



Water Resources Data Wisconsin Water Year 1987



U.S. GEOLOGICAL SURVEY WATER-DATA REPORT WI-87-1
Prepared in cooperation with the State of Wisconsin
and with other agencies

1986																												
OCTOBER							NOVEMBER							DECEMBER														
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Water Resources Data Wisconsin

Water Year 1987

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



U.S. GEOLOGICAL SURVEY WATER-DATA REPORT WI-87-1
Prepared in cooperation with the State of Wisconsin
and with other agencies

**UNITED STATES DEPARTMENT OF THE INTERIOR
DONALD PAUL HODEL, *SECRETARY***

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

Prepared in cooperation with

Wisconsin Department of Natural Resources
Southeastern Wisconsin Regional Planning Commission
U.S. Army Corps of Engineers
Wisconsin Department of Transportation
The University of Wisconsin-Extension, Geological and Natural History Survey
National Weather Service
Dane County Department of Public Works
Dane County Regional Planning Commission
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Big Hills Lake District
Fowler Lake Management District
City of Fond du Lac
Noquebay Lake District

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PREFACE

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

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

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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.

REPORT DOCUMENTATION PAGE	1. REPORT NO. USGS/WRD/HD-88/279	2.	3. Recipient's Accession No.
4. Title and Subtitle Water Resources Data - Wisconsin, Water Year 1987		5. Report Date September 1988	
7. Author(s) B. K. Holmstrom, P. A. Kammerer, Jr., and R. M. Erickson		6. 8. Performing Organization Rept. No. USGS-WDR-WI-87-1	
9. Performing Organization Name and Address U.S. Geological Survey Water Resources Division 6417 Normandy Lane Madison, WI 53719		10. Project/Task/Work Unit No. 001, 002, 003, 004 11. Contract(C) or Grant(G) No. (C) (G)	
12. Sponsoring Organization Name and Address U.S. Geological Survey Water Resources Division 6417 Normandy Lane Madison, WI 53719		13. Type of Report & Period Covered Annual - Oct. 1, 1986 to Sept. 30, 1987	
14. 15. Supplementary Notes Prepared in cooperation with the State of Wisconsin and other agencies			
16. Abstract (Limit: 200 words) Water-resources data for the 1987 water year for Wisconsin include records of streamflow at gaging stations, partial-record stations, and miscellaneous sites; records for chemical, biological, and physical characteristics of surface and ground water. Records of chemical analysis of precipitation, surface and ground water associated with acid deposition are included. In addition water levels in observation wells are reported. These data represent that part of the National Water Data System collected by the U.S. Geological Survey and cooperating State and local agencies and for other Federal agencies in Wisconsin.			
17. Document Analysis a. Descriptors *Wisconsin, *Hydrologic data, *Surface water, *Ground water, *Water quality, *Acid deposition, Flow rate, Gaging stations, Lakes, Chemical analyses, Microbiological analyses, Sediment, Water levels b. Identifiers/Open-Ended Terms c. COSATI Field/Group			
18. Availability Statement: No restriction on distribution This report may be purchased from: National Technical Information Service, Springfield, VA22161		19. Security Class (This Report) Unclassified	21. No. of Pages 380
		20. Security Class (This Page) Unclassified	22. Price

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[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, 1987

INTRODUCTION

Water-resources data for Wisconsin for the 1987 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 107 gaging stations and peak stage and discharge from 105 crest-stage stations; stage for 39 lakes and contents for 24 reservoirs; water-quality data from 30 streams, from 36 lakes, and from 39 wells; and water-level records from 68 observation wells. Various discharge, stage, precipitation, ground-water level, and water quality data are collected at two 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.
National Weather Service.
Dane County Department of Public Works, Kenneth J. Kosciuk,
director.
Dane County Regional Planning Commission, Charles Montemayor,
executive director.
City of Madison, A. E. Milke, city engineer.
City of Medford, Arthur Salzwedel, mayor.
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.
Illinois Department of Transportation.
Village of Slinger.
City of Waupun.
City of Peshtigo.
Rock County Parks Department.
Village of Oconomowoc Lake.
Menominee Indian Tribe of Wisconsin.
Lac Courte Oreilles Governing Board.
Town of Delavan.
District of Powers Lake.
Green Lake Sanitary District.
Morris Lake Management District.
Okauchee Lake Management District.
Park Lake Management District.
Wind Lake Management District.
Town of Norway.
Big Hills Lake District.
Fowler Lake Management District.
City of Fond du Lac.
Village of Oconomowoc Lake.
Noquebay Lake District.

Little Muskego Lake District.
 Chippewa County.
 Town of Sand Lake.
 Wood County Board.

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 1987 water year was generally below normal for streams in northern and southwestern Wisconsin. Annual runoff was above normal for streams in the remainder of the State. Average runoff varied from approximately 59 percent to 169 percent of the stations' long-term averages (fig. 1). The Big Eau Pleine River basin in central Wisconsin exhibited the lowest runoff (59 percent) compared to its long-term average (1915-1925, 1938-87). The Rock River at Watertown showed the greatest runoff (169 percent) compared to its long-term average (1932-1970, 1977-87). The comparison of the monthly and annual mean discharges for the 1987 water year to a 72-year base period at three gaging stations is shown in figure 2.

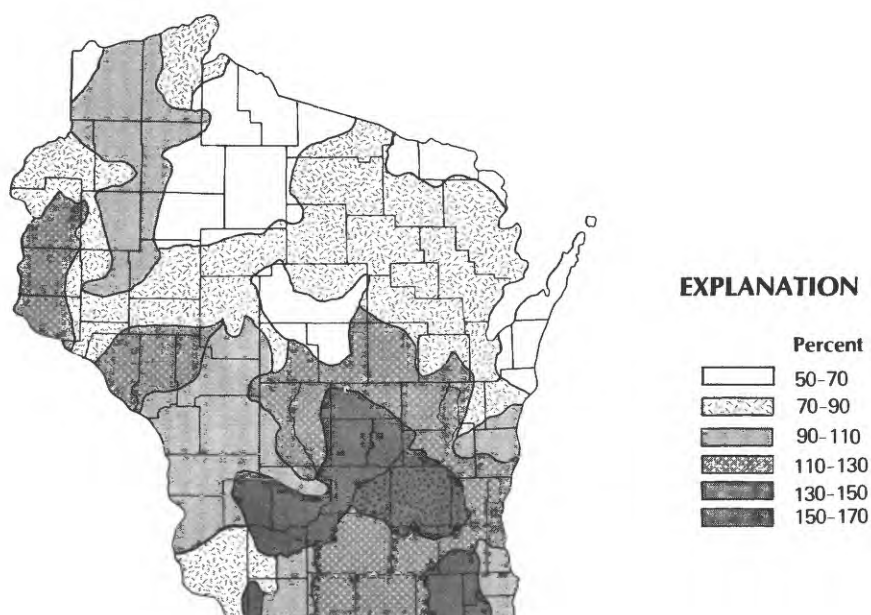


Figure 1. 1987 runoff as percent of long-term average runoff.

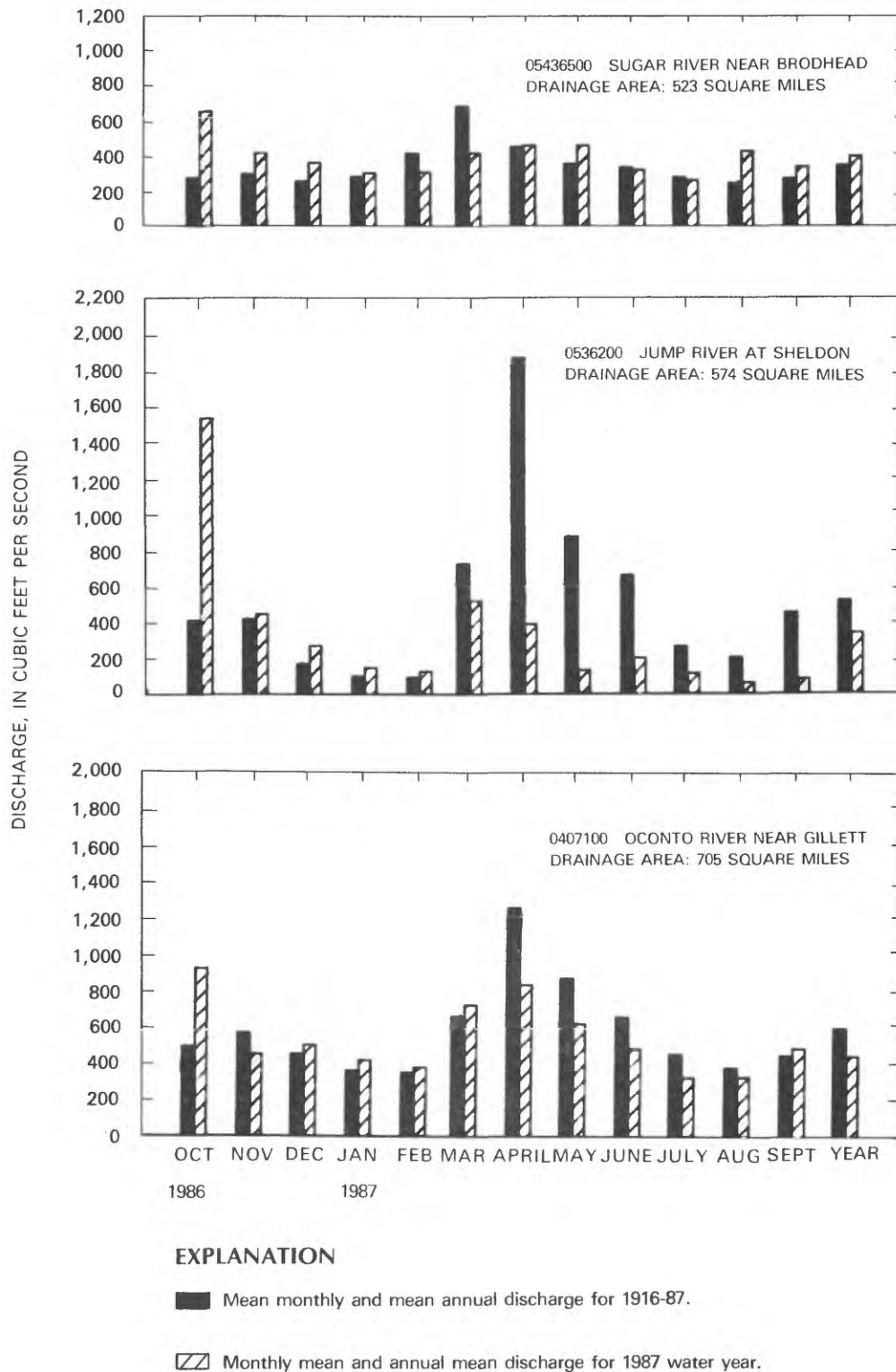


Figure 2. Comparison of discharge at representative gaging stations during 1987 water year with discharge for 1916-87.

The following is a description of the seasonal variation in streamflow in the State.

October - December 1986

Above normal precipitation during September 1986 produced above normal streamflows early in the 1987 water year. Average streamflows during the October-December period were up to five times greater than normal in the upper portion of the Rock River basin at the Rock River at Watertown gage and at the Crawfish River at Milford gage.

Several gaging stations recorded floods in October that exceeded the 2-year recurrence interval. These peak discharges and recurrence intervals are listed below:

Station number	Station name	Date	Peak discharge (ft ³ /s)	Recurrence interval (years)
04073500	Fox River at Berlin	Oct. 5	4,760	5
04077400	Wolf River near Shawano	Oct. 14	2,550	2
04084500	Fox River near Wrightstown	Oct. 13	16,000	5
05394500	Prairie River near Merrill	Oct. 12	1,800	3
05398000	Wisconsin River at Rothschild	Oct. 13	37,300	3
05399500	Big Eau Pleine River nr Stratford	Oct. 12	9,540	3
05400760	Wisconsin River at Wisconsin Rapids	Oct. 13	46,600	5
05404000	Wisconsin River near Wisconsin Dells	Oct. 15	40,600	2
05407000	Wisconsin River at Muscoda	Oct. 3	55,000	6
		Oct. 18	40,600	2
05425500	Rock River at Watertown	Oct. 5	3,960	16
05426000	Crawfish River at Milford	Oct. 4	3,530	6
05430500	Rock River at Afton	Oct. 9	9,560	7

January - March 1987

Statewide precipitation amounts were generally below normal during January and February. March precipitation was below normal in northern Wisconsin and about normal in the remainder of the State. Average flows during the January through March period were therefore at or below normal throughout most of Wisconsin. Average flows in most streams in the southern quarter of the State and in tributaries to Lake Michigan ranged from 40 to 80 percent of normal.

April - June 1987

The average flows during the April-June period were also below normal in most of the State; a few stations in southeastern Wisconsin had slightly above normal flows during this period. Below normal snowfall and precipitation from January through March, and below normal precipitation in all areas except for

southeastern Wisconsin from April through June caused the below normal flows during the April-June period. Average precipitation in northwestern Wisconsin was 5.8 inches below normal during the April-June period (Wisconsin Agricultural Statistics Service, June 29, 1987). The average discharges for many streams in the upper half of Wisconsin were 20 to 50 percent of normal.

The minimum consecutive 7-day mean flows (Q_7) at four stations declined to less than the 2-year recurrence interval values during the April-June period. These values and corresponding recurrence intervals are listed in the following table.

Station number	Station name	Dates	Q_7 (ft ³ /s)	Recurrence interval (years)
04066003	Menominee River below Pemene Creek, near Pembine	June 20-26	1,110	6
05356000	Chippewa River at Bishops Bridge, near Winter	May 3-9	101	4
05356500	Chippewa River near Bruce	May 4-10	362	4
05391000	Wisconsin River at Rainbow Lake, near Lake Tomahawk	May 29-June 4	194	3

July - September 1987

Average flows continued to be below normal throughout most of Wisconsin during the July-September period despite above normal precipitation in the southern two-thirds of the State. Average flows at some stations in southeastern Wisconsin remained above normal. Average flows at most stations in the northern half of the State remained below normal (between 30 and 80 percent of normal). Average discharges at the Fox River at Wilmot in southeastern Wisconsin increased to 163 percent of normal July-September values.

The minimum consecutive 7-day mean flows (Q_7) were less than the 2-year recurrence interval values at numerous stations during the July-September period. The 7-day low flows and corresponding recurrence intervals given in the following table are based on data collected in the 1987 water year. The Q_7 values for some of the stations listed below will probably be lower in the following months of the 1988 water year.

Station number	Station name	Dates	Q_7 (ft ³ /s)	Recurrence interval (years)
04027000	Bad River near Odanah	Sept. 1-7	87	4
04063700	Popple River near Fence	Sept. 5-11	20	14
04069500	Peshtigo River at Peshtigo	Sept. 2-8	275	3
04071000	Oconto River near Gillett	Sept. 6-12	197	7
04071858	Pensaukee River near Pensaukee	Sept. 4-10	1.6	6
04074950	Wolf River at Langlade	Sept. 3-9	196	5
04077400	Wolf River near Shawano	Sept. 9-15	345	3
04079000	Wolf River at New London	Sept. 10-16	635	3

04084500	Fox River at Rapide Croche Dam near Wrightstown	Sept. 5-11	1,410	3
04085200	Kewaunee River near Kewaunee	Sept. 5-11	9.9	3
04085281	East Twin River at Mishicot	Aug. 1-7	8.7	3
04085427	Manitowoc River at Manitowoc	Sept. 4-10	20	4
05360500	Flambeau River near Bruce	Aug. 27- Sept. 2	477	8
05369500	Chippewa River at Durand	June 30- July 6	2,840	2
05393500	Spirit River at Spirit Falls	Sept. 1-7	5.2	2
05395000	Wisconsin River at Merrill	Sept. 24-30	807	9
05398000	Wisconsin River at Rothschild	Sept. 24-30	923	12
05400760	Wisconsin River at Wisconsin Rapids	Aug. 31- Sept. 6	1,050	27
05404000	Wisconsin River near Wisconsin Dells	Aug. 29- Sept. 4	1,950	10
05407000	Wisconsin River at Muscoda	Aug. 31- Sept. 6	3,580	3

Reference cited:

Wisconsin Agricultural Statistics Service, Crop Weather Report, Vol. 10,
No. 21, June 29, 1987.

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 1987 water year reflect runoff conditions in the State. Dissolved solids concentrations measured at these stations during the year are compared to monthly median concentrations for the period of record in figure 3.

Areal and temporal differences in dissolved solids concentrations parallel differences in streamflow recorded during the water year. Streamflow was below normal at the Popple River near Fence on each date when dissolved solids concentrations were measured; that is reflected in instantaneous dissolved solids concentrations near or greater than long term median values. Dissolved solids concentrations in the Milwaukee River at Milwaukee and the Chippewa River at Durand were less than or near long term median values early and late in the water year when streamflows were above normal, and near or greater than median values during the March-June period when streamflows were below normal. Dissolved solids concentrations in the Wisconsin River at Muscoda and the Black River near Galesville were indicative of streamflow conditions in southern and western Wisconsin. Above average streamflows during the first

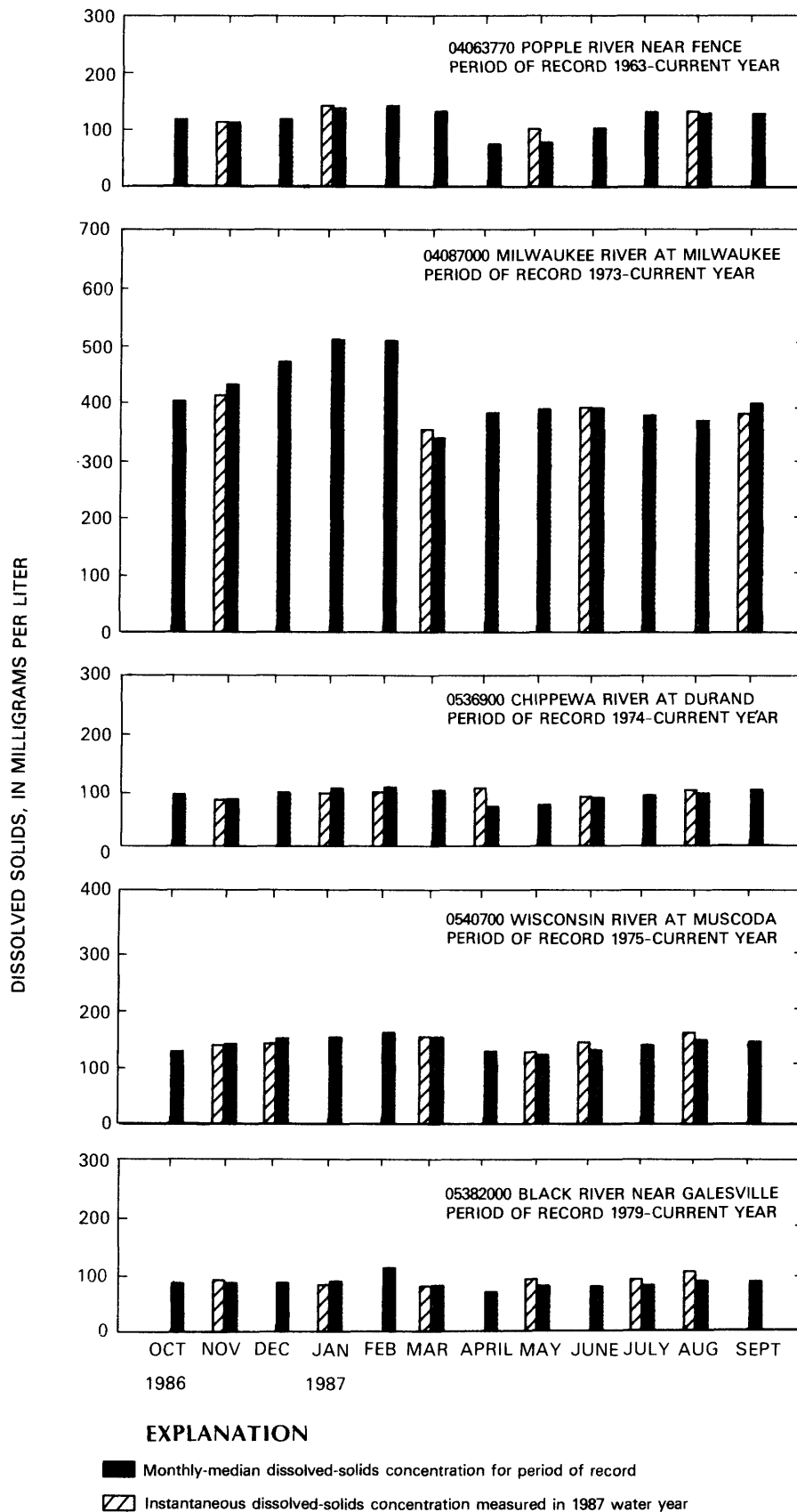


Figure 3. Comparison of dissolved-solids concentrations in streams during 1987 water year with monthly medians.

half of the water year resulted in dissolved solids concentrations near or slightly less than median values. Streamflows during the second half of the water year were below normal and dissolved solids concentrations increased relative to median values. Below average flows statewide during the April-June period resulted in dissolved solids concentrations near or greater than long term median values at all of the stations shown on figure 3.

Ground-Water Levels

Maps showing the seasonal ground-water trends for the 1987 water 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, 1986; WINTER consists of measurements from December, 1986 through February, 1987; SPRING consists of measurements from March through May, 1987; and SUMMER consists of measurements from June through August, 1987. Mean seasonal water levels for 1987 were compared to the long-term mean seasonal water levels. The 1987 water level was considered normal if it was within one-half of the standard deviation of the long-term mean.

Following 4 consecutive years of above normal ground-water levels throughout most of Wisconsin, ground-water levels began to decline during 1987. Water levels in most of the State were above normal early in the 1987 water year. The only exceptions were along the Wisconsin River valley in the southwest, and along Lake Michigan. The pattern was similar during the winter, but the area of above normal water levels increased to include much of southeastern and northeastern Wisconsin. Due to decreased rainfall in the spring, water levels in most of northern and southern Wisconsin had dropped to normal, and essentially all of eastern Wisconsin had below normal water levels. The trend of decreasing ground-water levels continued through the summer and, at the end of the 1987 water year, half of the State had normal or below normal water levels.

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 due to 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 10 wells were above normal throughout the year, and four of these wells had water levels more than one standard deviation above the long-term mean during all four seasons. The ground-water level in one well was below normal during the entire year, and at the end of water year 1987, five 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.

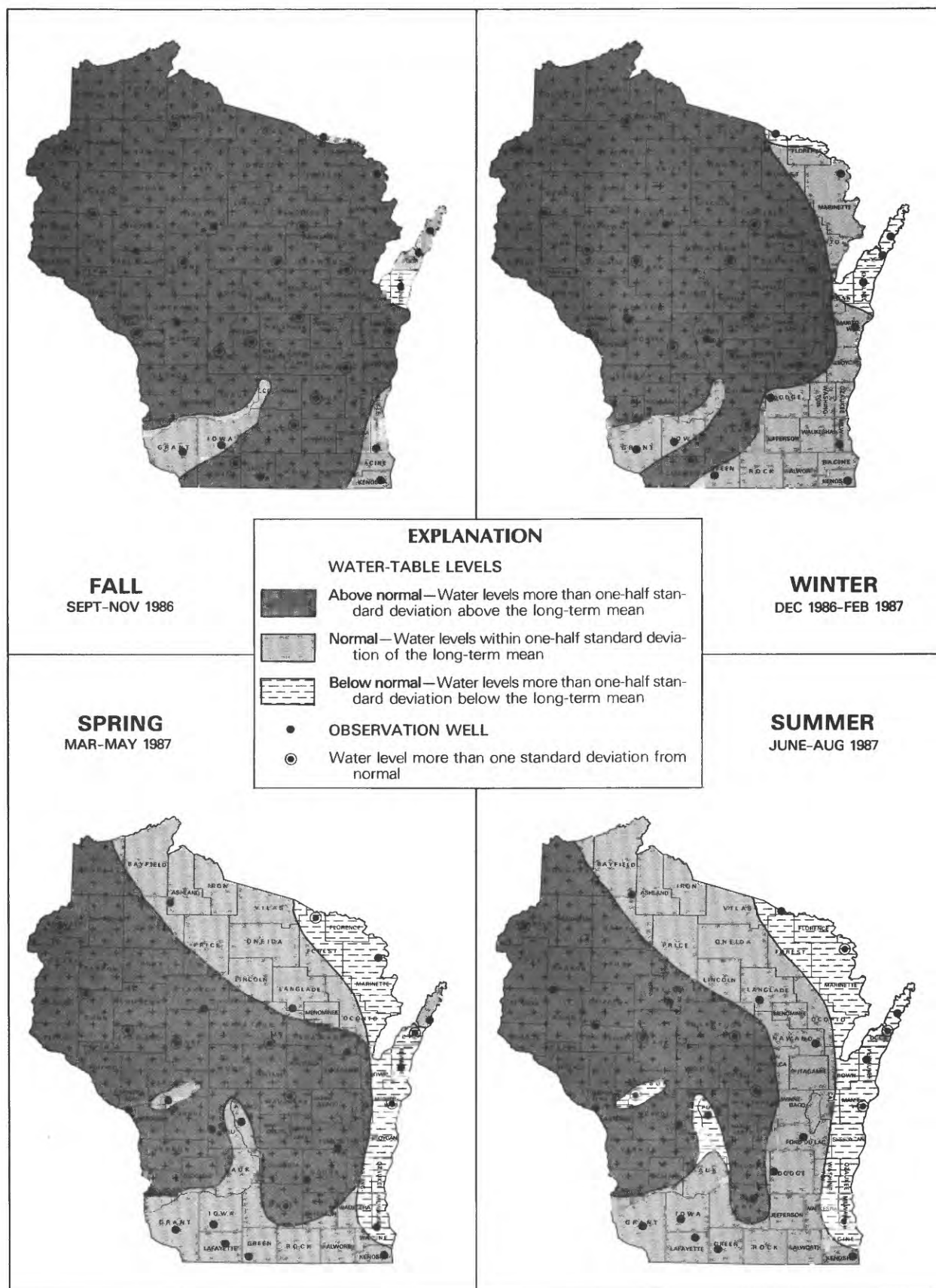


Figure 4. Relation of seasonal water-table levels to long-term means.

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 1987 water year that began October 1, 1986, and ended September 30, 1987. 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 64 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 64 wells are presented in this report, water-level data are currently being collected for a total of 227 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 μ m membrane filter. Determinations of "dissolved" constituents are made on subsamples of the filtrate.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Solute is any substance dissolved in water.

Specific conductance is a measure of the ability of water to conduct electrical current and is expressed in microsiemens per centimeter ($\mu\text{S}/\text{cm}$) 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 $0.45\ \mu\text{m}$ 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 $0.45\ \mu\text{m}$ membrane filter. This term is used only when the analytical procedure assures measurement of at least 95 percent of the constituent determined. A knowledge of the expected form of the constituent in the sample, as well as the analytical methodology used, is required to determine when the results should be reported as "suspended, total."

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

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

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

Total is the total amount of a given constituent in a water-sediment sample, regardless of the constituent's physical or chemical form. This term is used only when the analytical procedure assures measurement of at least 95 percent of the constituent present in both the dissolved and suspended phases of the sample. A knowledge of the expected form of the constituent in the sample, as well as the analytical methodology used, is required to judge when the results should be reported as "total." The term indicates the sample consists of a water-sediment mixture and that the analytical method determines all of the constituent in the sample.

Total, recoverable is the amount of a given constituent that is in solution after a water-sediment sample has been digested by dilute acid resulting in dissolution of only readily soluble substances. Complete dissolution of all particulate matter usually is not achieved, thus the determination represents something less than the "total" amount of the constituent present in the dissolved and suspended phases of the sample. To achieve comparability of analytical data, equivalent digestion procedures would be required of all laboratories performing such analyses because different digestion procedures are likely to produce different analytical results.

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

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

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

The U.S. Geological Survey publishes a series of manuals describing procedures for planning and conducting specialized work in water-resources investigations. The material is grouped under major subject headings called books and is further divided into sections and chapters. For example, Section A of Book 3 (Applications of Hydraulics) pertains to surface water. The chapter, the unit of publication, is limited to a narrow field of subject matter. This format permits flexibility in revision and publication as the need arises.

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

- 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. F. 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-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-B1. *Aquifer-test design, observation, and data analysis*, by R. W. Stallman: USGS--TWRI Book 3, Chapter B1. 1971. 26 pages.
- 3-B2. *Introduction to ground-water hydraulics, a programed text 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-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. Greenson, 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.
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- 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.
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- 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

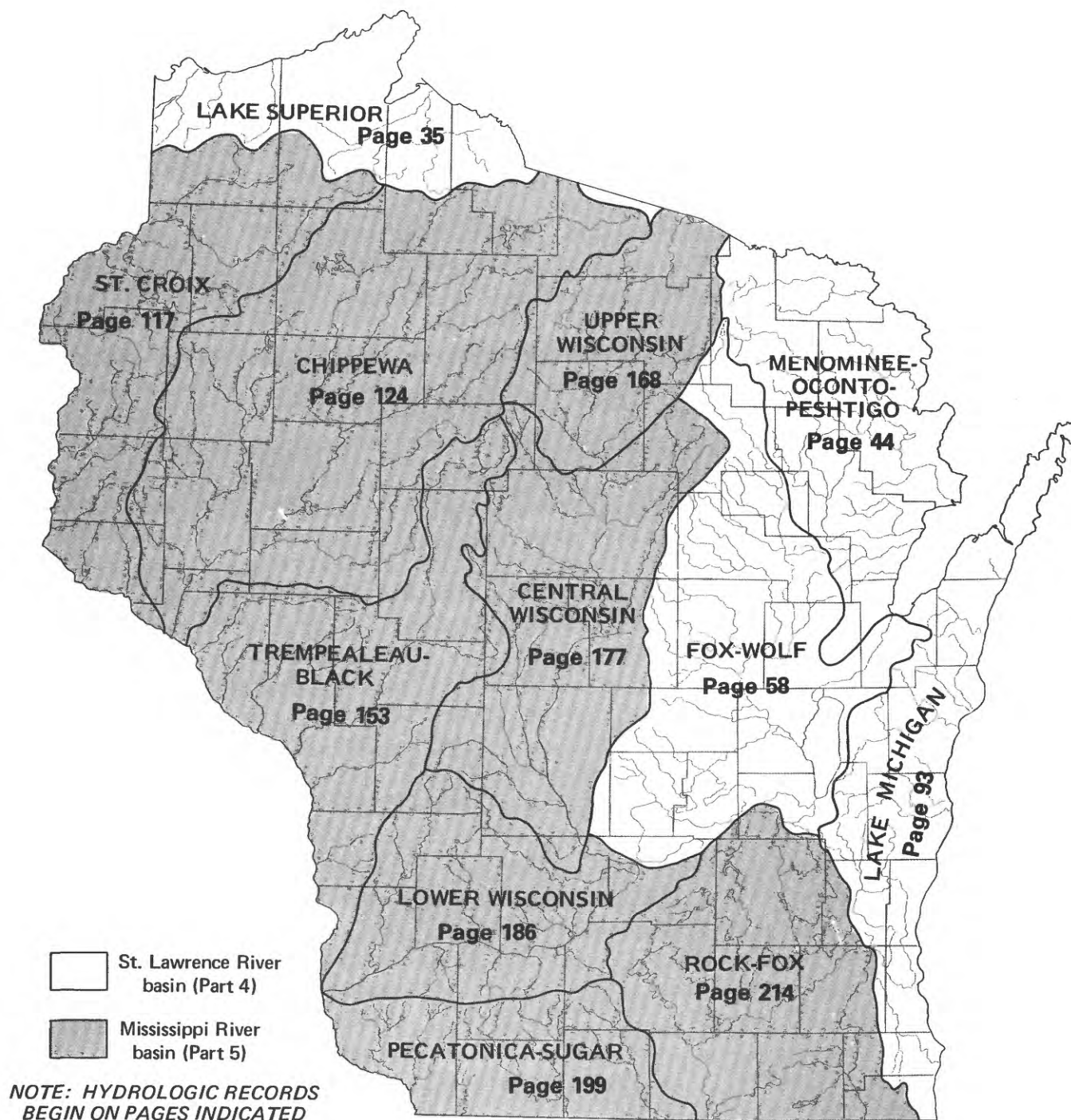
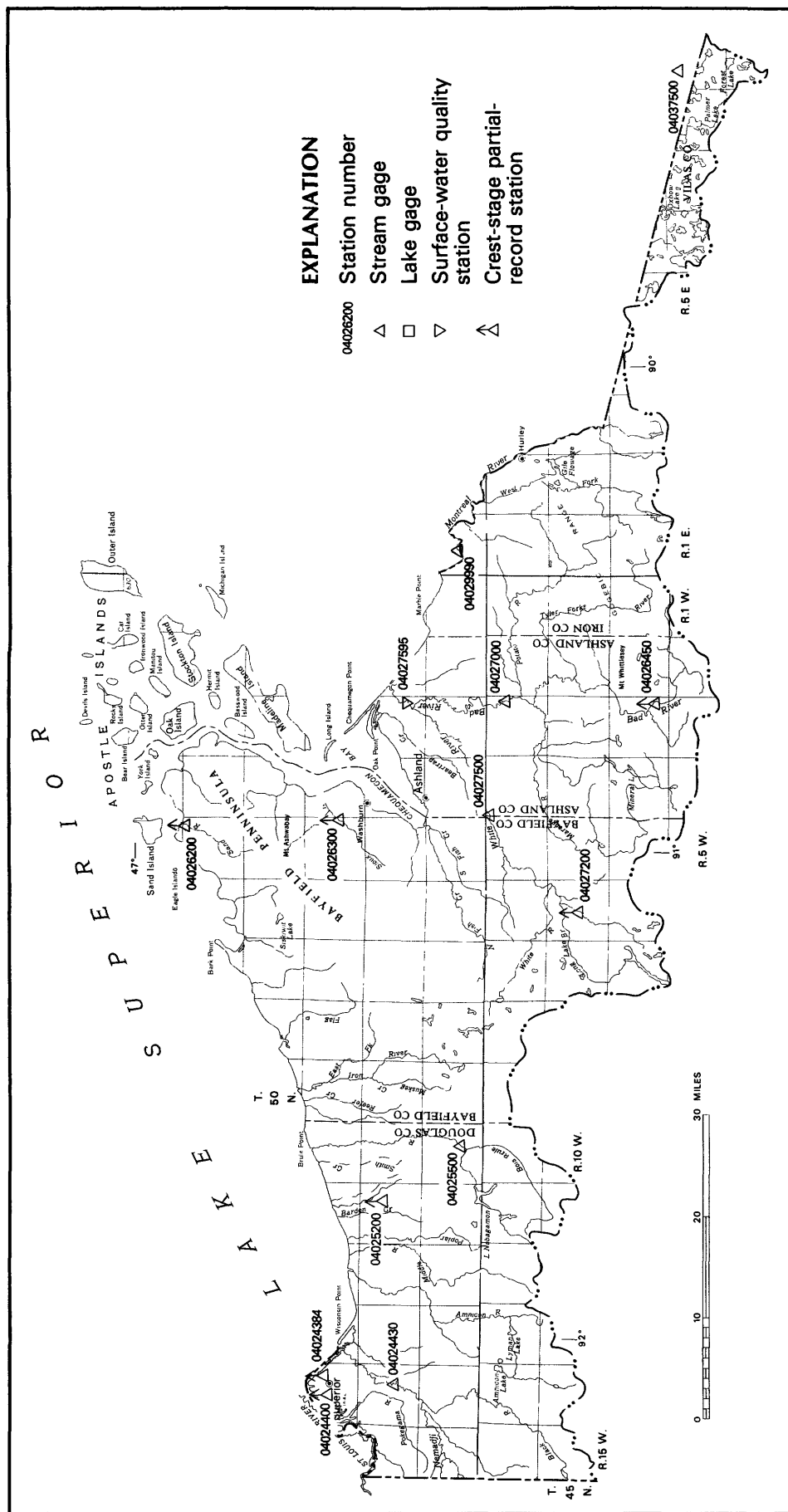


Figure 5. Major surface-water drainage basins and index of hydrologic records.



Base from U.S. Geological Survey
State base map, 1988

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: None, except for ice period listed in rating tables below. Records good except for ice-affected period, which is fair.

AVERAGE DISCHARGE.--13 years, 419 ft³/s, 13.55 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)
Nov. 8	2100	*1,810	*12.96				

Minimum discharge, 61 ft³/s July 17, 18, gage height, 3.76 ft.

RATING TABLES (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Nov. 11 to Mar. 27.)

Oct. 1 to Mar. 7				Mar. 8 to Sept. 30			
4.0	77	11.0	1,280	3.7	56	7.0	514
5.0	190	12.0	1,560	4.0	84	11.0	1,400
7.0	473			5.0	198		

DISCHARGE, IN 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	773	289	230	120	100	98	294	161	296	65	107	81
2	667	282	230	120	100	100	237	162	269	74	102	75
3	597	276	220	120	100	100	225	160	280	83	99	70
4	546	275	210	120	100	110	223	149	238	78	101	69
5	500	265	210	110	98	120	218	139	202	71	102	69
6	461	279	200	110	96	240	225	133	179	72	94	75
7	431	358	190	110	94	1000	232	127	160	71	85	89
8	458	1110	190	110	94	1200	251	123	147	77	79	78
9	505	1190	180	110	92	800	269	118	138	89	77	71
10	434	606	170	110	88	510	294	114	128	81	73	69
11	418	560	170	120	90	470	305	111	141	77	69	73
12	985	500	170	120	88	400	290	109	196	89	76	74
13	1350	450	160	120	86	360	272	105	175	88	274	72
14	981	400	150	110	86	340	278	108	145	77	277	70
15	938	380	150	110	84	330	272	122	128	70	183	68
16	768	360	140	110	84	320	271	119	123	66	160	66
17	645	330	140	110	82	310	275	113	124	63	197	67
18	558	310	140	110	82	320	274	209	112	71	173	76
19	504	300	140	110	80	340	269	1010	102	725	140	91
20	469	290	140	110	78	380	263	948	92	706	121	118
21	437	280	140	110	80	450	269	631	88	500	108	147
22	414	270	140	100	84	540	254	1340	83	390	102	145
23	397	260	140	100	86	620	232	1330	79	284	103	122
24	380	250	140	98	88	800	214	795	78	248	95	105
25	361	240	130	96	90	960	204	567	77	252	86	93
26	351	240	130	94	90	880	200	454	74	190	83	87
27	339	250	130	92	92	760	195	400	73	152	85	81
28	327	250	130	94	94	526	187	364	72	132	84	77
29	315	240	130	96	---	404	175	379	71	132	82	80
30	305	240	130	98	---	336	165	438	69	136	84	74
31	295	---	130	98	---	287	---	380	---	117	86	---
TOTAL	16909	11330	5000	3346	2506	14411	7332	11418	4139	5326	3587	2532
MEAN	545	378	161	108	89.5	465	244	368	138	172	116	84.4
MAX	1350	1190	230	120	100	1200	305	1340	296	725	277	147
MIN	295	240	130	92	78	98	165	105	69	63	69	66
CFSM	1.30	.90	.38	.26	.21	1.11	.58	.88	.33	.41	.28	.20
IN.	1.50	1.00	.44	.30	.22	1.28	.65	1.01	.37	.47	.32	.22

CAL YR 1986 TOTAL 287081 MEAN 787 MAX 7450 MIN 88 CFSM 1.87 IN. 25.4
WTR YR 1987 TOTAL 87836 MEAN 241 MAX 1350 MIN 63 CFSM .57 IN. 7.78

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: July 14-22 and ice periods listed in rating table below. Records good except those for estimated daily discharges, which are fair.

AVERAGE DISCHARGE.--42 years (water years 1943-81, 1985-87), 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)
Oct. 14	2000	*320	2.53	No other peak greater than base discharge.			
Jan. 26	1400	ice jam	*3.58				

Minimum discharge, 113 ft³/s, Sept. 3-5.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Nov. 9-21, Dec. 5-7, 10-22, Jan. 3 to Feb. 2, Feb. 9, and Mar. 9-12.)

1.5	114	3.0	443
2.0	200		

DISCHARGE, IN 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	289	188	167	158	150	150	169	148	164	133	126	116
2	276	184	167	158	150	152	167	147	165	141	126	115
3	262	185	170	150	148	145	165	144	159	138	125	115
4	249	182	170	150	147	146	166	143	156	135	125	115
5	240	184	170	150	146	147	167	141	154	134	124	121
6	230	185	170	150	148	154	169	139	150	137	123	124
7	226	197	170	150	149	177	171	139	149	135	121	120
8	224	221	163	150	144	183	172	137	148	134	118	120
9	218	220	162	150	150	170	173	136	147	138	118	119
10	213	200	160	150	147	150	173	136	145	139	117	120
11	218	200	160	150	147	150	173	136	161	140	117	123
12	280	190	160	150	148	150	170	134	158	145	129	122
13	297	180	160	150	151	158	169	133	152	143	133	123
14	305	180	160	150	153	156	168	136	146	140	126	121
15	295	170	160	150	147	155	170	135	143	140	123	120
16	270	170	160	150	145	154	171	133	141	130	124	119
17	254	170	160	150	144	155	168	139	140	130	130	129
18	240	170	160	150	144	158	167	171	139	130	126	146
19	231	170	160	150	143	165	165	204	137	130	123	142
20	225	170	160	150	143	174	165	201	137	130	123	165
21	220	170	160	150	145	184	163	204	138	130	121	151
22	216	171	160	150	146	192	161	237	138	135	121	142
23	210	172	160	150	148	205	159	223	138	134	119	133
24	208	172	160	150	149	209	156	202	138	138	117	129
25	205	171	160	150	151	212	158	189	138	136	115	127
26	201	171	158	150	147	207	157	180	137	131	119	126
27	198	171	158	150	144	197	155	173	136	128	120	126
28	196	171	158	150	146	188	154	169	134	130	118	127
29	194	170	158	150	---	180	150	165	134	129	117	126
30	190	168	158	150	---	175	149	166	133	127	120	125
31	190	---	158	e150	---	169	---	175	---	126	118	---
TOTAL	7270	5423	5017	4666	4120	5267	4940	5015	4355	4166	3782	3807
MEAN	235	181	162	151	147	170	165	162	145	134	122	127
MAX	305	221	170	158	153	212	173	237	165	145	133	165
MIN	190	168	158	150	143	145	149	133	133	126	115	115
CFSM	1.95	1.51	1.35	1.25	1.23	1.42	1.37	1.35	1.21	1.12	1.02	1.06
IN.	2.25	1.68	1.56	1.45	1.28	1.63	1.53	1.55	1.35	1.29	1.17	1.18

CAL YR 1986 TOTAL 79056 MEAN 217 MAX 720 MIN 130 CFSM 1.80 IN. 24.5
WTR YR 1987 TOTAL 57828 MEAN 158 MAX 305 MIN 115 CFSM 1.32 IN. 17.9

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.

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: None, except for ice periods listed in rating table below. Records good except those for ice-affected periods, which are fair.

AVERAGE DISCHARGE.--47 years (1915-22, 1949-87), 625 ft³/s, 14.22 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 27,790 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)
Oct. 12	2400	3,510	7.69	No other peak greater than base discharge.			
Minimum discharge, 78 ft ³ /s Sept. 4, gage height, 2.19 ft.							

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Nov. 10 to Mar. 20, Mar. 28 to Apr. 5.)

2.2	81	4.0	780
2.5	162	6.0	2,100
3.0	323	8.0	3,810

DISCHARGE, IN 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	529	463	290	210	180	300	500	238	1120	115	108	89
2	468	458	290	210	180	330	460	228	942	118	108	89
3	426	438	280	210	180	350	440	218	849	124	104	88
4	409	439	270	210	190	360	470	207	656	117	104	84
5	390	437	260	210	190	390	600	198	526	112	105	84
6	362	435	250	200	190	470	918	191	445	110	105	87
7	351	437	240	200	190	700	1040	181	375	182	105	89
8	353	825	240	190	200	1700	983	173	322	246	105	91
9	365	1350	240	190	200	1100	871	167	279	216	99	92
10	349	960	240	200	200	990	777	164	244	273	95	92
11	348	880	220	200	200	960	709	164	257	255	89	101
12	2210	700	200	200	200	700	641	162	395	322	93	119
13	3150	540	200	200	190	640	580	156	372	311	115	152
14	2430	460	200	200	180	580	545	163	304	260	111	144
15	2360	490	210	210	170	480	513	160	255	222	106	132
16	2020	470	210	210	160	450	516	155	218	193	109	124
17	1700	470	220	220	160	420	496	157	195	173	105	123
18	1380	420	220	200	170	470	464	186	179	161	110	202
19	1120	380	230	200	170	560	426	492	164	150	124	263
20	940	350	230	200	170	700	393	678	159	147	115	259
21	819	350	230	200	180	965	374	551	161	154	110	272
22	727	350	230	190	190	1270	345	765	153	160	107	441
23	675	330	220	190	190	1190	318	890	145	152	99	376
24	641	320	220	170	190	1390	296	668	139	146	96	295
25	598	310	220	160	200	1490	280	501	131	149	93	240
26	557	330	220	160	220	1380	307	446	127	140	92	211
27	525	350	220	160	230	1160	309	432	131	128	94	194
28	498	350	220	170	260	840	292	636	131	120	93	175
29	493	320	210	170	---	680	274	600	126	117	89	163
30	482	290	210	170	---	580	250	1060	120	116	91	155
31	453	---	210	180	---	540	---	1450	---	109	92	---
TOTAL	28128	14702	7150	5990	5330	24135	15387	12437	9620	5298	3171	5026
MEAN	907	490	231	193	190	779	513	401	321	171	102	168
MAX	3150	1350	290	220	260	1700	1040	1450	1120	322	124	441
MIN	348	290	200	160	160	300	250	155	120	109	89	84
CFSM	1.52	.82	.39	.32	.32	1.30	.86	.67	.54	.29	.17	.28
IN.	1.75	.92	.45	.37	.33	1.50	.96	.77	.60	.33	.20	.31

CAL YR 1986 TOTAL 252475 MEAN 692 MAX 10900 MIN 173 CFSM 1.16 IN. 15.7
WTR YR 1987 TOTAL 136374 MEAN 374 MAX 3150 MIN 84 CFSM .63 IN. 8.50

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: Nov. 10-12, Dec. 8-13, and Jan. 23-26. Records are good except those for estimated daily discharges, which are fair. Diurnal fluctuation caused by hydroelectric plant at gage.

