	38	53	13	15	24	.20	.13	.20	.16	.11
29	23	17	38	52	12	16	24	.22	1.0	.24	.12	.08
30	22	17	38	55	---	17	25	.23	.25	.28	.12	.10
31	22	---	36	78	---	18	---	.21	---	.31	.10	---
TOTAL	394.7	538	1004	1071.9	1057	432	719	156.67	5.33	8.29	6.81	4.63
MEAN	12.7	17.9	32.4	34.6	36.4	13.9	24.0	5.05	.18	.27	.22	.15
MAX	27	22	44	78	91	18	26	27	1.0	3.4	.36	.29
MIN	3.1	15	16	2.9	12	13	19	.15	.07	.10	.10	.08
AC-FT	783	1070	1990	2130	2100	857	1430	311	11	16	14	9.2
CFSM	.30	.43	.77	.82	.87	.33	.57	.12	.00	.01	.01	.00
IN.	.35	.48	.89	.95	.93	.38	.64	.14	.00	.01	.01	.00

CAL YR 1987 TOTAL 6087.39 MEAN 16.7 MAX 109 MIN .01 AC-FT 12070 CFSM .40 IN. 5.38
WTR YR 1988 TOTAL 5398.33 MEAN 14.7 MAX 91 MIN .07 AC-FT 10710 CFSM .35 IN. 4.77

ROCK RIVER BASIN

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.--

TOTAL PHOSPHORUS DISCHARGE: October 1983 to current year.

INSTRUMENTATION.--Automatic pumping sampler from October to December 1983. Observer samples from January 1984 to present.

REMARKS.--Records good.

COOPERATION.--Observer furnished by Delavan Lake Sanitary District.

EXTREMES FOR PERIOD OF RECORD.--

TOTAL PHOSPHORUS CONCENTRATIONS: Maximum observed, 4.60 mg/L Apr. 22, 1984; minimum observed, 0.02 mg/L Mar. 31, 1988.

TOTAL PHOSPHORUS DISCHARGE: Maximum daily, 432 lb May 28, 1984; minimum daily, 0.00 lb Aug. 9, 13, 1987.

EXTREMES FOR CURRENT YEAR.--

TOTAL PHOSPHORUS CONCENTRATIONS: Maximum observed, 0.48 mg/L Sept. 24; minimum observed, 0.02 mg/L Mar. 31.

TOTAL PHOSPHORUS DISCHARGE: Maximum daily, 125 lb Feb. 1; minimum daily, 0.03 lb Sept. 29.

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	PHOS- PHOROUS TOTAL (MG/L AS P) (00665)
OCT 1987				
01...	1317	--	7.2	0.030
NOV				
18...	1202	--	16	0.050
30...	1055	--	17	0.060
DEC				
09...	0805	--	19	0.090
30...	1325	--	38	0.090
FEB 1988				
01...	0950	--	90	0.280
01...	1400	--	93	0.250
02...	0819	--	90	0.240
18...	1356	--	27	0.110
22...	0905	--	13	0.080
MAR				
22...	1310	--	15	0.040
28...	1330	--	15	0.080
28...	1430	--	15	0.070
29...	0845	--	15	0.040
29...	1450	--	15	0.070
30...	0845	--	17	0.030
31...	1105	--	17	0.020
APR				
01...	1045	--	19	0.030
01...	1055	--	19	0.050
06...	1130	--	23	0.090
06...	1730	--	25	0.090
07...	1820	--	26	0.080
08...	1125	--	25	0.060
08...	1500	--	25	0.060
09...	0800	--	25	0.050
10...	0750	--	26	0.060
20...	1130	--	25	0.070
MAY				
05...	1015	--	27	0.160
JUN				
16...	1540	0.19	--	0.120
JUL				
12...	0935	0.19	--	0.240
16...	2040	--	0.31	0.100
18...	0810	0.16	--	0.180
25...	1000	--	0.23	0.170
AUG				
15...	1030	--	0.27	0.090
18...	1655	--	0.41	0.150
30...	0917	--	0.12	0.130
SEP				
19...	0855	--	0.31	0.140
23...	1125	--	0.19	0.120
23...	1535	--	0.19	0.170
24...	0805	--	0.15	0.480
24...	1530	--	0.15	0.080

[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 for ice-affected periods, which are fair. Some seasonal regulation caused by dams used to maintain levels of Turtle and Delavan Lakes.

AVERAGE DISCHARGE.--49 years, 125 ft³/s, 8.62 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)
Jan. 31	----	(a) * 1,500	(a) *9.02	No other peak greater than base discharge.			

(a) Backwater from ice.

Minimum discharge, 21 ft³/s, Jan. 1, gage height, 3.12 ft, result of freezeup.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Dec. 5, 6, and Dec. 16 to Mar. 7.)

3.3	37	5.0	374
3.5	60	6.0	726
4.0	140	7.0	1,180
4.5	246		

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	91	98	177	120	600	140	223	149	68	51	47	47
2	85	100	142	120	350	140	207	143	67	51	47	46
3	85	102	177	120	250	140	226	131	67	51	46	47
4	84	99	107	120	180	120	206	128	66	51	48	52
5	83	96	96	120	170	110	189	128	65	51	52	56
6	82	93	96	120	160	110	352	124	64	50	50	51
7	84	92	111	120	160	120	376	110	63	49	47	49
8	84	95	139	120	150	155	282	100	62	47	53	50
9	82	95	210	110	150	175	226	106	61	47	104	46
10	82	91	191	110	150	156	202	114	60	49	74	47
11	81	90	167	110	150	130	191	115	61	51	68	46
12	82	93	160	110	150	133	166	113	59	49	64	46
13	83	91	154	110	140	132	149	97	58	49	54	46
14	81	91	149	110	140	125	145	92	58	51	47	45
15	82	90	130	100	140	130	140	92	57	53	49	45
16	83	94	120	100	140	128	138	88	57	65	49	45
17	86	136	130	110	140	127	138	84	56	213	46	47
18	88	133	130	120	140	127	133	81	54	137	61	49
19	87	116	140	130	140	119	138	81	53	64	76	55
20	86	105	180	400	140	118	138	80	52	50	60	62
21	94	111	200	350	130	115	139	79	52	48	57	61
22	99	105	170	220	130	116	134	78	55	49	55	79
23	96	102	140	160	120	118	237	76	53	53	63	81
24	100	111	140	140	120	126	185	76	52	54	58	63
25	103	142	160	130	120	159	168	74	52	66	51	59
26	100	141	150	130	120	140	178	73	50	60	47	58
27	108	127	140	120	130	130	194	73	53	55	48	48
28	104	133	130	120	130	162	182	72	60	54	50	43
29	102	211	130	120	130	284	164	72	68	53	48	45
30	100	173	130	300	---	263	156	70	57	50	48	44
31	98	---	120	1000	---	269	---	68	---	47	49	---
TOTAL	2785	3356	4466	5370	4870	4517	5702	2967	1760	1868	1716	1558
MEAN	89.8	112	144	173	168	146	190	95.7	58.7	60.3	55.4	51.9
MAX	108	211	210	1000	600	284	376	149	68	213	104	81
MIN	81	90	96	100	120	110	133	68	50	47	46	43
CFSM	.45	.56	.72	.87	.84	.73	.96	.48	.29	.30	.28	.26
IN.	.52	.63	.83	1.00	.91	.84	1.07	.55	.33	.35	.32	.29
CAL YR 1987	TOTAL 45796	MEAN 125	MAX 734	MIN 59	CFSM .63	IN. 8.56						
WTR YR 1988	TOTAL 40935	MEAN 112	MAX 1000	MIN 43	CFSM .56	IN. 7.65						

ROCK RIVER BASIN

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 19, 1987 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 1,010 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 fair.

EXTREMES FOR CURRENT PERIOD.--June 19 to September 1987: Maximum discharge, 108 ft³/s, July 31, gage height, 4.65 ft; minimum discharge, 6.2 ft³/s, July 20-22, gage height, 2.96 ft.

Water year 1988: Maximum discharge, 203 ft³/s, Feb. 29, gage height, 5.59 ft; minimum discharge, 3.3 ft³/s, Aug. 18, gage height, 2.83 ft.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	---	7.5	11	8.7
2	---	---	---	---	---	---	---	---	---	8.5	9.8	8.4
3	---	---	---	---	---	---	---	---	---	9.1	9.0	7.8
4	---	---	---	---	---	---	---	---	---	7.4	8.9	7.9
5	---	---	---	---	---	---	---	---	---	7.8	8.5	7.6
6	---	---	---	---	---	---	---	---	---	8.2	8.3	7.6
7	---	---	---	---	---	---	---	---	---	7.9	7.8	8.8
8	---	---	---	---	---	---	---	---	---	7.6	35	8.4
9	---	---	---	---	---	---	---	---	---	7.7	15	7.6
10	---	---	---	---	---	---	---	---	---	7.5	11	7.7
11	---	---	---	---	---	---	---	---	---	7.3	10	7.9
12	---	---	---	---	---	---	---	---	---	7.1	9.4	7.6
13	---	---	---	---	---	---	---	---	---	6.9	9.5	8.9
14	---	---	---	---	---	---	---	---	---	7.0	9.8	8.9
15	---	---	---	---	---	---	---	---	---	9.9	9.3	10
16	---	---	---	---	---	---	---	---	---	7.2	12	13
17	---	---	---	---	---	---	---	---	---	6.9	10	19
18	---	---	---	---	---	---	---	---	---	6.9	13	13
19	---	---	---	---	---	---	---	---	9.3	7.2	10	12
20	---	---	---	---	---	---	---	---	9.0	6.6	9.1	11
21	---	---	---	---	---	---	---	---	9.4	6.4	9.6	11
22	---	---	---	---	---	---	---	---	8.7	6.4	8.7	11
23	---	---	---	---	---	---	---	---	8.4	7.0	7.9	10
24	---	---	---	---	---	---	---	---	8.1	7.3	7.9	9.9
25	---	---	---	---	---	---	---	---	8.3	7.7	8.1	9.4
26	---	---	---	---	---	---	---	---	7.9	7.8	11	9.5
27	---	---	---	---	---	---	---	---	7.8	12	10	9.4
28	---	---	---	---	---	---	---	---	7.9	11	16	9.1
29	---	---	---	---	---	---	---	---	7.9	9.4	11	9.1
30	---	---	---	---	---	---	---	---	7.6	23	10	8.5
31	---	---	---	---	---	---	---	---	---	36	9.2	---
TOTAL	---	---	---	---	---	---	---	---	---	286.2	335.8	288.7
MEAN	---	---	---	---	---	---	---	---	---	9.23	10.8	9.62
MAX	---	---	---	---	---	---	---	---	---	36	35	19
MIN	---	---	---	---	---	---	---	---	---	6.4	7.8	7.6

05432055 LIVINGSTON BRANCH PECATONICA RIVER NEAR LIVINGSTON, WI--CONTINUED

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Dec. 15-19, 1987, Dec. 28, 1987 to
Feb. 28, 1988.)

2.8	3.2	3.6	31
2.9	4.6	4.0	55
3.0	7.4	4.5	92
3.3	17		

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	8.8	8.8	12	11	35	63	18	11	9.2	7.5	3.9	4.3
2	8.3	8.5	11	10	27	47	19	11	9.4	7.2	3.8	4.3
3	7.9	8.2	11	9.6	23	29	20	11	9.2	6.9	3.7	4.3
4	8.2	7.3	12	9.4	21	24	18	10	9.3	6.5	5.6	4.5
5	8.4	7.1	11	9.2	19	27	18	11	9.5	5.4	9.1	4.5
6	7.9	7.7	10	9.0	18	55	17	10	9.5	5.6	4.4	4.3
7	7.9	8.6	10	9.0	17	42	16	10	9.8	5.7	4.3	4.3
8	7.7	7.2	12	9.0	16	45	15	14	9.4	5.7	5.2	4.3
9	7.8	6.8	19	8.8	16	29	15	13	8.8	5.4	4.7	4.2
10	7.4	7.0	14	8.8	15	25	14	11	8.9	6.6	4.5	4.1
11	7.3	7.1	14	8.8	15	24	14	10	9.3	5.6	4.4	4.1
12	7.6	7.2	13	8.8	15	24	14	9.7	9.4	5.7	4.3	4.2
13	7.9	6.8	12	8.8	15	20	14	9.2	9.4	5.1	4.4	4.0
14	8.2	6.8	12	8.8	15	37	13	9.2	9.2	6.3	4.6	4.0
15	8.2	6.9	12	8.8	14	19	13	9.3	9.1	4.9	3.9	4.0
16	8.9	9.4	11	8.8	14	17	13	9.2	9.0	8.7	3.9	4.3
17	9.6	23	10	9.0	14	17	13	9.1	9.2	4.8	4.2	4.6
18	8.3	12	11	9.2	14	17	13	8.7	9.3	5.2	3.7	4.4
19	8.2	12	13	9.8	13	17	12	8.7	9.6	5.2	4.3	10
20	7.9	11	18	15	14	17	13	8.8	9.7	4.7	4.3	8.4
21	7.9	10	16	13	14	16	12	8.6	9.1	5.0	4.3	5.2
22	8.2	10	13	12	14	15	12	8.3	8.8	4.5	5.0	21
23	7.9	11	13	11	14	15	13	8.1	8.1	4.4	9.1	9.2
24	7.6	10	14	10	14	18	12	7.8	8.1	4.3	4.7	5.4
25	7.8	9.7	14	9.8	14	25	12	7.7	8.1	4.3	4.4	4.9
26	7.8	9.7	14	9.6	14	18	13	8.0	7.5	4.2	4.3	4.7
27	7.4	9.5	14	9.2	16	16	14	8.3	7.7	4.2	4.4	4.5
28	7.3	17	13	9.0	32	23	13	8.8	7.9	4.1	4.4	4.4
29	7.4	15	13	9.4	70	30	12	8.9	8.3	4.0	4.2	4.6
30	7.7	13	13	20	---	21	12	8.9	7.7	4.0	4.3	4.7
31	11	---	12	50	---	19	---	9.0	---	3.8	4.4	---
TOTAL	250.4	294.3	397	352.6	552	811	427	296.3	267.5	165.5	144.7	163.7
MEAN	8.08	9.81	12.8	11.4	19.0	26.2	14.2	9.56	8.92	5.34	4.67	5.46
MAX	11	23	19	50	70	63	20	14	9.8	8.7	9.1	21
MIN	7.3	6.8	10	8.8	13	15	12	7.7	7.5	3.8	3.7	4.0

WTR YR 1988 TOTAL 4122.0 MEAN 11.3 MAX 70 MIN 3.7

ROCK RIVER BASIN

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.

REMARKS.--Water-quality analysis by the State Lab of Hygiene.

EXTREMES FOR PERIOD OF RECORD.--

WATER TEMPERATURE: Maximum observed, 32.5°C July 20, 1987; minimum observed, 0.0°C Nov. 20-21, Dec. 4-5, 1987.

DISSOLVED OXYGEN: Maximum observed, 16.3 mg/L Apr. 21, 23, 1988; minimum observed, 0.5 mg/L July 31, 1987.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum observed, 32.0°C Aug. 1-2; minimum observed, 0.0°C Nov. 20-21, Dec. 4-5.

DISSOLVED OXYGEN: Maximum observed, 16.3 mg/L Apr. 21, 23; minimum observed, 1.0 mg/L Sept. 23.

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH (STAND- ARD UNITS) (00400)	PH LAB (STAND- ARD UNITS) (00403)	TEMPER- ATURE WATER (DEG C) (00010)	TUR- BID- ITY (FTU) (00076)	OXYGEN, DIS- SOLVED (MG/L) (00300)	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- PHOROUS TOTAL (MG/L AS P) (00665)
NOV 1987											
17...	0130	21	--	7.90	--	72	--	756	--	0.770	--
17...	0330	31	--	7.80	--	86	--	1280	--	1.90	--
18...	0843	12	--	8.00	--	49	--	248	--	0.430	--
FEB 1988											
22...	1230	17	--	8.10	--	27	--	184	11.8	0.200	--
27...	1530	14	8.20	8.10	--	39	--	244	--	--	--
27...	1531	14	8.20	--	--	--	--	--	--	1.50	--
27...	1532	14	8.20	8.10	--	30	--	107	--	--	--
27...	1533	14	8.20	8.10	--	37	--	232	--	--	--
27...	1534	14	8.20	--	--	--	--	--	--	1.50	--
27...	1535	14	8.20	--	--	--	--	--	--	1.50	--
28...	1615	42	--	8.00	--	98	--	1210	--	2.00	--
28...	1715	73	--	7.70	--	270	--	4260	--	2.50	--
28...	1745	86	--	7.60	--	340	--	4660	--	2.80	--
29...	0430	35	--	7.60	--	66	--	564	--	3.40	--
29...	1515	53	--	7.90	--	82	--	952	--	2.00	--
29...	1616	119	--	7.60	--	260	--	5060	--	2.70	--
29...	1800	201	--	7.50	--	730	--	9120	--	4.10	--
29...	2145	109	--	7.40	--	160	--	2450	--	4.20	--
MAR											
01...	0300	50	--	7.60	--	100	--	800	--	3.20	--
01...	1415	34	8.00	8.00	--	43	--	450	--	--	--
01...	1416	34	8.00	8.00	--	44	--	440	--	--	--
01...	1417	34	8.00	--	--	--	--	--	--	1.90	--
01...	1418	34	8.00	--	--	--	--	--	--	1.90	--
01...	1420	34	8.00	7.90	--	28	--	170	--	--	--
01...	1421	34	8.00	--	--	--	--	--	--	1.90	--
APR											
06...	1015	17	8.50	8.20	8.0	17	11.5	60	11.1	0.120	0.220
MAY											
27...	0845	8.2	8.30	8.30	15.0	9.5	10.6	28	0.070	0.020	0.650
JUL											
16...	0700	14	--	8.00	--	66	--	1010	--	<0.100	--
AUG											
04...	2215	15	--	7.80	--	68	--	1160	--	0.220	--
23...	0315	14	--	8.10	--	87	--	620	--	0.210	--
SEP											
19...	1330	13	--	8.00	--	25	--	294	--	0.260	--
22...	0745	16	--	8.10	--	120	--	385	--	0.260	--
22...	1015	25	--	7.70	--	130	--	940	--	0.720	--
22...	1215	39	--	7.60	--	110	--	1940	--	1.20	--
22...	1735	31	--	7.50	--	190	--	1130	--	1.80	--
22...	1736	30	--	7.50	--	190	--	690	--	1.90	--
23...	0030	16	--	7.50	--	180	--	680	--	1.80	--

ROCK RIVER BASIN

05432055 LIVINGSTON BRANCH PECATONICA RIVER NEAR LIVINGSTON, WI--CONTINUED

WATER TEMPERATURE, DEGREES CENTIGRADE, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER				NOVEMBER			DECEMBER			JANUARY		
1	17.0	10.0	13.0	11.0	8.5	10.0	4.0	2.5	3.5	.5	.5	.5
2	13.5	8.0	10.0	14.5	11.0	12.5	3.0	1.5	2.5	.5	.5	.5
3	13.5	5.5	9.0	16.5	11.0	13.5	4.0	.5	2.5	.5	.5	.5
4	15.5	7.5	11.0	15.0	8.0	12.0	2.0	.0	.5	.5	.5	.5
5	15.0	11.0	12.5	8.0	4.5	6.5	3.0	.0	1.0	.5	.5	.5
6	11.5	8.5	10.0	7.0	2.5	5.0	3.0	1.0	2.0	.5	.5	.5
7	11.5	7.0	8.5	6.5	3.5	5.5	4.0	2.5	3.5	.5	.5	.5
8	11.5	5.0	8.0	8.5	6.0	7.5	6.5	4.0	5.0	.5	.5	.5
9	11.0	6.5	8.5	7.0	2.5	4.5	7.0	5.0	6.0	.5	.5	.5
10	9.0	6.5	8.0	5.5	.5	2.5	5.5	4.0	4.5	.5	.5	.5
11	10.5	2.5	6.5	6.0	.5	3.0	7.5	4.5	5.5	.5	.5	.5
12	12.0	4.0	7.5	8.0	1.5	4.5	4.5	1.5	2.5	.5	.5	.5
13	13.0	4.5	9.0	8.5	4.5	6.0	3.5	1.5	2.0	.5	.5	.5
14	11.0	8.5	10.0	9.5	3.5	6.0	2.5	1.0	2.0	.5	.5	.5
15	14.5	9.0	11.0	10.0	5.5	7.5	1.0	.5	.5	.5	.5	.5
16	11.5	10.5	11.0	10.0	9.0	9.5	.5	.5	.5	.5	.5	.5
17	10.5	7.0	9.5	10.0	6.0	8.5	.5	.5	.5	1.0	.5	.5
18	12.5	5.5	8.5	7.5	4.0	5.5	.5	.5	.5	1.0	1.0	1.0
19	12.0	6.5	9.5	7.0	3.0	4.5	1.0	.5	.5	1.5	.5	1.0
20	8.5	4.0	6.0	3.0	.0	1.5	2.0	.5	1.0	1.5	.5	1.0
21	9.0	3.0	5.5	3.0	.0	1.0	1.5	.5	1.0	2.0	1.0	1.5
22	10.5	4.0	7.0	6.0	.5	3.0	4.5	1.5	3.0	1.0	.5	1.0
23	7.5	5.5	6.0	6.5	4.5	5.5	4.5	2.0	3.0	.5	.5	.5
24	8.0	5.0	6.0	5.0	4.0	4.5	5.0	3.5	4.0	.5	.5	.5
25	9.0	2.0	5.5	4.5	2.5	4.0	4.0	1.5	3.0	.5	.5	.5
26	6.5	3.5	5.5	5.0	3.5	4.0	2.0	.5	1.0	.5	.5	.5
27	9.5	3.5	6.0	4.5	4.0	4.0	1.0	.5	.5	.5	.5	.5
28	8.0	2.5	5.5	6.0	4.0	5.0	1.0	.5	.5	.5	.5	.5
29	10.0	4.0	6.5	6.5	5.5	6.0	.5	.5	.5	.5	.5	.5
30	12.0	4.5	7.5	6.0	3.5	4.5	.5	.5	.5	1.0	.5	.5
31	10.0	5.5	8.0	---	---	---	.5	.5	.5	1.5	.5	1.0
MONTH	17.0	2.0	8.3	16.5	.0	5.9	7.5	.0	2.1	2.0	.5	.6
FEBRUARY				MARCH			APRIL			MAY		
1	.5	.5	.5	6.0	1.0	2.5	14.0	5.5	9.5	20.5	8.0	14.0
2	.5	.5	.5	6.5	1.0	3.0	9.5	7.0	8.0	20.5	8.5	14.0
3	1.0	.5	1.0	5.5	.5	2.5	10.5	7.5	8.5	20.5	8.5	14.0
4	.5	.5	.5	7.5	.5	3.5	18.0	7.5	12.0	18.5	8.0	13.0
5	.5	.5	.5	8.0	.5	3.5	16.5	8.5	12.5	21.5	9.0	15.0
6	.5	.5	.5	8.5	1.0	3.5	14.0	7.0	10.0	21.5	9.0	15.0
7	.5	.5	.5	8.0	1.5	4.5	16.5	5.0	10.5	19.0	10.0	14.5
8	.5	.5	.5	9.5	4.5	6.5	17.0	7.0	11.5	18.5	11.5	14.5
9	.5	.5	.5	8.0	4.0	5.5	17.0	7.5	12.0	12.5	10.0	11.0
10	.5	.5	.5	11.0	2.5	6.5	10.5	6.0	7.5	21.5	9.0	15.0
11	.5	.5	.5	10.0	3.5	7.0	15.5	5.0	9.5	22.5	10.0	16.0
12	.5	.5	.5	7.0	3.5	6.0	16.5	5.0	10.5	24.0	12.0	18.0
13	.5	.5	.5	3.5	.5	2.0	14.5	6.5	10.5	22.5	12.0	17.0
14	1.0	.5	.5	3.5	.5	1.5	13.5	4.5	8.5	21.5	10.5	16.0
15	.5	.5	.5	5.0	1.0	2.5	13.5	3.5	8.0	23.5	14.0	18.0
16	1.0	.5	1.0	8.5	1.5	4.5	15.5	4.0	9.5	15.5	12.0	13.5
17	2.5	.5	1.0	7.5	3.0	5.0	15.0	6.0	10.0	22.5	9.5	15.5
18	3.5	.5	1.5	9.5	2.0	5.0	13.5	3.5	8.0	24.0	10.5	17.0
19	3.5	.5	2.0	8.5	1.5	5.0	14.0	4.0	9.0	22.5	11.5	17.5
20	2.5	.5	1.0	7.0	1.5	4.5	13.0	5.0	8.0	25.5	12.0	18.5
21	.5	.5	.5	9.5	1.5	5.0	8.0	3.5	6.0	25.5	13.5	19.5
22	2.5	.5	1.0	12.5	2.0	7.0	7.5	5.0	6.0	23.5	15.0	19.5
23	1.5	.5	1.0	14.0	6.5	10.0	7.0	4.5	5.5	23.0	15.0	18.5
24	1.0	.5	.5	10.5	6.0	8.0	15.0	3.5	9.0	23.5	12.5	17.5
25	1.0	.5	.5	14.0	6.0	9.5	19.0	6.5	12.5	23.0	10.0	16.5
26	4.0	.5	1.5	7.5	2.5	5.0	12.5	6.0	8.5	24.0	11.5	17.5
27	7.0	.5	2.5	12.0	1.0	6.0	7.5	4.0	6.0	23.5	14.5	19.0
28	6.0	.5	2.0	8.0	5.5	7.0	17.0	4.0	10.0	26.0	15.5	20.5
29	6.5	.5	2.0	7.5	5.0	6.5	19.5	6.0	12.5	26.0	16.5	21.0
30	---	---	---	13.0	2.5	7.5	20.0	7.5	13.5	26.0	17.0	21.5
31	---	---	---	13.5	4.0	8.5	---	---	---	26.5	17.0	21.5
MONTH	7.0	.5	.9	14.0	.5	5.3	20.0	3.5	9.4	26.5	8.0	16.8

[illegible]

ROCK RIVER BASIN

05432055 LIVINGSTON BRANCH PECATONICA RIVER NEAR LIVINGSTON, WI--CONTINUED

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	---	---	---	---	---	---	12.5	9.6	11.0	---	---	---
2	---	---	---	---	---	---	11.7	9.9	10.7	---	---	---
3	---	---	---	---	---	---	11.8	9.5	10.6	---	---	---
4	---	---	---	---	---	---	12.0	8.4	10.3	---	---	---
5	---	---	---	---	---	---	12.0	8.2	9.8	---	---	---
6	---	---	---	---	---	---	12.2	8.8	10.4	---	---	---
7	---	---	---	---	---	---	12.8	8.5	10.8	---	---	---
8	---	---	---	---	---	---	12.7	8.3	10.4	---	---	---
9	---	---	---	---	---	---	12.9	8.2	10.2	---	---	---
10	---	---	---	---	---	---	13.1	8.6	10.9	---	---	---
11	---	---	---	---	---	---	13.9	8.9	11.3	---	---	---
12	---	---	---	---	---	---	14.6	8.6	11.4	---	---	---
13	---	---	---	---	---	---	14.8	8.9	11.2	---	---	---
14	---	---	---	---	---	---	15.2	9.6	12.1	---	---	---
15	---	---	---	---	---	---	15.3	9.6	12.3	---	---	---
16	---	---	---	---	---	---	15.4	8.8	12.0	---	---	---
17	---	---	---	---	---	---	14.7	9.1	11.5	---	---	---
18	---	---	---	---	---	---	15.3	9.7	12.2	12.2	7.4	9.9
19	---	---	---	---	---	---	---	---	---	12.5	7.1	9.8
20	---	---	---	---	---	---	15.9	10.0	12.3	12.5	6.6	9.6
21	---	---	---	---	---	---	16.3	10.3	13.0	12.8	6.1	9.3
22	---	---	---	---	---	---	15.8	10.8	12.5	11.8	6.1	8.7
23	---	---	---	12.2	9.8	10.9	16.3	11.5	13.4	11.6	5.7	8.1
24	---	---	---	11.7	8.8	10.7	---	---	---	12.1	5.7	8.9
25	---	---	---	9.7	5.7	8.6	---	---	---	13.1	6.3	9.7
26	---	---	---	12.1	9.6	11.3	---	---	---	12.9	5.5	9.2
27	---	---	---	13.0	9.9	11.6	---	---	---	---	---	---
28	---	---	---	11.1	8.2	10.3	---	---	---	---	---	---
29	---	---	---	10.9	7.1	9.8	---	---	---	---	---	---
30	---	---	---	12.5	9.4	11.1	---	---	---	---	---	---
31	---	---	---	12.5	9.4	10.9	---	---	---	---	---	---
MONTH	---	---	---	---	---	---	---	---	---	---	---	---
	JUNE			JULY			AUGUST			SEPTEMBER		
1	---	---	---	12.9	5.8	9.2	8.7	4.8	6.4	14.7	6.6	9.5
2	10.5	3.7	6.9	12.7	5.4	8.8	8.6	3.9	6.0	14.3	5.8	9.1
3	11.6	4.4	7.7	12.8	5.3	8.7	8.5	3.8	5.9	15.2	6.1	9.3
4	12.3	4.6	8.1	12.6	4.9	8.4	e8.5	4.0	6.1	13.4	6.8	9.1
5	12.9	4.4	8.3	12.7	4.7	8.3	e5.5	3.2	4.3	14.7	7.7	10.4
6	13.3	4.4	8.4	11.7	4.2	7.3	e7.5	5.1	6.3	14.7	7.3	10.5
7	13.6	4.3	8.6	11.6	3.8	7.2	e9.5	5.2	7.3	14.4	7.4	10.3
8	14.0	4.3	8.8	11.0	4.2	7.0	e9.5	5.1	6.8	16.4	6.7	10.5
9	12.9	5.6	9.2	10.2	4.6	7.0	e9.0	5.3	6.8	15.6	7.1	10.3
10	13.0	5.4	8.9	12.0	4.7	7.8	e8.5	4.5	6.5	---	---	---
11	13.2	5.0	8.9	12.3	5.6	8.8	e9.0	4.6	7.1	---	---	---
12	13.3	4.9	8.7	12.7	5.4	9.1	9.7	5.6	7.3	---	---	---
13	13.4	4.6	8.6	9.9	4.4	7.2	9.4	5.6	7.2	---	---	---
14	13.6	4.7	8.7	9.0	3.9	6.1	10.1	5.2	7.2	---	---	---
15	13.6	4.9	8.7	8.1	3.2	5.4	9.6	4.4	6.6	---	---	---
16	13.6	5.0	9.0	5.4	2.9	3.8	9.5	4.3	6.3	---	---	---
17	13.6	5.4	9.4	6.1	2.5	4.2	10.0	4.6	6.6	---	---	---
18	e13.5	4.7	9.0	8.0	2.1	4.7	10.8	5.0	7.5	---	---	---
19	e12.5	4.7	7.8	7.5	4.5	5.9	12.3	6.6	8.5	9.0	4.4	6.6
20	e13.5	3.9	8.3	8.0	5.4	6.7	12.3	6.5	9.0	7.3	5.5	6.4
21	e12.0	3.7	7.3	---	---	---	13.5	6.9	9.3	10.2	6.4	7.6
22	e11.5	3.6	7.0	---	---	---	11.0	7.2	8.5	7.4	1.7	5.0
23	e12.5	3.8	7.9	---	---	---	7.9	5.3	6.6	5.4	1.0	3.6
24	e13.0	4.7	8.0	---	---	---	9.3	6.0	7.4	9.1	5.5	7.8
25	e12.5	4.3	8.0	---	---	---	10.3	6.9	8.2	9.8	6.4	8.1
26	e12.5	4.4	8.3	---	---	---	10.9	6.7	8.6	9.1	6.2	7.6
27	e12.0	4.8	8.3	---	---	---	11.5	6.9	8.3	11.5	6.8	9.0
28	e12.0	4.9	7.8	---	---	---	11.6	7.3	9.2	13.1	8.4	10.5
29	12.5	5.3	8.2	9.5	5.6	7.3	12.3	6.9	9.2	14.1	8.8	11.2
30	12.9	5.9	9.3	9.4	5.8	7.3	12.2	6.6	8.8	---	---	---
31	---	---	---	9.5	4.5	6.9	13.0	6.6	9.0	---	---	---
MONTH	---	---	---	---	---	---	13.5	3.2	7.4	---	---	---

e Estimated

ROCK RIVER BASIN

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.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily rainfall, 2.36 in. Aug. 30, 1987.

EXTREMES FOR CURRENT YEAR.--Maximum daily rainfall, 1.80 in. Sept. 19.

RAINFALL ACCUMULATED (INCHES), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.03	.05	.00	---	---	---	.00	.00	.00	.00	.00	.00
2	.00	.06	.00	---	---	---	.24	.00	.00	.00	.00	.09
3	.00	.00	.00	---	---	---	.00	.00	.00	.00	.00	.00
4	.00	.00	---	---	---	---	.00	.00	.00	.00	1.04	.07
5	.00	.00	---	---	---	---	.06	.00	.00	.00	.16	.00
6	.01	.00	---	---	---	---	.04	.00	.00	.00	.00	.00
7	.00	.17	---	---	---	---	.00	.00	.00	.00	.00	.00
8	.00	.10	---	---	---	---	.00	.55	.00	.00	.22	.00
9	.00	.00	---	---	---	---	.00	.18	.00	.23	.00	.00
10	.00	.01	---	---	---	---	.00	.00	.00	.36	.00	.00
11	.02	.03	---	---	---	---	.00	.00	.00	.00	.00	.00
12	.00	.00	---	---	---	---	.00	.00	.00	.00	.00	.00
13	.00	.00	---	---	---	---	.00	.00	.00	.14	.07	.00
14	.03	.00	---	---	---	---	.00	.01	.00	.55	.00	.00
15	.00	.09	---	---	---	---	.00	.00	.00	.00	.00	.00
16	.42	.81	---	---	---	---	.00	.00	.00	.73	.00	.22
17	.06	.58	---	---	---	---	.00	.00	.00	.00	.00	.04
18	.00	.00	---	---	---	---	.00	.00	.00	.42	.21	.01
19	.00	.00	---	---	---	---	.00	.00	.05	.00	.00	1.80
20	.00	.00	---	---	---	---	.10	.00	.00	.22	.00	.17
21	.00	.00	---	---	---	---	.00	.00	.00	.00	.00	.12
22	.05	.03	---	---	---	.00	.36	.00	.10	.00	1.25	1.63
23	.00	.01	---	---	---	.00	.10	.00	.00	.00	.01	.00
24	.09	.05	---	---	---	.63	.00	.01	.03	.02	.00	.00
25	.00	.07	---	---	---	.01	.01	.00	.00	.00	.00	.00
26	.10	.00	---	---	---	.00	.41	.00	.00	.00	.00	.00
27	.00	.01	---	---	---	.00	.17	.00	.00	.00	.00	.00
28	.01	.80	---	---	---	.84	.01	.00	.12	.00	.00	.02
29	.00	.05	---	---	---	.04	.00	.00	.13	.00	.00	.01
30	.00	.00	---	---	---	.00	.00	.00	.00	.00	.00	.00
31	.48	---	---	---	---	.00	---	.00	---	.00	.00	---
TOTAL	1.30	2.92	---	---	---	---	1.50	0.75	0.43	2.67	2.96	4.18

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 table below. Records good except for ice-affected periods, which are fair.

AVERAGE DISCHARGE.--49 years, 187 ft³/s, 9.30 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)
Feb. 1	0700	(a) *630	(a) *7.53				

(a) Backwater from ice.

Minimum discharge, 54 ft³/s Sept. 16, gage height, 1.63 ft.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Dec. 17-20 and Dec. 28 to Mar. 5.)

1.6	52	5.0	385
2.0	86	6.0	512
3.0	176	7.0	653
4.0	270		

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	113	116	174	130	600	380	263	164	106	80	65	61
2	111	130	158	120	460	400	252	159	106	78	63	60
3	111	120	152	110	380	350	286	155	104	77	61	60
4	109	115	141	110	300	280	271	152	103	76	65	61
5	111	108	135	100	240	260	246	151	101	74	76	63
6	111	102	139	100	220	256	242	149	100	71	85	62
7	110	103	137	100	210	324	229	147	98	70	70	61
8	108	109	141	100	210	369	215	149	98	68	68	60
9	106	113	196	100	200	389	207	176	97	69	73	59
10	106	106	220	98	200	306	201	183	94	79	72	58
11	104	102	188	98	200	272	196	159	94	90	69	57
12	105	103	184	96	190	268	193	148	94	80	67	57
13	106	105	169	96	180	254	190	145	92	75	64	57
14	107	105	157	96	180	220	189	140	90	100	64	56
15	108	102	129	96	180	219	182	138	88	89	64	55
16	112	107	110	96	180	214	177	136	87	93	62	56
17	133	183	140	98	170	206	175	136	87	139	59	64
18	128	234	150	100	170	202	175	133	89	91	56	66
19	116	158	160	100	160	197	170	130	89	87	60	74
20	112	138	190	120	160	195	171	129	90	85	63	103
21	111	120	207	150	150	188	176	127	88	83	61	96
22	111	123	194	130	150	184	174	125	84	85	61	110
23	111	129	174	120	150	187	200	124	84	80	95	185
24	113	124	168	110	150	191	198	121	80	78	94	119
25	114	124	183	100	150	252	176	117	82	78	70	81
26	111	124	171	100	150	250	171	116	80	76	65	74
27	117	120	127	98	160	211	197	116	76	73	64	70
28	115	144	150	98	180	215	210	116	77	71	65	69
29	110	234	160	110	250	381	182	114	83	68	64	69
30	108	201	150	150	---	369	170	111	85	68	63	71
31	108	---	140	420	---	291	---	109	---	67	62	---
TOTAL	3456	3902	4994	3650	6280	8280	6084	4275	2726	2498	2090	2194
MEAN	111	130	161	118	217	267	203	138	90.9	80.6	67.4	73.1
MAX	133	234	220	420	600	400	286	183	106	139	95	185
MIN	104	102	110	96	150	184	170	109	76	67	56	55
CFSM	.41	.48	.59	.43	.79	.98	.74	.51	.33	.30	.25	.27
IN.	.47	.53	.68	.50	.86	1.13	.83	.58	.37	.34	.28	.30

CAL YR 1987 TOTAL 54424 MEAN 149 MAX 390 MIN 89 CFSM .55 IN. 7.42
WTR YR 1988 TOTAL 50429 MEAN 138 MAX 600 MIN 55 CFSM .50 IN. 6.87

ROCK RIVER BASIN

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 September 1988.

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: Oct. 1 to Nov. 4 and ice periods, Dec. 15-19 and Dec. 27 to Mar. 4. Records good except those for estimated daily discharges, which are fair.

AVERAGE DISCHARGE.--48 years (1940-86, 1988), 146 ft³/s, 8.97 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)
Jan. 31	2000	(a) *610	(a) *8.73				
(a) Backwater from ice							
Minimum discharge, 82 ft ³ /s, Sept. 15 and 16.							

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	120	130	184	160	500	250	212	156	130	106	92	86
2	120	140	166	160	360	250	209	151	125	106	92	85
3	120	130	161	150	320	210	345	148	124	105	91	84
4	120	130	155	150	280	190	278	146	123	104	92	84
5	120	121	145	140	270	189	241	145	122	103	100	85
6	120	118	143	140	260	191	235	143	121	104	97	85
7	120	118	146	140	250	229	224	141	118	104	94	85
8	120	122	154	140	240	281	210	144	118	102	93	85
9	120	122	299	140	230	289	201	172	116	102	95	84
10	120	116	275	140	220	239	194	172	116	115	95	84
11	120	114	218	130	220	223	190	156	116	115	94	84
12	120	115	223	130	210	227	185	153	116	103	93	84
13	120	116	189	130	210	215	183	150	116	103	91	84
14	120	118	175	130	200	193	182	146	115	105	91	83
15	120	115	160	130	200	185	177	148	115	101	89	83
16	120	117	140	130	200	180	172	146	113	112	88	83
17	140	234	150	130	190	179	171	145	112	126	87	88
18	140	235	170	140	190	177	169	143	112	104	85	87
19	130	155	190	150	180	174	165	141	112	103	90	92
20	120	142	238	170	180	171	166	141	112	101	88	99
21	120	131	208	200	170	165	168	139	110	111	87	92
22	120	130	186	180	170	163	166	138	109	105	87	99
23	120	133	178	160	160	168	203	137	109	101	112	136
24	120	133	179	150	160	172	190	135	108	100	98	95
25	120	133	209	130	160	253	169	137	110	100	89	88
26	120	135	186	130	170	212	163	136	106	98	87	87
27	130	133	150	120	170	181	188	139	105	97	87	86
28	130	175	170	120	180	197	193	138	106	96	88	86
29	120	333	180	130	210	339	168	137	109	94	87	87
30	120	215	170	230	---	270	160	133	109	94	86	87
31	120	---	170	540	---	225	---	132	---	94	86	---
TOTAL	3790	4359	5667	4920	6460	6587	5877	4488	3433	3214	2831	2657
MEAN	122	145	183	159	223	212	196	145	114	104	91.3	88.6
MAX	140	333	299	540	500	339	345	172	130	126	112	136
MIN	120	114	140	120	160	163	160	132	105	94	85	83
CFSM	.55	.66	.83	.72	1.01	.96	.89	.66	.52	.47	.41	.40
IN.	.64	.73	.95	.83	1.09	1.11	.99	.76	.58	.54	.48	.45

WTR YR 1988 TOTAL 54283 MEAN 148 MAX 540 MIN 83 CFSM .67 IN. 9.14

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: Ice periods listed in rating table below. 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.

AVERAGE DISCHARGE.--49 years, 727 ft³/s, 9.55 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)
Feb. 3	0100	(a) *1,940	(a) *11.38				

(a) Backwater from ice.

Minimum daily discharge, 289 ft³/s, Sept. 16.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Dec. 16-21 and Dec. 30 to Mar. 5.)

3.3	288	7.0	1,100
4.0	396	9.0	1,600
5.0	626	11.0	2,140
6.0	856		

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	542	519	893	620	1700	1200	1040	730	478	378	322	306
2	531	531	784	600	1900	1300	968	703	474	376	327	303
3	522	552	724	560	1900	1200	1010	682	469	370	305	300
4	521	548	687	540	1700	1100	1130	671	462	367	309	300
5	522	527	662	520	1500	1000	1110	654	457	361	326	304
6	527	507	625	520	1200	961	1040	644	454	355	337	302
7	526	509	619	500	1100	954	1000	637	449	351	337	307
8	521	517	635	500	1000	1030	958	632	444	347	327	304
9	516	521	733	490	960	1150	900	659	435	341	326	299
10	514	519	862	490	940	1170	855	706	431	351	329	298
11	508	504	932	480	920	1090	832	715	425	371	325	296
12	508	494	851	480	900	1020	825	671	423	378	322	294
13	508	496	801	480	880	992	808	635	421	370	314	292
14	512	500	755	470	860	952	797	618	415	368	306	291
15	511	499	712	470	840	896	785	599	401	370	310	290
16	512	498	660	470	820	852	769	585	404	374	307	289
17	524	575	580	470	800	841	752	584	395	372	299	297
18	553	741	580	500	780	825	739	584	397	418	298	313
19	565	823	680	520	760	810	730	572	401	404	293	329
20	542	713	840	600	760	795	723	562	404	367	297	332
21	524	620	920	740	760	781	726	553	399	363	301	358
22	522	570	905	760	740	767	731	546	392	369	300	377
23	523	559	847	720	740	758	798	539	384	366	316	388
24	527	567	802	660	740	764	848	534	379	350	351	462
25	531	569	816	620	720	815	832	527	378	350	367	453
26	535	570	833	580	720	907	780	515	376	355	325	365
27	537	569	802	560	760	922	777	512	371	338	314	329
28	548	605	700	540	820	880	813	508	366	335	311	325
29	544	807	552	540	940	956	830	504	368	330	313	322
30	533	950	620	600	---	1120	780	497	392	329	310	323
31	522	---	660	1300	---	1150	---	486	---	320	308	---
TOTAL	16331	17479	23072	17900	29160	29958	25686	18564	12444	11194	9832	9748
MEAN	527	583	744	577	1006	966	856	599	415	361	317	325
MAX	565	950	932	1300	1900	1300	1130	730	478	418	367	462
MIN	508	494	552	470	720	758	723	486	366	320	293	289
CFSM	.51	.56	.72	.56	.97	.93	.83	.58	.40	.35	.31	.31
IN.	.59	.63	.83	.64	1.05	1.08	.92	.67	.45	.40	.35	.35

CAL YR 1987 TOTAL 240072 MEAN 658 MAX 1230 MIN 422 CFSM .64 IN. 8.64
WTR YR 1988 TOTAL 221368 MEAN 605 MAX 1900 MIN 289 CFSM .58 IN. 7.96

ROCK RIVER BASIN

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.--74 years, 351 ft³/s, 9.11 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)
Feb. 2	1200	*1,920	*5.27	No other peak greater than base discharge.			
Minimum discharge, 152 ft ³ /s, Sept. 15.							

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Dec. 17-20, Dec. 29 to Jan. 31, and Feb. 4 to Mar. 3.)

0.10	137	3.0	944
1.0	328	4.0	1,320
2.0	612	6.0	2,320

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	293	293	697	330	1710	560	494	405	263	218	168	171
2	300	302	579	400	1860	560	472	386	260	213	163	168
3	281	311	474	360	1630	520	713	358	258	208	166	166
4	277	310	430	330	1200	491	898	363	257	204	168	165
5	279	302	399	320	1000	457	926	357	254	199	183	169
6	277	292	380	310	900	443	828	354	251	198	192	170
7	277	288	375	300	820	455	770	346	249	193	186	169
8	273	293	389	290	760	508	673	341	246	186	186	168
9	274	298	489	290	700	578	559	374	239	184	186	165
10	274	296	645	280	660	555	503	404	237	187	184	161
11	273	291	717	280	620	509	471	390	240	203	186	156
12	283	293	649	280	600	494	453	367	237	200	183	158
13	294	292	529	280	580	485	440	350	235	202	178	159
14	277	289	470	270	560	459	404	338	232	196	175	155
15	289	288	415	270	540	431	414	336	229	197	173	154
16	278	292	375	270	520	414	406	331	225	188	174	156
17	282	340	400	280	520	407	400	324	221	191	176	161
18	293	427	410	290	500	406	389	320	219	238	171	166
19	292	478	420	320	500	404	381	319	223	221	170	211
20	285	418	500	350	480	397	380	316	214	207	175	209
21	282	361	672	410	460	375	381	308	206	205	178	198
22	278	337	587	450	420	381	383	304	213	203	176	187
23	279	331	537	500	420	391	436	302	208	208	188	204
24	284	330	499	460	420	396	530	295	206	196	205	225
25	290	336	518	440	420	428	518	289	208	195	203	216
26	296	349	548	410	420	471	441	277	206	194	188	204
27	300	358	511	390	450	458	468	277	201	189	182	187
28	313	386	471	380	480	450	471	278	199	187	181	180
29	303	537	460	390	520	531	463	276	206	187	180	184
30	296	672	440	450	---	597	433	273	217	182	177	195
31	290	---	380	1000	---	573	---	268	---	180	173	---
TOTAL	8862	10390	15365	11380	20670	14584	15498	10226	6859	6159	5574	5337
MEAN	286	346	496	367	713	470	517	330	229	199	180	178
MAX	313	672	717	1000	1860	597	926	405	263	238	205	225
MIN	273	288	375	270	420	375	380	268	199	180	163	154
CFSM	.55	.66	.95	.70	1.36	.90	.99	.63	.44	.38	.34	.34
IN.	.63	.74	1.09	.81	1.47	1.04	1.10	.73	.49	.44	.40	.38

CAL YR 1987 TOTAL 136076 MEAN 373 MAX 902 MIN 230 CFSM .71 IN. 9.68
WTR YR 1988 TOTAL 130904 MEAN 358 MAX 1860 MIN 154 CFSM .68 IN. 9.31

ROCK RIVER BASIN

05437500- ROCK RIVER AT ROCKTON, IL

LOCATION.--Lat 42°26'55", long 89°04'11", in SW1/4 NE1/4 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. 24 to Feb. 26. Water-discharge records good 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.--56 years (water years 1904-5, 1915-19, 1940-88), 4,101 ft³/s, 8.75 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, 12,000 ft³/s, Feb. 4; maximum gage height, 12.05 ft, Feb. 9 (ice jam); minimum daily discharge, 1,040 ft³/s, Sept. 8, 11, 15.

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	4180	3190	5130	5300	8400	5630	6530	5580	2180	1500	1160	1110
2	3780	3200	5210	5100	8800	6010	6420	5420	2140	1360	1090	1060
3	3990	3190	5100	5000	11000	6050	7120	5120	2170	1360	1120	1110
4	3860	3360	4850	4850	12000	6130	7560	5030	2010	1360	1080	1140
5	3640	3440	4570	4700	11000	5750	7390	4830	1950	1330	1160	1130
6	3470	3270	4460	4450	10000	5350	8230	4780	1870	1330	1130	1100
7	3270	3460	4570	4300	9000	5200	8980	4510	1880	1280	1110	1100
8	3500	3410	4820	4200	8500	5330	8600	4270	1860	1270	1170	1040
9	3480	3530	5030	4100	8000	5640	8220	4120	1900	1250	1540	1110
10	3400	3460	5310	4000	7500	5930	7740	3970	1680	1220	1320	1080
11	3300	3360	5700	3900	7200	6180	7420	4220	1580	1410	1320	1040
12	3080	3260	5940	3900	6900	6310	7080	4140	1580	1320	1270	1100
13	3070	3260	5860	3900	6700	6280	6810	3940	1610	1280	1180	1050
14	2910	3360	5940	3900	6500	6230	6640	3800	1560	1440	1150	1050
15	3130	3370	6100	3900	6500	6240	6620	3560	1480	1290	1170	1040
16	2760	3400	5290	3900	6450	6030	6350	3430	1780	1410	1120	1050
17	2440	3710	5030	4000	6200	5980	6010	3420	1550	1620	1190	1060
18	2960	3700	4730	4500	5800	5870	5760	3280	1530	1710	1140	1140
19	3020	3870	4800	5500	5400	5790	5670	3230	1440	1700	1440	1160
20	2900	3990	5540	8600	5100	5690	5470	3290	1510	1720	1270	1190
21	2840	4110	6010	10000	5000	5540	5480	3030	1420	1700	1180	1190
22	2990	4020	6480	9500	4950	5310	5490	3040	1430	1440	1170	1400
23	3040	3850	6690	9300	4800	5340	6040	3050	1410	1410	1260	1510
24	3080	3720	7000	9200	4700	5250	6000	2870	1440	1380	1270	1460
25	3020	3940	7300	8200	4700	5420	5850	2640	1400	1550	1230	1430
26	3050	4020	7500	7400	4650	5130	5650	2440	1360	1590	1210	1440
27	3120	3960	7000	6800	4680	5320	5920	2160	1400	1370	1180	1620
28	3160	4210	6500	6400	4940	5680	5780	1770	1310	1290	1230	1410
29	3180	4730	6100	6000	5080	6450	5680	1970	1820	1160	1150	1500
30	3160	4860	5800	5800	---	6670	5570	1970	1790	1190	1150	1340
31	3220	---	5500	7000	---	6640	---	2040	---	1180	1130	---
TOTAL	100000	110210	175860	177600	200450	180370	198080	110920	50040	43420	37290	36160
MEAN	3226	3674	5673	5729	6912	5818	6603	3578	1668	1401	1203	1205
MAX	4180	4860	7500	10000	12000	6670	8980	5580	2180	1720	1540	1620
MIN	2440	3190	4460	3900	4650	5130	5470	1770	1310	1160	1080	1040
CFSM	.51	.58	.89	.90	1.09	.91	1.04	.56	.26	.22	.19	.19
IN.	.58	.64	1.03	1.04	1.17	1.05	1.16	.65	.29	.25	.22	.21

CAL YR 1987 TOTAL 1542280 MEAN 4225 MAX 7890 MIN 2370 CFSM .66 IN. 9.02
WTR YR 1988 TOTAL 1420400 MEAN 3881 MAX 12000 MIN 1040 CFSM .61 IN. 8.30

ILLINOIS RIVER BASIN

05527800 DES PLAINES RIVER AT RUSSELL, IL

LOCATION.--Lat 42°29'22", long 87°55'32", in SE1/4 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. 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: Jan. 8-16 and Feb. 12-28. Water-discharge records good except those for estimated daily discharges, which are poor. Gage-height telemeter at station.

AVERAGE DISCHARGE.--21 years, 100 ft³/s, 11.04 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, 442 ft³/s, Apr. 8, gage height, 7.57 ft; maximum gage height, 8.07 ft, Feb. 2; no flow for many days.