AVERAGE DISCHARGE.--39 years, 284 ft³/s, 12.81 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, 3,660 ft³/s May 21, gage height, 5.30 ft; minimum daily, 130 ft³/s Dec. 5.

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

1.0	128	3.0	1,170
1.5	292	4.0	2,100
2.0	520		

DISCHARGE, IN 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	399	261	248	213	206	225	221	198	325	182	181	170
2	354	253	209	241	239	221	215	222	336	184	178	169
3	322	231	229	204	210	237	230	209	309	192	167	168
4	321	257	178	242	226	189	240	186	289	179	169	166
5	268	263	130	204	235	254	253	212	231	187	170	164
6	271	234	166	238	210	381	260	217	243	185	164	163
7	256	271	200	209	229	762	263	225	229	170	162	162
8	267	418	230	236	231	519	266	194	212	201	162	187
9	267	389	210	163	210	414	266	236	183	190	161	152
10	262	300	210	243	202	291	267	240	215	193	161	158
11	243	250	220	233	207	288	272	215	217	228	161	159
12	769	200	210	196	245	277	262	251	227	207	160	157
13	560	179	200	241	204	210	246	213	229	209	194	157
14	620	241	219	203	236	235	250	253	225	204	170	156
15	649	216	220	232	194	207	254	255	227	169	169	184
16	574	261	228	164	164	190	254	244	199	200	169	154
17	482	234	244	171	200	216	243	206	203	167	170	155
18	435	262	208	212	207	226	199	245	235	198	173	187
19	374	216	240	229	228	254	244	377	206	169	175	191
20	331	220	205	219	208	280	272	432	208	209	177	220
21	318	255	192	198	206	295	244	668	208	191	176	217
22	290	246	164	186	226	312	222	1300	209	200	176	202
23	276	263	224	200	216	373	203	790	218	209	176	197
24	279	236	224	210	233	403	212	746	220	178	169	191
25	276	253	237	200	217	424	228	645	199	218	167	163
26	256	231	221	210	220	401	215	494	196	214	168	164
27	256	259	238	212	214	358	207	388	193	180	167	164
28	274	219	205	222	221	321	217	329	218	179	171	164
29	235	257	243	227	---	304	209	311	184	212	170	164
30	257	215	207	209	---	259	195	308	182	173	170	164
31	237	---	244	238	---	240	---	394	---	180	171	---
TOTAL	10978	7590	6603	6605	6044	9566	7129	11203	6775	5957	5274	5169
MEAN	354	253	213	213	216	309	238	361	226	192	170	172
MAX	769	418	248	243	245	762	272	1300	336	228	194	220
MIN	235	179	130	163	164	189	195	186	182	167	160	152
CFSM	1.18	.84	.71	.71	.72	1.03	.79	1.20	.75	.64	.57	.57
IN.	1.36	.94	.82	.82	.75	1.18	.88	1.38	.84	.74	.65	.64
CAL YR 1986	TOTAL 116935	MEAN 320	MAX 2600	MIN 130	CFSM 1.06	IN. 14.5						
WTR YR 1987	TOTAL 88893	MEAN 244	MAX 1300	MIN 130	CFSM .81	IN. 11.0						

STREAMS TRIBUTARY TO LAKE SUPERIOR

04027595 BAD RIVER AT ODANAH, WI
(NATIONAL STREAM-QUALITY ACCOUNTING NETWORK STATION)

LOCATION.--Lat 46°36'37", long 90°41'12", in SE 1/4 SE 1/4 sec.25, T.48 N., R.3 W., Ashland County, Hydrologic Unit 04010302, Bad River Indian Reservation, at bridge on U.S. Highway 2 at Odanah.

DRAINAGE AREA.--990 mi².

PERIOD OF RECORD.--February 1978 to September 1987. Station relocated to 04027000 Bad River near Odanah October 1987.

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	DIS-CHARGE, IN CUBIC FEET PER SECOND (00060)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	BARO-METRIC PRES-SURE (MM HG) (00025)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	COLI-FORM, FECAL, UM-MF (COLS./100 ML) (31625)
NOV , 1986										
12...	1300	1130	111	7.50	0.0	14	14.2	769	96	K200
JAN , 1987										
07...	1200	438	170	7.80	0.0	4.6	13.4	756	92	K16
FEB										
25...	1220	423	180	7.60	1.0	2.5	13.1	772	91	K13
APR										
02...	1315	721	122	7.30	2.0	8.2	13.6	765	98	K2
JUN										
03...	1300	1280	103	7.40	19.0	28	8.0	763	86	70
AUG										
19...	1145	283	189	8.00	21.5	6.8	8.0	766	90	43
DATE		STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS (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)	PERCENT SODIUM (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)
NOV , 1986										
12...	K1900	52	7	14	4.1	2.3	9	0.1	1.5	
JAN , 1987										
07...	30	78	5	21	6.1	3.1	8	0.2	0.90	
FEB										
25...	K160	82	2	22	6.5	3.2	8	0.2	0.90	
APR										
02...	K14	55	3	15	4.3	2.2	8	0.1	0.90	
JUN										
03...	K320	51	3	14	3.9	2.3	9	0.1	1.5	
AUG										
19...	40	96	0	26	7.6	4.1	8	0.2	1.3	
DATE		BICAR-BONATE WATER DISSOLV FIELD AS HCO3 (MG/L) (00453)	ALKA-LINITY WATER DISSOLV FLD. AS CACO3 (MG/L) (39086)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	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)
NOV , 1986										
12...	53	43	2.8	17	2.6	<0.10	11	80	80	
JAN , 1987										
07...	86	69	2.2	8.3	2.2	<0.10	15	103	100	
FEB										
25...	95	76	3.9	0.5	2.4	<0.10	15	95	99	
APR										
02...	59	48	5.0	11	2.1	<0.10	11	95	78	
JUN										
03...	59	48	3.7	11	2.0	<0.10	8.4	83	72	
AUG										
19...	113	91	1.9	7.3	2.6	0.10	12	115	120	
DATE		SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P) (00671)
NOV , 1986										
12...	0.11	244	0.100	0.040	0.010	0.90	0.040	0.030	0.010	
JAN , 1987										
07...	0.14	122	0.170	0.020	0.020	0.40	<0.010	<0.010	0.010	
FEB										
25...	0.13	108	0.200	<0.010	<0.010	1.0	0.120	0.010	<0.010	
APR										
02...	0.13	185	0.130	0.030	0.020	0.40	0.030	0.010	<0.010	
JUN										
03...	0.11	287	<0.100	0.050	0.060	1.1	0.080	0.030	<0.010	
AUG										
19...	0.16	88	<0.100	<0.010	<0.010	0.50	0.050	0.010	<0.010	

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

04027595 BAD RIVER AT ODANAH, WI--CONTINUED

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	ALUM- INUM, DIS- SOLVED (UG/L AS AL) (01106)	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE) (01010)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	COBALT, DIS- SOLVED (UG/L AS CO) (01035)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, DIS- SOLVED (UG/L AS FE) (01046)
NOV , 1986											
12...	1300	1130	120	<1	25	<0.5	<1	<1	<3	3	360
FEB , 1987											
25...	1220	423	20	<1	33	<0.5	<1	<1	<3	10	250
APR											
02...	1315	721	90	<1	23	<0.5	<1	<1	<3	2	270
AUG											
19...	1145	283	10	1	36	<0.5	<1	<1	<3	1	44

DATE	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	LITHIUM DIS- SOLVED (UG/L AS LI) (01130)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	MERCURY DIS- SOLVED (UG/L AS HG) (71890)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO) (01060)	NICKEL, DIS- SOLVED (UG/L AS NI) (01065)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	STRON- TIUM, DIS- SOLVED (UG/L AS SR) (01080)	VANA- DIUM, DIS- SOLVED (UG/L AS V) (01085)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)
NOV , 1986										
12...	<5	<4	17	<0.1	<10	2	<1	30	<6	7
FEB , 1987										
25...	<5	5	19	<0.1	<10	<1	<1	45	<6	23
APR										
02...	<5	<4	18	<0.1	<10	2	<1	32	<6	7
AUG										
19...	<5	<4	4	<0.1	<10	<1	<1	60	<6	<3

DATE	TIME	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
NOV , 1986							
12...	1300	1130		111	0.0	16	49
JAN , 1987							
07...	1200	438		170	0.0	6	7.1
FEB							
25...	1220	423		180	1.0	6	6.9
APR							
02...	1315	721		122	2.0	13	25
JUN							
03...	1300	1280		103	19.0	47	162
AUG							
19...	1145	283		189	21.5	12	9.2

STREAMS TRIBUTARY TO LAKE SUPERIOR

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

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 September 1987. 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.--Estimated daily discharges: Oct. 18, 19, Nov. 8, Dec. 13, 14. 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.--33 years (1939-70, 1987), 320 ft³/s, 16.59 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, 1,080 ft³/s Oct. 13; minimum daily discharge, 25 ft³/s Aug. 6.

DISCHARGE, IN 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	187	185	185	185	95	83	250	95	235	48	42	30
2	144	185	185	185	95	83	185	95	215	48	42	30
3	113	210	185	185	85	85	220	95	225	48	42	30
4	113	210	185	185	85	95	220	95	185	48	42	33
5	113	210	185	185	85	95	245	95	180	48	33	36
6	107	210	185	185	85	120	400	87	160	60	25	36
7	95	210	185	185	85	157	420	77	160	100	30	36
8	113	300	185	185	85	185	370	71	110	100	47	36
9	149	419	185	185	90	325	325	71	100	100	42	36
10	149	325	185	185	90	245	285	71	70	100	40	36
11	149	205	185	185	90	285	250	63	80	100	30	39
12	833	200	185	185	90	285	250	71	125	100	30	48
13	1080	185	260	185	90	220	220	71	120	120	33	71
14	869	185	320	185	90	185	197	65	120	100	36	67
15	910	185	325	185	90	185	197	60	115	100	36	60
16	950	185	185	185	80	185	210	60	90	95	36	60
17	785	185	185	185	70	145	210	60	65	90	36	60
18	620	185	185	185	70	170	197	60	60	70	33	57
19	480	185	185	185	70	210	197	185	60	70	40	52
20	370	185	185	185	70	285	185	305	60	70	48	52
21	325	185	185	167	75	294	180	250	60	75	38	65
22	285	185	185	185	75	285	160	220	55	90	42	130
23	250	185	185	110	75	650	135	220	48	80	42	95
24	220	185	185	90	83	870	105	220	48	40	40	95
25	185	185	185	90	83	870	95	220	48	70	33	85
26	185	250	185	98	90	710	95	195	48	70	30	71
27	185	325	185	125	90	585	155	185	48	71	30	71
28	185	325	185	110	83	585	167	200	48	56	30	62
29	185	250	185	110	---	585	150	250	40	46	30	48
30	185	250	185	95	---	285	105	220	48	42	30	42
31	185	---	185	95	---	220	---	220	---	42	30	---
TOTAL	10704	6674	6085	4975	2344	9567	6380	4252	3026	2297	1118	1669
MEAN	345	222	196	160	83.7	309	213	137	101	74.1	36.1	55.6
MAX	1080	419	325	185	95	870	420	305	235	120	48	130
MIN	95	185	185	90	70	83	95	60	40	40	25	30
CFSM	1.32	.85	.75	.61	.32	1.18	.81	.52	.38	.28	.14	.21
IN.	1.52	.95	.86	.71	.33	1.36	.91	.60	.43	.33	.16	.24

WTR YR 1987 TOTAL 59091 MEAN 162 MAX 1080 MIN 25 CFSM .62 IN. 8.39

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 (04037400). Several measurements of water temperature were made during the year.

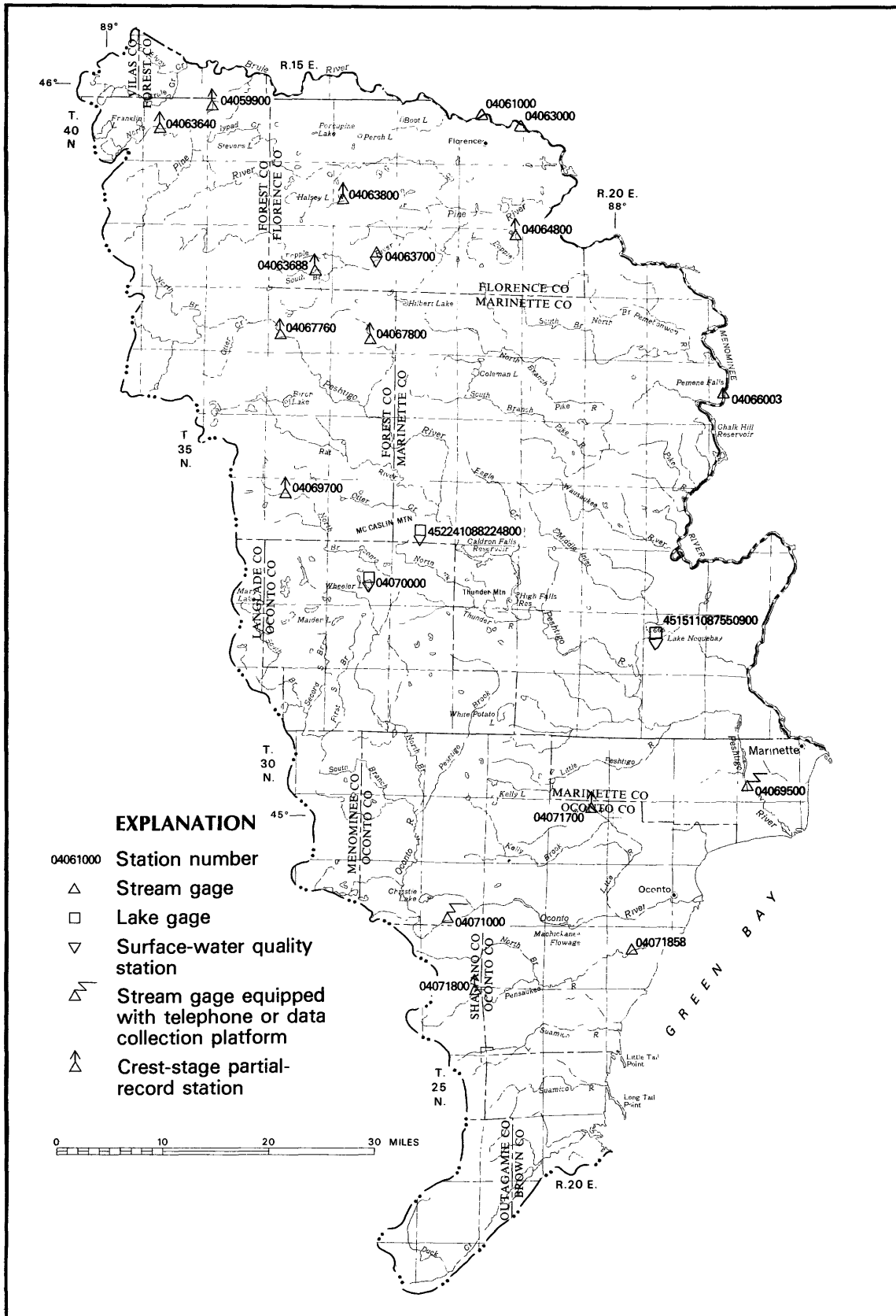
AVERAGE DISCHARGE.--43 years, 47.3 ft³/s, 12.67 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 288 ft³/s May 1-4, 1951, gage height, 6.10 ft, present datum; minimum daily, 0.09 ft³/s June 4-23, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 151 ft³/s Oct. 13, gage height, 5.43 ft; minimum daily, 0.22 ft³/s Apr. 30, May 1.

DISCHARGE, IN 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	49	86	63	14	44	44	69	.22	3.4	.24	.42	.28
2	48	85	49	30	44	45	66	.25	3.2	.26	.39	.28
3	70	83	49	47	44	44	68	.25	2.0	.31	.41	.27
4	86	83	49	47	43	44	65	.25	1.3	.29	.37	.29
5	83	82	48	46	43	43	62	.25	.68	.26	.35	.24
6	81	80	48	45	42	43	66	.25	.55	.25	.38	.35
7	81	78	47	46	32	43	36	.25	.55	.27	.34	.35
8	77	84	29	45	24	43	10	.25	.48	.28	.33	.30
9	76	77	11	45	24	25	11	.25	.40	.32	.34	.38
10	76	48	12	44	24	8.9	22	.25	.37	.34	.34	.43
11	74	5.0	12	44	24	9.5	38	.25	.38	29	.40	19
12	80	3.0	13	29	24	9.7	43	.25	.37	72	.78	30
13	111	.85	13	9.6	24	10	35	.25	.38	71	.79	31
14	145	.70	14	10	24	10	32	.25	.79	69	134	30
15	143	.70	30	10	24	11	17	.25	.75	68	130	43
16	140	.70	50	11	17	11	2.2	.25	.61	52	125	51
17	136	.70	48	19	8.5	30	1.3	.25	.41	17	69	51
18	132	.70	48	27	8.9	47	.55	.27	.37	.63	29	51
19	127	.70	47	27	9.2	46	.39	.29	.39	.35	29	52
20	122	.70	47	27	9.6	45	.25	.27	.40	.32	29	50
21	119	.82	46	28	9.9	45	.26	.25	.40	14	29	49
22	115	9.3	46	28	10	45	.27	.25	.40	29	17	49
23	112	17	28	28	18	45	.26	.26	.37	29	1.4	48
24	109	40	13	29	35	44	.25	.27	.31	29	1.4	20
25	105	76	13	29	44	26	.25	.25	.33	29	1.1	1.1
26	102	88	13	35	44	9.9	.25	.26	.31	28	1.0	1.0
27	99	86	14	45	44	11	.25	.29	.31	27	1.0	1.0
28	97	83	14	44	43	11	.25	.29	.29	26	.98	1.0
29	93	82	14	44	---	11	.23	.55	.28	25	.52	.90
30	92	80	14	44	---	12	.22	1.1	.26	12	.31	.75
31	91	---	15	44	---	43	---	1.9	---	.55	.28	---
TOTAL	3071	1361.87	957	1020.6	785.1	915.0	647.18	10.72	21.04	630.67	682.84	582.92
MEAN	99.1	45.4	30.9	32.9	28.0	29.5	21.6	.35	.70	20.3	22.0	19.4
MAX	145	88	63	47	44	47	69	1.9	3.4	72	134	52
MIN	48	.70	11	9.6	8.5	8.9	.22	.22	.26	.24	.28	.24
CAL YR 1986	TOTAL	15504.08	MEAN	42.5	MAX	177	MIN	.57	CFSM	.84	IN	11.38
WTR YR 1987	TOTAL	10685.94	MEAN	29.3	MAX	145	MIN	.22	CFSM	.58	IN	7.84



MENOMINEE-OCONTO-PESHIGO RIVER BASIN

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. 11 to Mar. 20, Mar. 31, and Apr. 1. 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.--44 years (water years 1915, 1945-87), 363 ft³/s, 12.67 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, 953 ft³/s Oct. 13, gage height, 3.29 ft; maximum gage height, 6.34 ft Nov. 11, backwater from ice; minimum discharge, 183 ft³/s Aug. 29, 30, gage height, 1.88 ft.

DISCHARGE, IN 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	408	328	320	300	280	290	280	277	354	206	244	191
2	359	335	325	300	290	290	299	266	358	211	580	194
3	337	313	320	300	290	290	295	260	377	265	592	199
4	323	304	310	300	280	290	297	251	325	240	435	192
5	314	304	310	305	270	280	311	249	307	218	346	193
6	300	308	305	300	270	300	342	255	293	208	294	190
7	293	299	290	300	260	330	361	249	273	236	283	199
8	303	321	280	290	260	370	356	236	262	233	260	196
9	314	335	280	290	270	340	342	233	253	220	249	191
10	296	304	270	280	290	320	345	233	241	223	239	186
11	304	300	270	280	300	310	371	235	257	296	228	191
12	730	280	260	290	290	300	357	246	291	527	221	197
13	907	250	260	290	280	300	346	240	267	503	239	197
14	714	240	270	290	270	290	355	229	248	363	249	200
15	595	300	280	290	280	290	423	225	234	297	244	192
16	524	310	290	260	280	285	410	231	224	265	237	186
17	468	305	290	200	280	280	381	238	214	248	226	218
18	417	270	290	230	280	275	360	243	212	239	219	243
19	385	260	290	230	280	275	346	310	213	273	214	258
20	366	270	290	240	280	275	340	394	203	267	209	270
21	351	290	280	250	280	281	354	355	210	287	207	260
22	335	310	270	250	280	278	340	331	210	273	209	246
23	330	320	280	240	290	294	328	328	203	245	207	243
24	326	320	290	230	290	309	318	303	198	245	195	222
25	317	320	300	230	290	317	312	286	199	263	192	210
26	313	310	300	230	290	314	317	298	208	240	190	202
27	311	310	300	230	290	306	334	334	220	225	187	193
28	308	320	300	230	280	294	311	385	221	218	187	189
29	302	320	300	240	---	290	295	370	215	220	185	192
30	296	320	300	260	---	283	284	427	220	215	192	194
31	294	---	300	270	---	270	---	416	---	229	197	---
TOTAL	12140	9076	9020	8225	7870	9216	10110	8933	7510	8198	7956	6234
MEAN	392	303	291	265	281	297	337	288	250	264	257	208
MAX	907	335	325	305	300	370	423	427	377	527	592	270
MIN	293	240	260	200	260	270	280	225	198	206	185	186
CFSM	1.01	.78	.75	.68	.72	.76	.87	.74	.64	.68	.66	.54
IN.	1.16	.87	.86	.79	.75	.88	.97	.85	.72	.78	.76	.60
CAL YR 1986	TOTAL	139188	MEAN 381	MAX 2200	MIN 236	CFSM .98	IN 13.31					
WTR YR 1987	TOTAL	104488	MEAN 286	MAX 907	MIN 185	CFSM .74	IN 9.99					

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 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.--73 years, 1,821 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, 3,410 ft³/s Oct. 12, gage height, 5.79 ft; minimum, 217 ft³/s, June 26, gage height, 1.91 ft; minimum daily, 356 ft³/s May 23.

DISCHARGE, IN 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	1500	992	1500	1460	1510	1480	1770	857	962	994	1440	1690
2	1270	880	1490	1440	1550	1460	2060	711	1100	988	2390	1700
3	1190	1060	1450	1470	1510	1440	1920	710	1440	966	2240	1300
4	1050	1090	1410	1360	1450	1490	1880	659	1510	926	1680	803
5	693	1060	1560	1560	1460	1360	1890	660	1370	820	1820	961
6	763	1150	1450	1570	1390	1490	1690	726	815	1000	1720	957
7	806	966	1440	1260	1430	1490	1400	630	708	993	1850	953
8	966	718	1350	1310	1450	1650	1220	551	930	1190	2050	982
9	1000	999	1580	1320	1490	1720	1190	547	1120	1220	1910	986
10	1000	804	1370	1320	1500	1350	1110	451	883	1060	1710	1030
11	656	928	1470	1360	1490	1370	1070	587	712	1090	1600	931
12	2090	979	1460	1460	1360	1510	1110	474	1040	2260	1680	874
13	2890	1000	1360	1400	1490	1730	1080	601	658	3140	1790	930
14	2590	872	1480	1460	1280	1880	1130	601	740	2540	2100	922
15	2390	679	1410	1470	1410	2010	1180	503	906	1630	2230	907
16	2390	487	1500	1460	1520	1970	1250	553	846	1520	2000	913
17	2070	912	1590	1290	1430	2070	1050	519	919	1550	1680	846
18	1630	924	1440	1420	1450	2180	1090	544	959	1160	1870	921
19	1540	889	1530	1440	1450	1810	1130	715	844	1250	1590	773
20	1510	1200	1380	1440	1500	1800	1180	733	540	1250	1480	804
21	1360	1130	1540	1650	1310	1980	955	554	533	1370	1420	837
22	1320	678	1380	1240	1410	2150	896	546	818	1610	1710	791
23	1320	615	1430	1470	1530	2350	949	356	690	1530	1580	804
24	1420	1140	1470	1270	1430	2180	900	459	607	1570	1670	811
25	1090	1120	1520	1410	1360	1840	563	453	795	1550	1660	860
26	939	1510	1480	1510	1540	2080	450	557	876	1560	1620	855
27	1040	1440	1440	1380	1440	1770	825	573	962	1540	1680	783
28	1100	1490	1520	1530	1360	1790	769	630	879	1570	1630	836
29	1160	1560	1520	1390	---	1860	755	699	998	1650	1660	810
30	1060	1530	1360	1440	---	1560	856	608	1020	1540	1640	732
31	1090	---	1550	1300	---	1590	---	666	---	1510	1840	---
TOTAL	42893	30802	45430	43860	40500	54410	35318	18433	27180	44547	54940	28302
MEAN	1384	1027	1465	1415	1446	1755	1177	595	906	1437	1772	943
MAX	2890	1560	1590	1650	1550	2350	2060	857	1510	3140	2390	1700
MIN	656	487	1350	1240	1280	1350	450	356	533	820	1420	732
CAL YR 1986	TOTAL	661453	MEAN	1812	MAX	9930	MIN	450				
WTR YR 1987	TOTAL	466615	MEAN	1278	MAX	3140	MIN	356				

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: None, except for ice periods listed in rating table below. Records good except those for ice-affected periods, which are fair.

AVERAGE DISCHARGE.--24 years, 124 ft³/s, 12.11 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)
Oct. 14	1200	*474	*2.74	No other peak greater than base discharge.			

Minimum discharge, 17 ft³/s part of each day Sept. 7, 8, gage height, 1.04 ft.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Nov. 10 to Mar. 16, Mar. 21, 30, 31, and Apr. 2, 3.)

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

DISCHARGE, IN 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	144	110	64	48	41	43	66	107	257	26	31	20
2	124	108	64	48	42	44	80	105	222	27	80	21
3	116	106	62	48	43	45	80	95	185	33	108	23
4	114	104	58	49	43	46	76	85	148	32	95	21
5	111	98	56	50	42	48	82	77	118	29	81	20
6	108	95	56	50	42	52	98	69	102	27	62	22
7	105	94	54	50	42	68	117	64	87	25	55	18
8	109	104	54	47	42	90	129	60	75	26	47	17
9	108	110	52	45	39	80	130	64	66	31	42	22
10	103	110	50	44	38	72	136	63	59	33	39	22
11	103	100	50	44	38	64	147	61	58	39	36	20
12	299	80	49	45	39	58	151	58	62	57	34	22
13	412	72	48	45	40	54	147	54	61	80	37	24
14	469	70	48	46	40	50	160	50	54	84	40	23
15	445	68	48	47	38	49	204	46	49	69	45	22
16	405	68	49	46	36	49	209	44	45	55	43	21
17	367	70	50	44	36	50	194	44	40	46	46	31
18	326	68	50	43	35	52	178	43	35	39	52	41
19	288	66	49	43	36	55	166	56	32	42	47	54
20	249	66	48	43	38	57	154	85	29	47	42	57
21	215	66	48	42	40	62	153	96	29	55	37	58
22	185	68	48	41	42	64	150	90	30	56	35	54
23	181	70	49	40	44	67	156	85	29	55	32	50
24	188	70	49	40	45	70	154	80	27	53	30	44
25	188	70	49	39	45	77	150	75	26	50	31	37
26	172	70	49	38	44	82	157	73	28	45	28	32
27	155	68	49	38	43	84	157	96	28	42	25	31
28	139	68	50	39	43	83	148	158	28	36	27	30
29	125	68	50	39	---	82	134	189	29	33	27	27
30	124	66	50	40	---	78	118	237	28	30	24	25
31	112	---	49	40	---	80	---	254	---	28	21	---
TOTAL	6289	2451	1599	1361	1136	1955	4181	2763	2066	1330	1379	909
MEAN	203	81.7	51.6	43.9	40.6	63.1	139	89.1	68.9	42.9	44.5	30.3
MAX	469	110	64	50	45	90	209	254	257	84	108	58
MIN	103	66	48	38	35	43	66	43	26	25	21	17
CFSM	1.46	.59	.37	.32	.29	.45	1.00	.64	.50	.31	.32	.22
IN.	1.68	.66	.43	.36	.30	.52	1.12	.74	.55	.36	.37	.24

CAL YR 1986 TOTAL 45813 MEAN 126 MAX 1080 MIN 35 CFSM .90 IN. 12.3
WTR YR 1987 TOTAL 27419 MEAN 75.1 MAX 469 MIN 17 CFSM .54 IN. 7.34

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, 1986 TO SEPTEMBER 1987

DATE	TIME	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	TUR- BID- ITY (NTU) (00076)	OXYGEN, DIS- SOLVED (MG/L) (00300)	BARO- METRIC PRES- SURE OF HG) (00025)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)
NOV , 1986										
19...	1230	--	67	190	7.50	0.0	1.6	--	731	--
JAN , 1987										
21...	1330	42	--	258	7.50	0.0	1.9	9.6	722	69
MAY										
13...	1400	--	53	165	8.20	16.0	1.0	10.2	732	108
AUG										
19...	1030	--	47	195	8.10	17.5	0.70	8.1	755	86

DATE	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP- TOCOCCHI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD- NESS (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)	PERCENT SODIUM (00932)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)
NOV , 1986										
19...	K5	K2	95	10	20	11	1.6	3	0.1	0.90
JAN , 1987										
21...	K12	K10	120	11	26	14	1.8	3	0.1	1.0
MAY										
13...	K11	K15	87	8	19	9.6	1.5	4	0.1	0.80
AUG										
19...	--	--	110	9	23	12	1.7	3	0.1	0.80

DATE	BICAR- BONATE WATER DISSOLV FIELD AS HCO3 (MG/L) (00453)	ALKA- LINITY WATER DISSOLV FLD. AS CACO3 (MG/L) (39086)	CARBON DIOXIDE DIS- SOLVED (MG/L AS CO2) (00405)	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)
NOV , 1986									
19...	103	83	5.2	11	1.7	0.10	12	113	110
JAN , 1987									
21...	137	110	6.8	5.9	1.7	<0.10	16	142	130
MAY									
13...	97	78	1	10	1.3	0.10	4.0	102	94
AUG									
19...	118	95	1.5	18	5.2	0.30	11	133	130

DATE	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS- SOLVED (TONS PER DAY) (70302)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P) (00671)
NOV , 1986									
19...	0.15	20	0.100	0.010	<0.010	0.50	0.010	0.020	<0.010
JAN , 1987									
21...	0.19	16	0.200	0.080	0.070	0.30	0.010	0.010	<0.010
MAY									
13...	0.14	15	<0.100	<0.010	0.030	1.2	0.020	0.010	0.010
AUG									
19...	0.18	17	<0.100	0.020	0.010	0.80	0.020	0.010	<0.010

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

04063700 POPPLE RIVER NEAR FENCE, WI--CONTINUED

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	DIS-CHARGE, IN CUBIC FEET PER SECOND (00060)	STREAM-FLOW, INSTANTANEOUS (CFS) (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)
NOV , 1986											
19...	1230	--	67	30	<1	11	<0.5	1	<1	<3	<1
JAN , 1987											
21...	1330	42	--	10	1	12	<0.5	<1	<1	<3	1
MAY											
13...	1400	--	53	<10	1	10	<0.5	<1	<1	<3	2
AUG											
19...	1030	--	47	<10	2	11	<0.5	<1	<1	<3	<1

DATE	TIME	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)
NOV , 1986												
19...	320	<5		4	51	<0.1	<10	2	<1	21	<6	6
JAN , 1987												
21...	360	<5		7	63	<0.1	<10	1	<1	27	<6	8
MAY												
13...	230	15		6	160	<0.1	<10	<1	<1	22	<6	6
AUG												
19...	220	<5		<4	70	<0.1	<10	3	<1	30	<6	10

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS) (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)	URANIUM, DIS-SOLVED, EXTRACTION (UG/L) (80020)
NOV , 1986										
19...	1230	67	0.7	<0.4	1.6	<0.4	1.3	<0.4	0.03	0.43
MAY , 1987										
13...	1400	53	0.6	<0.4	1.9	<0.4	1.5	<0.4	0.03	0.43

DATE	TIME	DIS-CHARGE, IN CUBIC FEET PER SECOND (00060)	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE WATER (DEG C) (00010)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT , 1986								
23...	1545	--	180	108	8.5	--	--	--
NOV								
19...	1230	--	67	190	0.0	3	0.54	73
DEC								
08...	1550	--	55	187	0.0	--	--	--
JAN , 1987								
21...	1330	42	--	258	0.0	2	0.23	100
MAR								
03...	1820	--	46	260	0.0	--	--	--
25...	1515	--	77	185	4.5	--	--	--
MAY								
07...	1925	--	64	144	16.0	--	--	--
13...	1400	--	53	165	16.0	3	0.43	92
JUL								
08...	1835	--	27	215	27.5	--	--	--
AUG								
04...	1335	--	97	170	21.0	--	--	--
19...	1030	--	47	195	17.5	3	0.38	95
SEP								
17...	1205	--	33	220	16.0	--	--	--

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.

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.

REMARKS.--Estimated daily discharges: May 5-29 and ice periods listed in rating table below. Records good except those for estimated daily discharges, which are 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.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 6,820 ft³/s Oct. 13, gage height, 10.59 ft; maximum gage height, 13.22 ft Jan. 30, backwater from ice; minimum daily, 1,040 ft³/s June 22, but may have been less during estimated period, May 5-29.

6.8	1,030	9.0	3,840
7.0	1,180	11.0	7,740
8.0	2,370		

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2940	2080	2120	2000	1700	1800	2340	1930	2320	1360	2410	2250
2	2660	1590	2220	2100	1800	1800	2500	1780	2620	1310	2950	2080
3	2400	1800	2030	2200	1900	1900	2720	1460	2550	1510	4200	1830
4	2220	1980	2000	2200	1900	1900	2490	1550	2360	1480	3630	1450
5	1930	1790	2200	2000	1800	1800	2670	1450	2160	1130	2730	1240
6	1880	1870	2100	2200	1800	1900	2770	1340	2040	1300	2760	1320
7	1800	1910	1900	2000	1800	2000	2760	1300	1570	1410	2590	1290
8	1670	1920	1800	1800	1700	2430	2750	1300	1510	1590	2700	1350
9	1680	1780	1800	1800	1700	2540	2640	1200	1530	1400	2630	1430
10	1790	1680	1700	1800	1800	2270	2380	1200	1450	1450	2700	1250
11	2110	1770	1700	1900	1900	2010	2370	1100	1500	1790	2260	1160
12	2250	1790	1700	1900	1900	2030	2360	1100	1510	2330	2100	1450
13	5930	1950	1600	1900	1800	2160	2470	1100	1470	3560	2460	1280
14	5950	2000	1600	1800	1800	2570	2230	1200	1340	3990	2830	1340
15	5370	1600	2000	1900	1700	2530	2750	1200	1330	2890	2840	1320
16	5290	1290	2000	1700	1700	2440	2950	1100	1300	2290	2470	1270
17	4850	1320	2200	1600	1800	2600	2930	1100	1330	2310	2600	1370
18	4080	1530	2200	1600	1800	2700	2820	1100	1300	2050	2450	1370
19	3200	1720	2000	1600	1700	2570	2670	1100	1320	1820	2200	1470
20	3170	1690	1800	1700	1700	2230	2750	1100	1240	1900	2240	1580
21	3140	1850	1800	1600	1700	2480	2520	1200	1060	2150	1890	1380
22	2770	1860	1700	1800	1700	2630	2300	1300	1040	2050	2020	1680
23	2550	1330	1700	1700	1700	2780	2420	1100	1070	2090	2050	1440
24	2550	1490	1800	1600	1800	2930	2530	1100	1070	2180	2070	1370
25	2490	1780	1900	1500	1800	3080	2340	1100	1070	2130	2200	1360
26	2220	1980	2000	1500	1900	2740	2030	1140	1190	2070	2050	1330
27	2110	2070	2000	1500	1900	2710	2020	1200	1240	1970	1870	1410
28	2090	2120	2000	1600	1800	2760	2280	1600	1310	2070	1880	1220
29	2130	2310	2000	1700	---	2640	2070	1800	1150	1850	2040	1200
30	2190	2170	1800	1700	---	2420	1830	2070	1240	1880	2110	1140
31	2120	---	1900	1600	---	2340	---	2250	---	1970	2010	---
TOTAL	89530	54020	59270	55500	50000	73690	74660	41570	45190	61280	75940	42630
MEAN	2888	1801	1912	1790	1786	2377	2489	1341	1506	1977	2450	1421
MAX	5950	2310	2220	2200	1900	3080	2950	2250	2620	3990	4200	

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.

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

EXTREMES FOR CURRENT YEAR.--Maximum gage height observed, 11.26 ft, June 14; minimum observed, 10.89 ft, May 16.

DATE	GAGE HEIGHT	DATE	GAGE HEIGHT	DATE	GAGE HEIGHT	DATE	GAGE HEIGHT	DATE	GAGE HEIGHT	DATE	GAGE HEIGHT
APR. 11	10.96	MAY 9	10.96	JUNE 14	11.26	JULY 11	11.02	AUG. 1	11.04	SEPT. 7	10.94
APR. 17	10.98	MAY 16	10.89	JUNE 26	11.09	JULY 19	11.09	AUG. 16	11.12	SEPT. 14	10.96
APR. 26	11.02	MAY 26	10.98	JUNE 28	11.09	JULY 26	11.06	AUG. 23	11.04	SEPT. 19	10.99
MAY 1	10.98	MAY 29	11.18	JULY 4	11.00						

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.

REMARKS.--Secchi disc readings made by Norman Kratz.

DATE	SECCHI DEPTH	DATE	SECCHI DEPTH	DATE	SECCHI DEPTH	DATE	SECCHI DEPTH	DATE	SECCHI DEPTH	DATE	SECCHI DEPTH
APR. 11	2.44	MAY 9	1.98	JUNE 14	1.75	JULY 4	1.37	JULY 26	1.22	AUG. 23	1.22
APR. 17	2.44	MAY 16	1.52	JUNE 26	1.68	JULY 11	1.37	AUG. 1	1.45	SEPT. 7	1.22
APR. 26	2.44	MAY 26	1.83	JUNE 28	1.52	JULY 19	1.22	AUG. 16	1.37	SEPT. 19	1.14
MAY 1	1.83	MAY 29	1.83								

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.

LAKE-STAGE RECORDS

PERIOD OF RECORD.--February 25 to September 30, 1987.

GAGE.--Staff gage at outlet read by Robert Adrian.

REMARKS.--Lake levels controlled at outlet. Lake levels are drawn down about 1.5 ft from October through April.

EXTREMES FOR CURRENT YEAR.--Maximum gage-height observed, 2.38 ft, May 27, July 22, and Sept. 23; minimum observed, 0.72 ft, Apr. 8.

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

[illegible]

451511087550900 LAKE NOUEBAY NEAR CRIVITZ, WI--CONTINUED

WATER-QUALITY RECORDS

PERIOD OF RECORD.--February 25 to September 30, 1987.

REMARKS.--Lake sampled at a lake depth of approximately 31 ft approximately 4,000 ft northeast of dam outlet. Lake ice-covered February 25. Water-quality analyses by U.S. Geological Survey National Water Quality Laboratory, except those indicated by an asterisk (*) which are by Wisconsin State Laboratory of Hygiene.

WATER QUALITY DATA, FEBRUARY 25 TO AUGUST 16, 1987
(Milligrams per liter unless otherwise indicated)

	Feb. 25		Apr. 23		June 12		July 16		Aug. 16	
Depth of sample (ft)	3.0	27.0	1.5	30.0	3.0	27.0	3.0	30.0	3.0	30.0
Specific conductance ($\mu\text{S}/\text{cm}$)	352	413	274	270	259	268	274	298	300	348
pH (units)	8.6	8.0	8.3	8.1	8.4	7.6	8.3	7.4	8.5	7.6
Water temperature ($^{\circ}\text{C}$)	1.3	4.1	12.7	11.3	20.7	14.7	22.2	16.6	24.3	17.8
Color (Pt-Co. scale)	---	---	23	23	---	---	---	---	---	---
Turbidity (NTU)	---	---	0.5	0.5	---	---	---	---	---	---
Secchi-disc (meters)	---	---	2.8	---	3.7	---	2.8	---	3.2	---
Dissolved oxygen	10.7	3.9	9.4	8.8	7.7	3.2	7.6	.5	7.9	0
Hardness, as CaCO_3	---	---	150	150	---	---	---	---	---	---
Calcium, dissolved (Ca)	---	---	35	36	---	---	---	---	---	---
Magnesium, dissolved (Mg)	---	---	15	15	---	---	---	---	---	---
Sodium, dissolved (Na)	---	---	1.9	1.8	---	---	---	---	---	---
Potassium, dissolved (K)	---	---	1.0	0.9	---	---	---	---	---	---
Alkalinity as CaCO_3	---	---	143	142	---	---	---	---	---	---
Sulfate, dissolved (SO_4)	---	---	11	10	---	---	---	---	---	---
Chloride, dissolved (Cl)	---	---	3.2	3.3	---	---	---	---	---	---
Silica, dissolved (SiO_2)	---	---	7.5	7.8	---	---	---	---	---	---
Solids, dissolved, at 180°C	---	---	169	166	---	---	---	---	---	---
Nitrogen, nitrate, total (as N)	---	---	<.10	<.10	---	---	---	---	---	---
Nitrogen, nitrite, total (as N)	---	---	<.01	<.01	---	---	---	---	---	---
Nitrogen, ammonia, total (as N)	---	---	<.01	<.01	---	---	---	---	---	---
Nitrogen, organic, total (as N)	---	---	.49	.69	---	---	---	---	---	---
Nitrogen, total (as N)	---	---	.50	.70	---	---	---	---	---	---
Total phosphorus (as P)	---	---	.011	.008	.015*	.010*	.012*	.013*	.013*	.046*
Phosphorus, ortho, diss. (as P)	---	---	.008	.002	---	<.010	---	<.004*	---	.028*
Iron, dissolved (Fe) $\mu\text{g}/\text{L}$	---	---	16	31	---	---	---	---	---	---
Manganese, dissolved (Fe) $\mu\text{g}/\text{L}$	---	---	2	2	---	---	---	---	---	---
Chlorophyll a, phyto. ($\mu\text{g}/\text{L}$)	---	---	6*	---	3.0*	---	3.0*	---	6.0*	---

2-25-87

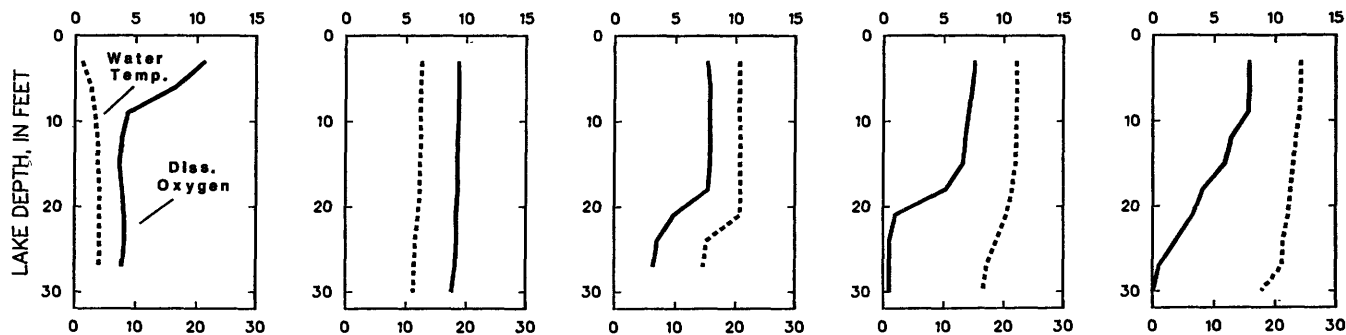
4-23-87

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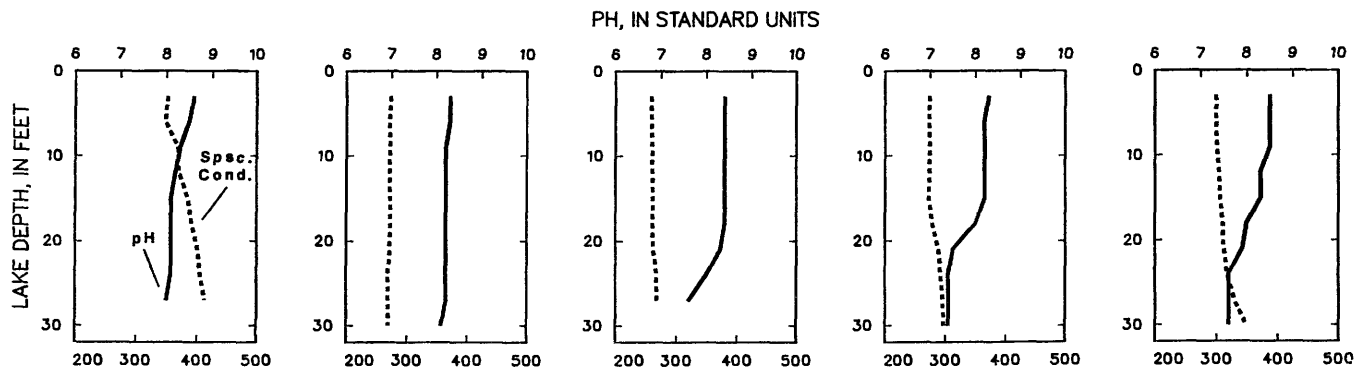
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DISSOLVED OXYGEN, IN MILLIGRAMS PER LITER



WATER TEMPERATURE, IN DEGREES CELSIUS



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: Nov. 23 to Jan. 16, Jan. 23 to Feb. 5, Feb. 9-11, and 13-17. Records fair except for period Oct. 1 to Feb. 17, which is poor. Diurnal fluctuation caused by two powerplants upstream.

AVERAGE DISCHARGE.--34 years, 943 ft³/s, 11.86 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, 2,840 ft³/s Oct. 16, gage height, 5.94 ft; minimum daily, 215 ft³/s Sept. 8.

DISCHARGE, IN 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	2260	1110	660	600	480	516	835	793	934	305	405	314
2	2010	1070	640	560	480	470	861	723	956	383	725	263
3	1950	1020	640	580	500	632	864	746	845	384	616	237
4	1920	1050	700	600	450	542	916	720	673	337	499	235
5	1850	1020	540	600	470	589	959	582	555	269	449	340
6	1660	1020	560	560	446	703	1040	620	633	269	435	312
7	1470	984	660	560	682	769	1220	541	631	570	454	321
8	1320	896	600	580	533	1010	1320	574	542	410	449	215
9	1530	865	540	540	450	1150	1200	517	450	363	376	292
10	1470	860	620	520	420	1180	1230	482	444	385	519	289
11	1420	954	600	540	450	1160	1120	476	342	425	445	258
12	1410	762	580	580	396	1080	956	578	441	433	476	366
13	1780	597	580	540	500	1030	937	490	553	443	393	265
14	2180	559	560	520	470	736	953	509	445	445	399	245
15	2370	700	540	540	450	696	1110	659	385	535	571	272
16	2720	749	540	560	420	737	1280	497	436	533	557	380
17	2620	760	600	550	500	732	1350	552	428	508	515	433
18	2320	802	660	501	486	652	1400	443	347	506	479	613
19	2000	677	660	429	446	616	1320	549	441	399	460	775
20	1840	625	540	481	473	659	1220	786	388	318	425	753
21	1610	738	600	659	479	640	1000	794	216	515	418	755
22	1470	754	540	539	431	657	1230	824	514	488	406	731
23	1390	720	540	500	457	708	1380	753	534	571	378	725
24	1290	740	580	500	459	746	1400	782	416	458	257	588
25	1190	740	580	400	506	926	1140	668	402	418	298	449
26	1290	680	560	350	407	980	1100	635	289	432	374	419
27	1380	720	560	350	453	1060	1210	952	309	316	386	401
28	1360	680	600	400	444	1080	1210	981	228	497	345	440
29	1310	780	560	450	---	999	940	1060	342	372	260	473
30	1220	740	560	470	---	958	1030	1070	410	324	253	330
31	1150	---	600	500	---	916	---	959	---	318	361	---
TOTAL	52760	24372	18300	16059	13138	25329	33731	21315	14529	12929	13383	12489
MEAN	1702	812	590	518	469	817	1124	688	484	417	432	416
MAX	2720	1110	700	659	682	1180	1400	1070	956	571	725	775
MIN	1150	559	540	350	396	470	835	443	216	269	253	215
CFSM	1.58	.75	.55	.48	.43	.76	1.04	.64	.45	.39	.40	.39
IN.	1.82	.84	.63	.55	.45	.87	1.16	.73	.50	.45	.46	.43
CAL YR 1986	TOTAL 379825	MEAN 1041	MAX 4930	MIN 331	CFSM .96	IN. 13.1						
WTR YR 1987	TOTAL 258334	MEAN 708	MAX 2720	MIN 215	CFSM .66	IN. 8.90						

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 Warren Thomas 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.

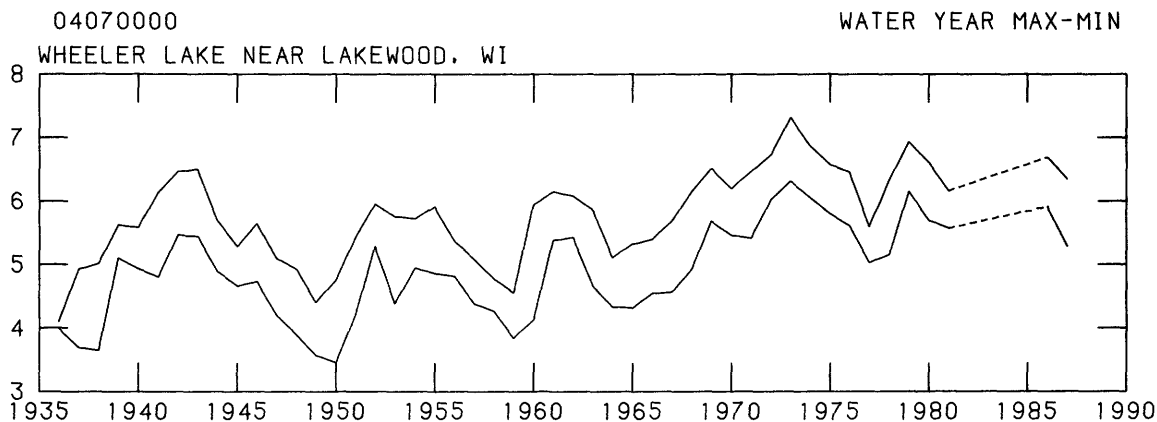
EXTREMES FOR PERIOD OF RECORD.--Maximum gage height observed, 7.31 ft June 6, 1973; minimum observed, 3.45 ft Feb. 5, 1950.

EXTREMES FOR CURRENT YEAR.--Maximum gage height observed, 6.35 ft, Oct. 17; minimum observed, 5.29 ft, Sept. 15.

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	GAGE HEIGHT	DATE	GAGE HEIGHT	DATE	GAGE HEIGHT	DATE	GAGE HEIGHT	DATE	GAGE HEIGHT	DATE	GAGE HEIGHT
OCT. 2	6.25	MAY 16	6.02	JUNE 17	5.90	JULY 19	5.79	AUG. 21	5.55	SEPT. 9	5.35
OCT. 17	6.35	MAY 21	6.04	JUNE 23	5.93	JULY 31	5.69	AUG. 29	5.47	SEPT. 15	5.29
MAY 1	6.20	MAY 31	6.08	JULY 4	5.81	AUG. 8	5.63	SEPT. 2	5.45	SEPT. 27	5.31
MAY 8	6.08	JUNE 8	6.04	JULY 10	5.83						

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 1986 TO SEPTEMBER 1987

DATE	SECCHI DEPTH	DATE	SECCHI DEPTH	DATE	SECCHI DEPTH	DATE	SECCHI DEPTH	DATE	SECCHI DEPTH	DATE	SECCHI DEPTH
OCT. 2	4.11	MAY 16	5.79	JUNE 17	7.01	JULY 19	3.35	AUG. 21	3.51	SEPT. 9	2.74
OCT. 17	3.35	MAY 21	5.11	JUNE 23	7.70	JULY 31	3.20	AUG. 29	3.35	SEPT. 15	2.74
MAY 1	7.62	MAY 31	6.10	JULY 4	5.33	AUG. 8	4.27	SEPT. 2	3.20	SEPT. 27	3.05
MAY 8	7.01	JUNE 8	7.16	JULY 10	4.27						

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: July 4-7 and ice period listed in rating table below. Records good except those for ice-affected period, which is fair. Gage-height telemeter at station.

AVERAGE DISCHARGE.--76 years (water years 1907-08, 1914-87), 585 ft³/s, 11.27 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)
Oct. 3	0800	*1,300	2.84	Dec. 14	1500	ice jam	*3.26

Minimum discharge, 195 ft³/s part of each day Aug. 29-31, Sept. 1, 6, 7, 9, 10, 14, gage height, 0.54 ft.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Nov. 13 to Mar. 20.)

0.5	184	2.0	780
0.9	300	3.0	1,400
1.4	480		

DISCHARGE, IN 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	1160	574	480	420	350	370	577	536	484	282	229	201
2	1140	566	500	410	360	380	601	503	430	276	239	220
3	1240	553	470	420	360	390	586	453	397	267	243	237
4	1210	539	450	420	360	410	584	436	377	280	241	261
5	1160	528	430	410	360	440	635	422	361	320	238	205
6	1110	521	440	400	370	480	700	412	355	300	236	195
7	1030	520	450	390	370	520	735	401	350	290	229	195
8	1020	530	460	390	370	580	750	385	347	280	221	199
9	949	532	450	390	380	540	747	372	339	270	235	197
10	896	529	450	370	370	520	728	365	330	266	265	196
11	865	508	440	390	350	490	711	363	328	283	271	200
12	890	481	430	390	360	470	695	356	339	293	253	200
13	936	470	400	380	360	460	674	347	350	310	239	199
14	996	460	440	390	360	450	680	343	331	327	235	196
15	1080	460	460	380	350	440	733	341	305	314	253	198
16	1170	480	480	370	340	440	802	346	294	294	271	204
17	1180	500	470	360	330	440	837	340	286	284	297	255
18	1130	480	460	370	340	450	812	327	278	279	329	369
19	1040	460	460	380	350	460	764	323	272	266	285	487
20	937	460	440	380	340	470	720	380	261	269	273	460
21	847	470	430	380	350	485	691	491	260	285	267	390
22	777	480	440	360	350	504	692	550	268	281	253	357
23	723	500	440	350	350	533	758	489	273	286	241	365
24	696	520	440	340	360	572	770	433	273	272	232	334
25	680	520	450	330	360	630	731	408	277	260	212	296
26	662	500	450	340	360	693	687	413	282	258	205	284
27	645	500	450	340	360	726	652	438	288	253	206	275
28	628	490	440	350	370	713	623	523	296	242	202	266
29	610	480	440	350	---	688	590	622	295	235	198	259
30	589	480	430	350	---	653	562	604	286	232	195	258
31	576	---	420	350	---	601	---	541	---	227	195	---
TOTAL	28572	15091	13890	11650	9990	15998	20827	13263	9612	8581	7488	7958
MEAN	922	503	448	376	357	516	694	428	320	277	242	265
MAX	1240	574	500	420	380	726	837	622	484	327	329	487
MIN	576	460	400	330	330	370	562	323	260	227	195	195
CFSM	1.31	.71	.64	.53	.51	.73	.98	.61	.45	.39	.34	.38
IN.	1.51	.80	.73	.61	.53	.84	1.10	.70	.51	.45	.40	.42

CAL YR 1986	TOTAL 250333	MEAN 686	MAX 3000	MIN 313	CFSM .97	IN. 13.2
WTR YR 1987	TOTAL 162920	MEAN 446	MAX 1240	MIN 195	CFSM .63	IN. 8.60

STREAMS TRIBUTARY TO LAKE MICHIGAN

04071858 PENSBAKEE RIVER NEAR PENSBAKEE, 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 discharge: None, except for ice periods listed in rating table below. Records good except for ice-affected periods, which are fair.

AVERAGE DISCHARGE.--15 years, 96.8 ft³/s, 9.81 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)
Oct. 4	2400	*625	6.05	Mar. 9	1800	ice jam	*7.07

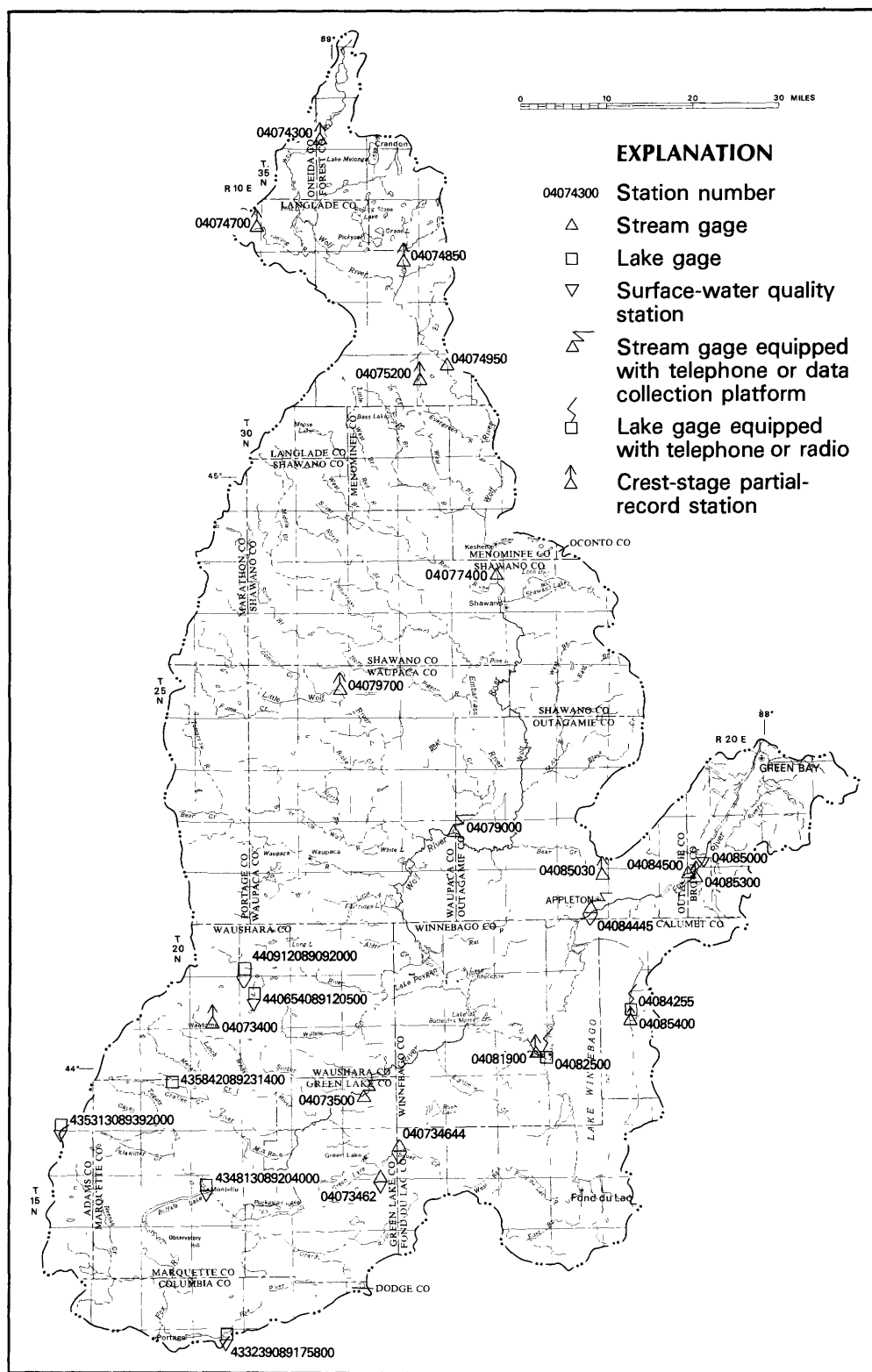
Minimum discharge, 0.44 ft³/s Sept. 13, gage height, 2.09 ft.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Shifting-control method used Oct. 18 to Nov. 8; stage-discharge relation affected by ice Nov. 9 to Mar. 20 and Mar. 31 to Apr. 2.)

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

DISCHARGE, IN 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	177	45	60	21	10	29	98	38	20	21	3.1	21
2	146	55	58	22	11	30	110	35	21	16	11	13
3	282	59	54	22	11	31	127	33	18	24	6.3	2.2
4	595	54	45	21	12	35	145	28	14	29	3.8	2.2
5	578	51	42	21	13	52	229	25	11	27	6.3	1.6
6	397	48	40	20	13	90	303	22	11	27	3.7	1.4
7	247	45	43	19	13	170	249	21	12	24	3.1	1.7
8	206	44	41	17	12	350	177	20	11	16	3.1	1.5
9	224	40	39	15	11	500	139	18	8.8	10	7.5	1.7
10	189	30	37	17	11	300	120	19	8.0	8.8	22	1.5
11	151	23	35	16	11	250	109	17	7.9	14	30	1.6
12	173	20	33	15	11	200	94	17	8.0	23	20	3.6
13	298	17	31	14	12	160	81	17	7.5	25	13	.96
14	256	17	34	13	12	150	80	16	7.4	28	16	1.7
15	199	19	31	12	10	130	143	15	6.4	24	27	2.7
16	161	23	29	12	11	120	178	13	6.2	19	43	3.7
17	141	24	27	13	11	110	148	13	5.5	12	53	13
18	124	21	25	12	12	100	118	12	4.5	5.4	53	29
19	113	18	24	11	12	96	95	16	4.5	3.9	42	42
20	102	24	22	10	12	90	79	26	4.7	3.1	28	29
21	93	25	21	10	13	88	68	27	5.6	4.0	18	31
22	84	32	20	9.4	13	95	74	26	7.6	19	13	38
23	78	50	20	8.6	14	106	107	23	7.9	18	11	35
24	71	60	19	7.8	15	114	138	22	8.4	6.4	9.5	31
25	64	74	19	7.8	17	124	116	21	6.7	4.1	7.2	11
26	59	68	19	8.0	20	180	94	27	7.0	3.6	6.5	15
27	57	68	19	8.4	24	196	72	30	4.1	3.3	12	4.8
28	59	76	20	8.4	27	163	59	28	4.6	3.1	16	4.1
29	51	66	20	9.0	---	146	49	31	12	3.1	21	8.4
30	47	62	20	9.4	---	124	44	28	23	2.8	23	16
31	42	---	20	9.4	---	100	---	24	---	2.7	24	---
TOTAL	5464	1258	967	419.2	374	4429	3643	708	284.3	430.3	556.1	369.36
MEAN	176	41.9	31.2	13.5	13.4	143	121	22.8	9.48	13.9	17.9	12.3
MAX	595	76	60	22	27	500	303	38	23	29	53	42
MIN	42	17	19	7.8	10	29	44	12	4.1	2.7	3.1	.96
CFSM	1.32	.31	.23	.10	.10	1.07	.91	.17	.07	.10	.13	.09
IN.	1.52	.35	.27	.12	.10	1.23	1.01	.20	.08	.12	.15	.10
CAL YR 1986	TOTAL 50657.09	MEAN 139	MAX 3170	MIN 6.7	CFSM 1.04	IN. 14.1						
WTR YR 1987	TOTAL 18902.16	MEAN 51.8	MAX 595	MIN .96	CFSM .39	IN. 5.25						



FOX-WOLF RIVER BASIN

433239089175800 PARK LAKE AT PARDEEVILLE, WI

LOCATION.--Lat 43°32'39", long 89°17'58", in NE 1/4 NE 1/4 sec.35, T.13 N., R.10 E., Columbia County, Hydrologic Unit 04030201, at Pardeeville.

DRAINAGE AREA.--48.4 mi².

LAKE-STAGE RECORDS

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

GAGE.--Staff gage at outlet read by Gene Buzzell. Datum of gage, 807.00 ft above National Geodetic Vertical Datum of 1929.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height observed, 8.44 ft Sept. 25, 1986; minimum observed, 6.76 ft Mar. 1, 1987.

EXTREMES FOR CURRENT YEAR.--Maximum gage height observed, 8.18 ft, Apr. 25; minimum observed, 6.76 ft, Mar. 1.

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.99	---	7.82	---	---	6.76	7.46	---	---	7.89	---	---
2	---	---	---	---	---	---	---	---	---	---	7.55	8.06
3	7.91	---	---	---	---	6.99	---	7.85	7.67	7.95	---	---
4	---	---	---	---	---	---	7.50	---	---	---	---	---
5	7.95	---	---	---	---	---	---	---	---	7.97	---	---
6	7.93	---	7.48	---	---	7.11	7.48	7.33	7.63	---	7.61	---
7	---	---	---	---	---	---	---	---	7.65	7.95	---	7.88
8	7.91	---	---	---	---	---	7.48	---	---	---	---	---
9	---	---	7.18	---	---	7.19	7.48	---	7.79	---	7.89	---
10	7.89	---	---	---	---	---	---	7.68	---	7.73	---	7.82
11	---	---	---	---	---	---	7.50	---	7.70	---	---	---
12	7.83	---	---	---	---	7.25	---	---	---	7.67	---	7.74
13	---	---	6.96	---	---	---	7.62	7.61	---	---	---	---
14	7.85	---	---	---	---	7.29	---	---	7.71	7.59	7.57	7.92
15	---	---	---	---	---	---	7.98	---	---	---	---	---
16	7.89	---	---	---	---	---	---	---	---	7.65	8.15	---
17	---	---	---	---	---	7.27	7.94	7.79	7.81	---	8.00	---
18	---	---	---	---	---	---	---	---	---	---	8.03	8.02
19	---	---	---	---	---	---	7.92	---	---	---	---	---
20	7.93	---	---	---	---	---	---	7.81	---	7.85	---	---
21	---	---	---	---	---	7.29	---	---	7.85	---	8.05	---
22	---	---	---	---	---	---	8.02	---	---	---	---	7.74
23	7.91	---	---	---	---	---	---	---	---	---	7.79	---
24	---	---	---	---	---	7.29	---	7.85	7.87	7.83	---	7.72
25	---	---	6.96	---	---	---	8.18	---	---	---	7.71	---
26	---	---	---	---	6.80	---	---	---	7.89	7.95	---	---
27	7.99	---	---	---	---	7.33	8.02	---	---	---	7.67	7.68
28	---	---	7.06	---	---	---	---	7.79	7.89	---	---	---
29	7.97	---	---	---	---	---	---	---	---	---	7.85	---
30	---	---	---	---	---	7.41	7.96	7.81	7.89	7.73	7.91	7.72
31	---	---	---	---	---	---	---	7.77	---	---	---	---

WATER-QUALITY RECORDS

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

REMARKS.--Lake sampled near dam. Lake ice-covered February 26. Water-quality analyses by U.S. Geological Survey National Water Quality Laboratory through April, and Wisconsin State Laboratory of Hygiene thereafter.

WATER QUALITY DATA, FEBRUARY 26 TO AUGUST 17, 1987
(Milligrams per liter unless otherwise indicated)

	Feb. 26		Apr. 8		June 11		July 15		Aug. 17	
Depth of sample (ft)	3.0	12.5	3.0	12.5	1.5	24.0	3.0	21.0	3.0	21.0
Specific conductance ($\mu\text{S}/\text{cm}$)	600	657	514	483	448	556	378	549	367	648
pH (units)	8.2	8.1	8.7	8.4	8.6	7.3	8.5	7.1	8.3	6.9
Water temperature ($^{\circ}\text{C}$)	4.4	4.7	11.7	7.4	22.0	9.8	25.2	15.7	24.6	16.3
Color (Pt-Co. scale)	--	--	17	15	--	--	--	--	--	--
Turbidity (NTU)	--	--	1.0	1.3	--	--	--	--	--	--
Secchi-disc (meters)	--	--	--	.8	--	.8	--	.6	--	.5
Dissolved oxygen	18.3	9.0	14.7	12.2	8.8	0	8.1	.1	8.4	0
Hardness, as CaCO_3	--	--	270	270	--	--	--	--	--	--
Calcium, dissolved (Ca)	--	--	56	56	--	--	--	--	--	--
Magnesium, dissolved (Mg)	--	--	31	31	--	--	--	--	--	--
Sodium, dissolved (Na)	--	--	3.9	3.8	--	--	--	--	--	--
Potassium, dissolved (K)	--	--	2.1	2.1	--	--	--	--	--	--
Alkalinity as CaCO_3	--	--	227	233	--	--	--	--	--	--
Sulfate, dissolved (SO_4)	--	--	22	22	--	--	--	--	--	--
Chloride, dissolved (Cl)	--	--	11	10	--	--	--	--	--	--
Silica, dissolved (SiO_2)	--	--	7.7	7.7	--	--	--	--	--	--
Solids, dissolved, at 180°	--	--	285	276	--	--	--	--	--	--
Nitrogen, nitrate, total (as N)	--	--	1.38	1.28	--	--	--	--	--	--
Nitrogen, nitrite, total (as N)	--	--	.020	.020	--	--	--	--	--	--
Nitrogen, ammonia, total (as N)	--	--	.030	.030	--	--	--	--	--	--
Nitrogen, organic, total (as N)	--	--	2.9	2.1	--	--	--	--	--	--
Nitrogen, total (as N)	--	--	4.3	3.4	--	--	--	--	--	--
Total phosphorus (as P)	--	--	.045	.078	.040	.078	.056	.062	.094	.157
Phosphorus, ortho, diss. (as P)	--	--	<.001	<.001	--	<.010	--	.017	--	.042
Iron, dissolved (Fe) $\mu\text{g}/\text{L}$	--	--	11	12	--	--	--	--	--	--
Manganese, dissolved (Fe) $\mu\text{g}/\text{L}$	--	--	3	2	--	--	--	--	--	--
Chlorophyll a, phyto. ($\mu\text{g}/\text{L}$)	--	--	20	--	40	--	10	--	150	--

2-26-87

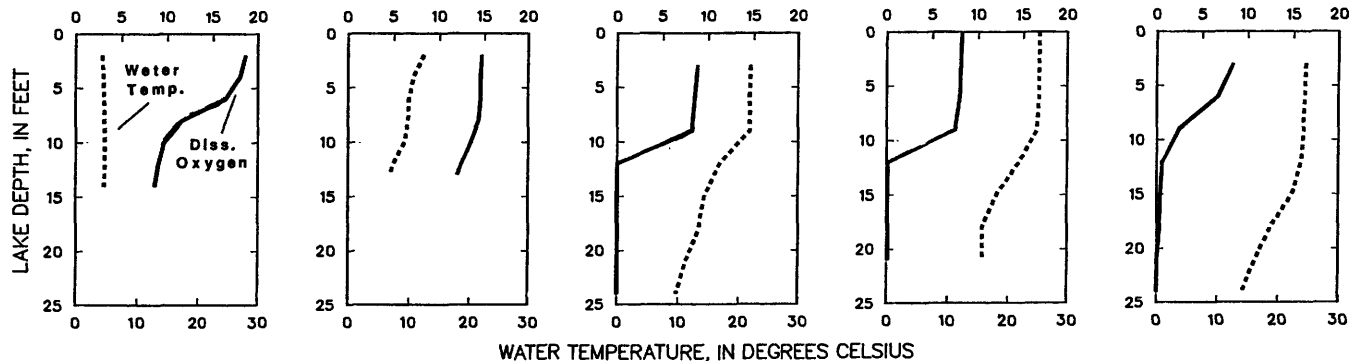
4-8-87

6-11-87

7-15-87

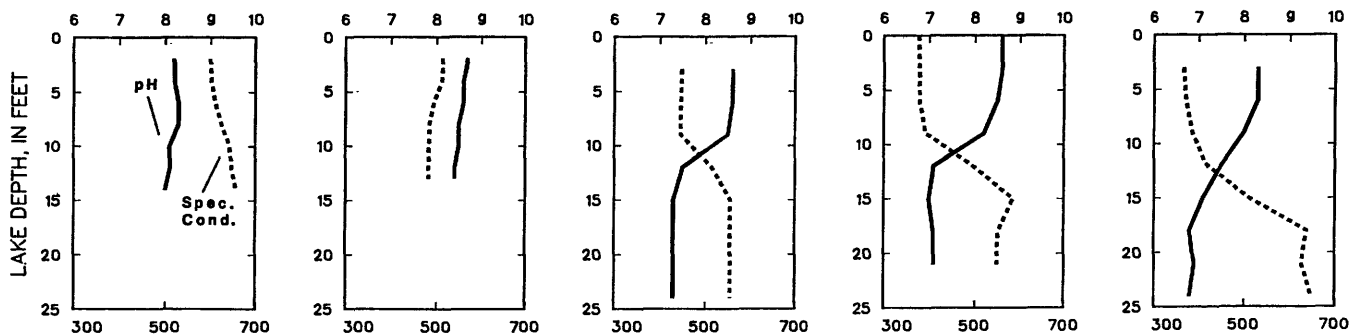
8-17-87

DISSOLVED OXYGEN, IN MILLIGRAMS PER LITER



WATER TEMPERATURE, IN DEGREES CELSIUS

PH, IN STANDARD UNITS



SPECIFIC CONDUCTANCE, IN MICROSIEMENS PER CENTIMETER

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, 11.47 ft, Oct. 4, 1984.

EXTREMES FOR CURRENT YEAR.--Maximum gage height observed, 16.01 ft, Oct. 25; minimum observed, 13.40 ft, Sept. 11.

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	GAGE HEIGHT	DATE	GAGE HEIGHT	DATE	GAGE HEIGHT	DATE	GAGE HEIGHT	DATE	GAGE HEIGHT	DATE	GAGE HEIGHT
OCT. 25	16.01	JUNE 23	13.92	JULY 7	13.82	JULY 29	13.88	AUG. 12	13.74	SEPT. 11	13.40
JUNE 16	13.96	JUNE 30	13.90	JULY 14	13.76	AUG. 5	13.80	SEPT. 2	13.48	SEPT. 20	13.59

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 1986 TO SEPTEMBER 1987

DATE	SECCHI DEPTH	DATE	SECCHI DEPTH	DATE	SECCHI DEPTH	DATE	SECCHI DEPTH	DATE	SECCHI DEPTH	DATE	SECCHI DEPTH
JUNE 16	3.35	JUNE 30	2.21	JULY 14	2.44	AUG. 5	2.90	SEPT. 2	3.51	SEPT. 20	3.28
JUNE 23	3.81	JULY 2	1.98	JULY 29	2.36	AUG. 12	2.82	SEPT. 11	3.51		

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, 11.74 ft, July 22; minimum observed, 10.71 ft, May 18.

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	11.24	11.04	---	---
2	---	---	---	---	---	---	---	---	11.32	11.26	---	---
3	---	---	---	---	---	---	---	---	11.26	11.18	---	---
4	---	---	---	---	---	---	---	---	11.42	---	---	---
5	---	---	---	---	---	---	---	---	11.04	---	---	---
6	---	---	---	---	---	---	---	---	---	11.00	---	---
7	---	---	---	---	---	---	---	---	---	11.20	---	---
8	---	---	---	---	---	---	---	---	11.20	---	---	---
9	---	---	---	---	---	---	---	---	11.30	11.26	---	---
10	---	---	---	---	---	---	---	---	11.46	11.26	---	---
11	---	---	---	---	---	---	---	---	11.40	---	---	---
12	---	---	---	---	---	---	---	---	10.88	---	---	---
13	---	---	---	---	---	---	---	---	---	11.08	---	---
14	---	---	---	---	---	---	---	---	---	11.26	---	---
15	---	---	---	---	---	---	---	---	11.04	---	---	---
16	---	---	---	---	---	---	---	---	11.22	11.24	---	---
17	---	---	---	---	---	---	---	---	11.32	11.28	---	---
18	---	---	---	---	---	---	---	10.71	11.30	---	---	---
19	---	---	---	---	---	---	---	10.96	---	---	---	---
20	---	---	---	---	---	---	---	11.11	11.24	11.22	---	---
21	---	---	---	---	---	---	---	11.26	---	---	---	---
22	---	---	---	---	---	---	---	---	11.40	11.74	---	---
23	---	---	---	---	---	---	---	11.26	11.68	11.36	---	---
24	---	---	---	---	---	---	---	---	11.66	---	---	---
25	---	---	---	---	---	---	---	---	11.08	---	---	---
26	---	---	---	---	---	---	---	11.26	11.22	---	---	---
27	---	---	---	---	---	---	---	11.26	11.14	11.04	---	---
28	---	---	---	---	---	---	---	11.32	---	11.24	---	---
29	---	---	---	---	---	---	---	11.24	11.04	11.22	---	---
30	---	---	---	---	---	---	---	11.24	---	11.28	---	---
31	---	---	---	---	---	---	---	---	---	11.24	---	---

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 1985 TO SEPTEMBER 1986

DATE	SECCHI DEPTH	DATE	SECCHI DEPTH	DATE	SECCHI DEPTH	DATE	SECCHI DEPTH	DATE	SECCHI DEPTH	DATE	SECCHI DEPTH
MAY 18	1.86	MAY 29	2.44	JUNE 9	2.06	JUNE 20	1.90	JULY 1	2.82	JULY 14	2.36
MAY 19	1.86	MAY 30	2.13	JUNE 10	1.90	JUNE 22	1.98	JULY 2	2.67	JULY 20	2.90
MAY 20	2.29	JUNE 1	2.36	JUNE 11	1.90	JUNE 23	2.59	JULY 3	2.44	JULY 22	2.13
MAY 21	2.36	JUNE 2	2.51	JUNE 12	2.51	JUNE 24	2.29	JULY 6	3.05	JULY 27	2.36
MAY 23	2.21	JUNE 3	2.44	JUNE 15	2.29	JUNE 25	2.67	JULY 7	3.12	JULY 28	2.21
MAY 26	2.59	JUNE 4	1.98	JUNE 16	2.21	JUNE 26	2.13	JULY 9	2.74	JULY 29	2.29
MAY 27	2.36	JUNE 5	2.44	JUNE 17	2.67	JUNE 27	2.44	JULY 10	2.74	JULY 30	2.51
MAY 28	2.41	JUNE 8	2.06	JUNE 18	1.90	JUNE 29	2.29	JULY 13	2.51	JULY 31	2.36

STREAMS TRIBUTARY TO LAKE MICHIGAN

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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, 7.63 ft, Sept. 15, 1987.

EXTREMES FOR CURRENT YEAR.--Maximum gage height observed, 9.21 ft, Oct. 4-6, 12-15; minimum observed, 7.63 ft, Sept. 15.

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.11	---	---	---	---	---	---	---	8.73	8.55	8.27	7.39
2	9.13	---	---	---	---	---	---	---	8.71	8.57	8.25	7.79
3	9.15	---	---	---	---	---	---	---	8.69	8.55	8.23	7.77
4	9.21	---	---	---	---	---	---	---	8.69	8.53	8.21	7.75
5	9.21	---	---	---	---	---	---	---	8.67	8.51	8.19	7.77
6	9.21	---	---	---	---	---	---	---	8.65	8.49	8.15	7.77
7	9.19	---	---	---	---	---	---	---	8.63	8.57	8.11	7.75
8	9.17	---	---	---	---	---	---	---	8.61	8.55	8.09	7.73
9	9.17	---	---	---	---	---	---	---	8.61	8.53	8.15	7.71
10	9.15	---	---	---	---	---	---	8.89	8.59	8.51	8.15	7.69
11	9.17	---	---	---	---	---	---	8.93	8.59	8.49	8.13	7.69
12	9.21	---	---	---	---	---	---	8.93	8.57	8.49	8.11	7.67
13	9.21	---	---	---	---	---	---	8.91	8.55	8.47	8.09	7.67
14	9.21	---	---	---	---	---	---	8.91	8.53	8.45	8.07	7.65
15	9.21	---	---	---	---	---	---	8.91	8.51	8.43	8.07	7.63
16	9.19	---	---	---	---	---	---	8.89	8.49	8.41	8.09	7.71
17	9.19	---	---	---	---	---	---	8.89	8.47	8.39	8.09	7.77
18	9.19	---	---	---	---	---	---	8.87	8.45	8.37	8.07	7.77
19	---	---	---	---	---	---	---	8.87	8.59	8.35	8.05	7.77
20	---	---	---	---	---	---	---	8.87	8.59	8.33	8.03	7.79
21	---	---	---	---	---	---	---	8.87	8.59	8.31	8.01	7.79
22	---	---	---	---	---	---	---	8.85	8.59	8.31	7.97	7.79
23	---	---	---	---	---	---	---	8.83	8.59	8.29	7.95	7.77
24	---	---	---	---	---	---	---	8.81	8.59	8.27	7.93	7.77
25	---	---	---	---	---	---	---	8.79	8.61	8.25	7.91	7.75
26	---	---	---	---	---	---	---	8.79	8.61	---	7.89	7.73
27	---	---	---	---	---	---	---	---	8.59	---	7.89	7.71
28	---	---	---	---	---	---	---	8.79	8.59	---	7.87	7.69
29	---	---	---	---	---	---	---	8.79	8.57	---	7.85	7.67
30	---	---	---	---	---	---	---	8.77	8.55	8.29	7.83	7.65
31	---	---	---	---	---	---	---	8.75	---	8.29	7.81	---
MEAN	---	---	---	---	---	---	---	---	8.59	---	8.05	7.72
MAX	---	---	---	---	---	---	---	---	8.73	---	8.27	7.79
MIN	---	---	---	---	---	---	---	---	8.45	---	7.81	7.39

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 current year.

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

REMARKS.--Estimated daily discharge: Jan. 24-26 and 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, 0.43 ft³/s Sept. 14, 15, 24, 1987.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 76 ft³/s Oct. 4, gage height, 5.12 ft; minimum daily, 0.43 ft³/s Sept. 14, 15, 24.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Jan. 20-23, 27.)

3.9	0.26	4.4	6.6
4.0	0.65	4.5	9.7
4.1	1.3	4.6	13
4.2	2.6	4.8	22
4.3	4.2	5.0	56

DISCHARGE, IN 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	18	7.1	3.6	1.9	1.0	2.4	2.2	7.5	3.8	1.9	.95	.59
2	17	6.9	3.6	1.8	1.0	4.1	2.2	7.3	3.6	1.8	.93	.63
3	17	6.7	3.5	1.8	1.1	4.0	2.2	7.0	3.5	1.8	.89	.59
4	28	6.2	3.3	1.8	1.0	4.0	2.2	6.9	3.6	1.7	.89	.56
5	16	6.1	3.2	1.8	.95	5.5	2.2	6.9	3.6	1.7	.89	.56
6	16	5.9	3.1	1.7	.97	4.9	2.2	6.6	3.6	1.7	.89	.55
7	16	5.8	3.0	1.7	1.5	5.1	2.4	6.4	3.5	1.6	.89	.50
8	16	5.8	3.1	1.7	2.0	4.8	2.5	6.2	3.4	1.5	1.2	.47
9	15	5.7	3.1	1.7	1.8	4.3	2.4	6.4	3.3	1.5	.99	.47
10	15	5.9	3.1	1.6	1.7	3.9	2.4	6.2	3.2	1.5	.92	.47
11	14	5.7	3.1	1.6	1.6	3.6	2.6	6.6	3.1	1.5	.89	.47
12	14	5.5	2.8	1.6	1.9	3.4	2.5	5.9	3.1	1.5	.89	.46
13	14	5.2	2.5	1.6	2.1	3.2	2.5	5.8	2.9	1.4	.91	.46
14	13	5.3	2.6	1.6	1.9	3.0	2.9	6.1	2.9	1.3	.90	.43
15	13	5.4	2.6	1.5	1.7	2.8	2.8	5.6	2.8	1.4	.88	.43
16	13	5.4	2.7	1.5	1.5	2.7	2.6	5.4	2.8	1.3	.98	.53
17	12	5.2	2.6	1.5	1.4	2.5	2.6	5.2	2.7	1.3	.86	.88
18	12	4.8	2.5	1.5	1.3	2.5	2.6	5.2	2.6	1.3	.81	.57
19	12	4.7	2.5	1.5	1.4	3.0	2.7	5.4	4.1	1.3	.77	.63
20	11	4.7	2.3	1.4	1.5	2.8	2.8	5.0	2.6	1.5	.75	.51
21	11	4.4	2.3	1.4	2.2	2.6	2.8	4.7	2.5	1.4	.71	.49
22	10	4.2	2.3	1.3	2.7	2.6	7.2	4.5	2.3	1.3	.71	.50
23	10	4.9	2.2	1.2	2.5	2.5	6.3	4.4	2.2	1.3	.69	.46
24	9.7	4.4	2.2	1.2	2.5	2.5	7.6	4.2	2.2	1.2	.65	.43
25	9.1	4.2	2.2	1.1	2.4	2.5	7.8	4.2	2.2	1.2	.65	.47
26	9.3	4.1	2.1	1.1	2.4	2.5	8.0	4.3	2.0	1.2	.70	.47
27	8.7	4.0	2.0	1.0	2.4	2.4	7.9	4.2	2.0	1.1	.71	.44
28	8.4	3.9	2.0	.96	2.4	2.3	7.6	4.4	1.9	1.1	.71	.47
29	8.1	3.7	2.0	1.0	---	2.4	7.8	4.1	2.0	1.3	.69	.50
30	7.4	3.6	1.9	1.0	---	2.3	7.5	3.9	1.9	1.0	.65	.49
31	7.2	---	1.9	1.0	---	2.2	---	4.6	---	.95	.64	---
TOTAL	400.9	155.4	81.9	45.06	48.82	99.3	120.0	171.1	85.9	43.55	25.59	15.48
MEAN	12.9	5.18	2.64	1.45	1.74	3.20	4.00	5.52	2.86	1.40	.83	.52
MAX	28	7.1	3.6	1.9	2.7	5.5	8.0	7.5	4.1	1.9	1.2	.88
MIN	7.2	3.6	1.9	.96	.95	2.2	2.2	3.9	1.9	.95	.64	.43
CFSM	4.24	1.70	.87	.48	.57	1.05	1.31	1.81	.94	.46	.27	.17
IN.	4.89	1.90	.99	.55	.60	1.21	1.46	2.09	1.05	.53	.31	.19
CAL YR 1986	TOTAL 2790.67		MEAN 7.65		MAX 89	MIN 1.3	CFSM 2.51	IN. 34.0				
WTR YR 1987	TOTAL 1292.98		MEAN 3.54		MAX 28	MIN .43	CFSM 1.16	IN. 15.8				

WATER-QUALITY RECORDS

TOTAL-PHOSPHORUS DISCHARGE: Maximum daily, 35 lb Oct. 4; minimum daily, 0.10 lb Sept. 14.