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	46	30	125	236	360	203	194	68	4.4	1.1	.00	.00
2	37	31	124	218	403	209	205	58	3.8	1.2	.00	.00
3	32	33	116	189	384	203	247	49	3.7	1.3	.00	.00
4	29	32	108	166	355	189	301	43	3.6	1.2	.00	.12
5	30	30	99	144	318	171	310	39	3.5	1.1	.00	.20
6	23	28	90	124	296	158	328	35	3.8	1.2	.00	.10
7	20	27	102	107	265	152	407	32	3.9	1.2	.00	.13
8	19	28	163	90	221	162	438	30	3.4	1.0	.00	.09
9	19	28	198	74	179	178	431	34	2.7	1.0	.00	.04
10	19	27	225	62	154	177	402	49	2.3	1.2	.00	.22
11	18	27	247	59	141	167	365	48	1.7	1.2	.00	.80
12	26	26	262	68	129	162	322	42	.85	.94	.00	.80
13	30	14	260	62	120	152	302	28	1.0	1.1	.00	.44
14	31	7.8	251	64	108	127	248	18	1.3	1.2	.00	.60
15	29	10	243	60	112	93	210	15	.97	1.0	.28	.77
16	28	16	234	77	110	64	179	12	.72	1.1	3.5	.78
17	31	20	211	116	100	53	158	10	.86	1.2	4.1	.98
18	32	13	186	186	101	44	140	10	1.2	.83	3.4	1.0
19	31	16	167	227	106	38	123	8.8	1.4	.77	3.1	1.3
20	32	15	186	297	100	30	105	13	1.2	.65	2.5	1.7
21	31	12	219	356	92	21	86	6.8	1.1	.69	2.3	1.4
22	31	11	239	359	100	14	74	4.8	1.1	.67	2.1	2.4
23	28	13	255	355	110	21	78	4.6	1.2	.57	1.8	3.2
24	28	15	263	337	108	36	81	4.6	1.2	.46	1.2	2.3
25	31	25	282	311	103	45	77	3.6	1.2	.33	.73	1.7
26	32	51	293	286	110	43	66	3.1	.90	.07	.61	1.2
27	33	61	289	260	120	32	67	2.4	.84	.00	.70	.90
28	34	63	285	231	148	24	76	2.1	.89	.00	.54	.53
29	33	96	290	209	188	60	78	2.1	1.3	.00	.22	.61
30	33	115	268	231	---	135	78	3.9	1.1	.00	.03	1.6
31	31	---	246	301	---	177	---	4.7	---	.00	.00	---
TOTAL	907	920.8	6526	5862	5141	3340	6176	684.5	57.13	24.28	27.11	25.91
MEAN	29.3	30.7	211	189	177	108	206	22.1	1.90	.78	.87	.86
MAX	46	115	293	359	403	209	438	68	4.4	1.3	4.1	3.2
MIN	18	7.8	90	59	92	14	66	2.1	.72	.00	.00	.00
CFSM	.24	.25	1.71	1.54	1.44	.88	1.67	.18	.02	.01	.01	.01
IN.	.27	.28	1.97	1.77	1.55	1.01	1.87	.21	.02	.01	.01	.01

CAL YR 1987 TOTAL 29583.9 MEAN 81.1 MAX 421 MIN 1.2 CFSM .66 IN. 8.95
WTR YR 1988 TOTAL 29691.73 MEAN 81.1 MAX 438 MIN .00 CFSM .66 IN. 8.98

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: Ice periods listed in rating table below. Records good except for ice-affected periods, which are fair. There is occasional regulation from mill dam 1.0 mi upstream.

AVERAGE DISCHARGE.--25 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, 793 ft³/s, Feb. 1, gage height, 5.18 ft; minimum daily, 9.9 ft³/s, July 10.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Shifting-control method used July 4-7 and Sept. 1-30; stage-discharge relation affected by ice Dec. 17-19, Dec. 31 to Jan. 11, Jan. 26-28, and Feb. 4-17.)

1.7	6.0	2.4	64
1.8	10	3.0	166
2.0	21	4.0	411
2.2	40	5.0	729

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	103	71	164	120	697	125	192	111	30	19	15	21
2	84	77	152	110	542	137	193	98	30	15	16	21
3	72	78	137	94	466	129	254	77	31	14	16	25
4	65	79	109	82	340	107	276	71	28	13	19	47
5	64	71	97	74	220	101	265	68	27	15	16	66
6	86	66	88	68	160	105	338	64	30	15	14	38
7	65	66	111	64	120	124	429	59	29	13	13	28
8	59	64	197	60	110	161	376	56	24	14	35	24
9	55	64	268	58	100	191	299	59	23	13	32	23
10	53	60	273	56	98	171	253	65	23	9.9	27	19
11	50	54	250	58	96	153	220	62	22	12	22	17
12	60	96	231	60	94	156	187	62	22	14	20	19
13	59	27	207	61	94	152	155	60	23	15	23	20
14	30	41	185	60	92	127	135	52	24	14	16	20
15	70	43	153	55	92	109	121	49	23	12	28	19
16	61	52	124	55	90	104	111	47	22	14	22	19
17	56	79	120	79	90	99	104	47	20	15	21	21
18	61	80	120	133	91	96	81	48	18	15	30	18
19	77	73	130	217	91	98	82	47	18	14	26	30
20	58	67	255	501	89	94	83	45	20	13	21	32
21	55	56	292	474	81	87	80	43	21	13	16	27
22	57	54	283	435	86	83	78	40	20	14	17	88
23	57	59	276	343	84	91	133	41	20	15	61	114
24	56	60	277	238	82	99	144	39	20	14	40	70
25	58	98	301	176	75	105	134	37	21	15	25	43
26	62	113	284	150	79	114	127	36	16	17	24	34
27	76	101	248	130	92	105	147	35	18	16	21	31
28	77	123	226	120	101	115	158	29	23	16	17	27
29	68	175	191	117	112	172	144	29	27	16	19	25
30	30	170	174	270	---	198	126	28	21	15	21	25
31	53	---	140	646	---	207	---	28	---	13	20	---
TOTAL	1937	2317	6063	5164	4564	3915	5425	1632	694	442.9	713	1011
MEAN	62.5	77.2	196	167	157	126	181	52.6	23.1	14.3	23.0	33.7
MAX	103	175	301	646	697	207	429	111	31	19	61	114
MIN	30	27	88	55	75	83	78	28	16	9.9	13	17
CFSM	.50	.61	1.55	1.32	1.25	1.00	1.44	.42	.18	.11	.18	.27
IN.	.57	.68	1.79	1.52	1.35	1.16	1.60	.48	.20	.13	.21	.30

CAL YR 1987 TOTAL 39849 MEAN 109 MAX 454 MIN 27 CFSM .87 IN. 11.76
WTR YR 1988 TOTAL 33877.9 MEAN 92.6 MAX 697 MIN 9.9 CFSM .73 IN. 10.00

ILLINOIS RIVER BASIN

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: Oct. 1-6 and ice effect, Dec. 17. Records good except for estimated daily discharges, which are fair. Discharge affected by manipulation of gates at dams 800 ft and 11.4 mi upstream.

AVERAGE DISCHARGE.--15 years, 58.7 ft³/s, 10.76 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, 165 ft³/s, Feb. 2, gage height, 2.82 ft; minimum daily, 10 ft³/s, June 25 and July 15.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Shifting-control method used July 5 to Aug. 10.)

1.8	8	2.4	64
2.0	15	2.6	103
2.2	34	2.8	151

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	32	42	54	64	115	57	102	76	16	14	13	19
2	32	43	76	63	144	55	109	43	14	14	13	19
3	30	44	90	63	150	54	108	15	15	13	12	21
4	28	44	76	63	133	55	106	20	16	12	12	25
5	27	44	60	62	116	57	104	26	17	13	14	26
6	26	41	57	59	107	58	113	40	20	13	14	51
7	26	41	58	55	101	66	113	43	19	12	14	85
8	26	41	56	50	54	77	108	42	16	12	16	100
9	27	42	87	46	35	76	103	40	18	12	20	99
10	26	42	103	45	39	74	98	42	18	11	19	93
11	26	43	105	41	43	73	92	46	17	12	23	84
12	18	43	102	40	46	73	90	47	15	12	24	74
13	14	41	95	39	49	72	87	44	16	11	23	64
14	17	40	80	39	51	72	81	42	15	11	21	54
15	19	40	75	40	54	69	50	42	15	10	20	45
16	21	40	77	41	55	68	38	37	14	11	27	37
17	25	45	76	41	56	67	40	39	14	12	29	34
18	27	47	76	43	55	66	38	39	13	13	25	29
19	29	61	75	48	52	65	39	38	12	13	27	29
20	32	65	83	66	51	63	40	35	11	15	26	31
21	46	60	86	78	51	61	41	30	11	16	25	29
22	48	58	71	110	51	60	41	28	12	15	24	36
23	45	46	67	115	50	62	48	28	13	16	31	44
24	44	38	71	107	52	60	50	29	12	16	29	47
25	43	40	74	99	52	60	54	29	10	17	27	50
26	43	41	75	91	54	60	72	28	11	16	24	50
27	44	44	76	84	55	59	97	27	11	15	22	48
28	43	71	75	81	57	60	91	26	12	14	22	39
29	43	98	74	63	57	69	85	25	15	14	21	35
30	44	63	73	50	---	78	80	23	15	13	20	34
31	42	---	71	69	---	82	---	21	---	13	20	---
TOTAL	993	1448	2374	1955	1985	2028	2318	1090	433	411	657	1431
MEAN	32.0	48.3	76.6	63.1	68.4	65.4	77.3	35.2	14.4	13.3	21.2	47.7
MAX	48	98	105	115	150	82	113	76	20	17	31	100
MIN	14	38	54	39	35	54	38	15	10	10	12	19
CFSM	.43	.65	1.03	.85	.92	.88	1.04	.47	.19	.18	.29	.64
IN.	.50	.73	1.19	.98	1.00	1.02	1.16	.55	.22	.21	.33	.72

CAL YR 1987 TOTAL 19221 MEAN 52.7 MAX 141 MIN 10 CFSM .71 IN. 9.65
WTR YR 1988 TOTAL 17123 MEAN 46.8 MAX 150 MIN 10 CFSM .63 IN. 8.60

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 read by Wendy Bennett. 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, 99.75 ft, Aug. 17, 1987; minimum observed, 97.44 ft, Jan. 28.

EXTREMES FOR CURRENT YEAR.--Maximum gage-height observed, 98.96 ft, Sept. 25; minimum observed, 98.32 ft, July 14-16, Aug. 3, 4.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	98.90	98.70	98.42	98.36	98.34
2	---	---	---	---	---	---	---	98.88	98.68	98.42	98.34	98.34
3	---	---	---	---	---	---	---	98.88	98.66	98.42	98.32	98.34
4	---	---	---	---	---	---	---	98.86	98.66	98.42	98.32	98.56
5	---	---	---	---	---	---	---	98.85	98.66	98.40	98.36	98.62
6	---	---	---	---	---	---	---	98.84	98.64	98.40	98.36	98.62
7	---	---	---	---	---	---	---	98.84	98.62	98.39	98.34	98.62
8	---	---	---	---	---	---	---	98.86	98.61	98.38	98.34	98.62
9	---	---	---	---	---	---	---	98.84	98.60	98.36	98.41	98.64
10	---	---	---	---	---	---	---	98.82	98.60	98.36	98.42	98.62
11	---	---	---	---	---	---	---	98.82	98.59	98.36	98.42	98.62
12	---	---	---	---	---	---	---	98.86	98.58	98.34	98.44	98.62
13	---	---	---	---	---	---	---	98.82	98.58	98.34	98.46	98.62
14	---	---	---	---	---	---	---	98.82	98.56	98.32	98.46	98.64
15	---	---	---	---	---	---	---	98.84	98.56	98.32	98.46	98.66
16	---	---	---	---	---	---	---	98.84	98.56	98.32	98.44	98.66
17	---	---	---	---	---	---	---	98.82	98.54	98.36	98.44	98.66
18	---	---	---	---	---	---	---	98.80	98.54	98.42	98.44	98.68
19	---	---	---	---	---	---	---	98.78	98.52	98.42	98.44	98.68
20	---	---	---	---	---	---	---	98.76	98.52	98.38	98.42	98.70
21	---	---	---	---	---	---	---	98.76	98.52	98.42	98.42	98.67
22	---	---	---	---	---	---	---	98.74	98.50	98.42	98.42	98.70
23	---	---	---	---	---	---	---	98.74	98.48	98.40	98.42	98.82
24	---	---	---	---	---	---	---	98.74	98.46	98.40	98.42	98.92
25	---	---	---	---	---	---	---	98.74	98.44	98.40	98.42	98.96
26	---	---	---	---	---	---	---	98.74	98.42	98.40	98.42	98.94
27	---	---	---	98.77	---	---	---	98.74	98.42	98.38	98.40	98.92
28	---	---	---	---	---	---	---	98.72	98.42	98.36	98.40	98.92
29	---	---	---	---	---	---	---	98.72	98.44	98.36	98.38	98.90
30	---	---	---	---	---	---	---	98.70	98.42	98.36	98.38	98.90
31	---	---	---	---	---	---	---	98.72	---	98.36	98.36	---
MEAN	---	---	---	---	---	---	---	98.80	98.55	98.38	98.40	98.68
MAX	---	---	---	---	---	---	---	98.90	98.70	98.42	98.46	98.96
MIN	---	---	---	---	---	---	---	98.70	98.42	98.32	98.32	98.34

ILLINOIS RIVER BASIN

425425088083500 LITTLE MUSKEGO LAKE AT MUSKEGO, WI--CONTINUED

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 17, 1986 to current year.

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 19, 1987 TO APRIL 13, 1988
(Milligrams per liter unless otherwise indicated)

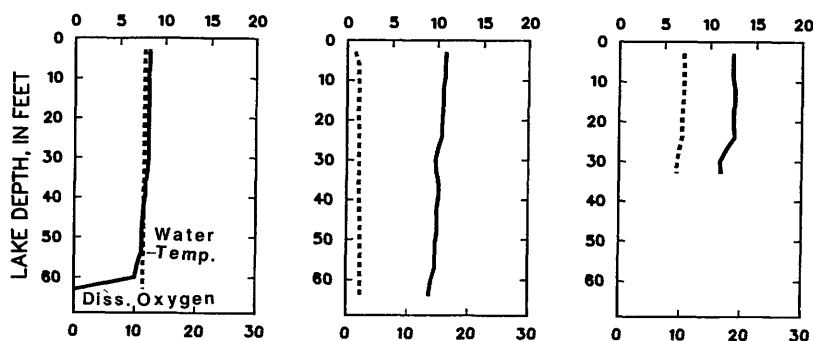
	Oct. 19		Jan. 27			Apr. 13	
Depth of sample (ft)	1.5	60.0	1.5	3.0	64.0	1.5	34.0
Specific conductance ($\mu\text{S}/\text{cm}$)	612	617	629	---	750	648	650
pH (units)	7.90	8.10	6.90	6.90	7.50	8.40	8.30
Water temperature ($^{\circ}\text{C}$)	11.5	11.5	1.5	1.5	2.5	10.5	9.5
Color (Pt-Co. scale)	---	---	---	---	---	15	15
Turbidity (NTU)	---	---	---	---	---	3.2	7.7
Secchi-disc (meters)	---	1.4	---	0.4	---	---	0.9
Dissolved oxygen	8.3	6.7	10.9	10.9	9.2	12.5	11.2
Hardness, total (as CaCO_3)	---	---	---	---	---	260	260
Calcium, dissolved (Ca)	---	---	---	---	---	51	51
Magnesium, Dissolved (Mg)	---	---	---	---	---	31	31
Sodium, dissolved (Na)	---	---	---	---	---	32	32
Potassium, dissolved (K)	---	---	---	---	---	2.5	2.5
Alkalinity, total (as CaCO_3)	---	---	---	---	---	210	212
Sulfate, dissolved (SO_4)	---	---	---	---	---	39	39
Fluoride, total (as F)	---	---	---	---	---	0.1	0.1
Chloride, dissolved (Cl)	---	---	---	---	---	61	60
Silica, dissolved (SiO_2)	---	---	---	---	---	3.7	3.7
Solids, dissolved, at 180°C	---	---	---	---	---	368	372
Nitrogen, nitrite plus nitrate, diss (as N)	---	---	---	---	---	0.28	0.28
Nitrogen, ammonia, diss (as N)	---	---	---	---	---	<0.02	<0.02
Nitrogen, ammonia plus organic, total (as N)	---	---	---	---	---	0.80	1.0
Total phosphorus (as P)	0.046	0.071	0.090	---	0.121	0.041	0.046
Phosphorus, ortho, diss (as P)	0.013	0.039	0.018	---	0.093	0.005	0.005
Iron, dissolved (Fe) $\mu\text{g}/\text{L}$	---	---	---	---	---	<100	<100
Manganese, dissolved (Mn) $\mu\text{g}/\text{L}$	---	---	---	---	---	<40	<40
Chlorophyll a, phyto. ($\mu\text{g}/\text{L}$)	17	---	---	42	---	29	---

10-19-87

1-27-88

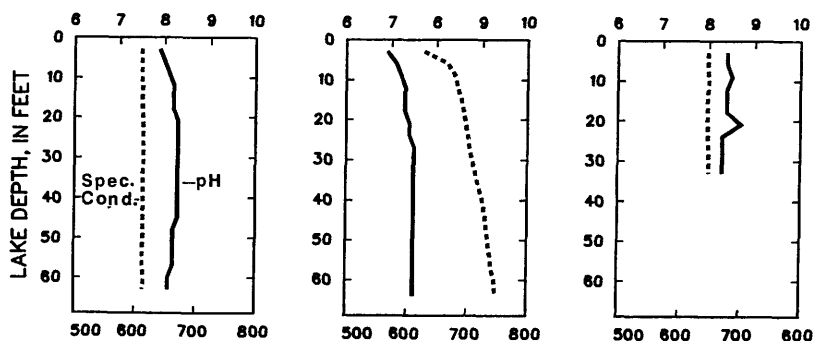
4-13-88

DISSOLVED OXYGEN, IN MILLIGRAMS PER LITER



WATER TEMPERATURE, IN DEGREES CELSIUS

PH, IN STANDARD UNITS



SPECIFIC CONDUCTANCE, IN MICROSIEMENS PER CENTIMETER

ILLINOIS RIVER BASIN

425425088083500 LITTLE MUSKEGO LAKE AT MUSKEGO, WI--CONTINUED

WATER-QUALITY DATA, MAY 12 TO JUNE 8, 1988
(Milligrams per liter unless otherwise indicated)

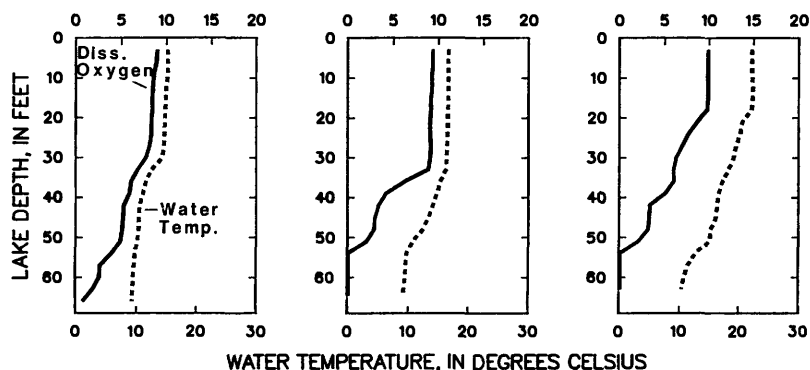
	May 12			May 25			June 08		
Depth of sample (ft)	1.5	33.0	65.0	1.5	48.0	64.0	1.5	51.0	62.0
Specific conductance ($\mu\text{S}/\text{cm}$)	654	667	668	640	663	675	622	658	670
pH (units)	8.50	8.30	7.80	8.60	7.90	7.80	8.70	7.90	7.80
Water temperature ($^{\circ}\text{C}$)	15.5	12.5	9.5	16.5	12.5	9.5	22.5	15.0	10.5
Secchi-disc (meters)	1.6			1.6			1.1		
Dissolved oxygen	9.0	6.8	0.8	9.4	2.9	0.1	9.9	2.1	0.1
Total phosphorus (as P)	0.012	0.008	0.053	0.013	0.024	0.121	0.011	0.039	0.018
Phosphorus, ortho, diss (as P)	0.002	0.002	0.054	0.007	0.020	---	0.003	0.039	0.021
Chlorophyll a, phyto. ($\mu\text{g}/\text{L}$)	6	---	---	11	---	---	11	---	---

5-12-88

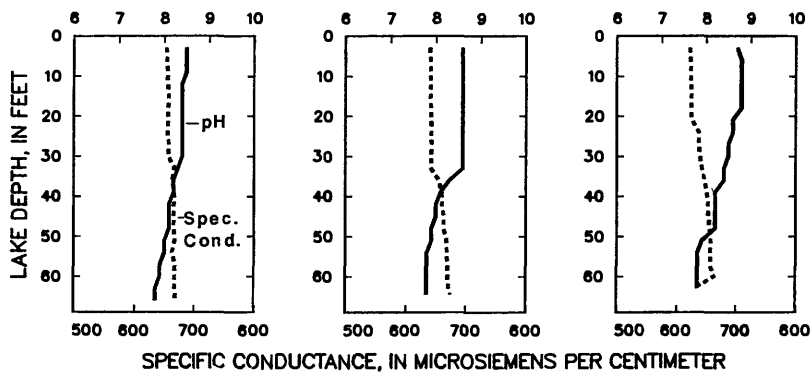
5-25-88

6-8-88

DISSOLVED OXYGEN, IN MILLIGRAMS PER LITER



PH, IN STANDARD UNITS



SPECIFIC CONDUCTANCE, IN MICROSIEMENS PER CENTIMETER

WATER-QUALITY DATA, JUNE 21 TO AUGUST 9, 1988
(Milligrams per liter unless otherwise indicated)

		June 21			July 07			July 20			Aug. 09		
Depth of sample (ft)	1.5	33.0	61.0		1.5	54.0	60.0	1.5	57.0	64.0	1.5	57.0	65.0
Specific conductance ($\mu\text{S}/\text{cm}$)	625	645	668		624	645	653	615	634	650	615	634	655
pH (units)	8.60	8.10	7.70		8.60	7.70	7.60	8.50	7.60	7.50	8.40	7.40	7.20
Water temperature ($^{\circ}\text{C}$)	25.0	20.5	15.0		25.0	19.0	17.0	25.5	20.5	17.5	26.5	21.5	19.0
Secchi-disc (meters)	1.3				1.4			0.9			1.5		
Dissolved oxygen	9.5	4.3	0.1		10.0	0	0	8.0	0.1	0.1	7.4	0	0
Total phosphorus (as P)	0.014	0.022	0.031		0.028	0.053	0.062	0.020	0.100	0.290	0.041	0.143	0.270
Phosphorus, ortho, diss (as P)	0.006	0.035	0.049		0.008	0.064	0.071	0.004	0.082	0.240	0.005	0.123	0.240
Chlorophyll a, phyto. ($\mu\text{g}/\text{L}$)	17	---	---		11	---	---	15	---	---	23	---	---

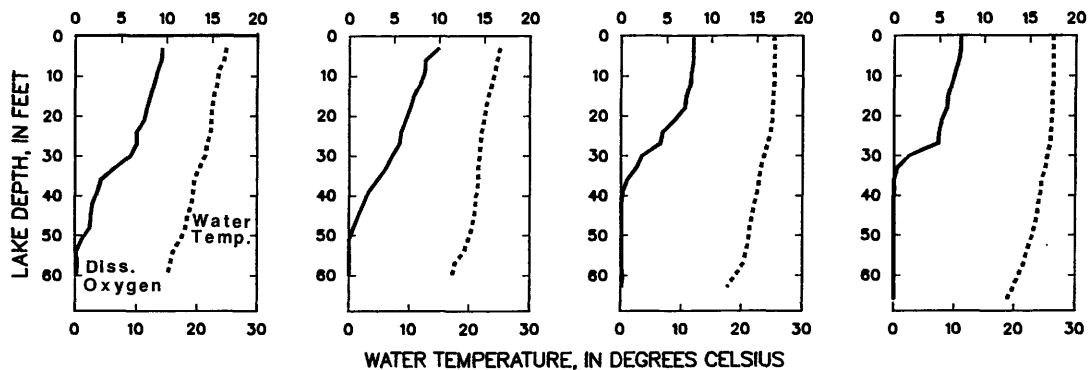
6-21-88

7-7-88

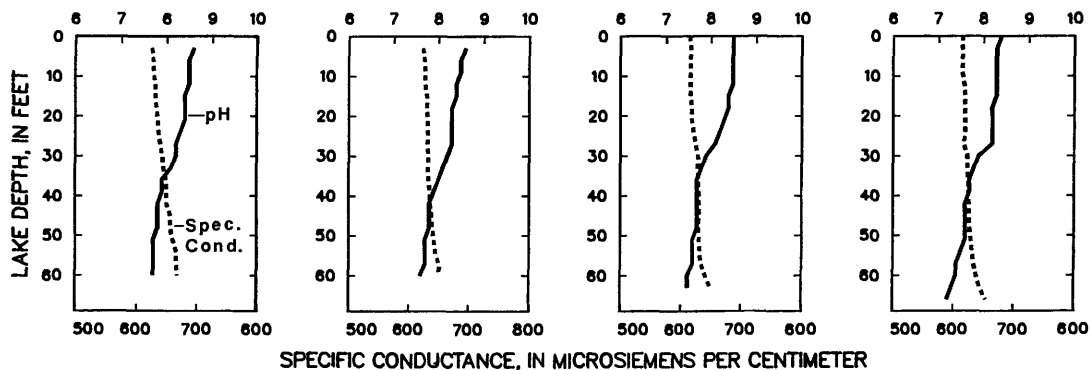
7-20-88

8-9-88

DISSOLVED OXYGEN, IN MILLIGRAMS PER LITER



PH, IN STANDARD UNITS



ILLINOIS RIVER BASIN

425425088083500 LITTLE MUSKEGO LAKE AT MUSKEGO, WI--CONTINUED

WATER-QUALITY DATA, AUGUST 22 TO SEPTEMBER 21, 1988
(Milligrams per liter unless otherwise indicated)

	Aug. 22			Aug. 30		Sep. 07		Sep. 21	
Depth of sample (ft)	1.5	57.0	60.0	1.5	58.0	1.5	66.0	1.5	66.0
Specific conductance ($\mu\text{S}/\text{cm}$)	616	630	634	624	622	627	626	617	611
pH (units)	8.20	7.50	7.40	8.10	8.10	8.10	8.10	8.20	8.20
Water temperature ($^{\circ}\text{C}$)	25.5	23.0	22.0	22.5	22.0	21.0	20.0	19.0	19.0
Secchi-disc (meters)	1.1			1.2		1.5		1.3	
Dissolved oxygen	5.6	0	0	6.8	5.5	7.7	6.8	7.2	6.8
Total phosphorus (as P)	0.038	0.150	0.170	0.039	0.060	0.035	0.034	0.041	0.040
Phosphorus, ortho, diss (as P)	0.004	0.139	0.142	0.004	0.004	0.011	0.012	0.005	0.008
Chlorophyll a, phyto. ($\mu\text{g}/\text{L}$)	23	---	---	23	---	12	---	23	---

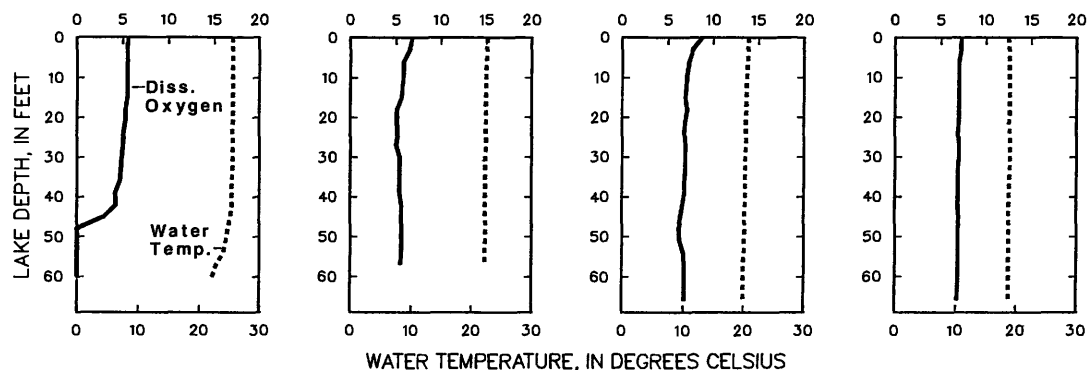
8-22-88

8-30-88

9-7-88

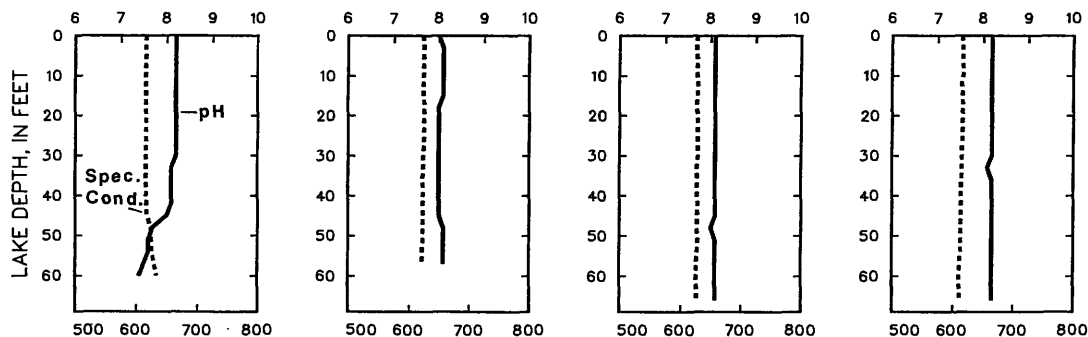
9-21-88

DISSOLVED OXYGEN, IN MILLIGRAMS PER LITER



WATER TEMPERATURE, IN DEGREES CELSIUS

PH, IN STANDARD UNITS



SPECIFIC CONDUCTANCE, IN MICROSIEMENS PER CENTIMETER

ILLINOIS RIVER BASIN

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 16 to September 30, 1988.

REMARKS.--Lake ice-covered during Feb. 16 and Mar. 9 sampling.

WATER-QUALITY DATA, FEBRUARY 16 TO APRIL 14, 1988
(Milligrams per liter unless otherwise indicated)

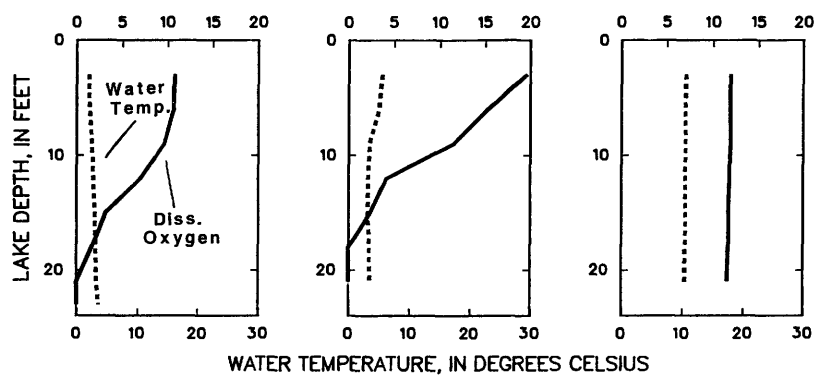
	Feb. 16		Mar. '09		Apr. 14	
Depth of sample (ft)	1.5	22	1.5	21	1.5	22
Specific conductance ($\mu\text{S}/\text{cm}$)	586	728	529	684	553	553
pH (units)	7.80	7.40	8.10	7.20	8.50	8.40
Water temperature ($^{\circ}\text{C}$)	2.0	3.5	5.5	3.5	10.5	10.5
Secchi-disc (meters)		0.8		1.0		0.7
Dissolved oxygen	10.8	0	19.6	0	11.9	11.6
Total phosphorus (as P)	0.111	0.320	0.056	0.183	0.067	0.061
Phosphorus, ortho, diss (as P)	0.063	0.265	<0.001	0.158	<0.002	<0.002
Chlorophyll a, phyto. ($\mu\text{g}/\text{L}$)	15	---	56	---	40	---

2-16-88

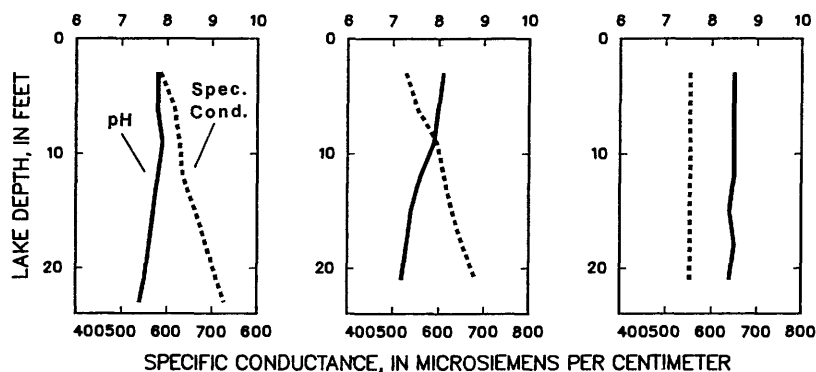
3-9-88

4-14-88

DISSOLVED OXYGEN, IN MILLIGRAMS PER LITER



PH, IN STANDARD UNITS



ILLINOIS RIVER BASIN

425344088070100 BIG MUSKEGO LAKE, BASS BAY, NEAR MUSKEGO, WI--CONTINUED

WATER-QUALITY DATA, JUNE 15 TO AUGUST 24, 1988
(Milligrams per liter unless otherwise indicated)

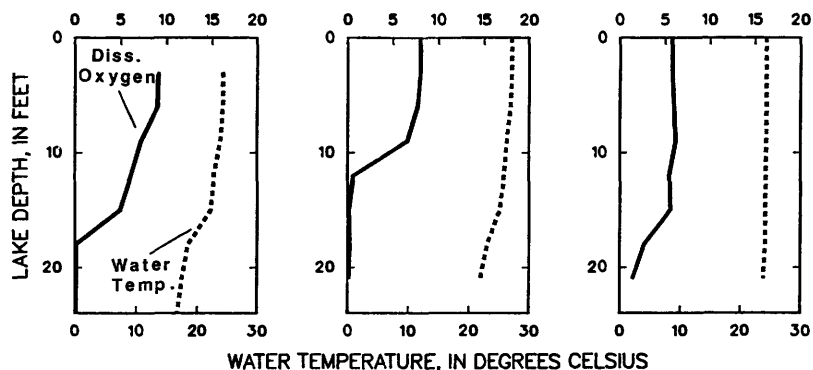
	June 15		July 20		Aug. 24	
Depth of sample (ft)	1.5	23	1.5	22	1.5	21
Specific conductance ($\mu\text{S}/\text{cm}$)	533	602	533	601	542	565
pH (units)	8.50	7.30	8.40	7.10	7.80	7.30
Water temperature ($^{\circ}\text{C}$)	24.5	17.0	27.0	22.0	24.5	24.0
Secchi-disc (meters)	0.7		0.7		0.7	
Dissolved oxygen	9.1	0.1	8.0	0.1	5.8	1.4
Total phosphorus (as P)	0.029	0.390	0.019	0.330	0.049	0.140
Phosphorus, ortho, diss (as P)	---	0.222	---	0.240	---	0.015
Chlorophyll a, phyto. ($\mu\text{g}/\text{L}$)	35	---	19	---	30	---

6-15-88

7-20-88

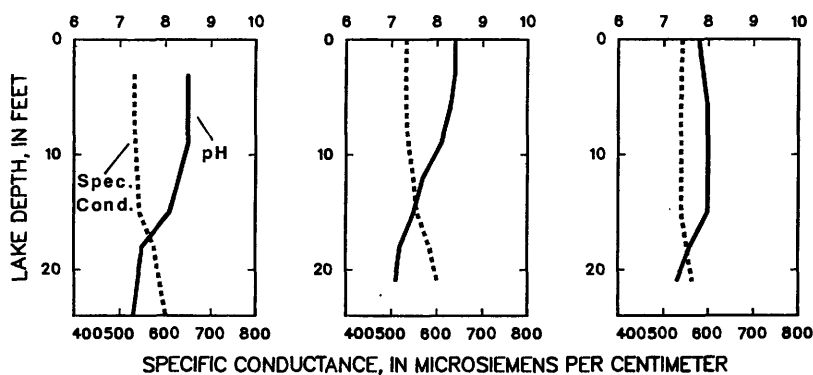
8-24-88

DISSOLVED OXYGEN, IN MILLIGRAMS PER LITER



WATER TEMPERATURE, IN DEGREES CELSIUS

PH, IN STANDARD UNITS



SPECIFIC CONDUCTANCE, IN MICROSIEMENS PER CENTIMETER

ILLINOIS RIVER BASIN

425301088061300 BIG MUSKEGO LAKE, NORTH SITE, NEAR MUSKEGO, WI

LOCATION.--Lat 42°53'01", long 88°06'13", in SE 1/4 NW 1/4 sec.23, T.5 N., R.20 E., Waukesha County, Hydrologic Unit 07120006, near Muskego.

DRAINAGE AREA.--33.9 mi².

PERIOD OF RECORD.--February 16 to September 30, 1988.

REMARKS.--Lake sampled at north end of lake at a depth of about 3 ft. Lake ice-covered during February 16 and March 9 sampling. Water-quality analyses by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, FEBRUARY 16 TO AUGUST 24, 1988
(Milligrams per liter unless otherwise indicated)

	Feb. 16		Mar. 09		Apr. 14		June 15		July 20		Aug. 24
Depth of sample (ft)	0.5	2.7	0.5	2.0	0.5	2.5	0.5	2.5	0.5	1.0	0.5
Specific conductance (μS/cm)	579	604	417	497	500	500	500	499	600	600	585
pH (units)	7.30	7.70	8.50	8.40	8.40	8.40	9.20	9.20	8.60	8.60	9.10
Water temperature (°C)	0.0	1.5	2.5	4.5	11.0	11.0	26.0	26.0	26.5	26.5	20.0
Secchi-disc (meters)	0.3		0.7		0.5		0.2		0.2		0.1
Dissolved oxygen	18.2	16.5	21.0	23.1	9.9	9.9	10.8	10.8	8.8	8.8	9.6
Total phosphorus (as P)	0.163	0.134	0.038	0.042	0.059	0.103	0.230	0.240	0.230	0.180	0.330
Phosphorus, ortho, diss (as P)	0.003	0.002	<0.001	<0.001	<0.002	<0.002	0.004	0.004	0.008	0.007	0.008
Chlorophyll a, phyto. (μg/L)	290	---	20	---	31	---	46	---	81	---	68

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 September 30, 1988.

REMARKS.--Lake sampled at south end of lake at a depth of about 3 ft. Lake ice-covered during February 16 and March 9 sampling. Water-quality analyses by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, FEBRUARY 16 TO AUGUST 24, 1989
(Milligrams per liter unless otherwise indicated)

	Feb. 16		Mar. 09		Apr. 14		June 15		July 20		Aug. 24
Depth of sample (ft)	0.5	2.8	0.5	2.0	0.5	2.0	0.5	2.0	0.5	1.0	0.5
Specific conductance (μS/cm)	592	638	200	507	497	497	---	---	---	---	594
pH (units)	7.40	7.40	7.40	7.20	8.40	8.50	9.20	9.20	9.00	9.00	9.10
Water temperature (°C)	0.5	2.0	0.5	3.0	10.5	11.0	26.5	26.5	28.0	28.0	23.5
Color (Pt-Co. scale)	---	---	---	---	40	---	---	---	---	---	---
Turbidity (NTU)	---	---	---	---	9.1	---	---	---	---	---	---
Secchi-disc (meters)	0.4		0.8		0.4		0.2		0.1		0.1
Dissolved oxygen	16.7	9.9	6.4	12.8	10.2	10.3	11.5	11.5	12.1	12.1	10.0
Hardness, total (as CaCO ₃)	---	---	---	---	200	---	---	---	---	---	---
Calcium, dissolved (Ca)	---	---	---	---	42	---	---	---	---	---	---
Magnesium, Dissolved (Mg)	---	---	---	---	23	---	---	---	---	---	---
Sodium, dissolved (Na)	---	---	---	---	18	---	---	---	---	---	---
Potassium, dissolved (K)	---	---	---	---	2.7	---	---	---	---	---	---
Alkalinity, total (as CaCO ₃)	---	---	---	---	170	---	---	---	---	---	---
Sulfate, dissolved (SO ₄)	---	---	---	---	34	---	---	---	---	---	---
Fluoride, total (as F)	---	---	---	---	0.1	---	---	---	---	---	---
Chloride, dissolved (Cl)	---	---	---	---	33	---	---	---	---	---	---
Silica, dissolved (SiO ₂)	---	---	---	---	<0.20	---	---	---	---	---	---
Solids, dissolved, at 180°C	---	---	---	---	288	---	---	---	---	---	---
Nitrogen, nitrite plus nitrate, diss (as N)	---	---	---	---	<0.02	---	---	---	---	---	---
Nitrogen, ammonia, diss (as N)	---	---	---	---	<0.02	---	---	---	---	---	---
Nitrogen, ammonia plus organic, total (as N)	---	---	---	---	1.7	---	---	---	---	---	---
Total phosphorus (as P)	0.106	0.081	0.065	0.057	0.073	0.079	0.220	0.220	0.250	0.270	0.300
Phosphorus, ortho, diss (as P)	0.004	0.003	0.002	0.002	0.003	<0.002	0.004	0.003	0.008	0.006	0.006
Iron, dissolved (Fe) μg/L	---	---	---	---	<100	---	---	---	---	---	---
Manganese, dissolved (Mn) μg/L	---	---	---	---	<40	---	---	---	---	---	---
Chlorophyll a, phyto. (μg/L)	190	---	18	---	36	---	*46	---	*81	---	*68

* Approximate value.

425109088075000 MUSKEGO LAKE OUTLET NEAR WIND LAKE, WI

LOCATION.--Lat 42°51'09", long 88°07'50", in SE 1/4 NE 1/4 sec.33, T.5 N., R.20 E., Waukesha County, Hydrologic Unit 07120006, on right bank 8 ft upstream of dam outlet of Muskego Lake, 700 ft north of Muskego Dam Drive, 2 mi northeast of Wind Lake.

DRAINAGE AREA.--28.3 mi².

LAKE-STAGE RECORDS

PERIOD OF RECORD.--October 1987 to September 1988.

GAGE.--Water-stage recorder. Datum of gage is 760.00 ft above National Geodetic Vertical Datum of 1929. Prior to Dec. 18, 1987, nonrecording gage at same site and datum.

REMARKS.--No estimated daily lake levels. Records good. Lake levels regulated by concrete dam with one 5-foot lift gate.

EXTREMES FOR CURRENT YEAR.--Maximum gage-height, 12.44 ft, Apr. 6; minimum, 9.81 ft, Sept. 20.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	11.71	---	11.96	12.26	11.80	11.93	---	11.36	10.81	10.28	10.11
2	11.81	11.68	11.79	---	12.27	11.81	11.90	11.77	11.40	10.76	10.24	10.09
3	---	11.58	11.79	---	12.25	11.81	11.94	11.75	11.35	10.74	10.26	10.18
4	---	11.64	11.81	---	12.21	11.82	11.93	11.74	11.29	10.73	10.23	10.36
5	---	11.66	11.88	---	12.18	11.82	11.94	11.72	11.28	10.70	10.29	10.35
6	---	11.65	11.89	---	12.15	11.81	12.17	11.71	11.26	10.68	10.26	10.26
7	---	11.67	11.87	---	12.11	11.81	12.02	11.68	11.24	10.65	10.22	10.20
8	---	---	11.83	---	12.06	11.84	11.99	11.56	11.39	10.63	10.27	10.16
9	---	11.68	11.82	---	12.03	11.85	11.94	11.57	11.25	10.60	10.39	10.23
10	---	11.68	11.87	---	12.01	11.84	---	11.68	11.16	10.61	10.38	10.23
11	11.66	11.61	11.91	---	12.01	11.86	---	11.65	11.12	10.61	10.35	10.21
12	11.64	11.60	11.91	---	11.99	11.87	---	11.62	11.09	10.61	10.33	10.17
13	---	---	11.91	---	11.97	11.88	---	11.67	11.06	10.49	10.27	10.22
14	11.64	---	11.91	11.78	11.94	11.87	---	11.63	11.02	10.54	10.27	10.21
15	11.65	---	11.91	---	11.92	11.86	---	11.59	11.05	10.52	10.35	10.20
16	11.66	11.62	---	---	11.90	11.84	---	11.65	11.06	10.58	10.30	10.14
17	11.68	---	11.93	---	11.88	11.83	---	11.64	11.04	10.58	10.27	10.12
18	11.69	11.70	11.88	---	11.86	11.83	---	11.61	10.97	10.57	10.39	10.15
19	11.71	---	11.90	---	11.83	11.82	---	11.59	10.89	10.57	10.39	10.07
20	11.67	---	11.99	---	11.83	11.82	---	11.58	10.95	10.57	10.31	10.03
21	11.68	---	12.00	12.07	11.82	11.79	11.67	11.57	10.90	10.56	10.27	10.22
22	11.68	---	12.01	12.09	11.81	11.74	11.74	11.62	10.93	10.55	10.21	10.30
23	11.70	---	12.01	12.09	11.80	11.73	11.79	11.63	10.92	10.51	10.27	10.45
24	11.73	---	12.01	12.09	11.79	11.78	11.77	11.65	10.80	10.48	10.25	10.42
25	11.69	---	12.02	12.07	11.79	11.73	11.72	11.47	10.84	10.48	10.22	10.42
26	11.67	---	12.02	12.03	11.78	11.76	11.81	11.39	10.90	10.48	10.21	10.38
27	11.69	---	12.01	12.01	11.79	11.81	---	11.38	10.79	10.40	10.19	10.45
28	11.70	---	12.00	11.98	11.80	11.78	---	11.40	10.80	10.38	10.20	10.54
29	11.70	---	12.01	11.96	11.80	11.87	---	11.39	10.93	10.32	10.20	10.42
30	11.69	---	11.99	11.98	---	11.89	---	11.38	10.88	10.39	10.15	10.40
31	---	---	11.96	12.16	---	11.92	---	11.37	---	10.33	10.09	---
MEAN	---	---	---	---	11.96	11.82	---	---	11.06	10.56	10.27	10.26
MAX	---	---	---	---	12.27	11.92	---	---	11.40	10.81	10.39	10.54
MIN	---	---	---	---	11.78	11.73	---	---	10.79	10.32	10.09	10.03

ILLINOIS RIVER BASIN

425109088075000 MUSKEGO LAKE OUTLET NEAR WIND LAKE, WI--CONTINUED

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1987 to September 1988.

GAGE.--Water-stage recorders for headwater and tailwater elevations, and concrete dam. Datum of gage is 760.00 ft above National Geodetic Vertical Datum of 1929. Prior to Dec. 18, 1987, nonrecording gage for headwater elevations, and concrete dam.

REMARKS.--Estimated daily discharges: Oct. 1, 3-10, 13, 31, Nov. 8, 13-15, 17, 19-30, Dec. 1, 16, Jan. 2-13, 15-20, Apr. 10-20, and Apr. 27 to May. 1 Records good except for periods of estimated record, which are fair. One 5-foot lift gate in Muskego Lake dam was in operation during the year; Apr. 6-13 discharge through gate was computed by a rating developed from the tailwater stage.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 115 ft³/s, Apr. 8; minimum, no flow on many days during current year.

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	22	14	27	49	102	26	44	23	.0	.0	.0	.0
2	27	11	24	45	104	26	41	22	.0	.0	.0	.0
3	20	3.2	24	42	101	27	46	19	.0	.0	.0	.0
4	16	7.2	27	39	94	28	45	18	.0	.0	.0	.0
5	15	8.9	37	36	89	28	46	16	.0	.0	.0	.0
6	15	7.9	39	33	83	26	112	14	.0	.0	.0	.0
7	14	9.9	36	31	75	27	110	11	.0	.0	.0	.0
8	13	11	30	29	67	32	115	3.9	.59	.0	.0	.0
9	11	11	28	28	62	33	107	3.2	.0	.0	.0	.0
10	10	11	36	27	58	32	108	12	.0	.0	.0	.0
11	8.9	5.1	42	26	58	35	106	7.8	.0	.0	.0	.0
12	7.2	4.4	42	25	54	36	89	5.9	.0	.0	.0	.0
13	7.2	4.4	42	24	51	37	60	11	.0	.0	.0	.0
14	7.2	5.1	42	23	46	36	30	6.8	.0	.0	.0	.0
15	7.9	5.1	42	23	44	34	27	4.5	.0	.0	.0	.0
16	8.9	5.8	44	22	40	31	24	8.4	.0	.0	.0	.0
17	11	8.9	45	24	37	30	21	7.1	.0	.0	.0	.0
18	12	13	38	29	35	29	19	4.8	.0	.0	.0	.0
19	14	16	41	35	29	28	16	4.1	.0	.0	.0	.0
20	9.9	19	54	52	29	28	13	3.1	.0	.0	.0	.0
21	11	20	57	69	28	24	10	2.6	.0	.0	.0	.0
22	11	20	59	72	27	19	18	6.5	.0	.0	.0	.0
23	13	21	59	73	25	17	25	7.3	.0	.0	.0	.0
24	17	21	59	72	25	24	21	9.0	.0	.0	.0	.0
25	12	23	59	69	24	17	16	.06	.0	.0	.0	.0
26	9.9	26	59	63	24	21	27	.0	.0	.0	.0	.0
27	12	30	58	59	25	27	26	.0	.0	.0	.0	.0
28	13	31	57	53	25	24	25	.0	.0	.0	.0	.0
29	13	31	58	51	25	36	24	.0	.0	.0	.0	.0
30	12	29	54	53	---	39	24	.0	.0	.0	.0	.0
31	13	---	50	84	---	44	---	.0	---	.0	.0	---
TOTAL	394.1	433.9	1369	1360	1486	901	1395	231.06	0.59	0.0	0.0	0.0
MEAN	12.7	14.5	44.2	43.9	51.2	29.1	46.5	7.45	.020	.00	.00	.00
MAX	27	31	59	84	104	44	115	23	.59	.00	.00	.00
MIN	7.2	3.2	24	22	24	17	10	.00	.00	.00	.00	.00
AC-FT	782	861	2720	2700	2950	1790	2770	458	1.2	.0	.0	.0
CFSM	.45	.51	1.56	1.55	1.81	1.03	1.64	.26	.00	.00	.00	.00
IN.	.52	.57	1.80	1.79	1.95	1.18	1.83	.30	.00	.00	.00	.00

WTR YR 1988 TOTAL 7570.65 MEAN 20.7 MAX 115 MIN .00 AC-FT 15020 CFSM .73 IN. 9.95

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

REMARKS.--Records fair. Total phosphorus discharge was computed using concentration data from samples collected at downstream side of dam at station 05544386; or if very little or no flow, samples were collected at upstream side of dam in Big Muskego Lake.

EXTREMES FOR CURRENT YEAR.--

TOTAL PHOSPHORUS DISCHARGE: Maximum daily, 52.7 lb, Apr. 8; minimum daily, 0.00 lb May 25 to Sept. 30.

[illegible]

ILLINOIS RIVER BASIN

05544386 MUSKEGO CANAL AT MUSKEGO LAKE OUTLET NEAR WIND LAKE, WI
(Formerly published as Muskego Canal near Wind Lake)

LOCATION.--Lat 42°51'08", long 88°07'52", in SE 1/4 sec.33, T.5 N., R.20 E., Waukesha County, Hydrologic Unit 07120006, on right bank 8 ft downstream of dam outlet of Muskego Lake, 700 ft north of Muskego Dam Drive, 2 mi northeast of Wind Lake.

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

REMARKS.--Samples collected upstream of dam in Big Muskego Lake if there was little or no flow. These concentrations were used to compute total phosphorus discharge at station 4251090880750000.

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	PHOS- PHOROUS TOTAL (MG/L AS P) (00665)	PHOS- PHOROUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)
OCT 1987					
15...	1200	7.9	--	0.080	--
29...	1510	13	--	0.049	--
NOV					
16...	1317	5.8	--	0.045	--
DEC					
17...	1227	45	--	0.050	--
17...	1234	--	--	<0.004	<0.004
JAN 1988					
14...	1610	--	22	0.030	--
28...	1515	--	55	0.045	--
FEB					
01...	1100	--	--	0.050	--
03...	1348	--	--	0.050	--
05...	1200	--	--	0.090	--
08...	1028	--	67	0.070	--
16...	1700	--	41	0.050	--
MAR					
03...	1120	--	27	0.050	--
10...	1130	--	32	0.040	0.006
16...	1140	--	31	0.050	--
APR					
08...	1315	--	--	0.090	--
10...	1145	--	--	0.050	--
11...	1805	--	--	0.050	--
12...	1230	--	85	0.070	--
21...	1150	--	8.5	0.070	--
MAY					
02...	1150	--	--	0.054	0.004
11...	1310	--	--	0.107	0.004
24...	1205	--	--	0.126	0.007
JUN					
07...	1340	--	--	0.240	--
21...	1320	--	0.0	0.116	0.007
JUL					
06...	1240	--	0.0	0.172	--
AUG					
08...	1300	--	0.0	0.330	0.007
23...	1225	--	--	0.270	--
SEP					
02...	1040	--	0.0	0.110	--
07...	1225	--	--	0.280	--
09...	1130	--	0.0	0.170	--
20...	1235	--	--	0.340	--

ILLINOIS RIVER BASIN

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 52 feet. Lake ice-covered during January 28 and February 16 sampling. Water-quality analyses by Wisconsin State Laboratory of Hygiene.