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)	SEDI- MENT, SUS- PENDE (MG/L) (80154)
OCT , 1986						FEB , 1987					
01...	1340	17	--	--	27	10...	1355	1.7	--	--	5
04...	0340	37	--	--	416	12...	1345	1.8	0.090	0.050	6
04...	0410	53	0.040	0.220	--	18...	1455	1.3	--	--	9
04...	0440	75	--	--	743	24...	1350	2.5	--	--	12
04...	0510	74	0.060	0.350	--	MAR					
04...	0540	74	--	--	657	02...	1410	4.7	--	--	64
04...	0710	56	--	--	408	02...	1440	5.9	0.170	0.350	--
04...	0840	39	--	--	180	02...	1510	6.9	--	--	117
04...	0910	32	0.110	0.290	--	02...	1610	8.1	--	--	151
06...	1430	16	--	--	17	02...	1640	8.1	0.270	0.540	--
08...	1120	16	--	--	12	02...	1810	6.9	--	--	171
16...	1320	13	--	--	15	02...	2040	5.4	0.140	0.300	--
22...	1300	10	0.030	0.040	18	02...	2110	5.2	--	--	62
NOV						03...	0310	4.0	--	--	62
06...	1540	5.9	--	--	18	03...	0340	4.0	0.270	0.260	--
14...	1435	5.4	--	--	9	03...	1515	4.0	--	--	36
21...	1040	4.2	--	--	4	03...	1545	4.0	0.100	0.190	--
DEC						03...	2115	3.9	--	--	24
01...	1615	3.6	--	--	5	04...	0415	3.7	--	--	28
04...	1500	3.2	--	--	7	04...	0445	3.7	0.240	0.270	--
15...	1420	2.3	--	--	10	04...	1625	3.7	--	--	24
16...	1510	2.6	0.060	0.040	18	04...	1655	4.0	0.100	0.140	--
23...	1515	2.2	--	--	8	04...	1855	5.2	0.080	0.150	--
30...	1320	1.9	--	--	8	04...	1925	5.2	--	--	16
JAN , 1987						04...	2255	4.9	0.100	0.140	--
08...	1545	1.7	--	--	2	04...	2325	4.7	--	--	39
14...	1300	1.6	--	--	1	05...	0525	4.2	--	--	30
29...	1520	1.1	0.050	0.030	11	05...	0555	4.0	0.130	0.150	--

STREAMS TRIBUTARY TO LAKE MICHIGAN

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)	SEDI- MENT, SUS- PENDE (MG/L) (80154)
MAR , 1987						MAY , 1987					
05...	1435	10	--	--	397	04...	1415	6.9	--	--	15
05...	1535	11	0.400	0.520	--	14...	1005	6.1	--	--	14
05...	1635	10	--	--	313	20...	1515	4.9	0.030	0.040	7
05...	1935	6.1	0.240	0.340	--	29...	1100	4.0	--	--	5
05...	2235	5.2	--	--	62	31...	1345	8.1	--	--	508
06...	0735	4.4	0.180	0.170	--	31...	1405	11	0.190	7.60	--
06...	0835	4.4	--	--	30	31...	1425	13	--	--	3710
18...	0955	2.5	0.040	0.040	14	31...	1445	9.7	0.450	4.70	--
19...	1420	2.9	--	--	45	31...	1505	9.4	--	--	4800
31...	1345	2.2	--	--	15	JUN					
APR						01...	1155	3.9	0.050	0.090	30
14...	0915	3.2	--	--	15	09...	1430	3.2	--	--	5
21...	1545	2.6	0.040	0.040	8	19...	1630	6.4	--	--	741
22...	0310	6.1	--	--	117	19...	1650	10	0.360	1.90	--
22...	0340	6.6	0.020	0.090	--	19...	1710	10	--	--	1570
22...	0410	6.4	--	--	207	19...	1730	15	0.580	2.90	--
22...	0440	6.1	0.500	0.420	--	19...	1750	20	0.290	0.360	5410
22...	0510	6.9	--	--	140	19...	1810	15	--	--	5500
22...	0540	8.1	0.060	0.130	--	19...	1830	10	0.330	2.30	--
22...	0610	8.8	--	--	228	19...	1910	9.1	--	--	2230
22...	0640	9.4	0.070	0.150	--	19...	1930	8.1	0.450	0.110	--
22...	0710	10	--	--	413	19...	2010	6.4	--	--	706
22...	0810	11	--	--	503	20...	1100	2.6	0.130	0.280	--
22...	0840	11	0.100	0.300	--	20...	1115	2.6	--	--	131
22...	0910	11	--	--	589	JUL					
22...	1000	9.7	0.100	0.240	525	01...	1010	1.9	0.020	0.050	26
22...	1010	9.4	--	--	513	13...	1615	1.8	--	--	9
22...	1140	8.1	0.090	0.180	--	29...	1445	4.4	0.050	0.480	594
22...	1210	7.8	--	--	263	29...	1505	4.4	0.100	4.20	3760
22...	1410	7.2	--	--	93	29...	1605	1.8	0.060	0.960	731
22...	1440	7.2	0.120	0.210	--	AUG					
22...	1610	7.5	--	--	66	07...	1350	0.89	0.010	0.130	22
22...	1910	6.6	0.070	0.090	--	25...	1020	0.65	--	--	7
22...	2010	6.4	--	--	43	31...	0930	0.65	--	--	7
23...	0010	5.9	--	--	37	SEP					
23...	0510	5.9	0.040	0.060	--	01...	1715	0.56	<0.010	0.040	14
23...	0610	5.9	--	--	52	16...	1355	0.56	--	--	26
23...	0910	6.4	--	--	50	17...	0720	2.3	--	--	286
23...	1110	6.4	0.050	0.050	--	17...	0740	2.6	--	--	343
23...	1210	6.4	--	--	49	17...	0800	2.6	--	--	253
24...	0010	6.6	0.030	0.050	73	17...	0820	2.0	--	--	365
24...	1510	7.5	--	--	60	17...	1430	0.65	--	--	20
24...	1610	7.8	0.060	0.040	--	24...	1129	0.43	--	--	22
27...	1150	7.8	0.020	0.030	98	25...	1405	0.47	0.040	0.050	32

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

NITROGEN, AMMONIA, 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	2.8	1.3	.95	.58	.31	1.2	.48	.87	1.1	.20	.11	.03
2	2.7	1.3	.99	.56	.33	3.5	.47	.86	.98	.20	.10	.04
3	2.7	1.3	.96	.54	.36	3.6	.47	.84	.96	.19	.08	.04
4	13.0	1.2	.91	.54	.34	3.1	.47	.85	.96	.18	.07	.04
5	6.0	1.2	.91	.53	.34	6.3	.47	.86	.96	.18	.06	.04
6	5.6	1.2	.89	.51	.37	4.5	.48	.83	.97	.18	.06	.04
7	5.2	1.2	.86	.50	.59	3.2	.52	.82	.93	.17	.05	.04
8	5.0	1.2	.90	.50	.80	2.2	.54	.82	.92	.17	.16	.04
9	4.5	1.2	.91	.49	.77	1.7	.52	.86	.89	.16	.05	.04
10	4.2	1.2	.92	.48	.75	1.5	.53	.85	.85	.16	.05	.04
11	3.9	1.2	.94	.46	.77	1.3	.56	.91	.84	.16	.05	.04
12	3.7	1.2	.85	.46	.93	1.1	.54	.82	.83	.16	.05	.05
13	3.4	1.1	.77	.45	1.0	.99	.53	.83	.80	.15	.05	.05
14	3.2	1.1	.83	.45	.92	.86	.65	.89	.79	.14	.05	.05
15	2.9	1.2	.82	.42	.83	.74	.60	.83	.75	.24	.05	.05
16	2.7	1.2	.87	.42	.75	.66	.57	.81	.75	.15	.10	.07
17	2.5	1.2	.84	.41	.67	.58	.56	.79	.73	.14	.05	.12
18	2.3	1.1	.79	.42	.66	.55	.57	.81	.71	.14	.04	.08
19	2.2	1.1	.79	.43	.67	.64	.58	.85	4.9	.14	.04	.10
20	2.0	1.1	.75	.40	.74	.60	.62	.80	1.7	.28	.04	.08
21	1.8	1.0	.74	.40	1.0	.57	.60	.76	.87	.24	.04	.08
22	1.7	1.0	.73	.37	1.3	.55	3.4	.73	.68	.14	.04	.09
23	1.7	1.2	.71	.34	1.2	.53	1.4	.71	.57	.14	.04	.09
24	1.6	1.1	.68	.34	1.2	.53	2.0	.68	.51	.13	.04	.09
25	1.5	1.0	.68	.31	1.2	.54	1.8	.67	.45	.13	.04	.10
26	1.6	1.0	.65	.31	1.2	.54	1.3	.69	.38	.13	.04	.11
27	1.5	1.0	.61	.28	1.2	.51	.89	.67	.34	.12	.04	.10
28	1.5	1.0	.63	.26	1.2	.50	.84	1.1	.29	.12	.04	.12
29	1.4	.95	.62	.28	---	.52	.87	.66	.26	.24	.04	.13
30	1.3	.94	.58	.29	---	.50	.85	.63	.23	.15	.04	.14
31	1.3	---	.58	.30	---	.48	---	2.6	---	.13	.03	---
TOTAL	97.4	33.99	24.66	13.03	22.40	44.59	24.68	26.70	26.90	5.16	1.74	2.13
MEAN	3.14	1.13	.80	.42	.80	1.44	.82	.86	.90	.17	.06	.07
MAX	13.0	1.3	.99	.58	1.3	6.3	3.4	2.6	4.9	.28	.16	.14
MIN	1.3	.94	.58	.26	.31	.48	.47	.63	.23	.12	.03	.03
CAL YR 1986	TOTAL 1516.20	MEAN 4.15	MAX 325	MIN .14								
WTR YR 1987	TOTAL 323.37	MEAN .89	MAX 13.0	MIN .03								

STREAMS TRIBUTARY TO LAKE MICHIGAN

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

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	8.54	1.54	.77	.37	.18	.65	.48	1.28	1.98	.50	.93	.13
2	6.54	1.49	.79	.36	.20	5.82	.47	1.25	1.77	.49	.86	.14
3	5.13	1.45	.75	.34	.21	4.91	.47	1.22	1.72	.47	.78	.13
4	35.0	1.35	.70	.34	.20	4.12	.47	1.22	1.73	.46	.74	.12
5	10.0	1.31	.70	.34	.20	8.18	.47	1.23	1.73	.45	.70	.13
6	7.22	1.27	.67	.32	.21	4.40	.48	1.19	1.75	.45	.66	.12
7	6.51	1.26	.64	.31	.34	2.64	.52	1.17	1.68	.43	.63	.12
8	6.25	1.25	.66	.31	.46	1.65	.54	1.16	1.65	.41	.86	.11
9	5.67	1.24	.67	.31	.43	1.34	.52	1.21	1.60	.39	.64	.11
10	5.28	1.27	.66	.30	.42	1.17	.53	1.19	1.54	.41	.57	.11
11	4.96	1.23	.67	.29	.43	1.04	.56	1.27	1.51	.39	.52	.11
12	4.75	1.19	.60	.28	.52	.94	.54	1.15	1.50	.39	.50	.11
13	4.32	1.11	.53	.28	.58	.86	.53	1.14	1.43	.38	.49	.11
14	4.09	1.14	.57	.28	.51	.76	.62	1.22	1.42	.36	.46	.10
15	3.78	1.17	.55	.26	.46	.68	.60	1.14	1.35	1.17	.43	.11
16	3.53	1.17	.58	.26	.42	.62	.57	1.11	1.34	.36	.60	.13
17	3.30	1.12	.56	.26	.37	.57	.56	1.07	1.31	.36	.38	.22
18	3.01	1.04	.53	.26	.36	.55	.57	1.09	1.28	.34	.34	.15
19	2.84	1.02	.52	.27	.37	.64	.58	1.15	18.0	.35	.31	.16
20	2.68	1.03	.49	.23	.41	.60	.62	1.07	2.94	1.80	.29	.13
21	2.42	.95	.49	.23	.58	.57	.60	1.01	1.51	.50	.26	.13
22	2.25	.91	.48	.22	.72	.55	6.39	.97	1.18	.35	.25	.13
23	2.21	1.05	.46	.19	.69	.53	1.87	.95	1.02	.34	.23	.12
24	2.09	.95	.45	.19	.67	.53	1.75	.91	.95	.33	.21	.11
25	1.97	.91	.44	.18	.64	.54	1.56	.90	.88	.32	.20	.13
26	2.00	.89	.42	.18	.65	.54	1.43	.92	.78	.31	.20	.13
27	1.88	.87	.40	.16	.65	.51	1.29	.90	.72	.30	.20	.12
28	1.82	.84	.41	.16	.65	.50	1.25	1.36	.63	.30	.19	.13
29	1.74	.79	.40	.17	---	.52	1.30	.88	.61	4.12	.17	.13
30	1.60	.77	.37	.17	---	.50	1.26	.84	.55	1.24	.16	.13
31	1.55	---	.37	.18	---	.48	---	24.0	---	.98	.15	---
TOTAL	154.93	33.58	17.30	8.00	12.53	47.91	29.40	57.17	58.06	19.45	13.91	3.81
MEAN	5.00	1.12	.56	.26	.45	1.55	.98	1.84	1.94	.63	.45	.13
MAX	35.0	1.54	.79	.37	.72	8.18	6.39	24.0	18.0	4.12	.93	.22
MIN	1.55	.77	.37	.16	.18	.48	.47	.84	.55	.30	.15	.10

CAL YR 1986 TOTAL 4121.74 MEAN 11.3 MAX 1130 MIN .14
WTR YR 1987 TOTAL 456.04 MEAN 1.25 MAX 35.0 MIN .10

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 to September 1987.

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

REMARKS.--Estimated daily discharge: Apr. 22-23. Records are good.

EXTREMES FOR CURRENT PERIOD.--February to September 1987: Maximum discharge, 167 ft³/s May 31, gage height, 7.37 ft; minimum daily, 2.8 ft³/s Aug. 6-7.

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

5.1	2.8	6.0	31
5.4	9.4	6.5	64
5.7	18	7.0	112

DISCHARGE, IN 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	---	---	---	---	11	28	25	32	42	9.3	30	6.8
2	---	---	---	---	12	31	23	31	37	9.5	11	7.2
3	---	---	---	---	13	37	25	29	29	9.4	8.1	6.4
4	---	---	---	---	13	41	25	27	23	8.9	8.2	5.8
5	---	---	---	---	13	40	26	26	19	8.7	6.9	5.3
6	---	---	---	---	13	42	26	25	21	9.8	2.8	4.7
7	---	---	---	---	14	48	26	24	17	11	2.8	4.5
8	---	---	---	---	14	55	25	23	16	9.9	7.8	4.9
9	---	---	---	---	14	51	24	21	15	9.3	4.5	4.9
10	---	---	---	---	14	40	23	20	13	8.7	3.8	5.9
11	---	---	---	---	14	40	25	31	14	7.5	3.4	5.9
12	---	---	---	---	15	34	27	25	14	7.2	3.3	5.7
13	---	---	---	---	16	30	27	23	12	7.6	3.3	5.2
14	---	---	---	---	15	27	39	27	12	7.5	3.9	5.5
15	---	---	---	---	13	25	47	24	11	8.2	6.0	5.4
16	---	---	---	---	14	25	50	22	11	7.7	15	8.4
17	---	---	---	---	13	25	48	20	11	7.0	14	23
18	---	---	---	---	13	26	43	19	11	6.6	11	15
19	---	---	---	---	13	31	36	23	12	6.1	8.8	14
20	---	---	---	---	14	32	31	22	11	10	8.0	12
21	---	---	---	---	15	32	27	21	11	11	7.5	15
22	---	---	---	---	17	33	61	20	12	8.7	6.9	17
23	---	---	---	---	19	33	99	19	11	7.5	6.1	13
24	---	---	---	---	18	32	112	19	11	6.7	6.6	8.9
25	---	---	---	---	18	33	92	19	11	5.9	6.5	8.7
26	---	---	---	---	19	34	71	21	11	6.7	6.5	8.6
27	---	---	---	---	19	33	57	22	10	6.5	6.6	7.5
28	---	---	---	---	19	31	47	27	9.4	6.7	11	6.1
29	---	---	---	---	---	34	41	27	11	12	8.2	6.1
30	---	---	---	---	---	29	35	23	10	9.7	6.5	6.4
31	---	---	---	---	---	26	---	44	---	30	6.1	---
TOTAL	---	---	---	---	415	1058	1263	756	458.4	281.3	241.1	253.8
MEAN	---	---	---	---	14.8	34.1	42.1	24.4	15.3	9.07	7.78	8.46
MAX	---	---	---	---	19	55	112	44	42	30	30	23
MIN	---	---	---	---	11	25	23	19	9.4	5.9	2.8	4.5

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

WATER-QUALITY RECORDS

PERIOD OF RECORD.--February to September 1987.

PERIOD OF DAILY RECORD.--

SUSPENDED-SEDIMENT DISCHARGE: February to September 1987.

TOTAL-PHOSPHORUS DISCHARGE: February to September 1987.

INSTRUMENTATION.--Automatic pumping sampler since April 1987.

REMARKS.--Records good, except for Feb. 1 to Apr. 1, prior to installation of pumping sampler, which are poor. Daily loads estimated for the period Feb. 1 to Apr. 1.

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

EXTREMES FOR CURRENT PERIOD OF DAILY RECORD.--

SUSPENDED-SEDIMENT DISCHARGE: Maximum daily, 46 tons May 31; minimum daily, 0.02 ton Aug. 7.

TOTAL-PHOSPHORUS DISCHARGE: Maximum daily, 179 lb May 31; minimum daily, 3.85 lb Aug. 7.

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

					STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)			
		DATE	TIME							
		FEB , 1987								
		12...	1125	15	1000	4.0				
		MAR								
		18...	1435	26	820	5.0				
		MAY								
		20...	1400	23	860	16.0				
		JUL								
		01...	1055	9.2	1470	20.0				
		AUG								
		06...	1355	3.8	1590	20.5				
DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	
MAR , 1987					APR , 1987					
	1500	35	--	5		23...	1040	99	33	
	1250	26	--	9		23...	1041	99	35	
	18...	26	0.110	19		23...	1245	100	31	
APR						23...	1445	102	--	
	02...	24	--	10		23...	2045	106	33	
	14...	30	0.090	--		23...	2245	109	--	
	14...	33	--	17		24...	0445	110	27	
	14...	36	0.080	--		24...	0645	110	--	
	14...	41	--	33		24...	0845	113	22	
	14...	46	0.110	--		24...	1445	115	23	
	14...	50	--	62		24...	1845	113	--	
	14...	50	0.150	--		24...	2045	110	23	
	14...	48	--	45		25...	0845	95	16	
	14...	43	--	19		25...	1845	85	--	
	14...	42	0.090	--		25...	2245	81	18	
	14...	39	--	17		26...	1845	67	17	
	14...	40	--	18		26...	2245	64	--	
	14...	39	0.130	--		MAY				
	14...	40	--	27		06...	1500	25	24	
	14...	46	--	31		14...	1110	28	17	
	14...	47	0.110	--		19...	0300	28	39	
	15...	44	--	32		19...	0345	23	--	
	15...	46	0.100	--		19...	0810	24	32	
	15...	45	--	22		19...	0900	29	--	
	15...	47	--	19		19...	1000	27	32	
	15...	47	0.150	--		20...	1400	23	12	
	15...	48	--	22		27...	1745	29	28	
	15...	49	0.110	--		27...	1815	30	--	
	15...	49	--	24		27...	1845	28	40	
	15...	49	--	25		27...	1915	26	--	
	16...	49	0.100	--		27...	1945	26	38	
	21...	27	0.140	14		28...	1730	25	44	
	22...	48	--	73		28...	1800	47	221	
	22...	62	0.140	--		28...	1830	57	278	
	22...	50	--	66		28...	1900	46	179	
	22...	64	0.140	--		28...	2000	38	83	
	22...	55	--	45		28...	2130	32	45	
	22...	53	0.140	--		28...	2200	31	--	
	22...	52	--	37		28...	2300	30	36	
	22...	72	--	39		29...	0130	28	45	
	22...	79	0.190	--		29...	0200	27	--	
	2300	84	--	31		29...	0630	27	37	
	0700	95	0.120	--		29...	0700	27	--	
	0900	97	--	35		30...	1100	23	22	

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)	SEDI- MENT, SUS- PENDE (MG/L) (80154)
MAY					AUG				
31...	1400	27	0.610	168	08...	1715	17	--	58
31...	1401	27	0.650	197	08...	1730	16	0.600	--
31...	1415	41	1.70	872	09...	1415	4.6	--	9
31...	1430	84	4.10	3330	16...	1215	12	0.500	67
31...	1445	119	3.70	--	16...	1245	24	0.410	76
31...	1500	142	2.20	1610	16...	1315	22	0.370	66
31...	1515	159	1.60	--	16...	1415	15	0.280	37
31...	1530	164	1.20	825	16...	1945	15	0.300	45
31...	1531	164	--	760	16...	2015	46	0.460	125
31...	1615	151	--	416	16...	2045	61	0.860	398
31...	1645	119	0.600	--	16...	2115	48	0.720	--
31...	1715	90	--	144	16...	2145	35	--	177
31...	1815	65	--	89	16...	2245	24	--	91
31...	1845	60	0.410	--	16...	2315	22	0.300	--
31...	2000	52	--	65	17...	0045	18	--	46
31...	2400	42	--	49	17...	0345	15	--	33
JUN					17...	0515	15	0.260	--
01...	0100	41	0.310	--	17...	0645	14	--	30
01...	0800	41	--	35	25...	1100	7.4	--	6
01...	1000	44	0.380	37	28...	1645	10	0.660	267
04...	1500	23	--	15	28...	1700	26	1.70	648
06...	0100	27	--	81	28...	1800	41	0.820	328
09...	1210	17	--	14	28...	1830	27	0.580	--
JUL					28...	1900	20	--	112
01...	1155	10	0.330	11	28...	2030	15	--	56
13...	1330	8.9	0.310	6	28...	2100	14	0.420	--
20...	1745	12	--	78	31...	1005	6.8	0.600	8
20...	1800	17	0.860	--	SEP				
20...	1815	21	0.860	128	01...	2045	8.9	0.730	79
20...	1830	27	0.960	--	01...	2115	21	0.760	150
20...	1845	33	1.00	273	01...	2145	17	0.550	84
20...	1900	35	0.910	--	11...	2215	10	0.700	57
20...	1915	35	0.780	219	11...	2230	15	0.620	54
20...	1930	33	--	178	15...	1300	6.3	0.410	5
20...	2000	27	--	134	16...	1015	16	0.320	65
20...	2015	25	0.540	--	16...	1045	22	0.550	61
20...	2100	22	--	97	16...	1145	15	0.360	39
20...	2115	21	0.460	--	16...	1400	10	0.500	14
20...	2215	17	0.400	--	17...	0445	15	0.390	56
20...	2230	17	--	58	17...	0515	27	--	202
21...	0015	13	0.360	--	17...	0545	22	0.580	--
21...	0030	13	--	38	17...	0645	17	0.380	93
29...	1515	23	1.70	151	17...	0745	38	0.220	172
29...	1530	48	0.820	630	17...	0815	64	1.10	485
29...	1545	53	1.70	786	17...	0915	56	0.400	--
29...	1600	48	1.20	448	17...	0945	48	0.310	94
29...	1615	39	0.850	--	17...	0946	48	--	70
29...	1630	34	0.680	251	17...	1015	39	0.320	--
29...	1745	22	0.420	110	17...	1115	30	--	45
29...	1845	17	0.380	72	17...	1215	23	0.240	--
31...	1745	82	--	284	17...	1315	21	--	27
31...	1915	90	0.360	--	17...	1815	21	--	35
31...	2015	90	--	93	17...	2245	18	0.220	--
AUG					17...	2315	17	--	25
07...	1310	4.1	--	3	18...	0615	14	0.220	--
08...	1115	8.9	1.30	329	18...	0645	14	--	21
08...	1145	22	0.750	125	18...	2215	19	0.340	77
08...	1215	22	0.840	--	18...	2230	20	0.300	48
08...	1445	12	0.530	82	18...	2300	19	0.300	--
08...	1515	17	0.500	--	18...	2330	18	0.280	35
08...	1545	21	0.520	77	18...	2359	17	0.280	--
08...	1615	23	0.420	112	19...	0700	17	0.320	42
08...	1645	21	0.440	--					

STREAMS TRIBUTARY TO LAKE MICHIGAN

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

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	---	---	---	---	.15	.97	.70	1.7	4.2	.27	2.0	.49
2	---	---	---	---	.17	1.1	.63	1.7	2.8	.27	.26	.23
3	---	---	---	---	.17	1.4	.68	1.7	1.6	.25	.16	.17
4	---	---	---	---	.17	1.0	.68	1.6	.98	.22	.13	.15
5	---	---	---	---	.17	1.6	.69	1.6	.68	.21	.09	.13
6	---	---	---	---	.17	1.8	.71	1.6	2.1	.23	.03	.11
7	---	---	---	---	.18	2.2	.71	1.5	.99	.23	.02	.11
8	---	---	---	---	.19	2.7	.68	1.3	.74	.21	1.4	.12
9	---	---	---	---	.19	2.0	.64	1.2	.57	.18	.18	.11
10	---	---	---	---	.19	1.2	.61	1.1	.49	.16	.09	.13
11	---	---	---	---	.19	.80	.80	1.6	.54	.14	.08	.22
12	---	---	---	---	.20	.46	.73	1.3	.53	.12	.08	.17
13	---	---	---	---	.21	.45	.87	1.1	.44	.12	.08	.11
14	---	---	---	---	.20	.45	2.9	1.2	.41	.12	.14	.09
15	---	---	---	---	.17	.48	3.0	1.1	.40	.46	.27	.08
16	---	---	---	---	.20	.55	3.2	.92	.38	.12	3.8	.58
17	---	---	---	---	.18	.66	2.8	.80	.37	.11	1.1	6.1
18	---	---	---	---	.18	1.2	2.2	.72	.37	.11	.41	.90
19	---	---	---	---	.18	1.5	1.7	1.5	.43	.10	.23	.92
20	---	---	---	---	.18	1.5	1.3	.80	.37	2.1	.19	.32
21	---	---	---	---	.20	1.5	1.1	.69	.36	.51	.16	.40
22	---	---	---	---	.23	1.4	7.7	.65	.38	.24	.14	.46
23	---	---	---	---	.25	1.4	8.7	.63	.36	.20	.12	.35
24	---	---	---	---	.24	1.3	7.3	.60	.35	.18	.11	.26
25	---	---	---	---	.25	1.2	4.4	.61	.35	.16	.11	.25
26	---	---	---	---	.26	1.2	3.3	.68	.34	.18	.11	.25
27	---	---	---	---	.25	1.2	2.7	1.1	.31	.18	.11	.22
28	---	---	---	---	.26	1.0	2.3	4.0	.28	.18	4.0	.19
29	---	---	---	---	---	1.1	2.1	2.5	.34	4.5	.41	.19
30	---	---	---	---	---	.87	1.8	1.4	.30	.39	.22	.20
31	---	---	---	---	---	.77	---	46	---	7.4	.15	---
TOTAL	---	---	---	---	5.58	36.96	67.63	84.90	22.76	19.85	16.38	14.01
MEAN	---	---	---	---	.20	1.19	2.25	2.74	.76	.64	.53	.47
MAX	---	---	---	---	.26	2.7	8.7	46	4.2	7.4	4.0	6.1
MIN	---	---	---	---	.15	.45	.61	.60	.28	.10	.02	.08

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	---	---	---	---	12.0	18.0	13.0	16.0	78.0	16.0	49.0	18.0
2	---	---	---	---	12.0	20.0	12.0	15.0	61.0	22.0	17.0	17.0
3	---	---	---	---	13.0	23.0	12.0	14.0	48.0	22.0	12.0	15.0
4	---	---	---	---	13.0	26.0	12.0	13.0	38.0	16.0	12.0	13.0
5	---	---	---	---	12.0	25.0	12.0	12.0	31.0	15.0	9.99	11.0
6	---	---	---	---	12.0	26.0	12.0	12.0	35.0	17.0	3.93	9.44
7	---	---	---	---	13.0	30.0	12.0	11.0	28.0	18.0	3.85	8.78
8	---	---	---	---	13.0	35.0	12.0	11.0	26.0	17.0	22.0	9.12
9	---	---	---	---	13.0	32.0	11.0	10.0	24.0	16.0	9.09	8.76
10	---	---	---	---	13.0	25.0	10.0	9.76	22.0	15.0	6.34	10.0
11	---	---	---	---	13.0	25.0	11.0	16.0	24.0	13.0	5.96	11.0
12	---	---	---	---	13.0	21.0	12.0	12.0	24.0	12.0	6.03	12.0
13	---	---	---	---	14.0	19.0	12.0	11.0	21.0	13.0	6.35	11.0
14	---	---	---	---	13.0	17.0	23.0	17.0	20.0	12.0	11.0	12.0
15	---	---	---	---	11.0	16.0	30.0	12.0	19.0	20.0	16.0	12.0
16	---	---	---	---	12.0	15.0	28.0	11.0	18.0	12.0	33.0	18.0
17	---	---	---	---	11.0	15.0	28.0	9.63	18.0	10.0	20.0	48.0
18	---	---	---	---	11.0	15.0	27.0	9.09	18.0	9.46	15.0	18.0
19	---	---	---	---	11.0	18.0	24.0	34.0	21.0	8.57	12.0	23.0
20	---	---	---	---	11.0	18.0	22.0	38.0	20.0	25.0	11.0	20.0
21	---	---	---	---	12.0	19.0	20.0	37.0	19.0	21.0	10.0	24.0
22	---	---	---	---	14.0	19.0	51.0	33.0	20.0	16.0	9.49	27.0
23	---	---	---	---	15.0	18.0	70.0	31.0	19.0	14.0	8.45	20.0
24	---	---	---	---	14.0	18.0	78.0	29.0	19.0	12.0	8.97	14.0
25	---	---	---	---	14.0	18.0	48.0	28.0	19.0	10.0	8.85	13.0
26	---	---	---	---	14.0	18.0	35.0	30.0	19.0	12.0	8.88	13.0
27	---	---	---	---	14.0	18.0	28.0	34.0	18.0	11.0	8.88	11.0
28	---	---	---	---	14.0	16.0	23.0	50.0	17.0	11.0	31.0	8.62
29	---	---	---	---	---	17.0	20.0	38.0	20.0	32.0	20.0	8.44
30	---	---	---	---	---	15.0	17.0	31.0	18.0	16.0	19.0	8.71
31	---	---	---	---	---	13.0	---	179	---	55.0	19.0	---
TOTAL	---	---	---	---	357.0	628.0	725.0	813.48	782.0	519.03	434.06	452.87
MEAN	---	---	---	---	12.7	20.3	24.2	26.2	26.1	16.7	14.0	15.1
MAX	---	---	---	---	15.0	35.0	78.0	179	78.0	55.0	49.0	48.0
MIN	---	---	---	---	11.0	13.0	10.0	9.09	17.0	8.57	3.85	8.44

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: None, except for ice periods listed in rating table below. Records good except for periods of ice effect, which are 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.--89 years, 1,126 ft³/s, 11.41 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,900 ft³/s Mar. 17, 18, 1946, gage height, 15.5 ft; minimum observed, 248 ft³/s Sept. 16, 1948, gage height, 6.1 ft.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,760 ft³/s Oct. 5, gage height, 14.73 ft; minimum daily discharge, 604 ft³/s July 5 and Sept. 15.

RATING TABLE (gage height, in feet, and discharge in cubic feet per second).
(Shifting-control method used Oct. 20 to Dec. 4, Dec. 19 to Jan. 16, Feb. 5 to Apr. 27; stage-discharge relation affected by ice Dec. 5-18, Jan. 17 to Feb. 4.)

8.0	500	12.0	2,560
9.0	910	13.0	3,280
10.0	1,370	14.0	4,100
11.0	1,950	15.0	5,000

DISCHARGE, IN 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	4720	2640	1700	1800	1200	1090	1780	2260	1110	657	679	710
2	4720	2580	1690	1590	1200	1130	1780	2230	1090	619	683	701
3	4720	2520	1680	1420	1200	1180	1760	2190	1050	640	655	679
4	4730	2460	1640	1320	1200	1210	1760	2150	1020	624	649	673
5	4750	2400	1600	1270	1240	1250	1760	2110	1000	604	608	663
6	4690	2360	1600	1240	1260	1320	1750	2060	1020	614	618	647
7	4640	2310	1600	1210	1310	1430	1730	2000	997	666	627	635
8	4560	2270	1600	1180	1370	1540	1710	1940	973	695	635	619
9	4460	2230	1600	1160	1340	1590	1690	1870	908	704	702	612
10	4370	2180	1600	1180	1370	1570	1660	1810	876	708	712	618
11	4270	2140	1600	1180	1430	1570	1640	1800	865	704	724	621
12	4220	2090	1500	1180	1480	1580	1640	1750	872	698	728	622
13	4120	2000	1500	1180	1540	1600	1620	1690	857	661	725	619
14	4030	1990	1500	1180	1610	1620	1650	1670	851	610	718	608
15	3920	1970	1600	1160	1570	1610	1710	1620	815	630	724	604
16	3830	1900	1600	1140	1400	1590	1750	1560	773	642	768	637
17	3740	1840	1600	1100	1350	1570	1790	1500	741	655	859	733
18	3640	1810	1600	1100	1430	1560	1820	1440	725	647	857	838
19	3550	1790	1680	1000	1490	1580	1840	1380	750	620	823	915
20	3470	1810	1680	980	1540	1610	1840	1320	768	619	883	974
21	3390	1790	1680	960	1620	1640	1840	1290	780	625	918	1010
22	3310	1750	1690	940	1810	1660	1930	1290	794	665	898	1080
23	3230	1770	1710	920	1610	1680	2070	1270	802	647	846	1140
24	3140	1760	1730	940	1240	1710	2200	1230	800	637	828	1170
25	3070	1750	1750	960	1110	1730	2290	1210	802	610	820	1170
26	3000	1760	1750	980	1080	1760	2360	1210	793	617	801	1160
27	2950	1750	1750	1000	1070	1780	2390	1240	785	613	762	1150
28	2890	1740	1790	1000	1070	1780	2360	1270	779	626	741	1130
29	2820	1730	1830	1100	---	1810	2340	1290	796	656	740	1100
30	2760	1720	1860	1100	---	1800	2290	1250	766	676	758	1060
31	2690	---	1920	1100	---	1780	---	1160	---	680	752	---
TOTAL	118400	60810	51630	35570	38140	48330	56750	50060	25958	20069	23241	24898
MEAN	3819	2027	1665	1147	1362	1559	1892	1615	865	647	750	830
MAX	4750	2640	1920	1800	1810	1810	2390	2260	1110	708	918	1170
MIN	2690	1720	1500	920	1070	1090	1620	1160	725	604	608	604
CFSM	2.85	1.51	1.24	.86	1.02	1.16	1.41	1.21	.65	.48	.56	.62
IN.	3.29	1.69	1.43	.99	1.06	1.34	1.58	1.39	.72	.56	.65	.69

CAL YR 1986 TOTAL 692565 MEAN 1897 MAX 4940 MIN 710 CFSM 1.42 IN. 19.2
WTR YR 1987 TOTAL 553856 MEAN 1517 MAX 4750 MIN 604 CFSM 1.13 IN. 15.4

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: None, except for ice periods listed in rating table below. Records good except those for ice-affected periods, which are fair.

AVERAGE DISCHARGE.--20 years (water years 1967-79, 1981-87), 460 ft³/s, 13.49 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, 1,310 ft³/s Oct. 15, gage height, 9.35 ft; minimum discharge, 184 ft³/s, Sept. 5, gage height, 7.43 ft.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Nov. 12-18, Dec. 3 to Mar. 21, and Mar. 31 to Apr. 3.)

7.4	174	9.0	1,000
7.6	241	9.5	1,460
8.0	390	10.0	2,000
8.5	640		

DISCHARGE, IN 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	884	485	429	330	320	340	370	388	506	262	241	221
2	841	479	379	330	320	350	380	367	499	282	251	211
3	797	475	370	330	310	370	380	331	476	401	254	202
4	737	475	360	330	310	380	384	318	446	383	254	193
5	657	466	330	330	300	400	390	309	414	327	244	187
6	581	462	360	330	320	400	419	303	370	305	233	200
7	541	459	420	330	320	430	439	294	313	289	229	199
8	568	473	420	340	320	470	448	287	305	286	225	196
9	548	478	390	340	310	440	450	281	299	281	270	195
10	521	451	360	320	330	360	440	274	288	288	281	202
11	503	422	320	330	330	400	460	277	299	316	258	201
12	874	420	350	350	320	390	504	274	319	337	242	206
13	1180	400	350	350	320	370	506	267	300	391	256	209
14	1210	390	360	340	310	350	531	268	287	350	361	201
15	1290	440	380	320	300	360	591	272	272	320	369	194
16	1300	410	370	310	310	360	577	268	264	304	349	205
17	1240	450	350	310	310	350	535	254	256	292	330	274
18	1160	430	360	320	310	340	502	243	246	288	300	291
19	1080	380	390	320	310	320	481	296	240	292	279	307
20	1000	376	360	310	310	330	464	344	236	314	265	312
21	927	404	370	320	320	330	497	327	246	428	254	291
22	857	408	370	310	330	340	520	324	293	397	247	266
23	770	378	380	300	330	358	526	313	279	342	243	259
24	653	397	370	280	320	372	512	298	253	322	236	250
25	578	434	350	270	320	388	482	288	245	310	225	229
26	543	393	350	290	320	403	470	310	251	288	221	225
27	529	436	340	300	330	400	457	341	244	268	219	245
28	521	400	360	300	330	387	438	405	239	255	211	246
29	516	408	330	310	---	401	425	417	263	261	205	240
30	499	396	330	320	---	379	405	471	277	254	224	237
31	488	---	330	310	---	370	---	470	---	238	232	---
TOTAL	24393	12875	11288	9880	8890	11638	13983	9879	9225	9671	8008	6894
MEAN	787	429	364	319	317	375	466	319	307	312	258	230
MAX	1300	485	429	350	330	470	591	471	506	428	369	312
MIN	488	376	320	270	300	320	370	243	236	238	205	187
CFSM	1.70	.93	.79	.69	.69	.81	1.01	.69	.66	.67	.56	.50
IN.	1.96	1.03	.91	.79	.71	.94	1.12	.79	.74	.78	.64	.55

CAL YR 1986 TOTAL 183875 MEAN 504 MAX 1930 MIN 272 CFSM 1.09 IN. 14.8
WTR YR 1987 TOTAL 136624 MEAN 374 MAX 1300 MIN 187 CFSM .81 IN. 11.0

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: Apr. 23 to May 6, and ice period listed in table below. Records good except those for estimated daily discharges, which are fair. Minor regulation by power dam upstream.

AVERAGE DISCHARGE.--78 years (1907-8, 1910-87), 765 ft³/s, 12.73 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, 2,550 ft³/s, Oct. 14, gage height 10.67 ft; minimum daily, 334 ft³/s Aug. 5.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Nov. 15 to Mar. 10.)

7.4	295	9.0	1,260
7.5	335	11.0	2,810
8.0	590		

DISCHARGE, IN 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	1490	863	620	520	560	620	693	700	645	554	408	368
2	1370	848	620	540	560	640	699	720	738	564	484	387
3	1560	834	600	560	580	660	651	660	701	597	435	393
4	1560	796	620	540	580	680	663	600	655	761	509	369
5	1230	817	560	540	580	720	675	660	627	709	334	354
6	1140	811	540	520	580	780	729	560	614	610	404	351
7	1030	809	660	520	600	840	792	502	562	548	388	355
8	1190	797	700	540	600	900	804	472	526	559	351	359
9	1210	838	600	520	560	960	778	490	538	608	393	394
10	1010	814	580	500	540	880	788	504	434	514	648	346
11	1000	633	480	540	560	836	715	493	547	579	601	344
12	1180	644	520	540	560	778	752	502	580	654	521	349
13	1750	562	490	560	560	784	800	505	591	668	479	348
14	2060	646	500	540	560	791	843	514	570	596	438	368
15	1940	740	540	540	540	778	948	434	539	574	635	364
16	1810	780	580	520	540	546	981	485	495	652	722	414
17	1770	800	600	500	520	717	935	498	424	479	710	517
18	1720	660	580	480	540	711	889	395	428	522	605	729
19	1590	700	560	500	560	705	842	552	534	478	562	746
20	1510	760	540	520	580	687	816	672	403	511	504	602
21	1430	680	540	500	600	687	829	677	450	665	462	637
22	1370	700	490	500	640	784	937	629	469	820	425	534
23	1200	740	490	500	660	772	980	527	571	757	388	453
24	1130	680	500	470	620	830	940	520	542	544	434	480
25	916	680	540	450	580	822	860	511	504	617	373	458
26	882	640	540	490	580	888	800	551	474	564	378	438
27	854	680	540	520	600	810	840	587	480	499	348	405
28	844	600	520	540	600	784	780	637	509	504	386	397
29	819	600	520	560	---	810	720	687	553	409	359	445
30	846	600	540	560	---	711	660	693	549	416	346	412
31	854	---	500	560	---	651	---	717	---	388	341	---
TOTAL	40265	21752	17210	16190	16140	23562	24139	17654	16252	17920	14371	13116
MEAN	1299	725	555	522	576	760	805	569	542	578	464	437
MAX	2060	863	700	560	660	960	981	720	738	820	722	746
MIN	819	562	480	450	520	546	651	395	403	388	334	344
CFSM	1.59	.89	.68	.64	.71	.93	.99	.70	.66	.71	.57	.54
IN.	1.84	.99	.78	.74	.74	1.07	1.10	.80	.74	.82	.66	.60

CAL YR 1986 TOTAL 344823 MEAN 945 MAX 3090 MIN 480 CFSM 1.16 IN. 15.7
WTR YR 1987 TOTAL 238571 MEAN 654 MAX 2060 MIN 334 CFSM .80 IN. 10.9

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: None, except for 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.--91 years, 1,768 ft³/s, 10.62 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, 6,350 ft³/s Oct. 7, gage height, 8.66 ft; minimum discharge, 622 ft³/s Sept. 15, gage height, 0.73 ft.

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

0.7	614	7.0	3,450
2.0	1,000	8.0	4,900
4.0	1,740	9.0	7,200
6.0	2,760		

DISCHARGE, IN 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	4370	3070	1700	1200	960	1300	2760	2210	1480	869	863	684
2	4620	2980	1700	1200	960	1400	2730	2010	1480	873	820	678
3	5090	2900	1700	1200	980	1400	2650	1820	1440	875	775	668
4	5590	2800	1600	1200	980	1500	2580	1670	1380	900	746	662
5	6040	2700	1600	1200	960	1500	2540	1570	1320	950	735	666
6	6270	2510	1500	1200	980	1700	2510	1460	1260	1020	734	662
7	6340	2370	1500	1100	980	1800	2500	1330	1170	1070	731	647
8	6330	2300	1400	1100	960	2000	2490	1220	1090	1050	725	647
9	6220	2250	1400	1000	940	2000	2480	1160	1030	1030	763	642
10	6070	2190	1300	1000	940	1900	2470	1110	982	1030	783	637
11	5850	2130	1300	1000	960	1800	2450	1110	958	953	843	637
12	5650	2010	1200	1000	980	1800	2420	1120	934	888	927	646
13	5420	1740	1200	1100	960	1800	2370	1150	893	876	970	638
14	5240	1570	1200	1100	940	1700	2320	1160	897	930	931	628
15	4990	1560	1300	1000	920	1700	2330	1120	898	1050	903	626
16	4790	1600	1300	1000	900	1700	2400	1090	884	1060	906	633
17	4580	1700	1300	940	900	1800	2480	1060	866	1030	928	671
18	4420	1700	1300	940	920	1800	2520	1010	851	971	993	753
19	4310	1600	1200	960	920	1800	2510	1010	816	929	1040	971
20	4260	1700	1200	980	940	1900	2500	1060	789	918	994	1140
21	4230	1600	1100	980	960	1900	2470	1190	839	980	922	1240
22	4170	1600	1200	960	1000	2000	2470	1390	943	1000	863	1250
23	4090	1700	1200	940	1100	2100	2590	1480	982	1010	811	1160
24	3990	1700	1200	920	1100	2100	2710	1490	1010	1040	780	1050
25	3890	1800	1200	900	1200	2200	2770	1420	1000	1050	768	951
26	3770	1800	1200	920	1200	2300	2770	1350	969	1020	761	881
27	3660	1800	1200	940	1300	2400	2730	1290	909	950	753	831
28	3530	1800	1200	940	1300	2500	2660	1270	862	910	736	808
29	3390	1800	1200	960	---	2600	2530	1290	866	876	730	796
30	3260	1700	1200	960	---	2700	2380	1360	873	853	729	778
31	3160	---	1200	960	---	2750	---	1430	---	849	711	---
TOTAL	147590	60680	41000	31800	28140	59850	76090	41410	30671	29810	25674	23681
MEAN	4761	2023	1323	1026	1005	1931	2536	1336	1022	962	828	789
MAX	6340	3070	1700	1200	1300	2750	2770	2210	1480	1070	1040	1250
MIN	3160	1560	1100	900	900	1300	2320	1010	789	849	711	626
CFSM	2.11	.89	.59	.45	.44	.85	1.12	.59	.45	.43	.37	.35
IN.	2.43	.99	.67	.52	.46	.99	1.25	.68	.50	.49	.42	.39

CAL YR 1986 TOTAL 913487 MEAN 2503 MAX 10200 MIN 893 CFSM 1.11 IN. 15.0
WTR YR 1987 TOTAL 596396 MEAN 1634 MAX 6340 MIN 626 CFSM .72 IN. 9.82

STREAMS TRIBUTARY TO LAKE MICHIGAN

77

440912089092000 HILLS LAKE NEAR WILD ROSE, WI

LOCATION.--Lat 44°09'12", long 89°09'20", in SW 1/4 NE 1/4 sec.2, T.19 N., R.11 E., Waushara County,
Hydrologic Unit 04030202, 4.6 mi southeast of Wild Rose.

DRAINAGE AREA.--0.78 mi².

LAKE-STAGE RECORDS

PERIOD OF RECORD.--June 1983 to September 1984; February to September 1987.

REMARKS.--Lake stages read on north side of lake by Tom Erickson.

EXTREMES FOR PERIOD OF RECORD.--Maximum stage observed, 5.95 ft Sept. 20, 1984; minimum observed, 4.62 ft Aug. 13, 1983.

EXTREMES FOR CURRENT YEAR.--Maximum gage-height observed, 5.88 ft, Apr. 8; minimum observed, 4.92 ft, Aug. 23.