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	DEPTH TO TOP OF SAMPLE INTER- VAL (IN FEET)	DEPTH TO BOT- TOM OF SAMPLE INTER- VAL (IN FEET)	MOIS- TURE CONTENT DRY WT. (% OF TOTAL) (00495)	NITRO- GEN, NO2+NO3 TOT. IN BOT MAT (MG/KG AS N) (00633)	NITRO- GEN, NH4 TOTAL IN BOT. MAT. (MG/KG AS N) (00611)	NITRO- GEN, NH4 + ORG. TOTAL IN BOT. MAT. (MG/KG AS N) (00626)	PHOS- PHOROUS TOTAL IN BOT. MAT. (MG/KG AS P) (00668)	IRON, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS FE) (01170)	MANGA- NESE, RECOV. FM BOT- TOM MA- TERIAL (UG/G) (01053)
JAN 1988										
28...	1200	0.0	0.33	85	<10	910	11000	1100	14000	990
28...	1201	0.33	0.83	84	--	--	--	1000	14000	990
28...	1202	0.83	1.33	83	--	--	--	940	15000	990
28...	1203	1.33	1.83	79	--	--	--	860	15000	1100

WATER-QUALITY DATA, OCTOBER 15 TO DECEMBER 10, 1987
(Milligrams per liter unless otherwise indicated)

	Oct. 15		Oct. 29		Nov. 17		Dec. 10		
Depth of sample (ft)	1.5	51.0	1.5	51.0	1.5	51.0	1.5	51.0	54.0
Specific conductance (µS/cm)	540	594	545	636	538	539	541	547	546
pH (units)	8.00	6.60	8.60	6.80	8.40	8.40	8.30	8.30	8.30
Water temperature (°C)	11.0	10.5	8.0	7.5	7.0	7.0	2.5	2.5	2.5
Secchi-disc (meters)	1.0		1.4		1.0		1.4		
Dissolved oxygen	8.7	0.6	10.0	4.7	10.7	10.4	11.7	11.6	2.5
Total phosphorus (as P)	0.045	0.054	0.037	0.032	---	0.038	0.031	0.030	0.034
Phosphorus, ortho, diss (as P)	---	0.016	---	0.007	---	---	---	---	<0.004
Chlorophyll a, phyto. (µg/L)	9	---	9	---	23	---	12	---	---

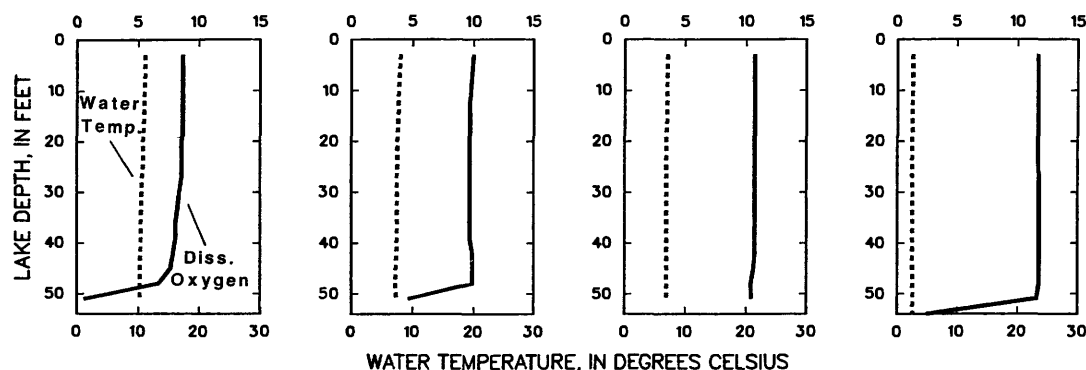
10-15-87

10-29-87

11-17-87

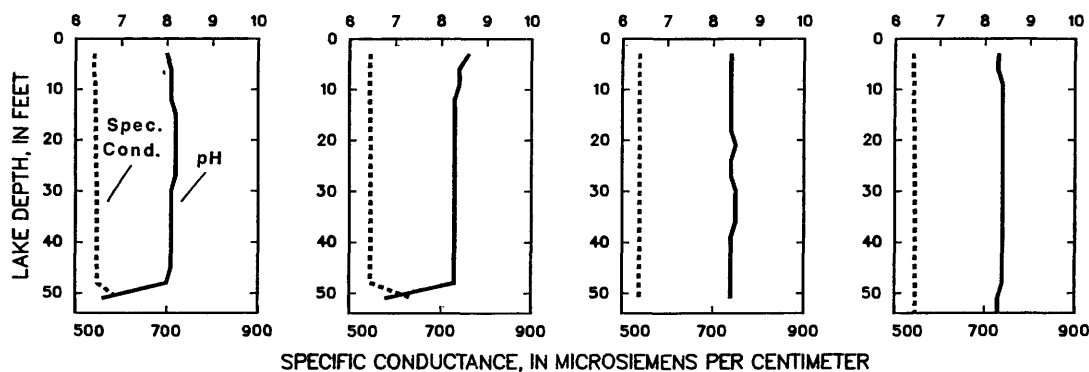
12-10-87

DISSOLVED OXYGEN, IN MILLIGRAMS PER LITER



WATER TEMPERATURE, IN DEGREES CELSIUS

PH, IN STANDARD UNITS



SPECIFIC CONDUCTANCE, IN MICROSIEMENS PER CENTIMETER

ILLINOIS RIVER BASIN

424915088083900 WIND LAKE AT WIND LAKE, WI--CONTINUED

WATER-QUALITY DATA, JANUARY 28 TO APRIL 8, 1988
(Milligrams per liter unless otherwise indicated)

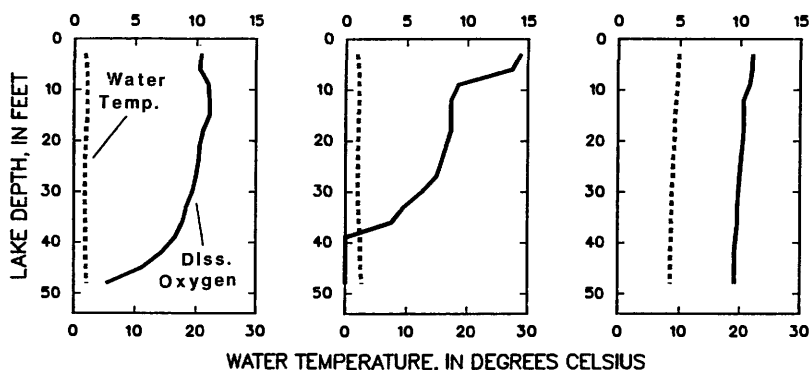
	Jan. 28				Feb. 16			Apr. 08	
Depth of sample (ft)	1.5	3.0	42.0	48.0	1.5	44.0	48.0	1.5	48.0
Specific conductance ($\mu\text{S}/\text{cm}$)	603	603	735	736	590	743	749	564	569
pH (units)	7.40	7.40	7.40	7.40	7.50	7.30	7.10	8.30	8.10
Water temperature ($^{\circ}\text{C}$)	2.0	2.0	2.0	2.0	2.0	2.5	2.5	10.0	8.5
Secchi-disc (meters)	0.6				0.6			0.8	
Dissolved oxygen	10.4	10.4	7.2	2.7	14.4	0	0	11.0	9.6
Nitrogen, nitrite plus nitrate, diss (as N)	---	---	---	---	---	---	---	0.27	0.26
Nitrogen, ammonia, diss (as N)	---	---	---	---	---	---	---	0.15	0.21
Nitrogen, ammonia plus organic, total (as N)	---	---	---	---	---	---	---	1.6	1.5
Total phosphorus (as P)	0.038	---	0.096	0.410	0.077	0.118	0.600	0.056	0.042
Phosphorus, ortho, diss (as P)	---	---	---	0.109	---	---	0.384	<0.001	<0.001
Chlorophyll a, phyto. ($\mu\text{g}/\text{L}$)	---	64	---	---	65	---	---	25	---

1-28-88

2-16-88

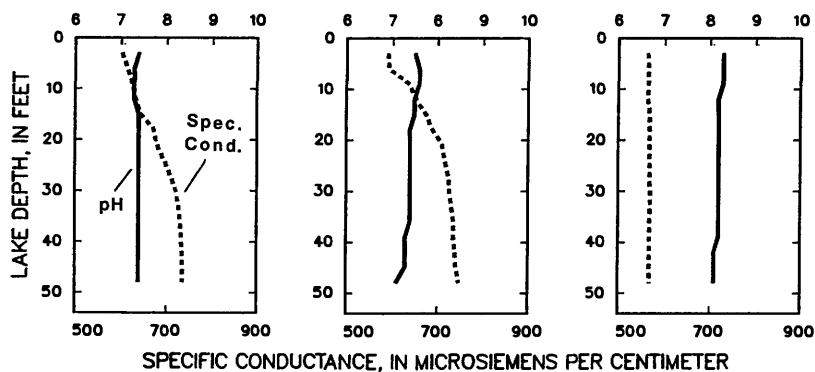
4-8-88

DISSOLVED OXYGEN, IN MILLIGRAMS PER LITER



WATER TEMPERATURE, IN DEGREES CELSIUS

PH, IN STANDARD UNITS



SPECIFIC CONDUCTANCE, IN MICROSIEMENS PER CENTIMETER

ILLINOIS RIVER BASIN

424915088083900 WIND LAKE AT WIND LAKE, WI--CONTINUED

WATER-QUALITY DATA, MAY 2 TO MAY 25, 1988
(Milligrams per liter unless otherwise indicated)

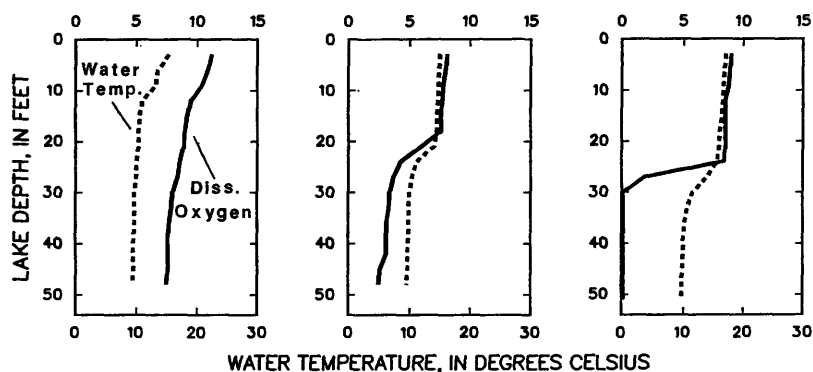
	May 02			May 11				May 25			
Depth of sample (ft)	1.5	44.0	48.0	1.5	21.0	42.0	48.0	1.5	27.0	42.0	50.0
Specific conductance ($\mu\text{S}/\text{cm}$)	553	556	556	563	566	562	563	556	563	570	570
pH (units)	8.40	8.00	8.00	8.30	8.10	7.60	7.60	8.70	8.40	7.60	7.60
Water temperature ($^{\circ}\text{C}$)	15.5	9.5	9.5	15.0	14.0	9.5	9.5	17.0	14.0	10.0	10.0
Secchi-disc (meters)	0.9			1.1				1.0			
Dissolved oxygen	11.2	7.6	7.5	8.1	6.0	3.1	2.5	9.0	1.9	0.1	0.1
Total phosphorus (as P)	0.044	0.015	0.015	0.024	0.022	0.046	0.044	0.014	0.049	0.113	0.097
Phosphorus, ortho, diss (as P)	---	---	0.004	---	---	---	0.022	---	---	---	0.101
Chlorophyll a, phyto. ($\mu\text{g}/\text{L}$)	---	---	---	---	---	---	---	7	---	---	---

5-2-88

5-11-88

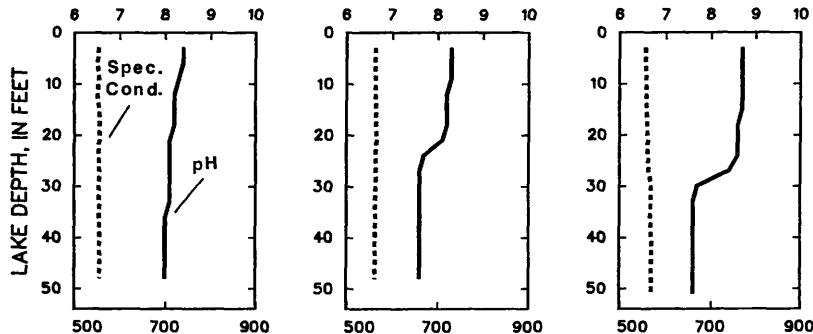
5-25-88

DISSOLVED OXYGEN, IN MILLIGRAMS PER LITER



WATER TEMPERATURE, IN DEGREES CELSIUS

PH, IN STANDARD UNITS



SPECIFIC CONDUCTANCE, IN MICROSIEMENS PER CENTIMETER

ILLINOIS RIVER BASIN

424915088083900 WIND LAKE AT WIND LAKE, WI--CONTINUED

WATER-QUALITY DATA, JUNE 7 TO JULY 18, 1988
(Milligrams per liter unless otherwise indicated)

	June 07				June 22			
Depth of sample (ft)	1.5	18.0	39.0	47.0	1.5	15.0	33.0	44.0
Specific conductance ($\mu\text{S}/\text{cm}$)	536	558	569	574	542	560	590	591
pH (units)	8.80	8.30	7.50	7.40	8.70	8.30	7.40	7.30
Water temperature ($^{\circ}\text{C}$)	23.0	19.0	10.5	10.0	25.0	22.5	11.5	10.5
Secchi-disc (meters)	0.9				0.9			
Dissolved oxygen	11.2	4.5	0.2	0.2	7.8	3.9	0.1	0.1
Total phosphorus (as P)	0.011	0.050	0.170	0.180	0.028	0.016	0.113	0.198
Phosphorus, ortho, diss (as P)	---	---	---	0.137	---	---	---	---
Chlorophyll a, phyto. ($\mu\text{g}/\text{L}$)	8	---	---	---	14	---	---	---

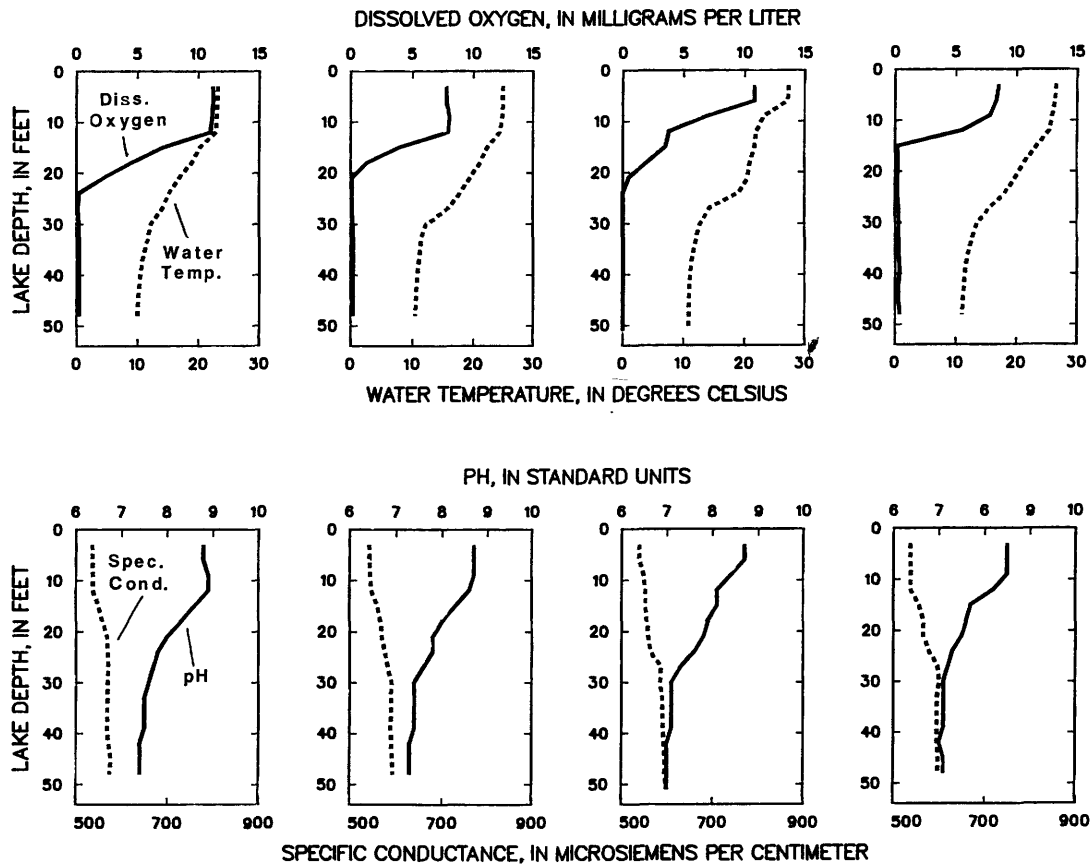
	July 06				July 18			
Depth of sample (ft)	1.5	24.0	33.0	46.0	1.5	15.0	39.0	48.0
Specific conductance ($\mu\text{S}/\text{cm}$)	539	564	590	596	537	556	596	598
pH (units)	8.70	7.60	7.10	7.00	8.50	7.70	7.10	7.10
Water temperature ($^{\circ}\text{C}$)	27.5	19.0	12.0	11.0	26.5	23.5	11.5	11.0
Secchi-disc (meters)	1.1				1.1			
Dissolved oxygen	10.8	0	0	0	8.5	0.2	0.4	0.4
Total phosphorus (as P)	0.015	0.026	0.142	0.330	0.012	0.040	0.360	0.440
Phosphorus, ortho, diss (as P)	---	---	---	0.310	---	---	---	0.340
Chlorophyll a, phyto. ($\mu\text{g}/\text{L}$)	8	---	---	---	12	---	---	---

6-7-88

6-22-88

7-6-88

7-18-88



ILLINOIS RIVER BASIN

424915088083900 WIND LAKE AT WIND LAKE, WI--CONTINUED

WATER-QUALITY DATA, AUGUST 10 TO SEPTEMBER 21, 1988
(Milligrams per liter unless otherwise indicated)

	Aug. 10					Aug. 23				
Depth of sample (ft)	1.5	15.0	33.0	42.0	47.0	1.5	18.0	30.0	44.0	48.0
Specific conductance ($\mu\text{S}/\text{cm}$)	525	542	607	612	615	522	530	604	619	621
pH (units)	8.50	8.00	7.00	7.00	6.90	8.50	8.10	7.00	6.90	6.90
Water temperature ($^{\circ}\text{C}$)	26.5	25.5	13.0	11.5	11.5	24.0	23.5	13.5	11.5	11.5
Secchi-disc (meters)		1.1					0.8			
Dissolved oxygen	8.1	1.2	0	0	0	6.8	3.3	0	0	0
Total phosphorus (as P)	0.029	0.029	---	0.500	0.530	0.023	0.030	0.340	0.560	0.600
Phosphorus, ortho, diss (as P)	0.005	0.006	0.310	0.470	0.510	0.004	0.004	0.310	0.470	0.540
Chlorophyll a, phyto. ($\mu\text{g}/\text{L}$)	17	---	---	---	---	14	---	---	---	---

	Sept. 07					Sept. 21				
Depth of sample (ft)	1.5	27.0	36.0	46.0		1.5	39.0	45.0	48.0	
Specific conductance ($\mu\text{S}/\text{cm}$)	538	545	631	648		531	569	633	637	
pH (units)	8.40	8.10	7.00	6.90		8.20	7.10	6.90	6.90	
Water temperature ($^{\circ}\text{C}$)	19.0	18.0	12.5	11.5		18.0	16.0	12.0	12.0	
Secchi-disc (meters)		1.0					1.1			
Dissolved oxygen	8.9	6.3	0.4	0.3		7.2	0.3	0.3	0.3	
Total phosphorus (as P)	0.027	0.048	0.470	0.640		0.078	0.260	0.690	0.760	
Phosphorus, ortho, diss (as P)	0.004	0.006	0.440	0.630		---	---	---	0.650	
Chlorophyll a, phyto. ($\mu\text{g}/\text{L}$)	14	---	---	---		13	---	---	---	

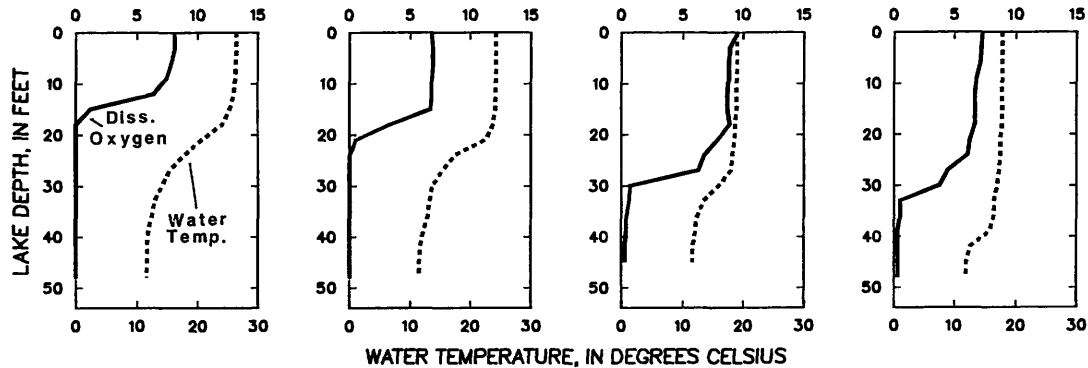
8-10-88

8-23-88

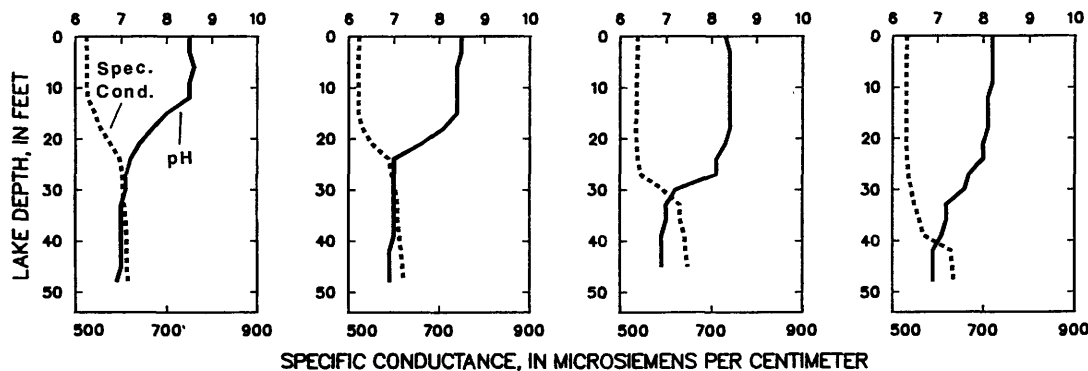
9-7-88

9-21-88

DISSOLVED OXYGEN, IN MILLIGRAMS PER LITER



PH, IN STANDARD UNITS



SPECIFIC CONDUCTANCE, IN MICROSIEMENS PER CENTIMETER

ILLINOIS RIVER BASIN

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.

LAKE-STAGE RECORDS

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.--Records good. Lake level regulated by dam with two 10-foot gates at outlet. Previously published as Wind Lake at Wind Lake, WI

EXTREMES FOR PERIOD OF RECORD.--Maximum gage-height observed, 8.54 ft Apr. 17, 24, 29, 1985; minimum, 5.57 ft, Feb. 26, 1988.

EXTREMES FOR CURRENT YEAR.--Maximum gage-height, 8.50 ft, May 2-5; minimum, 5.57 ft, Feb. 26.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DÉC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	8.48	8.09	7.44	8.18	6.46	8.26	8.48	7.95	7.34	6.89	6.67
2	8.29	8.47	7.98	7.38	8.25	6.55	8.35	8.49	7.93	7.32	6.87	6.65
3	8.27	8.41	7.87	7.30	8.20	6.63	8.44	8.49	7.90	7.31	6.85	6.75
4	8.27	8.36	7.73	7.21	8.09	6.70	8.34	8.49	7.88	7.30	6.84	6.86
5	8.29	8.30	7.57	7.11	7.96	6.77	8.22	8.49	7.86	7.29	6.86	6.90
6	8.31	8.23	7.44	6.99	7.78	6.86	8.32	8.47	7.85	7.27	6.83	6.87
7	8.34	8.18	7.39	6.86	7.58	6.94	8.41	8.38	7.83	7.25	6.80	6.85
8	8.33	8.15	7.41	6.78	7.35	7.03	8.46	8.28	7.81	7.22	6.82	6.84
9	8.33	8.12	7.46	6.74	7.11	7.14	8.45	8.20	7.76	7.20	6.97	6.83
10	8.34	8.08	7.50	6.67	6.88	7.22	8.43	8.17	7.73	7.18	6.96	6.81
11	8.34	8.03	7.53	6.60	6.81	---	8.40	8.12	7.71	7.16	6.95	6.81
12	8.35	7.98	7.55	6.54	6.69	---	8.33	8.12	7.69	7.14	6.94	6.81
13	8.35	7.94	7.54	6.48	6.50	---	8.23	8.13	7.67	7.11	6.93	6.80
14	8.35	7.90	7.53	6.42	6.32	---	8.03	8.13	7.65	7.10	6.93	6.78
15	8.36	7.85	7.53	6.44	6.28	---	7.83	8.13	7.63	7.08	6.92	6.76
16	8.37	7.81	7.64	6.47	6.43	7.46	7.71	8.13	7.61	7.10	6.91	6.75
17	8.39	7.79	7.65	6.51	6.43	7.48	7.73	8.12	7.59	7.14	6.89	6.75
18	8.39	7.75	7.69	6.60	6.40	7.50	7.77	8.12	7.57	7.12	6.88	6.75
19	8.40	7.69	7.70	6.69	6.36	7.51	7.79	8.11	7.54	7.11	6.88	6.77
20	8.41	7.65	7.81	7.04	6.30	7.52	7.80	8.10	7.53	7.09	6.86	6.78
21	8.40	7.59	7.82	7.29	6.25	7.53	7.83	8.10	7.51	7.08	6.84	6.77
22	8.40	7.58	7.81	7.48	6.22	7.53	7.86	8.10	7.50	7.07	6.81	6.87
23	8.40	7.60	7.77	7.60	6.07	7.53	8.01	8.09	7.47	7.05	6.84	6.98
24	8.42	7.61	7.73	7.69	5.95	7.54	8.08	8.08	7.44	7.03	6.83	6.96
25	8.42	7.71	7.72	7.74	5.78	7.56	8.13	8.05	7.43	7.02	6.81	6.95
26	8.43	7.78	7.70	7.76	5.65	7.61	8.19	8.02	7.39	7.01	6.77	6.94
27	8.46	7.83	7.65	7.74	5.64	7.66	8.30	8.01	7.36	6.99	6.75	6.94
28	8.46	7.92	7.61	7.72	5.75	7.74	8.38	7.99	7.35	6.97	6.75	6.92
29	8.45	8.02	7.57	7.68	6.15	7.89	8.42	7.98	7.40	6.95	6.72	6.91
30	8.46	8.09	7.50	7.69	---	8.03	8.45	7.97	7.37	6.93	6.70	6.90
31	8.46	---	7.47	7.94	---	8.15	---	7.96	---	6.91	6.68	---
MEAN	---	7.96	7.64	7.12	6.74	---	8.16	8.18	7.63	7.12	6.85	6.83
MAX	---	8.48	8.09	7.94	8.25	---	8.46	8.49	7.95	7.34	6.97	6.98
MIN	---	7.58	7.39	6.42	5.64	---	7.71	7.96	7.35	6.91	6.68	6.65

424848088083100 WIND LAKE OUTLET AT WIND LAKE, WI--CONTINUED

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1987 to September 1988.

GAGE.--Water-stage recorder and concrete dam. Datum of gage is 760.30 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Estimated daily discharge: Oct. 1 and Mar. 11-16. Records are poor. Lake level regulated by dam with two 10-foot gates at outlet.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 172 ft³/s, Feb. 3; minimum daily, 0.20 ft³/s, many days during current year.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	4.0	14	54	80	86	1.8	22	14	.20	.20	.20	.20
2	3.7	47	80	85	149	1.8	26	15	.20	.20	.20	.20
3	3.2	68	98	85	172	1.9	74	15	.20	.20	.20	.20
4	3.4	65	102	84	170	1.9	131	15	.20	.20	.20	.20
5	3.9	47	100	81	165	2.0	131	15	.20	.20	.20	.20
6	4.8	27	78	79	158	2.0	113	14	.20	.20	.20	.20
7	6.0	26	62	76	150	2.0	125	8.5	.20	.20	.20	.20
8	5.6	25	53	53	144	2.0	137	3.8	.20	.20	.20	.20
9	5.8	24	49	43	132	2.0	142	1.6	.20	.20	.20	.20
10	6.2	25	54	42	111	2.1	141	1.0	.20	.20	.20	.20
11	6.4	25	56	41	99	13	141	.90	.20	.20	.20	.20
12	6.6	24	56	41	94	17	138	.85	.20	.20	.20	.20
13	6.8	24	58	36	89	19	130	.80	.20	.20	.20	.20
14	6.7	24	59	34	87	18	128	.75	.20	.20	.20	.20
15	7.1	24	54	35	71	18	128	.70	.20	.20	.20	.20
16	7.5	24	57	37	53	18	33	.65	.20	.20	.20	.20
17	8.6	23	61	37	54	18	1.1	.60	.20	.20	.20	.20
18	8.8	35	60	36	53	18	1.1	.55	.20	.20	.20	.20
19	9.3	26	80	38	53	17	1.1	.50	.20	.20	.20	.20
20	9.5	26	87	19	48	18	1.1	.45	.20	.20	.20	.20
21	9.3	27	87	35	40	18	1.1	.40	.20	.20	.20	.20
22	9.2	27	87	41	41	17	1.2	.35	.20	.20	.20	.20
23	9.3	28	88	41	43	17	1.1	.30	.20	.20	.20	.20
24	10	28	86	43	42	17	1.1	.25	.20	.20	.20	.20
25	11	28	82	53	40	17	1.0	.20	.20	.20	.20	.20
26	11	28	82	60	36	17	1.5	.20	.20	.20	.20	.20
27	13	28	85	60	31	18	5.0	.20	.20	.20	.20	.20
28	13	28	86	61	30	18	8.2	.20	.20	.20	.20	.20
29	12	28	87	61	21	18	11	.20	.20	.20	.20	.20
30	13	30	88	52	---	19	13	.20	.20	.20	.20	.20
31	13	---	85	41	---	20	---	.20	---	.20	.20	---
TOTAL	247.7	903	2301	1610	2462	389.5	1788.6	112.35	6.00	6.20	6.20	6.00
MEAN	7.99	30.1	74.2	51.9	84.9	12.6	59.6	3.62	.20	.20	.20	.20
MAX	13	68	102	85	172	20	142	15	.20	.20	.20	.20
MIN	3.2	14	49	19	21	1.8	1.0	.20	.20	.20	.20	.20
AC-FT	491	1790	4560	3190	4880	773	3550	223	12	12	12	12
CFSM	.20	.76	1.87	1.31	2.14	.32	1.51	.09	.01	.01	.01	.01
IN.	.23	.85	2.16	1.51	2.31	.37	1.68	.11	.01	.01	.01	.01

WTR YR 1988 TOTAL 9838.55 MEAN 26.9 MAX 172 MIN .20 AC-FT 19510 CFSM .68 IN. 9.24

ILLINOIS RIVER BASIN

424848088083100 WIND LAKE OUTLET AT WIND LAKE, WI--CONTINUED

WATER-QUALITY RECORDS

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

PERIOD OF DAILY RECORD.--

TOTAL PHOSPHORUS DISCHARGE: October 1987 to September 1988

REMARKS.--Records fair. Total phosphorus discharge was computed using concentration data from samples collected in Wind Lake at station 424915088083900.

EXTREMES FOR CURRENT YEAR.--

TOTAL PHOSPHORUS CONCENTRATIONS: Maximum observed, 0.078 mg/L, Sept. 21; minimum observed, 0.011 mg/L, June 7.

TOTAL PHOSPHORUS DISCHARGE: Maximum daily, 61.1 lb, Feb. 8; minimum daily, 0.01 lb on many days.

PHOSPHORUS, TOTAL, POUNDS PER DAY, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.08	2.76	9.39	16.2	18.3	.56	4.27	3.01	.01	.02	.01	.03
2	.99	9.23	13.9	17.2	31.9	.55	4.98	3.50	.01	.02	.02	.03
3	.85	13.3	16.9	17.2	37.8	.57	14.2	3.50	.01	.02	.02	.03
4	.90	12.7	17.5	17.0	42.3	.56	27.3	3.43	.01	.02	.02	.03
5	1.02	9.12	17.1	16.4	47.1	.57	30.0	3.37	.01	.02	.02	.03
6	1.25	5.22	13.3	16.0	51.8	.56	28.5	3.08	.01	.02	.02	.03
7	1.55	5.00	10.5	15.4	56.6	.55	34.6	1.81	.01	.02	.02	.03
8	1.43	4.79	8.95	10.8	61.1	.54	41.0	.72	.01	.02	.03	.03
9	1.47	4.58	8.24	8.74	56.7	.53	42.7	.27	.01	.02	.03	.03
10	1.56	4.75	9.05	8.54	47.5	.55	42.2	.15	.01	.02	.03	.04
11	1.60	4.73	9.38	8.34	42.2	3.33	42.0	.12	.02	.01	.03	.04
12	1.64	4.52	9.38	8.35	39.8	4.29	40.9	.11	.02	.01	.03	.04
13	1.68	4.50	9.72	7.33	37.5	4.74	38.3	.10	.02	.01	.03	.05
14	1.64	4.48	9.90	6.93	36.5	4.43	37.5	.09	.02	.01	.03	.05
15	1.73	4.46	9.06	7.14	29.7	4.37	37.1	.08	.02	.01	.03	.05
16	1.80	4.45	9.57	7.55	22.0	4.31	9.20	.07	.02	.01	.03	.06
17	2.04	4.24	10.2	7.55	22.0	4.26	.29	.06	.02	.01	.03	.06
18	2.05	6.43	10.1	7.35	21.1	4.20	.28	.05	.02	.01	.03	.07
19	2.14	4.76	13.5	7.76	20.7	3.92	.27	.05	.03	.01	.03	.07
20	2.16	4.74	14.6	3.88	18.3	4.09	.26	.04	.03	.01	.03	.08
21	2.08	4.90	14.6	7.16	15.0	4.04	.24	.04	.03	.01	.03	.08
22	2.03	4.88	14.6	8.39	15.0	3.76	.26	.03	.03	.01	.03	.09
23	2.02	5.04	14.8	8.39	15.5	3.71	.22	.02	.03	.01	.02	.09
24	2.14	5.01	14.5	8.81	14.8	3.67	.21	.02	.03	.01	.03	.09
25	2.33	4.99	13.8	10.9	13.8	3.62	.19	.02	.03	.01	.03	.09
26	2.29	4.97	13.8	12.3	12.2	3.57	.27	.01	.03	.01	.03	.09
27	2.67	4.95	14.4	12.3	10.3	3.73	.85	.01	.02	.01	.03	.09
28	2.63	4.93	14.5	12.5	9.74	3.68	1.35	.01	.02	.01	.03	.09
29	2.40	4.91	14.7	12.6	6.68	3.63	1.96	.01	.02	.01	.03	.10
30	2.59	5.24	14.9	10.9	---	3.79	2.54	.01	.02	.01	.03	.10
31	2.58	---	14.4	8.63	---	3.93	---	.01	---	.01	.03	---
TOTAL	56.34	168.58	389.24	328.54	853.92	88.61	483.94	23.80	0.58	0.41	0.84	1.79

WTR YR 1988 TOTAL 2396.59

WATER-QUALITY RECORDS

PERIOD OF RECORD.--February 15 to September 30, 1988.

REMARKS.--Lake sampled in southwest end of lake at an approximate lake depth of 28 ft. Lake ice-covered during February 15 sampling. Water-quality analyses by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, FEBRUARY 15 TO AUGUST 23, 1988
(Milligrams per liter unless otherwise indicated)

	Feb. 15		Apr. 07		June 15		July 25		Aug. 23	
Depth of sample (ft)	1.5	27.0	1.5	26.0	1.5	26.0	1.5	25.0	1.5	25.0
Specific conductance ($\mu\text{S}/\text{cm}$)	546	657	498	508	498	532	468	552	457	570
pH (units)	7.50	6.70	8.00	7.60	8.70	7.50	8.70	7.00	8.30	6.90
Water temperature ($^{\circ}\text{C}$)	2.0	3.0	12.0	8.0	23.0	11.0	27.0	12.0	25.5	13.0
Color (Pt-Co. scale)	---	---	100	100	---	---	---	---	---	---
Turbidity (NTU)	---	---	2.8	1.9	---	---	---	---	---	---
Secchi-disc (meters)	---	---	1.0	---	1.5	---	2.0	---	1.3	---
Dissolved oxygen	7.8	0	10.0	7.9	8.2	0.1	8.5	0.3	7.5	0
Hardness, total (as CaCO_3)	---	---	230	230	---	---	---	---	---	---
Calcium, dissolved (Ca)	---	---	51	51	---	---	---	---	---	---
Magnesium, Dissolved (Mg)	---	---	26	26	---	---	---	---	---	---
Sodium, dissolved (Na)	---	---	9.0	9.0	---	---	---	---	---	---
Potassium, dissolved (K)	---	---	3.6	3.4	---	---	---	---	---	---
Alkalinity, total (as CaCO_3)	---	---	200	198	---	---	---	---	---	---
Sulfate, dissolved (SO_4)	---	---	43	43	---	---	---	---	---	---
Fluoride, total (as F)	---	---	0.1	0.1	---	---	---	---	---	---
Chloride, dissolved (Cl)	---	---	20	20	---	---	---	---	---	---
Silica, dissolved (SiO_2)	---	---	1.5	1.7	---	---	---	---	---	---
Solids, dissolved, at 180°C	---	---	310	312	---	---	---	---	---	---
Nitrogen, nitrite plus nitrate, diss (as N)	---	---	0.16	0.16	---	---	---	---	---	---
Nitrogen, ammonia, diss (as N)	---	---	<0.02	0.09	---	---	---	---	---	---
Nitrogen, ammonia plus organic, total (as N)	---	---	1.2	1.4	---	---	---	---	---	---
Total phosphorus (as P)	---	---	0.036	0.044	0.011	0.340	0.012	0.252	0.033	0.520
Phosphorus, ortho, diss (as P)	---	---	<0.002	<0.002	---	0.290	---	0.234	---	0.450
Iron, dissolved (Fe) $\mu\text{g}/\text{L}$	---	---	<100	<100	---	---	---	---	---	---
Manganese, dissolved (Mn) $\mu\text{g}/\text{L}$	---	---	<40	<40	---	---	---	---	---	---
Chlorophyll a, phyto. ($\mu\text{g}/\text{L}$)	---	---	13	---	6	---	13	---	16	---

2-15-88

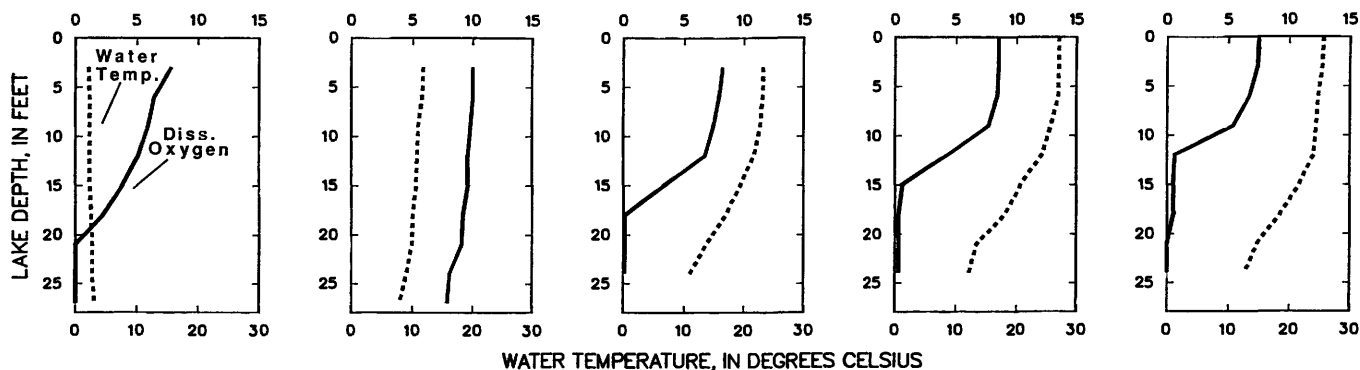
4-7-88

6-15-88

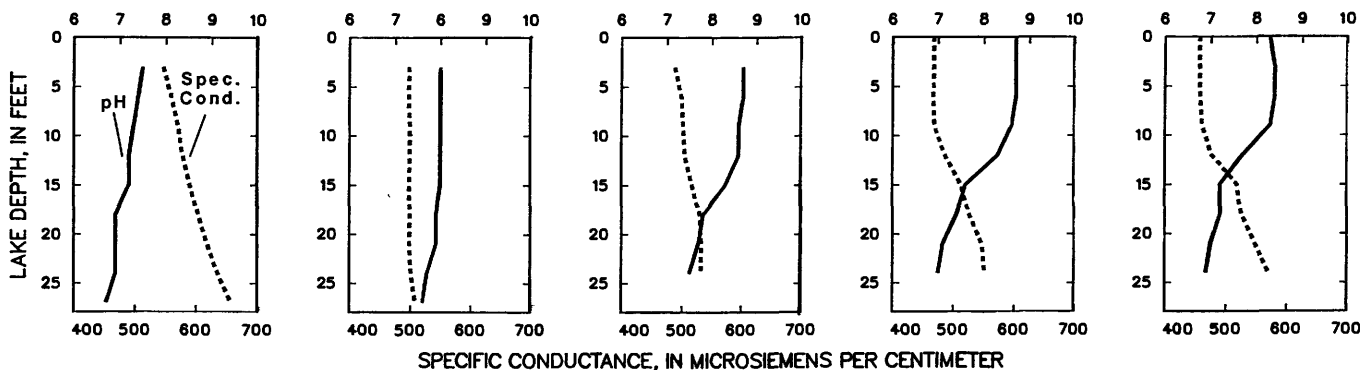
7-25-88

8-23-88

DISSOLVED OXYGEN, IN MILLIGRAMS PER LITER



PH, IN STANDARD UNITS



424857088101500 WAUBEESEE LAKE AT WIND LAKE, WI

LOCATION.--Lat 42°48'57", long 88°10'15", in SE 1/4 SE 1/4 sec.7, T.4 N., R.20 E., Racine County, Hydrologic Unit 07120006, at Wind Lake.

DRAINAGE AREA.--5.16 mi².

LAKE-STAGE RECORDS

PERIOD OF RECORD.--February 15 to September 30, 1988.

GAGE.--Staff gage read by Robert Anschutz.

EXTREMES FOR CURRENT YEAR.--Maximum gage height observed, 5.03 ft, Feb. 15; minimum observed, 3.40 ft, Aug. 29.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	---	---	---	---
2	---	---	---	---	---	---	---	---	4.66	---	---	3.36
3	---	---	---	---	---	---	---	---	---	---	3.58	3.42
4	---	---	---	---	---	---	---	---	---	---	3.54	3.54
5	---	---	---	---	---	---	---	---	4.60	4.05	3.56	3.54
6	---	---	---	---	---	---	---	---	4.58	4.04	3.54	---
7	---	---	---	---	---	---	---	---	4.56	---	3.52	---
8	---	---	---	---	---	---	---	---	4.52	---	---	---
9	---	---	---	---	---	---	---	---	---	---	3.66	3.48
10	---	---	---	---	---	---	---	---	---	---	3.64	---
11	---	---	---	---	---	---	---	---	4.46	3.92	---	---
12	---	---	---	---	---	---	---	5.01	---	---	---	3.46
13	---	---	---	---	---	---	---	5.00	4.43	---	3.62	---
14	---	---	---	---	---	---	---	---	---	3.87	3.60	---
15	---	---	---	---	5.03	---	---	4.97	4.38	---	---	---
16	---	---	---	---	---	---	---	---	---	3.82	---	---
17	---	---	---	---	---	---	---	4.90	4.36	3.86	3.58	3.40
18	---	---	---	---	---	---	---	4.90	---	---	---	---
19	---	---	---	---	---	---	---	---	---	3.84	---	---
20	---	---	---	---	---	---	---	---	---	---	---	---
21	---	---	---	---	---	---	---	4.86	---	3.82	---	---
22	---	---	---	---	---	---	4.97	---	---	---	---	3.56
23	---	---	---	---	---	---	---	---	---	3.78	3.52	3.58
24	---	---	---	---	---	---	---	---	4.20	3.74	---	---
25	---	---	---	---	---	---	---	---	---	3.74	---	3.56
26	---	---	---	---	---	---	---	---	4.14	---	3.46	---
27	---	---	---	---	---	---	---	4.75	---	3.70	---	---
28	---	---	---	---	---	---	---	4.74	4.10	3.68	---	---
29	---	---	---	---	---	---	---	---	4.16	---	3.40	---
30	---	---	---	---	---	---	---	---	4.13	---	---	3.54
31	---	---	---	---	---	---	---	---	---	3.64	---	---

WATER-QUALITY RECORDS

PERIOD OF RECORD.--February 15 to September 30, 1988.

REMARKS.--Lake ice-covered during Feb. 15 sampling. Water-quality analyses by Wisconsin State Laboratory of Hygiene. Lake sampled near southwest end at about a lake depth of 70 ft.

WATER-QUALITY DATA, FEBRUARY 15 TO AUGUST 17, 1988
(Milligrams per liter unless otherwise indicated)

	Feb. 15		Apr. 07		June 15		July 28		Aug. 17	
Depth of sample (ft)	1.5	72.0	1.5	71.0	1.5	66.0	1.5	68.0	1.5	66.0
Specific conductance ($\mu\text{S}/\text{cm}$)	497	535	496	493	507	509	481	501	463	507
pH (units)	7.80	7.40	8.10	7.80	8.60	7.50	8.60	7.20	8.60	7.20
Water temperature ($^{\circ}\text{C}$)	2.0	3.0	8.0	5.5	23.5	7.0	26.5	7.5	29.0	7.5
Color (Pt-Co. scale)	---	---	40	40	---	---	---	---	---	---
Turbidity (NTU)	---	---	1.6	1.0	---	---	---	---	---	---
Secchi-disc (meters)	---	---	2.4	---	2.8	---	2.0	---	2.2	---
Dissolved oxygen	9.9	0	10.1	8.9	8.8	0.1	8.8	2.9	8.6	0
Hardness, total (as CaCO_3)	---	---	220	230	---	---	---	---	---	---
Calcium, dissolved (Ca)	---	---	47	48	---	---	---	---	---	---
Magnesium, dissolved (Mg)	---	---	25	26	---	---	---	---	---	---
Sodium, dissolved (Na)	---	---	11	11	---	---	---	---	---	---
Potassium, dissolved (K)	---	---	3.2	3.6	---	---	---	---	---	---
Alkalinity, total (as CaCO_3)	---	---	182	182	---	---	---	---	---	---
Sulfate, dissolved (SO_4)	---	---	41	42	---	---	---	---	---	---
Fluoride, total (as F)	---	---	0.1	0.1	---	---	---	---	---	---
Chloride, dissolved (Cl)	---	---	22	23	---	---	---	---	---	---
Silica, dissolved (SiO_2)	---	---	1.6	2.0	---	---	---	---	---	---
Solids, dissolved, at 180°C	---	---	294	294	---	---	---	---	---	---
Nitrogen, nitrite plus nitrate, diss (as N)	---	---	0.28	0.29	---	---	---	---	---	---
Nitrogen, ammonia, diss (as N)	---	---	0.03	0.06	---	---	---	---	---	---
Nitrogen, ammonia plus organic, total (as N)	---	---	1.0	1.0	---	---	---	---	---	---
Total phosphorus (as P)	---	---	0.018	0.016	0.008	0.063	0.005	0.090	0.010	0.061
Phosphorus, ortho, diss (as P)	---	---	<0.002	0.003	---	0.074	---	0.069	---	0.045
Iron, dissolved (Fe) $\mu\text{g}/\text{L}$	---	---	<100	<100	---	---	---	---	---	---
Manganese, dissolved (Mn) $\mu\text{g}/\text{L}$	---	---	<40	<40	---	---	---	---	---	---
Chlorophyll a, phyto. ($\mu\text{g}/\text{L}$)	---	---	3	---	2	---	4	---	<5	---

2-15-88

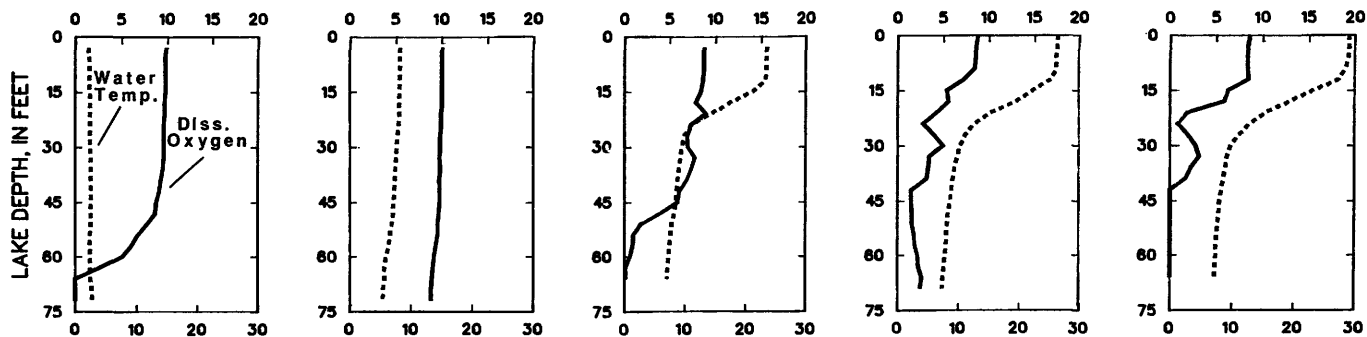
4-7-88

6-15-88

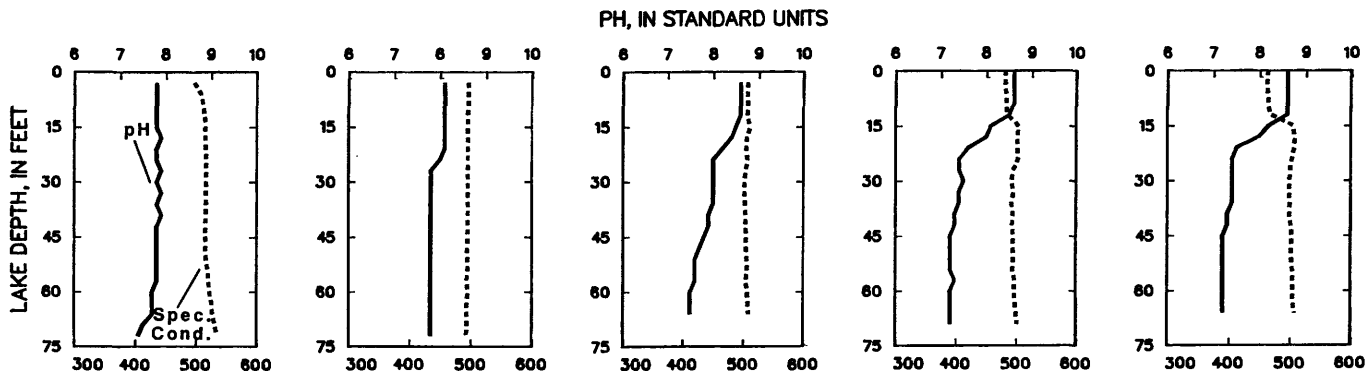
7-28-88

8-17-88

DISSOLVED OXYGEN, IN MILLIGRAMS PER LITER



WATER TEMPERATURE, IN DEGREES CELSIUS



SPECIFIC CONDUCTANCE, IN MICROSIEMENS PER CENTIMETER

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, 7.28 ft, Sept. 18, 1988.

EXTREMES FOR CURRENT YEAR.--Maximum gage height observed, 8.62 ft, Apr. 9; minimum observed, 7.28 ft, Sept. 18.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	8.0	---	---	---	---	---	---	---	---	---	---
2	---	---	---	---	---	---	---	---	---	---	---	---
3	---	---	---	---	---	---	---	---	---	7.60	---	---
4	8.1	---	---	---	---	---	---	---	---	---	7.42	7.37
5	---	---	---	---	---	---	---	---	7.95	---	---	---
6	---	---	---	---	---	---	---	---	---	---	---	---
7	---	8.0	---	---	---	---	---	8.32	---	---	---	---
8	---	---	---	---	---	---	---	---	---	---	---	---
9	---	---	---	---	---	---	8.62	---	---	---	7.42	---
10	8.0	---	---	---	---	---	---	---	---	7.52	---	---
11	---	---	---	---	---	---	---	---	---	---	---	7.30
12	---	---	---	---	---	---	---	---	---	---	---	---
13	---	---	---	---	---	---	---	---	---	---	---	---
14	---	---	---	---	---	---	---	---	7.82	---	---	---
15	---	---	---	---	---	---	---	8.32	---	---	---	---
16	---	---	---	---	---	---	8.52	---	---	---	7.50	---
17	---	---	---	---	---	---	---	---	---	7.60	---	---
18	8.0	---	---	---	---	---	---	---	---	---	---	7.28
19	---	---	---	---	---	---	---	---	---	---	---	---
20	---	---	---	---	---	---	---	---	---	---	---	---
21	---	---	---	---	---	---	---	---	---	---	---	---
22	---	---	---	---	---	---	---	8.22	7.72	---	7.47	---
23	---	---	---	---	---	---	---	8.16	---	---	---	---
24	---	---	---	---	---	---	8.47	---	---	7.52	---	---
25	7.98	---	---	---	---	---	---	---	---	---	---	7.37
26	---	---	---	---	---	---	---	---	7.62	---	7.38	---
27	---	---	---	---	---	---	---	---	---	---	---	---
28	---	---	---	---	---	---	---	---	---	---	---	---
29	---	---	---	---	---	---	---	---	---	7.52	---	---
30	---	---	---	---	---	---	8.47	---	---	---	---	---
31	---	---	---	---	---	---	---	8.10	---	---	---	---

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 1987 TO SEPTEMBER 1988

DATE	SECCHI DEPTH	DATE	SECCHI DEPTH	DATE	SECCHI DEPTH	DATE	SECCHI DEPTH	DATE	SECCHI DEPTH
Oct. 4	2.3	Apr. 9	4.3	May 22	3.5	July 3	3.4	Aug. 16	2.1
10	2.4	16	4.1	31	3.2	10	4.3	22	2.4
18	3.1	24	4.0	June 5	3.2	17	3.3	26	2.6
25	3.7	30	4.6	14	3.1	24	2.6	Sept. 4	2.5
Nov. 1	4.0	May 7	3.7	22	2.6	29	2.2	11	2.6
7	4.4	15	3.8	26	2.4	Aug. 4	2.3	18	2.4
						9	2.3	25	2.3

ILLINOIS RIVER BASIN

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: Jan. 13-15 and ice periods, Dec. 15-18, 30, and Jan. 1, 3-6. Records are good, except for estimated periods and Feb. 12-17, 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.--49 years, 548 ft³/s, 8.57 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; minimum daily discharge, 35 ft³/s, Sept. 9, 1958.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,390 ft³/s, Feb. 1, gage height, 6.97 ft; minimum daily, 65 ft³/s, Aug. 5.