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	---	---	---	---
2	---	---	---	---	---	---	---	---	---	---	---	---
3	---	---	---	---	---	---	---	---	---	---	---	---
4	---	---	---	---	---	---	---	---	---	---	---	---
5	---	---	---	---	---	---	---	---	---	---	---	---
6	---	---	---	---	---	---	---	---	---	5.32	5.08	---
7	---	---	---	---	---	---	---	---	---	---	---	---
8	---	---	---	---	---	---	5.88	---	---	---	---	---
9	---	---	---	---	---	---	---	---	---	---	---	---
10	---	---	---	---	---	---	---	---	---	---	---	---
11	---	---	---	---	---	---	---	---	5.48	5.26	---	---
12	---	---	---	---	---	---	5.74	---	---	---	---	---
13	---	---	---	---	---	---	---	---	---	---	---	---
14	---	---	---	---	---	---	---	---	---	---	---	---
15	---	---	---	---	---	---	---	---	---	5.21	4.98	---
16	---	---	---	---	---	---	---	---	---	---	---	---
17	---	---	---	---	---	---	---	---	5.42	---	---	---
18	---	---	---	---	---	---	---	---	---	---	---	---
19	---	---	---	---	---	---	5.84	---	---	---	---	---
20	---	---	---	---	---	---	---	---	---	---	---	---
21	---	---	---	---	---	---	---	---	---	---	---	---
22	---	---	---	---	---	---	---	---	---	5.15	---	---
23	---	---	---	---	---	---	---	---	5.42	---	4.92	---
24	---	---	---	---	---	---	---	---	---	---	---	---
25	---	---	---	---	---	---	---	---	---	---	---	---
26	---	---	---	---	5.81	---	---	---	---	---	---	---
27	---	---	---	---	---	---	---	---	---	---	---	---
28	---	---	---	---	---	---	---	---	5.36	---	---	---
29	---	---	---	---	---	---	5.78	---	---	---	---	---
30	---	---	---	---	---	---	---	---	---	---	---	---
31	---	---	---	---	---	---	---	---	---	5.10	---	---

WATER-QUALITY RECORDS

PERIOD OF RECORD.--June 1983 to August 1984, February to August 1987.

REMARKS.--Lake sampled at east end at a lake depth of 22 feet. Lake ice-covered February 26. Water-quality analyses by U.S. Geological Survey National Water Quality Laboratory, except those indicated by an asterisk (*) which are by Wisconsin State Laboratory of Hygiene.

WATER QUALITY DATA, FEBRUARY 26 TO AUGUST 17, 1987
(Milligrams per liter unless otherwise indicated)

	Feb. 26		Apr. 8		June 11		July 15		Aug. 17	
Depth of sample (ft)	3.0	20.0	1.5	20.0	3.0	20.0	3.0	19.5	3.0	19.5
Specific conductance ($\mu\text{S}/\text{cm}$)	224	226	218	190	190	235	198	200	200	232
pH (units)	8.1	8.0	8.1	7.9	8.7	7.5	8.4	7.3	8.4	7.4
Water temperature ($^{\circ}\text{C}$)	3.7	4.1	7.9	7.1	22.2	21.0	25.5	25.0	24.9	24.4
Color (Pt-Co. scale)	---	---	1	2	---	---	---	---	---	---
Turbidity (NTU)	---	---	0.6	23	---	---	---	---	---	---
Secchi-disc (meters)	---	---	---	5.6	---	3.8	---	3.6	---	2.0
Dissolved oxygen	6.5	6.0	11.0	11.0	9.0	2.6	8.2	5.1	7.8	1.1
Hardness, as CaCO_3	---	---	100	100	---	---	---	---	---	---
Calcium, dissolved (Ca)	---	---	22	21	---	---	---	---	---	---
Magnesium, dissolved (Mg)	---	---	12	12	---	---	---	---	---	---
Sodium, dissolved (Na)	---	---	1.7	1.6	---	---	---	---	---	---
Potassium, dissolved (K)	---	---	0.8	0.6	---	---	---	---	---	---
Alkalinity as CaCO_3	---	---	98	99	---	---	---	---	---	---
Sulfate, dissolved (SO_4)	---	---	8.0	8.2	---	---	---	---	---	---
Chloride, dissolved (Cl)	---	---	2.2	2.3	---	---	---	---	---	---
Silica, dissolved (SiO_2)	---	---	0.5	0.5	---	---	---	---	---	---
Solids, dissolved, at 180°C	---	---	108	106	---	---	---	---	---	---
Nitrogen, nitrate, total (as N)	---	---	0.09	0.09	---	---	---	---	---	---
Nitrogen, nitrite, total (as N)	---	---	<0.010	<0.010	---	---	---	---	---	---
Nitrogen, ammonia, total (as N)	---	---	0.140	0.170	---	---	---	---	---	---
Nitrogen, organic, total (as N)	---	---	0.56	11.83	---	---	---	---	---	---
Nitrogen, total (as N)	---	---	0.8	12.1	---	---	---	---	---	---
Total phosphorus (as P)	---	---	0.024	<0.005	0.011*	0.037	0.009*	0.008*	0.012*	0.013*
Phosphorus, ortho, diss. (as P)	---	---	<0.001	0.001	---	<0.010	---	<0.004*	---	<0.004*
Iron, dissolved (Fe) $\mu\text{g}/\text{L}$	---	---	3	3	---	---	---	---	---	---
Manganese, dissolved (Fe) $\mu\text{g}/\text{L}$	---	---	<1	1	---	---	---	---	---	---
Chlorophyll a, phyto. ($\mu\text{g}/\text{L}$)	---	---	2*	---	3*	---	3*	---	4*	---

2-26-87

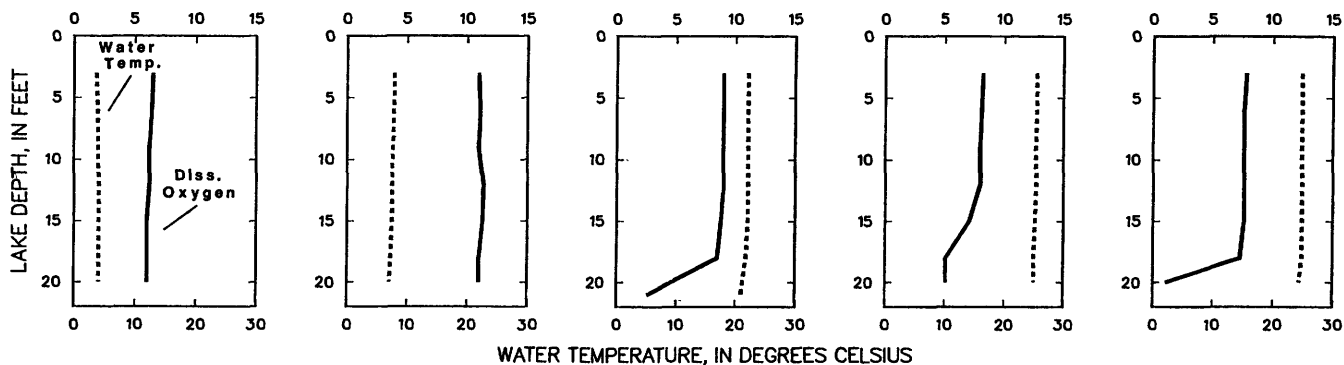
4-8-87

6-11-87

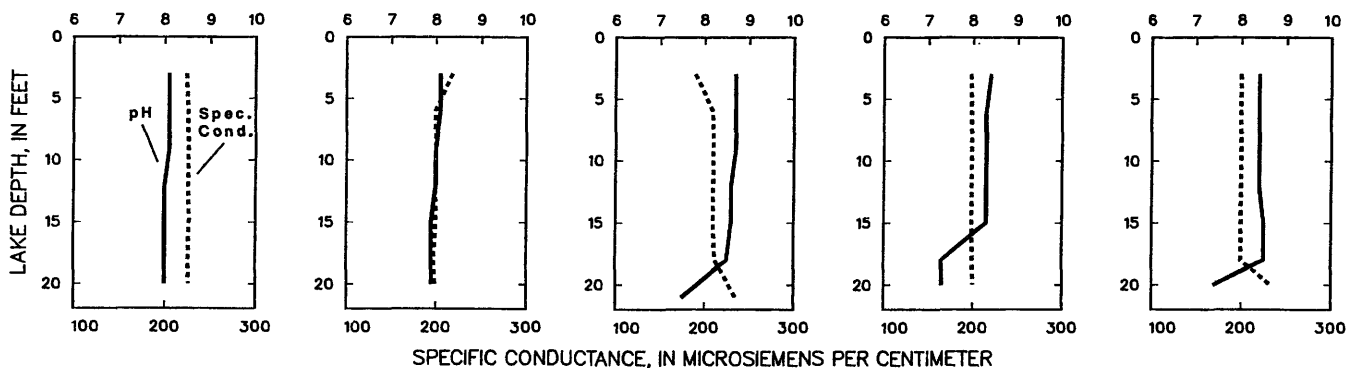
7-15-87

8-17-87

DISSOLVED OXYGEN, IN MILLIGRAMS PER LITER



PH, IN STANDARD UNITS



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.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height observed, 5.82 ft May 1, 1984; minimum observed, 4.88 ft Apr. 10, 1988.

EXTREMES FOR CURRENT YEAR.--Maximum gage height observed, 5.42 ft, May 14, 18, 19; minimum observed, 4.88 ft Apr. 10.

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	5.03	4.97	---	---	---	---
2	5.28	---	---	---	---	---	5.08	---	5.26	---	---	---
3	5.31	---	---	---	---	---	4.98	---	5.28	---	---	---
4	5.34	---	---	---	---	---	4.97	4.95	---	---	5.34	---
5	---	---	---	---	---	---	4.96	4.94	---	---	5.34	---
6	5.37	---	---	---	---	---	4.94	4.93	5.38	---	5.34	---
7	5.30	---	---	---	---	---	4.93	4.92	---	---	5.34	---
8	5.20	---	---	---	---	---	4.91	4.90	5.26	---	5.35	---
9	5.15	---	---	---	---	---	4.90	---	5.22	---	---	5.38
10	5.13	---	---	---	---	---	4.88	---	---	---	5.31	---
11	5.10	---	---	---	---	---	4.93	5.28	5.16	---	---	5.34
12	5.04	---	---	---	---	---	5.08	5.38	---	5.30	5.24	---
13	5.03	---	---	---	---	---	---	5.38	---	5.28	---	---
14	5.01	---	---	---	---	---	---	5.42	---	5.24	---	---
15	5.01	---	---	---	---	---	---	5.28	5.37	5.26	---	---
16	---	---	---	---	---	---	---	---	5.38	5.28	5.30	5.30
17	---	---	---	---	---	---	---	---	5.38	5.30	5.30	---
18	4.98	---	---	---	---	4.98	---	5.42	5.40	---	---	---
19	5.00	---	---	---	---	5.02	---	5.42	5.38	5.38	---	---
20	5.04	---	---	---	---	5.02	---	5.40	5.40	---	---	---
21	5.06	---	---	---	---	5.03	---	5.34	5.40	---	---	5.10
22	5.10	---	---	---	---	5.05	---	5.28	5.40	5.41	---	---
23	5.10	---	---	---	---	5.05	---	5.20	---	5.40	---	---
24	5.10	---	---	---	---	5.08	---	---	---	---	---	---
25	5.09	---	---	---	---	5.05	---	5.36	---	---	5.34	---
26	---	---	---	---	4.92	5.06	---	5.36	---	---	---	---
27	---	---	---	---	---	---	---	5.40	---	5.30	5.38	---
28	---	---	---	---	---	---	---	5.30	---	---	---	5.18
29	---	---	---	---	---	---	---	5.20	---	5.30	---	---
30	---	---	---	---	---	5.05	---	---	5.26	---	---	---
31	---	---	---	---	---	5.04	---	---	---	---	---	---

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 February 26. Water-quality analyses by U.S. Geological Survey National Water Quality Laboratory, except those indicated by an asterisk (*) which are by Wisconsin State Laboratory of Hygiene.

WATER QUALITY DATA, FEBRUARY 26 TO AUGUST 17, 1987
(Milligrams per liter unless otherwise indicated)

	Feb. 26		Apr. 8		June 11		July 15		Aug. 17	
Depth of sample (ft)	3.0	41.0	3.0	38.5	3.0	39.0	3.0	39.0	3.0	39.0
Specific conductance ($\mu\text{S}/\text{cm}$)	390	420	354	352	298	378	318	381	323	370
pH (units)	8.5	8.0	8.3	7.5	8.8	7.2	8.4	7.3	8.0	7.0
Water temperature ($^{\circ}\text{C}$)	2.7	3.9	9.1	4.3	21.8	4.3	24.2	4.7	23.6	5.8
Color (Pt-Co. scale)	--	--	15	8	--	--	--	--	--	--
Turbidity (NTU)	--	--	1.0	.6	--	--	--	--	--	--
Secchi-disc (meters)	--	--	--	2.4	3.0	--	4.4	--	4.4	--
Dissolved oxygen	7.8	.4	12.4	7.5	10.5	.5	8.7	.4	7.8	0
Hardness, as CaCO_3	--	--	190	190	--	--	--	--	--	--
Calcium, dissolved (Ca)	--	--	40	41	--	--	--	--	--	--
Magnesium, dissolved (Mg)	--	--	21	22	--	--	--	--	--	--
Sodium, dissolved (Na)	--	--	2.0	2.0	--	--	--	--	--	--
Potassium, dissolved (K)	--	--	1.1	1.0	--	--	--	--	--	--
Alkalinity as CaCO_3	--	--	177	183	--	--	--	--	--	--
Sulfate, dissolved (SO_4)	--	--	13	13	--	--	--	--	--	--
Chloride, dissolved (Cl)	--	--	3.2	3.0	--	--	--	--	--	--
Silica, dissolved (SiO_2)	--	--	9.2	11.0	--	--	--	--	--	--
Solids, dissolved, at 180°C	--	--	192	203	--	--	--	--	--	--
Nitrogen, nitrate, total (as N)	--	--	.59	.69	--	--	--	--	--	--
Nitrogen, nitrite, total (as N)	--	--	.010	<.010	--	--	--	--	--	--
Nitrogen, ammonia, total (as N)	--	--	.060	.080	--	--	--	--	--	--
Nitrogen, organic, total (as N)	--	--	.54	.62	--	--	--	--	--	--
Nitrogen, total (as N)	--	--	1.2	1.4	--	--	--	--	--	--
Total phosphorus (as P)	--	--	.024	.017	.054*	.115	.013*	.032*	.013*	.033*
Phosphorus, ortho, diss. (as P)	--	--	.002	<.001	--	.050	--	.006*	--	.011*
Iron, dissolved (Fe) $\mu\text{g}/\text{L}$	--	--	11	10	--	--	--	--	--	--
Manganese, dissolved (Fe) $\mu\text{g}/\text{L}$	--	--	7	5	--	--	--	--	--	--
Chlorophyll a, phyto. ($\mu\text{g}/\text{L}$)	--	--	7*	--	4*	--	17*	--	4*	--

2-26-87

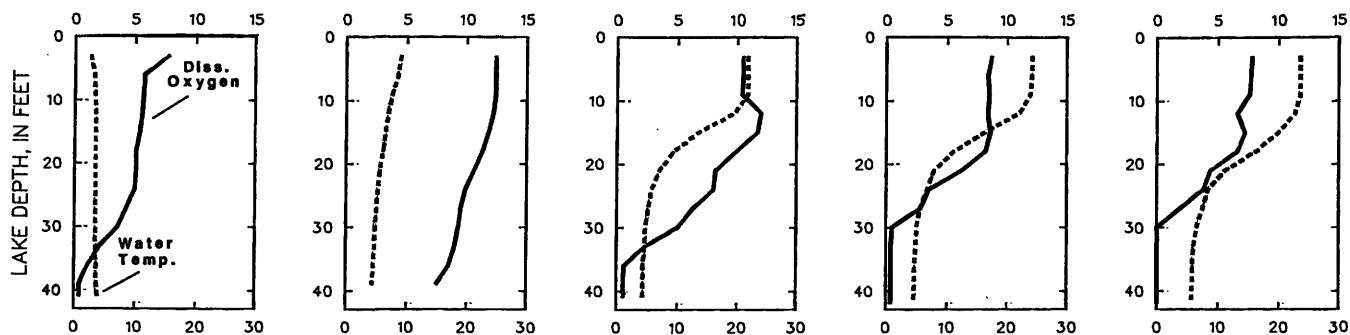
4-8-87

6-11-87

7-15-87

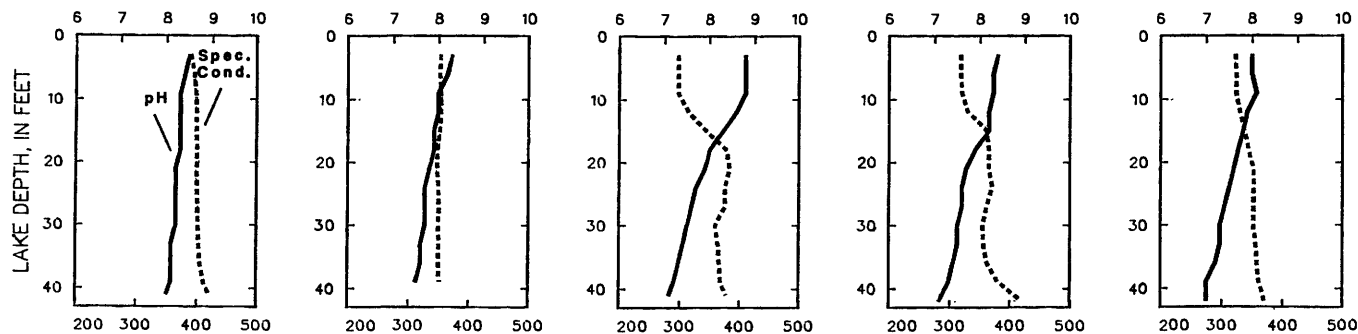
8-17-87

DISSOLVED OXYGEN, IN MILLIGRAMS PER LITER



WATER TEMPERATURE, IN DEGREES CELSIUS

PH, IN STANDARD UNITS



SPECIFIC CONDUCTANCE, IN MICROSIEMENS PER CENTIMETER

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.--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, 3.48 ft Aug. 16, local condition due to seiche; minimum, 0.93 ft Feb. 27, 28.

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.20	2.50	2.49	2.51	1.73	.99	1.80	2.91	2.93	2.69	2.71	2.65
2	3.17	2.50	2.48	2.51	1.69	1.02	1.95	2.93	2.90	2.65	2.71	2.63
3	3.17	2.46	2.38	2.52	1.64	1.03	2.00	2.91	2.82	2.69	2.71	2.61
4	3.20	2.46	2.50	2.51	1.60	1.02	2.02	2.85	2.82	2.69	2.72	2.59
5	3.14	2.41	2.52	2.51	1.56	1.01	2.08	2.84	2.80	2.66	2.67	2.59
6	3.17	2.39	2.51	2.49	1.52	1.02	2.10	2.85	2.77	2.66	2.61	2.59
7	3.13	2.40	2.52	2.47	1.49	1.04	2.14	2.84	2.78	2.68	2.62	2.61
8	3.16	2.22	2.53	2.44	1.46	1.06	2.18	2.84	2.81	2.69	2.67	2.59
9	3.15	2.23	2.54	2.40	1.42	1.09	2.21	2.80	2.79	2.67	2.67	2.60
10	3.11	2.37	2.56	2.37	1.37	1.09	2.23	2.83	2.75	2.67	2.69	2.58
11	3.06	2.36	2.54	2.34	1.34	1.13	2.29	2.85	2.70	2.68	2.67	2.58
12	3.02	2.26	2.53	2.30	1.31	1.17	2.33	2.88	2.73	2.68	2.64	2.58
13	3.03	2.30	2.52	2.25	1.27	1.21	2.35	2.84	2.75	2.70	2.65	2.58
14	2.97	2.26	2.51	2.20	1.24	1.25	2.46	2.85	2.75	2.68	2.66	2.58
15	3.01	2.32	2.51	2.16	1.21	1.28	2.48	2.89	2.74	2.67	2.68	2.57
16	3.01	2.33	2.50	2.14	1.18	1.31	2.54	2.84	2.72	2.64	2.72	2.58
17	2.98	2.34	2.50	2.12	1.14	1.34	2.58	2.88	2.71	2.62	2.76	2.64
18	2.93	2.41	2.50	2.10	1.11	1.35	2.62	2.91	2.71	2.64	2.76	2.65
19	2.88	2.40	2.50	2.07	1.09	1.37	2.65	2.87	2.76	2.61	2.76	2.65
20	2.85	2.44	2.50	2.04	1.06	1.42	2.65	2.90	2.77	2.68	2.76	2.67
21	2.82	2.44	2.50	2.01	1.04	1.45	2.78	2.90	2.78	2.70	2.74	2.70
22	2.78	2.44	2.50	1.99	1.03	1.48	2.85	2.89	2.76	2.71	2.73	2.70
23	2.77	2.44	2.50	1.98	1.01	1.50	2.91	2.93	2.76	2.68	2.72	2.68
24	2.75	2.46	2.50	1.97	.99	1.52	2.98	2.92	2.75	2.68	2.70	2.71
25	2.73	2.47	2.51	1.95	.99	1.57	2.98	2.93	2.74	2.70	2.68	2.68
26	2.70	2.47	2.51	1.94	.98	1.61	2.96	2.92	2.71	2.75	2.70	2.67
27	2.64	2.46	2.51	1.91	.97	1.66	2.95	2.96	2.72	2.72	2.67	2.65
28	2.63	2.48	2.51	1.87	.97	1.72	2.99	3.00	2.68	2.71	2.67	2.63
29	2.61	2.49	2.51	1.85	---	1.77	2.97	3.00	2.70	2.71	2.67	2.62
30	2.63	2.52	2.51	1.82	---	1.77	2.95	2.98	2.71	2.73	2.62	2.63
31	2.51	---	2.51	1.78	---	1.85	---	2.96	---	2.72	2.63	---
MEAN	2.93	2.40	2.51	2.18	1.26	1.33	2.50	2.89	2.76	2.68	2.69	2.63
MAX	3.20	2.52	2.56	2.52	1.73	1.85	2.99	3.00	2.93	2.75	2.76	2.71
MIN	2.51	2.22	2.38	1.78	.97	.99	1.80	2.80	2.68	2.61	2.61	2.57

CAL YR 1986 MEAN 2.36 MAX 3.23 MIN .36
WTR YR 1987 MEAN 2.40 MAX 3.20 MIN .97

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, 3.34 ft Oct. 5, local condition due to seiche; minimum, 0.92 ft Feb. 27.

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.19	2.53	2.42	2.50	1.71	.99	1.95	2.92	2.94	2.65	2.69	2.63
2	3.17	2.55	2.47	2.50	1.67	1.02	1.96	2.86	2.91	2.66	2.72	2.59
3	3.13	2.50	2.62	2.50	1.64	1.02	2.00	2.78	2.91	2.68	2.70	2.58
4	3.17	2.43	2.57	2.50	1.59	1.00	2.02	2.80	2.85	2.64	2.66	2.57
5	3.25	2.42	2.52	2.49	1.55	1.00	2.00	2.84	2.80	2.62	2.63	2.57
6	3.23	2.42	2.49	2.48	1.51	1.01	2.07	2.84	2.79	2.64	2.64	2.58
7	3.25	2.37	2.50	2.47	1.47	1.02	2.13	2.85	2.82	2.67	2.62	2.57
8	3.13	2.55	2.51	2.44	1.45	1.03	2.16	2.85	2.80	2.68	2.58	2.57
9	3.09	2.60	2.55	2.39	1.40	1.02	2.20	2.89	2.76	2.71	2.61	2.59
10	3.09	2.42	2.55	2.36	1.36	1.07	2.25	2.81	2.72	2.70	2.64	2.58
11	3.07	2.42	2.52	2.33	1.33	1.12	2.29	2.90	2.74	2.69	2.64	2.56
12	3.10	2.44	2.52	2.28	1.30	1.16	2.31	2.84	2.76	2.71	2.63	2.61
13	3.09	2.42	2.51	2.23	1.26	1.19	2.32	2.84	2.74	2.70	2.63	2.60
14	3.15	2.45	2.50	2.19	1.23	1.23	2.33	2.88	2.73	2.65	2.63	2.56
15	3.04	2.35	2.49	2.15	1.19	1.25	2.46	2.88	2.70	2.59	2.67	2.53
16	3.01	2.33	2.49	2.13	1.16	1.29	2.53	2.89	2.71	2.63	2.73	2.54
17	2.94	2.35	2.49	2.10	1.13	1.32	2.57	2.86	2.69	2.65	2.82	2.56
18	2.92	2.31	2.50	2.09	1.10	1.32	2.61	2.77	2.70	2.64	2.81	2.60
19	2.89	2.39	2.48	2.06	1.08	1.35	2.63	2.84	2.72	2.65	2.79	2.68
20	2.86	2.43	2.49	2.03	1.05	1.41	2.66	2.87	2.70	2.63	2.75	2.67
21	2.82	2.46	2.49	1.99	1.02	1.43	2.57	2.90	2.69	2.71	2.74	2.64
22	2.79	2.46	2.48	1.99	1.02	1.46	2.73	2.95	2.72	2.71	2.73	2.68
23	2.75	2.48	2.49	1.98	1.01	1.47	2.89	2.92	2.74	2.73	2.73	2.74
24	2.70	2.51	2.49	1.96	.99	1.49	2.92	2.91	2.74	2.71	2.71	2.65
25	2.64	2.48	2.50	1.94	.98	1.56	2.94	2.87	2.77	2.67	2.68	2.66
26	2.63	2.46	2.49	1.92	.97	1.62	2.96	2.91	2.80	2.71	2.61	2.66
27	2.66	2.51	2.49	1.90	.96	1.66	3.00	2.96	2.76	2.70	2.60	2.65
28	2.64	2.49	2.49	1.86	.95	1.67	3.01	3.00	2.72	2.71	2.63	2.65
29	2.61	2.46	2.50	1.83	---	1.63	2.97	3.00	2.72	2.71	2.67	2.65
30	2.57	2.41	2.50	1.82	---	1.82	2.92	2.98	2.68	2.71	2.71	2.62
31	2.56	---	2.49	1.76	---	1.87	---	2.96	---	2.68	2.68	---
MEAN	2.94	2.45	2.50	2.17	1.25	1.31	2.48	2.88	2.76	2.68	2.68	2.61
MAX	3.25	2.60	2.62	2.50	1.71	1.87	3.01	3.00	2.94	2.73	2.82	2.74
MIN	2.56	2.31	2.42	1.76	.95	.99	1.95	2.77	2.68	2.59	2.58	2.53

CAL YR 1986	MEAN 2.36	MAX 3.25	MIN .34
WTR YR 1987	MEAN 2.40	MAX 3.25	MIN .95

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 CURRENT PERIOD.--JULY TO SEPTEMBER 1986: Maximum daily discharge, 16,200 ft³/s Sept. 25; minimum daily, 2,400 ft³/s Sept. 1.

WATER YEAR 1987: Maximum daily discharge, 16,300 ft³/s Oct. 7; minimum daily, 1,300 ft³/s July 24.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	---	4100	8900	2400
2	---	---	---	---	---	---	---	---	---	3420	8950	2420
3	---	---	---	---	---	---	---	---	---	3940	8100	2720
4	---	---	---	---	---	---	---	---	---	3730	7650	2740
5	---	---	---	---	---	---	---	---	---	3570	6050	2690
6	---	---	---	---	---	---	---	---	---	3320	4950	2600
7	---	---	---	---	---	---	---	---	---	3820	4100	2580
8	---	---	---	---	---	---	---	---	---	3430	3180	2600
9	---	---	---	---	---	---	---	---	---	3500	3170	2610
10	---	---	---	---	---	---	---	---	---	3370	3170	3010
11	---	---	---	---	---	---	---	---	---	3680	3140	4050
12	---	---	---	---	---	---	---	---	---	3680	3170	8650
13	---	---	---	---	---	---	---	---	---	3810	3120	12300
14	---	---	---	---	---	---	---	---	---	3800	3140	10100
15	---	---	---	---	---	---	---	---	---	3680	3040	9250
16	---	---	---	---	---	---	---	---	---	3640	3040	10000
17	---	---	---	---	---	---	---	---	---	3710	3010	10600
18	---	---	---	---	---	---	---	---	---	3820	2980	10000
19	---	---	---	---	---	---	---	---	---	5670	3010	9950
20	---	---	---	---	---	---	---	---	---	5080	3020	10000
21	---	---	---	---	---	---	---	---	---	4920	2900	10900
22	---	---	---	---	---	---	---	---	---	4260	3040	12500
23	---	---	---	---	---	---	---	---	---	5210	2930	13200
24	---	---	---	---	---	---	---	---	---	4100	2960	15500
25	---	---	---	---	---	---	---	---	---	7350	3020	16200
26	---	---	---	---	---	---	---	---	---	6100	2920	16000
27	---	---	---	---	---	---	---	---	---	5500	2770	15600
28	---	---	---	---	---	---	---	---	---	5700	2770	15200
29	---	---	---	---	---	---	---	---	---	8100	2770	15700
30	---	---	---	---	---	---	---	---	---	8800	2610	14900
31	---	---	---	---	---	---	---	---	---	8000	2530	---
TOTAL	---	---	---	---	---	---	---	---	---	144810	120110	266970
MEAN	---	---	---	---	---	---	---	---	---	4671	3875	8899
MAX	---	---	---	---	---	---	---	---	---	8800	8950	16200
MIN	---	---	---	---	---	---	---	---	---	3320	2530	2400
CFSM	---	---	---	---	---	---	---	---	---	.79	.65	1.50

STREAMS TRIBUTARY TO LAKE MICHIGAN

04084445 FOX RIVER AT APPLETON, WI--CONTINUED

DISCHARGE, IN 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	14800	10100	4770	3890	6560	3940	2800	7560	6010	1590	1640	1600
2	14700	10000	4690	3910	6440	4010	2700	6860	5870	1590	1560	1590
3	14700	9840	5010	3910	6200	3990	2800	6590	5180	1780	1690	1610
4	15300	8960	4320	3920	6170	3970	2860	6160	3840	1570	1560	1640
5	15700	9030	3400	4490	6140	3930	2840	5370	3630	1460	1390	1430
6	15800	8540	3550	5510	6080	4050	2890	4960	3330	1530	1450	1450
7	16300	7170	4040	6120	6010	4070	2960	4760	2850	1660	1670	1410
8	15300	6810	4000	6220	5890	4090	3020	4260	2710	1740	1690	1340
9	14300	6310	3640	6910	5870	3950	3080	4320	2610	1660	1630	1290
10	14300	5860	3750	6800	5820	3540	3110	4210	2640	1680	1620	1410
11	14500	5160	3780	6840	5850	3120	3120	4220	2640	1630	1650	1500
12	14500	4670	3820	6900	5830	3210	3170	2940	2210	1650	1540	1530
13	14200	4710	3810	7590	5750	3310	3210	2900	1930	1620	1630	1540
14	14200	4740	3810	7140	5640	3400	3610	2980	2020	1580	1590	1520
15	13900	3600	3810	6810	5630	3310	3420	2970	1920	1620	1750	1520
16	14000	3420	3820	5340	5560	3150	3490	3120	1840	1650	1460	1500
17	13800	3250	3790	5200	5340	3330	3580	3050	1770	1660	1690	1440
18	13700	3390	3840	5330	5340	3400	3620	2630	1950	1720	1630	1470
19	13600	3840	3830	5260	5200	3450	3660	2840	1880	1740	2360	1580
20	13600	3840	3830	5230	5140	3710	3750	2920	1820	1600	1980	1660
21	13400	4410	3830	5160	5100	3590	3520	3060	1790	1830	1940	1570
22	13200	5180	3840	4820	5100	3540	4100	3100	1660	1370	1850	2160
23	12500	5040	3840	4020	4880	3460	4690	3040	1670	1400	1800	3020
24	11900	5180	3840	4430	4460	3550	5280	3020	1960	1300	1590	2930
25	11700	5170	3850	4840	4020	3700	6270	2780	1860	1640	1640	2910
26	11500	5030	3850	5250	3960	3700	6450	2900	2120	1600	1670	2970
27	11400	5120	3860	5650	3930	3750	6920	3180	1990	1490	1720	2900
28	10800	5110	3850	6060	3900	3760	7780	3780	1630	1580	1630	2910
29	10200	5050	3840	5990	---	3620	8080	5150	1590	1600	1550	2860
30	10300	4900	3870	6670	---	3220	7830	6210	1590	1790	1590	2730
31	10700	---	3860	6600	---	2720	---	6120	---	1750	1670	---
TOTAL	418800	173430	121640	172810	151810	111540	124610	127960	76510	50080	51830	56990
MEAN	13510	5781	3924	5575	5422	3598	4154	4128	2550	1615	1672	1900
MAX	16300	10100	5010	7590	6560	4090	8080	7560	6010	1830	2360	3020
MIN	10200	3250	3400	3890	3900	2720	2700	2630	1590	1300	1390	1290
CFSM	2.27	.97	.66	.94	.91	.60	.70	.69	.43	.27	.28	.32

CAL YR 1986	TOTAL 1262680	MEAN 6681	MAX 16300	MIN 2400	CFSM 1.12
WTR YR 1987	TOTAL 1638010	MEAN 4488	MAX 16300	MIN 1290	CFSM .75

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 September 1987.

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 July 23 and 26, 1987, due to a data recorder malfunction.

EXTREMES FOR CURRENT PERIOD OF DAILY RECORD.--

SUSPENDED-SEDIMENT CONCENTRATION--JULY THROUGH SEPTEMBER 1986: Maximum daily average concentration, 58 mg/L, Sept. 11; minimum daily average concentration, 14 mg/L on Sept. 8.

WATER YEAR 1987: Maximum daily average concentration, 104 mg/L, Aug. 12; minimum daily average concentration, 1 mg/L, Feb. 5, 13, 15, 17.

SUSPENDED-SEDIMENT DISCHARGE--JULY THROUGH SEPTEMBER 1986: Maximum discharge, 1,356 tons Sept. 24; minimum discharge, 100 tons Sept. 8.

WATER YEAR 1987: Maximum discharge, 1,681 tons Nov. 8; minimum discharge, 12 tons Feb. 17.

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

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 , 1986			OCT , 1986			NOV , 1986		
01...	0800	21	24...	2000	9	16...	0800	19
01...	2000	20	25...	1400	12	16...	1400	26
02...	0800	16	25...	2000	12	16...	2000	21
02...	2000	19	26...	1400	11	17...	0800	21
03...	0800	18	26...	2000	11	17...	1400	22
03...	2000	17	27...	1400	9	17...	2000	19
04...	0800	16	27...	2000	9	18...	0800	18
04...	2000	20	28...	1400	11	18...	1400	22
05...	0800	20	28...	2000	12	18...	2000	17
05...	2000	19	29...	1400	12	19...	0800	18
06...	0800	17	29...	2000	10	19...	1400	18
06...	2000	17	30...	1400	11	19...	2000	20
07...	0800	15	30...	2000	11	20...	0800	17
07...	2000	26	31...	1400	29	20...	2000	14
08...	0800	23	31...	2000	24	21...	0800	15
08...	2000	22	NOV			21...	2000	13
09...	0800	19	01...	0800	15	22...	0800	13
09...	1400	22	01...	1400	17	22...	2000	11
09...	2000	19	01...	2000	16	23...	0800	14
10...	0800	16	02...	0800	14	23...	2000	13
10...	1400	23	02...	1400	18	24...	0800	14
10...	2000	18	02...	0800	16	24...	2000	14
11...	0800	15	03...	1400	17	25...	0800	12
11...	1400	17	03...	2000	17	25...	2000	12
11...	2000	14	04...	0800	16	26...	0800	11
12...	0800	14	04...	1400	17	26...	2000	9
12...	1400	18	04...	2000	16	27...	0800	10
12...	2000	18	05...	0800	16	27...	2000	10
13...	0800	15	05...	1400	17	28...	0800	10
13...	1400	17	05...	2000	19	28...	1400	11
13...	2000	14	06...	0800	16	28...	2000	11
14...	0800	13	06...	1400	17	29...	0800	9
14...	1400	17	06...	2000	20	29...	1400	10
14...	2000	12	07...	0800	16	29...	2000	10
15...	0800	9	07...	1400	20	30...	0800	11
15...	1400	14	07...	2000	18	30...	1400	10
15...	2000	10	08...	0800	52	30...	2000	9
16...	0800	10	08...	1400	133	DEC		
16...	1400	11	08...	2000	90	01...	0800	10
16...	2000	10	09...	0800	52	01...	1400	11
17...	0800	8	09...	1400	44	02...	0800	10
17...	1400	10	09...	2000	33	02...	1400	8
17...	2000	9	10...	0800	25	02...	2000	8
18...	0800	8	10...	1400	23	03...	1400	15
18...	1400	11	10...	2000	23	03...	2000	14
18...	2000	10	11...	0800	23	04...	1400	11
19...	0800	13	11...	1400	25	04...	2000	10
19...	1400	17	11...	2000	24	05...	0800	10
19...	2000	11	12...	0800	32	05...	1400	10
20...	0800	10	12...	1400	28	06...	1400	10
20...	1400	13	12...	2000	20	06...	2000	9
20...	2000	11	13...	0800	21	07...	0800	8
21...	0800	10	13...	1400	21	07...	1400	10
21...	1400	14	13...	2000	18	08...	0800	9
21...	2000	13	14...	0800	18	08...	1400	8
22...	1400	13	14...	1400	21	08...	2000	8
22...	2000	13	14...	2000	22	09...	1400	10
23...	1400	13	15...	0800	20	09...	2000	6
23...	2000	10	15...	1400	24	10...	1400	8
				2000	22	11...	1400	6

04084445 FOX RIVER AT APPLETON, WI--CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

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 , 1986			FEB , 1987			MAR , 1987		
11...	2000	10	01...	0800	5	12...	1400	5
12...	0800	5	01...	1400	2	13...	1200	4
12...	1400	6	02...	0800	9	14...	1200	11
13...	1400	9	02...	1400	4	14...	1400	4
14...	0800	10	03...	0800	6	15...	1200	10
14...	1400	6	03...	1400	5	15...	1400	4
14...	2000	7	04...	0800	4	16...	1200	5
15...	0800	8	04...	1400	2	16...	1400	4
15...	1400	7	05...	1400	1	17...	1200	4
16...	0800	6	06...	0800	4	17...	1400	2
16...	1400	7	06...	1400	2	18...	1200	9
16...	2000	7	07...	0800	3	18...	1400	8
17...	1400	2	07...	1400	2	19...	1200	11
18...	1400	3	08...	0800	4	19...	1400	3
18...	2000	7	08...	1400	4	20...	1400	6
19...	0800	6	09...	0800	4	21...	1200	8
19...	1400	3	09...	1400	3	21...	1400	14
20...	1400	3	10...	0800	1	22...	1200	13
20...	2000	13	10...	1400	3	22...	1400	15
21...	0800	7	11...	1400	2	23...	1200	20
21...	1400	2	12...	1400	3	23...	1400	17
22...	0800	10	13...	1400	1	24...	1200	14
22...	1400	4	14...	1400	6	24...	1400	14
22...	2000	6	15...	1400	1	25...	1200	23
23...	1400	5	16...	1400	2	25...	1400	14
23...	2000	6	16...	2000	5	26...	1200	17
24...	0800	4	17...	0800	2	26...	1400	21
24...	1400	5	17...	1400	0	27...	1200	19
25...	1400	3	17...	2000	0	27...	1400	13
25...	2000	4	18...	1400	2	28...	1200	10
26...	0800	5	18...	2000	5	28...	1400	8
26...	1400	1	19...	0800	4	29...	1200	8
27...	0800	5	19...	1400	4	29...	1400	9
27...	1400	4	19...	2000	0	30...	1200	7
27...	2000	4	20...	1400	6	30...	1400	8
28...	1400	3	20...	2000	0	31...	1200	7
28...	2000	5	21...	0800	1	31...	1400	4
29...	0800	4	21...	1400	4	APR		
29...	1400	3	21...	2000	0	01...	1200	9
30...	0800	5	22...	0800	3	01...	1400	16
30...	1400	4	22...	1400	3	02...	1200	12
30...	2000	4	22...	2000	2	02...	1400	12
31...	1400	3	23...	0800	2	03...	1200	16
JAN , 1987			23...	1400	13	03...	1400	9
01...	1400	3	23...	2000	0	04...	1200	11
02...	1400	3	24...	0800	2	04...	1400	9
03...	1400	5	24...	1400	2	05...	1200	15
04...	1400	5	24...	2000	0	05...	1400	20
05...	1400	3	25...	0800	12	06...	1200	24
06...	1400	6	25...	1400	3	06...	1400	17
07...	1400	4	25...	2000	3	07...	1200	10
07...	2000	6	26...	0800	5	07...	1400	23
08...	1400	4	26...	1400	4	08...	1200	32
08...	2000	4	26...	2000	2	08...	1400	41
09...	1400	5	27...	0800	3	09...	1200	36
09...	2000	3	27...	1400	3	09...	1400	35
10...	1400	4	27...	2000	1	10...	1200	18
10...	2000	4	28...	0800	4	10...	1400	18
11...	1400	5	28...	1400	3	11...	1200	18
11...	2000	6	28...	2000	5	11...	1400	18
12...	1400	3	MAR			12...	1200	21
12...	2000	4	01...	0800	5	12...	1400	21
13...	1400	5	01...	1400	5	13...	1200	14
13...	2000	2	02...	0800	9	14...	1200	24
14...	1400	3	02...	1400	6	14...	1400	21
14...	2000	5	03...	0800	8	15...	1200	22
15...	2000	2	03...	1400	7	15...	1400	22
16...	1400	2	04...	1400	5	16...	1200	16
16...	2000	2	05...	1200	9	16...	1400	18
17...	1400	2	05...	1400	3	17...	1200	19
17...	2000	4	06...	1200	17	17...	1400	25
18...	1400	2	06...	1400	10	18...	1200	23
18...	2000	2	07...	1200	16	18...	1400	29
19...	1400	17	07...	1400	19	19...	1200	23
19...	2000	3	08...	1200	18	19...	1400	30
20...	1400	2	08...	1400	12	20...	1200	32
21...	1400	3	09...	1400	19	20...	1400	26
22...	1400	2	10...	1200	17	21...	1200	26
28...	1400	5	10...	1400	12	21...	1400	28
29...	1400	5	11...	1200	10	22...	1200	25
30...	1400	3	11...	1400	11	22...	1400	27
31...	1400	2	12...	1200	10	23...	1200	18

STREAMS TRIBUTARY TO LAKE MICHIGAN

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04084445 FOX RIVER AT APPLETON, WI--CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

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)
APR , 1987			JUN , 1987			AUG , 1987		
23...	1400	17	07...	1400	39	16...	0400	52
24...	1200	16	08...	1200	33	16...	1600	34
24...	1400	20	08...	1400	29	17...	0400	60
25...	1200	18	09...	1200	25	17...	1600	32
25...	1400	19	09...	1400	25	18...	0400	48
26...	1200	22	10...	1200	27	18...	1600	28
26...	1400	25	10...	1400	24	19...	0400	40
27...	1200	22	11...	1200	27	19...	1600	26
27...	1400	26	11...	1400	29	20...	0400	36
28...	1200	19	12...	1200	28	20...	1600	25
28...	1400	20	12...	1400	27	21...	0400	47
29...	1200	17	13...	1200	30	21...	1600	30
29...	1400	20	14...	1400	31	22...	0400	49
30...	1200	14	15...	1200	32	22...	1600	30
MAY			15...	1400	29	23...	0400	35
01...	1400	27	16...	1200	26	23...	1600	32
02...	1200	16	16...	1400	24	24...	0400	56
02...	1400	21	17...	1200	22	24...	1600	26
03...	1200	11	17...	1400	21	25...	0400	27
03...	1400	16	18...	1400	26	25...	1600	22
04...	1200	9	19...	1200	29	26...	0400	31
04...	1400	14	19...	1400	16	26...	1600	24
05...	1200	9	20...	1200	31	27...	0400	44
05...	1400	14	20...	1400	28	27...	1600	24
06...	1200	10	21...	1200	28	28...	0400	28
06...	1400	16	21...	1400	29	28...	1600	25
07...	1200	12	22...	1400	21	29...	0400	27
07...	1400	17	27...	1400	25	29...	1600	33
08...	1200	15	28...	1400	24	30...	0400	41
08...	1400	20	29...	1400	22	30...	1600	35
09...	1200	24	30...	1400	23	31...	0400	31
09...	1400	30	JUL			31...	1600	32
10...	1200	15	01...	1400	21	SEP		
10...	1400	17	02...	1400	19	01...	0400	31
11...	1200	31	03...	1400	22	01...	1600	35
11...	1400	35	04...	0800	33	02...	0400	29
12...	1200	19	04...	1400	23	02...	1600	33
12...	1400	24	04...	2000	39	03...	1600	31
13...	1200	27	05...	1400	19	04...	1600	33
14...	1200	27	06...	1400	20	05...	1600	36
14...	1400	30	07...	1400	25	06...	1600	33
15...	1200	20	08...	1400	16	07...	1600	33
15...	1400	19	09...	1400	17	08...	1600	26
16...	1200	35	10...	1400	17	09...	0400	28
16...	1400	33	11...	1400	21	09...	1600	26
17...	1200	34	12...	1400	23	10...	0400	27
17...	1400	25	13...	1400	24	10...	1600	22
18...	1200	27	13...	1600	26	11...	0400	27
18...	1400	29	13...	2000	26	11...	1600	21
19...	1200	25	14...	1200	19	12...	0400	22
19...	1400	20	14...	1400	16	12...	1600	25
20...	1200	16	15...	1200	17	13...	0400	21
20...	1400	15	16...	1200	22	14...	0400	23
21...	1200	13	17...	1200	28	14...	1600	27
21...	1400	11	18...	1200	30	15...	0400	18
22...	1200	22	19...	1200	31	15...	1600	26
22...	1400	19	20...	1200	32	16...	0400	18
23...	1200	26	21...	1200	35	16...	1600	22
23...	1400	32	22...	1200	30	17...	0400	17
24...	1200	21	23...	1200	29	17...	1600	22
24...	1400	24	24...	1200	28	18...	0400	20
25...	1400	21	25...	1200	26	18...	1600	25
26...	1200	23	26...	1200	24	19...	0400	19
26...	1400	15	27...	1200	21	19...	1600	23
27...	1200	19	28...	1200	22	20...	0400	16
27...	1400	15	29...	1200	20	20...	1600	25
28...	1200	27	30...	1200	25	21...	0400	13
28...	1400	25	31...	1200	18	21...	1600	20
29...	1200	23	AUG			22...	0400	14
29...	1400	25	02...	1200	21	22...	1600	29
30...	1200	25	03...	1200	18	23...	0400	18
30...	1400	28	04...	1200	17	23...	1600	27
31...	1200	32	05...	1200	21	24...	0400	19
31...	1400	34	06...	1200	18	24...	1600	21
JUN			07...	1200	26	25...	0400	17
01...	1200	45	08...	1200	22	25...	1600	19
01...	1400	36	09...	1200	29	26...	0400	18
02...	1400	30	10...	1200	19	26...	1600	20
03...	1400	29	11...	1600	20	27...	0400	17
04...	1200	25	12...	0400	156	27...	1600	19
04...	1400	21	12...	1600	32	28...	0400	26
05...	1200	24	13...	0400	53	28...	1600	28
05...	1400	22	14...	0400	47	29...	0400	21
06...	1200	33	14...	1600	24	29...	1600	31
06...	1400	32	15...	0400	41	30...	0400	24
07...	1200	43	15...	1600	34	30...	1600	25