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	417	374	881	860	2220	700	1140	775	190	124	88	92
2	422	380	893	792	2260	844	1100	732	183	123	80	88
3	451	453	862	780	2180	890	1320	694	177	118	70	118
4	413	453	820	760	1970	760	1470	651	167	114	66	185
5	390	453	771	740	1730	740	1470	582	159	112	65	375
6	420	472	744	720	1470	722	1460	505	155	110	71	354
7	410	386	778	713	1340	751	1910	427	150	103	73	196
8	323	329	943	694	1320	824	1900	429	154	94	85	145
9	241	380	1170	683	1250	868	1750	444	150	87	163	145
10	232	441	1290	671	1130	908	1580	496	140	83	204	142
11	275	417	1240	517	958	956	1490	507	129	82	180	153
12	286	312	1190	423	765	981	1390	482	125	81	153	159
13	286	374	1150	360	686	986	1360	489	121	77	139	155
14	281	392	1090	320	648	946	1410	468	114	79	138	148
15	286	404	1000	300	639	883	1270	437	108	72	130	132
16	286	357	880	298	611	853	925	425	105	88	92	113
17	352	369	720	310	595	813	671	410	106	133	80	115
18	286	415	620	383	587	762	678	393	105	120	95	119
19	302	461	807	515	596	719	551	348	105	114	140	129
20	329	471	1120	879	485	639	557	299	103	108	143	137
21	340	471	1370	1230	394	606	518	259	98	108	130	129
22	352	445	1450	1400	422	558	492	259	97	124	113	168
23	346	430	1440	1360	475	525	634	267	93	134	121	349
24	363	398	1380	1260	458	570	855	260	91	123	123	369
25	374	467	1430	1170	442	631	806	239	93	128	129	339
26	374	502	1490	1120	449	668	750	225	89	127	127	310
27	392	501	1430	1070	527	652	807	220	90	120	119	312
28	410	533	1350	1020	571	681	903	216	98	105	114	185
29	404	739	1270	972	605	981	881	218	119	97	108	200
30	398	882	1200	1050	---	1120	822	211	116	105	100	208
31	386	---	1100	1470	---	1150	---	197	---	94	96	---
TOTAL	10827	13461	33879	24840	27783	24687	32870	12564	3730	3287	3535	5769
MEAN	349	449	1093	801	958	796	1096	405	124	106	114	192
MAX	451	882	1490	1470	2260	1150	1910	775	190	134	204	375
MIN	232	312	620	298	394	525	492	197	89	72	65	88
CFSM	.40	.52	1.26	.92	1.10	.92	1.26	.47	.14	.12	.13	.22
IN.	.46	.58	1.45	1.06	1.19	1.06	1.41	.54	.16	.14	.15	.25
CAL YR 1987	TOTAL 234244	MEAN 642	MAX 2240	MIN 193	CFSM .74	IN. 10.04						
WTR YR 1988	TOTAL 197232	MEAN 539	MAX 2260	MIN 65	CFSM .62	IN. 8.45						

ILLINOIS RIVER BASIN

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 4, 1986 to current year.

REMARKS.--Lake sampled near center at a lake depth of about 33 ft. Lake ice-covered during Feb. 15 sampling. Water-quality analyses by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, FEBRUARY 15 TO AUGUST 24, 1988
(Milligrams per liter unless otherwise indicated)

	Feb. 15		Apr. 13		June 14		July 25		Aug. 24	
Depth of sample (ft)	1.5	32.5	1.5	32.5	1.5	32.0	1.5	31.0	1.5	31.0
Specific conductance (μS/cm)	478	504	464	463	451	478	438	474	425	462
pH (units)	7.20	7.70	8.30	8.50	8.50	7.60	8.60	7.50	8.40	7.20
Water temperature (°C)	1.5	3.0	10.5	10.0	22.5	14.0	26.0	19.0	25.0	20.0
Color (Pt-Co. scale)	---	---	10	5	---	---	---	---	---	---
Turbidity (NTU)	---	---	0.80	0.70	---	---	---	---	---	---
Secchi-disc (meters)	---	---	4.3	---	2.2	---	3.0	---	1.8	---
Dissolved oxygen	12.9	3.6	10.7	9.9	9.4	0.2	8.7	0.3	8.3	0
Hardness, total (as CaCO ₃)	---	---	200	200	---	---	---	---	---	---
Calcium, dissolved (Ca)	---	---	35	35	---	---	---	---	---	---
Magnesium, Dissolved (Mg)	---	---	28	28	---	---	---	---	---	---
Sodium, dissolved (Na)	---	---	11	11	---	---	---	---	---	---
Potassium, dissolved (K)	---	---	2.7	2.6	---	---	---	---	---	---
Alkalinity, total (as CaCO ₃)	---	---	174	174	---	---	---	---	---	---
Sulfate, dissolved (SO ₄)	---	---	30	31	---	---	---	---	---	---
Fluoride, total (as F)	---	---	0.1	0.1	---	---	---	---	---	---
Chloride, dissolved (Cl)	---	---	24	24	---	---	---	---	---	---
Silica, dissolved (SiO ₂)	---	---	5.7	5.9	---	---	---	---	---	---
Solids, dissolved, at 180°C	---	---	258	258	---	---	---	---	---	---
Nitrogen, nitrite plus nitrate, diss (as N)	---	---	0.05	0.03	---	---	---	---	---	---
Nitrogen, ammonia, diss (as N)	---	---	<0.02	0.02	---	---	---	---	---	---
Nitrogen, ammonia plus organic, total (as N)	---	---	0.40	0.40	---	---	---	---	---	---
Total phosphorus (as P)	---	---	0.008	0.012	0.006	<0.020	0.005	0.012	0.052	0.040
Phosphorus, ortho, diss (as P)	---	---	0.004	0.004	---	0.003	---	0.003	---	0.003
Iron, dissolved (Fe) μg/L	---	---	<100	<100	---	---	---	---	---	---
Manganese, dissolved (Mn) μg/L	---	---	<40	<40	---	---	---	---	---	---
Chlorophyll a, phyto. (μg/L)	---	---	<5	---	3	---	<5	---	5	---

2-15-88

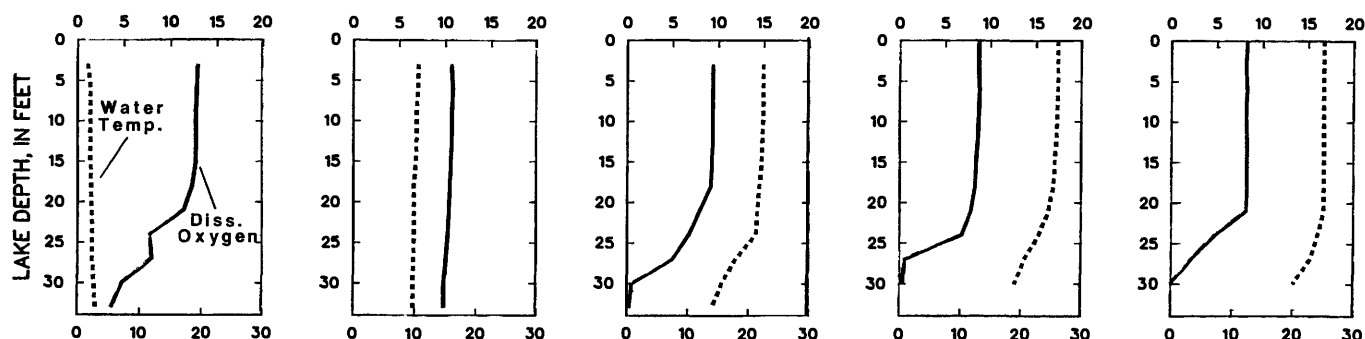
4-13-88

6-14-88

7-25-88

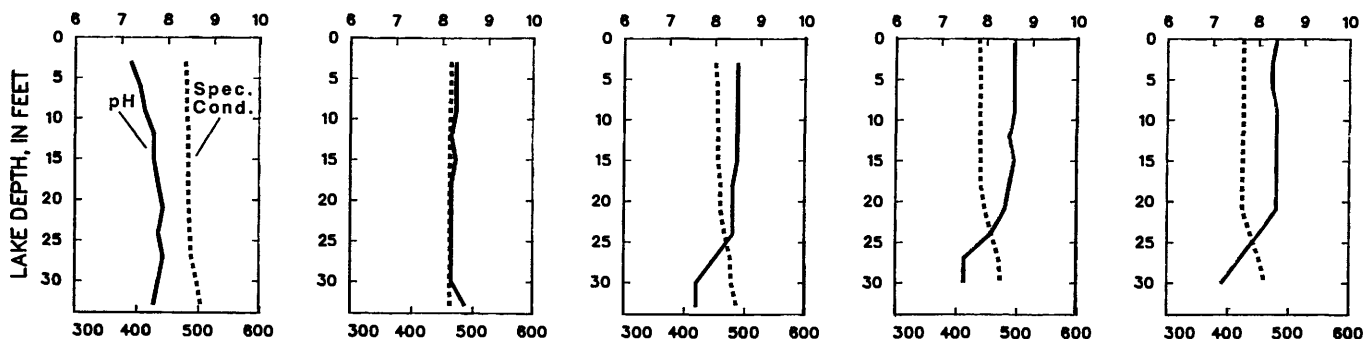
8-24-88

DISSOLVED OXYGEN, IN MILLIGRAMS PER LITER



WATER TEMPERATURE, IN DEGREES CELSIUS

PH, IN STANDARD UNITS



SPECIFIC CONDUCTANCE, IN MICROSIEMENS PER CENTIMETER

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

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 1988

ANNUAL MAXIMUM DISCHARGE AT CREST STAGE PARTIAL RECORD STATIONS DURING WATER YEAR 1988						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 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.	E 1.86	1959-88	03-24-88	12.40	85
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	1957-88	09-20-88	12.78	265
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	1959-88	05-09-88	12.41	200
*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.	E 33.9	1959-65 1966# 1967-88	05-09-88	10.02	170
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# 1976-88	10-21-87	4.47	704
*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	1960-88	09-20-88	10.98	115
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	1960-88	04-02-88	11.17	19
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# 1970-88	04-02-88	2.30	48
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	1970-88	09-03-88	11.89	48
*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	1958-88	04-03-88	11.05	200
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	1970-88	04-03-88	11.84	200
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	1970-88	04-03-88	12.90	790

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

ANNUAL MAXIMUM DISCHARGE AT CREST-STAGE PARTIAL-RECORD STATIONS DURING WATER YEAR 1988

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 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	1958-88	1988	B	<70
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 INTER- SECTION WITH STATE HIGHWAY 32 AT WABENO.	34.1	1970-88	04-03-88	11.38	92
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	1958-88	03-29-88	11.91	130
*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	1961-88	04-02-88	11.56	270
*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	1959-88	07-16-88	10.97	45
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	1970-88	04-04-88	12.52	48
*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. HIGH- WAY 45 AND STATE HIGHWAY 47, 1.5 MI SOUTH OF ELCHO.	9.00	1958-88	04-04-88	11.62	62
*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	1970-88	04-04-88	9.64	46
*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# 1973-88	07-17-88	11.06	53
*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# 1967-88	04-02-88	10.58	40
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	1961-88	04-02-88	11.44	215
*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	1960-88	04-02-88	14.59	1,050
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	1959-88	03-29-88	12.44	145
*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	1961-88	01-31-88	11.00	350
*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., OZAUCKEE COUNTY, AT BRIDGE ON DONGES BAY ROAD, 2.0 MI SOUTH OF FREISTADT.	8.00	1958-88	01-31-88	11.91	215

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

ANNUAL MAXIMUM DISCHARGE AT CREST-STAGE PARTIAL-RECORD STATIONS DURING WATER YEAR 1988

ANNUAL MAXIMUM DISCHARGE AT CREST--STAGE PARTIAL-RECORD STATIONS DURING WATER YEAR 1988					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							
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	1959-88	01-30-88	20.55	450
*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	1958-88	01-30-88	15.51	275
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	1962-88	01-30-88	12.49	152
*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	1960-88	05-06-88	14.98	90
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	1961-88	11-17-87	14.48	200
*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# 1967-88	03-08-88	11.90	70
*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	1958-88	05-09-88	11.37 D	60
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	1959-88	08-09-88	15.99	5,200
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	1970-88	04-04-88	11.33	265
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	1970-88	04-04-88	10.84	56
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.	E 9.46	1970-88	04-04-88	12.32	480
*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# 1967-88	1988	B	<70
*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	1961-88	04-04-88	12.32	480
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.	E 25.2	1970-88	04-04-88	13.19	510

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

ANNUAL MAXIMUM DISCHARGE AT CREST-STAGE PARTIAL-RECORD STATIONS DURING WATER YEAR 1988

STATION NO.	STATION NAME	LOCATION	DRAINAGE AREA (MI ²)	PERIOD OF RECORD	ANNUAL MAXIMUM		
					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	1970-88	04-04-88	11.00	28
*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# 1962-88	10-16-87	9.26	2,000
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	1962-88	10-16-87	12.46	145
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# 1958-88	10-16-87	3.32	165
*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	1958-88	10-16-87	12.80	290
*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# 1958-88	10-16-87	8.32	4,750
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	1958-88	10-16-87	12.09	203
*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	1960-88	03-05-88	11.89	96
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	1958-88	03-08-88	11.42 D	200
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	1959-88	1988	B	<100
*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	1962-88	03-01-88	11.95	100

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	1960-88	02-29-88	10.89	45
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.	E 279	1974-88	03-24-88	10.83	605

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	1961-88	03-24-88	14.19	900
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DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

ANNUAL MAXIMUM DISCHARGE AT CREST-STAGE PARTIAL-RECORD STATIONS DURING WATER YEAR 1988

ANNUAL MAXIMUM DISCHARGE AT CREST-STAGE PARTIAL-RECORD STATIONS DURING WATER YEAR 1988					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	1960-88	03-10-88	11.98	161
*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# 1967-88	03-10-88	17.59	7,200
*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	1961-88	03-25-88	16.88	3,050
*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., TREMPPEALEAU COUNTY, AT BRIDGE ON COUNTY TRUNK HIGHWAYS D AND T, 2.5 MI WEST OF ETTRICK.	14.3	1960-88	1988	B	<75
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	1961-88	03-24-88	7.25	100
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# 1967-88	1988	B	<500
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	1970-88	04-03-88	11.75	58
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	1970-88	04-03-88	12.28	92
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	1970-88	04-04-88	11.63	54
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	1970-88	07-09-88	10.51	15
*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	1958-88	04-04-88	10.40	70
*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# 1967-88	04-03-88	9.27	54
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	1970-88	03-09-88	12.62	104

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

ANNUAL MAXIMUM DISCHARGE AT CREST-STAGE PARTIAL-RECORD STATIONS DURING WATER YEAR 1988

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	1961-88	03-09-88	13.97	400
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	1970-88	03-09-88	12.90	265
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	1959-88	03-09-88	11.91	80
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	1962-88	03-09-88	16.41	1,180
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	1982-88	07-24-88	5.70	135
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	1959-88	03-09-88	12.19	400
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	1973-88	03-09-88	13.65	460
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	1959-88	02-29-88	11.83	265
*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	1961-88	03-08-88	11.92	55
*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	1958-88	03-08-88	11.39	105
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# 1978-88	09-21-88	3.37 D	52
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# 1983-88	09-21-88	4.96	131
*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# 1967-88	01-31-88	10.67	310
*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	1961-88	1988	B	<30
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	1960-88	1988	B	<50

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

ANNUAL MAXIMUM DISCHARGE AT CREST-STAGE PARTIAL-RECORD STATIONS DURING WATER YEAR 1988

ANNUAL MAXIMUM DISCHARGE AT CREST-STAGE PARTIAL-RECORD STATIONS DURING WATER YEAR 1988					ANNUAL MAXIMUM		
STATION NO.	STATION NAME	LOCATION	DRAINAGE AREA (MI ²)	PERIOD OF RECORD	DATE	GAGE HEIGHT (FT)	DIS-CHARGE (FT ³ /3)
WISCONSIN RIVER BASIN--CONTINUED							
*05407100	RICHLAND CREEK NEAR PLUGTOWN, 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 PLUGTOWN.	19.2	1958-88	1988	B	<75
*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	1959-88	1988	B	<75
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# 1967-88	1988	B	150
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	1958-88	1988	B	<160
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	1960-88	1988	B	<200
05414915	MADDEN BRANCH 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# 1984-88	1988	B	<100
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	1960-88	01-30-88	11.75	150
*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	1960-88	01-31-88	10.79	71
05425827	MAUNESHA RIVER NEAR SUN PRAIRIE, WI	LAT 43°13'37", LONG 89°09'33", IN SE 1/4 SEC.23, T.9 N., R.11 E., DANE COUNTY, AT BRIDGE ON TOWN ROAD, 4.2 MI NORTHEAST OF SUN PRAIRIE.	26.0	1973-88	01-31-88	12.89	620
*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	1958-88	01-31-88	12.04	255
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# 1982-88	01-31-88	11.04	106
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	1982-88	08-08-88	7.28	640

ANNUAL MAXIMUM DISCHARGE AT CREST-STAGE PARTIAL-RECORD STATIONS DURING WATER YEAR 1988

STATION NO.	STATION NAME	LOCATION	DRAINAGE AREA (MI ²)	PERIOD OF RECORD	DATE	ANNUAL MAXIMUM GAGE HEIGHT (FT)	DIS-CHARGE (FT ³ /S)
ROCK RIVER BASIN--CONTINUED							
*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	1962-88	01-18-88	12.40	465
*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	1959-88	1988	B	<100
*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# 1966-88	01-31-88	3.32	144
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	1961-88	1988	B	<30
*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	1961-88	01-31-88	11.40	32
*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	1958-88	04-06-88	11.89	115
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	1962-88	01-31-88	12.30	145
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	1958-88	01-20-88	11.19	80
*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	1962-88	01-19-88	10.97	130

* 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.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

MEASUREMENTS AT MISCELLANEOUS SITES

Measurements of streamflow at points other than gaging stations or partial-record stations are given in the following table.

DISCHARGE MEASUREMENTS MADE AT MISCELLANEOUS SITES DURING WATER YEAR 1988

Stream	Tributary to	Location	Drainage Area (mi ²)	Measured Previously (Water Years)	Measurements	
					Date	Discharge (ft ³ /s)
STREAMS TRIBUTARY TO LAKE MICHIGAN						
Pokegama River	St. Louis River	Lat 46°39'43", long 92°07'07", in NW 1/4 NW 1/4 sec.10, T.48 N., R.14 W., Douglas County, at town road 0.2 mi south of State Highway 105 and 0.8 mi west of State Highway 35 at South Superior.	26.4	1973-76	08-02-88	0
Black River	Nemadji River	Lat 46°26'45", long 92°10'05", in SE 1/4 SW 1/4 sec.19, T.46 N., R.14 W., Douglas County, at State Higway 35, 4.0 mi southeast of Patzau.	54.5	1964 1967 1969-76	08-02-88	0
Bear Creek	Lake Superior	Lat 46°38'51", long 92°00'40", in NW 1/4 NW 1/4 sec.16, T.48 N., R.13 W., Douglas County, at County Highway Z, 4.3 mi southeast of South Superior.	3.53	1973-75	08-02-88	0
Amnicon River	Lake Superior	Lat 46°36'20", long 91°53'20", in NE 1/4 NE 1/4 sec.32, T.48 N., R.12 W., Douglas County, at U.S. Highway 2, 4.5 mi northwest of Poplar.	110	1964 1967 1969-76	08-03-88	4.4
Middle River	Lake Superior	Lat 46°32'27", long 91°52'44", in SE 1/4 NW 1/4 sec.21, T.47 N., R.12 W., Douglas County, at sewage treatment plant, 1.4 mi east of Hines.	28.2	1973-75	08-03-88	0.78
Middle River	Lake Superior	Lat 46°39'05", long 91°48'15", in NE 1/4 NE 1/4 sec.13, T.48 N., R.12 W., Douglas County, at State Highway 13, 4.6 mi north of Poplar.	48.4	1964 1967 1969-76	08-02-88	2.8
Flag River	Lake Superior	Lat 46°46'55", long 91°22'25", in SE 1/4 NW 1/4 sec.28, T.50 N., R.8 W., Bayfield County, at State Highway 13, at Port Wing.	32.0	1964 1967 1969-76	08-03-88	31
Sand River	Lake Superior	Lat 46°54'00", long 90°57'20", in SW 1/4 NE 1/4 sec.14, T.51 N., R.5 W., Bayfield County, at State Highway 13, 8.5 mi northwest of Red Cliff.	27.4	1964 1967 1969-76	08-03-88	4.1
Whittlesey Creek Tributary	Whittlesey Creek	Lat 46°35'49", long 90°58'07", in SW 1/4 NW 1/4 sec.35, T.48 N., R.5 W., Bayfield County, at town road, 4.0 mi east of Ashland.	0.93	1973-77	08-04-88	0.65
Emmons Creek	Waupaca River	Lat 44°18'34", long 89°11'34", in NW 1/4 NE 1/4 sec.8, T.21 N., R.11 E., Waupaca County, at town road, 1.8 mi west of Rural.	25.1	1968-74#	07-12-88	20
Waupaca River	Wolf River	Lat 44°19'50", long 88°59'45", in NW 1/4 NW 1/4 sec.1, T.21 N., R.12 E., Waupaca County, at country road, 4.7 mi southeast of Waupaca.	265	1916-66# 1982-85# 1972-73 1977	07-13-88 08-15-88	154 173
Walla Walla Creek	Wolf River	Lat 44°17'20", long 88°55'53", in SE 1/4 SW 1/4 sec.16, T.21 N., R.13 E., Waupaca County, at U.S. Highway 10, 2.2 mi south of Weyauwega.	52.4	1963-67 1976-77	07-13-88	14
Rat River	Wolf River	Lat 44°12'48", long 88°45'42", in SW 1/4 SE 1/4 sec.13, T.20 N., R.14 E., Winnebago County, at County Highway MM, 5.3 mi west of Winchester.	69.4	1966 1973	07-13-88	0.04
Alder Creek	Wolf River	Lat 44°11'04", long 88°50'44", in SE 1/4 SE 1/4 sec.20, T.20 N., R.14 E., Winnebago County, on County Highway H, 5.1 mi south of Fremont.	14.2	1969-70 1974-75	07-12-88	0.21
Humphrey Creek	Pine River	Lat 44°11'05", long 89°14'45", in NW 1/4 NW 1/4 sec.30, T.20 N., R.11 E., Waushara County, at bridge on County Highway A, at Wild Rose.	20.6	1972-73 1975-76 1978	07-12-88	5.8
Pine River	Wolf River	Lat 44°10'16", long 89°06'23", in SW 1/4 SW 1/4 sec.29, T.20 N., R.12 E. Waushara County, at end of private road, at Saxeville.	62.6	1965-66	07-12-88	40

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

DISCHARGE MEASUREMENTS MADE AT MISCELLANEOUS SITES DURING WATER YEAR 1988

Stream	Tributary to	Location	Drainage Area (mi ²)	Measured Previously (Water Years)	Measurements	
					Date	Discharge (ft ³ /s)
STREAMS TRIBUTARY TO LAKE MICHIGAN--CQNTINUED						
Pine River	Wolf River	Lat 44°08'09", long 88°59'46", in SE 1/4 NW 1/4 sec.7, T.19 N., R.13 E., Waushara County, at State Highway 49, at Poy Sippi.	99.4	1966 1972-73 1975-76	07-13-88	74
Rattlesnake Creek	Willow Creek	Lat 44°06'45", long 89°11'32", in SE 1/4 SE 1/4 sec.16, T.19 N., R.11 E., Waushara County, below Lake Morris dam, at Mount Morris.	8.94	1972-73 1975-76	07-12-88	5.9
Willow Creek	Wolf River	Lat 44°03'19", long 89°08'32", in NE 1/4 NW 1/4 sec.12, T.18 N., R.11 E., Waushara County, at County Highway S, 2.1 mi northwest of Redgranite.	34.8	1962-67 1976-77	07-11-88	30
Willow Creek	Wolf River	Lat 44°02'58", long 89°06'11", in SW 1/4 NW 1/4 sec.8, T.18 N., R.12 E., Waushara County, at bridge on County Highway E, 0.4 mi north of Redgranite.	48.8	1972-73 1975-76	07-12-88	45
Daggets Creek	Fox River	Lat 44°05'36", long 88°37'56", in NW 1/4 NE 1/4 sec.30, T.19 N., R.16 E., Winnebago County, at mouth, 1.1 mi east of Butte des Morts.	11.3	--	07-13-88	0
W. Br. Fond du Lac River	Fox River	Lat 43°45'45", long 88°29'00", in NE 1/4 NE 1/4 sec.20, T.15 N., R.17 E., at County Highway T, 2.0 mi southwest of downtown Fond du Lac.	83.1	1939-54# 1972 1974	07-11-88	0
Campground Creek	E. Br. Fond du Lac River	Lat 43°41'25", long 88°28'48", in SE 1/4 SW 1/4 sec.11, T.14 N., R.16 E., Fond du Lac County, just upstream from sewage treatment plant, at Oakfield.	9.57	1973-76	07-11-88	2.8
Sevenmile Creek	E. Br. Fond du Lac River	Lat 43°44'01", long 88°28'25", in NW 1/4 NE 1/4 sec.34, T.15 N., R.16 E., Fond du Lac County, at bridge on State Highway 103, at Lamartine.	18.5	1973-74 1976	07-11-88	0
E. Br. Fond du Lac River	Fond du Lac River	Lat 43°45'15", long 88°27'10", in NE 1/4 SW 1/4 sec.22, T.15 N., R.17 E., Fond du Lac County, at County Highway VV, 1.4 mi south of downtown Fond du Lac.	78.4	1939-54# 1962-67 1971	07-11-88	3.7
Lake Winnebago Tributary	Fox River	Lat 43°58'17", long 88°18'35", on Indian Reservation in T.17 N., R.18 E., Calumet County, at U.S. Highway 151 and State Highway 55, at Brothertown.	5.10	1976-77	07-11-88	0.09
Plum Creek	Fox River	Lat 44°18'20", long 88°10'16", in NW 1/4 SW 1/4 sec.11, T.21 N., R.19 E., Brown County, on County Highway D, 1.6 mi south of Wrightstown.	21.1	1969 1976	07-11-88	0
Apple Creek	Fox River	Lat 44°20'56", long 88°09'41", in NE 1/4 SW 1/4 sec.26, T.22 N., R.19 E., Brown County, on town road, 1.5 mi north of Wrightstown.	48.1	1969	07-11-88	0
Ashwaubenon Creek	Fox River	Lat 44°27'17", long 88°05'43", in land grant 29, T.23 N., R.20 E., Brown County, at culvert on County Highway G, 0.5 mi west of DePere.	26.6	1969 1976-77	07-12-88	0.17
Dutchman Creek	Fox River	Lat 44°28'43", long 88°04'21", in E 1/2 land grant 23, T.23 N., R.20 E., Brown County, on town road, 1.9 mi north of DePere.	28.1	1969 1976	07-12-88	0.40
East River Tributary	East River	Lat 44°19'15", long 88°07'49", in NW 1/4 SW 1/4 sec.6, T.21 N., R.20 E., Brown County, on Fair Road, 1.7 mi west of Greenleaf.	4.12	1969-70	07-11-88	0
East River Tributary	East River	Lat 44°19'15", long 88°06'49", in NE 1/4 SE 1/4 sec.6, T.21 N., R.20 E., Brown County, on Fair Road, 1.0 mi northwest of Greenleaf.	10.0	1969-70	07-11-88	0.21
Baird Creek	East River	Lat 44°36'04", long 87°53'35", in NW 1/4 SW 1/4 sec.33, T.24 N., R.21 E., Brown County, at bridge on County Highway CC, near east city limits of Green Bay.	23.9	1969-70	07-12-88	0.36

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

DISCHARGE MEASUREMENTS MADE AT MISCELLANEOUS SITES DURING WATER YEAR 1988

Stream	Tributary to	Location	Drainage Area (mi ²)	Measured Previously (Water Years)	Measurements	
					Date	Discharge (ft ³ /s)
ST. CROIX RIVER BASIN						
St. Croix River	Mississippi River	Lat 46°18'24", long 91°47'16", in NW 1/4 SE 1/4 sec.7, T.44 N., R.11 W., Douglas County, at town road, 3.6 mi southeast of Solon Springs.	34.8	1974 1976-77	09-15-88	20
Hatchery Creek	Namekagon River	Lat 46°00'39", long 91°27'06", in NE 1/4 NE 1/4 sec.26, T.41 N., R.9 W., Sawyer County, at town road, 1.6 mi east of Hayward.	1.11	1975-77	09-15-88	1.5
Namekagon River	St. Croix River	Lat 46°00'07", long 91°29'24", in NE 1/4 SE 1/4 sec.28, T.41 N., R.9 W., Sawyer County, at ranger station, 0.8 mi southwest of U.S. Highway 63, at Hayward.	206	1973-76	09-15-88	105
Chippanazie Creek	Namekagon River	Lat 45°59'50", long 91°38'05", in NW 1/4 NW 1/4 sec.33, T.41 N., R.10 W., Washburn County, at U.S. Highway 63, at Stanberry.	34.4	1964 1967 1969-76	09-15-88	2.2
Godfrey Creek	S. Fk. Bean Brook	Lat 45°52'52", long 91°33'40", in NW 1/4 NW 1/4 sec.12, T.39 N., R.10 W., Washburn County, at town road, 2.7 mi northwest of Stone Lake.	7.45	1975-77	09-15-88	0.98
Bean Brook	Namekagon River	Lat 45°54'00", long 91°39'40", in NE 1/4 NE 1/4 sec.1, T.39 N., R.11 W., Washburn County, at County Highway M, 3.5 mi southeast of Spring Brook.	45.5	1964 1967 1969-76	09-14-88	31
Potato Creek	Namekagon River	Lat 45°53'32", long 91°49'39", in NW 1/4 SW 1/4 sec.2, T.39 N., R.12 W., Washburn County, at U.S. Highways 53 and 63, at Trego.	30.4	1962-67 1969 1976	09-14-88	15
Stuntz Brook	Namekagon River	Lat 46°00'45", long 91°57'25", in SE 1/4 SW 1/4 sec.23, T.41 N., R.13 W., Washburn County, at County Highway F, 8.8 mi southwest of Minong.	21.1	1964 1967 1969-76	09-15-88	0.21
Yellow River	St. Croix River	Lat 45°49'20", long 91°55'58", in NE 1/4 SE 1/4 sec.35, T.39 N., R.13 W., Washburn County, on town road, 2.0 mi west of Spooner.	74.3	1972-76	09-14-88	40
Sawyer Creek Tributary	Sawyer Creek	Lat 45°46'17", long 91°55'44", in SW 1/4 SW 1/4 sec.13, T.38 N., R.13 W., Washburn County, at culvert on town road, 2.8 mi north of Shell Lake.	4.36	1972-73	09-14-88	8.7
Yellow River	St. Croix River	Lat 45°53'35", long 92°21'55", in SE 1/4 NE 1/4 sec.5, T.39 N., R.16 W., Burnett County, at State Highway 35, 1.3 mi north of Webster.	284	1964 1967 1969-76	09-14-88	156
Clam River	St. Croix River	Lat 45°38'23", long 92°15'29", in NE 1/4 NE 1/4 sec.6, T.36 N., R.15 W., at County Highway W, 10.2 mi east of Frederic.	41.6	1962-67 1969 1976	09-13-88	0.76
Sand Creek	N. Fk. Clam River	Lat 45°36'30", long 92°07'16", in NW 1/4 NE 1/4 sec.17, T.36 N., R.14 W., Barron County, at town road, about 7.0 mi northwest of Cumberland.	17.7	--	07-18-88	5.0
Clam River Tributary	Clam River	Lat 45°51'34", long 92°24'21", in SW 1/4 SE 1/4 sec.16, T.39 N., R.16 W., Burnett County, at culvert on Bass Lake Road, 1.2 mi southeast of Webster.	1.24	1972-76	09-14-88	0.67
Wood River	St. Croix River	Lat 45°45'00", long 92°28'10", in SE 1/4 NE 1/4 sec.28, T.38 N., R.17 W., Burnett County, at town road, 4.8 mi southwest of Siren.	29.2	1964 1967 1969-76	09-13-88	0.10
Wood River	St. Croix River	Lat 45°45'29", long 92°45'29", in NE 1/4 NE 1/4 sec.28, T.38 N., R.18 W., Burnett County, at town road, 1.2 mi southwest of Alpha.	73.0	1969 1974 1976	09-13-88	16
N. Fk. Wood River	Wood River	Lat 45°47'30", long 92°37'00", in NW 1/4 SE 1/4 sec.8, T.38 N., R.18 W., Burnett County, at town road, 3.5 mi northeast of Grantsburg.	54.8	1964 1967 1969-76	09-13-88	1.5

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

DISCHARGE MEASUREMENTS MADE AT MISCELLANEOUS SITES DURING WATER YEAR 1988

Stream	Tributary to	Location	Drainage Area (mi ²)	Measured Previously (Water Years)	Measurements	
					Date	Discharge (ft ³ /s)
ST. CROIX RIVER BASIN--CONTINUED						
Wood River	St. Croix River	Lat 45°46'23", long 92°42'27", in SE 1/4 SW 1/4 sec.15, T.38 N., R.19 W., Burnett County, at State Highway 70, 1.3 mi west of Grantsburg.	153	1973-76	09-13-88	27
Trade River	St. Croix River	Lat 45°37'41", long 92°29'19", in SW 1/4 SW 1/4 sec.4, T.36 N., R.17 W., Polk County, at State Highways 35 and 48, 2.5 mi southwest of Frederic.	6.16	1960-67 1969 1976	09-13-88	0.58
Trade River Tributary	Trade River	Lat 45°39'00", long 92°28'05", in SW 1/4 NW 1/4 sec.34, T.37 N., R.17 W., Polk County, at State Highways 35 and 48, at Frederic.	2.04	1972-76	09-13-88	0
Trade River Tributary	Trade River	Lat 45°35'55", long 92°29'16", in NW 1/4 NW 1/4 sec.21, T.36 N., R.17 W., Polk County, at town road, 1.7 mi north of Luck.	2.18	1972-76	09-06-88	0.18
Wolf Creek	St. Croix River	Lat 45°33'20", long 92°43'05", in SE 1/4 SE 1/4 sec.33, T.36 N., R.19 W., Polk County, at County Highway G, 11.0 mi northwest of St. Croix Falls.	24.9	1964 1967 1969-76	09-06-88	3.6
St. Croix River Tributary	St. Croix River	Lat 45°20'52", long 92°40'55", in SW 1/4 NE 1/4 sec.14, T.33 N., R.19 W., Polk County, at road to fish hatchery, 2.1 mi northeast of Osceola.	2.28	1976	09-08-88	6.0
Osceola Creek	St. Croix River	Lat 45°17'52", long 92°39'11", in SE 1/4 SE 1/4 sec.36, T.33 N., R.19 W., Polk County, at culvert on town road, 3.0 mi southeast of Osceola.	2.01	1974-76	09-12-88	3.3
Trout Brook	St. Croix River	Lat 45°19'18", long 92°41'40", in NE 1/4 NE 1/4 sec.27, T.33 N., R.19 W., Polk County, at Third Street, in Osceola.	10.5	1974 1976	09-08-88	2.4
S. Br. Beaver Brook Tributary	S. Br. Beaver Brook	Lat 45°21'37", long 92°11'33", in NW 1/4 SW 1/4 sec.11, T.33 N., R.15 W., Polk County, at culvert on town road, 2.2 mi northwest of Clayton.	2.51	1972-76	09-12-88	0.20
Apple River	St. Croix River	Lat 45°18'04", long 92°21'48", in NW 1/4 SW 1/4 sec.33, T.33 N., R.16 W., Polk County, at sewage treatment plant, at Amery.	250	1972-76	09-08-88	64
Balsam Branch	Apple River	Lat 45°26'46", long 92°27'05", in NE 1/4 SE 1/4 sec.10, T.34 N., R.17 W., Polk County, at sewage treatment plant, at south side of town of Balsam Lake.	52.8	1972-76	09-06-88	1.6
Apple River	St. Croix River	Lat 45°11'49", long 92°31'57", in SE 1/4 SE 1/4 sec.1, T.31 N., R.18 W., St. Croix County, at County Highway HH, at Star Prairie.	459	1974-76	09-08-88	145
Willow River	St. Croix River	Lat 45°10'23", long 92°21'51", in SW 1/4 NW 1/4 sec.16, T.31 N., R.16 W., St. Croix County, at town road, 1.5 mi southeast of Deer Park.	80.4	1975-76	09-06-88	10
Willow River	St. Croix River	Lat 45°08'13", long 92°24'40", in SW 1/4 SE 1/4 sec.25, T.31 N., R.17 W., St. Croix County, at State Highway 64, 6.2 mi east of New Richmond.	87.9	1962-67 1969 1976	09-07-88	9.7
Willow River	St. Croix River	Lat 45°07'24", long 92°33'02", in SW 1/4 SE 1/4 sec.35, T.31 N., R.18 W., St. Croix County, downstream of sewage treatment plant, 0.9 mi west of New Richmond.	196	1972-76	09-07-88	30
CHIPPEWA RIVER BASIN						
Kinnickinnic River	St. Croix River	Lat 44°52'29", long 92°37'18", in NE 1/4 NE 1/4 sec.36, T.28 N., R.19 W., St. Croix County, at State Highway 35, 1.2 mi north of River Falls.	115	1969 1972-76	09-07-88	45

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

DISCHARGE MEASUREMENTS MADE AT MISCELLANEOUS SITES DURING WATER YEAR 1988

Stream	Tributary to	Location	Drainage Area (mi ²)	Measured Previously (Water Years)	Measurements	
					Date	Discharge (ft ³ /s)
CHIPPEWA RIVER BASIN--CONTINUED						
Torch River	W. Fk. Chippewa River	Lat 46°06'51", long 90°53'00", in SE 1/4 SE 1/4 sec.17, T.42 N., R.4 W., Ashland County, on County Highway GG, 3.7 mi south of Clam Lake.	43.9	--	08-03-88	4.0
Ghost Creek	W. Fk. Chippewa River	Lat 46°08'07", long 91°02'34", in SE 1/4 NW 1/4 sec.7, T.42 N., R.5 W., Sawyer County, on town road, 17 mi north of New Post.	5.27	--	08-03-88	0.15
Moose River	W. Fk. Chippewa River	Lat 46°04'16", long 90°51'40", in SW 1/4 SW 1/4 sec.34, T.42 N., R.4 W., Ashland County, on County Highway GG, 6.1 mi southeast of Clam Lake.	26.8	1969-70 1974 1976	08-02-88	1.3
Little Moose River	Moose River	Lat 46°03'02", long 90°59'39", in SW 1/4 NE 1/4 sec.9, T.41 N., R.5 W., Sawyer County, on town road, 14 mi northeast of New Post.	8.58	--	08-03-88	0.80
Willerth Creek	E. Fk. Chippewa River	Lat. 46°08'47", long 90°30'22", in NW 1/4 SW 1/4 sec.4, T.42 N., R.2 W., Ashland County, on town Road, 3.4 mi east of Glidden.	4.05	--	08-03-88	1.5
E. Fk. Chippewa River	Chippewa River	Lat 46°07'35", long 90°33'55", in NE 1/4 NW 1/4 sec.13, T.42 N., R.2 W., Ashland County, on town road, 0.7 mi southeast of Glidden.	96.7	1967 1969-70 1974 1976	08-03-88	20
Schraum Creek	E. Fk. Chippewa River	Lat 46°06'58", long 90°33'05", in SE 1/4 SE 1/4 sec.13, T.42 N., R.2 W., Ashland County, on State Highway 13, 1.9 mi southeast of Glidden.	--	--	08-03-88	2.7
Dryden Creek	E. Fk. Chippewa River	Lat 46°07'05", long 90°39'09", in SW 1/4 NW 1/4 sec.17, T.42 N., R.2 W., Ashland County, on town road, 1.2 mi west of Shanagolden.	24.1	--	08-03-88	3.1
Hungry Run Creek	E. Fk. Chippewa River	Lat 46°06'24", long 90°47'20", in SE 1/4 SE 1/4 sec.7, T.41 N., R.3 W., Ashland County, on town road, 10.4 mi southeast of Clam Lake.	7.78	--	08-02-88	0.74
Fishtrap Creek	E. Fk. Chippewa River	Lat 45°58'27", long 90°56'26", in NW 1/4 SW 1/4 sec.1, T.40 N., R.5 W., Sawyer County, on town road, 13 mi northeast of New Post.	13.1	--	08-01-88	1.5
Nail Creek	Chippewa River	Lat 45°37'35", long 91°09'50", in SW 1/4 SE 1/4 sec.6, T.36 N., R.6 W., Rusk County, at bridge on town road, 4.8 mi southeast of Exeland.	26.6	--	08-02-88	1.5
Big Weirgor Creek	Chippewa River	Lat 45°36'59", long 91°15'25". in NE 1/4 SE 1/4 sec.8, T.36 N., R.7 W., Rusk County, at bridge on town road, 3.9 mi southwest of Exeland.	41.7	1963-67	08-02-88	3.6
Devils Creek	Chippewa River	Lat 45°28'56", long 91°16'48", in SE 1/4 SE 1/4 sec.30, T.35 N., R.7 W., Rusk County, at bridge on State Highway 40, 1.7 mi north of Bruce.	44.1	1967	08-02-88	3.8
Soft Maple Creek	Chippewa River	Lat 45°24'30", long 91°23'59", in SE 1/4 SE 1/4 sec.19, T.34 N., R.8 W., Rusk County, on County Highway F, 1.2 mi southeast of Weyerhauser.	15.9	1972-74 1976	08-02-88	1.6
Soft Maple Creek	Chippewa River	Lat 45°25'04", long 91°21'30", in NE 1/4 NE 1/4 sec.21, T.34 N., R.8 W., Rusk County, at bridge on town road, 4.9 mi southwest of Bruce.	32.0	1963-67 1976	08-02-88	6.4
Smith Creek	Flambeau River	Lat 45°57'06", long 90°28'07", in NE 1/4 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	1970-71	08-02-88	0.64
Butternut Creek	Flambeau River	Lat 45°55'00", long 90°35'01", in SW 1/4 NE 1/4 sec.26, T.40 N., R.2 W., Price County, on County Highway E, 7 mi west of Park Falls.	60.9	--	08-02-88	13

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

DISCHARGE MEASUREMENTS MADE AT MISCELLANEOUS SITES DURING WATER YEAR 1988

Stream	Tributary to	Location	Drainage Area (mi ²)	Measured Previously (Water Years)	Measurements	
					Date	Discharge (ft ³ /s)
CHIPPEWA RIVER BASIN--CONTINUED						
Pine Creek	Flambeau River	Lat 45°54'12", long 90°41'00", in SE 1/4 sec.36, T.40 N., R.3 W., Sawyer County, at bridge on County Highway EE, 3.0 mi northeast of Oxbow.	38.9	1970-75#	08-02-88	15
Log Creek	Flambeau River	Lat 45°52'24", long 90°44'10", in SE 1/4 SE 1/4 sec.10, T.39 N., R.3 W., Sawyer County, at State Highway 70, 1.5 mi northwest of Oxbow.	14.8	--	08-02-88	1.3
S. Fk. Flambeau River	Flambeau River	Lat 45°52'48", long 90°24'56", in NE 1/4 SW 1/4 sec.7, T.39 N., R.1 E., Price County, at bridge on Center Street, at Fifield.	241	1975-77	08-02-88	34
Sailor Creek	S. Fk. Flambeau River	Lat 45°51'13", long 90°24'45", in NW 1/4 NW 1/4 sec.19, T.39 N., R.1 E., Price County, at town road, 1.9 mi south of Fifield.	35.3	--	08-02-88	3.7
Smith Creek	S. Fk. Flambeau River	Lat 45°45'57", long 90°32'58", in SW 1/4 SW 1/4 sec.18, T.38 N., R.1 W., Price County, at town road, 2.3 mi west of Lugerville.	11.4	--	08-02-88	0.30
Elk River	S. Fk. Flambeau River	Lat 45°44'40", long 90°13'40", in NE 1/4 NE 1/4 sec.33, T.38 N., R.2 E., Price County, at bridge on County Highway H, 8.9 mi northeast of Phillips.	34.0	1967 1969-71 1974 1976	08-03-88	4.4
Popple Creek	Elk River	Lat 45°45'05", long 90°14'46", in SW 1/4 NW 1/4 sec.28, T.38 N., R.2 E., Price County, at bridge on County Highway H, approximately 9 mi northeast of Phillips.	18.3	--	08-03-88	0.81
Squaw Creek	Elk River	Lat 45°43'25", long 90°23'11", in SW 1/4 SW 1/4 sec.32, T.38 N., R.1 E., Price County, at bridge on town road, 2.3 mi north of Phillips.	23.0	1940	08-03-88	0.93
Deer Creek	Elk River	Lat 45°42'24", long 90°28'15", in NW 1/4 NW 1/4 sec.11, T.37 N., R.1 W., Price County, at County Highway F, 3.5 mi west of Phillips.	12.9	--	08-02-88	2.7
Carpenter Creek	Ninemile Creek	Lat 45°40'54", long 90°33'19", in NE 1/4 NE 1/4 sec.24, T.37 N., R.2 W., Price County, at town road, approximately 8 mi northwest of Phillips.	12.4	--	08-02-88	0.21
S. Fk. Flambeau River	Flambeau River	Lat 45°42'15", long 90°36'55", in NW 1/4 SW 1/4 sec.10, T.37 N., R.2 W., Price County, on County Highway W, 0.4 mi downstream from Elk River and 12 mi west of Phillips.	609	1929-75# 1977	08-02-88	70
Price Creek	S. Fk. Flambeau River	Lat 45°43'33", long 90°40'12", in SE 1/4 SW 1/4 sec.31, T.38 N., R.2 W., Price County, on County Highway W, 13 mi west of Phillips.	16.9	1964-66# 1976	08-02-88	0.81
Skinner Creek	S. Fk. Flambeau River	Lat 45°35'29", long 90°43'14", in NW 1/4 sec.23, T.36 N., R.3 W., Rusk County, at bridge on County Highway M, 5.6 mi north of Hawkins.	29.8	1962-67	08-03-88	0.69
Deertail Creek	Chippewa River	Lat 45°30'00", long 90°54'17", in NW 1/4 SW 1/4 sec.20, T.35 N., R.4 W., Rusk County, at bridge on town road, 0.7 mi northwest of Glen Flora.	--	--	07-13-88	0.23
S. Fk. Jump River	Chippewa River	Lat 45°32'51", long 90°17'30", in SE 1/4 NE 1/4 sec.1, T.35 N., R.1 E., Price County, 1/4 mi downstream of State Highway 13, at Prentice.	57.2	1972-74 1976	08-04-88	0.99
Hay Creek	S. Fk. Jump River	Lat 45°32'32", long 90°21'37", in NW 1/4 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.	22.6	1961-67	08-03-88	0.62
Holmes Creek	S. Fk. Jump River	Lat 45°26'45", long 90°18'21", in NW 1/4 SW 1/4 sec.12, T.34 N., R.1 E., Price County, at bridge on State Highway 86, 0.6 mi west of Ogema.	10.4	1972-74 1976	08-01-88	0.12

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

DISCHARGE MEASUREMENTS MADE AT MISCELLANEOUS SITES DURING WATER YEAR 1988

Stream	Tributary to	Location	Drainage Area (mi ²)	Measured Previously (Water Years)	Measurements	
					Date	Discharge (ft ³ /s)
CHIPPEWA RIVER BASIN--CONTINUED						
Silver Creek	S. Fk. Big Jump River	Lat 45°21'02", long 90°17'49", in SW 1/4 SE 1/4 sec. 12, T.33 N., R.1 E., Taylor County, just downstream from State Highway 13, at Westboro.	36.4	1967 1972-74 1976	08-01-88	1.1
Fisher Creek	Silver Creek	Lat 45°20'47", long 90°17'39", in SE 1/4 NE 1/4 sec.13, T.33 N., R.1 E., Taylor County, on State Highway 13, at Westboro.	5.48	--	08-01-88	0.58
Mondeaux River	S. Fk. Jump River	Lat 45°20'53", long 90°27'52", in NE 1/4 NW 1/4 sec.14, T.33 N., R.1 W., Taylor County, on Country Trunk D, 8.4 mi west of Westboro.	39.2	--	08-01-88	3.1
N. Fk. Jump River	Jump River	Lat 45°37'45", long 90°23'32", in NW 1/4 SW 1/4 sec.5, T.36 N., R.1 E., Price County, at culvert on State Highway 13, 4 mi south of Phillips.	10.5	1970-71	08-03-88	0.13
Needle Creek	N. Fk. Jump River	Lat 45°33'15", long 90°29'32", in SE 1/4 SE 1/4 sec.33, T.36 N., R.1 W., Price County, at bridge on State Highway 111, 1 mi northeast of Catawba.	8.90	--	08-03-88	0.16
Levitt Creek	Jump River	Lat 45°21'22", long 90°46'48", in NW 1/4 SW 1/4 sec.8, T.33 N., R.3 W., Taylor County, at bridge on County Highway D, at Jump River.	28.4	--	08-03-88	0.19
S. Fk. Main Creek	Main Creek	Lat 45°30'32", long 90°42'25", in SW 1/4 SE 1/4 sec.14, T.35 N., R.3 W., Rusk County, at sewage treatment plant, at Hawkins.	16.2	1972-74	08-03-88	0.58
Main Creek	Jump River	Lat 45°20'07", long 91°03'16", in SW 1/4 SE 1/4 sec.13, T.33 N., R.6 W., Rusk County, on town road, approximately 3.5 mi northwest of Sheldon	138	--	08-02-88	5.2
Fisher River	Chippewa River	Lat 45°13'20", long 91°06'35", in SW 1/4 SW 1/4 sec.27, T.32 N., R.6 W., Chippewa County, at bridge on State Highway 27, in Holcombe.	81.5	1944-45# 1963-64# 1966#	08-03-88	0.16
N. Fk. Bob Creek	Chippewa River	Lat 45°08'03", long 91°12'58", in SE 1/4 SE 1/4 sec.27, T.31 N., R.7 W., Chippewa County, at town road, 4.0 mi southwest of Cornell.	42.0	--	07-20-88	1.1
O'Neil Creek	Chippewa River	Lat 45°05'26", long 91°22'46", in SE 1/4 SW 1/4 sec.8, T.30 N., R.8 W., Chippewa County, on town road, 2 mi north of Eagleton.	38.6	--	07-20-88	4.4
McCann Creek	O'Neil Creek	Lat 45°05'22", long 91°24'17", in SW 1/4 SW 1.4 sec.7, T.30 N., R.8 W., Chippewa County, on County Highway SS, 2 mi north of Eagleton.	29.7	--	07-20-88	11
Yellow River	Chippewa River	Lat 45°09'47", long 90°46'54", in SW 1/4 SW 1/4 sec.17, T.31 N., R.3 W., Taylor County, at State Highways 73 and 64, 1.3 mi east of Gilman.	146	--	06-27-88	4.8
Yellow River	Chippewa River	Lat 45°09'26", long 90°49'12", in SW 1/4 NW 1/4 sec.24, T.31 N., R.4 W., Taylor County, just upstream from sewage lagoon, 0.8 mi southwest of Gilman.	187	1972-74 1976	07-20-88	1.2
Otter Creek	Yellow River	Lat 45°06'45", long 90°59'11", in SE 1/4 NE 1/4 sec.4, T.30 N., R.5 W., Chippewa County, at County Highway S, at Huron.	30.1	--	07-20-88	1.9
Lotz Creek	Yellow River	Lat 44°56'39", long 91°06'13", in NW 1/4 NW 1/4 sec.34, T.29 N., R.6 W., Chippewa County, at County Highway X, 3.2 mi west of Boyd.	7.66	--	07-21-88	1.2
Yellow River	Chippewa River	Lat 44°56'54", long 91°09'29", in SE 1/4 SW 1/4 sec.31, T.29 N., R.6 W., Chippewa County, at Cadott.	365	1972-74 1976	07-20-88	9.4