STREAMS TRIBUTARY TO LAKE MICHIGAN

04084445 FOX RIVER AT APPLETON, WI--CONTINUED

SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DAY	MEAN CONCEN- TRATION (MG/L)	LOAD (TONS/ DAY)	MEAN CONCEN- TRATION (MG/L)	LOAD (TONS/ DAY)	MEAN CONCEN- TRATION (MG/L)	LOAD (TONS/ DAY)	MEAN CONCEN- TRATION (MG/L)	LOAD (TONS/ DAY)	MEAN CONCEN- TRATION (MG/L)	LOAD (TONS/ DAY)	MEAN CONCEN- TRATION (MG/L)	LOAD (TONS/ DAY)
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	---	---	---	---	---	---	---	---	33	798	20	128
2	---	---	---	---	---	---	18	163	39	935	16	103
3	---	---	---	---	---	---	22	232	35	770	19	141
4	---	---	---	---	---	---	36	363	37	768	19	141
5	---	---	---	---	---	---	33	314	32	523	19	135
6	---	---	---	---	---	---	27	245	29	388	18	127
7	---	---	---	---	---	---	26	268	22	240	16	110
8	---	---	---	---	---	---	26	241	27	230	14	100
9	---	---	---	---	---	---	22	209	27	234	15	106
10	---	---	---	---	---	---	25	225	32	276	20	166
11	---	---	---	---	---	---	20	199	26	225	58	636
12	---	---	---	---	---	---	19	191	22	191	26	605
13	---	---	---	---	---	---	23	239	25	210	24	807
14	---	---	---	---	---	---	22	227	30	256	19	524
15	---	---	---	---	---	---	22	217	23	187	18	457
16	---	---	---	---	---	---	27	264	24	195	19	513
17	---	---	---	---	---	---	30	301	23	190	18	529
18	---	---	---	---	---	---	27	282	24	195	21	556
19	---	---	---	---	---	---	45	692	19	157	17	451
20	---	---	---	---	---	---	49	669	20	162	19	518
21	---	---	---	---	---	---	30	405	22	171	18	542
22	---	---	---	---	---	---	31	358	29	235	43	1470
23	---	---	---	---	---	---	36	510	24	187	34	1210
24	---	---	---	---	---	---	39	431	19	152	32	1356
25	---	---	---	---	---	---	39	774	22	182	28	1233
26	---	---	---	---	---	---	37	616	18	143	26	1106
27	---	---	---	---	---	---	40	595	22	165	23	977
28	---	---	---	---	---	---	37	576	18	135	18	760
29	---	---	---	---	---	---	36	779	18	135	19	805
30	---	---	---	---	---	---	34	803	19	132	22	895
31	---	---	---	---	---	---	40	886	20	136	---	---
TOTAL	---	---	---	---	---	---	---	---	---	8903	---	17207

SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

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	20	815	16	425	10	131	3	29	4	62	6	63
2	18	699	17	454	8	106	3	32	6	111	7	73
3	17	683	17	454	15	199	5	50	5	90	8	82
4	18	735	16	389	10	120	4	41	3	47	5	56
5	20	839	17	422	10	89	3	33	1	20	6	64
6	17	712	18	404	10	93	6	83	3	53	13	147
7	20	885	18	341	9	98	5	86	2	39	18	196
8	22	917	91	1681	8	91	4	71	4	60	15	169
9	20	761	43	734	8	75	4	75	4	57	18	197
10	19	737	24	373	8	84	4	73	2	31	30	283
11	15	595	24	336	8	82	5	100	2	32	10	87
12	17	658	27	338	6	60	4	67	2	39	8	66
13	15	583	20	257	9	95	3	64	1	20	7	66
14	14	533	20	257	8	79	4	83	6	84	8	70
15	11	417	22	214	7	74	3	51	1	18	7	63
16	10	378	22	204	7	68	2	27	3	51	4	38
17	9	339	21	183	2	17	3	45	1	12	3	30
18	9	348	19	173	5	54	2	26	4	52	8	77
19	12	422	19	193	4	46	10	139	3	41	7	66
20	11	411	16	162	8	81	2	30	3	46	6	63
21	12	441	14	167	5	49	3	36	2	22	11	105
22	13	456	12	171	6	66	2	30	2	33	14	134
23	12	395	13	182	5	54	E3	E28	5	69	19	174
24	11	360	14	194	4	46	E3	E38	2	18	14	134
25	12	389	12	165	3	33	E4	E52	6	65	18	184
26	11	332	10	137	3	32	E5	E67	4	40	19	188
27	9	280	10	138	4	45	E5	E82	2	24	16	162
28	12	344	11	146	4	44	6	97	4	42	9	89
29	11	303	10	135	4	39	4	73	---	---	8	82
30	11	311	10	136	4	44	3	49	---	---	8	70
31	26	757	---	---	3	30	2	37	---	---	5	38
TOTAL	---	16835	---	9565	---	2224	---	1794	---	1278	---	3316
YEAR		71897										

E ESTIMATED.

SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DAY	MEAN CONCEN- TRATION (MG/L)	LOAD (TONS/ DAY)	MEAN CONCEN- TRATION (MG/L)	LOAD (TONS/ DAY)	MEAN CONCEN- TRATION (MG/L)	LOAD (TONS/ DAY)	MEAN CONCEN- TRATION (MG/L)	LOAD (TONS/ DAY)	MEAN CONCEN- TRATION (MG/L)	LOAD (TONS/ DAY)	MEAN CONCEN- TRATION (MG/L)	LOAD (TONS/ DAY)
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	13	95	30	618	46	751	24	101	E22	E97	37	158
2	12	90	21	396	34	533	22	94	24	99	35	149
3	12	95	15	274	33	467	25	121	20	93	34	148
4	10	76	21	351	27	276	26	111	19	79	37	163
5	18	134	13	183	26	254	21	84	23	87	39	152
6	20	160	15	196	36	328	23	93	20	78	36	142
7	17	133	17	217	47	359	28	128	29	130	37	139
8	36	296	20	232	35	258	18	86	24	112	29	106
9	35	294	24	282	28	199	19	85	32	142	30	104
10	34	281	18	205	29	205	19	85	21	90	27	103
11	34	282	37	426	32	225	24	104	23	101	27	110
12	38	325	24	194	32	188	26	118	104	432	26	109
13	33	284	30	232	36	186	27	117	43	191	26	109
14	41	398	32	257	35	192	20	84	39	167	28	114
15	40	369	22	179	35	179	19	82	42	197	24	100
16	31	291	39	329	28	140	25	110	48	187	22	90
17	40	384	34	277	24	116	32	143	51	234	22	85
18	47	462	32	227	29	154	34	158	42	186	25	98
19	48	474	26	196	26	131	E35	E166	36	232	23	99
20	39	394	18	140	34	165	37	158	34	179	23	104
21	36	346	14	113	32	156	39	194	43	223	18	78
22	35	392	24	198	24	109	34	127	44	218	24	139
23	24	304	33	269	E29	E131	33	124	37	181	24	200
24	25	351	26	208	E29	E153	32	111	46	195	22	174
25	25	416	24	180	E29	E146	30	131	27	118	20	157
26	24	414	21	168	E29	E166	27	116	30	138	21	171
27	24	445	19	167	28	150	24	98	38	176	20	153
28	20	410	29	298	27	118	24	105	29	129	30	234
29	18	397	27	371	25	106	22	97	33	139	29	222
30	14	292	30	501	26	111	29	139	42	180	27	199
31	---	---	38	621	---	---	21	97	35	158	---	---
TOTAL	---	9084	---	8505	---	6652	---	3567	---	4968	---	4109
YEAR		71897										

E ESTIMATED.

WATER TEMPERATURE, DEGREES CENTIGRADE, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	10.5	.5	.5	1.0	2.0	4.0	13.5	23.5	23.5	27.5	20.0
2	---	9.0	.5	.5	1.0	2.0	4.0	13.0	23.5	24.0	29.0	19.5
3	---	8.5	.5	1.0	1.5	2.5	4.0	13.5	22.5	23.5	29.0	19.5
4	---	8.0	.5	.5	1.5	2.5	5.0	13.5	21.5	23.5	28.0	20.0
5	---	7.5	.5	.5	1.0	3.0	6.0	14.0	21.5	24.0	26.0	21.0
6	---	8.0	.5	1.0	1.5	3.5	7.5	15.0	22.0	23.5	25.0	22.0
7	---	8.0	.5	1.0	1.5	4.5	8.0	15.5	22.5	24.0	25.0	22.0
8	14.0	8.5	.5	1.0	1.5	4.5	8.5	15.5	23.5	25.5	25.0	22.0
9	13.5	6.0	.5	.5	.5	2.5	9.5	16.0	23.0	26.5	24.0	21.5
10	13.0	4.0	.5	1.0	1.0	1.0	10	17.0	22.0	26.5	23.5	21.5
11	12.5	3.5	.5	1.0	1.5	1.0	9.5	18.0	21.0	27.5	23.5	22.0
12	12.5	2.5	.5	1.0	2.0	1.5	9.5	18.0	21.0	28.0	24.5	21.5
13	12.0	1.0	.5	1.5	1.5	1.5	10.5	18.0	22.0	26.5	25.0	20.5
14	11.0	.5	.5	1.5	1.5	2.0	10.5	18.0	24.0	24.5	24.5	20.0
15	10.5	1.0	.5	1.5	.5	2.0	10.0	18.5	24.5	23.0	24.5	20.5
16	10.5	1.5	.5	.5	.5	2.0	10.5	18.5	24.5	22.5	25.5	21.0
17	10.0	1.5	.5	.5	1.0	2.5	11.5	18.5	25.5	23.0	25.5	21.0
18	10.5	1.0	.5	.5	1.5	2.5	13.0	18.5	26.0	25.0	25.5	20.0
19	10.5	.5	.5	.5	2.0	3.0	14.5	16.0	26.5	26.0	25.0	19.5
20	11.0	.5	.5	.5	2.0	4.0	16.0	16.0	25.5	27.0	24.0	19.0
21	11.5	.5	.5	.5	2.5	4.0	15.0	17.5	24.5	26.0	23.0	18.5
22	11.5	1.0	.5	.5	2.5	4.5	12.0	19.0	23.5	27.5	23.0	18.5
23	11.5	1.0	.5	.5	2.0	5.5	11.0	17.5	23.5	28.0	24.0	18.5
24	11.0	.5	.5	.5	2.0	6.0	12.0	16.0	25.5	27.5	24.0	18.5
25	11.0	1.0	.5	.5	2.5	6.5	12.0	16.0	26.5	27.5	22.5	18.5
26	10.5	1.0	.5	.5	2.5	6.0	11.5	16.5	25.0	28.0	21.5	18.5
27	11.0	1.0	.5	.5	2.5	6.0	13.0	18.5	23.0	26.5	21.5	19.5
28	11.0	1.0	.5	.5	2.5	6.0	12.5	20.5	22.0	26.5	21.5	20.0
29	11.5	1.0	.5	.5	---	5.0	13.0	20.5	22.5	26.0	20.5	20.0
30	11.0	1.0	.5	.5	---	4.0	13.5	22.0	23.5	27.0	20.5	18.5
31	10.5	---	.5	.5	---	4.0	---	22.5	---	27.5	20.5	---
MEAN	---	3.3	.5	.7	1.6	3.5	10.2	17.1	23.5	25.7	24.3	20.1
MAX	---	10.5	.5	1.5	2.5	6.5	16.0	22.5	26.5	28.0	29.0	22.0
MIN	---	.5	.5	.5	.5	1.0	4.0	13.0	21.0	22.5	20.5	18.5

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.--91 years, 4,273 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, 16,000 ft³/s Oct. 13; minimum daily, 1,170 ft³/s Sept. 8.

DISCHARGE, IN 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	14800	11600	4890	4290	7040	4270	2920	8090	6300	1610	2130	1730
2	14900	11700	4770	3700	6790	4470	2790	7820	6290	1650	1790	1570
3	14500	11100	4410	4180	6450	4520	2960	6590	5360	1670	1810	1760
4	15000	9620	4000	3700	6570	4220	2950	7320	3710	1340	1470	1770
5	14600	10500	3320	4520	6540	4110	3000	6190	3590	1550	1410	1400
6	15400	9200	3600	5820	6490	4290	2990	4430	3480	1540	1840	1490
7	15500	8510	4300	6730	6310	4340	3040	4940	3080	1740	1620	1490
8	14300	7520	4010	6560	6130	4440	3120	5100	2560	1770	1870	1170
9	15200	7170	3230	7640	6050	4260	3190	4480	2670	1810	1710	1250
10	15600	6360	3820	6970	6010	3480	3280	4560	2710	1800	1630	1610
11	15300	5190	3870	7730	6100	3080	3190	4460	2910	1680	1620	1490
12	15300	4380	3790	6800	6030	3360	3360	2810	1880	1690	1770	1600
13	16000	3750	3980	8140	6010	3640	3460	3140	1950	1610	1550	1640
14	15200	4820	4080	6820	5740	3400	4090	3260	2020	1610	1900	1540
15	14800	3490	3890	7300	4940	3510	3960	3160	1730	1610	1820	1540
16	15000	3270	3920	5720	6530	3210	3840	3200	1940	1610	2880	1670
17	14900	2940	3910	5710	5380	3500	3880	3210	1940	1840	2020	1460
18	15100	3280	3880	5520	5440	3510	3860	2870	1940	1680	2170	1550
19	14200	3810	3900	5670	5760	3550	3800	3060	1980	1690	1990	1750
20	15000	3780	3700	5870	5680	4180	3680	2980	1940	1760	1940	1740
21	14300	4440	4030	5310	5790	3930	3690	3210	1950	1930	2030	1620
22	14500	5140	3820	3770	5630	3720	4420	3300	1330	1850	1720	2470
23	13600	5140	3940	3780	5190	3920	5120	3190	1860	1960	1550	3270
24	13800	5100	3880	3930	4330	3800	5470	3190	2170	1820	1750	2900
25	12900	4820	3910	3800	4040	4610	7580	2800	2000	1750	1980	2920
26	12500	5110	4030	3710	4140	3850	6860	3060	2290	1820	1690	3260
27	12300	5060	3840	4260	4180	4170	7840	3260	1910	1870	1480	3050
28	11900	5100	3950	6080	4040	3930	7750	3790	1620	1930	1680	2860
29	11200	5030	3360	6610	---	3980	9060	5570	1690	1870	1720	3000
30	11400	4940	4040	7300	---	3080	8680	6790	1530	1860	1910	2880
31	12000	---	3880	7090	---	2750	---	5620	---	1680	1620	---
TOTAL	441000	181870	121950	175030	159330	119080	133830	135450	78330	53600	56070	59450
MEAN	14230	6062	3934	5646	5690	3841	4461	4369	2611	1729	1809	1982
MAX	16000	11700	4890	8140	7040	4610	9060	8090	6300	1960	2880	3270
MIN	11200	2940	3230	3700	4040	2750	2790	2800	1330	1340	1410	1170

CAL YR 1986 TOTAL 2450400 MEAN 6713 MAX 16000 MIN 1720
WTR YR 1987 TOTAL 1714990 MEAN 4699 MAX 16000 MIN 1170

STREAMS TRIBUTARY TO LAKE MICHIGAN

91

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 1986 TO SEPTEMBER 1987

DATE	TIME	DIS-CHARGE, IN CUBIC FEET PER SECOND (00060)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	BARO-METRIC PRES-SURE (MM HG) (00025)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	COLI-FORM, FECAL, UM-MF (COLS./100 ML) (31625)
NOV , 1986										
12...	0830	4380	300	8.10	2.0	12	13.4	754	98	K820
MAR , 1987										
25...	0840	4610	380	8.30	6.0	3.2	12.8	736	107	45
JUN										
30...	0730	1530	440	8.70	24.0	12	11.6	745	141	35
SEP										
02...	0730	1570	400	8.90	18.5	0.40	10.2	753	110	--

DATE	STREP-TOCOCCHI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS (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)	PERCENT SODIUM (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE WATER DISSOLV FIELD AS HCO3 (MG/L) (00453)
NOV , 1986										
12...	K79	170	28	35	20	9.0	10	0.3	2.6	187
MAR , 1987										
25...	K15	200	28	44	22	9.5	9	0.3	2.6	--
JUN										
30...	24	200	30	43	22	15	14	0.5	3.0	--
SEP										
02...	--	170	17	33	21	17	18	0.6	2.9	150

DATE	CAR-BONATE WATER DISSOLV FIELD AS CO3 (MG/L) (00452)	ALKA-LINITY WATER DISSOLV FLD. AS CACO3 (MG/L) (39086)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	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)
NOV , 1986									
12...	--	153	2.2	20	14	0.10	0.2	191	190
MAR , 1987									
25...	--	168	1.7	23	15	0.20	4.8	228	230
JUN									
30...	--	167	0.6	28	20	0.50	7.5	227	240
SEP									
02...	27	168	0.4	29	20	0.20	0.6	223	220

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 DIS-SOLVED (MG/L AS N) (00610)	NITRO-GEN, AMMONIA + DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, AMMONIA + ORGANIC DIS-SOLVED (MG/L AS N) (00625)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P) (00671)
NOV , 1986									
12...	0.26	2260	0.240	0.130	0.140	1.4	0.100	0.030	0.020
MAR , 1987									
25...	0.31	2840	0.490	0.050	0.070	1.7	0.070	0.040	0.030
JUN									
30...	0.31	938	0.220	0.040	0.020	2.1	0.130	0.020	<0.010
SEP									
02...	0.30	945	<0.100	0.020	0.020	2.8	0.210	0.020	<0.010

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

STREAMS TRIBUTARY TO LAKE MICHIGAN

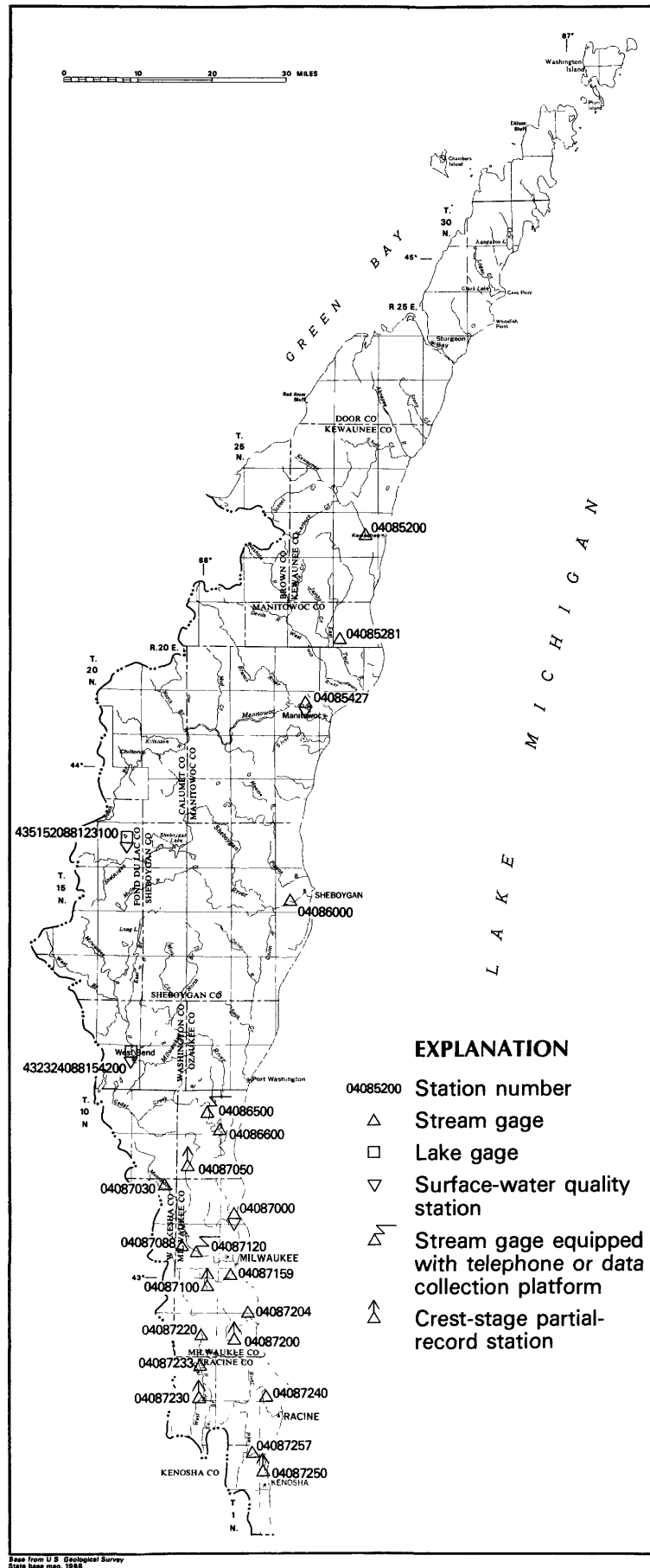
04085000 FOX RIVER AT WRIGHTSTOWN, WI--CONTINUED

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	DIS- CHARGE, IN CUBIC FEET PER SECOND (000060)	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 , 1986 12...	0830	4380	10	<1	23	0.6	1	<1	<3	1	17
MAR , 1987 25...	0840	4610	<10	<1	22	<0.5	<1	<1	<3	3	15
JUN 30...	0730	1530	20	<1	28	<0.5	2	<1	<3	1	10
SEP 02...	0730	1570	40	2	24	<0.5	2	<1	<3	1	17

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 , 1986 12...	<5	6	6	<0.1	<10	1	<1	140	<6	10
MAR , 1987 25...	<5	<4	9	<0.1	<10	1	<1	150	<6	8
JUN 30...	<5	7	4	<0.1	410	<1	<1	280	<6	15
SEP 02...	<5	<4	3	<0.1	<10	<1	<1	280	<6	10

DATE	TIME	DIS- CHARGE, IN CUBIC FEET PER SECOND (000060)	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)
NOV , 1986 12...	0830	4380	300	2.0	30	355	88
MAR , 1987 25...	0840	4610	380	6.0	10	124	93
JUN 30...	0730	1530	440	24.0	26	107	96
SEP 02...	0730	1570	400	18.5	63	267	99



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: Mar. 24 to Apr. 7 and ice periods listed in rating table below. Records for Apr. 8-15 were based on once-daily observer readings. Records good except those for estimated daily discharges, which are fair.

AVERAGE DISCHARGE.--21 years, 87.2 ft³/s, 9.32 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)
Oct. 5	0430	*780	*11.13				

Minimum discharge, 5.6 ft³/s Jan. 12, gage height, 8.14 ft, result of freezeup.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Nov. 12, 13, Dec. 5 to Feb. 28.)

8.3	9.0	9.5	137
8.5	18	10.0	263
8.7	31	11.0	701
8.9	48	12.0	1,460
9.1	71		

DISCHARGE, IN 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	520	74	72	24	26	468	64	42	26	27	11	11
2	303	74	69	24	27	476	70	41	25	22	12	11
3	424	70	74	24	26	335	86	38	23	29	12	11
4	601	68	65	24	26	241	110	36	21	31	12	11
5	741	65	56	24	26	173	120	34	20	29	11	10
6	463	64	47	24	26	202	140	34	22	23	10	10
7	294	62	42	24	28	324	120	33	24	20	10	9.9
8	255	63	37	24	30	361	92	33	23	19	11	9.8
9	240	61	32	24	31	227	76	31	21	17	17	9.8
10	195	55	29	24	31	126	70	30	19	17	17	9.6
11	164	52	27	24	30	94	64	30	20	16	15	10
12	189	50	25	25	29	72	60	29	22	22	13	10
13	211	48	24	25	29	66	60	28	21	40	12	10
14	186	46	25	25	29	62	64	33	19	23	13	10
15	167	47	26	25	29	61	190	35	18	19	14	9.8
16	159	47	27	25	29	59	141	31	17	17	18	11
17	162	47	25	25	29	56	107	28	16	16	34	22
18	145	47	25	25	29	55	81	27	15	16	25	28
19	129	49	24	24	29	54	67	38	34	15	20	40
20	116	50	24	23	30	54	57	58	22	16	18	31
21	106	51	24	23	32	54	52	48	23	18	16	25
22	99	51	24	22	35	54	70	48	33	17	14	25
23	94	67	24	21	58	56	165	44	23	15	13	22
24	89	93	24	19	68	60	146	38	20	14	12	20
25	85	87	24	19	74	66	87	35	20	13	12	18
26	83	86	24	20	80	76	67	35	19	12	11	16
27	81	95	23	21	86	76	59	36	24	12	12	16
28	78	91	23	23	100	68	53	35	20	11	13	17
29	75	82	24	24	---	64	48	34	28	11	13	19
30	72	78	24	25	---	60	44	31	29	11	12	16
31	69	---	24	26	---	58	---	28	---	11	12	---
TOTAL	6595	1920	1037	729	1102	4258	2630	1101	667	579	445	478.9
MEAN	213	64.0	33.5	23.5	39.4	137	87.7	35.5	22.2	18.7	14.4	16.0
MAX	741	95	74	26	100	476	190	58	34	40	34	40
MIN	69	46	23	19	26	54	44	27	15	11	10	9.6
CFSM	1.68	.50	.26	.19	.31	1.08	.69	.28	.18	.15	.11	.13
IN.	1.93	.56	.30	.21	.32	1.25	.77	.32	.20	.17	.13	.14

CAL YR 1986	TOTAL 54165.0	MEAN 148	MAX 4740	MIN 19	CFSM 1.17	IN. 15.9
WTR YR 1987	TOTAL 21541.9	MEAN 59.0	MAX 741	MIN 9.6	CFSM .46	IN. 6.31

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: Dec. 4 to Jan. 12 and ice periods listed in rating table below. Records good except those for estimated daily discharges, which are fair. Occasional regulation caused by recreation dam 0.3 mi upstream.

AVERAGE DISCHARGE.--15 years, 82.6 ft³/s, 10.20 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)
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Oct. 5	0530	*474	*7.40				
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Minimum discharge, 8.0 ft³/s Aug. 7, 8, gage height, 4.15.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Nov. 13, 20, 21, Jan. 16, 19, Jan. 22 to Feb. 5, and Feb. 13-19.)

4.1	6.2	5.0	82
4.2	10	6.0	222
4.3	16	7.0	392
4.4	22	8.0	610
4.5	30		

DISCHARGE, IN 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	221	69	74	42	28	277	87	52	30	14	8.8	11
2	195	71	73	42	28	346	103	48	29	13	9.0	11
3	217	70	77	42	28	292	105	44	24	14	9.2	9.7
4	328	67	74	41	27	261	119	39	21	14	9.0	9.4
5	452	65	64	42	26	220	135	36	20	14	8.4	9.3
6	376	63	60	42	26	233	145	35	23	14	8.4	8.9
7	281	62	56	43	26	306	137	32	37	18	8.1	8.8
8	219	62	52	43	32	444	118	30	29	16	9.5	8.8
9	178	60	48	43	35	368	96	29	23	15	22	8.8
10	150	57	46	43	25	244	83	27	20	13	19	8.8
11	138	52	43	43	25	167	75	26	18	11	16	9.2
12	173	50	42	43	26	117	69	27	20	14	13	9.1
13	222	45	39	42	26	100	55	25	19	20	11	9.0
14	192	42	42	37	25	87	67	27	17	23	12	9.2
15	171	38	46	35	25	86	137	30	14	18	12	9.2
16	150	39	46	35	25	87	160	29	14	15	13	9.8
17	138	42	45	34	25	84	137	25	13	14	16	17
18	126	43	45	31	25	82	104	23	13	12	24	34
19	116	40	44	31	25	81	83	36	13	11	18	44
20	107	43	44	30	25	81	70	61	13	15	14	41
21	102	48	43	29	26	83	62	67	17	22	12	34
22	95	54	43	28	31	83	92	63	22	17	11	26
23	90	69	43	27	34	82	240	64	23	15	10	22
24	87	98	43	25	37	88	221	51	18	12	9.5	19
25	82	90	43	24	42	98	145	44	15	11	8.8	16
26	80	87	42	24	47	112	101	43	15	11	8.8	15
27	80	88	41	25	54	111	83	43	14	9.5	8.8	15
28	79	86	41	26	54	99	71	42	13	9.2	11	15
29	75	81	41	27	---	94	62	38	13	9.2	15	23
30	74	78	41	27	---	88	56	33	14	9.2	14	27
31	70	---	42	28	---	84	---	30	---	8.8	12	---
TOTAL	5064	1859	1523	1074	858	4985	3218	1199	574	431.9	381.3	498.0
MEAN	163	62.0	49.1	34.6	30.6	161	107	38.7	19.1	13.9	12.3	16.6
MAX	452	98	77	43	54	444	240	67	37	23	24	44
MIN	70	38	39	24	25	81	55	23	13	8.8	8.1	8.8
CFSM	1.49	.56	.45	.31	.28	1.46	.98	.35	.17	.13	.11	.15
IN.	1.71	.63	.52	.36	.29	1.69	1.09	.41	.19	.15	.13	.17

CAL YR 1986 TOTAL 46070.0 MEAN 126 MAX 2010 MIN 17 CFSM 1.15 IN. 15.6
WTR YR 1987 TOTAL 21665.1 MEAN 59.4 MAX 452 MIN 8.1 CFSM .54 IN. 7.33

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: Mar. 4 to Apr. 8, and ice periods listed in rating table below. Records good except for estimated daily discharges, which are fair.

AVERAGE DISCHARGE.--15 years, 362 ft³/s, 9.35 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, 10 ft³/s Nov. 7, 1976, gage height, 3.69 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)
Oct. 4	1345	(a)*2,500	(a)*9.14	Mar. 9-10	----	(b)1,400	----

(a) Maximum discharge and stage, not independent of peak which occurred Sept. 25, 1986.

(b) Estimated, daily mean discharge.

Minimum discharge, 19 ft³/s Sept. 5-11, gage height, 3.79 ft.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Nov. 12-25, and Dec. 6 to Mar. 3.)

3.8	19	6.0	540
4.1	51	7.0	981
4.5	114	8.0	1,570
5.0	224	9.0	2,380

DISCHARGE, IN 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	2310	649	283	110	110	900	370	480	175	43	37	33
2	2190	620	290	110	110	1100	390	434	174	38	42	32
3	2130	584	325	110	110	1100	420	382	174	40	68	26
4	2350	538	231	110	110	1000	460	348	166	38	68	22
5	2280	500	191	110	110	900	500	315	146	38	55	20
6	2180	470	180	110	110	1000	500	267	132	35	47	19
7	2110	434	160	110	120	1100	470	227	119	33	40	19
8	1970	408	150	110	130	1200	440	201	104	35	41	20
9	1860	396	140	110	130	1400	413	185	84	36	81	20
10	1750	351	130	110	120	1400	394	162	68	35	69	19
11	1660	277	130	110	120	1300	378	138	65	33	72	22
12	1700	200	120	110	120	1100	360	133	66	32	70	26
13	1670	180	100	120	120	800	343	123	80	32	64	24
14	1570	200	110	120	120	600	350	128	73	31	61	23
15	1500	200	110	120	120	450	486	134	62	35	58	22
16	1420	200	120	120	120	400	530	130	52	34	66	25
17	1340	200	120	120	120	350	556	125	46	30	64	46
18	1270	200	120	110	120	300	561	116	45	28	63	50
19	1210	210	120	110	120	300	530	122	43	29	64	57
20	1150	210	120	110	120	300	489	142	44	42	58	56
21	1100	220	120	110	120	300	446	177	51	60	55	61
22	1060	230	120	110	120	310	516	187	63	45	50	53
23	1010	250	120	110	130	320	689	193	74	40	44	55
24	963	270	120	100	170	340	696	184	75	34	42	54
25	919	290	120	94	250	370	710	168	71	32	38	50
26	878	309	120	100	300	390	698	162	66	36	34	46
27	850	325	120	110	400	390	674	164	60	35	32	41
28	815	323	120	110	600	380	649	168	60	37	29	40
29	775	326	120	110	---	360	592	172	57	34	28	50
30	730	320	110	120	---	350	528	174	48	32	30	58
31	680	---	110	120	---	350	---	172	---	31	33	---
TOTAL	45400	9890	4550	3444	4450	20860	15138	6213	2543	1113	1603	1089
MEAN	1465	330	147	111	159	673	505	200	84.8	35.9	51.7	36.3
MAX	2350	649	325	120	600	1400	710	480	175	60	81	61
MIN	680	180	100	94	110	300	343	116	43	28	28	19
CFSM	2.78	.63	.28	.21	.30	1.28	.96	.38	.16	.07	.10	.07
IN.	3.21	.70	.32	.24	.31	1.48	1.07	.44	.18	.08	.11	.08

CAL YR 1986 TOTAL 257476 MEAN 705 MAX 5600 MIN 62 CFSM 1.34 IN. 18.2
WTR YR 1987 TOTAL 116293 MEAN 319 MAX 2350 MIN 19 CFSM .61 IN. 8.22

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 1986 TO SEPTEMBER 1987

DATE	TIME	DIS-CHARGE, IN CUBIC FEET PER SECOND (00060)	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	
NOV , 1986											
11...	1330	--	269	610	8.40	0.0	8.4	15.0	757	103	
MAR , 1987											
25...	1230	370	--	600	8.30	9.0	1.5	11.8	736	106	
JUN											
29...	1330	--	56	690	8.50	25.0	4.1	10.6	745	132	
SEP											
01...	1400	--	34	680	8.70	18.0	2.3	12.3	749	133	
DATE		COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI, FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS (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)	PERCENT SODIUM (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)
NOV , 1986											
11...	23	32	390	56	82	44	12	6	0.3	4.9	
MAR , 1987											
25...	21	70	330	53	70	37	12	7	0.3	4.4	
JUN											
29...	88	44	330	42	64	41	20	12	0.5	3.3	
SEP											
01...	K82	K20	330	61	60	44	20	11	0.5	3.6	
DATE		BICAR-BONATE WATER DISSOLV FIELD AS HCO3 (MG/L) (00453)	CAR-BONATE WATER DISSOLV FIELD AS CO3 (MG/L) (00452)	ALKA-LINITY WATER FLD. AS CACO3 (MG/L) (39086)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	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)
NOV , 1986											
11...	--	--	328	2.5	30	27	0.10	11	438	420	
MAR , 1987											
25...	302	6	258	2.6	36	26	0.10	1.8	363	350	
JUN											
29...	312	12	276	1.7	33	40	<0.10	5.4	405	380	
SEP											
01...	288	18	266	1.0	39	36	0.20	2.7	380	370	
DATE		SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P) (00671)	
NOV , 1986											
11...	0.60	318	1.50	0.080	0.080	0.40	0.140	0.070	0.040		
MAR , 1987											
25...	0.49	363	0.560	0.030	0.050	1.8	0.090	0.030	<0.010		
JUN											
29...	0.55	61	0.210	0.060	0.040	1.6	0.210	0.140	0.110		
SEP											
01...	0.52	35	<0.100	0.020	0.020	1.2	0.090	0.050	0.030		

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 1986 TO SEPTEMBER 1987

DATE	TIME	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	STREAM- FLOW, INSTAN- TANEOUS (CFS) (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)
NOV , 1986 11...	1330	--	269	<10	<1	27	0.6	<1	<1	<3	1
MAR , 1987 25...	1230	370	--	<10	<1	29	<0.5	<1	<1	<3	1
JUN 29...	1330	--	56	<10	1	37	<0.5	1	<1	<3	3
SEP 01...	1400	--	34	<10	5	34	<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)
NOV , 1986 11...	81	<5	10	38	<0.1	<10	4	<1	180	<6	15
MAR , 1987 25...	65	<5	7	66	<0.1	<10	4	<1	160	<6	8
JUN 29...	15	<5	10	16	0.1	<10	<1	<1	370	<6	<3
SEP 01...	16	<5	4	25	<0.1	<10	<1	1	510	<6	9

DATE	TIME	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	STREAM- FLOW, INSTAN- TANEOUS (CFS) (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 , 1986 21...	1420	--	1110	470	10.5	--	--	--
NOV 11...	1330	--	269	610	0.0	15	11	94
DEC 03...	1440	--	322	720	1.0	--	--	--
JAN , 1987 14...	1210	--	111	818	0.0	--	--	--
FEB 23...	1510	--	127	760	0.0	--	--	--
MAR 25...	1230	370	--	600	9.0	11	11	91
APR 08...	1540	--	432	620	11.5	--	--	--
JUN 29...	1330	--	56	690	25.0	11	1.7	96
JUL 08...	1020	--	35	665	25.0	--	--	--
SEP 01...	1400	--	34	680	18.0	46	4.2	98
02...	1420	--	31	680	18.0	--	--	--

435152088123100 WOLF LAKE NEAR MT. CALVARY, WI

LAKE-STAGE RECORDS

LOCATION.--Lat 43°51'52", long 88°12'31", in SW 1/4 SE 1/4 Sec.10, T.16 N., R.19 E., Fond du Lac County, Hydrologic Unit 04030101, 3.2 miles northeast of Mt. Calvary.

DRAINAGE AREA.--3.43 mi².

PERIOD OF RECORD.--November 17, 1983 to current year.

GAGE.--Staff gage read on west side of lake by William Krupp.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage-height observed, 6.81 ft Sept. 15, 1986; minimum observed, 4.42 ft July 24, 1985.

EXTREMES FOR CURRENT YEAR.--Maximum gage-height observed, 6.36 ft, Oct. 1; minimum observed, 4.70 ft, July 15, Sept. 15.

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.36	---	---	---	---	---	4.92	5.05	5.15	---	---	---
2	6.26	---	---	---	---	---	4.92	5.03	5.23	---	---	---
3	6.15	---	---	---	---	---	4.91	5.01	5.24	---	---	---
4	6.22	---	---	---	---	---	4.89	5.00	5.22	---	---	---
5	6.19	---	---	---	---	---	4.88	4.99	5.21	---	---	---
6	6.14	---	---	---	---	---	4.87	4.97	5.20	---	---	---
7	6.10	---	---	---	---	---	4.86	4.96	5.16	---	---	---
8	6.07	---	---	---	---	---	4.85	4.94	5.14	---	---	---
9	6.01	---	---	---	---	---	4.85	4.93	5.11	---	---	---
10	5.96	---	---	---	---	---	4.84	4.92	5.08	---	---	---
11	5.90	---	---	---	---	---	4.84	4.90	5.07	---	---	---
12	5.88	---	---	---	---	---	4.84	4.90	5.06	---	---	---
13	5.85	---	---	---	---	---	4.84	4.92	5.04	---	---	---
14	5.82	---	---	---	---	---	4.83	4.93	5.01	---	---	---
15	5.78	---	---	---	---	---	4.98	4.90	5.00	4.70	---	4.70
16	5.75	---	---	---	---	---	5.01	4.92	4.99	---	---	---
17	5.72	---	---	---	---	---	5.05	4.91	4.97	---	---	---
18	5.70	---	---	---	---	---	5.03	4.90	4.96	---	---	4.92
19	5.68	---	---	---	---	---	5.01	4.94	4.95	---	---	---
20	5.65	---	---	---	---	---	4.98	4.96	4.93	---	---	---
21	5.61	---	---	---	---	---	4.96	5.00	4.92	---	---	---
22	5.59	---	---	---	---	---	5.30	5.02	4.91	---	---	---
23	5.57	---	---	---	---	---	5.32	5.04	4.90	---	---	---
24	5.55	---	---	---	---	---	5.29	5.04	4.93	---	---	---
25	5.52	---	---	---	---	---	5.25	5.03	4.92	---	---	---
26	5.50	---	---	---	---	---	5.19	5.06	4.90	---	---	---
27	5.48	---	---	---	---	5.00	5.16	5.06	4.90	---	---	---
28	5.46	---	---	---	---	4.98	5.13	5.08	4.86	---	---	---
29	5.43	---	---	---	---	4.96	5.10	5.08	4.84	---	---	---
30	5.40	---	---	---	---	4.94	5.07	5.10	4.82	---	---	---
31	5.38	---	---	---	---	4.93	---	5.16	---	---	---	---
MEAN	5.80	---	---	---	---	---	5.00	4.99	5.02	---	---	---
MAX	6.36	---	---	---	---	---	5.32	5.16	5.24	---	---	---
MIN	5.38	---	---	---	---	---	4.83	4.90	4.82	---	---	---

WATER-QUALITY RECORDS

LOCATION.--Lat 43°51'52", long 88°12'31", in SW 1/4 SE 1/4 Sec.10, T.16 N., R.19 E., Fond du Lac County, Hydrologic Unit 04030101, 3.2 miles northeast of Mt. Calvary.

PERIOD OF RECORD.--February 20, 1984 to current year.

REMARKS.--Secchi disc readings made by William Krupp.

SECCHI DISC TRANSPARENCY (IN METERS) WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	SECCHI DEPTH	DATE	SECCHI DEPTH	DATE	SECCHI DEPTH	DATE	SECCHI DEPTH
JUNE 30	1.68	JULY 15	2.13	SEPT. 15	2.13	SEPT. 18	2.44

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: None, except for ice periods listed in rating table below. Records good except those for ice-affected periods, which are fair. Diurnal fluctuation caused by numerous powerplants above station.

AVERAGE DISCHARGE.--45 years (water years 1917-24, 1951-87), 259 ft³/s, 8.41 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)
Oct. 4	2230	*2,070	*6.53	Apr. 23	0330	1,530	5.75

Minimum discharge, 48 ft³/s July 20, gage height, 1.78 ft.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Nov. 13-15, 20, 21, Dec. 5-23, 27, 28, Jan. 4, 9, Jan. 16 to Feb. 20.)

1.8	50	4.0	570
2.0	80	5.0	992
2.5	165	7.0	2,440
3.0	270		

DISCHARGE, IN 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	1410	313	253	164	140	840	377	370	227	68	155	92
2	1260	275	266	166	140	842	423	346	227	67	228	94
3	1220	241	285	173	140	725	384	322	209	84	166	96
4	1650	230	257	170	140	565	364	300	189	71	122	90
5	1820	234	200	171	130	428	351	261	169	67	96	84
6	1490	255	210	171	130	430	333	181	161	67	83	81
7	1170	253	220	172	130	576	319	154	145	75	76	77
8	941	252	210	171	160	704	307	153	123	85	94	86
9	741	256	200	170	140	657	295	229	124	81	227	93
10	618	249	190	171	130	526	285	256	115	70	233	68
11	680	232	180	174	130	513	275	221	114	65	169	59
12	755	210	180	166	130	472	268	187	115	68	125	66
13	849	180	160	175	130	432	260	167	112	70	109	70
14	758	130	170	174	130	421	307	140	100	66	112	69
15	691	140	180	182	130	377	802	177	91	73	125	75
16	645	143	190	170	130	292	750	179	83	75	168	82
17	627	144	190	160	130	237	594	183	79	74	620	182
18	593	148	180	150	140	349	495	208	77	65	464	319
19	560	150	180	140	140	405	445	256	73	58	298	253
20	524	160	180	140	140	387	407	269	70	62	216	217
21	490	180	170	140	144	366	394	298	100	77	176	261
22	351	193	170	130	165	345	693	322	247	92	158	410
23	290	238	170	120	189	334	1420	278	167	94	140	340
24	337	321	168	110	177	326	1080	232	113	75	122	240
25	350	299	165	110	181	336	799	218	128	64	112	186
26	367	286	164	110	186	332	615	242	124	74	109	157
27	383	281	160	120	183	297	548	272	97	80	108	138
28	374	267	160	130	191	314	496	273	83	79	114	126
29	358	260	166	140	---	348	456	293	76	73	110	133
30	337	257	164	140	---	361	412	271	74	84	107	141
31	322	---	163	140	---	369	---	232	---	88	98	---
TOTAL	22961	6777	5901	4720	4126	13906	14954	7490	3812	2291	5240	4385
MEAN	741	226	190	152	147	449	498	242	127	73.9	169	146
MAX	1820	321	285	182	191	842	1420	370	247	94	620	410
MIN	290	130	160	110	130	237	260	140	70	58	76	59
CFSM	1.77	.54	.46	.36	.35	1.07	1.19	.58	.30	.18	.40	.35
IN.	2.04	.60	.53	.42	.37	1.24	1.33	.67	.34	.20	.47	.39

CAL YR 1986 TOTAL 163293 MEAN 447 MAX 3140 MIN 71 CFSM 1.07 IN. 14.5
WTR YR 1987 TOTAL 96563 MEAN 265 MAX 1820 MIN 58 CFSM .63 IN. 8.59

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, 7.64 ft, June 30, 1987.