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

DISCHARGE MEASUREMENTS MADE AT MISCELLANEOUS SITES DURING WATER YEAR 1988

Stream	Tributary to	Location	Drainage Area (mi ²)	Measured Previously (Water Years)	Measurements	
					Date	Discharge (ft ³ /s)
CHIPPEWA RIVER BASIN--CONTINUED						
Big Drywood Creek	Yellow River	Lat 44°58'27", long 91°13'36", in SW 1/4 SW 1/4 sec.22, T.29 N., R.7 W., Chippewa County, at bridge on town road, 4.4 mi northwest of Cadott.	33.5	1963-67 1976	07-20-88	3.2
Little Drywood Creek	Drywood Creek	Lat 44°59'16", long 91°14'22", in SE 1/4 SW 1/4 sec.16, T.29 N., R.7 W., Chippewa County, at County Highway K, 5.1 mi northwest of Cadott.	33.0	--	07-20-88	0.12
Paint Creek	Chippewa River	Lat 44°54'52", long 91°15'27", in NE 1/4 NW 1/4 sec.17, T.28 N., R.7 W., Chippewa County, at bridge on County Highway K, 6.3 mi east of Chippewa Falls.	55.5	1963-67 1973 1976	07-20-88	6.8
Duncan Creek	Chippewa River	Lat 45°11'21", long 91°30'13", in NE 1/4 NE 1/4 sec.8, T.31 N., R.9 W., Chippewa County, at bridge on County Highway AA, 3.0 mi southeast of New Auburn.	11.5	1972-73 1976-77	07-20-88	0.44
Duncan Creek	Chippewa River	45°06'00", long 91°29'20", in NE 1/4 NE 1/4 sec.8, T.30 N., R.9 W., Chippewa County, on State Highway 40, 0.3 mi below Floomer dam at Bloomer.	50.3	1943-51# 1973	07-20-88	14
S. Fk. Eau Claire River	Chippewa River	Lat 44°54'54", long 90°42'08", in SE 1/4 SE 1/4 sec.11, T.28 N., R.3 W., Clark County, at County Highway N, 6.0 mi southwest of Withee.	28.2	1969	07-19-88	1.0
S. Fk. Eau Claire River	Chippewa River	Lat 44°47'58", long 90°42'53", in SW 1/4 SW 1/4 sec.23, T.27 N., R.3 W., Clark County, at bridge on County Highway MM, 6.2 mi northwest of Greenwood.	77.6	1962-67 1969	07-19-88	2.9
S. Fk. Eau Claire River	Chippewa River	Lat 44°46'33", long 90°50'29", in NE 1/4 SE 1/4 sec.34, T.27 N., R.4 W., Clark County, on town road, approximately 13 mi south of Thorp.	122	--	07-19-88	4.4
Goggle-Eye Creek	N. Fk. Eau Claire River	Lat 44°58'40", long 90°48'00", in NW 1/4 SW 1/4 sec.19, T.29 N., R.3 W., Clark County, at culvert on State Highway 73, 1.3 mi north of Thorp.	6.42	1961# 1976	7-20-88	0.14
N. Fk. Eau Claire River	Eau Claire River	Lat 44°57'33", long 90°51'30", in SW 1/4 SW 1/4 sec.27, T.29 N., R.4 W., Clark County, at bridge on old State Highway 29, 2.8 mi west of Thorp.	52.9	1973 1976	07-20-88	0.39
McGrogan Creek	N. Fk. Eau Claire River	Lat 44°57'28", long 90°48'01", in NW 1/4 NW 1/4 sec.31, T.29 N., R.3 W., Clark County, at bridge on County Highway M, at Thorp.	2.22	1972-74	07-20-88	0.01
Schoolhouse Creek	Black Creek	Lat 44°35'48", long 90°57'11", in NE 1/4 NW 1/4 sec.2, T.24 N., R.5 W., Jackson County, at bridge on U. S. Highways 10 and 12, at Fairchild.	9.60	1972-74 1976	07-18-88	2.7
Wolf River	N. Fk. Eau Claire River	Lat 44°57'06", long 90°56'05", in SE 1/4 NW 1/4 sec.36, T.29 N., R.5 W., Chippewa County, at sewage treatment plant, at Stanley.	30.8	1972-74	07-21-88	0.02
Wolf River	N. Fk. Eau Claire River	Lat 44°49'40", long 90°56'53", in SW 1/4 SE 1/4 sec.11, T.27 N., R.5 W., Eau Claire County, at bridge on County Highway MM, 9 mi south of Stanley.	81.3	--	07-19-88	4.4
N. Fk. Eau Claire River	S. Fk. Eau Claire River	Lat 44°44'53", long 90°58'00", in NW 1/4 SE 1/4 sec.10, T.26 N., R.5 W., Eau Claire County, on town road, 7 mi northeast of Augusta.	205	--	07-19-88	13
Schoolhouse Creek	Black Creek	Lat 44°35'51", long 90°57'35", in NW 1/4 NW 1/4 sec.2, T.24 N., R.5 W., Jackson County, at bridge on U. S. Highways 10 and 12, approximately 0.3 mi southwest of Fairchild.	--	--	07-18-88	2.3

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

DISCHARGE MEASUREMENTS MADE AT MISCELLANEOUS SITES DURING WATER YEAR 1988

Stream	Tributary to	Location	Drainage Area (mi ²)	Measured	Measurements	
				Previously (Water Years)	Date	Discharge (ft ³ /s)
CHIPPEWA RIVER BASIN--CONTINUED						
Black Creek	Coon Fork Creek	Lat 44°40'07", long 90°59'26", in NW 1/4 NE 1/4 sec.9, T.25 N., R.5 W., Eau Claire County, at bridge on County Highway M, 5 mi north of Fairchild.	43.9	1967	07-18-88	9.9
Muskrat Creek	Eau Claire River	Lat 44°47'30", long 91°03'28", in NE 1/4 SW 1/4 sec.25, T.27 N., R.6 W., Eau Claire County, at town road, approximately 10 mi north of Augusta.	29.6	--	07-19-88	0.16
Hay Creek	Eau Claire River	Lat 44°47'08", long 91°05'29", in SW 1/4 SE 1/4 sec.27, T.27 N., R.6 W., Eau Claire County, at County Highway NN, approximately 11 mi north of Augusta.	39.9	--	07-19-88	3.0
Bridge Creek	Eau Claire River	Lat 44°40'41", long 91°06'15", in SE 1/4 NE 1/4 sec.4, T.25 N., R.6 W., Eau Claire County, upstream from confluence with Diamond Valley Creek, 0.8 mi east-southeast of Augusta.	25.7	--	10-05-87	8.4
Diamond Valley Creek	Bridge Creek	Lat 44°40'41", long 91°06'24", in SE 1/4 NE 1/4 sec.4, T.25 N., R.6 W., Eau Claire County, at mouth, at Augusta.	8.26	1980	10-05-87	3.8
Bridge Creek	Eau Claire River	Lat 44°40'45", long 91°06'37", in NE 1/4 NW 1/4 sec.4, T.25 N., R.6 W., Eau Claire County, on left bank approximately 0.25 mi downstream from Diamond Valley Creek, in Augusta.	34.9	1980	07-18-88	8.8
Bridge Creek	Eau Claire River	Lat 44°41'04", long 91°07'33", in SE 1/4 SE 1/4 sec.32, T.26 N., R.6 W., Eau Claire County, at sewage treatment plant, at Augusta.	35.6	1972-74 1976	10-05-87	12
Thompson Valley Creek	Bridge Creek	Lat 44°40'35", long 91°09'52", in NE 1/4 SE 1/4 sec.1, T.25 N., R.7 W., Eau Claire County, at State Highway 27, 2 mi west of Augusta.	11.1	--	07-18-88	3.1
Thompson Valley Creek	Bridge Creek	Lat 44°41'22", long 91°08'40", in NW 1/4 SW 1/4 sec.32, T.26 N., R.6 W., Eau Claire County, at Baring Road, 1.4 mi northwest of Augusta.	12.9	1980	10-05-87	6.2
Browns Creek	Bridge Creek	Lat 44°43'56", long 91°08'39", in NW 1/4 SW 1/4 sec.17, T.26 N., R.6 W., Eau Claire County, approximately 500 ft downstream of State Highway 27, 3.8 mi north-northwest of Augusta.	11.8	1980	10-05-87	1.3
Bridge Creek	Eau Claire River	Lat 44°44'21", long 91°09'55", in NE 1/4 NE 1/4 sec.13, T.26 N., R.7 W., Eau Claire County, at mouth, 4.5 mi northwest of Augusta.	71.5	1980	10-05-87	27
Bears Grass Creek	Eau Claire River	Lat 44°43'51", long 91°11'57", in SE 1/4 SW 1/4 sec.14, T.26 N., R.7 W., Eau Claire County, at bridge on U. S. Highway 12, 4.3 mi southeast of Fall Creek.	16.2	1962-67 1976	07-18-88	6.1
Bears Grass Creek Tributary	Bears Grass Creek	Lat 44°43'28", long 91°11'29", in NW 1/4 NE 1/4 sec.23, T.26 N., R.7 W., Eau Claire County, at bridge on U. S. Highway 12, 4.7 mi northwest of Augusta.	7.84	1962	10-05-87	0.93
Bears Grass Creek	Eau Claire River	Lat 44°45'07", long 91°11'26", in SW 1/4 NE 1/4 sec.11, T.26 N., R.7 W., Eau Claire County, on country road, 0.8 mi upstream from mouth, 4.2 mi southeast of Fall Creek.	28.0	--	10-05-87	11
Rush Creek	Eau Claire River	Lat 44°46'34", long 91°14'42", in NW 1/4 SW 1/4 sec.33, T.27 N., R.7 W., Eau Claire County, on County Highway D, 2.0 mi northeast of Fall Creek.	6.19	--	10-05-87	0.21
Fall Creek	Eau Claire River	Lat 44°45'48", long 91°16'57", in NW 1/4 SW 1/4 sec.6, T.26 N., R.7 W., Eau Claire County, at bridge on U. S. Highway 12, at Fall Creek.	14.8	--	07-19-88	2.2

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

DISCHARGE MEASUREMENTS MADE AT MISCELLANEOUS SITES DURING WATER YEAR 1988

Stream	Tributary to	Location	Drainage Area (mi ²)	Measured Previously (Water Years)	Measurements	
					Date	Discharge (ft ³ /s)
CHIPPEWA RIVER BASIN--CONTINUED						
Fall Creek	Eau Claire River	Lat 44°46'05", long 91°16'21", in NW 1/4 NE 1/4 sec.6, T.26 N., R.7 W., Eau Claire County, at sewage treatment plant, 0.3 mi north of U. S. Highway 12, at Fall Creek.	15.9	1972-74 1976 1980	10-05-87 07-19-88	3.9 2.3
Beaver Creek	Eau Claire River	Lat 44°46'34", long 91°14'42", in SW 1/4 SE 1/4 sec.17, T.27 N., R.7 W., Eau Claire County, at South 140th Ave., 6.0 mi west of Ludington.	16.8	--	10-05-87	7.2
Eau Claire River	Chippewa River	Lat 44°48'35", long 91°16'50", in SE 1/4 NW 1/4 sec.19, T.27 N., R.7 W., Eau Claire County, 500 ft east of County Highway K, 3.2 mi north of Fall Creek.	760	1943-55# 1963-64# 1966# 1971 1974 1980	10-05-87 07-19-88	165 126
Sevenmile Creek	Eau Claire River	Lat 44°50'15", long 91°22'19", in SE 1/4 NE 1/4 sec.8, T.27 N., R.8 W., Eau Claire County, at bridge on County Highway Q, 6.9 mi northwest of Fall Creek.	5.23	1977	07-18-88	0.84
Sevenmile Creek	Eau Claire River	Lat 44°50'08", long 91°22'25", in NW 1/4 SE 1/4 sec.8, T.27 N., R.8 W., Eau Claire County, 0.15 mi downstream of County Highway Q, 6.8 mi northwest of Fall Creek.	5.32	1977	07-18-88	2.6
Otter Creek	Eau Claire River	Lat 44°42'05", long 91°20'35", in NW 1/4 SW 1/4 sec.27, T.26 N., R.8 W., Eau Claire County, at culvert on County Highway D, at Brackett.	23.7	1967 1972	07-21-88	8.3
Beaver Creek	Otter Creek	Lat 44°41'52", long 91°21'10", in NW 1/4 NE 1/4 sec.33, T.26 N., R.8 W., Eau Claire County, at County Highway D, at Brackett.	12.4	--	07-21-88	1.0
Willow Creek	Lowes Creek	Lat 44°44'11", long 91°26'48", in SW 1/4 NW 1/4 sec.14, T.26 N., R.9 W., Eau Claire County, at State Highway 93, 4 mi south of Eau Claire.	3.83	--	07-18-88	0.70
Lowes Creek	Chippewa River	Lat 44°44'31", long 91°27'40", in NE 1/4 NW 1/4 sec.15, T.26 N., R.9 W., Eau Claire County, at bridge on County Highway II, 4.0 mi south of Eau Claire.	53.8	1962-67 1973	07-18-88	14
Lowes Creek	Chippewa River	Lat 44°43'38", long 91°30'02", in SE 1/4 SW 1/4 sec.32, T.27 N., R.9 W., Eau Claire County, at bridge on County Highway F, 3.0 mi south of Eau Claire.	62.4	1930-31	07-18-88	18
West Creek	Chippewa River	Lat 44°44'37", long 91°37'28", in NE 1/4 NW 1/4 sec.8, T.26 N., R.10 W., Eau Claire County, at State Highway 85, approximately 4.5 mi southwest of Eau Claire.	18.4	--	07-18-88 07-19-88	2.8 4.2
Elk Creek	Chippewa River	Lat 44°54'00", long 91°37'55", in SE 1/4 SE 1/4 sec.18, T.28 N., R.10 W., Chippewa County, at State Highway 29, 3.5 mi northeast of Elk Mound.	49.5	1973	07-20-88	21
Elk Creek	Chippewa River	Lat 44°54'31", long 91°39'35", in NW 1/4 NE 1/4 sec.12, T.27 N., R.11 W., Dunn County, at bridge on County Highway EE, 2.8 mi southeast of Elk Mound.	64.0	1967 1973	07-18-88	21
Rock Creek	Chippewa River	Lat 44°42'15", long 91°41'20", in NW 1/4 SW 1/4 sec.26, T.26 N., R.11 W., Dunn County, at bridge on County Highway H, 1.1 mi south of Rock Falls.	30.5	1967 1973	07-19-88	4.0
Muddy Creek	Chippewa River	Lat 44°48'00", long 91°46'02", in SW 1/4 SW 1/4 sec.19, T.27 N., R.11 W., Dunn County, at bridge on County Highway J, 9.3 mi southeast of Menomonie.	67.4	1962-67 1973 1976-77	07-19-88	0.52
Cranberry Creek	Chippewa River	Lat 44°44'06", long 91°47'31", in SW 1/4 NW 1/4 sec.13, T.26 N., R.12 W., Dunn County, at County Highway O, at Meridean.	16.9	1973	07-19-88	4.7

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

DISCHARGE MEASUREMENTS MADE AT MISCELLANEOUS SITES DURING WATER YEAR 1988

Stream	Tributary to	Location	Drainage Area (mi ²)	Measured Previously (Water Years)	Measurements	
					Date	Discharge (ft ³ /s)
CHIPPEWA RIVER BASIN--CONTINUED						
Fall Creek	Chippewa River	Lat 44°41'02", long 91°50'57", in NW 1/4 NE 1/4 sec.4, T.25 N., R.12 W., Pepin County, at State Highway 85, 4.4 mi southwest of Meridean.	8.21	--	07-19-88	4.0
Hemlock Creek	Red Cedar River	Lat 45°34'27", long 91°30'46", in SE 1/4 NW 1/4 sec.29, T.36 N., R.9 W., Rusk County, at Murphy Dam, 4.5 mi east of Mikana.	20.4	--	07-21-88	4.8
Meadow Creek	Red Cedar River	Lat 45°27'24", long 91°44'07", in NW 1/4 SE 1/4 sec.4, T.34 N., R.11 W., Barron County, on County Highway SS, 2.6 mi south of Rice Lake.	36.37	1973 1977	07-21-88	8.3
Pokegama Creek	Red Cedar River	Lat 45°24'29", long 91°39'36", in SW 1/4 SW 1/4 sec.19, T.34 N., R.10 W., Barron County, at bridge on U. S. Highway 8, 3.6 mi east of Cameron.	39.7	1963-64 1966-67 1973 1977	07-20-88	7.1
Moose Ear Creek	Chetek River	Lat 45°19'15", long 91°35'17", in SW 1/4 SE 1/4 sec.22, T.33 N., R.10 W., Barron County, on County Highway D, 3.1 mi east of Chetek.	38.2	1973 1977	07-21-88	7.0
Eighteenmile Creek	Red Cedar River	Lat 45°00'06", long 91°41'29", in SW 1/4 SW 1/4 sec.11, T.29 N., R.11 W., Dunn County, on town road, 1.5 mi east of Colfax.	21.5	--	07-20-88	6.6
Lightning Creek	Hay River	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 Highway P, in Almena.	19.0	1962 1965 1973-74 1976	07-18-88	1.3
Dority Creek	Hay River	Lat 45°17'32", long 91°57'45", in NW 1/4 NE 1/4, sec.3, T.32 N., R.13 W., Barron County, on town road, 4.3 mi southeast of Arland.	7.62	--	07-18-88	2.8
Hay River	Red Cedar River	Lat 45°15'45", long 91°58'49", in SW 1/4 NE 1/4 sec.16, T.32 N., R.13 W., Barron County, on County Highway F, 1.8 mi north of Prairie Farm.	92.1	1973-74 1976	07-18-88	26
Turtle Creek	Hay River	Lat 45°24'27", long 92°05'15", in NE 1/4 NW 1/4 sec.27, T.34 N., R.14 W., Barron County, at culvert on U. S. Highway 8, 2.7 mi northeast of Turtle Lake.	3.76	1972-74 1976-77	07-18-88	0.92
Turtle Creek	Hay River	Lat 45°15'20", long 92°00'13", in SE 1/4 NW 1/4 sec.20, T.32 N., R.13 W., Barron County, at County Highway A, 5.7 mi south of Arland.	60.8	--	07-18-88	13
Big Beaver Creek	Hay River	Lat 45°06'09", long 91°56'44", in NE 1/4 NW 1/4 sec.10, T.30 N., R.13 W., Dunn County, on County Highway F, 4.4 mi northwest of Wheeler.	--	--	07-19-88	1.1
S. Fk. Hay River	Hay River	Lat 45°04'17", long 92°02'08", in NE 1/4 NE 1/4 sec.23, T.30 N., R.14 W., Dunn County, at bridge on State Highway 79, 1.9 mi north of Boyceville.	89.8	1962-67 1973	07-19-88	26
Tiffany Creek	S. Fk. Hay River	Lat 45°02'47", long 92°09'24", in NE 1/4 NE 1/4 sec.35, T.30 N., R.15 W., St. Croix County, at bridge on country road, 1.0 mi southeast of Glenwood City.	13.7	1972-74 1976	07-19-88	0.80
Tiffany Creek	S. Fk. Hay River	Lat 45°02'48", long 92°02'08", in SE 1/4 SE 1/4 sec.26, T.30 N., R.14 W., Dunn County, at bridge on State Highway 79, at Boyceville.	69.9	1972-74 1976-77	07-19-88	17
Otter Creek	Hay River	Lat 45°03'36", long 91°52'43", in SE 1/4 SE 1/4 sec.19, T.30 N., R.12 W., Dunn County, at bridge on County Highway N, 1.7 mi northeast of Wheeler.	25.8	1962-67 1973 1976	07-19-88	2.3
Wilson Creek	Red Cedar River	Lat 44°55'05", long 91°57'55", in SE 1/4 SW 1/4 sec.9, T.28 N., R.13 W., Dunn County, at town road, 3.4 mi northwest of Menomonie.	--	--	07-19-88	24

DISCHARGE MEASUREMENTS MADE AT MISCELLANEOUS SITES DURING WATER YEAR 1988

Stream	Tributary to	Location	Drainage Area (mi ²)	Measured Previously (Water Years)	Measurements	
					Date	Discharge (ft ³ /s)
CHIPPEWA RIVER BASIN--CONTINUED						
Gilbert Creek	Red Cedar River	Lat 44°52'59", long 91°58'04", in NE 1/4 NW 1/4 sec.28, T.28 N., R.13 W., Dunn County, on town road, 1.9 mi west of Menomonie.	33.6	--	07-19-88	15
Irving Creek	Red Cedar River	Lat 44°50'35", long 91°59'00", in NW 1/4 NE 1/4 sec.8, T.27 N., R.13 W., Dunn County, at end of county road, 1.4 mi northwest of Irvington.	8.54	--	07-19-88	3.3
Little Elk Creek	Red Cedar River	Lat 44°48'08", long 91°54'35", in SW 1/4 SE 1/4 sec.23, T.22 N., R.13 W., Dunn County, at State Highway 25, 2 mi north of Downs ville.	15.4	1973	07-19-88	5.1
Bear Creek	Chippewa River	Lat 44°37'04", long 91°53'25", in NW 1/4 SW 1/4 sec.30, T.25 N., R.12 W., Pepin County, at bridge on U. S. Highway 10, 3.6 mi east of Durand.	37.9	1967	07-19-88	11
Bear Creek	Chippewa River	Lat 44°38'42", long 91°56'09", in SE 1/4 SE 1/4 sec.15, T.25 N., R.13 W., Pepin County, at bridge on State Highway 85, 1.6 mi northeast of Durand.	48.1	1964 1966-70 1973	07-19-88	13
Cady Creek	Eau Galle River	Lat 44°47'26", long 92°06'25", in NW 1/4 SE 1/4 sec.25, T.27 N., R.15 W., Pierce County, on County Highway P, at Elmwood.	22.4	--	07-18-88	34
Knights Creek	Eau Galle River	Lat 44°47'34", long 92°01'46", in NW 1/4 SW 1/4 sec.25, T.27 N., R.14 W., Dunn County, on County Highway D, 2.5 mi southeast of Weston.	19.1	--	07-19-88	5.1
Missouri Creek	Eau Galle River	Lat 44°41'55", long 92°01'57", in SW 1/4 SW 1/4 sec.25, T.26 N., R.14 W., Dunn County, at town road, 1.0 mi northwest of Eau Galle.	28.2	--	07-18-88	5.9
Arkansaw Creek Tributary	Arkansaw Creek	Lat 44°38'31", long 92°03'09", in SW 1/4 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.	2.61	--	07-19-88	0.14
Arkansaw Creek	Eau Galle River	Lat 44°38'27", long 92°01'53", in SW 1/4 NW 1/4 sec.24, T.25 N., R.14 W., Pepin County, at bridge on County Highways D and O, at Arkansaw.	22.0	1972-74 1976	07-19-88	5.4
Spring Creek	Buffalo Slough	Lat 44°34'13", long 91°57'48", in SW 1/4 SE 1/4 sec.9, T.24 N., R.13 W., Buffalo County, at bridge on town road, 4 mi south of Chippewa River bridge in Durand.	6.45	1962-69 1976-77	07-19-88	2.9
Plum Creek	Chippewa River	Lat 44°38'13", long 92°11'10", in SE 1/4 NW 1/4 sec.22, T.25 N., R.15 W., Pierce County, at bridge on U.S. Highway 10, in Plum City.	31.6	1964 1966-70	07-18-88	8.6
Porcupine Creek	Plum Creek	Lat 44°35'03", long 92°05'42", in SE 1/4 SE 1/4 sec.5, T.24 N., R.14 W., Pepin County, at County Highway SS, at Porcupine.	7.24	--	07-19-88	1.6

Operated as a low-flow partial-record station.

Operated as a continuous-record gaging station.

WATER-QUALITY PARTIAL-RECORD STATIONS

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 1987 TO SEPTEMBER 1988

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 00 LONG 092 05 38)									
OCT 1987					APR 1988				
06...	1245	92	195	9.5	13...	1030	1180	125	7.0
DEC 09...	0835	88	190	0.0	JUN 28...	1125	58	205	21.0
JAN 1988					AUG 11...	1210	59	180	23.0
22...	1035	71	200	0.0	SEP 21...	1200	1080	130	12.0
MAR 02...	1130	65	337	0.0					
04025500 BOIS BRULE RIVER AT BRULE, WI (LAT 46 32 16 LONG 091 35 43)									
OCT 1987					MAY 1988				
06...	1425	144	116	9.5	17...	1530	174	115	15.0
DEC 08...	1330	156	143	4.0	JUN 28...	1335	140	120	17.0
JAN 1988					AUG 11...	1400	116	128	18.5
22...	0920	129	90	0.5	SEP 21...	1350	243	80	12.5
MAR 02...	1000	131	124	0.5					
APR 13...	0810	332	105	6.5					
04027500 WHITE RIVER NEAR ASHLAND, WI (LAT 46 29 50N LONG 090 54 15W)									
OCT 1987					MAY 1988				
07...	1140	174	183	9.5	19...	0935	167	171	15.0
DEC 08...	1150	305	213	1.0	JUN 28...	1630	148	194	23.5
JAN 1988					AUG 11...	1555	159	175	22.5
21...	1600	141	103	0.5	SEP 21...	1640	295	142	14.5
MAR 01...	1700	182	194	1.0					
APR 12...	1530	380	125	8.0					
STREAMS TRIBUTARY TO LAKE MICHIGAN									
04066003 MENOMINEE RIVER BELOW PEMENE CRK NR PEMBINE, WI (LAT 45 34 46 LONG 087 47 13)									
OCT 1987					JUN 1988				
22...	1235	1910	270	6.5	17...	1030	1050	250	26.0
DEC 04...	0940	2530	268	0.0	SEP 06...	1200	1940	240	16.0
APR 1988									
28...	1550	2750	245	10.0					
04071000 OCONTO RIVER NEAR GILLET, WI (LAT 44 51 53 LONG 088 18 00)									
OCT 1987					JUN 1988				
21...	1105	336	270	6.5	16...	1600	170	300	25.0
DEC 01...	1640	603	250	1.5	JUL 28...	1510	231	275	28.0
MAR 1988					SEP 07...	1530	196	280	19.0
01...	1440	274	290	0.0					
APR 27...	1520	554	240	7.0					
04071858 PENSANKEE RIVER NEAR PENSANKEE, WI (LAT 44 49 08 LONG 087 57 12)									
DEC 1987					APR 1988				
02...	1420	477	560	0.5	26...	1750	55	480	11.0
JAN 1988					JUL 27...	1415	3.3	330	24.0
13...	1110	3.4	--	0.0	SEP 07...	1300	4.3	415	17.0
MAR 02...	1500	13	--	0.0					

WATER-QUALITY PARTIAL-RECORD STATIONS

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

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)	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)
STREAMS TRIBUTARY TO LAKE MICHIGAN--CONTINUED											
040720305		DUCK CREEK 0.3 MI DS FREEDOM STP NR FREEDOM, WI (LAT 44 23 50 LONG 088 16 55)									
JUL 1988 26...	1145	E0.25	2450	6.90	22.5	81	45	330	10	256	120
04072036		DUCK CREEK AT HILLSIDE PARK NEAR ONEIDA, WI (LAT 44 25 55 LONG 088 14 45)									
JUL 1988 26...	1435	E0.10	1260	7.00	24.5	75	40	110	8.0	268	63
040720432		DUCK CREEK AT FISH CREEK ROAD NEAR ONEIDA, WI (LAT 44 27 32 LONG 088 13 18)									
JUL 1988 27...	0815	E0.06	615	7.80	20.5	56	32	17	4.2	231	40
04072050		DUCK CREEK AT CO TR HWY J NEAR ONEIDA, WI (LAT 44 27 57 LONG 088 13 08)									
JUL 1988 27...	1055	E0.07	580	7.90	22.5	49	32	15	4.5	223	30
04072053		DUCK CREEK 0.5 MI US HWY 54 BRIDGE NR ONEIDA, WI (LAT 44 29 35 LONG 088 11 15)									
JUL 1988 28...	0955	E0.0	765	8.10	22.0	75	38	32	8.7	301	19
040720555		DUCK CREEK TRIBUTARY AT ONEIDA, WI (LAT 44 29 55 LONG 088 11 14)									
JUL 1988 28...	1230	E0.10	1480	8.10	25.5	100	45	130	3.5	379	47
04072058		DUCK CREEK 0.25 MI DS HW 54 BRIDGE NR ONEIDA, WI (LAT 44 30 06 LONG 088 10 54)									
JUL 1988 28...	1130	E0.0	865	7.90	22.0	80	40	40	8.3	312	33
04072060		DUCK CREEK AT OVERLAND ROAD NEAR ONEIDA, WI (LAT 44 30 42 LONG 088 10 12)									
JUL 1988 28...	0730	E0.10	680	7.60	20.5	46	43	28	7.0	258	15
04072155		TROUT CREEK AT SUNLITE DRIVE NEAR ONEIDA, WI (LAT 44 33 49 LONG 088 10 44)									
JUL 1988 28...	1700	0.11	745	8.00	22.0	91	36	7.8	1.2	302	45
04072165		TROUT CREEK AT MELANIE DRIVE NEAR ONEIDA, WI (LAT 44 32 40 LONG 088 09 12)									
JUL 1988 28...	1545	0.45	710	8.40	23.0	88	37	8.5	7.0	301	49
04072170		TROUT CREEK AT CTH J NEAR ONEIDA, WI (LAT 44 31 31 LONG 088 09 04)									
JUL 1988 28...	1755	0.28	703	8.30	25.0	84	37	9.3	3.2	296	46
04072186		TROUT CREEK AT MOUTH NEAR ONEIDA, WI (LAT 44 32 05 LONG 088 07 41)									
JUL 1988 28...	1430	0.25	650	8.20	26.0	73	36	9.5	4.8	272	42

WATER-QUALITY PARTIAL-RECORD STATIONS

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

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)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA DIS- 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- PHOROUS TOTAL (MG/L AS P) (00665)	PHOS- PHOROUS DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHOROUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)
STREAMS TRIBUTARY TO LAKE MICHIGAN--CONTINUED											
040720305	DUCK CREEK 0.3 MI DS FREEDOM STP NR FREEDOM, WI (LAT 44 23 50 LONG 088 16 55)										
JUL 1988 26...	490	0.10	10	0.110	20.0	0.110	0.140	1.6	4.60	2.20	2.00
04072036	DUCK CREEK AT HILLSIDE PARK NEAR ONEIDA, WI (LAT 44'25 55 LONG 088 14 45)										
JUL 1988 26...	200	0.60	9.1	0.020	0.290	0.090	0.130	1.6	0.480	0.420	0.350
040720432	DUCK CREEK AT FISH CREEK ROAD NEAR ONEIDA, WI (LAT 44 27 32 LONG 088 13 18)										
JUL 1988 27...	34	0.10	6.7	0.020	0.200	0.070	0.100	0.50	0.140	0.110	0.110
04072050	DUCK CREEK AT CO TR HWY J NEAR ONEIDA, WI (LAT 44 27 57 LONG 088 13 08)										
JUL 1988 27...	29	0.20	13	<0.010	<0.100	<0.010	0.020	0.90	0.400	0.380	0.350
04072053	DUCK CREEK 0.5 MI US HWY 54 BRIDGE NR ONEIDA, WI (LAT 44 29 35 LONG 088 11 15)										
JUL 1988 28...	68	0.20	9.9	<0.010	<0.100	0.120	0.160	1.1	1.00	0.870	0.750
040720555	DUCK CREEK TRIBUTARY AT ONEIDA, WI (LAT 44 29 55 LONG 088 11 14)										
JUL 1988 28...	230	0.10	21	<0.010	<0.100	0.050	0.090	0.30	0.170	0.160	0.150
04072058	DUCK CREEK 0.25 MI DS HW 54 BRIDGE NR ONEIDA, WI (LAT 44 30 06 LONG 088 10 54)										
JUL 1988 28...	80	0.20	2.6	<0.010	<0.100	0.060	0.090	1.2	0.880	0.640	0.540
04072060	DUCK CREEK AT OVERLAND ROAD NEAR ONEIDA, WI (LAT 44 30 42 LONG 088 10 12)										
JUL 1988 28...	63	0.20	16	<0.010	<0.100	0.040	0.090	1.9	0.730	0.670	0.540
04072155	TROUT CREEK AT SUNLITE DRIVE NEAR ONEIDA, WI (LAT 44 33 49 LONG 088 10 44)										
JUL 1988 28...	26	0.20	17	0.030	4.70	0.040	0.050	<0.20	0.050	0.040	0.030
04072165	TROUT CREEK AT MELANIE DRIVE NEAR ONEIDA, WI (LAT 44 32 40 LONG 088 09 12)										
JUL 1988 28...	24	0.10	16	0.010	3.10	0.020	0.040	0.40	0.170	0.160	0.130
04072170	TROUT CREEK AT CTH J NEAR ONEIDA, WI (LAT 44 31 31 LONG 088 09 04)										
JUL 1988 28...	25	0.10	14	0.020	1.60	0.070	0.090	0.70	0.250	0.220	0.200
04072186	TROUT CREEK AT MOUTH NEAR ONEIDA, WI (LAT 44 32 05 LONG 088 07 41)										
JUL 1988 28...	27	0.10	14	0.020	1.10	0.020	0.040	0.60	0.340	0.310	0.260

WATER-QUALITY PARTIAL-RECORD STATIONS

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

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STREAMS TRIBUTARY TO LAKE MICHIGAN--CONTINUED									
04073500 FOX RIVER AT BERLIN, WI (LAT 43 57 14 LONG 088 57 08)									
OCT 1987					MAY 1988				
23...	1155	774	380	6.0	20...	1415	776	320	20.5
DEC 09...	1345	1490	440	2.0	JUN 23...	1420	278	380	27.5
JAN 1988					JUL 13...	1340	315	330	26.5
12...	1335	685	510	0.0	AUG 25...	1425	512	310	23.0
FEB 17...	1045	797	410	0.0					
APR 07...	1355	2470	290	11.5					
04074950 WOLF RIVER AT LANGLADE, WI (LAT 44 11 25 LONG 088 44 00)									
NOV 1987					MAY 1988				
17...	1535	477	200	6.0	03...	1440	415	180	15.5
JAN 1988					31...	1655	232	220	26.5
21...	1600	253	260	0.0	JUN 15...	1140	149	--	22.0
FEB 22...	1445	257	280	0.0	AUG 16...	1400	206	215	28.0
MAR 15...	1345	333	--	0.0	SEP 15...	1410	182	220	16.0
04077400 WOLF RIVER NEAR SHAWANO, WI (LAT 44 50 09 LONG 088 37 30)									
DEC 1987					JUN 1988				
01...	1350	804	245	1.0	16...	1215	322	290	24.5
MAR 1988					JUL 28...	1800	412	230	24.5
01...	0935	433	295	0.0	SEP 07...	1755	385	275	16.0
APR 27...	1220	851	227	7.0					
04079000 WOLF RIVER AT NEW LONDON, WI (LAT 44 23 32 LONG 088 44 25)									
JAN 1988					JUL 1988				
11...	1500	681	368	0.0	13...	0900	499	480	25.0
FEB 29...	1400	843	370	0.0	SEP 08...	1355	576	370	18.0
JUN 17...	1200	436	375	23.5					
04085200 KEWAUNEE RIVER NEAR KEWAUNEE, WI (LAT 44 27 30 LONG 087 33 23)									
OCT 1987					MAY 1988				
06...	0910	13	690	11.0	05...	1125	51	650	14.5
NOV 11...	0910	19	710	1.0	JUN 15...	2115	9.8	530	20.0
JAN 1988					AUG 10...	1050	9.1	510	23.5
08...	1015	10	160	0.0	SEP 13...	1110	8.8	515	19.0
FEB 16...	1015	23	600	0.0					
04085281 EAST TWIN RIVER AT MISHICOT, WI (LAT 44 14 16 LONG 087 38 11)									
OCT 1987					MAY 1988				
06...	1120	15	680	11.5	05...	0920	51	510	14.0
NOV 11...	1135	22	680	2.0	JUN 15...	1745	7.2	570	26.0
JAN 1988					AUG 10...	0905	5.0	570	23.0
08...	1230	8.3	380	0.0	SEP 13...	0905	9.0	540	18.5
FEB 16...	1420	21	480	0.0					
04086000 SHEBOYGAN RIVER AT SHEBOYGAN, WI (LAT 43 44 25 LONG 087 45 35)									
OCT 1987					JUN 1988				
05...	1055	108	710	12.0	14...	1700	49	650	27.0
NOV 10...	1110	170	740	3.0	AUG 09...	1300	42	530	26.0
FEB 1988					SEP 12...	1315	46	535	22.5
15...	1305	155	730	0.0					

WATER-QUALITY PARTIAL-RECORD STATIONS

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

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STREAMS TRIBUTARY TO LAKE MICHIGAN--CONTINUED									
04086600 MILWAUKEE RIVER NEAR CEDARBURG, WI (LAT 43 16 46 LONG 087 56 34)									
OCT 1987					MAY 1988				
01...	1210	284	740	16.0	13...	1300	247	640	20.5
NOV					JUN				
09...	1230	283	760	6.0	23...	1235	91	720	27.0
DEC					AUG				
17...	1225	380	720	0.0	04...	1225	50	710	31.0
FEB 1988					SEP				
18...	1150	232	760	0.0	15...	1250	65	690	21.0
04087030 MENOMONEE RIVER AT MENOMONEE FALLS, WI (LAT 44 10 20 LONG 088 06 14)									
OCT 1987					JUN 1988				
01...	1605	15	1030	15.5	22...	1135	5.6	670	25.0
NOV					AUG				
09...	1605	15	1060	5.0	04...	1435	0.70	730	30.5
DEC					SEP				
17...	0930	26	920	0.0	15...	1435	1.1	625	19.0
MAY 1988									
13...	1515	14	780	19.0					
04087088 UNDERWOOD CREEK AT WAUWATOSA, WI (LAT 43 03 17 LONG 088 02 46)									
OCT 1987					MAY 1988				
29...	1027	5.4	1060	9.5	24...	1225	5.3	1090	22.0
DEC					JUL				
10...	1100	28	1100	6.0	06...	1745	4.2	770	31.0
JAN 1988					AUG				
20...	1405	151	1570	1.0	15...	1013	70	270	26.0
MAR					15...	1653	5.4	850	32.0
02...	1039	10	1550	4.0	SEP				
APR					26...	1120	7.0	1190	19.0
11...	1141	15	1450	10.0					
04087120 MENOMONEE RIVER AT WAUWATOSA, WI (LAT 43 02 44 LONG 087 59 59)									
OCT 1987					MAY 1988				
06...	1248	398	770	11.5	24...	1810	21	1070	16.5
29...	1340	36	980	7.0	JUL				
DEC					06...	1538	10	900	27.5
10...	1235	336	800	5.0	AUG				
JAN 1988					15...	1225	85	360	26.0
19...	1450	118	1330	0.5	SEP				
MAR					26...	1338	36	990	18.0
02...	1415	86	1200	2.0					
APR									
11...	1428	127	960	11.0					
04087159 KINNICKINNIC R AT S. 11TH ST AT MILWAUKEE, WI (LAT 42 59 51 LONG 087 55 35)									
OCT 1987					APR 1988				
29...	1532	6.9	730	12.0	11...	1623	14	1370	13.0
DEC					MAY				
10...	1530	19	980	7.5	25...	0720	8.4	840	10.0
JAN 1988					AUG				
20...	1200	113	3060	2.0	15...	1519	24	380	29.5
MAR					SEP				
02...	1625	11	2150	4.5	26...	1510	9.0	1510	22.5
04087204 OAK CREEK AT SOUTH MILWAUKEE, WI (LAT 42 55 30 LONG 087 52 12)									
OCT 1987					MAY 1988				
30...	1330	3.2	990	16.0	25...	1230	3.9	1380	15.0
DEC					JUL				
11...	1405	47	965	5.0	07...	0740	1.1	1200	22.0
JAN 1988					AUG				
19...	1222	46	1650	0.5	16...	1150	4.6	750	27.0
MAR					SEP				
03...	0815	15	1610	0.0	26...	1700	4.8	1040	19.0
APR									
12...	0900	21	1070	7.5					

WATER-QUALITY PARTIAL-RECORD STATIONS

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

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STREAMS TRIBUTARY TO LAKE MICHIGAN--CONTINUED									
04087220 ROOT RIVER NEAR FRANKLIN, WI (LAT 42 52 25 LONG 087 59 45)									
OCT 1987					MAY 1988				
30...	1130	9.4	960	7.5	26...	1157	9.0	--	15.0
DEC					JUL				
11...	1205	74	905	4.5	07...	1145	2.3	930	25.5
MAR 1988					AUG				
03...	1220	41	1120	0.0	16...	0918	12	1020	25.0
APR					SEP				
12...	1210	43	1000	11.0	27...	1118	12	990	16.0
04087233 ROOT RIVER CANAL NEAR FRANKLIN, WI (LAT 42 48 55 LONG 087 59 40)									
OCT 1987					MAY 1988				
30...	0925	8.3	1010	7.0	26...	1340	8.2	1000	16.5
DEC					JUL				
11...	0900	160	730	5.0	07...	1500	2.7	1150	28.0
JAN 1988					AUG				
19...	0930	130	670	0.5	16...	0737	1.7	1120	26.5
MAR					SEP				
03...	1425	56	690	0.5	27...	0836	5.8	1050	17.0
APR									
12...	1420	71	730	9.5					
04087240 ROOT RIVER AT RACINE, WI (LAT 42 45 05 LONG 087 49 25)									
OCT 1987					MAY 1988				
07...	1115	32	910	11.5	11...	0800	77	880	15.5
JAN 1988					JUN				
13...	1005	52	1080	0.5	23...	1710	2.2	1070	29.5
FEB					JUL				
19...	0720	62	445	0.5	25...	0952	7.6	980	26.0
APR					SEP				
01...	0820	345	890	7.0	15...	1620	4.6	585	21.0
04087257 PIKE RIVER NEAR RACINE, WI (LAT 42 30 49 LONG 087 51 30)									
OCT 1987					MAY 1988				
07...	0805	11	655	11.5	10...	1625	23	630	15.5
NOV					JUN				
19...	0830	8.6	610	6.0	23...	1415	7.0	390	24.5
JAN 1988					JUL				
13...	1240	16	795	0.5	25...	1215	6.5	360	24.5
FEB					SEP				
18...	1545	19	915	1.5	15...	1410	5.6	390	19.0
MAR									
31...	1700	63	720	7.0					
ST. CROIX RIVER BASIN									
05333500 ST. CROIX RIVER NEAR DANBURY, WI (LAT 46 04 28 LONG 092 14 50)									
DEC 1987					MAY 1988				
09...	1035	1120	166	1.5	20...	1305	1140	135	18.5
JAN 1988					JUL				
22...	1330	956	78	1.0	01...	1430	583	133	23.5
MAR					AUG				
02...	1240	1040	185	0.0	09...	1255	755	110	21.0
APR									
13...	1600	1930	116	11.5					
05340500 ST. CROIX RIVER AT ST. CROIX FALLS, WI (LAT 45 24 25 LONG 092 38 49)									
OCT 1987					JUN 1988				
15...	1005	1780	208	8.5	16...	1235	1450	195	23.0
DEC					SEP				
16...	1130	3890	235	1.0	02...	1000	1450	193	19.0
APR 1988					05...	1200	1500	213	18.5
07...	1220	11000	108	7.0					
MAY									
11...	1200	7250	175	17.0					

WATER-QUALITY PARTIAL-RECORD STATIONS

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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									
05356000		CHIPPEWA RIVER AT BISHOPS BRIDGE NEAR WINTER, WI (LAT 45 50 57 LONG 091 04 44)							
OCT 1987					MAY 1988				
06...	1120	144	105	10.5	19...	1350	230	83	17.0
DEC 07...	1030	1190	97	2.5	JUN 29...	1410	230	126	24.0
JAN 1988					AUG 10...	1350	230	67	23.5
21...	1005	530	95	2.0	SEP 23...	0950	271	60	12.0
APR 11...	0840	1220	70	5.5					
14...	1225	1900	57	8.0					
454657091300600		BIG SISSABAGAMA TRIBUTARY NEAR STONE LAKE, WI (LAT 45 46 57 LONG 091 30 06)							
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- PHOROUS TOTAL (MG/L AS P) (00665)			
APR 1988									
21...	1315	<0.50	7.90	10.0	10	0.060			
JUN 16...	1440	0.0	8.00	23.0	8.2	0.042			
JUL 25...	1315	0.0	9.20	29.5	7.2	0.080			
AUG 18...	1225	0.0	8.60	26.0	7.4	0.080			
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)
05356500		CHIPPEWA RIVER NEAR BRUCE, WI (LAT 45 27 08 LONG 091 15 39)							
OCT 1987					MAY 1988				
01...	0930	325	134	13.5	04...	1155	627	108	17.5
DEC 15...	1025	1200	112	0.5	27...	0930	550	115	21.0
JAN 1988					JUN 29...	1150	515	103	21.0
21...	1040	771	120	0.0	JUL 07...	1210	279	125	29.0
MAR 02...	1135	415	134	0.0	AUG 24...	1130	555	135	20.0
05360500		FLAMBEAU RIVER NEAR BRUCE, WI (LAT 45 22 21 LONG 091 12 34)							
OCT 1987					MAY 1988				
01...	1415	583	147	16.0	05...	1110	893	110	17.0
DEC 15...	0930	1400	163	0.5	27...	1145	604	125	21.0
JAN 1988					JUN 22...	1500	582	125	27.0
21...	1440	798	146	0.0	29...	1220	395	130	23.5
MAR 02...	1430	721	150	0.0	JUL 07...	1140	474	135	24.0
MAY 04...	1220	1190	105	16.5	AUG 25...	1510	829	140	21.0

WATER-QUALITY PARTIAL-RECORD STATIONS

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

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									
05362000 JUMP RIVER AT SHELDON, WI (LAT 45 18 29 LONG 090 57 23)									
OCT 1987					MAY 1988				
01...	1105	71	178	13.0	31...	1200	84	155	25.5
DEC 16...	1340	330	172	0.0	JUN 22...	1130	42	185	27.0
JAN 1988					JUL 07...	1030	31	190	27.5
15...	1140	73	216	0.0	AUG 25...	1200	42	190	26.0
MAR 01...	1235	78	227	0.0					
APR 29...	1100	527	115	11.0					
05365707 NORTH FORK EAU CLAIRE RIVER NEAR THORP, WI (LAT 44 58 25 LONG 090 50 57)									
OCT 1987					MAY 1988				
15...	1115	3.7	210	10.0	31...	1445	4.1	213	28.0
DEC 14...	1330	39	165	0.5	JUN 22...	0915	0.58	235	24.5
JAN 1988					JUL 05...	1420	0.25	240	28.0
28...	1350	4.5	278	0.0	28...	1150	0.11	207	29.5
MAR 14...	1345	86	170	0.5	AUG 31...	1300	0.41	645	20.5
17...	1200	39	158	0.0					
APR 27...	1715	80	182	8.0					
05368000 HAY RIVER AT WHEELER, WI (LAT 45 02 52 LONG 091 54 39)									
OCT 1987					MAY 1988				
14...	1245	203	365	9.5	06...	1330	212	386	18.0
DEC 03...	1440	267	328	2.5	JUN 03...	1300	198	340	18.0
JAN 1988					23...	1455	153	338	20.0
27...	1450	263	422	0.0	AUG 24...	0845	153	366	16.0
MAR 16...	1215	338	348	4.0	SEP 20...	1430	525	320	13.5
31...	1415	341	318	8.0					
APR 26...	1020	233	355	8.0					
05369000 RED CEDAR RIVER AT MENOMONIE, WI (LAT 44 53 02 LONG 091 55 57)									
OCT 1987					APR 1988				
14...	1200	987	243	11.0	26...	1245	1400	212	10.0
DEC 03...	1310	1370	212	2.0	JUN 03...	1030	1350	232	22.0
JAN 1988					23...	1330	579	210	24.0
26...	1315	777	280	0.5	JUL 19...	1250	560	220	26.5
MAR 16...	1045	2560	205	1.0	AUG 12...	0945	571	--	24.0
TREMPEALEAU RIVER BASIN									
05379500 TREMPEALEAU RIVER AT DODGE, WI (LAT 44 07 55 LONG 091 33 14)									
OCT 1987					APR 1988				
07...	1500	349	285	10.0	25...	1805	485	255	12.5
NOV 25...	1015	449	265	4.0	JUN 07...	1945	292	270	27.5
JAN 1988					JUL 26...	1925	235	275	26.5
26...	1550	319	327	0.0	SEP 13...	1210	222	270	18.0
MAR 15...	1730	552	280	2.0					

WATER-QUALITY PARTIAL-RECORD STATIONS

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BLACK RIVER BASIN									
05381000		BLACK RIVER AT NEILLSVILLE, WI (LAT 44 33 35 LONG 090 36 54)							
OCT 1987					APR 1988				
14...	1210	83	195	11.5	27...	1410	737	144	7.5
DEC					MAY				
02...	1330	866	157	1.0	31...	1730	94	164	28.5
JAN 1988					JUL				
28...	1050	93	262	0.0	05...	1215	33	205	27.5
MAR					AUG				
17...	1015	779	132	0.0	25...	0830	38	185	20.0
WISCONSIN RIVER BASIN									
05391000		WISCONSIN R AT RAINBOW LK NEAR LAKE TOMAHAWK, WI (LAT 45 49 58 LONG 089 32 51)							
NOV 1987					JUL 1988				
03...	1415	260	80	7.5	06...	1230	219	90	24.0
MAR 1988					SEP				
22...	1510	590	105	2.5	08...	1335	252	85	16.5
MAY									
19...	1305	322	85	17.5					
05393500		SPIRIT RIVER AT SPIRIT FALLS, WI (LAT 45 26 58 LONG 089 58 47)							
DEC 1987					JUN 1988				
04...	1055	71	80	0.0	24...	1130	4.9	160	22.5
JAN 1988					JUL				
21...	1450	19	135	0.0	27...	1100	3.2	170	21.5
MAR					SEP				
18...	1500	41	130	0.0	14...	1150	4.5	150	15.5
MAY									
18...	1450	34	102	17.5					
05394500		PRAIRIE RIVER NEAR MERRILL, WI (LAT 45 14 09 LONG 089 38 59)							
JAN 1988					JUN 1988				
21...	1140	87	185	0.5	15...	1440	63	--	22.5
MAR					JUL				
18...	1200	110	155	0.5	27...	1000	87	155	18.5
MAY					SEP				
18...	1200	110	130	16.5	13...	1450	73	190	18.0
05395000		WISCONSIN RIVER AT MERRILL, WI (LAT 45 10 41 LONG 089 40 52)							
MAY 1988					SEP 1988				
27...	1400	1090	128	20.5	15...	1145	655	165	17.0
05397500		EAU CLAIRE RIVER AT KELLY, WI (LAT 44 55 06 LONG 089 33 00)							
OCT 1987					JUN 1988				
29...	1610	137	168	4.0	23...	1350	55	300	23.5
JAN 1988					JUL				
22...	1310	88	295	0.0	25...	1630	71	205	24.5
MAR					SEP				
17...	1220	238	200	0.0	15...	1500	47	275	16.5
MAY									
10...	1500	274	230	6.5					
05398000		WISCONSIN RIVER AT ROTHSCHILD, WI (LAT 44 53 09 LONG 089 38 05)							
JUN 1988					SEP 1988				
06...	1130	939	282	26.0	23...	1645	2250	250	16.5
05399500		BIG EAU PLEINE RIVER NEAR STRATFORD, WI (LAT 44 49 19 LONG 090 04 46)							
DEC 1987					JUN 1988				
11...	1405	212	180	1.5	24...	1500	2.7	260	28.5
FEB 1988					JUL				
18...	1440	13	340	0.0	27...	1530	2.7	225	27.5
MAY					SEP				
13...	1205	76	190	15.0	14...	1530	1.4	310	21.5

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WISCONSIN RIVER BASIN--CONTINUED									
05402000 YELLOW RIVER AT BABCOCK, WI (LAT 44 18 05 LONG 090 07 15)									
OCT 1987					MAY 1988				
23...	1120	15	128	5.0	11...	0950	275	130	15.0
DEC 03...	1200	164	317	1.0	JUN 02...	1340	13	134	19.5
JAN 1988					20...	1630	6.5	184	25.5
13...	1115	13	114	0.0	JUL 20...	1220	5.0	138	22.5
FEB 25...	1145	15	187	0.0	AUG 31...	0910	3.9	125	16.0
APR 21...	1020	42	136	8.0					
05404000 WISCONSIN RIVER NEAR WISCONSIN DELLS, WI (LAT 43 36 22 LONG 089 45 25)									
OCT 1987					JUN 1988				
15...	1315	3210	250	10.0	02...	1300	3660	185	24.0
NOV 18...	1515	5720	240	6.5	JUL 14...	1130	3200	150	26.0
APR 1988					AUG 19...	0900	1670	210	26.5
12...	1430	8930	215	11.5					
05405000 BARABOO RIVER NEAR BARABOO, WI (LAT 43 28 51 LONG 089 38 09)									
OCT 1987					APR 1988				
05...	1515	224	390	12.5	11...	1440	360	360	11.5
NOV 19...	1300	616	340	6.5	MAY 31...	1325	179	420	22.0
JAN 1988					JUL 14...	0945	183	400	25.5
08...	1400	189	440	0.0	AUG 18...	1430	172	380	26.0
FEB 23...	1200	322	440	0.0					
05406500 BLACK EARTH CREEK AT BLACK EARTH, WI (LAT 43 08 03 LONG 089 43 56)									
OCT 1987					MAY 1988				
06...	1120	30	615	10.5	31...	1545	28	560	20.5
29...	1150	34	580	8.0	JUL 07...	1000	30	750	18.5
NOV 17...	1210	76	540	10.0	27...	1255	29	650	19.5
JAN 1988					AUG 16...	1510	26	580	25.0
12...	1155	34	620	3.5	SEP 21...	1340	27	585	15.0
FEB 23...	1515	38	550	4.0					
APR 11...	0955	42	600	8.5					
05408000 KICKAPOO RIVER AT LAFARGE, WI (LAT 43 34 27 LONG 090 38 35)									
OCT 1987					APR 1988				
08...	1030	191	425	7.0	13...	1345	156	460	11.0
NOV 25...	1515	201	455	4.0	JUN 03...	1130	103	480	20.5
JAN 1988					JUL 13...	1135	94	480	22.5
14...	1300	191	490	0.0	AUG 19...	1315	133	420	21.5
FEB 24...	1250	187	450	0.0					
05410490 KICKAPOO RIVER AT STEUBEN, WI (LAT 43 10 58 LONG 090 51 30)									
OCT 1987					MAY 1988				
06...	1000	366	495	10.5	10...	1030	561	450	14.5
NOV 16...	0900	384	490	7.5	JUN 22...	1130	314	490	25.0
JAN 1988					AUG 05...	0756	259	456	24.5
04...	1040	399	540	0.0	SEP 12...	0830	251	470	17.5
MAR 31...	1000	700	430	7.5					

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PLATTE RIVER BASIN									
05414000		PLATTE RIVER NEAR ROCKVILLE, WI (LAT 42 43 52 LONG 090 38 25)							
OCT 1987					MAY 1988				
06...	1638	64	640	11.0	09...	1020	98	605	14.0
NOV					JUN				
16...	1400	69	615	9.5	22...	1630	56	580	28.5
JAN 1988					AUG				
05...	0950	61	750	0.0	05...	1248	140	540	25.5
FEB					SEP				
15...	1418	101	640	0.0	12...	1450	42	565	22.0
MAR									
30...	0826	157	600	5.5					
GALENA RIVER BASIN									
05415000		GALENA RIVER AT BUNCOMBE, WI (LAT 42 30 49 LONG 090 22 40)							
OCT 1987					MAR 1988				
07...	1306	55	930	10.5	30...	1126	135	770	8.0
NOV					MAY				
17...	1020	122	860	9.0	09...	1510	89	770	15.0
18...	1405	77	830	7.0	JUN				
JAN 1988					23...	1650	40	760	28.0
05...	1356	50	1000	0.0	AUG				
FEB					05...	1820	36	880	29.0
16...	1310	110	840	0.5	SEP				
					12...	1727	29	865	25.0
ROCK RIVER BASIN									
05425912		BEAVERDAM RIVER AT BEAVER DAM, WI (LAT 43 26 57 LONG 088 50 21)							
NOV 1987					APR 1988				
03...	1025	1.6	580	16.5	06...	1050	49	550	10.0
DEC					MAY				
08...	1312	106	500	2.5	23...	1430	10	480	23.0
JAN 1988					AUG				
14...	0920	14	720	1.5	10...	1525	2.4	490	30.5
MAR					SEP				
01...	1512	90	890	3.0	23...	1555	3.6	600	18.0
05426250		BARK RIVER NEAR ROME, WI (LAT 42 57 39 LONG 088 40 09)							
OCT 1987					MAY 1988				
28...	1000	183	580	12.0	11...	1220	55	595	17.0
NOV					JUN				
20...	1025	71	645	2.0	24...	1040	7.6	650	24.5
JAN 1988					AUG				
07...	1335	72	810	0.5	11...	1405	6.2	675	22.5
FEB					SEP				
19...	1220	88	700	0.5	16...	1125	6.3	700	18.0
APR									
01...	1255	173	545	10.0					
05427570		ROCK RIVER AT INDIANFORD, WI (LAT 42 48 15 LONG 089 05 25)							
OCT 1987					JUN 1988				
09...	1235	969	565	10.5	22...	1335	87	535	27.0
NOV					JUL				
13...	1505	1060	590	6.0	08...	1125	118	515	28.5
FEB 1988					AUG				
23...	1140	1680	690	1.0	03...	0915	109	505	29.5
MAY					25...	1130	118	535	24.0
04...	0835	2220	490	17.0	SEP				
JUN					13...	0950	156	550	22.0
01...	1210	382	565	25.5					

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ROCK RIVER BASIN--CONTINUED									
05429500 YAHARA RIVER NEAR MC FARLAND, WI (LAT 43 00 32 LONG 089 18 18)									
OCT 1987					APR 1988				
05...	1350	152	405	16.5	19...	1140	14	490	10.0
29...	1055	187	420	9.5	MAY				
NOV					09...	1245	68	470	16.5
20...	1300	154	450	5.0	26...	1310	30	450	24.0
DEC					JUN				
11...	0845	279	475	2.5	20...	1045	23	380	27.5
JAN 1988					JUL				
04...	0905	246	360	1.0	14...	0950	11	415	28.5
29...	1300	292	520	2.5	AUG				
FEB					03...	1130	27	415	30.0
16...	0850	283	520	2.0	23...	1010	19	420	24.5
MAR					SEP				
09...	0820	190	495	4.5	13...	1140	18	395	23.0
28...	0800	156	460	5.0					
05430095 BADFISH CREEK AT CNTY HIGHWAY A NR STOUGHTON, WI (LAT 42 53 37 LONG 089 17 55)									
OCT 1987					APR 1988				
08...	0925	65	1450	13.0	09...	0930	62	1290	10.0
29...	0850	63	1430	12.5	MAY				
NOV					09...	0840	72	1210	14.5
16...	0800	56	1330	13.5	31...	0750	63	1300	18.5
DEC					JUN				
11...	1240	86	1190	11.0	24...	1335	53	1410	22.5
JAN 1988					JUL				
08...	0930	57	1360	4.0	19...	0655	70	1240	21.0
29...	1050	59	1400	8.0	AUG				
FEB					01...	0800	63	1330	22.5
16...	1140	61	1290	7.5	23...	0813	82	1400	20.5
MAR					SEP				
09...	1055	64	1300	9.0	12...	1213	51	1350	23.0
29...	1325	87	1140	10.5					
05430150 BADFISH CREEK NEAR COOKSVILLE, WI (LAT 42 50 00 LONG 089 11 48)									
OCT 1987					MAY 1988				
08...	1125	93	1300	11.0	09...	1050	120	1070	15.5
DEC					31...	1015	88	1280	21.0
11...	1150	135	1080	8.5	JUN				
JAN 1988					27...	1150	80	1290	22.5
11...	1200	95	565	1.0	JUL				
29...	0940	105	1190	4.0	19...	0855	92	1190	22.0
FEB					AUG				
17...	0955	109	1210	5.0	01...	1024	79	1300	25.0
MAR					SEP				
30...	0905	128	1040	7.0	12...	1110	83	1300	22.0
05430175 YAHARA RIVER NEAR FULTON, WI (LAT 42 49 50 LONG 089 10 09)									
OCT 1987					MAY 1988				
08...	1320	364	875	11.0	12...	1235	408	995	20.0
NOV					JUN				
23...	0930	319	880	8.5	27...	1005	117	1220	21.0
FEB 1988					AUG				
23...	1320	471	970	3.5	01...	1227	111	1000	28.5
MAR					SEP				
30...	1040	433	940	6.5	12...	0910	107	1330	21.0
05430500 ROCK RIVER AT AFTON, WI (LAT 42 36 33 LONG 089 04 14)									
NOV 1987					JUN 1988				
13...	1118	1470	645	6.0	22...	1025	349	710	24.0
JAN 1988					AUG				
11...	0935	1830	795	0.5	02...	1100	353	685	27.5
MAR					25...	0900	412	680	20.5
30...	1150	3240	490	7.5	SEP				
JUN					14...	1145	373	730	20.5
01...	0820	717	710	22.5					

WATER-QUALITY PARTIAL-RECORD STATIONS

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

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)
ROCK RIVER BASIN--CONTINUED									
05431486	TURTLE CREEK AT CARVERS ROCK ROAD NR CLINTON, WI (LAT 42 35 50 LONG 088 49 45)								
OCT 1987					MAY 1988				
06...	0900	79	740	12.0	10...	0910	118	675	13.5
NOV					JUN				
17...	0945	134	700	11.5	23...	0845	51	720	22.0
JAN 1988					AUG				
07...	1030	114	390	0.5	02...	0855	46	710	26.0
FEB					SEP				
18...	0910	134	710	0.5	14...	0900	44	710	15.5
MAR									
31...	0850	286	600	6.5					
05432500	PECATONICA RIVER AT DARLINGTON, WI (LAT 42 40 40 LONG 090 07 07)								
OCT 1987					MAY 1988				
07...	1426	108	710	10.5	11...	0745	162	665	15.0
NOV					JUN				
17...	0730	150	670	9.5	23...	1440	89	680	26.0
JAN 1988					AUG				
07...	1455	98	870	0.0	06...	1215	89	620	24.5
FEB					SEP				
15...	1718	180	690	0.5	13...	1400	58	645	21.0
APR									
01...	0756	264	660	8.0					
05434500	PECATONICA RIVER AT MARTINTOWN, WI (LAT 42 30 34 LONG 089 47 58)								
OCT 1987					MAY 1988				
09...	1310	498	660	9.5	12...	0812	684	625	17.0
NOV					JUN				
18...	1230	746	605	8.0	20...	1737	406	635	25.5
JAN 1988					AUG				
06...	1106	514	760	0.0	06...	0953	350	585	24.5
FEB					SEP				
17...	0912	771	630	0.0	13...	1128	300	600	19.5
MAR									
25...	1230	802	630	10.0					
05436500	SUGAR RIVER NEAR BRODHEAD, WI (LAT 42 36 42 LONG 089 23 53)								
OCT 1987					MAY 1988				
07...	0825	277	585	9.0	12...	1010	366	575	19.0
NOV					JUN				
18...	0835	416	560	6.5	20...	0840	220	600	23.5
JAN 1988					AUG				
12...	1058	281	640	0.0	06...	0730	194	510	24.0
MAR					SEP				
25...	0835	423	560	9.5	13...	0805	159	565	20.0
ILLINOIS RIVER BASIN									
05543830	FOX RIVER AT WAUKESHA, WI (LAT 43 00 17 LONG 088 14 37)								
OCT 1987					MAY 1988				
29...	0842	71	1020	5.0	24...	1048	37	1180	17.0
DEC					JUL				
10...	0845	266	800	4.5	06...	1206	15	1310	26.5
JAN 1988					AUG				
20...	1617	538	650	0.5	15...	0747	55	560	25.0
MAR					SEP				
02...	0846	139	880	2.0	26...	0830	34	990	16.5
APR									
11...	0855	223	790	9.0					
05544200	MUKWONAGO RIVER AT MUKWONAGO, WI (LAT 42 51 24 LONG 088 19 40)								
OCT 1987					MAY 1988				
07...	1355	25	520	11.5	11...	1038	46	500	17.5
NOV					JUN				
19...	1345	72	550	6.0	24...	0900	12	480	25.5
JAN 1988					AUG				
07...	1235	56	620	2.0	05...	1423	14	490	29.5
FEB					SEP				
19...	0950	53	580	1.5	16...	0845	37	520	19.5
APR									
01...	1055	115	470	8.5					

WATER-QUALITY PARTIAL-RECORD STATIONS

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

DATE	TIME	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	PHOS- PHOROUS 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- PHOROUS TOTAL (MG/L AS P) (00665)
------	------	--	---	--	------	------	--	---	--

ILLINOIS RIVER BASIN--CONTINUED

05544382 MUSKEGO CREEK AT MUSKEGO, WI (LAT 42 53 44 LONG 088 07 44)

OCT 1987					MAY 1988				
29...	1645	--	8.8	0.028	02...	1030	--	9.8	0.015
NOV					11...	1500	--	5.1	0.009
16...	1456	--	5.6	0.054	24...	1350	--	2.4	0.015
DEC					JUN				
17...	0920	--	19	0.040	07...	1445	--	0.29	0.070
JAN 1988					JUL				
28...	1615	--	18	0.030	18...	1430	--	E0.05	0.090
FEB					AUG				
16...	1800	--	15	0.040	23...	1315	--	0.65	0.100
MAR					SEP				
10...	0910	--	18	0.040	07...	1600	--	0.33	0.040
APR					20...	1325	--	1.9	0.050
08...	1515	--	37	0.070					

05544388 UNNAMED TRIB TO MUSKEGO CANAL NEAR WIND LAKE, WI (LAT 42 51 01 LONG 088 08 21)

NOV 1987					APR 1988				
16...	1427	--	E0.6	0.055	08...	1353	--	--	0.100
JAN 1988					10...	1146	--	--	0.070
14...	1640	--	0.0	0.090	11...	1806	--	--	0.060
28...	1600	--	0.0	0.100	12...	1345	--	--	0.060
FEB					21...	1245	--	2.0	0.060
08...	0845	--	--	0.080	MAY				
MAR					02...	1130	--	3.0	0.058
03...	1215	--	3.4	0.100	11...	1345	--	E1.6	0.098
10...	1045	--	4.1	0.090	24...	1245	--	0.0	0.202
16...	0845	--	3.1	0.160					

05544410 WIND LAKE DRAINAGE CANAL AT WIND LAKE, WI (LAT 42 48 46 LONG 088 08 31)

JAN 1988					JUN 1988				
28...	1400	61	--	0.026	22...	1105	--	0.0	0.027
APR					JUL				
08...	0856	137	--	0.046	06...	1625	--	0.0	0.026
MAY									
11...	1235	0.90	--	0.022					

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)
------	------	---	--	---	------	------	---	--	---

05546500 FOX RIVER AT WILMOT, WI (LAT 42 30 40 LONG 088 10 45)

OCT 1987					MAR 1988				
06...	1505	382	775	13.0	31...	1355	1120	665	8.5
NOV									
17...	1415	433	795	9.5					

E Estimated.

GROUND-WATER RECORDS



Figure 6. Locaton of observation wells and ground-water-quality sites in Wisconsin.

GROUND-WATER LEVELS

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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 1987 TO SEPTEMBER 1988

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 1	15.57	DEC 1	15.68	FEB 1	16.07	APR 4	14.86	JUN 8	16.43	AUG 2	17.04
6	15.60	7	15.63	8	16.05	12	14.76	13	16.45	8	16.68
12	15.70	14	15.57	15	16.07	20	14.76	21	16.70	15	16.55
19	15.80	21	15.52	22	16.08	26	14.78	28	16.60	26	16.30
26	15.81	28	15.54	29	16.28	MAY 3	14.75	JUL 6	16.82	29	16.31
NOV 2	15.82	JAN 4	15.55	MAR 7	16.22	10	14.85	11	16.72	SEP 5	16.55
9	15.94	11	15.65	14	15.68	16	15.00	18	16.35	12	16.67
18	15.70	19	15.81	21	15.60	24	15.60	25	16.32	26	15.46
23	15.69	25	15.94	28	15.32	31	15.80				

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 1987 TO SEPTEMBER 1988

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 23	29.80	JAN 7	30.40	MAR 31	30.80	MAY 20	31.00	JUL 12	30.90	SEP 20	31.10
NOV 23	29.80	FEB 12	30.50	APR 29	31.10	JUN 15	30.70	AUG 15	31.10		

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.

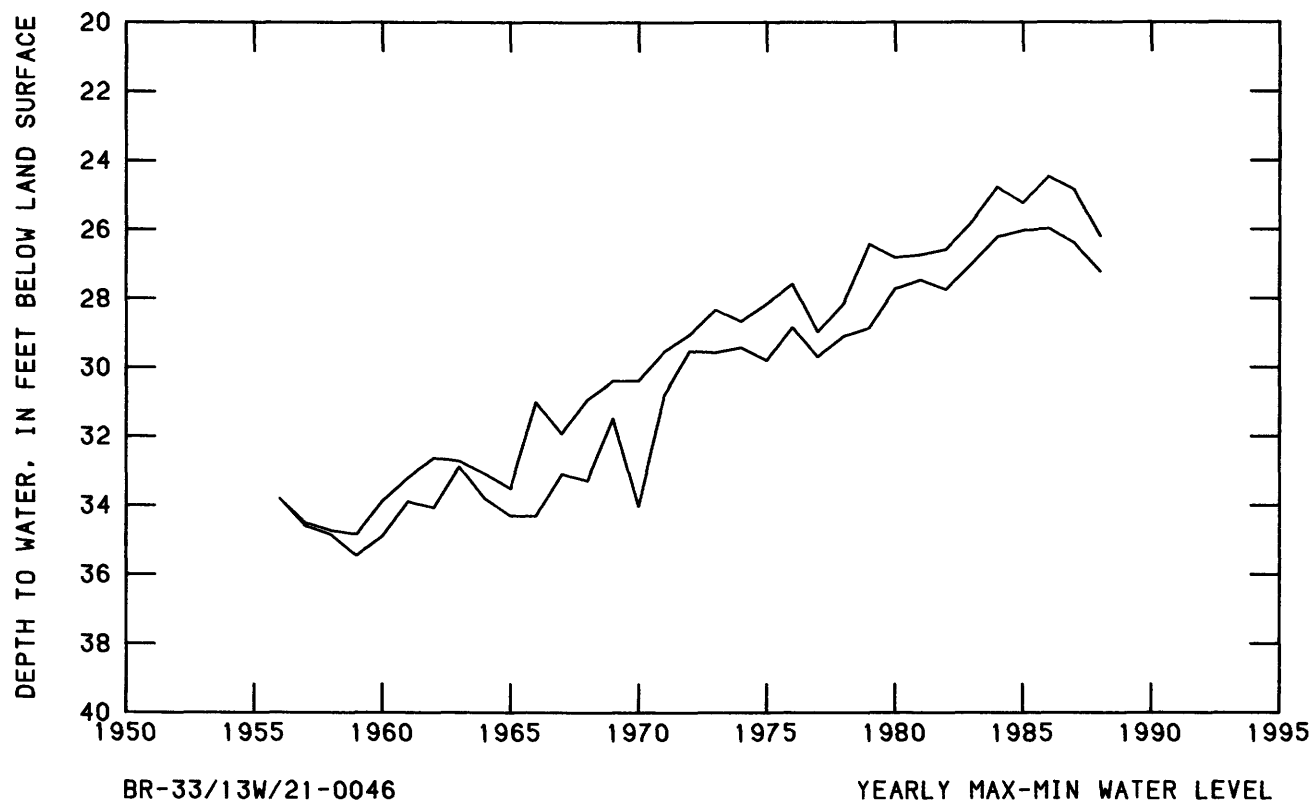
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 24.47 ft below land-surface datum, Nov. 5, 1986; lowest water level measured, 35.45 ft below land-surface datum, May 13, 1959.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 12	26.05	DEC 29	26.40	MAR 11	26.44	MAY 12	26.19	JUN 28	26.60	AUG 18	26.74
20	26.14	JAN 8	26.28	16	26.55	17	26.59	JUL 6	26.66	27	26.78
29	26.21	15	26.19	23	26.52	24	26.60	15	26.60	SEP 1	26.83
NOV 3	25.97	22	26.27	31	26.58	JUN 2	26.58	22	26.69	10	26.86
9	26.30	26	26.45	APR 7	26.51	10	26.58	26	26.75	17	26.82
16	26.06	FEB 16	26.32	20	26.44	16	26.66	AUG 5	26.69	22	26.86
DEC 7	26.22	25	26.55	25	26.47	22	26.60	11	26.72	29	26.91
16	26.39	MAR 3	26.55	MAY 6	26.55						

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 1987 TO SEPTEMBER 1988

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 6	101.55	DEC 2	91.78	JAN 28	87.45	MAR 29	85.58	JUL 19	127.00	AUG 25	121.87
13	100.13	8	90.93	FEB 2	87.28	APR 15	85.70	26	124.40	30	121.70
20	98.30	15	89.55	11	86.84	19	85.37	AUG 2	124.60	SEP 6	120.41
27	96.75	22	89.58	23	86.00	26	85.27	9	128.10	13	116.72
NOV 3	95.35	JAN 5	88.90	MAR 1	85.73	MAY 5	85.37	16	126.20	20	115.10
17	93.60	13	88.15	17	85.91	JUL 11	125.52	23	123.73	27	113.10
24	93.30	21	87.52								

GROUND-WATER LEVELS

BURNETT COUNTY

455224092215601. Local number, BT-39/16W/17-0002.

LOCATION.--Lat 45°52'24", long 92°21'56", Hydrologic Unit 07030001. Owner: Wis. Dept. of Natural Resources.

AQUIFER.--Sand and gravel.

WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 8 in, depth 46 ft, cased to 46 ft, perforated 44 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 1987 TO SEPTEMBER 1988

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 1	32.02	DEC 11	32.14	FEB 19	32.24	APR 22	32.55	JUN 17	32.88	AUG 12	33.10
9	32.13	18	32.24	26	32.39	29	32.68	28	32.88	19	33.14
16	32.14	25	32.33	MAR 4	32.44	MAY 6	32.71	JUL 1	32.94	26	33.15
23	32.16	JAN 8	32.35	11	32.48	13	32.69	8	32.98	SEP 2	33.18
30	32.19	15	32.33	18	32.54	20	32.75	15	32.96	9	33.17
NOV 13	32.13	22	32.40	25	32.38	27	32.73	22	33.03	16	33.22
20	32.24	29	32.36	APR 1	32.64	JUN 3	32.83	29	33.05	23	33.25
27	32.28	FEB 5	32.37	8	32.56	10	32.87	AUG 5	33.07	30	33.27
DEC 4	32.25	12	32.47	15	32.62						

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 1987 TO SEPTEMBER 1988

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 5	27.38	DEC 7	27.99	FEB 8	28.27	APR 12	28.59	JUN 14	28.69	AUG 10	28.94
11	28.11	15	27.63	15	28.05	18	28.24	18	28.60	16	28.87
20	27.90	21	27.79	22	27.79	25	28.36	27	28.59	22	28.80
26	27.52	29	28.40	29	28.50	MAY 2	28.60	JUL 5	28.63	29	29.16
NOV 3	27.81	JAN 5	28.45	MAR 7	28.12	9	27.77	11	28.62	SEP 5	29.05
9	28.31	11	27.77	14	28.49	16	28.51	18	28.73	12	29.09
12	27.71	18	28.15	20	28.55	23	28.39	24	28.67	19	28.55
23	27.88	25	28.19	28	28.27	30	28.50	AUG 1	28.67	26	29.11
30	27.72	FEB 1	28.57	APR 4	28.05	JUN 6	28.49				

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 1987 TO SEPTEMBER 1988

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 21	53.83	MAR 23	54.78	JUN 10	54.79	JUL 12	55.19	JUL 20	55.30	AUG 25	55.60
FEB 22	54.30	MAY 5	54.55	23	54.98						

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 1987 TO SEPTEMBER 1988

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 5	114.62	NOV 30	105.45	FEB 1	85.70	MAR 21	85.42	MAY 16	87.84	JUL 25	95.38
12	111.24	DEC 7	104.70	2	85.88	28	86.01	23	91.69	AUG 1	97.45
19	109.37	14	104.68	8	85.75	APR 4	85.25	JUN 6	93.40	8	99.85
26	111.44	23	106.15	15	85.60	11	86.15	13	97.10	15	99.62
NOV 2	106.07	JAN 1	105.79	22	85.45	18	86.32	20	96.79	22	98.73
9	107.38	11	101.95	29	86.25	25	88.51	JUL 5	96.55	SEP 6	95.11
16	104.31	19	107.19	MAR 7	86.82	MAY 2	87.10	11	97.49	19	99.27
23	108.00	26	85.60	14	85.23	9	87.12	18	97.97	26	97.24

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 1987 TO SEPTEMBER 1988

LOWEST VALUE

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	24.17	24.95	24.44	23.79	23.46	23.71	23.32	23.76	27.67	27.76	27.23	26.27
10	25.45	24.83	24.13	23.96	23.37	23.69	23.09	23.31	28.22	27.49	27.79	26.80
15	24.63	24.69	23.98	23.90	23.45	23.73	23.91	23.39	28.73	27.89	27.93	27.06
20	24.64	24.92	23.92	23.92	23.57	23.67	23.74	25.37	28.75	26.50	26.95	26.71
25	24.36	24.88	23.50	23.65	23.71	23.90	23.20	26.26	28.15	26.37	26.70	26.12
EOM	24.71	24.37	23.51	23.31	23.47	23.88	23.36	27.67	26.00	27.42	27.10	26.43

WTR YEAR 1988 MAX 28.93 JUN 17 MIN 22.01 FEB 25, APR 30

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 1987 TO SEPTEMBER 1988

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 28	19.89	DEC 9	18.49	FEB 29	18.11	MAY 9	16.84	JUL 8	18.80	SEP 15	26.18
NOV 10	19.68	30	18.61	APR 4	17.41	31	18.80	AUG 5	22.50	27	24.68
DEC 3	18.44	FEB 3	17.71								

DOOR COUNTY

455757087151701. Local number, DR-29/27E/30-0007.

LOCATION.--Lat 45°57'57", long 87°15'17", Hydrologic Unit 04030102. Owner: Fred Peterson.

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 1987 TO SEPTEMBER 1988

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 8	46.29	JAN 12	46.38	APR 13	31.92	JUN 15	46.30	AUG 24	46.34	SEP 27	46.38
NOV 10	32.69	FEB 16	46.63	MAY 24	45.74	JUL 12	46.26				

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 1987 TO SEPTEMBER 1988

LOWEST VALUE

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	21.67	19.97	9.40	11.74	14.96	19.94	3.09	6.87	17.99	24.98	25.14	28.89
10	23.55	19.33	9.18	12.70	16.23	11.00	2.97	8.81	18.50	25.20	27.32	30.89
15	24.83	18.87	7.24	13.54	16.78	9.91	5.15	9.26	20.31	25.26	27.31	31.42
20	23.72	14.39	8.76	14.40	17.56	10.43	7.22	10.36	22.01	23.34	27.66	29.51
25	19.76	13.84	9.01	15.71	18.64	8.59	7.26	12.54	22.01	24.42	27.34	29.61
EOM	19.51	10.66	8.70	16.30	18.52	5.68	5.23	16.16	21.86	25.46	28.06	30.63

WTR YEAR 1988 MAX 31.42 SEP 15 MIN 0.25 APR 10

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 1987 TO SEPTEMBER 1988

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 5	11.83	DEC 7	13.23	FEB 8	4.25	APR 12	0.22	JUN 13	3.27	AUG 8	6.54
12	12.07	14	0.53	16	4.63	19	0.61	21	3.78	15	6.88
19	12.21	21	2.10	22	4.95	25	0.91	27	4.13	22	7.29
26	12.30	28	2.29	29	5.25	MAY 2	1.01	JUL 5	4.61	31	7.63
NOV 2	12.51	JAN 4	2.43	MAR 7	5.57	9	0.69	11	4.95	SEP 6	5.27
9	12.58	11	2.65	14	5.91	16	1.24	18	5.38	12	8.21
16	12.78	19	3.09	21	6.25	23	1.91	25	5.80	19	8.52
23	12.94	25	3.46	28	1.26	31	2.53	AUG 1	6.16	26	7.33
30	13.05	FEB 2	3.83	APR 4	0.03	JUN 6	3.45				

GROUND-WATER LEVELS

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 1987 TO SEPTEMBER 1988

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 1	21.99	DEC 3	21.81	FEB 1	19.64	APR 27	17.97	JUN 1	20.25	AUG 1	25.43
2	21.72	31	18.16	23	19.08	5	17.93	17	21.99	1	25.94
NOV 19	22.43	JAN 14	19.14	MAR 29	20.39	26	18.74	30	23.30	22	26.64
20	22.69										

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 1987 TO SEPTEMBER 1988

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 30	11.50	DEC 30	11.30	FEB 28	10.57	APR 30	10.97	JUN 30	11.56	AUG 31	11.69
NOV 30	11.30	JAN 30	10.45	MAR 30	10.81	MAY 30	11.51	JUL 30	11.77	SEP 29	11.57

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.

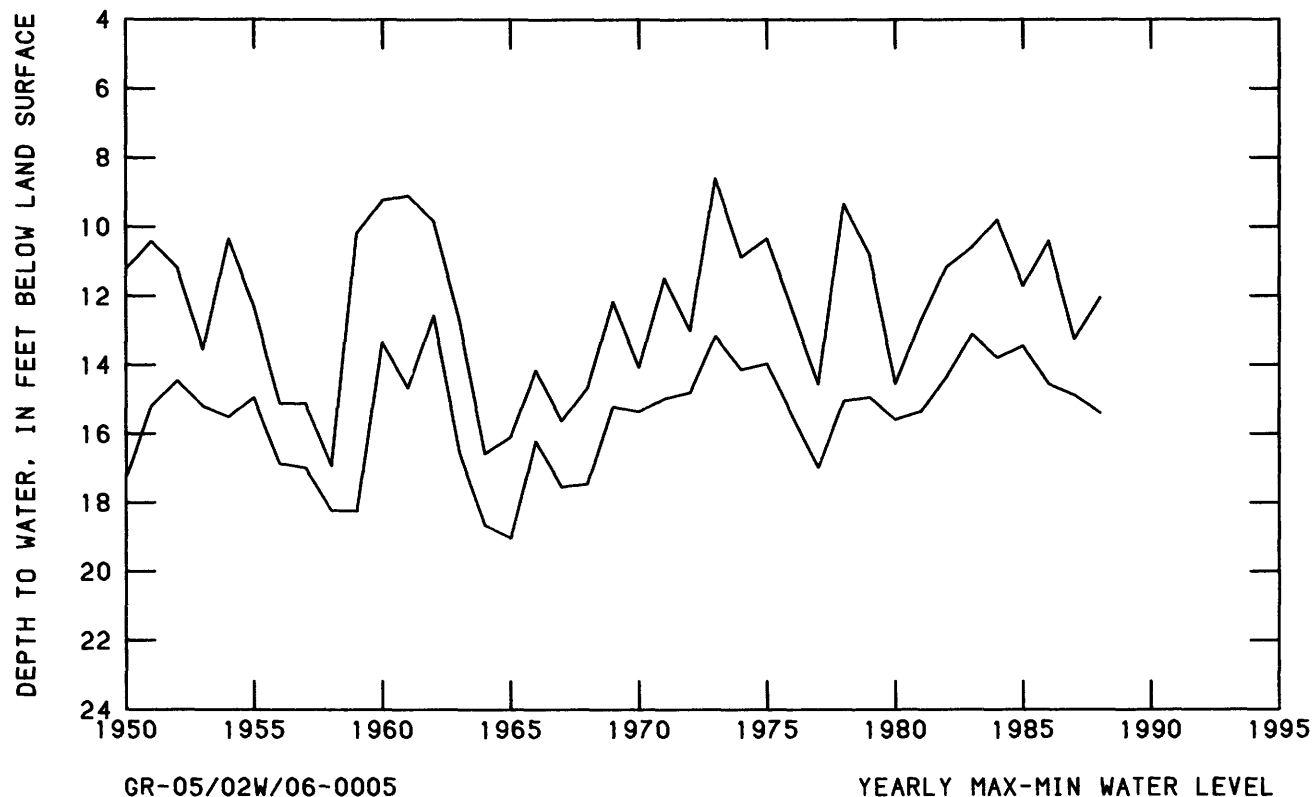
PERIOD OF RECORD.--July 1946 to current year.

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 1987 TO SEPTEMBER 1988

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 9	13.69	DEC 30	13.25	FEB 4	12.33	APR 26	12.25	JUN 16	13.41	AUG 19	14.61
NOV 2	13.78	JAN 15	13.30	MAR 10	12.06	MAY 11	12.42	JUL 21	14.07	SEP 30	14.85

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 1987 TO SEPTEMBER 1988

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 20	57.92	JAN 6	58.12	MAR 7	55.40	MAY 3	54.83	JUN 22	58.70	AUG 2	61.09
NOV 5	58.60	12	59.50	14	54.90	18	58.20	JUL 7	59.98	29	61.60
DEC 8	59.41	30	56.70	23	56.40	JUN 13	61.60	21	60.30	SEP 13	62.26
26	59.29	FEB 4	51.51	APR 12	54.56						

GROUND-WATER LEVELS

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 1987 TO SEPTEMBER 1988

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 6	57.46	NOV 19	59.74	FEB 17	55.87	APR 25	54.54	JUN 22	56.33	AUG 5	57.41
13	58.82	DEC 31	60.02	MAR 3	54.22	MAY 11	55.46	JUL 11	56.93	SEP 12	58.54
NOV 16	59.43	JAN 13	59.92	30	55.02	JUN 14	56.46	26	57.39		

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 1987 TO SEPTEMBER 1988

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 19	19.58	NOV 20	20.49	APR 21	19.78	MAY 17	19.97	JUL 20	21.00	SEP 10	20.97
21	19.69	DEC 18	20.68	22	19.98	JUL 14	20.74	AUG 6	20.93		

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 1987 TO SEPTEMBER 1988

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 15	12.16	NOV 19	11.83	APR 21	11.81	JUN 23	12.81	JUL 14	12.92	SEP 8	13.41
21	12.09	FEB 2	12.02	JUN 13	12.56						

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, 4.25 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, 207.71 ft below land-surface datum, May 29, 1987.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 7	202.93	NOV 17	200.46	FEB 18	200.89	MAR 31	202.00	JUN 23	202.77	AUG 4	204.48

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 1987 TO SEPTEMBER 1988

LOWEST VALUE

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	36.26	37.71	38.43	39.28	37.60	36.66	36.32	36.56	36.96	37.53	37.95	38.62
10	37.16	38.06	38.29	38.94	36.94	36.28	36.80	36.66	37.25	37.35	38.16	38.87
15	36.90	37.76	38.39	38.62	36.18	36.69	36.63	36.33	37.11	37.48	38.20	39.12
20	37.02	38.12	38.63	38.50	36.34	36.60	36.22	36.55	37.02	37.75	38.21	39.09
25	37.54	38.32	39.02	38.62	36.60	36.32	36.36	36.96	37.14	37.82	38.27	39.21
EOM	37.62	37.83	39.00	38.44	36.47	36.94	36.57	36.88	37.30	37.90	38.62	39.27

WTR YEAR 1988 MAX 39.28 JAN 5 MIN 35.56 FEB 22

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 1987 TO SEPTEMBER 1988

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 7	16.07	JAN 7	15.79	MAR 30	15.28	MAY 11	14.68	JUL 11	16.39	SEP 13	16.86
NOV 17	16.12	FEB 16	15.07	APR 25	13.56	JUN 23	16.11	AUG 6	16.60		

GROUND-WATER LEVELS

LANGLADE COUNTY

450942089085301. Local number, LA-31/11E/20-0118.

LOCATION.--Lat 45°09'42", long 89°08'53", Hydrologic Unit 07070002. Owner: Wis. Public Service Corp.

AQUIFER.--Sand and gravel.

WELL CHARACTERISTICS.--Driven observation water-table well, diameter 1 1/2 in, depth 21 ft, cased to 19 ft, well point 19-21 ft.

DATUM.--Land-surface datum is 1,510 ft above National Geodetic Vertical Datum of 1929. Measuring point: top of casing, 2.50 ft above land-surface datum.

PERIOD OF RECORD.--August 1942 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 5.09 ft below land-surface datum, May 18, 1973; lowest water level measured, 13.84 ft below land-surface datum, Feb. 28, 1949.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 23	12.51	DEC 28	11.48	FEB 29	11.93	APR 28	10.34	MAY 27	10.40	JUN 20	10.81
NOV 30	11.38	JAN 29	11.71	MAR 28	11.08						

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 1987 TO SEPTEMBER 1988

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 5	8.57	JAN 16	8.60	FEB 22	9.10	JUN 9	8.90	JUL 19	9.49	AUG 27	9.60
12	8.66	23	8.80	27	9.00	14	9.19	30	9.80	SEP 1	9.70
19	8.66	30	8.80	MAY 18	8.36	20	9.19	AUG 3	9.89	7	9.59
25	8.58	FEB 6	9.00	28	8.50	27	9.29	12	9.70	16	9.80
JAN 2	8.30	13	9.10	JUN 1	8.50	JUL 11	9.39	17	9.80	24	9.40
9	8.80										

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.

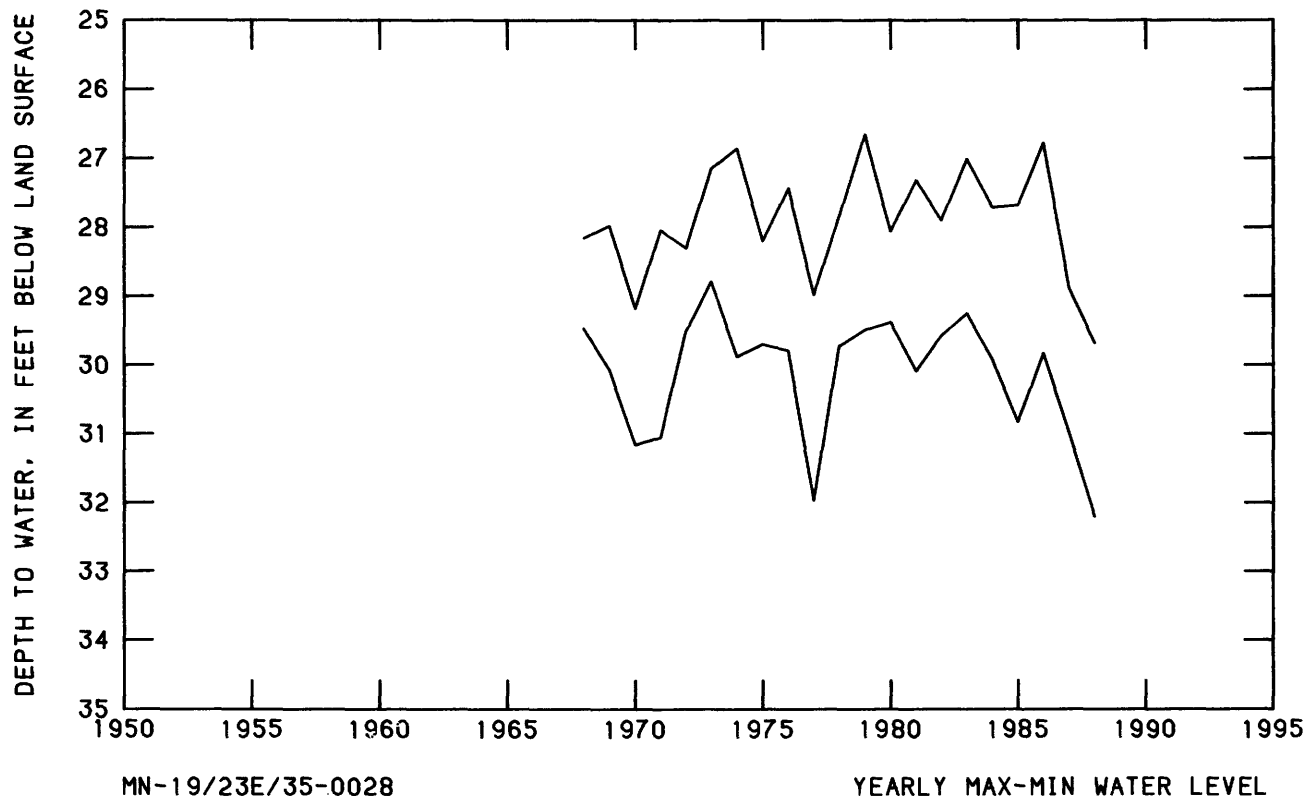
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 26.66 ft below land-surface datum, June 11, 1979; lowest water level measured, 32.20 ft below land-surface datum, Aug. 2, 1988.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 1	30.71	FEB 15	30.25	APR 12	29.68	JUN 7	31.69	JUL 19	31.45	AUG 23	31.68
5	30.70	MAR 1	30.42	26	29.82	14	31.88	26	31.72	30	31.79
NOV 3	30.78	8	30.21	MAY 3	30.00	22	31.98	AUG 2	32.20	SEP 6	31.87
10	30.96	15	29.96	10	29.90	30	31.94	9	31.71	12	31.88
DEC 1	30.98	22	30.08	17	30.22	JUL 5	32.16	11	31.07	21	31.79
FEB 8	30.35	29	29.95	23	30.63	12	31.75	16	31.87	27	31.77
11	30.34	APR 5	29.84	JUN 1	31.39						

GROUND-WATER LEVELS

MANITOWOC COUNTY



MARATHON COUNTY

444709089265301. Local number, MR-27/09E/31-0028.

LOCATION.--Lat 44°47'09", long 89°26'53", Hydrologic Unit 07070002. Owner: U.S. Geol. Survey.

AQUIFER.--Sand and gravel.

WELL CHARACTERISTICS.--Driven observation water-table well, diameter 1 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 1987 TO SEPTEMBER 1988

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 4	16.68	DEC 6	17.54	FEB 7	18.15	APR 10	18.30	JUN 12	18.87	AUG 7	19.35
11	16.78	13	17.59	14	18.37	17	18.34	19	18.94	14	19.44
18	16.87	20	17.60	21	18.42	24	18.43	26	19.18	21	19.44
25	16.90	27	17.78	28	18.54	MAY 1	18.48	JUL 3	19.34	28	19.53
NOV 1	17.06	JAN 3	17.82	MAR 6	18.62	7	18.54	10	18.89	SEP 4	19.60
8	17.15	10	17.93	13	18.20	15	18.63	16	19.12	11	19.62
15	17.22	17	17.97	20	18.38	22	18.67	24	19.26	18	19.62
22	17.32	24	18.11	27	18.22	29	18.79	31	19.27	25	19.76
29	17.39	31	18.18	APR 3	18.27	JUN 5	18.81				

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GROUND-WATER LEVELS

MARQUETTE COUNTY

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 1987 TO SEPTEMBER 1988

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 22	17.54	DEC 3	16.73	APR 27	15.39	JUN 3	16.43	JUL 19	17.96	AUG 26	15.54
NOV 12	17.31	FEB 10	16.77	MAY 12	15.63	15	16.96	AUG 19	18.52	SEP 26	18.11

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, 310.78 ft below land-surface datum, Sept. 29, 1988.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

LOWEST VALUE

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	295.38	296.16	296.40	295.90	296.48	296.89	296.53	296.88	297.95	300.53	304.67	308.64
10	295.85	296.38	295.79	295.93	296.51	296.70	296.84	296.90	298.47	300.94	305.30	309.24
15	295.76	296.32	295.58	295.94	296.13	296.86	296.73	296.82		301.95	305.92	309.84
20	295.83	296.75	295.75	295.69	296.19	296.89	296.50	297.12		302.65	306.55	310.43
25	296.11	296.77	296.05	295.79	296.51	296.60	296.74	297.54		303.28	307.21	
EOM	296.05	296.11	295.60	296.24	296.58	297.17	296.88	297.76	300.02	304.04	307.99	

WTR YEAR 1988 MAX 310.78 SEP 29 MIN 294.90 OCT 1, 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, 107.95 ft below land-surface datum, Feb. 28, 1964.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

LOWEST VALUE

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	61.05	61.27	69.13	74.62	81.04	85.83		97.98	99.67	101.38	102.37	103.53
10	61.43	62.49	69.46	75.12		85.72		98.11	100.20	101.39	102.29	104.04
15	61.18	63.60	70.38	75.64		87.96		98.19	100.22	101.71	102.90	104.62
20	61.04	65.57	71.52	75.86		90.14	96.29	98.59	100.30	101.97	102.98	104.87
25	61.39	67.44		77.13	84.43		96.89	99.15	100.56	102.15	102.99	105.20
EOM	61.29	67.83	73.64	79.36	84.73		97.61	99.49	101.06	102.36	103.50	105.88

WTR YEAR 1988 MAX 105.88 SEP 30 MIN 60.72 OCT 6

GROUND-WATER LEVELS

MILWAUKEE COUNTY

425613088014301. Local number, ML-06/21E/32-0148.

LOCATION.--Lat 42°56'13", long 88°01'43", Hydrologic Unit 04040002. Owner: Milwaukee County.

AQUIFER.--Silurian dolomite.

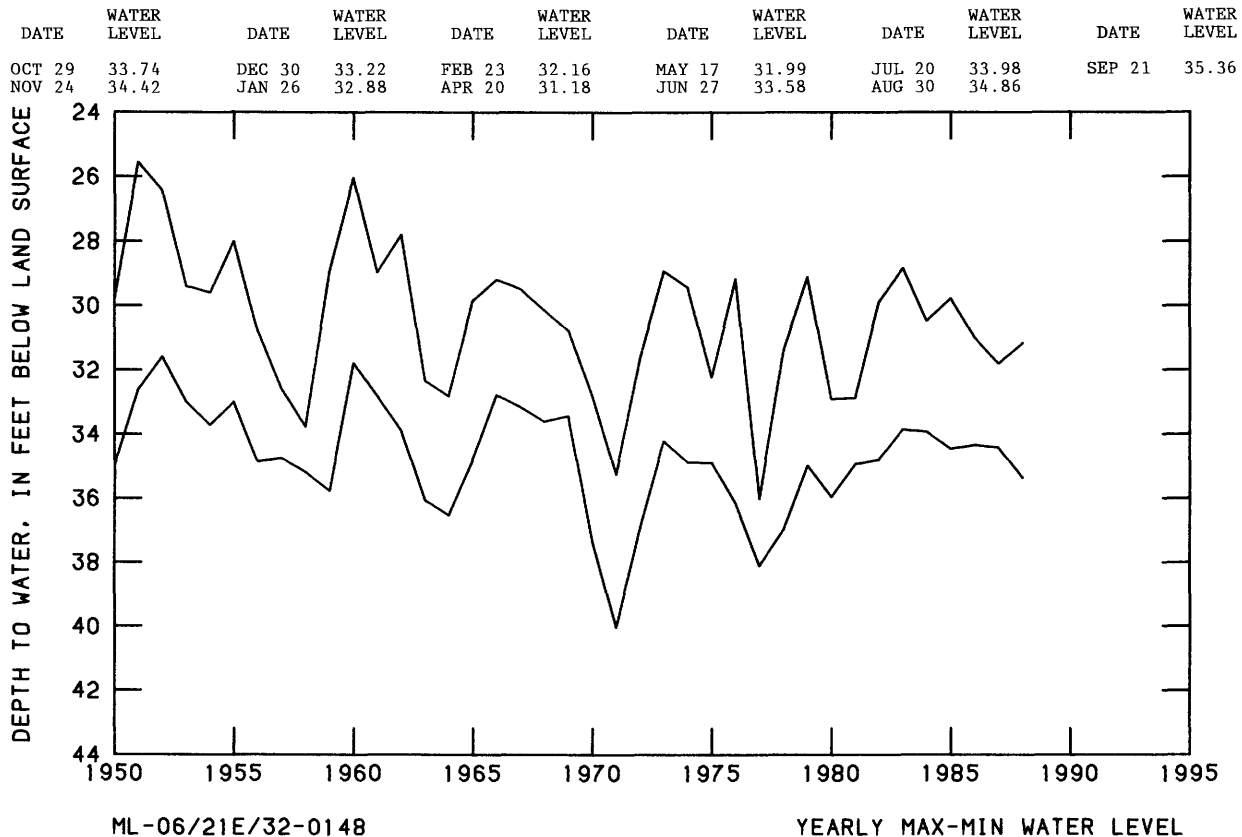
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 5 in, depth 180 ft, cased to 43 ft, open end.

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 1987 TO SEPTEMBER 1988



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 1987 TO SEPTEMBER 1988

LOWEST VALUE												
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	7.10	7.31	7.20	7.45	7.20	7.20	6.85	7.03	7.20	7.44	7.55	7.56
10	7.19	7.34	7.23	7.23	7.25	6.39	6.94	6.70	7.28	7.45	7.51	7.63
15	7.19	7.33	7.29	7.12	7.23	6.85	6.97	6.87	7.30	7.46	7.55	7.64
20	7.21	7.29	7.31	7.15	7.27	7.01	7.00	7.00	7.34	7.48	7.53	7.31
25	7.25	7.32	7.38	7.19	7.30	6.79	7.03	7.11	7.39	7.45	7.48	7.05
EOM	7.30	7.02	7.31	7.12	7.31	6.75	7.03	7.16	7.39	7.50	7.56	7.27
WTR YEAR 1988	MAX		7.64	SEP 18	MIN	6.27	MAR 12					

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, 8.25 ft below land-surface datum, Sept. 20, 1988.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

LOWEST VALUE

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5		7.88	7.71					6.82	7.00	7.56	7.90	8.13
10		7.90	7.58	7.61				6.78	7.14	7.61	7.96	8.16
15	7.69	7.92	7.51				6.75	6.73	7.25	7.62	8.02	8.20
20	7.73	7.93	7.47				6.80	6.71	7.34	7.68	8.04	8.25
25	7.77	7.94	7.45		7.85		6.66	6.75	7.43	7.75	8.06	7.51
EOM	7.84	7.91	7.46		7.83		6.75	6.88	7.49	7.84	8.10	7.23

WTR YEAR 1988 MAX 8.25 SEP 20 MIN 6.66 APR 25

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 1987 TO SEPTEMBER 1988

[illegible]

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 1987 TO SEPTEMBER 1988

LOWEST VALUE

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	17.37	17.45	17.45	17.54	17.71	17.92	18.12	17.70	17.47	17.69	17.84	17.95
10	17.41	17.48	17.44	17.55	17.75	17.96	18.08	17.64	17.49	17.72	17.86	17.95
15	17.43	17.49	17.46	17.57	17.78	18.00	18.01	17.58	17.50	17.72	17.89	17.98
20	17.40	17.48	17.45	17.60	17.81	18.05	17.94	17.56	17.54	17.75	17.90	17.95
25	17.42	17.49	17.49	17.65	17.85	18.07	17.85	17.51	17.58	17.79	17.91	17.95
EOM	17.45	17.45	17.50	17.69	17.88	18.13	17.75	17.48	17.63	17.84	17.95	17.96

WTR YEAR 1988 MAX 17.98 SEP 16 MIN 17.35 OCT 2

GROUND-WATER LEVELS

ONEIDA COUNTY

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, 33.67 ft below land-surface datum, Apr. 15, 1965.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 7	29.51	DEC 8	29.96	FEB 8	30.30	APR 10	30.42	JUN 15	30.86	AUG 8	31.20
12	29.58	13	29.73	14	30.42	18	30.76	20	30.63	15	31.19
21	29.63	20	29.94	21	30.40	25	30.66	27	30.78	22	31.05
26	29.58	29	29.94	29	30.38	MAY 2	30.79	JUL 5	30.97	29	31.31
NOV 2	29.81	JAN 2	30.10	MAR 7	30.53	7	30.94	10	31.12	SEP 6	31.34
9	29.75	11	30.14	14	30.43	16	30.55	18	31.08	12	31.35
14	29.78	19	30.17	21	30.38	23	30.62	26	31.14	19	31.20
23	29.83	24	30.32	28	30.54	31	30.84	AUG 1	31.11	26	31.15
30	29.92	31	30.26	APR 5	30.64	JUN 6	30.90				

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, 83.59 ft below land-surface datum, Aug. 25, 1988.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 7	73.75	DEC 21	69.98	FEB 11	69.02	MAY 24	68.86	JUL 12	80.56	SEP 27	82.73
NOV 11	72.99	JAN 13	69.08	APR 15	68.46	JUN 16	75.01	AUG 25	83.59		

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 1987 TO SEPTEMBER 1988

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 15	34.70	DEC 16	35.36	FEB 25	36.16	APR 7	36.41	JUN 16	37.09	AUG 11	37.31
NOV 11	34.98	JAN 15	35.80	MAR 15	36.17	MAY 11	36.62	JUL 22	37.34	SEP 5	37.38

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.

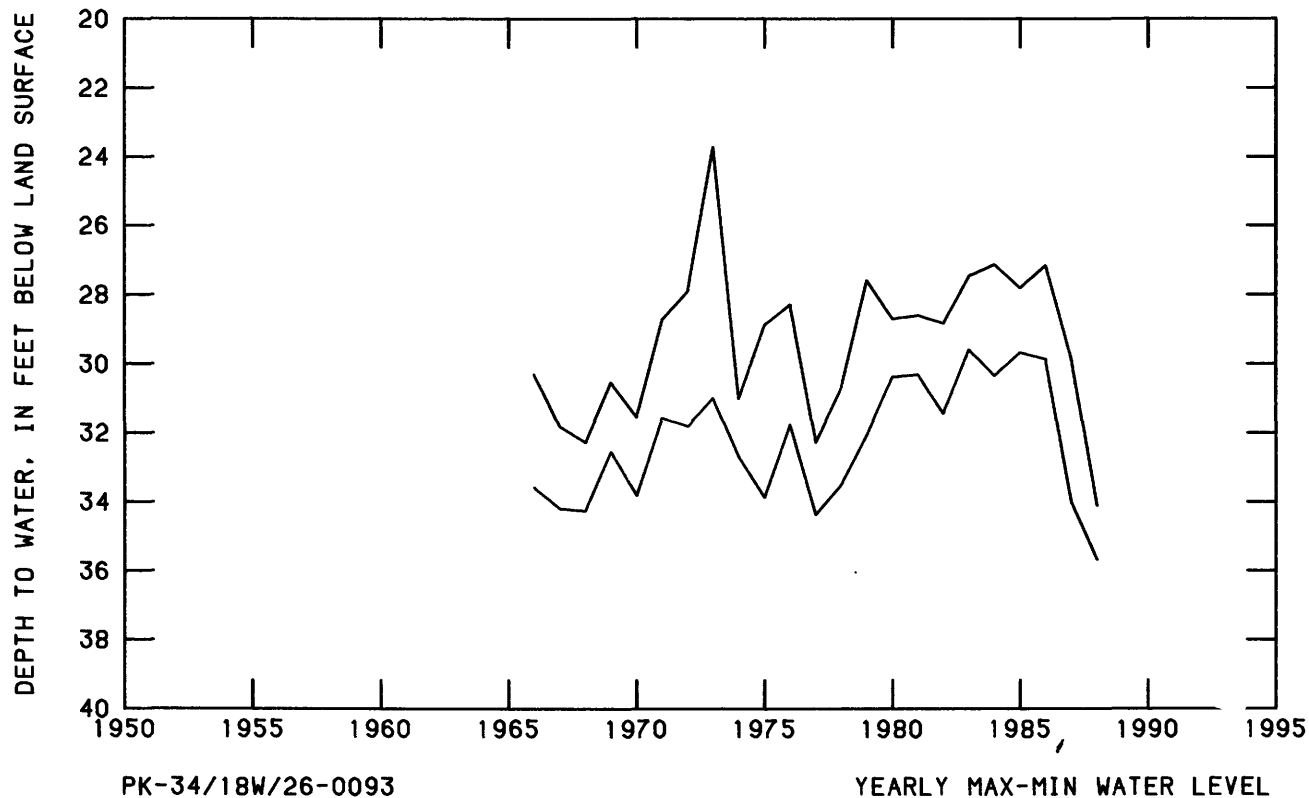
DATUM.--Altitude of land-surface is 1,140 ft above National Geodetic Vertical Datum of 1929. Measuring point: hole in pump base, 2.00 ft above land-surface datum.

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, 35.21 ft below land-surface datum, Sept. 28, 1988.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 7	33.02	DEC 10	33.80	FEB 10	34.40	APR 13	34.20	JUN 15	34.50	AUG 10	34.90
14	33.03	16	33.90	17	34.40	20	34.20	22	34.60	17	34.90
20	33.40	21	33.90	24	34.50	27	34.20	29	34.60	24	35.00
28	33.40	30	34.00	MAR 2	34.50	MAY 4	34.30	JUL 7	34.70	31	35.10
NOV 4	33.05	JAN 5	34.10	9	34.50	11	34.40	11	34.70	SEP 7	35.10
12	33.60	15	34.10	16	34.40	18	34.40	20	34.80	14	35.20
17	33.60	22	34.20	23	34.40	25	34.40	27	34.90	21	35.20
23	33.70	27	34.30	30	34.30	JUN 1	34.40	AUG 3	34.90	28	35.21
DEC 1	33.80	FEB 3	34.30	APR 6	34.20	8	34.50				



GROUND-WATER LEVELS

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 1987 TO SEPTEMBER 1988

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 10	30.31	DEC 19	30.84	FEB 27	31.32	APR 23	31.58	JUN 18	31.77	AUG 13	31.99
24	30.44	JAN 2	30.93	MAR 12	31.42	MAY 7	31.62	JUL 2	31.81	27	32.06
NOV 7	30.58	16	31.02	26	31.48	21	31.67	16	31.87	SEP 10	32.10
21	30.66	30	31.13	APR 9	31.53	JUN 4	31.72	30	31.93	24	32.17
DEC 5	30.76	FEB 13	31.20								

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.