EXTREMES FOR CURRENT YEAR.--Maximum gage height observed, 7.89 ft, July 8; minimum observed, 7.64 ft, June 30.

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	GAGE HEIGHT	DATE	GAGE HEIGHT	DATE	GAGE HEIGHT	DATE	GAGE HEIGHT	DATE	GAGE HEIGHT
MAY 26	7.84	JUNE 12	7.74	JUNE 25	7.70	JULY 8	7.89	SEPT. 28	7.84
JUNE 6	7.74	JUNE 16	7.72	JUNE 30	7.64	SEPT. 12	7.74		

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 1986 TO SEPTEMBER 1987

DATE	SECCHI DEPTH	DATE	SECCHI DEPTH	DATE	SECCHI DEPTH	DATE	SECCHI DEPTH	DATE	SECCHI DEPTH	DATE	SECCHI DEPTH
MAY 16	4.27	JUNE 6	4.57	JUNE 16	3.89	JUNE 30	4.57	JULY 18	3.20	SEPT. 12	3.20
MAY 26	3.66	JUNE 12	4.42	JUNE 25	4.42	JULY 7	4.65	JULY 22	2.59	SEPT. 25	4.27

STREAMS TRIBUTARY TO LAKE MICHIGAN

04086500 CEDAR CREEK NEAR CEDARBURG, WI

LOCATION.--Lat 43°19'23", long 87°58'43", in SE 1/4 SW 1/4 sec.14, T.10 N., R.21 E., Ozaukee County, Hydrologic Unit 04040003, on left bank 40 ft upstream from bridge on State Highway 60, 1.9 mi north of Cedarburg and 6.6 mi upstream from mouth.

DRAINAGE AREA.--120 mi².

PERIOD OF RECORD.--August 1930 to September 1970, July 1973 to September 1981, August 1983 to September 1987 (discontinued).

REVISED RECORDS.--WSP 1307: 1932-34(M), 1937(M), 1939(M), 1945(M), 1948-49(M). WDR WI-77-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 795.33 ft above National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Nonrecording gage and crest-stage gage August 1930 to September 1970 at same site and datum.

REMARKS.--Estimated daily discharges: June 15 to July 1 and ice periods listed in rating table below. Records good except those for estimated daily discharges, which are fair.

AVERAGE DISCHARGE.--52 years, 72.1 ft³/s, 8.16 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge observed, about 3,600 ft³/s Mar. 30, 1960, gage height, 12.25 ft, from graph based on gage readings, backwater from ice; minimum observed, 0.20 ft³/s Aug. 9-12, 1936.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 400 ft³/s and maximum (*):

DATE	TIME	DISCHARGE (ft ³ /s)	GAGE HEIGHT (ft)	DATE	TIME	DISCHARGE (ft ³ /s)	GAGE HEIGHT (ft)
Oct. 5	1700	*695	*7.90	Apr. 16	0430	468	7.23
Mar. 1	1100	443	7.15	Apr. 24	0815	468	7.23

Minimum discharge, 15 ft³/s July 2, 5, 6, gage height, 5.23 ft.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Nov. 13, 14, 20, Dec. 3-7, Dec. 11 to Jan. 6, Jan. 11-14, and Jan. 17 to Mar. 1.)

5.2	12	6.0	134
5.3	22	7.0	398
5.5	44	8.0	732
5.7	74		

DISCHARGE, IN 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	661	119	96	62	50	370	131	100	55	19	57	53
2	595	119	99	64	54	411	157	100	50	16	57	56
3	528	116	100	64	60	320	139	103	44	17	47	58
4	600	111	100	66	62	208	120	94	39	19	38	49
5	676	106	96	66	58	157	110	85	40	16	32	44
6	670	103	94	64	58	150	105	83	37	19	28	40
7	582	99	94	64	58	168	96	77	35	25	25	38
8	488	100	94	64	64	199	88	73	30	41	27	40
9	406	99	92	67	64	191	87	68	36	40	79	40
10	339	92	88	61	62	137	83	63	37	29	79	38
11	283	89	96	66	60	111	82	61	36	25	58	35
12	287	78	92	72	60	97	81	56	35	23	45	35
13	306	76	72	76	58	95	80	52	33	24	39	37
14	303	70	70	74	56	91	165	51	30	27	41	39
15	274	77	70	67	54	91	428	50	25	44	47	40
16	239	79	72	63	54	92	464	46	23	69	57	45
17	209	79	72	64	52	93	410	42	20	53	230	68
18	186	80	72	62	50	102	314	47	22	42	249	140
19	168	86	70	60	46	125	208	66	23	36	165	133
20	155	80	70	56	46	188	146	81	22	33	107	118
21	152	80	68	56	47	173	119	75	21	47	78	174
22	143	83	66	54	49	156	215	75	22	47	64	187
23	138	108	64	52	50	145	421	66	24	43	55	152
24	136	145	62	47	50	135	461	63	25	36	49	114
25	129	129	62	45	50	133	397	61	29	32	45	90
26	133	121	62	44	50	149	299	72	27	34	45	76
27	156	117	64	44	52	149	201	77	24	37	61	67
28	151	106	64	45	60	128	145	71	24	35	64	59
29	137	100	64	47	---	125	122	74	25	37	90	79
30	126	96	64	48	---	147	109	66	21	79	77	79
31	121	---	62	49	---	138	---	54	---	67	63	---
TOTAL	9477	2943	2411	1833	1534	4974	5983	2152	914	1111	2198	2223
MEAN	306	98.1	77.8	59.1	54.8	160	199	69.4	30.5	35.8	70.9	74.1
MAX	676	145	100	76	64	411	464	103	55	79	249	187
MIN	121	70	62	44	46	91	80	42	20	16	25	35
CFSM	2.55	.82	.65	.49	.46	1.34	1.66	.58	.25	.30	.59	.62
IN.	2.94	.91	.75	.57	.48	1.54	1.85	.67	.28	.34	.68	.69

CAL YR 1986 TOTAL 58820 MEAN 161 MAX 1480 MIN 22 CFSM 1.34 IN. 18.2
WTR YR 1987 TOTAL 37753 MEAN 103 MAX 676 MIN 16 CFSM .86 IN. 11.7

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: None, except for ice periods listed in rating tables below. Records good except those for ice-affected periods, which are fair.

AVERAGE DISCHARGE.--5 years, 569 ft³/s, 12.73 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, 72 ft³/s July 24, 1985.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,650 ft³/s Oct. 4, gage height, 9.59 ft; minimum daily, 83 ft³/s June 17.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Shifting-control method used May 3 to Aug. 16, Aug. 21 to Sept. 20, Sept. 26-30; stage-discharge relation affected by ice Nov. 12-21, Dec. 9 to Mar. 2.)

5.2	60	7.0	923
5.5	175	8.0	1,520
6.0	410	10.0	2,960

DISCHARGE, IN 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	2390	565	520	260	230	300	595	521	412	93	296	238
2	2100	554	527	260	230	1100	620	476	306	88	242	209
3	1870	545	545	260	230	1170	594	433	276	99	198	259
4	2250	528	522	250	230	1020	563	441	251	86	194	314
5	2440	510	442	240	230	874	539	393	214	88	160	199
6	2150	468	525	230	220	774	515	368	183	96	116	170
7	1830	470	496	230	230	747	518	360	190	185	103	163
8	1550	474	479	220	240	788	511	349	196	178	161	164
9	1370	464	400	220	230	852	484	321	150	179	313	173
10	1210	445	350	220	230	798	469	330	142	138	383	160
11	1080	416	300	220	220	726	457	301	144	169	292	158
12	1090	410	260	230	220	646	451	304	171	114	252	154
13	1220	310	280	230	210	593	436	325	147	111	226	160
14	1140	290	290	230	210	569	605	259	110	134	223	165
15	1040	300	300	230	210	535	1390	281	164	227	235	176
16	975	310	300	230	210	503	1420	280	113	313	283	152
17	922	320	300	220	210	480	1260	235	83	208	910	212
18	866	330	290	220	210	499	1070	251	111	142	1080	428
19	801	360	280	220	210	541	912	335	116	160	906	478
20	751	380	280	210	220	625	772	391	114	142	676	484
21	715	400	260	200	230	617	638	362	104	147	533	570
22	642	438	260	200	240	609	836	429	108	212	455	683
23	526	514	260	190	250	587	1570	425	120	186	365	653
24	659	571	260	180	260	574	1580	420	119	166	290	545
25	632	565	250	180	260	584	1380	406	147	166	223	491
26	642	579	250	190	260	642	1200	394	137	164	222	416
27	668	581	250	200	270	637	1040	389	120	141	283	340
28	649	567	250	210	280	609	815	427	118	133	286	310
29	587	550	260	220	---	625	685	447	127	180	297	303
30	545	532	260	220	---	666	556	431	105	234	333	306
31	555	---	260	230	---	617	---	379	---	264	272	---
TOTAL	35865	13746	10506	6850	6480	20907	24481	11463	4798	4943	10808	9233
MEAN	1157	458	339	221	231	674	816	370	160	159	349	308
MAX	2440	581	545	260	280	1170	1580	521	412	313	1080	683
MIN	526	290	250	180	210	300	436	235	83	86	103	152
CFSM	1.91	.75	.56	.36	.38	1.11	1.34	.61	.26	.26	.57	.51
IN.	2.20	.84	.64	.42	.40	1.28	1.50	.70	.29	.30	.66	.57

CAL YR 1986 TOTAL 241552 MEAN 662 MAX 3960 MIN 87 CFSM 1.09 IN. 14.8
WTR YR 1987 TOTAL 160080 MEAN 439 MAX 2440 MIN 83 CFSM .72 IN. 9.81

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: None, except for ice periods listed in rating table below. Records good except those for ice-affected periods, which are fair. Occasional regulation caused by recreation dam approximately 1,200 ft upstream.

AVERAGE DISCHARGE.--73 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)
Oct. 4	0900	*3,260	*4.96	No other peak greater than base discharge.			

Minimum discharge, 16 ft³/s July 8, gage height, 1.56 ft, result of regulation.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Nov. 14-16, 18, 20, 21, and Dec. 10 to Mar. 2.)

1.8	81	3.0	756
2.0	156	4.0	1,830
2.5	412	5.0	3,320

DISCHARGE, IN 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	2870	628	557	310	290	1000	657	606	527	119	531	339
2	2470	601	588	320	300	1400	653	616	494	113	340	349
3	2170	591	576	310	300	1370	654	517	388	116	286	265
4	2660	583	575	300	300	1210	612	509	333	108	243	299
5	2860	557	413	300	290	1030	583	494	293	185	216	298
6	2520	543	517	290	280	888	553	444	247	467	176	249
7	2120	466	564	290	290	825	531	442	220	448	144	242
8	1810	533	563	280	350	844	532	427	248	234	557	239
9	1560	504	606	280	320	905	516	405	212	246	198	224
10	1370	493	450	280	300	899	491	385	184	221	402	122
11	1220	472	400	280	290	804	488	391	191	203	368	175
12	1230	439	350	290	290	724	470	352	210	235	285	190
13	1300	307	370	290	280	646	461	368	212	172	262	181
14	1260	320	370	290	270	651	1140	355	166	171	329	188
15	1160	340	380	290	260	603	1900	304	166	696	501	297
16	1070	350	380	290	260	567	1790	316	178	461	580	243
17	1000	362	380	280	250	523	1580	289	132	395	769	280
18	943	370	370	280	250	538	1300	359	118	231	1130	376
19	876	374	360	270	250	606	1080	394	141	208	972	515
20	814	390	350	260	260	678	915	440	138	256	746	587
21	775	410	340	250	270	698	826	543	223	238	569	607
22	731	433	330	240	280	671	1250	331	188	230	478	668
23	558	534	320	230	290	647	2160	390	136	249	412	688
24	664	593	320	220	300	627	2000	459	140	212	341	600
25	680	605	310	220	300	622	1710	479	168	195	303	521
26	795	617	310	230	300	672	1430	488	179	294	424	481
27	721	619	320	240	320	685	1230	479	142	180	314	403
28	717	613	320	250	350	667	1010	478	137	157	443	400
29	689	588	320	260	---	805	809	492	210	337	368	381
30	579	571	320	270	---	734	689	496	184	282	365	345
31	590	---	310	280	---	720	---	461	---	300	317	---
TOTAL	40782	14806	12639	8470	8090	24259	30020	13509	6505	7959	13369	10752
MEAN	1316	494	408	273	289	783	1001	436	217	257	431	358
MAX	2870	628	606	320	350	1400	2160	616	527	696	1130	688
MIN	558	307	310	220	250	523	461	289	118	108	144	122
CFSM	1.89	.71	.59	.39	.42	1.12	1.44	.63	.31	.37	.62	.51
IN.	2.18	.79	.68	.45	.43	1.30	1.60	.72	.35	.43	.71	.57

CAL YR 1986	TOTAL 287226	MEAN 787	MAX 5130	MIN 136	CFSM 1.13	IN. 15.4
WTR YR 1987	TOTAL 191160	MEAN 524	MAX 2870	MIN 108	CFSM .75	IN. 10.2

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 1986 TO SEPTEMBER 1987

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	TUR- BID- ITY (NTU) (00076)	OXYGEN, DIS- SOLVED (MG/L) (00300)	BARO- METRIC PRES- SURE (MM OF HG) (00025)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)
NOV , 1986										
11...	0900	473	610	8.40	1.5	2.0	13.8	758	99	120
MAR , 1987										
26...	1000	668	610	8.40	8.0	2.7	11.7	741	102	80
JUN										
29...	0930	128	690	8.60	22.0	8.2	8.1	745	95	K650
SEP										
01...	0830	300	640	8.60	19.0	4.3	10.4	753	114	K310
DATE		STREP- TOCOCCEI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD- NESS WH WAT TOT FLD MG/L AS CACO3 (00900)	HARD- NESS NONCARB 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)	PERCENT SODIUM (00932)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED MG/L AS K (00935)	BICAR- BONATE WATER DISSOLV FIELD AS HCO3 (MG/L) (00453)
NOV , 1986										
11...	85	360	55	78	41	23	12	0.5	2.5	--
MAR , 1987										
26...	K61	330	59	71	38	20	11	0.5	2.5	307
JUN										
29...	K100	290	40	53	37	37	22	1	2.7	257
SEP										
01...	K180	290	53	57	36	25	16	0.7	3.4	272
DATE		CAR- BONATE WATER DISSOLV FIELD AS CO3 (MG/L) (00452)	ALKA- LINITY WATER DISSOLV FLD. AS CACO3 (MG/L) (39086)	CARBON DIOXIDE DIS- SOLVED MG/L AS CO2 (00405)	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 STO2 (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED MG/L (70300)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED MG/L (70301)
NOV , 1986										
11...	--	308	2.4	32	41	0.20	6.2	414	410	
MAR , 1987										
26...	10	272	2.1	33	38	0.10	0.3	355	370	
JUN										
29...	21	246	1.2	35	62	0.10	9.9	393	380	
SEP										
01...	8	237	1.1	38	44	0.20	13	382	360	
DATE		SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS- SOLVED (TONS PER DAY) (70302)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P) (00671)
NOV , 1986										
11...	0.56	529	1.20	<0.010	<0.010	1.1	0.060	0.060	0.040	
MAR , 1987										
26...	0.48	640	0.460	0.020	0.030	1.0	0.050	0.010	<0.010	
JUN										
29...	0.53	136	<0.100	0.040	0.030	2.0	0.220	0.060	0.030	
SEP										
01...	0.52	309	<0.100	0.020	<0.010	2.4	0.180	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 1986 TO SEPTEMBER 1987

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (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 , 1986											
11...	0900	473	10	1	33	<0.5	<1	<1	<3	3	29
MAR , 1987											
26...	1000	668	20	<1	35	<0.5	<1	<1	<3	1	25
JUN											
29...	0930	128	20	3	34	<0.5	2	<1	<3	1	12
SEP											
01...	0830	300	20	2	31	<0.5	4	<1	<3	4	47

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 , 1986										
11...	5	11	11	<0.1	<10	2	<1	270	<6	16
MAR , 1987										
26...	<5	5	34	<0.1	<10	3	<1	210	<6	10
JUN										
29...	<5	12	3	<0.1	<10	<1	<1	330	<6	3
SEP										
01...	<5	5	9	0.2	<10	<1	1	290	<6	24

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (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 , 1986							
16...	1800	1050	570	9.0	--	--	--
NOV							
11...	0900	473	610	1.5	15	19	81
DEC							
01...	1105	547	720	1.5	--	--	--
JAN , 1987							
09...	0945	275	740	0.0	--	--	--
FEB							
19...	0945	280	720	0.0	--	--	--
MAR							
26...	1000	668	610	8.0	9	16	87
APR							
07...	1410	558	615	12.0	--	--	--
JUN							
29...	0930	128	690	22.0	27	9.3	98
JUL							
01...	0900	110	630	22.5	--	--	--
AUG							
19...	1040	956	560	21.5	--	--	--
SEP							
01...	0830	300	640	19.0	103	83	99

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: None, except for ice periods listed in rating table below. Records good except those for ice periods, which are fair. Occasional regulation caused by dam in Menomonee Falls, about 1.0 mi upstream.

AVERAGE DISCHARGE.--10 years (1976-77, 1980-87) 31.5 ft³/s, 12.33 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, 0.85 ft³/s July 29, 30, and Aug. 13, 1982, gage height, 2.55 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)
July 29	1550	*296	*4.59				

Minimum, 3.5 ft³/s June 28, 29, gage height, 2.68 ft.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Nov. 13-15, Dec. 5, 9-18, 22, 27, Jan. 16 to Feb. 12, and Feb. 15-18.)

2.7	3.8	3.4	43
2.8	6.0	3.7	80
3.0	14	4.0	131
3.2	26	4.5	264

DISCHARGE, IN 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	215	26	21	13	13	91	35	26	17	7.0	20	11
2	169	25	25	13	16	85	34	30	12	6.2	9.0	14
3	130	24	28	13	20	57	29	28	11	5.8	7.4	9.8
4	151	23	24	13	15	40	26	25	9.5	4.9	6.5	8.7
5	167	22	e22	13	14	35	25	23	8.4	10	5.5	7.3
6	154	21	20	13	14	35	24	21	8.1	27	5.3	6.5
7	118	21	19	13	17	42	23	20	7.6	21	5.1	10
8	81	20	19	13	25	49	21	19	7.7	22	19	7.4
9	61	19	18	14	20	42	21	18	7.2	14	19	7.1
10	50	18	17	14	16	31	22	16	6.9	9.7	13	6.2
11	47	17	17	12	15	24	21	17	7.5	7.8	9.6	9.5
12	71	16	16	13	15	21	21	15	8.2	7.1	7.6	14
13	92	15	16	13	15	21	20	14	6.9	6.0	7.2	8.4
14	74	15	15	14	15	20	94	16	6.0	5.9	11	7.7
15	59	15	15	15	14	20	178	14	5.7	14	17	12
16	50	15	14	15	14	21	154	13	4.9	8.3	26	12
17	43	15	14	14	14	22	104	12	4.9	6.9	41	23
18	40	17	13	14	13	25	61	16	4.5	6.3	30	40
19	37	16	13	13	12	40	43	16	4.2	5.6	21	31
20	35	18	13	12	11	56	36	17	4.6	9.5	15	38
21	34	18	12	11	12	49	34	20	7.4	9.9	12	54
22	31	18	12	11	12	44	101	20	6.4	6.7	10	48
23	30	32	12	10	12	39	168	18	5.3	5.8	8.8	35
24	29	35	12	9.8	12	36	139	15	5.0	5.5	8.0	25
25	29	30	12	9.4	13	37	90	17	5.0	5.1	7.5	20
26	34	29	12	9.0	13	40	54	20	4.7	8.1	15	16
27	35	26	12	8.8	13	36	43	23	4.1	5.5	14	14
28	32	24	12	8.8	27	32	37	18	3.9	5.4	8.3	19
29	32	23	12	9.4	---	42	31	16	7.0	21	8.5	19
30	27	22	13	10	---	43	27	13	8.3	20	8.5	17
31	25	---	13	11	---	36	---	12	---	13	7.5	---
TOTAL	2182	635	493	375.2	422	1211	1716	568	209.9	311.0	403.3	550.6
MEAN	70.4	21.2	15.9	12.1	15.1	39.1	57.2	18.3	7.00	10.0	13.0	18.4
MAX	215	35	28	15	27	91	178	30	17	27	41	54
MIN	25	15	12	8.8	11	20	20	12	3.9	4.9	5.1	6.2
CFSM	2.03	.61	.46	.35	.43	1.13	1.65	.53	.20	.29	.37	.53
IN.	2.34	.68	.53	.40	.45	1.30	1.84	.61	.23	.33	.43	.59

CAL YR 1986 TOTAL 16477.4 MEAN 45.1 MAX 674 MIN 6.9 CFSM 1.30 IN. 17.7
WTR YR 1987 TOTAL 9077.0 MEAN 24.9 MAX 215 MIN 3.9 CFSM .72 IN. 9.73

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: None, except for ice periods listed in rating table below. Records are good, except those for discharges less than 6 ft³/s and greater than 600 ft³/s which are fair to poor, and the periods of ice effect, which are poor.

AVERAGE DISCHARGE.--11 years (1976-79, 1981-87), 13.6 ft³/s, 10.15 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, 1,120 ft³/s Aug. 15, gage height, 5.70 ft; minimum daily, 3.5 ft³/s Feb. 21 and 27.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Nov. 10-14, Dec. 5, 11-15, 19, 22, and Jan. 17 to Feb. 10.)

1.9	2.0	2.4	24
2.0	3.7	2.7	57
2.1	6.5	3.0	105
2.2	10	3.5	211

DISCHARGE, IN 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	83	12	5.9	5.0	4.5	69	14	20	9.9	6.4	14	18
2	49	9.5	9.5	7.2	4.8	18	10	25	6.6	6.6	6.0	15
3	47	8.9	6.7	5.6	7.0	10	8.6	13	6.6	6.7	5.5	8.6
4	141	8.3	6.0	5.3	5.2	7.9	8.2	11	7.0	6.3	5.2	8.6
5	77	8.2	5.2	5.2	4.5	8.0	7.8	9.7	6.8	39	5.0	8.3
6	42	8.1	5.3	5.6	5.0	7.8	8.4	9.5	6.4	72	4.8	7.5
7	31	7.4	7.4	5.6	6.6	8.0	8.4	9.1	6.6	132	4.7	25
8	25	7.2	15	5.7	9.0	8.7	7.9	8.7	6.8	77	72	11
9	20	6.7	19	6.4	7.0	8.4	7.9	8.2	6.5	24	14	8.4
10	17	6.6	7.5	5.3	5.0	8.0	8.2	7.8	6.5	36	6.5	7.7
11	16	6.4	6.4	5.0	4.2	7.3	18	8.7	6.5	11	5.6	7.1
12	41	6.4	6.2	5.5	4.1	7.7	11	7.2	6.8	20	5.7	8.6
13	22	6.2	6.0	6.0	3.9	7.2	8.5	6.5	6.5	13	7.7	7.4
14	16	6.0	5.8	6.4	3.7	13	140	10	6.7	9.3	45	7.1
15	16	5.9	5.8	6.1	3.7	13	114	6.7	6.5	82	97	31
16	14	6.5	5.7	4.9	3.7	11	46	6.2	6.4	20	178	21
17	11	6.1	5.7	5.0	3.7	9.8	30	6.3	6.5	12	90	20
18	10	9.9	5.6	4.8	3.7	11	22	36	6.5	11	46	23
19	9.9	8.4	5.6	4.6	3.7	18	18	28	6.3	11	20	19
20	9.6	12	5.4	4.4	3.6	15	15	28	6.6	28	12	50
21	11	8.0	5.3	4.4	3.5	12	24	40	42	12	11	38
22	12	7.2	5.2	4.4	3.7	11	149	32	23	7.6	9.6	21
23	11	12	5.0	4.5	3.7	10	122	14	7.3	6.8	7.8	14
24	8.3	9.3	5.0	4.5	3.7	10	57	9.9	6.0	6.3	7.4	12
25	8.1	8.2	5.0	4.4	3.7	11	33	17	8.8	6.3	7.6	11
26	27	7.1	5.0	4.4	3.7	12	25	19	6.4	22	91	10
27	15	7.6	5.0	4.4	3.5	9.9	20	13	5.9	8.3	33	9.8
28	13	5.9	5.4	4.4	38	9.1	16	9.6	5.6	6.2	38	25
29	11	5.9	5.9	4.4	---	36	15	8.2	21	16	27	17
30	9.9	5.9	5.3	4.4	---	15	13	7.9	9.6	6.9	15	9.6
31	9.5	---	5.1	4.4	---	12	---	9.0	---	6.1	11	---
TOTAL	833.3	233.8	202.9	158.2	160.1	414.8	985.9	445.2	270.6	727.8	903.1	479.7
MEAN	26.9	7.79	6.55	5.10	5.72	13.4	32.9	14.4	9.02	23.5	29.1	16.0
MAX	141	12	19	7.2	38	69	149	40	42	132	178	50
MIN	8.1	5.9	5.0	4.4	3.5	7.2	7.8	6.2	5.6	6.1	4.7	7.1
CFSM	1.48	.43	.36	.28	.31	.74	1.81	.79	.50	1.29	1.60	.88
IN.	1.70	.48	.41	.32	.33	.85	2.02	.91	.55	1.49	1.85	.98

CAL YR 1986 TOTAL 7006.1 MEAN 19.2 MAX 296 MIN 3.6 CFSM 1.05 IN. 14.3
WTR YR 1987 TOTAL 5815.4 MEAN 15.9 MAX 178 MIN 3.5 CFSM .88 IN. 11.9

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: None, except those for ice periods listed in rating table below. Records good except for ice-affected periods, which are poor. Low flow affected by three sewage treatment plants upstream. Gage-height telemeter at station.

AVERAGE DISCHARGE.--26 years, 98.5 ft³/s, 10.88 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,500 ft³/s Apr. 21, 1973, gage height, 13.92 ft from rating curve extended above 6,000 ft³/s on basis of slope-area measurement of peak flow; minimum daily, 2.8 ft³/s Jan. 18, 1964.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,000 ft³/s and maximum (*):

DATE	TIME	DISCHARGE (ft ³ /s)	GAGE HEIGHT (ft)	DATE	TIME	DISCHARGE (ft ³ /s)	GAGE HEIGHT (ft)
Apr. 14	1920	*2,560	*6.17	Aug. 15	2130	2,520	6.12
July 7	2000	2,160	5.60				

Minimum daily discharge, 19 ft³/s June 20.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Nov. 14, Dec. 11-20, and Jan. 17 to Feb. 3.)

0.3	18	2.0	252
0.5	26	2.5	410
0.7	38	3.0	630
1.0	71	4.0	1,140
1.5	152		

DISCHARGE, IN 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	743	91	51	33	30	762	114	113	83	27	172	72
2	477	74	92	51	38	270	97	137	51	24	56	135
3	391	69	74	41	50	178	81	98	39	22	34	52
4	934	67	65	36	40	127	69	80	34	21	30	40
5	699	63	48	35	33	104	62	71	30	177	25	35
6	409	61	52	36	36	97	59	65	27	372	23	30
7	299	58	64	37	48	100	57	60	25	670	23	125
8	237	55	95	37	68	117	54	56	24	265	338	71
9	189	50	143	36	67	111	51	50	24	112	152	42
10	157	47	68	39	46	83	50	46	23	114	58	36
11	138	49	58	39	41	67	89	58	23	48	40	37
12	270	45	48	39	47	55	58	45	25	83	32	45
13	209	43	42	45	42	55	50	39	23	51	28	37
14	183	41	39	53	37	88	857	58	21	33	191	32
15	153	39	38	52	33	88	1060	41	21	346	459	185
16	133	40	37	39	42	80	477	35	21	104	641	105
17	115	40	35	37	37	76	291	32	20	59	429	126
18	103	66	34	35	32	87	198	196	20	41	226	134
19	94	51	34	34	31	138	146	178	20	33	122	128
20	91	87	34	32	29	162	119	122	19	82	75	260
21	89	60	34	30	29	140	136	248	178	77	56	233
22	88	51	35	28	31	122	828	147	112	38	48	158
23	81	100	33	27	31	109	973	84	37	31	36	115
24	76	94	33	26	30	98	529	62	27	28	32	87
25	75	82	33	25	30	102	293	85	46	25	30	68
26	187	73	32	24	30	109	199	124	27	144	379	56
27	111	68	32	23	30	95	156	109	22	39	135	49
28	95	59	33	23	249	82	130	75	20	28	169	122
29	84	56	36	24	---	232	111	56	82	91	118	128
30	75	52	36	25	---	140	94	46	58	101	67	68
31	71	---	34	27	---	109	---	46	---	43	49	---
TOTAL	7056	1831	1522	1068	1287	4183	7488	2662	1182	3329	4273	2811
MEAN	228	61.0	49.1	34.5	46.0	135	250	85.9	39.4	107	138	93.7
MAX	934	100	143	53	249	762	1060	248	178	670	641	260
MIN	71	39	32	23	29	55	50	32	19	21	23	30
CFSM	1.85	.50	.40	.28	.37	1.10	2.03	.70	.32	.87	1.12	.76
IN.	2.13	.55	.46	.32	.39	1.27	2.26	.81	.36	1.01	1.29	.85

CAL YR 1986	TOTAL 60808	MEAN 167	MAX 3310	MIN 19	CFSM 1.35	IN. 18.4
WTR YR 1987	TOTAL 38692	MEAN 106	MAX 1060	MIN 19	CFSM .86	IN. 11.7

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: None, except for ice periods listed in rating table below. Records are good except for the ice-affected periods, which are fair.

AVERAGE DISCHARGE.--5 years, 27.3 ft³/s, 18.35 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, 3,710 ft³/s Aug. 15, gage height, 12.08 ft; minimum discharge, 2.0 ft³/s Jan. 23, gage height, 5.86 ft, result of freezeup.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Nov. 10-15, Dec. 10-24, and Jan. 18 to Feb. 2.)

6.0	4.2	6.9	68
6.2	9.4	7.4	156
6.4	19	8.1	348
6.6	33	9.0	736

DISCHARGE, IN 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	16	6.8	5.3	6.0	108	12	29	13	7.5	17	31
2	22	8.1	19	13	7.0	16	8.4	33	9.1	7.4	7.4	32
3	27	8.7	9.1	6.6	15	11	7.6	13	8.0	7.2	8.7	11
4	158	8.5	7.2	5.2	8.3	9.4	6.7	10	7.5	6.3	8.1	10
5	30	9.0	6.8	5.6	6.9	9.0	6.2	9.4	7.5	93	7.4	9.4
6	19	8.2	6.7	6.8	11	8.7	6.8	9.3	6.3	68	7.6	8.9
7	16	8.0	17	6.8	13	8.4	7.0	9.2	6.8	170	7.7	11
8	16	7.1	40	6.4	9.3	8.2	13	8.1	8.9	48	217	11
9	13	6.2	37	6.1	9.1	7.2	6.9	7.1	8.4	12	33	11
10	12	6.2	12	9.2	6.3	7.1	6.2	6.8	8.5	43	11	11
11	12	6.0	9.0	6.4	6.6	7.0	28	7.9	8.3	9.3	9.6	9.1
12	62	5.8	7.0	8.5	6.3	6.7	7.0	7.6	8.6	8.6	10	12
13	22	5.8	6.2	10	6.1	8.4	6.5	7.5	6.9	11	11	7.9
14	18	6.0	5.8	11	5.5	29	369	17	6.3	8.5	90	9.8
15	17	6.0	5.6	9.4	4.4	23	66	7.4	8.3	103	580	64
16	18	6.6	5.4	6.5	6.4	16	22	6.9	7.3	11	569	32
17	16	9.5	5.2	5.7	6.3	15	15	6.8	8.4	9.8	104	41
18	16	22	5.2	5.6	5.8	16	12	67	8.1	8.7	62	13
19	13	9.7	5.2	5.4	5.5	25	10	73	8.6	8.1	22	14
20	10	29	5.0	5.4	5.3	12	9.7	32	7.0	51	16	57
21	10	9.1	5.0	5.2	5.5	9.6	25	64	98	20	14	24
22	9.7	7.1	5.0	5.0	5.9	8.6	312	53	22	10	25	15
23	9.8	20	5.0	4.9	5.4	8.6	115	14	8.9	9.2	9.9	9.7
24	9.6	7.5	5.0	4.9	5.9	8.3	32	9.6	9.9	9.1	9.9	9.1
25	12	7.3	5.0	4.9	5.7	12	18	19	40	8.7	10	9.3
26	93	7.0	4.8	5.2	5.8	11	14	15	8.7	46	194	8.0
27	16	6.0	4.8	5.2	5.8	8.2	13	15	6.8	16	34	8.0
28	13	6.2	4.8	5.2	153	6.8	12	12	6.0	7.2	29	28
29	12	6.0	5.4	5.4	---	62	11	9.9	29	45	15	17
30	11	5.8	5.4	5.4	---	11	9.8	8.6	21	12	12	8.6
31	11	---	5.3	5.6	---	9.7	---	19	---	8.5	11	---
TOTAL	755.1	274.4	276.7	201.8	343.1	506.9	1187.8	607.1	412.1	883.1	2162.3	542.8
MEAN	24.4	9.15	8.93	6.51	12.3	16.4	39.6	19.6	13.7	28.5	69.8	18.1
MAX	158	29	40	13	153	108	369	73	98	170	580	64
MIN	9.6	5.8	4.8	4.9	4.4	6.7	6.2	6.8	6.0	6.3	7.4	7.9
CFSM	1.21	.45	.44	.32	.61	.81	1.96	.97	.68	1.41	3.45	.90
IN.	1.39	.51	.51	.37	.63	.93	2.19	1.12	.76	1.63	3.98	1.00

CAL YR 1986 TOTAL 12009.5 MEAN 32.9 MAX 1630 MIN 4.8 CFSM 1.63 IN. 22.1
WTR YR 1987 TOTAL 8153.2 MEAN 22.3 MAX 580 MIN 4.4 CFSM 1.11 IN. 15.0

STREAMS TRIBUTARY TO LAKE MICHIGAN

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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: None, except for 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.--24 years, 22.5 ft³/s, 12.22 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)
Apr. 15	0045	*457	*7.03	Aug. 16	2200	412	6.76
Apr. 22	2400	397	6.67				

Minimum discharge, 1.8 ft³/s Aug. 7, 8, gage height, 2.26 ft.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Dec. 11-21, Jan. 22 to Feb. 1, and Feb. 15-18.)

2.2	1.4	3.0	35
2.3	2.1	4.0	112
2.4	3.7	5.0	196
2.5	8.0	6.0	302
2.6	13		

DISCHARGE, IN 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	107	15	7.4	5.6	4.3	227	16	15	8.9	5.1	2.9	9.5
2	61	15	12	8.3	6.9	64	14	29	5.0	3.1	2.6	11
3	50	13	14	9.3	15	33	13	24	4.2	2.7	2.2	7.8
4	143	12	10	8.1	11	23	12	18	3.4	2.4	2.1	6.3
5	109	12	7.7	7.5	9.1	22	11	15	3.2	7.5	2.0	5.6
6	49	11	7.1	8.0	9.8	21	9.8	13	2.8	15	1.9	5.1
7	34	10	9.8	8.8	16	23	9.3	12	2.7	52	1.8	4.7
8	29	9.8	19	7.8	24	25	8.6	11	2.5	57	82	4.9
9	25	8.1	48	6.8	17	20	7.9	9.8	2.4	15	53	4.1
10	21	7.5	26	7.1	9.6	14	7.4	8.6	2.3	7.6	10	4.2
11	19	7.5	12	7.1	8.1	13	13	7.9	2.4	4.6	5.1	4.4
12	33	6.6	8.0	7.0	8.9	11	15	7.2	2.3	3.4	3.3	6.2
13	33	6.2	7.0	8.5	7.6	11	12	6.8	2.2	3.6	2.9	5.0
14	24	5.4	6.6	10	6.7	15	154	7.4	2.2	3.3	47	4.1
15	19	5.6	6.4	12	6.0	20	299	6.7	2.2	19	131	9.1
16	16	5.8	6.2	8.7	5.2	25	93	5.5	2.1	13	226	12
17	15	6.1	6.0	7.4	4.1	29	43	4.8	2.2	4.9	258	21
18	14	7.6	5.8	6.6	4.1	32	28	20	2.0	3.1	70	17
19	13	9.0	5.8	5.9	4.0	49	22	29	2.0	2.7	38	11
20	12	15	5.6	5.3	3.9	34	17	21	2.0	5.0	18	14
21	12	14	5.6	4.9	4.4	24	16	37	18	11	14	22
22	11	11	5.6	4.3	5.2	19	154	26	35	6.1	15	14
23	11	16	5.8	3.9	5.8	17	268	16	9.3	2.9	11	9.1
24	10	15	5.6	3.3	5.7	16	102	12	4.3	2.5	7.6	6.3
25	11	11	5.6	2.8	5.6	16	47	11	32	2.2	6.5	5.0
26	77	10	5.7	2.7	5.4	17	31	11	19	7.2	91	4.1
27	46	8.8	5.8	2.6	5.4	16	23	8.8	7.1	6.5	115	3.6
28	24	7.9	5.8	2.6	32	15	18	7.0	4.0	3.6	28	7.4
29	18	7.4	6.0	2.7	---	41	15	5.7	4.3	6.4	17	10
30	16	7.0	5.8	2.8	---	27	14	4.7	5.5	13	13	5.8
31	15	---	5.6	2.9	---	18	---	9.1	---	3.8	10	---
TOTAL	1077	296.3	293.3	191.3	250.8	937	1493.0	420.0	197.5	295.2	1287.9	254.3
MEAN	34.7	9.88	9.46	6.17	8.96	30.2	49.8	13.5	6.58	9.52	41.5	8.48
MAX	143	16	48	12	32	227	299	37	35	57	258	22
MIN	10	5.4	5.6	2.6	3.9	11	7.4	4.7	2.0	2.2	1.8	3.6
CFSM	1.39	.40	.38	.25	.36	1.21	1.99	.54	.26	.38	1.66	.34
IN.	1.60	.44	.44	.28	.37	1.39	2.22	.62	.29	.44	1.92	.38

CAL YR 1986 TOTAL 11580.2 MEAN 31.7 MAX 518 MIN 1.8 CFSM 1.27 IN. 17.2
WTR YR 1987 TOTAL 6993.5 MEAN 19.2 MAX 299 MIN 1.8 CFSM .77 IN. 10.4

STREAMS TRIBUTARY TO LAKE MICHIGAN

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: None, except for ice periods listed in rating table below. Records are fair. Flow affected by urbanization in the drainage basin.

AVERAGE DISCHARGE.--24 years, 44.9 ft³/s, 12.39 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)
Apr. 15	1400	512	7.54	Aug. 17	1015	*579	*7.78

Minimum discharge, 3.5 ft³/s July 4, 5, Aug. 5, 7, gage height, 1.66 ft.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Shifting-control method used Oct. 1-16, 26-29, Dec. 9-10, Mar. 1-4, 18-22, 29, 30, Apr. 14-19, 22-28, May 2, 3, 19, 21, 22, July 7-9, 16, Aug. 8, 9, 14-20, 26-29, Sept. 18, 21-23, 29, 30; stage-discharge relation affected by ice Nov. 2, 13, Dec. 5, 11-23, Jan. 9 to Feb. 28, and Mar. 12.)

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

DISCHARGE, IN 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	238	29	16	10	7.6	292	35	32	18	8.4	6.0	18
2	118	31	21	10	10	122	31	53	15	5.5	6.8	22
3	88	26	26	12	16	59	25	49	11	4.2	5.0	17
4	165	24	20	11	14	46	21	41	10	3.7	4.0	12
5	225	22	e16	10	13	41	20	34	9.3	4.4	3.6	10
6	98	21	13	12	15	38	21	30	8.0	32	4.4	9.2
7	69	20	14	12	22	36	20	25	7.2	67	3.8	9.0
8	59	19	22	10	32	39	18	23	7.7	191	49	14
9	51	18	54	10	22	38	16	21	6.9	55	100	11
10	45	17	69	11	15	28	16	19	6.3	28	30	9.5
11	41	17	50	11	13	22	22	19	6.3	17	15	8.6
12	56	15	20	13	11	20	34	19	6.8	10	10	8.4
13	71	14	14	15	9.8	19	23	16	6.2	10	8.6	7.9
14	55	13	12	11	9.4	23	117	16	5.2	8.6	45	7.7
15	45	12	11	11	8.6	34	431	19	5.2	31	173	24
16	39	13	11	10	8.2	37	182	14	5.0	51	260	24
17	34	13	10	9.6	7.8	44	87	11	4.9	15	536	37
18	30	15	10	9.2	7.4	48	62	29	4.6	9.3	264	54
19	30	23	9.8	8.8	7.0	63	50	45	4.7	7.3	104	34
20	28	28	9.8	8.6	6.8	63	44	42	4.4	6.6	54	29
21	28	36	9.6	8.4	6.6	51	40	57	5.8	28	39	58
22	30	24	9.6	8.0	6.8	45	153	74	37	11	39	53
23	37	37	9.8	7.6	7.2	41	429	40	13	6.1	24	37
24	34	41	9.9	7.2	7.6	38	222	31	6.5	5.2	18	22
25	31	32	10	7.0	7.4	36	98	24	6.7	4.7	14	17
26	75	21	10	6.8	7.4	40	67	42	12	6.1	72	15
27	64	19	9.9	6.6	7.2	36	54	30	6.0	10	174	11
28	48	18	9.7	6.6	17	29	47	23	5.0	8.4	65	11
29	41	17	10	6.8	---	53	42	19	5.5	6.8	53	30
30	34	16	11	7.0	---	57	35	15	14	23	35	22
31	29	---	10	7.2	---	42	---	13	---	7.5	25	---
TOTAL	2036	651	538.1	294.4	322.8	1580	2462	925	264.2	681.8	2240.2	642.3
MEAN	65.7	21.7	17.4	9.50	11.5	51.0	82.1	29.8	8.81	22.0	72.3	21.4
MAX	238	41	69	15	32	292	431	74	37	191	536	58
MIN	28	12	9.6	6.6	6.6	19	16	11	4.4	3.7	3.6	7.7
CFSM	1.33	.44	.35	.19	.23	1.04	1.67	.61	.18	.45	1.47	.44
IN.	1.54	.49	.41	.22	.24	1.19	1.86	.70	.20	.52	1.69	.49

CAL YR 1986	TOTAL 20393.8	MEAN 55.9	MAX 629	MIN 5.1	CFSM 1.14	IN. 15.4
WTR YR 1987	TOTAL 12637.8	MEAN 34.6	MAX 536	MIN 3.6	CFSM .70	IN. 9.56

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: None, except for ice periods listed in rating table below. Records fair.

AVERAGE DISCHARGE.--24 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)
Oct. 1	0015	(a)*930	*9.55	Apr. 23	1000	697	8.89
Apr. 15	1300	(b) 901	9.48	Aug. 17	1130	552	8.33

(a) Recession from peak of Sept. 30.

(b) Maximum peak discharge.

Minimum discharge, 2.5 ft³/s Aug. 6-8, gage height, 1.88 ft.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Dec. 13-19 and Jan. 21 to Feb. 9.)