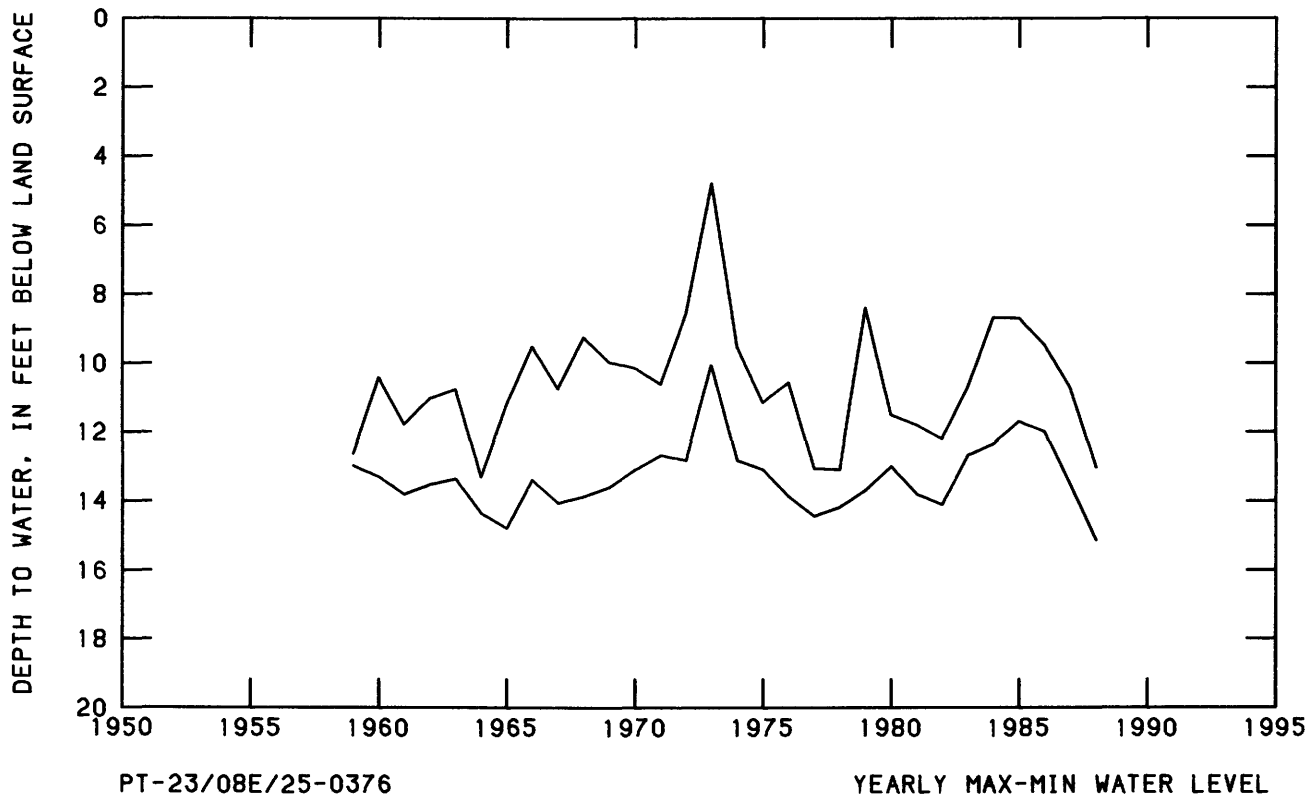
DATUM.--Altitude of land-surface is 1,099 ft above National Geodetic Vertical Datum of 1929. Measuring point: top of casing, 4.20 ft above land-surface datum.

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, 15.12 ft below sand-surface datum. Sept. 2, 1988.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 9	13.22	NOV 12	13.52	JAN 19	13.65	JUN 14	13.74	JUN 24	14.06	SEP 2	15.12
22	13.34	DEC 18	13.37	MAY 13	13.02						



GROUND-WATER LEVELS

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.

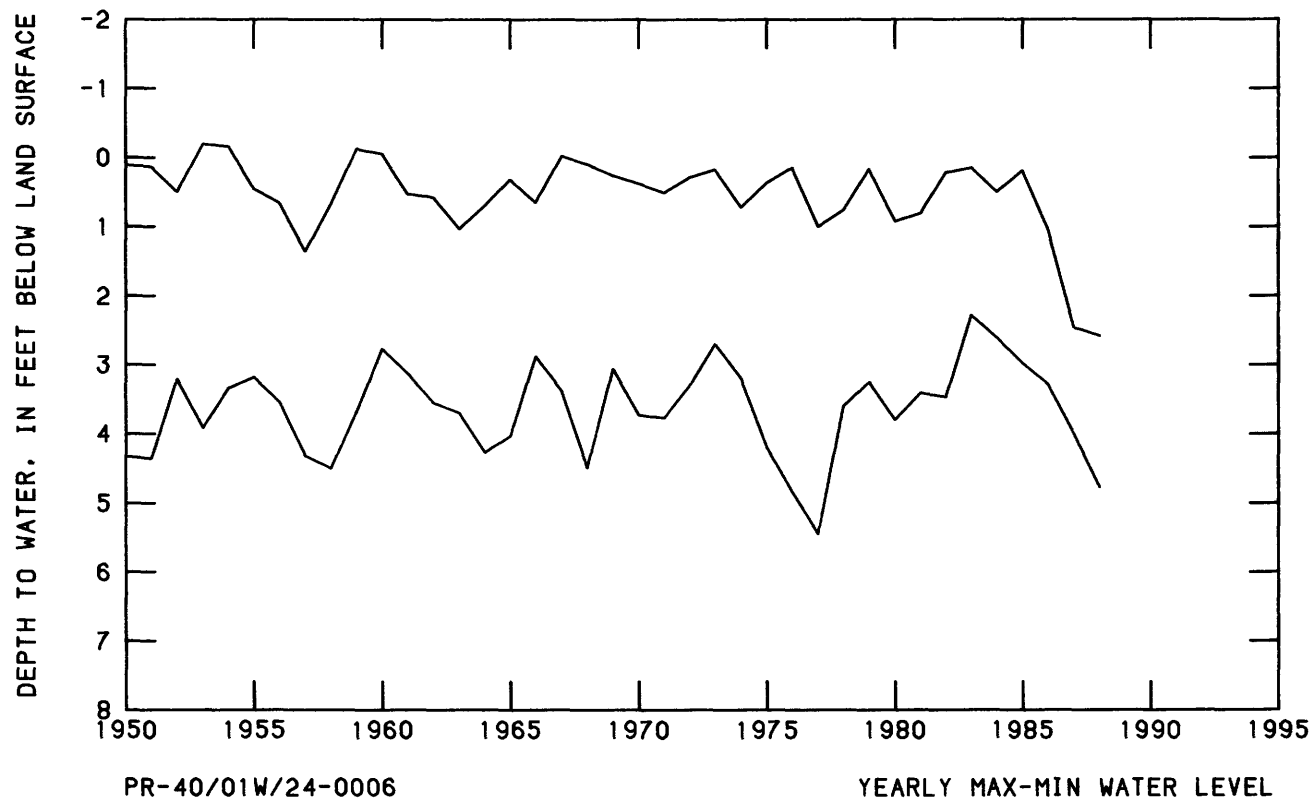
DATUM.--Altitude of land-surface is 1,510 ft above National Geodetic Vertical Datum of 1929. Measuring point: top of casing, 5.00 ft above land-surface datum.

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 1987 TO SEPTEMBER 1988

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 2	3.30	DEC 11	2.66	FEB 12	3.78	APR 15	2.74	JUN 10	3.50	AUG 12	3.38
9	3.30	18	2.90	19	3.81	22	2.80	17	4.06	19	3.29
16	3.02	25	3.15	26	3.78	29	2.71	24	4.25	26	3.30
23	2.94	JAN 1	3.15	MAR 4	3.75	MAY 6	2.58	30	4.06	31	3.45
30	3.07	8	3.32	11	3.02	13	2.80	JUL 8	4.57	SEP 2	3.45
NOV 6	3.15	15	3.50	16	3.14	20	2.96	15	4.77	9	3.55
13	2.46	22	3.46	25	2.60	27	3.15	22	4.52	16	3.60
20	2.96	29	3.46	APR 1	2.60	31	3.39	29	4.40	23	3.20
27	2.95	FEB 5	3.76	8	2.68	JUN 4	3.53	AUG 5	3.55	30	3.48
DEC 4	2.98										



DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 13	13.52	JAN 12	12.43	MAR 3	12.42	MAY 16	13.24	JUN 14	13.21	JUL 25	13.45
NOV 18	13.14	FEB 15	12.75								

GROUND-WATER LEVELS

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, 59.51 ft below land-surface datum, June 16, 1988.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 1	53.36	NOV 27	51.90	FEB 4	54.54	MAR 31	51.99	MAY 19	59.50	AUG 4	57.53
15	52.29	DEC 3	51.58	11	56.91	APR 7	51.44	26	59.26	11	56.26
22	51.94	10	51.58	18	58.03	14	54.00	JUN 2	59.50	18	54.67
29	54.79	25	52.27	MAR 3	52.79	21	57.18	9	59.50	25	54.05
NOV 5	52.70	JAN 1	52.02	10	51.95	28	58.38	16	59.50	SEP 8	55.98
12	52.01	7	52.09	17	52.12	MAY 12	59.30	JUL 21	56.48	22	57.99
19	51.90	14	51.85	24	51.50						

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 1987 TO SEPTEMBER 1988

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 9	15.84	JAN 20	13.74	APR 20	13.67	JUN 16	14.10	JUL 14	15.06	SEP 15	16.78
NOV 6	15.47	FEB 24	14.66	MAY 13	13.44	JUL 13	14.98	AUG 12	15.72	20	16.28
DEC 1	14.34	MAR 11	14.84								

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 1987 TO SEPTEMBER 1988

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 29	31.15	JAN 10	31.39	MAR 1	31.69	MAY 2	31.78	JUN 30	31.90	SEP 6	32.15
DEC 1	31.28	FEB 3	31.63	30	31.69	JUN 2	31.94	AUG 1	32.20		

GROUND-WATER LEVELS

SAUK COUNTY

432201089460101. Local number, SK-10/06E/03-0001.

LOCATION.--Lat 43°22'01", long 89°46'01", Hydrologic Unit 07070005. Owner: Badger Army Ammunition Plant.

AQUIFER.--Sandstone.

WELL CHARACTERISTICS.--Drilled unused artesian well, diameter 16 in, depth 426 ft, cased to 203 ft, open end.

DATUM.--Altitude of land-surface is 865 ft above National Geodetic Vertical Datum of 1929. Measuring point: top of casing, 1.43 ft above land-surface datum.

REMARKS.--Water level affected by pumping of nearby wells.

PERIOD OF RECORD.--March 1946 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 58.45 ft below land-surface datum, May 20, 1953; lowest water level, 93.25 ft below land-surface datum, June 4, 1964.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

LOWEST VALUE

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	64.16	64.70	64.85	66.68	66.85	65.70	64.79	64.76	66.92	66.28	66.00	66.11
10	65.06	64.86	64.45	66.77	66.83	65.34	65.48	64.74	67.47	65.85	66.25	66.50
15	64.76	64.85	64.56	66.31	66.67	65.65	65.31	64.47	66.77	66.51	66.49	66.38
20	64.35	64.91	64.80	65.63	66.09	65.55	64.56	65.25	66.82	66.05	66.22	65.89
25	64.56	64.84	65.06	65.95	65.97	65.04	64.54	65.58	66.14	66.11	66.16	65.96
EOM	64.63	64.53	65.34	66.19	65.82	65.08	64.66	67.25	65.84	66.67	66.05	65.65

WTR YEAR 1988 MAX 67.71 JUN 11 MIN 63.85 OCT 1

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, 2.43 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, 64.60 ft below land-surface datum, Jan. 11, 1956.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 9	60.00	DEC 28	59.15	APR 14	56.96	MAY 25	58.20	JUL 7	60.15	AUG 25	61.40
14	60.17	JAN 13	59.10	MAY 9	57.32	JUN 14	59.39	12	60.05	SEP 30	62.18
NOV 11	60.34	FEB 10	59.40								

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 1987 TO SEPTEMBER 1988

LOWEST VALUE

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	9.72	8.88	8.86	9.17	9.42	9.04	7.60	9.10	9.55	10.46	10.40	10.50
10	9.71	9.08	8.76	9.18	9.43	8.13	7.94	8.69	9.79	10.51	10.43	10.53
15	9.73	9.24	8.73	9.31	9.58	8.91	8.55	8.84	10.01	10.45	10.45	10.52
20	8.84	8.67	9.00	9.43	9.62	9.09	9.11	9.19	10.17	10.39	10.50	10.20
25	8.95	8.76	9.14	9.35	9.64	7.78	9.10	9.48	10.28	10.39	10.47	10.30
EOM	9.15	8.50	9.24	9.38	9.63	7.43	8.86	9.65	10.20	10.45	10.50	10.27

WTR YEAR 1988 MAX 10.53 SEP 11 MIN 7.16 MAR 26

TAYLOR COUNTY

450830090215201. Local number, TA-31/01E/28-0006.

LOCATION.--Lat 45°08'30", long 90°21'52", Hydrologic Unit 07040007. Owner: P. J. Ziehlke.

AQUIFER.--Sand and gravel.

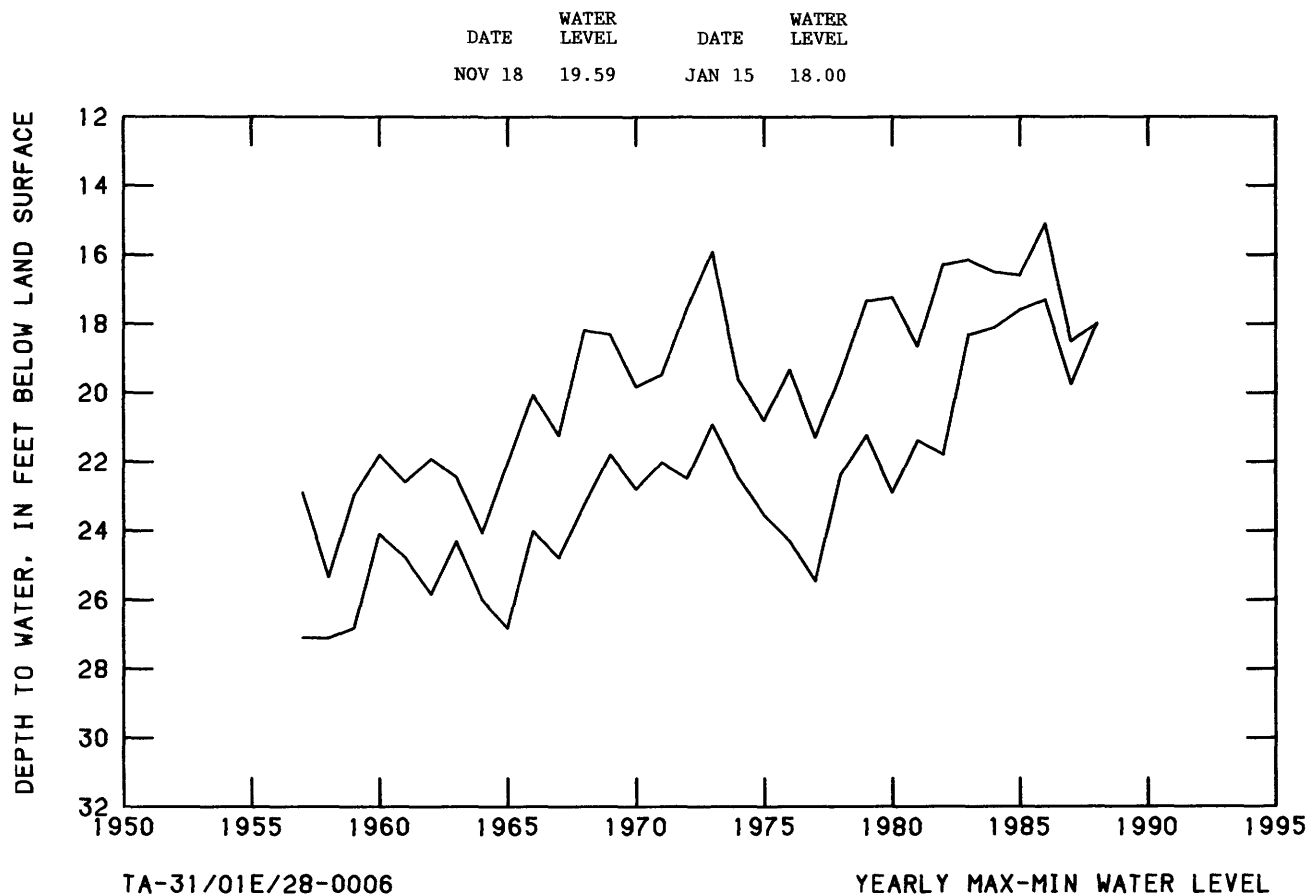
WELL CHARACTERISTICS.--Dug domestic water table well, diameter 3.00 ft, depth 35 ft, open end.

DATUM.--Altitude of land-surface is 1,460 ft above National Geodetic Vertical Datum of 1929. Measuring point: top of curb, 1.00 ft above land-surface datum.

PERIOD OF RECORD.--August 20, 1957, to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 15.10 ft below land-surface datum, Apr. 9, 1986; lowest water level measured, 27.10 ft below land-surface datum, Mar. 13, 1958.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988



GROUND-WATER LEVELS

TAYLOR COUNTY

451919090172401. Local number, TA-33/02E/30-0009.

LOCATION.--Lat 45°19'19", long 90°17'24", Hydrologic Unit 07050005. Owner: Wis. Dept. of Transportation.

AQUIFER.--Sand and gravel.

WELL CHARACTERISTICS.--Drilled domestic water-table well, diameter 6 in, depth 160 ft, cased to 155 ft, open end.

DATUM.--Altitude of land-surface is 1,591 ft above National Geodetic Vertical Datum of 1929. Measuring point: 1/4-in hole in pump base, 0.50 ft above land-surface datum.

PERIOD OF RECORD.--December 1965 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 29.30 ft below land-surface datum, July 19, 1979; lowest water level measured, 35.35 ft below land-surface datum, June 2, 1977.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 15	33.10	NOV 18	32.75	JAN 28	32.77	JUL 12	33.03	JUL 13	33.06	JUL 27	33.40

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 1987 TO SEPTEMBER 1988

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 18	139.07	FEB 12	138.65	APR 21	138.30	JUL 15	140.14	AUG 5	140.46	SEP 12	140.72
DEC 7	138.58	MAR 15	138.46	MAY 26	138.97						

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, 44.29 ft below land-surface datum, Apr. 2, 1985; 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 1987 TO SEPTEMBER 1988

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 15	44.69	JAN 22	46.37	MAR 10	45.66	MAY 20	47.39	JUL 6	46.87	SEP 13	47.58
NOV 9	44.26	FEB 16	44.50	APR 5	46.00	JUN 13	48.27	AUG 24	47.44		

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 1987 TO SEPTEMBER 1988

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 12	13.46	DEC 14	13.43	FEB 19	13.60	APR 13	13.29	MAY 19	13.06	JUN 14	13.33
NOV 22	13.50										

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, 211.10 ft below land-surface datum, Sept. 9, 1988.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 29	205.93	FEB 4	206.81	FEB 19	206.28	APR 22	206.71	JUN 8	207.60	AUG 31	211.43
DEC 22	206.40	12	206.94	MAR 23	206.84	MAY 31	202.27	JUL 6	210.35	SEP 9	211.10
JAN 14	206.93										

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 1987 TO SEPTEMBER 1988

LOWEST VALUE

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5		468.60	471.79	466.08	466.78	461.23	462.51	469.11			499.30	501.98
10		470.49	472.41	465.42	466.84	460.49		468.09		489.93		
15		471.64	470.84	463.33	466.32	460.95					496.97	
20		472.76	468.91	462.24	467.14	463.85	466.22	473.75		493.60	501.31	
25		471.48	470.14	463.47	468.66	463.40	467.79			493.37		500.43
EOM	467.17	467.52	467.45	464.56	467.54	461.54	469.27			496.80	502.07	500.60

WTR YEAR 1988 MAX 502.48 SEP 8 MIN 459.03 MAR 18

GROUND-WATER LEVELS

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 1987 TO SEPTEMBER 1988

LOWEST VALUE

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	131.34	131.63	131.76	131.46	130.97				132.06	133.63	134.08	133.78
10	131.50	131.70	131.58	131.31	130.84				132.27	133.84	133.95	133.88
15	131.42	131.66	131.55	131.40	130.73				132.46	133.78	133.92	133.99
20	131.57	131.75	131.52	131.20	130.78			131.29	132.65	133.50	134.03	133.87
25	131.65	131.76	131.53	131.19				131.52	132.83	133.52	133.64	133.89
EOM	131.59	131.61	131.40	131.20				131.81	132.79	134.08	133.81	133.91

WTR YEAR 1988 MAX 134.08 JUL 31, AUG 5 MIN 130.58 FEB 20

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 1987 TO SEPTEMBER 1988

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 3	14.36	DEC 5	14.01	FEB 6	14.55	APR 9	13.33	JUN 11	14.23	AUG 6	14.83
10	14.44	12	13.99	13	14.61	16	13.20	18	14.44	13	14.91
17	14.42	19	14.01	22	14.63	23	13.34	24	14.58	20	14.73
24	14.36	26	14.04	27	14.66	30	13.37	JUL 2	14.74	27	14.80
31	14.26	JAN 2	14.20	MAR 5	14.68	MAY 7	13.41	9	14.93	SEP 3	14.76
NOV 7	14.22	9	14.41	12	14.18	14	13.57	16	14.81	10	14.74
14	14.29	16	14.52	19	13.90	20	13.80	23	14.69	17	14.78
21	14.25	23	14.48	26	13.88	28	13.88	30	14.75	24	14.56
28	13.97	30	14.51	APR 2	13.81	JUN 4	13.94				

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 1987 TO SEPTEMBER 1988

LOWEST VALUE

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	9.45	9.76	10.04	10.01	10.16	10.37	9.94	9.61	10.00	10.89	11.14	11.53
10	9.53	9.84	10.00	10.02	10.19	10.20	9.87	9.61	10.17	11.06	11.27	11.48
15	9.55	9.90	10.02	10.03	10.23	10.04	9.80	9.65	10.26	11.09	11.39	11.51
20	9.58	9.95	9.97	10.04	10.26	10.04	9.69	9.80	10.42	10.67	11.40	11.53
25	9.62	9.98	9.99	10.09	10.31	10.02	9.65	9.82	10.55	10.83	11.47	11.30
EOM	9.73	9.99	9.97	10.12	10.33	10.01	9.62	9.95	10.72	11.14	11.46	11.18

WTR YEAR 1988 MAX 11.61 SEP 4 MIN 9.42 OCT 1, 2.

GROUND-WATER LEVELS

WAUSHARA COUNTY

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 1987 TO SEPTEMBER 1988

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 15	34.55	DEC 15	34.75	FEB 17	34.98	APR 17	34.62	JUN 19	35.50	AUG 22	35.80
NOV 17	34.64	JAN 18	34.89	MAR 12	35.00	MAY 15	34.56	JUL 16	35.45	SEP 20	36.00

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 1987 TO SEPTEMBER 1988

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 2	21.12	DEC 29	19.88	FEB 26	20.38	APR 29	18.64	JUN 30	22.52	AUG 31	22.44
25	20.60	JAN 29	20.20	MAR 30	19.78	JUN 6	21.76	AUG 2	24.75	SEP 28	21.56

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 1987 TO SEPTEMBER 1988

LOWEST VALUE

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	20.91	20.86	21.80	23.31								
10	20.93	20.98	21.69	23.57								25.08
15	20.83	21.09	22.16	23.80								25.08
20	20.78	21.30	22.43	23.87								25.07
25	20.83	21.51	22.67									25.07
EOM	20.80	21.64	23.05									25.05
WTR YEAR 1988	MAX	25.08	SEP 15	MIN	20.72	OCT 26						

QUALITY OF GROUND WATER

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

GEOLOGICAL UNIT.--110QRNR, rocks of the Quaternary System of the Cenozoic Era.

STATION	NUMBER	LOCAL IDENT- IFIER	GEO- LOGIC UNIT	DATE	DEPTH OF WELL, TOTAL (FEET) (72008)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PHOS- PHOROUS DIS- SOLVED (MG/L AS P) (00666)
POLK COUNTY							
452716092254701	PK-34/17W/02-0161		110QRNR	03-08-88	6.30	370	<0.002
452749092280101	PK-34/17W/03-0159		110QRNR	03-08-88	6.10	410	0.013
452752092241101	PK-34/16W/06-0163		110QRNR	03-08-88	5.10	410	0.045
452800092231601	PK-34/16W/06-0164		110QRNR	03-08-88	5.50	223	0.006
452805092270701	PK-34/17W/03-0160		110QRNR	03-08-88	5.40	320	0.014
452806092252001	PK-34/17W/01-0158		110QRNR	03-08-88	5.00	229	0.008
452826092235801	PK-35/16W/31-0162		110QRNR	03-08-88	3.90	279	0.020
452828092263901	PK-35/17W/35-0157		110QRNR	03-08-88	6.60	310	0.006
452845092262301	PK-35/17W/35-0156		110QRNR	03-08-88	6.10	250	0.005
452856092270101	PK-35/17W/34-0155		110QRNR	03-08-88	3.70	295	0.035
452918092273001	PK-35/17W/27-0001	SPRING	110QRNR	03-07-88	--	310	0.006
452918092273002	PK-35/17W/27-0002	SPRING	110QRNR	03-07-88	--	218	0.044
452922092273801	PK-35/17W/27-0154		110QRNR	03-07-88	4.60	290	0.003

ACID-DEPOSITION RECORDS

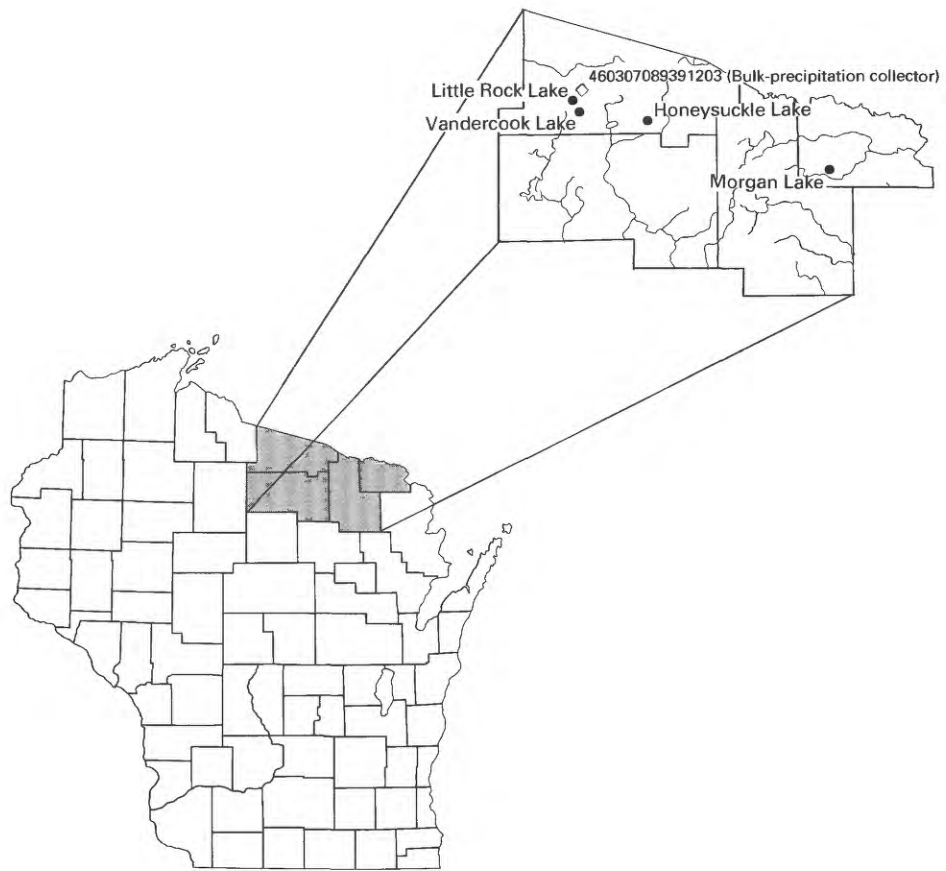


Figure 7. Location of acid-deposition sites in Wisconsin.

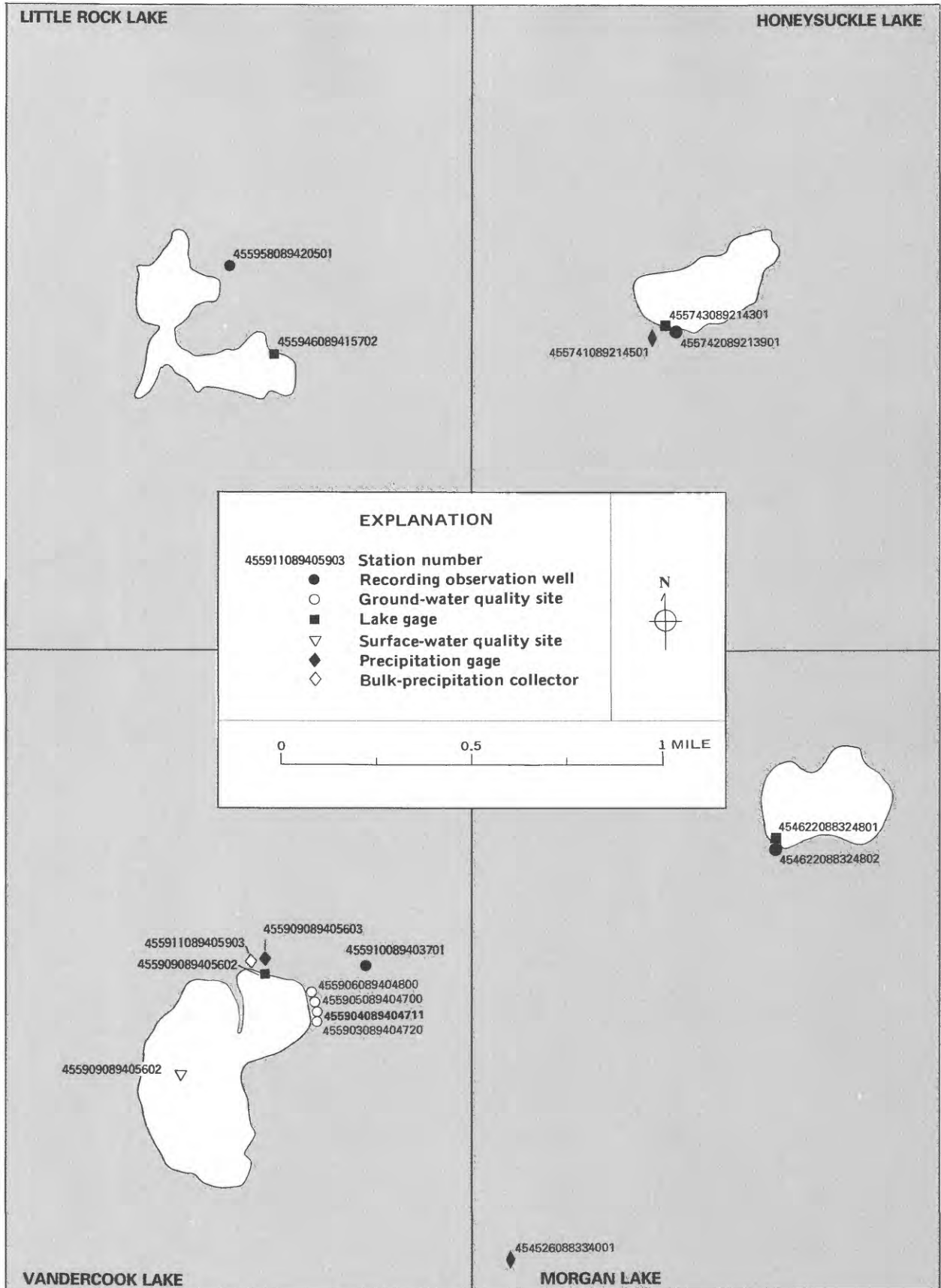


Figure 8. Location of data-collection sites at acid-deposition sites in Wisconsin.

ACID DEPOSITION RECORDS

Lake stages, precipitation quantity, ground-water levels, and water quality for acid deposition investigations in northern Wisconsin.

STAGE RECORDS

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 September 1988.

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

REMARKS.--Daily stages estimated: Oct. 3-6, 15-19, 22, and 25, Nov. 1-17, 1987; and Aug. 12 to Sept. 7, 1988. Records good. Lake does not have surface inlet or outlet.

EXTREMES FOR CURRENT YEAR.--Maximum observed gage height, 65.17 ft, Apr. 7-9, 11-13; minimum observed gage height, 64.06 ft, Aug. 26-Sept. 2.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	64.82	64.80	64.95	65.02	65.02	64.92	65.07	65.10	64.79	64.36	64.12	64.06
2	64.82	64.80	64.95	65.02	65.02	64.92	65.07	65.09	64.78	64.35	64.11	64.06
3	64.81	64.81	64.95	65.01	65.02	64.92	65.09	65.08	64.77	64.34	64.10	64.10
4	64.80	64.83	64.94	65.00	65.02	64.92	65.11	65.06	64.76	64.33	64.14	64.14
5	64.79	64.83	64.94	65.00	65.01	64.92	65.12	65.05	64.74	64.31	64.18	64.13
6	64.78	64.82	64.94	65.00	65.00	64.91	65.16	65.01	64.73	64.30	64.17	64.12
7	64.78	64.82	64.94	65.00	65.00	64.90	65.17	65.00	64.72	64.29	64.16	64.11
8	64.78	64.82	64.94	64.99	65.00	64.91	65.17	64.99	64.69	64.26	64.13	64.11
9	64.78	64.81	64.94	64.99	65.00	64.92	65.17	65.00	64.67	64.26	64.13	64.10
10	64.78	64.81	64.95	64.98	65.00	64.92	65.16	65.00	64.65	64.26	64.11	64.08
11	64.78	64.81	64.95	64.97	65.00	64.92	65.17	64.99	64.63	64.25	64.10	64.07
12	64.78	64.81	64.96	64.97	65.00	64.92	65.17	64.99	64.61	64.24	64.08	64.09
13	64.78	64.80	64.97	64.97	65.00	64.94	65.17	64.99	64.59	64.23	64.12	64.10
14	64.78	64.80	64.97	64.97	65.00	64.94	65.15	64.98	64.58	64.21	64.14	64.08
15	64.79	64.80	64.98	64.97	64.97	64.94	65.14	64.97	64.55	64.24	64.12	64.07
16	64.81	64.80	64.99	64.97	64.98	64.95	65.14	64.95	64.53	64.28	64.10	64.08
17	64.81	64.85	64.99	64.98	64.97	64.95	65.13	64.94	64.52	64.28	64.13	64.10
18	64.81	64.91	64.99	64.98	64.97	64.94	65.11	64.94	64.51	64.29	64.16	64.09
19	64.81	64.91	65.00	64.98	64.97	64.94	65.11	64.93	64.51	64.26	64.14	64.12
20	64.81	64.89	65.02	65.02	64.95	64.94	65.09	64.91	64.50	64.25	64.13	64.13
21	64.81	64.90	65.03	65.03	64.95	64.94	65.09	64.91	64.49	64.27	64.11	64.12
22	64.82	64.90	65.03	65.03	64.95	64.94	65.08	64.92	64.49	64.26	64.10	64.14
23	64.82	64.90	65.03	65.03	64.94	64.93	65.10	64.92	64.46	64.24	64.10	64.13
24	64.82	64.91	65.03	65.03	64.94	64.94	65.10	64.88	64.44	64.23	64.08	64.12
25	64.80	64.91	65.03	65.03	64.94	65.02	65.10	64.87	64.43	64.22	64.07	64.11
26	64.80	64.91	65.03	65.03	64.94	65.03	65.10	64.85	64.40	64.20	64.06	64.11
27	64.80	64.91	65.03	65.03	64.93	65.02	65.11	64.84	64.38	64.18	64.06	64.10
28	64.80	64.91	65.03	65.03	64.93	65.02	65.11	64.83	64.39	64.18	64.06	64.09
29	64.80	64.92	65.02	65.03	64.92	65.05	65.11	64.83	64.40	64.16	64.06	64.08
30	64.80	64.94	65.02	65.03	---	65.06	65.10	64.81	64.39	64.14	64.06	64.08
31	64.80	---	65.02	65.03	---	65.06	---	64.80	---	64.12	64.06	---
TOTAL	2008.77	1945.64	2014.56	2015.12	1884.34	2013.55	1953.67	2013.43	1937.10	1991.79	1987.39	1923.02
MEAN	64.80	64.85	64.99	65.00	64.98	64.95	65.12	64.95	64.57	64.25	64.11	64.10
MAX	64.82	64.94	65.03	65.03	65.02	65.06	65.17	65.10	64.79	64.36	64.18	64.14
MIN	64.78	64.80	64.94	64.97	64.92	64.90	65.07	64.80	64.38	64.12	64.06	64.06

WTR YR 1988 TOTAL 23688.38 MEAN 64.72 MAX 65.17 MIN 64.06

ACID DEPOSITION RECORDS

PRECIPITATION QUANTITY

454526088334001 MORGAN LAKE RAIN GAGE NEAR FENCE, WI

LOCATION.--Lat 45°45'26", long 88°33'40", in NW 1/4 NW 1/4 SE 1/4 sec.24, T.38 N., R.15 E., Florence County,
Hydrologic Unit 04030108, at end of dirt road off Forest Service Road 2159, 6 mi west northwest of Fence.

PERIOD OF RECORD.--October 1987 to September 1988.

GAGE.--Water-stage recorder.

REMARKS.--Records good.

EXTREMES FOR CURRENT YEAR.--Maximum daily rainfall, 1.55 in., Sept. 3.

RAINFALL ACCUMULATED (INCHES), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.34	.05	---	---	---	---	---	---	.02	.00	.00	.00
2	.03	.02	---	---	---	---	---	---	.02	.00	.03	.00
3	.00	.52	---	---	---	---	---	---	.02	.00	.14	1.55
4	.00	.05	---	---	---	---	---	---	.00	.00	.88	.07
5	.22	.02	---	---	---	---	---	---	.00	.00	.56	.03
6	.25	.00	---	---	---	---	---	---	.00	.00	.00	.00
7	.00	.00	---	---	---	---	---	.00	.00	.00	.00	.03
8	.02	.00	---	---	---	---	---	.27	.12	.20	.07	.00
9	.00	.00	---	---	---	---	---	.00	.00	.22	.00	.00
10	.00	.00	---	---	---	---	---	.02	.00	.00	.02	.00
11	.00	.00	---	---	---	---	---	.02	.00	.02	.00	.00
12	.00	.00	---	---	---	---	---	.00	.00	.00	.07	.39
13	.00	.00	---	---	---	---	---	.00	.00	.10	1.05	---
14	.00	.00	---	---	---	---	---	.03	.00	.00	.00	---
15	.51	.00	---	---	---	---	---	.00	.00	1.27	.00	---
16	.15	.37	---	---	---	---	---	.00	.07	.03	.02	---
17	.24	.95	---	---	---	---	---	.02	.00	.00	1.23	---
18	.00	---	---	---	---	---	---	.00	.00	.00	.00	---
19	.00	---	---	---	---	---	---	.00	.42	.00	.00	---
20	.03	---	---	---	---	---	---	.00	.00	.44	.00	---
21	.08	---	---	---	---	---	---	.00	.02	.10	.00	---
22	.24	---	---	---	---	---	---	.00	.08	.00	.17	---
23	.02	---	---	---	---	---	---	.02	.00	.00	.08	---
24	.02	---	---	---	---	---	---	.00	.00	.02	.00	---
25	.00	---	---	---	---	---	---	.02	.00	.00	.00	---
26	.22	---	---	---	---	---	---	.00	.00	.00	.00	---
27	.02	---	---	---	---	---	---	.00	.00	.00	.27	---
28	.00	---	---	---	---	---	---	.00	.66	.00	.00	---
29	.00	---	---	---	---	---	---	.00	.02	.15	.12	---
30	.00	---	---	---	---	---	---	.00	.00	.08	.00	---
31	.00	---	---	---	---	---	---	.00	---	.03	.00	---
TOTAL	2.39	---	---	---	---	---	---	---	1.45	2.66	4.71	---

ACID DEPOSITION RECORDS

GROUND-WATER LEVELS

454622088324802 WELL FL-38/15E/18-0093

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 Morgan Lake, 6 mi west northwest of Fence.

AQUIFER.--Sand and gravel.

WELL CHARACTERISTICS.--Augered water-table observation well, diameter 3 in.

PERIOD OF RECORD.--October 1987 to September 1988.

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

REMARKS.--Daily stages estimated: Nov. 17, 1987; Jan. 9-17, Feb. 9-15, and Sept. 11-22, 1988. Records good.

EXTREMES FOR CURRENT YEAR.--Maximum observed water level, 63.77 ft, Apr. 6; minimum observed water level, 62.49 ft, Sept. 29-30.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	63.24	63.17	63.25	63.17	63.11	63.02	63.30	63.49	63.41	63.00	62.74	62.55
2	63.24	63.18	63.24	63.16	63.11	63.02	63.33	63.49	63.40	62.99	62.73	62.54
3	63.23	63.19	63.24	63.15	63.10	63.02	63.51	63.49	63.39	62.98	62.72	62.57
4	63.23	63.19	63.24	63.15	63.09	63.02	63.62	63.49	63.38	62.97	62.70	62.63
5	63.23	63.19	63.23	63.15	63.09	63.01	63.68	63.50	63.37	62.96	62.71	62.61
6	63.23	63.18	63.22	63.14	63.09	63.01	63.77	63.50	63.35	62.94	62.71	62.59
7	63.22	63.17	63.22	63.14	63.08	63.01	63.73	63.50	63.34	62.93	62.69	62.58
8	63.22	63.16	63.22	63.14	63.08	63.00	63.68	63.50	63.32	62.92	62.68	62.56
9	63.21	63.16	63.22	63.14	63.07	63.00	63.65	63.51	63.31	62.91	62.67	62.55
10	63.21	63.16	63.23	63.14	63.07	63.00	63.62	63.51	63.29	62.91	62.66	62.54
11	63.20	63.15	63.24	63.14	63.07	63.00	63.60	63.51	63.27	62.90	62.65	62.54
12	63.20	63.15	63.24	63.14	63.06	63.01	63.58	63.51	63.26	62.89	62.64	62.53
13	63.19	63.14	63.23	63.14	63.06	63.01	63.57	63.51	63.24	62.88	62.64	62.53
14	63.19	63.14	63.22	63.14	63.06	63.01	63.55	63.52	63.22	62.87	62.66	62.52
15	63.19	63.17	63.23	63.14	63.06	63.01	63.54	63.53	63.20	62.87	62.65	62.52
16	63.20	63.23	63.22	63.14	63.05	63.01	63.53	63.51	63.18	62.88	62.63	62.51
17	63.21	63.24	63.22	63.13	63.05	63.01	63.53	63.51	63.17	62.87	62.67	62.51
18	63.21	63.25	63.22	63.13	63.05	63.00	63.51	63.51	63.15	62.86	62.69	62.50
19	63.20	63.26	63.21	63.13	63.05	63.00	63.50	63.51	63.14	62.85	62.67	62.56
20	63.19	63.26	63.21	63.13	63.05	63.00	63.50	63.50	63.13	62.84	62.65	62.56
21	63.20	63.24	63.21	63.13	63.05	63.00	63.49	63.50	63.11	62.84	62.63	62.55
22	63.20	63.22	63.21	63.13	63.05	62.99	63.48	63.50	63.10	62.84	62.62	62.54
23	63.19	63.21	63.21	63.13	63.04	62.99	63.48	63.49	63.09	62.83	62.62	62.54
24	63.19	63.21	63.21	63.13	63.04	63.00	63.49	63.48	63.07	62.82	62.61	62.53
25	63.19	63.21	63.21	63.13	63.04	63.14	63.49	63.48	63.06	62.82	62.60	62.52
26	63.19	63.20	63.20	63.13	63.03	63.23	63.48	63.47	63.04	62.80	62.59	62.51
27	63.19	63.20	63.20	63.12	63.03	63.20	63.48	63.46	63.03	62.80	62.59	62.50
28	63.18	63.19	63.20	63.12	63.03	63.19	63.49	63.45	63.02	62.78	62.58	62.50
29	63.18	63.22	63.19	63.12	63.02	63.25	63.49	63.44	63.02	62.77	62.57	62.49
30	63.17	63.25	63.18	63.12	---	63.27	63.49	63.43	63.01	62.76	62.57	62.49
31	63.17	---	63.18	63.12	---	63.28	---	63.42	---	62.75	62.56	---
TOTAL	1959.29	1895.89	1959.75	1957.22	1828.78	1954.71	1906.16	1968.22	1896.07	1949.03	1942.10	1876.17
MEAN	63.20	63.20	63.22	63.14	63.06	63.06	63.54	63.49	63.20	62.87	62.65	62.54
MAX	63.24	63.26	63.25	63.17	63.11	63.28	63.77	63.53	63.41	63.00	62.74	62.63
MIN	63.17	63.14	63.18	63.12	63.02	62.99	63.30	63.42	63.01	62.75	62.56	62.49

WTR YR 1988 TOTAL 23093.39 MEAN 63.10 MAX 63.77 MIN 62.49

ACID DEPOSITION RECORDS

STAGE RECORDS

455743089214301 HONEYSUCKLE LAKE NEAR EAGLE RIVER, WI

LOCATION.--Lat 45°57'43", long 89°21'43", in NW 1/4 NW 1/4 SW 1/4 sec.10, T.40 N., R.9 E., Vilas County,
Hydrologic Unit 07070001, at southwest end of lake on dirt road off County Trunk Highway G, 6 mi northwest
of Eagle River.

DRAINAGE AREA.--Not determined. Area of lake, 36 acres.

PERIOD OF RECORD.--October 1987 to September 1988.

GAGE.--Water-stage recorder. Datum of gage is approximately 1,600 ft above National Geodetic Vertical Datum
of 1929.

REMARKS.--Daily stages estimated: June 24 to July 5, 1988. Records good. Lake does not have surface inlet
or outlet.

EXTREMES FOR CURRENT YEAR.--Maximum observed gage height, 46.44 ft, Apr. 11-13; minimum observed gage height,
45.42 ft, July 31.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	45.75	45.88	46.07	46.19	46.18	46.14	46.29	46.33	46.09	45.66	45.43	45.48
2	45.81	45.88	46.07	46.18	46.18	46.14	46.30	46.32	46.07	45.64	45.52	45.49
3	45.80	45.90	46.07	46.18	46.18	46.14	46.33	46.31	46.05	45.62	45.54	45.62
4	45.80	45.93	46.07	46.18	46.18	46.13	46.34	46.30	46.03	45.60	45.58	45.71
5	45.79	45.94	46.06	46.17	46.18	46.13	46.36	46.29	46.02	45.58	45.58	45.70
6	45.80	45.93	46.06	46.16	46.18	46.13	46.41	46.28	46.01	45.57	45.56	45.70
7	45.81	45.93	46.07	46.16	46.19	46.12	46.42	46.27	45.98	45.54	45.55	45.69
8	45.80	45.93	46.06	46.16	46.18	46.14	46.42	46.26	45.94	45.57	45.54	45.68
9	45.79	45.92	46.09	46.16	46.18	46.14	46.43	46.29	45.91	45.62	45.52	45.67
10	45.78	45.91	46.10	46.16	46.18	46.14	46.43	46.30	45.89	45.61	45.50	45.66
11	45.77	45.91	46.11	46.16	46.18	46.14	46.44	46.28	45.88	45.59	45.49	45.65
12	45.77	45.91	46.12	46.17	46.17	46.15	46.44	46.28	45.86	45.58	45.50	45.65
13	45.76	45.91	46.12	46.17	46.17	46.18	46.44	46.27	45.85	45.57	45.54	45.65
14	45.76	45.90	46.12	46.16	46.17	46.18	46.43	46.25	45.84	45.56	45.55	45.63
15	45.78	45.90	46.13	46.17	46.17	46.18	46.42	46.25	45.80	45.59	45.53	45.62
16	45.87	45.91	46.14	46.18	46.17	46.18	46.42	46.23	45.78	45.63	45.53	45.63
17	45.88	45.97	46.13	46.17	46.16	46.17	46.41	46.22	45.76	45.62	45.56	45.66
18	45.87	45.99	46.15	46.17	46.17	46.17	46.41	46.21	45.75	45.59	45.56	45.65
19	45.87	45.98	46.16	46.16	46.16	46.17	46.40	46.21	45.78	45.58	45.54	45.68
20	45.87	45.99	46.18	46.20	46.16	46.17	46.39	46.19	45.78	45.59	45.53	45.74
21	45.87	45.98	46.18	46.19	46.15	46.17	46.38	46.23	45.75	45.58	45.51	45.75
22	45.87	45.98	46.18	46.20	46.15	46.18	46.37	46.22	45.74	45.56	45.50	45.75
23	45.88	45.99	46.18	46.20	46.15	46.17	46.37	46.22	45.73	45.55	45.54	45.75
24	45.88	46.00	46.18	46.20	46.15	46.19	46.37	46.20	45.70	45.53	45.53	45.74
25	45.87	46.00	46.19	46.20	46.14	46.27	46.36	46.18	45.68	45.52	45.52	45.73
26	45.87	45.99	46.18	46.20	46.14	46.27	46.35	46.17	45.67	45.50	45.51	45.73
27	45.89	45.99	46.18	46.19	46.14	46.28	46.35	46.16	45.66	45.49	45.50	45.73
28	45.89	45.99	46.19	46.19	46.14	46.27	46.35	46.15	45.69	45.48	45.49	45.71
29	45.89	46.04	46.19	46.20	46.13	46.28	46.34	46.13	45.72	45.46	45.48	45.72
30	45.89	46.07	46.19	46.19	---	46.28	46.33	46.12	45.70	45.45	45.48	45.72
31	45.88	---	46.19	46.19	---	46.28	---	46.11	---	45.42	45.48	---
TOTAL	1420.81	1378.55	1430.11	1431.56	1338.78	1431.68	1391.50	1433.23	1375.11	1412.45	1411.19	1370.29
MEAN	45.83	45.95	46.13	46.18	46.16	46.18	46.38	46.23	45.84	45.56	45.52	45.68
MAX	45.89	46.07	46.19	46.20	46.19	46.28	46.44	46.33	46.09	45.66	45.58	45.75
MIN	45.75	45.88	46.06	46.16	46.13	46.12	46.29	46.11	45.66	45.42	45.43	45.48

WTR YR 1988 TOTAL 16825.26 MEAN 45.97 MAX 46.44 MIN 45.42

ACID DEPOSITION RECORDS

PRECIPITATION QUANTITY

455741089214501 HONEYSUCKLE LAKE RAIN GAGE NEAR EAGLE RIVER, WI

LOCATION.--Lat 45°57'41", long 89°21'45", in NW 1/4 NW 1/4 SW 1/4 sec.10, T.40 N., R.9 E., Vilas County,
Hydrologic Unit 07070001, at southwest end of Honeysuckle Lake, about 6 mi northwest of Eagle River.

PERIOD OF RECORD.--October 1987 to September 1988.

GAGE.--Water-stage recorder.

REMARKS.--Records good.

EXTREMES FOR CURRENT YEAR.--Maximum daily rainfall, 2.38 in., Sept. 3.

RAINFALL ACCUMULATED (INCHES), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.79	.00	---	---	---	---	---	---	.00	.00	---	.35
2	.09	.03	---	---	---	---	---	---	.00	.00	---	.25
3	.01	.45	---	---	---	---	---	---	.00	.00	---	2.38
4	.00	.08	---	---	---	---	---	---	.00	.00	.57	.02
5	.22	---	---	---	---	---	---	---	.00	.00	.05	.07
6	.24	---	---	---	---	---	---	---	.00	---	.01	.01
7	.02	---	---	---	---	---	---	.00	.00	---	.01	.04
8	.00	---	---	---	---	---	---	.53	.05	---	.09	.00
9	.01	---	---	---	---	---	---	.30	.00	---	.00	.00
10	.00	---	---	---	---	---	---	.01	.00	---	.00	.00
11	.01	---	---	---	---	---	---	.03	.00	---	.00	.00
12	.00	---	---	---	---	---	---	.09	.00	---	.59	.05
13	.00	---	---	---	---	---	---	.01	.03	---	.55	.05
14	.00	---	---	---	---	---	---	.01	.00	---	.00	.00
15	1.07	---	---	---	---	---	---	.00	.00	---	.00	.00
16	.40	---	---	---	---	---	---	.01	.03	---	.00	.53
17	.01	---	---	---	---	---	---	.00	.01	---	.92	.04
18	.01	---	---	---	---	---	---	.00	.00	---	.00	.00
19	.01	---	---	---	---	---	---	.00	.62	---	.00	1.04
20	.05	---	---	---	---	---	---	.04	.00	---	.00	.28
21	.13	---	---	---	---	---	---	.54	.00	---	.00	.06
22	.19	---	---	---	---	---	---	.06	.03	---	.69	.11
23	.04	---	---	---	---	---	---	.01	.00	---	.10	.02
24	.00	---	---	---	---	---	---	.00	.00	---	.00	.01
25	.03	---	---	---	---	---	---	.00	.00	---	.07	.00
26	.20	---	---	---	---	---	---	.00	.00	---	.01	.10
27	.05	---	---	---	---	---	---	.05	.00	---	.18	.00
28	.08	---	---	---	---	---	---	.00	.74	---	.00	.03
29	.04	---	---	---	---	---	---	.00	.00	---	.12	.21
30	.00	---	---	---	---	---	---	.00	.00	---	.01	.00
31	.00	---	---	---	---	---	---	.00	---	---	.00	---
TOTAL	3.70	---	---	---	---	---	---	---	1.51	---	---	5.65

ACID DEPOSITION RECORDS

GROUND-WATER LEVELS

455742089213901 WELL VI-40/09E/10-0960

LOCATION.--Lat 45°57'42", long 89°21'39", in NE 1/4 NW 1/4 SW 1/4 sec.10, T.40 N., R.9 E., Vilas County, Hydrologic Unit 07070001, at southwest end of Honeysuckle Lake, about 6 mi northwest of Eagle River.

AQUIFER.--Sand and gravel.

WELL CHARACTERISTICS.--Augered water-table observation well, diameter 3 in., depth 6 ft, cased to 3 ft, well screened 3-6 ft.

PERIOD OF RECORD.--March to September 1988.

GAGE.--Water-stage recorder. Datum of gage is approximately 1,600 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good, except for period of missing record, March 31 to May 10, 1988.

EXTREMES FOR CURRENT YEAR.--Maximum observed water level, 46.24 ft, May 11; minimum observed water level, 44.67 ft, July 31.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	45.75	45.02	44.68	44.77
2	---	---	---	---	---	---	---	---	45.74	44.99	44.92	44.78
3	---	---	---	---	---	---	---	---	45.73	44.96	44.97	45.03
4	---	---	---	---	---	---	---	---	45.68	44.94	45.00	45.36
5	---	---	---	---	---	---	---	---	45.65	44.91	45.04	45.35
6	---	---	---	---	---	---	---	---	45.59	44.88	44.99	45.29
7	---	---	---	---	---	---	---	---	45.54	44.86	44.92	45.23
8	---	---	---	---	---	---	---	---	45.52	44.90	44.87	45.17
9	---	---	---	---	---	---	---	---	45.51	45.12	44.87	45.13
10	---	---	---	---	---	---	---	---	45.47	45.11	44.82	45.08
11	---	---	---	---	---	---	---	46.24	45.43	45.04	44.78	45.06
12	---	---	---	---	---	---	---	46.16	45.39	45.00	44.81	45.05
13	---	---	---	---	---	---	---	46.16	45.35	44.97	44.91	45.06
14	---	---	---	---	---	---	---	46.14	45.32	44.93	44.99	45.03
15	---	---	---	---	---	---	---	46.12	45.28	45.01	44.93	45.01
16	---	---	---	---	---	---	---	46.11	45.26	45.18	44.86	45.02
17	---	---	---	---	---	---	---	46.08	45.25	45.11	44.93	45.15
18	---	---	---	---	---	---	---	46.05	45.21	45.03	45.02	45.13
19	---	---	---	---	---	---	---	46.05	45.29	44.97	44.97	45.18
20	---	---	---	---	---	---	---	46.01	45.25	44.94	44.91	45.39
21	---	---	---	---	---	---	---	46.01	45.18	44.93	44.85	45.42
22	---	---	---	---	---	---	---	46.03	45.18	44.89	44.82	45.42
23	---	---	---	---	---	45.71	---	46.03	45.14	44.86	44.97	45.40
24	---	---	---	---	---	45.68	---	46.02	45.12	44.83	44.95	45.35
25	---	---	---	---	---	45.88	---	45.94	45.09	44.84	44.89	45.31
26	---	---	---	---	---	45.94	---	45.92	45.05	44.81	44.84	45.29
27	---	---	---	---	---	45.93	---	45.89	45.02	44.79	44.82	45.28
28	---	---	---	---	---	45.93	---	45.87	45.12	44.76	44.81	45.26
29	---	---	---	---	---	45.95	---	45.84	45.21	44.72	44.78	45.28
30	---	---	---	---	---	45.95	---	45.81	45.10	44.69	44.78	45.30
31	---	---	---	---	---	---	---	45.78	---	44.67	44.77	---
TOTAL	---	---	---	---	---	---	---	---	1360.42	1392.66	1391.47	1355.58
MEAN	---	---	---	---	---	---	---	---	45.35	44.92	44.89	45.19
MAX	---	---	---	---	---	---	---	---	45.75	45.18	45.04	45.42
MIN	---	---	---	---	---	---	---	---	45.02	44.67	44.68	44.77

ACID DEPOSITION RECORDS

STAGE RECORDS

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. 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, 29.74 ft, Sept. 15, 1988.

EXTREMES FOR CURRENT YEAR.--Maximum observed gage height, 30.93 ft, Dec. 25; minimum observed gage height, 29.74 ft, Sept. 15.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	30.77	30.78	30.85	30.90	30.89	30.81	30.87	30.72	30.44	30.03	29.84	29.76
2	30.80	30.78	30.84	30.90	30.89	30.81	30.87	30.71	30.43	30.01	29.89	29.75
3	30.79	30.79	30.84	30.90	30.89	30.80	30.89	30.70	30.42	30.00	29.89	29.84
4	30.78	30.80	30.84	30.89	30.87	30.80	30.89	30.69	30.41	29.98	29.93	29.89
5	30.78	30.78	30.84	30.90	30.87	30.80	30.89	30.68	30.40	29.97	29.93	29.87
6	30.78	30.77	30.84	30.89	30.87	30.79	30.91	30.67	30.39	29.97	29.92	29.85
7	30.78	30.77	30.83	30.89	30.87	30.79	30.91	30.66	30.37	29.94	29.91	29.84
8	30.77	30.76	30.83	30.89	30.87	30.80	30.90	30.65	30.34	29.93	29.89	29.82
9	30.76	30.75	30.86	30.88	30.87	30.81	30.89	30.68	30.32	29.95	29.88	29.81
10	30.75	30.74	30.86	30.88	30.87	30.80	30.91	30.67	30.30	29.95	29.86	29.79
11	30.74	30.74	30.86	30.88	30.86	30.80	30.91	30.65	30.28	29.93	29.84	29.78
12	30.73	30.73	30.87	30.88	30.86	30.80	30.90	30.65	30.26	29.92	29.87	29.78
13	30.72	30.73	30.87	30.89	30.86	30.82	30.88	30.64	30.24	29.91	29.90	29.77
14	30.72	30.72	30.87	30.88	30.86	30.82	30.87	30.63	30.24	29.89	29.92	29.75
15	30.74	30.72	30.88	30.89	30.85	30.83	30.87	30.63	30.21	29.92	29.89	29.74
16	30.82	30.73	30.89	30.89	30.85	30.82	30.86	30.60	30.20	30.00	29.89	29.75
17	30.83	30.78	30.88	30.89	30.85	30.82	30.85	30.59	30.19	29.99	29.90	29.79
18	30.82	30.81	30.89	30.88	30.85	30.82	30.83	30.58	30.17	29.97	29.88	29.79
19	30.82	30.80	30.89	30.88	30.84	30.81	30.82	30.56	30.20	29.96	29.86	29.81
20	30.81	30.79	30.91	30.90	30.84	30.81	30.80	30.55	30.19	29.95	29.85	29.83
21	30.82	30.78	30.92	30.91	30.83	30.80	30.80	30.55	30.17	29.95	29.83	29.83
22	30.82	30.78	30.91	30.91	30.84	30.80	30.79	30.55	30.16	29.94	29.82	29.82
23	30.82	30.79	30.91	30.91	30.84	30.80	30.79	30.54	30.13	29.92	29.88	29.81
24	30.82	30.80	30.91	30.91	30.83	30.80	30.79	30.52	30.11	29.92	29.86	29.80
25	30.81	30.80	30.93	30.91	30.82	30.87	30.78	30.50	30.10	29.92	29.84	29.79
26	30.81	30.79	30.91	30.90	30.83	30.87	30.76	30.49	30.07	29.90	29.82	29.79
27	30.81	30.79	30.91	30.90	30.82	30.87	30.75	30.49	30.05	29.89	29.82	29.78
28	30.80	30.78	30.91	30.90	30.81	30.87	30.75	30.48	30.07	29.88	29.79	29.76
29	30.80	30.83	30.91	30.90	30.81	30.88	30.74	30.47	30.07	29.86	29.78	29.76
30	30.79	30.84	30.90	30.90	---	30.88	30.73	30.46	30.05	29.84	29.77	29.76
31	30.78	---	30.91	30.90	---	30.87	---	30.45	---	29.83	29.76	---
TOTAL	954.39	923.25	957.27	957.73	894.71	955.47	925.20	948.41	906.98	928.02	925.71	893.91
MEAN	30.79	30.77	30.88	30.89	30.85	30.82	30.84	30.59	30.23	29.94	29.86	29.80
MAX	30.83	30.84	30.93	30.91	30.89	30.88	30.91	30.72	30.44	30.03	29.93	29.89
MIN	30.72	30.72	30.83	30.88	30.81	30.79	30.73	30.45	30.05	29.83	29.76	29.74
CAL YR 1987	TOTAL 11424.21		MEAN 31.30	MAX 31.85	MIN 30.72							
WTR YR 1988	TOTAL 11171.05		MEAN 30.52	MAX 30.93	MIN 29.74							

ACID DEPOSITION RECORDS

PRECIPITATION QUANTITY

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, 1.95 in., Sept. 3.

RAINFALL ACCUMULATED (INCHES), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.78	.00	---	---	---	---	---	.00	.08	.00	.85	.16
2	.10	.04	---	---	---	---	---	.00	.19	.00	.04	.06
3	.01	---	---	---	---	---	---	.00	.00	.00	.07	1.95
4	.00	---	---	---	---	---	---	.00	.00	.00	.91	.07
5	.17	---	---	---	---	---	---	.00	.00	.00	.04	.01
6	.29	---	---	---	---	---	---	.00	.00	.00	.01	.00
7	.03	---	---	---	---	---	---	.00	.00	.00	.09	.00
8	.00	---	---	---	---	---	---	.80	.10	.47	.04	.00
9	.01	---	---	---	---	---	---	.03	.00	.22	.01	.00
10	.01	---	---	---	---	---	---	.00	.00	.01	.00	.00
11	.00	---	---	---	---	---	---	.01	.00	.20	.01	.00
12	.00	---	---	---	---	---	---	.18	.00	.01	.69	.15
13	.00	---	---	---	---	---	---	.00	.00	.02	.39	.01
14	.00	---	---	---	---	---	---	.00	.03	.00	.00	.00
15	1.03	---	---	---	---	---	---	.00	.04	1.58	.00	.00
16	.49	---	---	---	---	---	---	.00	.03	.00	.00	.66
17	.02	---	---	---	---	---	---	.00	.00	.00	.50	.05
18	.00	---	---	---	---	---	---	.00	.03	.00	.00	.00
19	.00	---	---	---	---	---	.02	.00	.55	.00	.00	.44
20	.03	---	---	---	---	---	.00	.00	.00	.25	.00	.15
21	.19	---	---	---	---	---	.00	.06	.00	.03	.00	.05
22	.18	---	---	---	---	---	.00	.03	.00	.00	.78	.03
23	.03	---	---	---	---	---	.14	.01	.00	.01	.02	.00
24	.01	---	---	---	---	---	.00	.00	.00	.40	.00	.00
25	.01	---	---	---	---	---	.00	.00	.00	.01	.09	.00
26	.08	---	---	---	---	---	.00	.03	.00	.00	.01	.09
27	.02	---	---	---	---	---	.03	.11	.00	.00	.11	.00
28	.01	---	---	---	---	---	.00	.00	.68	.00	.00	.05
29	.02	---	---	---	---	---	.00	.00	.00	.20	.01	.06
30	.00	---	---	---	---	---	.00	.00	.00	.00	.01	.00
31	.00	---	---	---	---	---	---	.00	---	.12	.00	---
TOTAL	3.52	--	---	---	---	---	---	1.26	1.73	3.53	4.68	3.99

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	31.49	31.34	31.14	31.12	30.99	30.83	30.69	30.93	30.87	30.75	30.64	30.53
2	31.46	31.34	31.13	31.12	30.99	30.83	30.69	30.93	30.85	30.75	30.64	30.53
3	31.45	31.35	31.12	31.11	30.98	30.82	30.69	30.93	30.85	30.74	30.64	30.52
4	31.46	31.33	31.10	31.11	30.97	30.82	30.69	30.93	30.85	30.73	30.64	30.52
5	31.47	31.31	31.10	31.11	30.96	30.81	30.71	30.93	30.85	30.73	30.64	30.52
6	31.45	31.31	31.10	31.10	30.95	30.80	30.75	30.92	30.85	30.73	30.64	30.52
7	31.44	31.31	31.10	31.10	30.96	30.80	30.80	30.92	30.85	30.72	30.64	30.51
8	31.43	31.30	31.10	31.10	30.94	30.79	30.83	30.92	30.85	30.72	30.62	30.50
9	31.43	31.28	31.10	31.09	30.93	30.78	30.86	30.92	30.85	30.72	30.62	30.50
10	31.42	31.27	31.10	31.09	30.92	30.78	30.89	30.92	30.85	30.70	30.62	30.49
11	31.42	31.27	31.11	31.09	30.92	30.77	30.91	30.92	30.85	30.70	30.62	30.48
12	31.42	31.26	31.11	31.08	30.92	30.77	30.92	30.92	30.85	30.70	30.61	30.48
13	31.42	31.27	31.11	31.08	30.91	30.76	30.93	30.92	30.85	30.70	30.61	30.48
14	31.41	31.26	31.11	31.07	30.92	30.76	30.95	30.92	30.85	30.70	30.60	30.48
15	31.40	31.24	31.11	31.08	30.90	30.75	30.96	30.92	30.83	30.70	30.60	30.48
16	31.41	31.24	31.12	31.09	30.90	30.74	30.97	30.92	30.83	30.70	30.60	30.48
17	31.41	31.25	31.12	31.06	30.89	30.74	30.98	30.91	30.83	30.70	30.60	30.48
18	31.40	31.22	31.12	31.05	30.89	30.73	30.98	30.90	30.82	30.70	30.60	30.48
19	31.39	31.23	31.12	31.05	30.89	30.73	30.98	30.89	30.79	30.70	30.59	30.48
20	31.39	31.21	31.12	31.06	30.87	30.72	30.99	30.89	30.79	30.70	30.59	30.47
21	31.38	31.19	31.12	31.04	30.87	30.72	30.99	30.89	30.79	30.70	30.59	30.47
22	31.38	31.19	31.12	31.05	30.87	30.71	30.98	30.89	30.79	30.70	30.59	30.47
23	31.38	31.18	31.13	31.05	30.86	30.71	30.98	30.89	30.79	30.70	30.58	30.47
24	31.37	31.17	31.13	31.04	30.86	30.71	30.97	30.89	30.79	30.69	30.58	30.47
25	31.37	31.16	31.13	31.02	30.85	30.70	30.97	30.89	30.79	30.69	30.58	30.47
26	31.39	31.15	31.13	31.02	30.85	30.70	30.96	30.89	30.78	30.69	30.58	30.46
27	31.37	31.15	31.13	31.02	30.83	30.70	30.96	30.89	30.76	30.68	30.57	30.45
28	31.36	31.14	31.13	31.01	30.84	30.69	30.95	30.89	30.75	30.67	30.56	30.45
29	31.36	31.16	31.13	31.01	30.82	30.69	30.94	30.89	30.75	30.67	30.55	30.45
30	31.35	31.16	31.12	31.01	---	30.69	30.94	30.89	30.75	30.64	30.55	30.45
31	31.34	---	31.13	31.00	---	30.69	---	30.89	---	30.64	30.54	---
TOTAL	973.62	937.24	964.64	963.03	896.25	953.24	926.81	958.15	924.55	951.76	948.63	914.54
MEAN	31.41	31.24	31.12	31.07	30.91	30.75	30.89	30.91	30.82	30.70	30.60	30.48
MAX	31.49	31.35	31.14	31.12	30.99	30.83	30.99	30.93	30.87	30.75	30.64	30.53
MIN	31.34	31.14	31.10	31.00	30.82	30.69	30.69	30.89	30.75	30.64	30.54	30.45
CAL YR 1987	TOTAL 11663.16		MEAN 31.95	MAX 32.87	MIN 31.10							
WTR YR 1988	TOTAL 11312.46		MEAN 30.91	MAX 31.49	MIN 30.45							

ACID DEPOSITION RECORDS

VANDERCOOK LAKE

QUALITY OF SURFACE WATER

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

455909089405602 VANDERCOOK LAKE NEAR WOODRUFF, WI (LAT 45 59 09 LONG 0894056)

		SAM- PLING DEPTH (FEET) (00003)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	OXYGEN, DIS- SOLVED (MG/L) (00300)	ACIDITY (MG/L AS H) (71825)	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- LITY WAT WH TOT IT LAB MG/L AS CAC03 (00416)	
OCT 1987													
**07...	1050	3.00	14	5.40	11.0	9.4	0.04	1.3	0.40	0.57	0.19	1	
**07...	1051	3.00	14	5.50	11.0	9.4	0.04	1.2	0.39	0.59	0.10	1	
07...	1100	18.0	14	5.60	12.0	9.4	0.04	1.2	0.38	0.52	0.16	1	
NOV													
04...	1045	3.00	14	6.10	7.0	10.5	0.04	1.0	0.34	0.43	0.20	1	
04...	1055	18.0	14	6.20	6.0	10.5	0.04	1.0	0.35	0.43	0.21	1	
DEC													
09...	1130	3.00	14	--	4.0	12.9	0.02	1.4	0.39	0.73	0.03	1	
**09...	1140	18.0	14	--	5.0	11.3	0.03	1.4	0.38	0.59	0.12	1	
**09...	1141	18.0	14	--	5.0	11.3	0.03	1.3	0.38	0.49	0.23	1	
JAN 1988													
11...	1100	3.00	16	5.80	4.0	10.9	0.04	1.4	0.43	0.53	0.27	1	
11...	1110	18.0	14	5.80	4.0	8.6	0.04	1.4	0.41	0.60	0.20	1	
FEB													
**03...	1500	3.00	17	5.70	3.5	12.3	0.06	1.3	0.39	0.46	0.31	1	
**03...	1501	3.00	18	5.60	3.5	12.3	0.04	1.5	0.47	0.56	0.44	1	
03...	1510	18.0	15	5.70	4.0	7.3	0.03	1.6	0.46	0.64	0.43	1	
MAR													
02...	1500	3.00	17	5.80	3.0	9.3	0.05	1.2	0.37	0.42	0.34	1	
02...	1515	18.0	15	5.70	4.0	6.0	0.07	1.4	0.43	0.51	0.39	1	
29...	1250	3.00	20	5.50	4.0	8.2	0.05	1.6	0.50	0.52	0.52	1	
29...	1300	18.0	25	5.30	4.5	5.3	0.03	1.2	0.38	0.38	0.38	1	
MAY													
02...	1345	3.00	14	6.50	14.0	10.9	0.03	1.2	0.36	0.47	0.22	1	
02...	1355	18.0	14	6.50	10.0	11.2	0.03	1.4	0.39	0.53	0.24	1	
JUN													
**01...	1350	3.00	15	6.30	24.0	8.3	0.02	1.2	0.36	0.45	0.23	1	
**01...	1351	3.00	14	6.40	24.0	8.3	0.02	1.2	0.35	0.48	0.18	1	
01...	1400	18.0	15	6.20	18.0	9.4	0.02	1.2	0.37	0.40	0.22	1	
27...	1350	3.00	16	6.60	23.0	7.6	0.03	1.5	0.42	0.77	0.18	1	
27...	1400	18.0	15	6.30	23.0	7.1	0.02	1.3	0.38	0.72	0.03	1	
AUG													
01...	1355	3.00	13	6.50	27.0	7.4	0.02	1.4	0.39	0.72	0.09	1	
01...	1405	18.0	17	6.60	25.5	7.5	0.02	1.4	0.37	0.65	0.20	2	
29...	1400	3.00	14	6.40	21.0	7.5	0.03	1.4	0.37	0.48	0.22	2	
29...	1405	18.0	18	6.20	21.0	7.6	0.03	1.3	0.36	0.43	0.16	2	
DATE		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)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N) (00618)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	PHOS- PHOROUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	ALUM- INUM, DIS- SOLVED (UG/L AS AL) (01106)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)
OCT 1987													
07...	3.8	0.28	0.03	0.09	7	<0.010	0.018	<0.001	5	5	5	4.2	
07...	3.9	0.28	0.03	0.08	7	<0.010	0.024	<0.001	3	7	6	4.5	
07...	3.9	0.28	0.04	0.07	7	<0.010	0.032	<0.001	3	5	5	4.7	
NOV													
04...	3.7	0.27	0.05	0.11	6	<0.010	0.030	0.003	6	7	4	4.8	
04...	3.7	0.27	0.04	0.06	6	<0.010	0.026	0.004	8	9	5	4.6	
DEC													
09...	4.4	0.29	0.06	0.02	7	0.020	0.025	0.004	6	4	2	5.5	
09...	4.0	0.27	0.05	0.07	7	0.020	0.045	0.005	9	14	17	4.9	
09...	4.0	0.27	0.05	0.04	7	0.020	0.062	0.004	6	6	11	4.7	
JAN 1988													
11...	4.6	0.34	0.04	0.07	8	0.030	0.045	0.040	5	5	6	4.7	
11...	3.9	0.29	0.05	0.08	7	0.010	0.060	0.030	8	6	6	3.6	
FEB													
03...	3.9	0.26	0.04	0.04	7	0.020	0.160	0.007	4	12	11	4.4	
03...	4.9	0.34	0.05	0.02	9	0.030	0.088	0.015	5	61	3	4.4	
03...	4.8	0.35	0.05	0.04	9	0.030	0.099	0.013	20	7	26	4.8	
MAR													
02...	4.6	0.34	0.06	0.07	8	0.040	0.120	0.024	7	<2	8	4.7	
02...	3.9	0.27	0.06	0.04	7	0.050	0.077	0.017	7	<2	14	3.7	
29...	7.7	0.31	0.03	0.05	12	0.130	0.160	0.017	10	8	7	5.1	
29...	4.0	0.24	0.03	0.03	7	0.070	0.110	0.029	10	8	7	3.7	
MAY													
02...	3.9	0.26	0.03	0.09	7	0.030	0.016	0.021	20	3	14	3.6	
02...	3.9	0.29	0.05	0.16	7	0.020	0.020	0.031	5	5	16	3.5	
JUN													
01...	4.0	0.24	0.04	0.07	7	<0.010	0.011	0.003	5	6	20	4.9	
01...	4.0	0.27	0.05	0.07	7	<0.010	0.011	0.032	4	5	18	4.1	
01...	3.9	0.38	0.05	0.06	7	<0.010	0.012	0.008	7	16	18	4.6	
27...	4.1	0.31	0.05	0.19	8	<0.010	0.089	0.021	30	13	<1	5.4	
27...	4.0	0.30	0.02	0.13	7	<0.010	0.075	0.016	6	12	<1	6.0	
AUG													
01...	3.8	0.30	0.05	0.10	7	<0.010	0.044	0.037	10	11	4	5.1	
01...	3.8	0.30	0.05	0.08	7	<0.010	0.035	0.014	8	11	5	4.6	
29...	3.8	0.27	0.06	0.13	7	0.010	0.030	<0.001	10	15	4	4.5	
29...	3.6	0.27	0.06	0.12	6	0.020	0.031	<0.001	10	11	3	4.4	

**SAMPLES WITH SAME DATES AND SAMPLING DEPTHS ARE REPLICATES.

ACID DEPOSITION RECORDS

VANDERCOOK LAKE

QUALITY OF PRECIPITATION

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

DATE	RAIN FALL ACCUM (IN) (00045)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	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)
455911089405903 VANDERCOOK LK BULK PRECIP COLL NR WOODRUFF, WI (LAT 45 59 11 LONG 089 40 59)							
OCT 07 - NOV 04, 1987	2.54	15	4.80	0.70	0.12	0.27	0.08
NOV 04 - DEC 09, 1987	3.57	13	--	0.38	0.06	0.20	0.03
DEC 09, 1987 - JAN 11, 1988	1.51	18	4.40	0.32	0.05	0.13	0.05
JAN 11 - FEB 03, 1988	0.98	22	4.50	0.56	0.07	0.21	0.06
FEB 03 - MAR 02, 1988	0.49	17	4.70	0.67	0.12	0.25	0.09
MAR 02 - MAR 29, 1988	2.74	23	4.60	0.90	0.13	0.26	0.11
MAR 29 - MAY 02, 1988	0.91	20	5.00	0.25	0.02	0.31	0.16
MAY 02 - JUN 01, 1988	1.45	27	6.20	1.3	0.32	0.30	0.48
JUN 01 - JUN 27, 1988	1.20	24	6.40	1.7	0.33	0.48	0.49
JUN 27 - AUG 01, 1988	4.62	14	5.30	0.71	0.11	0.26	0.10
AUG 01 - AUG 29, 1988	4.96	12	4.70	0.56	0.19	0.25	0.07
AUG 29 - OCT 05, 1988	4.62	13	4.30	0.55	0.13	0.31	0.07

460307089391203 TROUT LK BULK PRECIP COLL NR BOULDER JCT, WI (LAT 46 03 07 LONG 089 39 12)							
DEC 09, 1987 - JAN 11, 1988	1.19	18	4.40	0.36	0.06	0.15	0.04

DATE	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)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N) (00618)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	PHOS- PHOROUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)
455911089405903 VANDERCOOK LK BULK PRECIP COLL NR WOODRUFF, WI (LAT 45 59 11N LONG 089 40 59W)						
OCT 07 - NOV 04, 1987	2.0	0.13	0.03	0.380	0.450	<0.001
NOV 04 - DEC 09, 1987	0.98	0.18	0.03	0.240	0.037	<0.010
DEC 09, 1987 - JAN 11, 1988	0.84	0.17	0.02	0.470	0.150	<0.010
JAN 11 - FEB 03, 1988	1.6	0.18	0.05	0.620	0.260	0.010
FEB 03 - MAR 02, 1988	1.4	0.25	0.04	0.570	0.230	<0.010
MAR 02 - MAR 29, 1988	2.9	0.16	0.04	0.610	0.760	<0.010
MAR 29 - MAY 02, 1988	2.9	0.15	0.04	0.570	0.660	0.040
MAY 02 - JUN 01, 1988	5.0	0.21	0.05	0.880	1.80	<0.010
JUN 01 - JUN 27, 1988	3.7	0.25	0.03	0.900	1.00	0.030
JUN 27 - AUG 01, 1988	1.5	0.09	0.03	0.380	0.650	<0.010
AUG 01 - AUG 29, 1988	1.6	0.09	0.04	0.390	0.440	<0.010
AUG 29 - OCT 05, 1988	2.0	0.06	0.02	0.310	0.740	<0.010

460307089391203 TROUT LK BULK PRECIP COLL NR BOULDER JCT, WI (LAT 46 03 07N LONG 089 39 12W)						
DEC 09, 1987 - JAN. 11, 1988	0.83	0.15	0.01	0.470	0.130	<0.010

ACID DEPOSITION RECORDS

VANDERCOOK LAKE

QUALITY OF GROUND WATER

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

STATION	NUMBER	LOCAL IDENT- I- FIER	GEO- LOGIC UNIT	DATE	DEPTH OF WELL, TOTAL (FEET) (72008)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)
455903089404720	VI-41/06E/36-0747		110QRNR	12-09-87	8.00	32	--	4.0
			110QRNR	03-02-88	8.00	33	6.70	2.0
455904089404711	VI-41/06E/36-0088		110QRNR	10-07-87	18.00	58	6.00	8.0
			110QRNR	11-04-87	18.00	57	6.50	9.0
			110QRNR	12-09-87	18.00	55	--	7.0
			110QRNR	01-11-88	18.00	54	6.50	5.0
			110QRNR	02-03-88	18.00	55	6.50	5.0
			110QRNR	03-02-88	18.00	53	6.50	7.0
			**110QRNR	03-29-88	18.00	55	6.10	5.0
			**110QRNR	03-29-88	18.00	56	6.20	5.5
			110QRNR	05-02-88	18.00	55	6.50	9.0
			110QRNR	06-01-88	18.00	60	6.40	10.0
			110QRNR	06-27-88	18.00	59	6.50	8.0
			**110QRNR	08-01-88	18.00	55	6.40	11.0
			**110QRNR	08-01-88	18.00	55	6.40	11.0
455905089404700	VI-41/06E/36-0961		110QRNR	08-29-88	18.00	59	6.00	10.0
			110QRNR	02-03-88	8.00	36	6.50	4.0
			110QRNR	03-02-88	8.00	30	6.60	2.0
			110QRNR	03-29-88	8.00	31	6.20	3.0
			110QRNR	05-02-88	8.00	32	6.40	7.0
			110QRNR	06-01-88	8.00	37	6.40	11.0
			110QRNR	06-27-88	8.00	37	6.50	10.0
			110QRNR	08-01-88	8.00	37	6.60	12.5
455906089404800	VI-41/06E/36-0962		110QRNR	08-29-88	8.00	36	6.00	13.0
			110QRNR	02-03-88	8.00	49	5.80	4.0
			110QRNR	03-02-88	8.00	50	5.90	3.0
			110QRNR	03-29-88	8.00	44	5.60	3.0
			110QRNR	05-02-88	8.00	44	6.30	7.0
			110QRNR	06-01-88	8.00	54	5.70	11.0
			110QRNR	06-27-88	8.00	55	5.80	10.0
			110QRNR	08-01-88	8.00	50	5.80	15.0
			110QWNR	08-29-88	8.00	53	5.30	14.0

STATION	NUMBER	ACIDITY (MG/L AS H) (71825)	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 WAT WH TOT IT LAB MG/L AS CACO3 (00416)	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)
455903089404720		0.03	3.5	1.2	1.3	0.25	12	3.8	0.28	0.09
455904089404711		0.03	3.4	1.2	1.0	0.14	--	4.9	0.35	0.10
		0.06	6.7	1.6	2.2	0.30	19	8.2	0.36	0.08
		<0.01	6.0	1.5	2.1	0.39	19	7.9	0.45	0.09
		0.02	6.5	1.5	2.1	0.41	19	8.1	0.33	0.10
		0.05	6.5	1.6	2.0	0.43	19	7.1	0.33	0.07
		0.06	6.4	1.5	2.1	0.23	19	7.6	0.34	0.09
		0.03	6.3	1.5	2.0	0.31	--	5.6	0.34	0.10
		0.02	6.6	1.5	1.9	0.36	20	7.3	0.36	0.07
		0.02	6.8	1.6	1.9	0.37	20	7.5	0.36	0.07
		0.06	6.8	1.6	1.9	0.35	20	7.7	0.32	0.14
		<0.01	7.3	1.7	2.2	0.18	--	7.8	0.36	0.08
		0.27	6.9	1.6	2.1	0.29	20	7.7	0.35	0.09
		0.02	6.8	1.6	2.1	0.29	--	7.8	0.39	0.09
		0.01	7.1	1.6	2.3	0.28	--	8.0	0.40	0.08
455905089404700		0.05	7.2	1.6	2.3	0.22	21	7.7	0.37	0.08
		0.10	2.1	0.86	1.6	0.18	8	5.1	0.31	0.10
		0.04	1.8	0.72	1.2	0.15	4	5.1	0.30	0.07
		0.03	2.1	0.83	1.1	0.14	4	6.1	0.36	0.07
		0.10	2.5	0.93	1.2	0.16	6	6.4	0.34	0.06
		0.02	2.8	1.0	1.4	0.06	6	6.5	0.31	0.06
		0.02	2.9	1.1	1.5	0.06	8	5.6	0.33	0.06
		0.02	2.9	1.0	1.6	0.19	9	5.1	0.30	0.09
455906089404800		0.07	2.9	1.0	1.5	0.20	9	4.8	0.31	0.08
		0.13	4.5	1.7	2.2	0.16	12	10	0.77	0.08
		0.04	4.3	1.7	2.2	0.17	13	10	0.56	0.05
		0.04	3.8	1.5	2.1	0.19	--	14	0.58	0.07
		0.29	3.5	1.4	2.2	0.17	11	8.1	0.59	0.06
		0.05	4.8	1.9	2.6	0.17	15	9.0	0.58	0.08
		0.08	5.0	1.9	2.5	0.17	16	9.6	0.57	0.06
		0.02	4.8	1.8	2.6	0.21	--	9.7	0.56	0.13
		0.18	4.4	1.7	2.4	0.22	13	11	0.56	0.09

ACID DEPOSITION RECORDS

VANDERCOOK LAKE

QUALITY OF GROUND WATER--CONTINUED

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

STATION	NUMBER	SILICA, DIS- SOLVED (MG/L AS SI02) (00955)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N) (00618)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	PHOS- PHOROUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	ALUM- INUM, DIS- SOLVED (UG/L AS AL) (01106)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)
455903089404720	11		21	<0.010	0.006	0.004	7	10	20	3.7
	6.3		18	0.050	<0.002	0.009	5	<2	<1	3.2
455904089404711	17		36	<0.010	0.013	<0.001	4	3	1	1.6
	17		36	0.050	0.002	0.006	6	5	<1	1.5
	17		36	0.020	0.008	0.005	7	4	4	1.6
	17		36	0.060	0.032	0.067	6	3	2	1.5
	17		36	0.080	0.028	0.013	3	7	<1	1.2
	17		34	0.080	<0.002	0.023	4	<2	<1	1.3
	16		34	0.040	0.011	0.031	8	2	<1	1.4
	16		35	0.060	0.009	0.023	5	<2	<1	2.0
	16		35	0.090	0.014	0.038	4	2	3	1.3
	16		36	0.100	0.007	0.014	3	<2	12	1.5
	16		36	0.100	0.023	0.027	4	<2	<1	3.0
	15		34	0.060	0.011	0.022	8	7	5	1.5
	16		36	0.070	0.008	0.005	10	6	4	1.6
455905089404700	16		36	<0.010	0.009	<0.001	20	6	3	1.1
	13		27	<0.010	0.060	0.020	3	3500	54	2.3
	11		22	<0.010	<0.002	0.027	7	2000	27	2.4
	8.9		21	<0.010	0.015	0.032	7	1700	22	2.8
	8.3		22	<0.010	0.012	0.030	2	1600	26	2.8
	9.3		23	<0.010	0.011	0.017	4	1600	25	2.1
	10		24	<0.010	0.040	0.052	7	1900	18	3.5
	11		24	0.020	0.012	0.010	10	1900	26	1.7
	12		25	0.020	0.025	0.007	20	1800	24	1.5
455906089404800	16		36	0.030	0.024	0.013	7	10	32	1.6
	16		36	0.240	0.009	0.014	10	110	35	1.5
	18		42	0.240	0.011	0.027	10	91	62	1.8
	17		33	<0.010	0.020	0.026	8	76	97	2.0
	16		35	0.030	0.005	0.018	9	64	90	1.5
	16		36	0.030	0.016	0.020	10	79	53	3.0
	16		36	0.020	0.012	0.005	20	66	55	1.4
	17		38	<0.010	0.008	<0.001	20	73	52	1.5

**SAMPLES WITH SAME DATES ARE REPLICATES.

ACID DEPOSITION RECORDS

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STAGE RECORDS

455946089415702 LITTLE ROCK LAKE NEAR WOODRUFF, WI

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.

DRAINAGE AREA.--0.22 mi². Area of lake, 0.07 mi².

PERIOD OF RECORD.--October 1983 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. Lake does not have surface inlet or outlet.

EXTREMES FOR PERIOD OF RECORD.--Maximum observed gage height, 28.10 ft, Apr. 7-9, 1986; minimum observed gage height, 25.70 ft, July 31, 1988.

EXTREMES FOR CURRENT YEAR.--Maximum observed gage height, 26.80 ft, Jan. 24-27; minimum observed gage height, 25.70 ft, July 31.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26.58	26.61	26.67	26.73	26.78	26.64	26.65	26.58	26.30	25.86	25.72	25.80
2	26.63	26.61	26.67	26.73	26.77	26.63	26.63	26.58	26.30	25.85	25.78	25.79
3	26.61	26.62	26.66	26.72	26.76	26.63	26.63	26.56	26.29	25.83	25.78	25.89
4	26.60	26.64	26.66	26.73	26.76	26.62	26.65	26.55	26.27	25.81	25.83	25.95
5	26.60	26.62	26.66	26.76	26.75	26.62	26.65	26.54	26.26	25.80	25.86	25.95
6	26.61	26.61	26.66	26.76	26.74	26.61	26.65	26.53	26.25	25.79	25.86	25.92
7	26.61	26.60	26.65	26.75	26.75	26.60	26.64	26.51	26.24	25.77	25.84	25.91
8	26.59	26.60	26.65	26.74	26.75	26.60	26.64	26.50	26.22	25.75	25.84	25.89
9	26.58	26.58	26.69	26.74	26.74	26.58	26.64	26.55	26.19	25.76	25.82	25.88
10	26.57	26.58	26.71	26.74	26.73	26.57	26.65	26.55	26.17	25.77	25.80	25.86
11	26.56	26.57	26.71	26.74	26.72	26.57	26.67	26.54	26.15	25.74	25.78	25.85
12	26.55	26.57	26.72	26.75	26.72	26.57	26.67	26.53	26.13	25.73	25.85	25.85
13	26.55	26.56	26.72	26.76	26.72	26.58	26.67	26.53	26.11	25.72	25.88	25.84
14	26.54	26.56	26.71	26.75	26.71	26.58	26.68	26.51	26.08	25.72	25.90	25.83
15	26.56	26.56	26.72	26.74	26.70	26.60	26.68	26.50	26.05	25.75	25.89	25.81
16	26.65	26.56	26.73	26.76	26.70	26.60	26.68	26.49	26.03	25.83	25.87	25.82
17	26.66	26.61	26.73	26.74	26.70	26.60	26.68	26.47	26.02	25.82	25.91	25.87
18	26.66	26.65	26.73	26.74	26.69	26.59	26.68	26.46	26.00	25.80	25.91	25.87
19	26.65	26.65	26.73	26.76	26.68	26.59	26.68	26.45	26.02	25.79	25.88	25.88
20	26.64	26.63	26.74	26.79	26.68	26.59	26.67	26.44	26.02	25.78	25.88	25.92
21	26.65	26.62	26.75	26.78	26.68	26.58	26.66	26.43	26.00	25.79	25.88	25.92
22	26.65	26.62	26.74	26.78	26.67	26.58	26.64	26.43	25.99	25.78	25.85	25.91
23	26.65	26.62	26.73	26.79	26.67	26.58	26.65	26.42	25.96	25.76	25.90	25.91
24	26.65	26.63	26.73	26.80	26.66	26.58	26.65	26.41	25.95	25.76	25.90	25.90
25	26.64	26.63	26.74	26.80	26.65	26.65	26.65	26.39	25.92	25.78	25.89	25.89
26	26.64	26.62	26.74	26.80	26.65	26.63	26.64	26.37	25.90	25.76	25.86	25.88
27	26.64	26.61	26.74	26.80	26.64	26.64	26.62	26.36	25.88	25.74	25.85	25.88
28	26.64	26.61	26.74	26.79	26.64	26.64	26.62	26.36	25.89	25.73	25.85	25.86
29	26.63	26.65	26.74	26.79	26.65	26.65	26.61	26.34	25.90	25.72	25.82	25.86
30	26.63	26.67	26.73	26.78	---	26.65	26.59	26.33	25.88	25.71	25.81	25.84
31	26.62	---	26.74	26.78	---	26.65	---	26.32	---	25.70	25.80	---
TOTAL	825.04	798.27	828.04	829.62	774.46	824.80	799.52	820.53	782.37	798.90	801.29	776.23
MEAN	26.61	26.61	26.71	26.76	26.71	26.61	26.65	26.47	26.08	25.77	25.85	25.87
MAX	26.66	26.67	26.75	26.80	26.78	26.65	26.68	26.58	26.30	25.86	25.91	25.95
MIN	26.54	26.56	26.65	26.72	26.64	26.57	26.59	26.32	25.88	25.70	25.72	25.79
CAL YR 1987	TOTAL 9882.04		MEAN 27.07		MAX 27.65		MIN 26.54					
WTR YR 1988	TOTAL 9659.07		MEAN 26.39		MAX 26.80		MIN 25.70					

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24.54	24.42	24.33	24.32	24.22	24.10	24.05	24.40	24.22	23.91	23.63	23.55
2	24.52	24.42	24.33	24.32	24.22	24.09	24.06	24.40	24.21	23.90	23.61	23.55
3	24.52	24.40	24.33	24.32	24.21	24.09	24.07	24.40	24.20	23.89	23.61	23.55
4	24.52	24.39	24.32	24.32	24.21	24.08	24.09	24.39	24.19	23.89	23.60	23.55
5	24.52	24.39	24.32	24.32	24.21	24.08	24.12	24.39	24.18	23.87	23.60	23.55
6	24.51	24.39	24.32	24.31	24.21	24.07	24.15	24.39	24.17	23.86	23.60	23.55
7	24.50	24.39	24.32	24.31	24.21	24.07	24.18	24.38	24.16	23.85	23.60	23.56
8	24.49	24.39	24.32	24.31	24.20	24.06	24.22	24.38	24.15	23.84	23.60	23.56
9	24.49	24.39	24.32	24.30	24.19	24.06	24.25	24.38	24.14	23.83	23.60	23.56
10	24.48	24.38	24.32	24.30	24.19	24.06	24.27	24.38	24.13	23.82	23.60	23.56
11	24.48	24.38	24.34	24.30	24.19	24.05	24.29	24.36	24.12	23.80	23.59	23.56
12	24.47	24.38	24.34	24.29	24.18	24.05	24.31	24.36	24.11	23.78	23.59	23.54
13	24.46	24.37	24.34	24.28	24.18	24.05	24.33	24.36	24.10	23.78	23.59	23.54
14	24.45	24.36	24.33	24.28	24.18	24.05	24.34	24.36	24.09	23.77	23.59	23.54
15	24.45	24.36	24.34	24.28	24.17	24.04	24.35	24.36	24.06	23.76	23.59	23.53
16	24.44	24.35	24.34	24.28	24.17	24.04	24.36	24.36	24.04	23.74	23.58	23.53
17	24.44	24.35	24.34	24.27	24.16	24.04	24.38	24.35	24.04	23.74	23.58	23.52
18	24.44	24.35	24.34	24.26	24.15	24.05	24.38	24.34	24.03	23.74	23.58	23.52
19	24.44	24.35	24.34	24.26	24.15	24.05	24.39	24.34	24.01	23.74	23.58	23.52
20	24.44	24.35	24.34	24.26	24.15	24.04	24.39	24.33	24.00	23.73	23.58	23.53
21	24.44	24.35	24.34	24.25	24.15	24.04	24.39	24.33	23.98	23.73	23.58	23.53
22	24.44	24.35	24.34	24.25	24.14	24.04	24.39	24.32	23.98	23.72	23.58	23.53
23	24.44	24.35	24.34	24.25	24.14	24.04	24.40	24.31	23.98	23.71	23.58	23.53
24	24.44	24.34	24.34	24.25	24.13	24.03	24.40	24.30	23.97	23.70	23.59	23.53
25	24.44	24.33	24.34	24.25	24.12	24.03	24.41	24.29	23.94	23.69	23.59	23.52
26	24.43	24.33	24.33	24.24	24.12	24.03	24.40	24.29	23.94	23.69	23.58	23.52
27	24.43	24.33	24.32	24.24	24.11	24.03	24.40	24.28	23.94	23.68	23.58	23.52
28	24.43	24.33	24.32	24.24	24.11	24.04	24.40	24.27	23.93	23.67	23.58	23.52
29	24.43	24.33	24.32	24.23	24.10	24.05	24.40	24.26	23.92	23.66	23.58	23.52
30	24.43	24.33	24.32	24.23	---	24.05	24.40	24.25	23.92	23.64	23.57	23.51
31	24.42	---	24.33	24.23	---	24.05	---	24.23	---	23.64	23.57	---
TOTAL	758.37	730.93	754.26	752.55	700.87	745.65	728.97	754.54	721.85	736.77	731.28	706.10
MEAN	24.46	24.36	24.33	24.28	24.17	24.05	24.30	24.34	24.06	23.77	23.59	23.54
MAX	24.54	24.42	24.34	24.32	24.22	24.10	24.41	24.40	24.22	23.91	23.63	23.56
MIN	24.42	24.33	24.32	24.23	24.10	24.03	24.05	24.23	23.92	23.64	23.57	23.51
CAL YR 1987	TOTAL 9126.30		MEAN 25.00	MAX 25.87		MIN 24.32						
WTR YR 1988	TOTAL 8822.14		MEAN 24.10	MAX 24.54		MIN 23.51						

DISCONTINUED STATIONS

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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	5.00	1976-78
04024315	Little Balsam Creek near Patzau, WI	5.18	1975-78
04024318	Little Balsam Creek Tributary near Patzau, WI	0.54	1976-78
04024320	Little Balsam Creek near Foxboro, WI	6.27	1977-78
04025000	Amnicon River near Poplar (Amnicon Falls), WI	112	1914-16
04026000	Bois Brule (Brule) River near Brule, WI	153	1914-17
04026300	Sioux River near Washburn, WI	14.9	1964-66
04026347	Pine Creek at Moquah, WI	5.90	1975-78
04026348	Pine Creek Tributary at Moquah, WI	0.57	1976-78
04026349	Pine Creek near Moquah, WI	21.5	1975-78
04026450	Bad River near Mellen, WI	83.4	1970-75
04026500	Bad River at Mellen, WI	101	1948-55
04026870	Alder Creek near Upson, WI	22.3	1972-77
04028500	Montreal River near Kimball, WI	109	1924-25
04029000	West Fork Montreal River at Gile, WI	78	1918-25, 1942-47
04029500	West Fork Montreal River near Kimball, WI	96	1924-25
04063640	North Branch Pine River at Windsor Dam nr Alvin, WI	29.4	1966-68
04064000	Pine River near Florence, WI	500	1913-23
04064500	Pine River below Pine River Powerplant near Florence, WI	528	1923-75
04066500	Pike River at Amberg, WI	253	1914-70
04067000	Menominee River below Koss, MI	3,730	1907-09, 1913-81
04068000	Peshtigo River at High Falls near Crivitz, WI	554	1912-57
04072000	Suamico River at Suamico, WI	57.0	1951-52
04072750	Lawrence Creek near Westfield, WI	16.0	1967-73
04073050	Grand River near Kingston, WI	73.7	1968-75
04073405	West Branch White River near Wautoma, WI	43	1963-65
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	482	1935-37
04075200	Evergreen Creek near Langlade, WI	8.0	1964-73
04075500	Wolf River above West Branch Wolf River, WI	633	1927-62
04076000	West Branch Wolf River at Neopit, WI	108	1911-17
04076500	West Branch Wolf River near Keshena, WI	170	1928-31
04078500	Embarrass River near Embarrass, WI	384	1919-85
04079602	Little Wolf River near Galloway, WI	22.5	1973-79
04079700	Spaulding Creek near Big Falls, WI	4.9	1964-66
04080000	Little Wolf River at Royalton, WI	507	1914-70, 1982-85
04080950	Emmons Creek near Rural, WI	27	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	10.3	1976-77
04083000	West Branch Fond du Lac River at Fond du Lac, WI	84.5	1939-54
04083500	East Branch Fond du Lac River near Fond du Lac, WI	77.9	1939-54
04084200	Brothertown Creek at Brothertown, WI	5.59	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 Waubesa, WI	432	1968-81
04086488	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
04087060	Noyes Creek at Milwaukee, WI	1.94	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	460	1914-27
05335010	Loon Creek near Danbury, WI	16.9	1970-71
05335380	Bashaw Brook near Shell Lake, WI	24.9	1964-66
05335500	Clam River near Webster, WI	364	1940-42
05336000	St. Croix River near Grantsburg, WI	2,820	1923-70
05339000	Wood River near Grantsburg, WI	190	1939
05342000	Kinnickinnic River near River Falls, WI	167	1916-21

LIST OF DISCONTINUED STATIONS--CONTINUED

Station number	Station name	Drainage area (sq mi)	Period of record
05355500	West Fork Chippewa River at Lessards, nr Winter, WI	577	1911-16
05356121	Couderay River near Couderay, WI	169	1981-83
05357500	Flambeau River at Flambeau Flowage (Flambeau Reservoir), WI	666	1927-61
05358000	Flambeau River near Butternut, WI	737	1914-38
05358300	Pine Creek near Oxbo, WI	37.8	1970-75
05358500	Flambeau River at Babbs Island near Winter, WI	1,000	1929-75
05359500	South Fork Flambeau River near Phillips, WI	615	1929-75
05359600	Price Creek near Phillips, WI	14.7	1964-66
05360000	Flambeau River near (at) Ladysmith, WI	1,823	1903-06, 1914-61
05361000	Chippewa River near Holcombe, WI	3,790	1944-49
05361500	South Fork Jump River near Ogema, WI	328	1944-54
05362500	Chippewa River at Holcombe, WI	4,700	1942-49
05363000	Fisher River at (near) Holcombe, WI	76	1944-45
05363500	O'Neil Creek near Chippewa Falls, WI	67.1	1944-45
05363700	Yellow River near Hannibal, WI	91.2	1962-63
05364000	Yellow River at Cadott, WI	351	1942-61
05364500	Duncan Creek at Bloomer, WI	49.2	1943-51
05365000	Duncan Creek at Chippewa Falls, WI	114	1942-55
05366000	Eau Claire River near Augusta, WI	500	1914-26
05366300	Bridge Creek at Augusta, WI	34.5	1979-80
05366500	Eau Claire River near Fall Creek, WI	758	1942-55
05367000	Chippewa River at (near) Eau Claire, WI	6,630	1902-09, 1944-54
05367425	Red Cedar River near Cameron, WI	450	1966-70
05367426	Red Cedar River near Cameron, WI	453	1971-73
05367500	Red Cedar River near Colfax, WI	1,100	1914-61
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	91.9	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	99.7	1979-80
05379400	Trempealeau River at Arcadia, WI	552	1960-77
05380000	Trempealeau River near Trempealeau, WI	722	1931-34
05380806	Black River at Medford, WI	47.9	1984-87
05380900	Poplar River near Owen, WI	157	1964-66
05382500	Little LaCrosse River near Leon, WI	77.4	1934-61, 1978-81
05383000	LaCrosse River near West Salem, WI	398	1913-70
05386490	Spring Coulee Creek near Coon Valley, WI	8.93	1978-81
05386500	Coon Creek at Coon Valley, WI	78.3	1934-40, 1978-81
05386999	Coon Creek near Stoddard, WI	120	1934-40, 1979-81
05387100	North Fork Bad Axe River near Genoa, WI	68.8	1964-66
05390180	Wisconsin River at Conover, WI	176	1966-71
05391226	Pelican River near Rhinelander, WI	101	1976-79
05392000	Wisconsin River at Whirlpool Rapids, near Rhinelander, WI	1,200	1905-61
05392350	Bearskin Creek near Harshaw, WI	27.8	1964-66
05392400	Tomahawk River near Bradley, WI	422	1914-27, 1928-29
05393000	Tomahawk River at Bradley, WI	545	1930-73
05394000	New Wood River near Merrill, WI	83.1	1952-61
05396000	Rib River at Rib Falls, WI	309	1925-57
05396500	Little Rib River near Wausau, WI	76	1914-16
05397000	East Branch Eau Claire River near Antigo, WI	75	1949-55
05397110	Eau Claire River near Antigo, WI	200	1974-81
05398500	Bull Junior Creek (Bull Creek Junior) near Rothschild, WI	26.4	1944-51
05399000	Big Eau Pleine River near Colby, WI	79	1941-54
05399431	Hamann Creek near Stratford, WI	11.3	1976-79
05400000	Wisconsin River at Knowlton, WI	4,520	1920-42
05400500	Plover River near Stevens Point, WI	136	1914-19, 1944-51
05400600	Little Plover River near Arnott, WI	1.5	1959-75
05400650	Little Plover River at Plover, WI	19.0	1959-87
05400840	Fourmile Creek near Kellner, WI	51	1964-67
05400853	Buena Vista Creek near Kellner, WI	44	1964-67
05401020	Tenmile Creek Ditch 5 near Bancroft, WI	8.8	1964-73
05401100	Fourteenmile Creek near New Rome, WI	91.9	1964-79
05401510	Big Roche a Cri Creek near Hancock, WI	9.5	1963-67
05401535	Big Roche a Cri Creek near Adams, WI	52.8	1963-78
05402500	Yellow River at Sprague, WI	420	1926-40
05403000	Yellow River at Necedah, WI	526	1940-57
05403630	Hulbert Creek near Wisconsin Dells, WI	11.2	1970-77

LIST OF DISCONTINUED STATIONS--CONTINUED

Station number	Station name	Drainage area (sq mi)	Period of record
05401500	Wisconsin River near Necedah, WI	5,860	1902-14, 1944-50
05403500	Lemonweir River at New Lisbon, WI	507	1944-87
05403700	Dell Creek near Lake Delton, WI	44.9	1957-1965, 1970-80
05404200	Narrows Creek at Loganville, WI	40.0	1964-66
05406000	Wisconsin River at Prairie du Sac, WI	9,180	1946-53
05406460	Black Earth Creek at Cross Plains, WI	14.6	1984-86
05406470	Brewery Creek at Cross Plains, WI	10.5	1984-86
05406491	Garfoot Creek near Cross Plains, WI	5.39	1984-86
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	16.6	1968-69, 1970-75
05407500	Kickapoo River at Ontario, WI	151	1938-39, 1973-77
05408500	Knapp Creek near Bloomingdale, WI	8.47	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	6.81	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	15.1	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	7.2	1926-28, 1946-54
05426900	Whitewater Creek at Millis Road near Whitewater, WI	20.6	1978-81
05427000	Whitewater Creek at Whitewater, WI	22.7	1926-28, 1946-54
05427507	Koshkonong Creek near Rockdale, WI	150	1976-82
05427718	Yahara River at Windsor, WI	73.6	1976-81
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
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	0.22	1970-77
05429050	Nakoma Storm Sewer at Madison, WI	2.35	1971-77
05429118	Lake Wingra at Madison, WI	6.08	1970-79
05429120	Lake Wingra Outlet at Madison, WI	6.08	1970-77
05429580	Door Creek near Cottage Grove, WI	15.3	1975-79
05430000	Yahara River near Edgerton, WI	459	1916-17
05430030	Oregon Branch at Oregon, WI	9.93	1979-81
05430100	Badfish Creek near Stoughton, WI	43.5	1956-66
05433500	Yellowstone River near Blanchardville, WI	28.5	1954-65, 1977-79
05434000	Pecatonica River at Dill, WI	951	1914-19
05433510	Steiner Branch near Walldwick, 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

WISCONSIN DISTRICT PUBLICATIONS

The reports listed below are a partial list of reports prepared by the Wisconsin District in cooperation with other agencies since 1948. The list contains reports that are relevant and contribute significantly to understanding the hydrology of Wisconsin's water resources.

The reports published in a U.S. Geological Survey series are for sale by the U.S. Geological Survey, Box 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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