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

DISCHARGE, IN 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	721	34	16	10	7.0	197	37	47	12	11	7.1	36
2	363	31	20	11	7.6	121	32	139	12	9.1	6.3	35
3	219	30	22	11	12	81	27	278	12	7.3	3.8	27
4	264	27	19	10	21	59	24	256	9.8	6.0	3.6	22
5	317	25	15	10	17	54	22	138	8.7	5.7	3.1	18
6	188	23	15	11	17	55	21	100	8.1	6.3	2.8	16
7	140	21	16	12	35	62	20	75	7.4	98	2.6	14
8	114	21	20	11	50	66	19	60	6.5	60	8.7	14
9	94	19	39	9.7	25	55	18	50	6.3	30	16	13
10	81	17	37	12	21	41	17	42	6.0	18	7.7	11
11	71	17	30	10	19	33	31	37	6.3	13	5.1	11
12	68	16	23	9.6	19	28	140	31	6.6	9.7	3.7	10
13	65	14	17	9.7	15	27	99	28	5.9	8.3	3.3	10
14	60	15	16	11	14	31	275	27	5.4	7.7	45	9.1
15	52	15	15	12	11	33	837	23	4.8	29	101	10
16	47	15	15	10	9.8	44	556	21	4.7	37	211	11
17	41	15	15	11	9.6	57	253	19	4.4	17	527	20
18	37	15	14	10	8.9	63	167	20	4.3	11	333	39
19	35	15	13	9.6	8.2	92	128	22	4.2	8.5	200	31
20	33	16	13	9.2	7.9	82	101	23	4.2	6.9	111	30
21	33	17	12	8.4	8.4	63	80	46	9.0	9.9	73	94
22	31	16	12	7.8	8.8	51	208	35	11	9.2	51	84
23	29	23	12	7.2	8.5	45	655	28	6.9	7.2	36	58
24	27	25	12	6.8	8.0	40	379	24	5.4	5.5	28	40
25	27	22	12	6.4	7.6	38	188	22	68	5.6	23	30
26	76	22	11	6.2	7.7	37	134	24	88	5.7	66	25
27	87	20	11	6.0	7.8	34	104	19	32	6.2	290	20
28	61	18	11	6.0	14	30	81	16	18	5.1	173	18
29	48	17	11	6.2	---	48	68	15	14	4.5	111	19
30	40	16	11	6.4	---	51	53	14	15	4.0	73	17
31	36	---	10	6.6	---	40	---	13	---	3.6	49	---
TOTAL	3505	597	515	283.8	405.8	1758	4774	1692	406.9	466.0	2574.8	792.1
MEAN	113	19.9	16.6	9.15	14.5	56.7	159	54.6	13.6	15.0	83.1	26.4
MAX	721	34	39	12	50	197	837	278	88	98	527	94
MIN	27	14	10	6.0	7.0	27	17	13	4.2	3.6	2.6	9.1
CFSM	1.98	.35	.29	.16	.25	.99	2.79	.96	.24	.26	1.46	.46
IN.	2.29	.39	.34	.19	.26	1.15	3.12	1.10	.27	.30	1.68	.52

CAL YR 1986	TOTAL 24064.0	MEAN 65.9	MAX 1040	MIN 2.4	CFSM 1.16	IN. 15.7
WTR YR 1987	TOTAL 17770.3	MEAN 48.7	MAX 837	MIN 2.6	CFSM .85	IN. 11.6

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: None, except for ice-affected periods listed in rating table below. Records good except for periods of ice affect, which are fair.

AVERAGE DISCHARGE.--24 years, 155 ft³/s, 11.14 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, 1.0 ft³/s July 17, 1977.

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)
Oct. 2	0300	*1,450	*5.17	Apr. 24	1600	1,410	5.13
Apr. 16	2000	1,390	5.10	Aug. 19	0500	1,120	4.76

Minimum daily, 11.0 ft³/s June 19.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Dec. 12 and Jan. 23-24.)

2.3	11	3.0	116
2.4	18	3.5	290
2.5	26	4.0	560
2.6	37	5.0	1,310
2.8	65	6.0	2,130

DISCHARGE, IN 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	1350	109	55	39	22	268	131	153	44	42	25	125
2	1320	102	57	39	24	518	116	200	44	35	22	99
3	994	100	63	39	29	515	104	379	42	28	21	86
4	770	91	67	42	39	266	88	460	38	25	18	73
5	704	84	52	40	54	203	79	434	33	22	15	58
6	733	80	56	41	52	185	71	277	29	23	13	52
7	623	76	52	41	57	188	66	225	27	136	12	47
8	395	74	59	42	111	205	68	194	24	234	16	45
9	285	68	96	33	134	192	62	151	22	248	85	46
10	235	61	117	39	84	163	67	129	21	122	131	44
11	206	57	91	44	62	126	65	119	20	66	55	40
12	187	54	80	41	55	106	118	107	21	49	34	39
13	198	42	66	37	54	109	221	102	21	36	26	36
14	198	54	61	42	49	110	333	98	21	31	78	35
15	166	48	51	43	42	124	912	96	19	38	208	36
16	142	47	49	36	34	152	1250	96	16	84	378	47
17	125	48	50	48	31	172	1240	90	15	106	735	78
18	113	49	51	42	31	211	809	90	13	49	874	122
19	100	49	49	35	29	267	460	113	11	34	1040	144
20	93	58	46	36	26	304	322	146	12	29	741	119
21	88	63	43	35	28	248	270	184	15	26	340	194
22	87	67	38	32	27	199	360	204	21	41	201	267
23	84	69	41	25	29	167	925	182	58	39	148	215
24	81	84	41	24	29	154	1310	129	32	29	106	152
25	75	90	41	23	27	153	1220	113	47	26	84	108
26	129	80	41	21	26	128	776	102	136	26	114	83
27	256	71	40	19	27	121	453	113	122	20	404	67
28	221	65	35	17	33	110	278	86	61	24	545	57
29	168	61	41	18	---	120	214	63	46	24	450	55
30	135	57	40	20	---	191	177	55	43	24	258	58
31	120	---	39	21	---	166	---	48	---	27	174	---
TOTAL	10381	2058	1708	1054	1245	6141	12565	4938	1074	1743	7351	2627
MEAN	335	68.6	55.1	34.0	44.5	198	419	159	35.8	56.2	237	87.6
MAX	1350	109	117	48	134	518	1310	460	136	248	1040	267
MIN	75	42	35	17	22	106	62	48	11	20	12	35
CFSM	1.76	.36	.29	.18	.23	1.04	2.20	.84	.19	.30	1.25	.46
IN.	2.03	.40	.33	.21	.24	1.20	2.46	.97	.21	.34	1.44	.51
CAL YR 1986	TOTAL 68746	MEAN 188	MAX 2060	MIN 14	CFSM .99	IN. 13.5						
WTR YR 1987	TOTAL 52885	MEAN 145	MAX 1350	MIN 11	CFSM .76	IN. 10.4						

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: None, except for 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.--16 years, 37.0 ft³/s, 13.05 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)
Apr. 14	2245	*836	*6.65	No other peak greater than base discharge.			
Minimum daily, 6.1 ft ³ /s July 5.							

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Nov. 11, 12, Dec. 10-14, Jan. 18 to Feb. 2, and Feb. 16.)

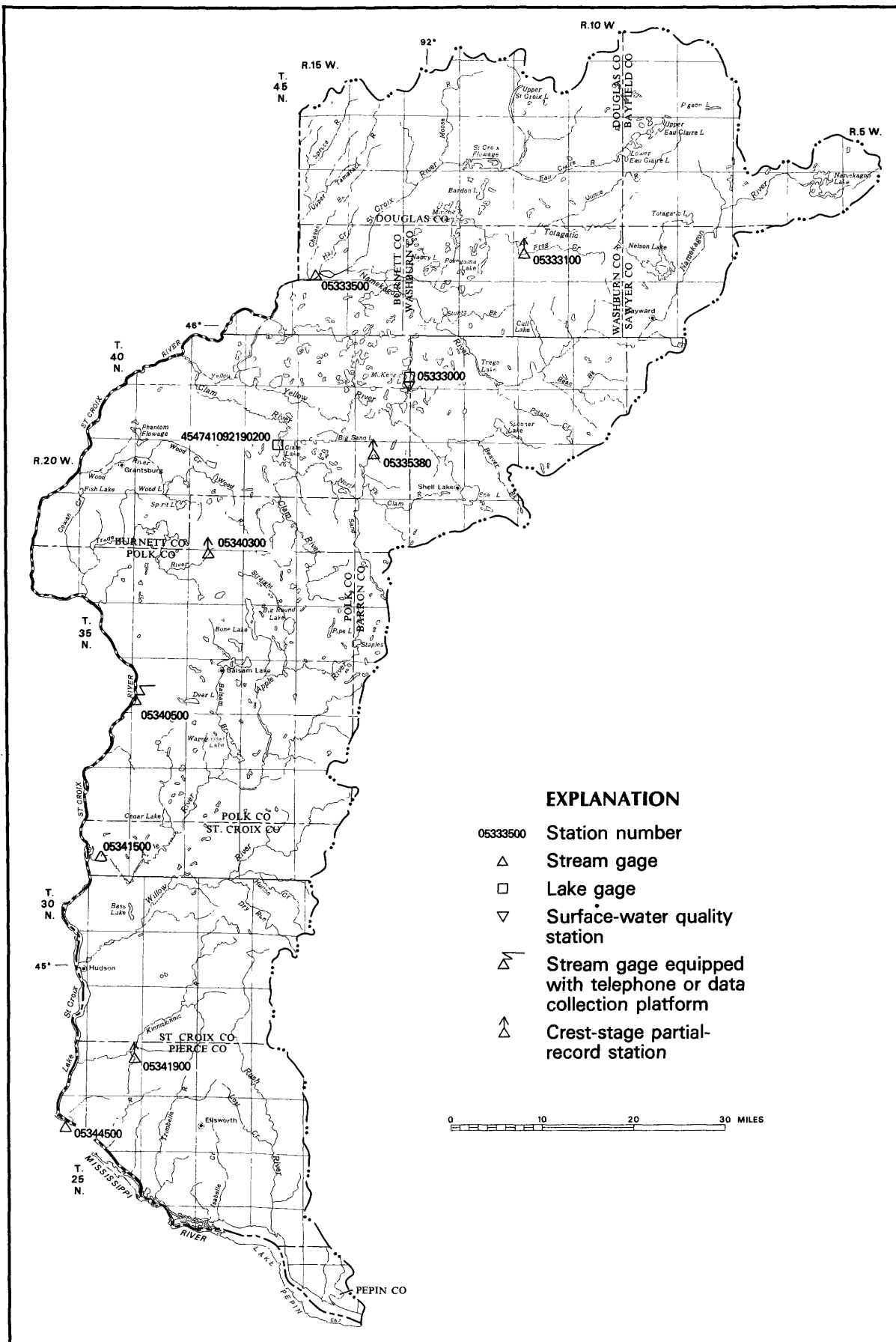
1.7	3.8	3.0	93
1.8	6.4	4.0	242
2.0	14	5.0	440
2.2	24	6.0	684
2.5	44		

DISCHARGE, IN 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	254	27	13	11	12	172	26	34	21	9.0	8.1	18
2	177	24	18	11	14	77	23	165	32	9.0	7.0	24
3	129	23	17	12	19	54	21	269	20	8.8	6.9	16
4	193	22	15	11	17	43	19	173	15	7.6	7.7	13
5	170	20	13	11	16	40	18	101	15	6.1	6.7	11
6	100	20	14	12	16	38	18	72	14	6.9	6.7	10
7	74	19	16	13	25	38	18	56	14	21	7.0	11
8	59	19	26	12	32	37	18	48	14	13	17	12
9	47	17	48	11	27	33	15	42	13	8.8	11	16
10	40	16	32	12	16	28	14	37	11	8.3	7.8	13
11	34	15	25	12	15	26	42	36	12	7.0	7.4	11
12	31	15	21	11	16	23	98	33	12	6.6	6.6	9.9
13	28	14	19	12	14	22	55	32	12	7.3	6.9	9.0
14	27	14	19	13	13	28	263	32	10	7.2	72	9.1
15	24	14	18	14	12	30	479	21	10	23	30	14
16	23	14	17	13	12	41	228	26	9.7	11	33	18
17	22	14	16	11	11	41	151	25	9.7	7.9	229	32
18	19	15	16	10	11	39	105	38	9.7	7.9	93	32
19	17	15	16	9.8	11	62	73	52	9.5	6.7	56	21
20	19	18	15	9.6	11	48	57	43	8.3	6.4	29	20
21	20	17	13	9.2	11	39	46	85	7.5	8.5	21	47
22	19	15	13	9.0	11	33	188	55	8.6	8.6	16	40
23	18	18	13	8.8	11	30	381	39	9.0	8.5	11	29
24	17	16	12	8.8	11	28	188	34	9.3	8.1	9.2	23
25	18	15	12	8.6	11	27	115	32	9.6	8.4	9.1	19
26	102	16	11	8.6	10	26	80	34	9.9	8.8	102	16
27	71	14	11	8.6	10	24	60	27	9.8	13	176	13
28	49	13	11	8.8	22	21	48	26	8.8	7.1	73	12
29	37	13	11	9.0	---	36	43	23	8.3	7.4	43	30
30	31	12	11	9.2	---	30	36	16	8.8	8.3	29	17
31	29	---	11	10	---	27	---	15	---	8.2	22	---
TOTAL	1898	504	523	330.0	417	1241	2926	1721	361.5	284.4	1160.1	566.0
MEAN	61.2	16.8	16.9	10.6	14.9	40.0	97.5	55.5	12.0	9.17	37.4	18.9
MAX	254	27	48	14	32	172	479	269	32	23	229	47
MIN	17	12	11	8.6	10	21	14	15	7.5	6.1	6.6	9.0
CFSM	1.59	.44	.44	.28	.39	1.04	2.53	1.44	.31	.24	.97	.49
IN.	1.83	.49	.51	.32	.40	1.20	2.83	1.66	.35	.27	1.12	.55

CAL YR 1986 TOTAL 16901.4 MEAN 46.3 MAX 837 MIN 5.3 CFSM 1.20 IN. 16.3
WTR YR 1987 TOTAL 11932.0 MEAN 32.7 MAX 479 MIN 6.1 CFSM .85 IN. 11.5

UPPER MISSISSIPPI RIVER BASIN RECORDS



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

ST CROIX RIVER BASIN

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. 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, 1.08 ft, May 13; minimum observed, 0.42 ft, July 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 1986 TO SEPTEMBER 1987

DATE	GAGE HEIGHT	DATE	GAGE HEIGHT	DATE	GAGE HEIGHT	DATE	GAGE HEIGHT	DATE	GAGE HEIGHT	DATE	GAGE HEIGHT
OCT. 12	0.62	MAY 12	0.27	MAY 27	0.20	JUNE 1	0.34	JULY 10	0.02	AUG. 10	0.10
OCT. 14	0.62	MAY 24	0.23	MAY 31	0.29	JULY 5	-0.03	JULY 18	0.00	SEPT. 8	0.04
										SEPT. 15	0.08

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.

SECCHI DISC TRANSPARENCY (IN METERS) WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	SECCHI DEPTH	DATE	SECCHI DEPTH	DATE	SECCHI DEPTH	DATE	SECCHI DEPTH
MAY 24	3.66	MAY 31	4.57	JULY 18	2.44	SEPT. 8	1.60
MAY 27	3.96	JULY 5	3.05	AUG. 10	1.52	SEPT. 15	1.68

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: None, except for ice period listed in rating table below. Records good except those for ice-affected period, which is fair.

AVERAGE DISCHARGE.--70 years (water years 1915-81, 1985-87), 1,314 ft³/s, 11.29 in/yr.

EXTREMES FOR PERIODS 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)
Oct. 1	0100	(a)*2,880	3.00	Dec. 11	1600	ice jam	*4.75
Oct. 14	0400	(b) 2,390	2.54				

(a) Occurred on recession of peak on Sept. 26, 1986.

(b) Maximum independent peak discharge.

Minimum discharge, 633 ft³/s, Aug. 11, Sept. 2, gage height, 0.42 ft

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Dec. 5 to Mar. 7.)

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

DISCHARGE, IN 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	2730	1630	1440	1300	1100	1300	1430	1120	1210	786	905	667
2	2290	1590	1410	1200	1200	1300	1320	1070	1460	788	872	688
3	2250	1620	1420	1200	1200	1400	1350	1040	1650	743	821	678
4	2200	1610	1390	1200	1200	1400	1300	993	1650	802	818	675
5	2110	1580	1300	1300	1200	1400	1270	971	1520	764	803	691
6	2050	1610	1300	1300	1200	1300	1300	931	1380	702	916	710
7	1800	1630	1200	1300	1200	1300	1220	868	1250	713	801	769
8	1730	1750	1200	1300	1300	1370	1230	920	1260	755	719	814
9	1720	1770	1200	1200	1300	1370	1230	912	1210	777	727	768
10	1680	1720	1300	1200	1300	1470	1310	868	989	793	673	717
11	1670	1710	1400	1200	1300	1420	1300	930	1090	791	658	734
12	2040	1630	1300	1200	1300	1360	1290	893	1150	856	731	736
13	2240	1410	1200	1200	1300	1370	1260	894	1140	811	827	767
14	2290	1410	1200	1200	1300	1330	1250	911	1120	896	744	735
15	2180	1590	1200	1100	1300	1260	1260	871	1050	794	763	691
16	2290	1700	1300	1100	1300	1230	1280	873	975	811	831	734
17	2270	1640	1300	960	1300	1170	1250	843	950	746	845	857
18	2180	1620	1300	900	1200	1180	1200	911	955	787	813	988
19	2120	1580	1300	1000	1200	1200	1210	1070	866	799	768	1050
20	2020	1690	1300	1000	1200	1250	1190	1170	884	785	728	997
21	1910	1470	1300	1000	1200	1320	1180	1110	842	862	775	1050
22	1850	1530	1300	1100	1300	1380	1250	1240	779	888	763	1020
23	1890	1560	1300	1100	1300	1510	1140	1350	826	912	746	983
24	1880	1510	1200	1000	1300	1640	1080	1380	859	892	707	907
25	1780	1510	1300	900	1300	1760	1140	1220	848	962	737	857
26	1710	1450	1300	980	1300	1690	1160	1200	720	916	807	850
27	1700	1470	1300	1000	1300	1690	1130	1230	751	819	789	872
28	1690	1480	1300	1100	1300	1550	1100	1190	762	951	791	834
29	1740	1510	1300	1100	---	1450	1040	1260	808	1080	785	840
30	1700	1480	1400	1100	---	1450	1030	1110	799	975	772	809
31	1670	---	1300	1100	---	1380	---	1180	---	914	721	---
TOTAL	61380	47460	40260	34840	35200	43200	36700	32529	31753	25870	24156	24488
MEAN	1980	1582	1299	1124	1257	1394	1223	1049	1058	835	779	816
MAX	2730	1770	1440	1300	1300	1760	1430	1380	1650	1080	916	1050
MIN	1670	1410	1200	900	1100	1170	1030	843	720	702	658	667
CFSM	1.25	.99	.82	.71	.79	.88	.77	.66	.67	.53	.49	.51
IN.	1.44	1.11	.94	.82	.82	1.01	.86	.76	.74	.61	.57	.57

CAL YR 1986 TOTAL 701300 MEAN 1921 MAX 6550 MIN 1100 CFSM 1.21 IN. 16.4
WTR YR 1987 TOTAL 437836 MEAN 1200 MAX 2730 MIN 658 CFSM .76 IN. 10.3

ST. CROIX RIVER BASIN

454741092190200 CLAM LAKE NEAR SIREN, WI

LOCATION.--Lat 45°47'41", long 92°19'02", in NW 1/4 sec.11, T.38 N., R.16 W., Burnett County, Hydrologic Unit 07030001, 3.1 mi east of Siren.

PERIOD OF RECORD.--April 1985 to September 1986 (discontinued).

REMARKS.--Records for 1986 water year were published as station 454711090203000. The published longitude for the 1986 water year (90°20'30") is incorrect. The correct longitude is 92°20'30". There are no data for the 1987 water year.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height observed, 11.19 ft, May 12, 1986; minimum observed, 7.79 ft, Oct. 28, 1985.

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.--Estimated daily discharges: Aug. 1-31. Powerplant data provided by Northern States Power Company was used for Aug. 1-31. Records are good. Diurnal fluctuation caused by St. Croix Falls Powerplant 1,500 ft upstream. Data-collection platform at station.

AVERAGE DISCHARGE.--85 years, 4,336 ft³/s, 9.44 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 54,900 ft³/s May 8, 1950, gage height, 25.19 ft; minimum daily, 75 ft³/s July 17, 1910.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 15,300 ft³/s Oct. 1, gage height, 7.84 ft, occurred on recession following peak of Sept. 26, 1986; maximum independent peak discharge, 9,530 ft³/s, Oct. 21, gage height, 5.55 ft; minimum daily, 1,510 ft³/s July 5.

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

2.5	1,400	6.0	10,700
3.0	2,350	8.0	15,700
4.0	4,950		

DISCHARGE, IN 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	14400	5320	4660	3640	3000	2870	4720	3200	3570	1680	2120	1920
2	12800	5040	4480	3520	2700	3100	4690	3090	3690	1600	2280	1780
3	11300	5030	4410	3530	2970	3270	4260	2980	3500	1730	2310	1660
4	10200	4980	4080	3460	2880	3080	4120	2940	4160	1610	2450	1670
5	9350	4990	3210	3370	3120	3540	3780	2820	4070	1510	2610	1670
6	8530	5350	3220	3760	3050	3550	3610	2980	3710	1690	1990	1700
7	8210	5400	3320	3080	2880	4080	3490	2600	3320	1720	2210	1710
8	9070	5290	3450	3630	2960	4560	3480	2330	3130	1580	1910	1760
9	6150	5800	3510	3630	2850	4590	3590	2550	2960	1650	1770	1780
10	5310	6150	3230	3430	2910	4450	3620	2540	2520	1730	1830	1780
11	6420	5500	2800	2900	2960	4800	3800	2880	2930	1810	1720	1860
12	6500	3540	2610	3440	3060	4870	3640	2210	2890	1820	1720	1760
13	7140	3630	2190	3440	2810	4680	3770	2330	2640	1820	1850	1760
14	7690	3550	2780	3390	2930	4250	3640	2480	2920	1800	2260	1790
15	7980	3550	3270	3620	3000	4160	3660	2540	2510	1790	2200	1870
16	7960	4210	3630	3010	2960	4160	3830	1940	2520	1680	1970	2050
17	7570	4530	3640	2320	2860	3660	3740	2420	2110	1690	2500	2010
18	7430	4850	3620	2770	2630	3690	3780	2440	2660	1660	2380	2790
19	7040	4820	3810	3170	3190	3490	3660	2590	2630	1680	2240	2890
20	6920	4460	3500	2550	2750	3940	3690	3040	1820	1860	1970	2970
21	6820	4430	3510	2980	3190	4020	3760	3920	1800	2620	2310	3090
22	6510	4410	3610	2760	2250	3980	3610	3740	1920	2540	1960	2430
23	6470	4950	3390	2910	3010	4180	3440	3950	1960	2800	2260	2910
24	6320	4690	3520	2710	3050	4670	3440	5060	1920	2820	2230	2450
25	5420	5010	3690	2580	3150	5300	3380	5480	1740	2910	1890	2440
26	5670	5100	3540	2850	3000	5390	3180	4710	1730	2340	1750	2500
27	5700	4900	3380	2480	3010	6310	3440	4390	1730	2500	1920	2030
28	5080	4770	3560	2480	3060	6230	3340	4390	1620	2470	1990	2230
29	5990	4630	3590	2610	---	6180	2940	4520	1620	2320	1940	2310
30	4880	4640	3590	2680	---	5230	2990	3990	1630	3360	1980	1990
31	5760	---	3380	2750	---	5090	---	3950	---	2520	2030	---
TOTAL	232590	143520	108180	95450	82190	135370	110090	101000	77930	63310	64550	63560
MEAN	7503	4784	3490	3079	2935	4367	3670	3258	2598	2042	2082	2119
MAX	14400	6150	4660	3760	3190	6310	4720	5480	4160	3360	2610	3090
MIN	4880	3540	2190	2320	2250	2870	2940	1940	1620	1510	1720	1660
CFSM	1.20	.77	.56	.49	.47	.70	.59	.52	.42	.33	.33	.34
IN.	1.39	.86	.64	.57	.49	.81	.66	.60	.46	.38	.38	.38

CAL YR 1986 TOTAL 3063510 MEAN 8393 MAX 36700 MIN 1460 CFSM 1.35 IN. 18.3
WTR YR 1987 TOTAL 1277740 MEAN 3501 MAX 14400 MIN 1510 CFSM .56 IN. 7.62

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, revised.

PERIOD OF RECORD.--January 1901 to September 1914 (monthly discharge only), October 1914 to September 1970, October 1986 to September 1987.

REVISED RECORDS.--WSP 1238: Drainage area. WSP 1388: 1929, 1933.

GAGE.--Headwater and tailwater gages readily hourly.

REMARKS.--Estimated daily discharges: None. Records are good except for periods of spillage through overflow channel, Oct. 1-4, 13-20, Nov. 7-10, 19, Dec. 18, Mar. 25, Mar. 27-Apr. 1, July 24, and Sept. 19-30, which are poor. 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.--70 years, 306 ft³/s, 7.18 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, 690 ft³/s Mar. 25; minimum daily, 149 ft³/s Sept. 22.

DISCHARGE, IN 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	527	414	396	381	395	359	460	277	269	231	298	232
2	518	458	455	385	410	378	460	341	303	233	309	242
3	538	467	421	379	383	370	362	298	290	249	322	253
4	531	459	460	372	384	380	365	312	280	196	312	257
5	463	460	354	402	370	379	355	296	242	191	285	270
6	488	408	439	364	383	379	295	302	277	269	317	250
7	426	448	455	379	385	392	259	295	220	274	276	225
8	433	408	438	377	378	409	260	292	248	244	303	259
9	467	408	365	387	342	395	345	275	229	263	286	257
10	354	380	318	380	376	420	359	267	201	299	312	249
11	466	345	287	385	393	464	376	288	269	258	299	267
12	464	284	338	385	396	428	341	295	242	257	285	262
13	516	387	347	385	397	467	341	286	246	259	274	262
14	516	360	379	373	383	419	328	274	258	245	266	243
15	488	469	405	382	383	417	290	276	271	254	285	217
16	516	469	470	257	372	399	324	276	176	250	318	239
17	549	470	378	275	384	440	334	258	186	234	320	283
18	512	463	500	359	409	353	340	281	250	231	318	304
19	529	618	394	416	382	452	335	258	285	259	304	272
20	506	459	357	359	389	409	336	320	210	244	325	231
21	315	430	367	381	387	352	328	319	225	273	300	286
22	310	357	388	363	382	403	326	340	239	251	294	149
23	317	456	406	300	366	413	332	285	243	248	285	299
24	326	464	392	291	372	390	318	305	244	340	294	394
25	462	429	399	284	384	690	321	310	231	376	271	313
26	474	440	378	341	411	464	317	293	230	409	241	326
27	441	456	392	334	358	520	320	284	192	233	244	299
28	456	473	378	389	351	520	318	290	226	336	255	218
29	465	424	382	378	---	520	286	254	232	349	242	231
30	480	461	381	366	---	460	244	287	257	356	245	218
31	411	---	383	371	---	460	---	232	---	405	267	---
TOTAL	14264	13024	12202	11180	10705	13301	9975	8966	7271	8516	8952	7807
MEAN	460	434	394	361	382	429	332	289	242	275	289	260
MAX	549	618	500	416	411	690	460	341	303	409	325	394
MIN	310	284	287	257	342	352	244	232	176	191	241	149

CAL YR 1986 TOTAL 184650 MEAN 506 MAX 1450 MIN 267
WTR YR 1987 TOTAL 126163 MEAN 346 MAX 690 MIN 149

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 07010206, 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. WDR 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. Auxiliary water-stage recorder 10.7 mi downstream from base gage.

REMARKS.--Estimated daily discharges: July 27, 28. Records good, except for period of estimated daily discharges, July 27, 28, which is fair. Some regulation by reservoirs, navigation dam, and powerplants at low and medium stages. Flood flow not materially affected by artificial storage.

AVERAGE DISCHARGE.--59 years, 17,390 ft³/s, 5.27 in/yr; median of yearly mean discharges, 17,000 ft³/s, 5.17 in/yr.

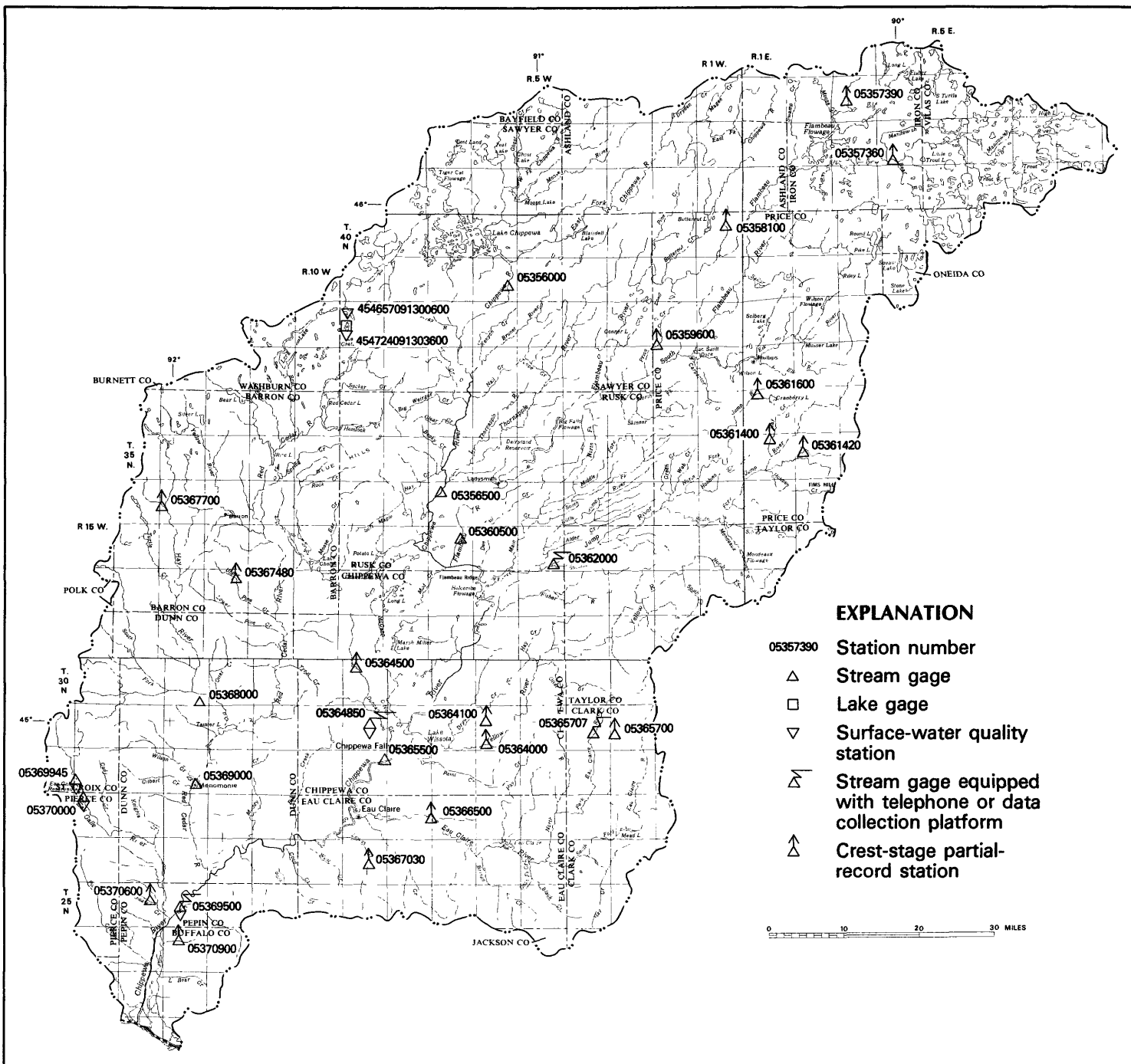
EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 228,000 ft³/s Apr. 18, 1965, gage height, 43.11 ft; minimum daily, 1,380 ft³/s July 13, 1940; minimum gage height, 15.08 ft Aug. 29, 1934, present datum.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 83,400 ft³/s Oct. 1, stage falling, peak occurred Sept. 29, 1986; maximum recorded gage height, 34.42 ft, Sept. 15; maximum daily discharge, 29,400 ft³/s Mar. 30, 31; minimum daily, 6,140 ft³/s Sept. 15; minimum gage height, 24.59 ft May 9.

DISCHARGE, IN 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	83400	32200	23300	17600	12500	13400	29000	14600	23800	9950	13200	7890
2	80800	30600	23500	17600	12900	13400	28900	14200	24000	9520	12500	7440
3	78000	29800	23100	17000	12900	13900	28100	14100	24000	8920	13000	7380
4	74600	29200	23400	17300	13800	14000	27500	14200	23700	8500	13000	7170
5	71000	29400	23000	17000	12700	13700	26100	14200	23300	8370	12900	7480
6	67400	28700	20700	16400	13400	14400	25100	13800	23100	7910	12400	6410
7	63300	28900	19600	17100	13200	14500	23600	13300	21200	7990	11600	6480
8	60100	28800	19800	16300	13400	15800	23400	12700	20800	7610	11000	7010
9	58400	29200	19400	16700	12700	16600	22400	12300	18500	7310	10500	6670
10	53100	28700	20200	16100	12400	17700	22100	12000	17500	7370	10100	6670
11	49900	28600	19000	16000	12300	18200	22000	11700	16500	7390	10400	6720
12	49500	27300	17100	15000	12700	18200	21600	11500	16000	7510	9790	6930
13	47200	23700	16200	16600	12900	18400	21000	10800	15200	7490	9220	6450
14	45900	21600	13500	16500	12500	18500	20800	11000	14200	7740	9210	6540
15	45400	20100	18200	16200	12800	18000	20600	10100	14100	7520	9780	6140
16	45000	21500	19800	15400	13100	17600	20500	9960	13200	7800	9850	6320
17	45200	21300	20200	13400	12200	17400	20300	9350	12400	7810	9220	6500
18	44000	23500	20100	12100	12900	16500	20100	9760	11400	9310	11000	6420
19	43700	24200	19500	13600	12900	16100	20300	9700	11900	10200	10300	7510
20	42700	23800	20000	14300	13300	15900	19600	9370	11500	9500	9550	7420
21	42300	22500	18900	13200	12500	16500	19500	10600	10200	10100	8980	7820
22	40700	23100	18600	13600	13100	16300	19300	11400	10100	10700	9520	8570
23	38600	22300	18800	13300	12100	16200	19000	11600	9810	10600	9490	8220
24	37700	24400	18600	10700	13100	16700	18000	13000	9450	18700	8970	8850
25	36400	23900	18600	10500	13000	18400	17600	15500	10300	19100	8920	8760
26	34600	24100	19000	11300	13100	20100	17000	18600	10600	17600	8200	8050
27	33600	23700	18200	11800	13100	21400	16200	19100	10000	15600	7950	8500
28	33400	23700	17900	12200	13200	25800	16500	20800	10400	14500	8470	8240
29	32400	23300	17900	13500	---	28400	15900	22400	10300	13400	8350	7680
30	32500	23100	18400	12900	---	29400	15100	23400	9920	12800	8030	7930
31	31100	---	17900	13100	---	29400	---	23300	---	14100	7820	---
TOTAL	1541900	765200	602400	454300	360700	560800	637100	428340	457380	322920	313220	220170
MEAN	49740	25510	19430	14650	12880	18090	21240	13820	15250	10420	10100	7339
MAX	83400	32200	23500	17600	13800	29400	29000	23400	24000	19100	13200	8850
MIN	31100	20100	13500	10500	12100	13400	15100	9350	9450	7310	7820	6140
CFSM	1.11	.57	.43	.33	.29	.40	.47	.31	.34	.23	.23	.16

CAL YR 1986 TOTAL 14632100 MEAN 40090 MAX 116000 MIN 10600 CFSM .89
WTR YR 1987 TOTAL 6664430 MEAN 18260 MAX 83400 MIN 6140 CFSM .41



CHIPPEWA RIVER BASIN

125

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.

PERIOD OF RECORD.--February 1912 to current year. December to April 1913, monthly discharge only, published in WSP 1308.

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.

AVERAGE DISCHARGE.--75 years, 726 ft³/s.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,090 ft³/s Oct. 22, gage height, 7.60 ft; minimum discharge, 76 ft³/s July 22, 23, gage height 3.75 ft.

3.8	86	5.0	660
4.0	134	6.0	1,430
4.3	248	7.0	2,400
4.6	399		

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1230	1040	1150	950	583	193	177	102	175	164	150	142
2	693	1030	1430	843	568	191	178	102	185	165	149	142
3	446	990	1360	769	421	191	183	101	169	163	150	143
4	443	1040	1540	765	460	191	182	100	170	163	149	143
5	443	833	1080	761	487	191	182	101	168	165	147	146
6	492	1100	1720	756	511	190	182	100	169	164	146	144
7	510	1180	1700	754	596	193	182	100	168	164	148	142
8	495	1170	1790	755	505	193	141	101	168	163	149	142
9	598	1150	1800	742	485	191	125	101	168	169	286	143
10	454	1140	1790	749	476	187	172	105	171	165	142	144
11	461	1130	1790	749	464	188	166	103	175	172	143	143
12	759	1130	1790	744	438	187	164	101	171	168	147	143
13	1130	1120	1790	738	473	190	167	102	170	165	143	142
14	1380	1130	1770	741	200	187	132	138	168	164	143	141
15	1350	1110	1560	733	133	186	103	155	168	164	143	141
16	1240	1110	1340	749	140	188	102	126	170	166	143	142
17	1200	1100	1340	750	178	178	102	117	172	165	143	143
18	1280	1010	1330	746	179	188	102	173	170	165	143	144
19	1280	978	1330	724	175	193	102	123	170	166	142	143
20	1280	1080	1320	694	175	156	102	174	172	165	142	142
21	1270	955	1320	640	177	143	104	172	171	178	143	142
22	1520	943	1220	605	176	178	102	168	171	129	142	141
23	1460	933	1150	608	176	181	101	169	171	117	142	141
24	1260	937	1150	607	178	182	101	166	170	149	142	141
25	1260	1150	1140	607	179	183	102	169	172	147	142	142
26	1260	1370	1150	544	190	183	103	166	171	145	143	141
27	1280	921	1160	434	190	187	101	166	167	145	142	142
28	1260	915	1160	531	191	187	102	166	167	147	143	143
29	975	915	1150	541	---	183	102	170	167	146	143	142
30	848	916	1150	592	---	183	102	171	163	145	143	140
31	1050	---	1060	590	---	184	---	168	---	146	142	---
TOTAL	30607	31526	43530	21511	9104	5726	3966	4176	5107	4899	4615	4270
MEAN	987	1051	1404	694	325	185	132	135	170	158	149	142
MAX	1520	1370	1800	950	596	193	183	174	185	178	286	146
MIN	443	833	1060	434	133	143	101	100	163	117	142	140
CAL YR 1986	TOTAL 330940	MEAN 907	MAX 2140	MIN 134								
WTR YR 1987	TOTAL 169037	MEAN 463	MAX 1800	MIN 100								

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, 5.72 ft, Oct. 1, 14; minimum observed, 5.00 ft, Sept. 29, 30.

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.72	5.58	---	---	---	---	---	5.41	5.36	5.20	5.30	5.16
2	5.69	5.58	---	---	---	---	---	5.41	5.46	5.18	5.30	5.14
3	5.68	5.58	---	---	---	---	---	5.41	5.44	5.18	5.30	5.14
4	5.66	5.58	---	---	---	---	---	5.41	5.44	5.16	5.28	5.12
5	5.65	5.58	---	---	---	---	---	5.40	5.44	5.14	5.26	5.12
6	5.65	5.57	---	---	---	---	---	5.40	5.44	5.14	5.24	5.10
7	5.65	5.57	---	---	---	---	---	5.38	5.42	5.14	5.22	5.10
8	5.63	---	---	---	---	---	---	5.38	5.42	5.14	5.22	5.08
9	5.62	---	---	---	---	---	---	5.36	5.40	5.14	5.20	5.06
10	5.60	---	---	---	---	---	---	5.36	5.40	5.16	5.20	5.06
11	5.62	---	---	---	---	---	---	5.34	5.40	5.24	5.18	5.06
12	5.69	---	---	---	---	---	---	5.34	5.40	5.24	5.24	5.06
13	5.70	---	---	---	---	---	---	5.32	5.40	5.24	5.26	5.06
14	5.72	---	---	---	---	---	---	5.32	5.38	5.22	5.26	5.04
15	5.70	---	---	---	---	---	---	5.32	5.38	5.22	5.26	5.04
16	5.70	---	---	---	---	---	---	5.30	5.36	5.20	5.28	5.02
17	5.68	---	---	---	---	---	---	5.30	5.36	5.18	5.26	5.06
18	5.68	---	---	---	---	---	---	5.30	5.34	5.18	5.26	5.08
19	5.68	---	---	---	---	---	---	5.32	5.34	5.16	5.26	5.10
20	5.66	---	---	---	---	---	---	5.34	5.34	5.21	5.24	5.12
21	5.65	---	---	---	---	---	---	5.34	5.32	5.22	5.24	5.12
22	5.65	---	---	---	---	---	---	5.34	5.32	5.20	5.24	5.12
23	5.64	---	---	---	---	---	5.44	5.34	5.30	5.20	5.22	5.12
24	5.63	---	---	---	---	---	5.44	5.32	5.28	5.28	5.22	5.10
25	5.62	---	---	---	---	---	5.44	5.32	5.28	5.26	5.18	5.10
26	5.62	---	---	---	---	---	5.44	5.32	5.26	5.26	5.18	5.06
27	5.62	---	---	---	---	---	5.42	5.32	5.24	5.24	5.16	5.04
28	5.60	---	---	---	---	---	5.42	5.34	5.22	5.32	5.18	5.02
29	5.60	---	---	---	---	---	5.42	5.34	5.22	5.32	---	5.00
30	5.58	---	---	---	---	---	5.42	5.34	5.20	5.32	5.16	5.00
31	5.60	---	---	---	---	---	---	5.36	---	5.30	5.16	---
MEAN	5.65	---	---	---	---	---	---	5.35	5.35	5.21	---	5.08
MAX	5.72	---	---	---	---	---	---	5.41	5.46	5.32	---	5.16
MIN	5.58	---	---	---	---	---	---	5.30	5.20	5.14	---	5.00

454724091303600 BIG SISSABAGAMA LAKE NEAR STONE LAKE, WI--CONTINUED

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 March 10. Water-quality analyses by U.S. Geological Survey National Water Quality Laboratory through April, and Wisconsin State Laboratory of Hygiene thereafter.

WATER QUALITY DATA, MARCH 10 TO AUGUST 20, 1987
(Milligrams per liter unless otherwise indicated)

	Mar. 10		Apr. 24		June 23		July 20		Aug. 20	
Depth of sample (ft)	3.0	51.0	1.5	47.0	1.5	45.5	1.5	49.0	1.5	49.0
Specific conductance ($\mu\text{S}/\text{cm}$)	60	78	69	72	67	100	74	123	66	111
pH (units)	7.3	7.1	7.8	7.7	8.6	7.1	8.3	6.9	8.0	7.1
Water temperature ($^{\circ}\text{C}$)	4.7	5.8	12.0	11.6	25.1	11.6	25.8	14.2	24.7	14.4
Color (Pt-Co. scale)	--	--	13	25	--	--	--	--	--	--
Turbidity (NTU)	--	--	1.0	2.3	--	--	--	--	--	--
Secchi-disc (meters)	--	--	--	4.0	--	3.7	--	2.1	--	2.3
Dissolved oxygen	13.6	.3	9.3	9.1	8.6	0.2	9.4	0	8.2	0
Hardness, as CaCO_3	--	--	32	32	--	--	--	--	--	--
Calcium, dissolved (Ca)	--	--	8.5	8.4	--	--	--	--	--	--
Magnesium, dissolved (Mg)	--	--	2.6	2.6	--	--	--	--	--	--
Sodium, dissolved (Na)	--	--	1.5	1.5	--	--	--	--	--	--
Potassium, dissolved (K)	--	--	.8	.8	--	--	--	--	--	--
Alkalinity as CaCO_3	--	--	31	31	--	--	--	--	--	--
Sulfate, dissolved (SO_4)	--	--	5.2	7.2	--	--	--	--	--	--
Chloride, dissolved (Cl)	--	--	.7	.7	--	--	--	--	--	--
Silica, dissolved (SiO_2)	--	--	8.9	9.9	--	--	--	--	--	--
Solids, dissolved, at 180°C	--	--	48	51	--	--	--	--	--	--
Nitrogen, nitrate, total (as N)	--	--	.090	.090	--	--	--	--	--	--
Nitrogen, nitrite, total (as N)	--	--	<.010	<.010	--	--	--	--	--	--
Nitrogen, ammonia, total (as N)	--	--	.050	.170	--	--	--	--	--	--
Nitrogen, organic, total (as N)	--	--	.75	.33	--	--	--	--	--	--
Nitrogen, total (as N)	--	--	.9	.6	--	--	--	--	--	--
Total phosphorus (as P)	--	--	.017	.041	.014	.075	.024	.240	.019	.240
Phosphorus, ortho, diss. (as P)	--	--	.002	.006	.004	.023	.004	.191	<.004	.169
Iron, dissolved (Fe) $\mu\text{g}/\text{L}$	--	--	120	290	--	--	--	--	--	--
Manganese, dissolved (Fe) $\mu\text{g}/\text{L}$	--	--	63	220	--	--	--	--	--	--
Chlorophyll a, phyto. ($\mu\text{g}/\text{L}$)	--	--	3	--	4	--	12	--	11	--

3-10-87

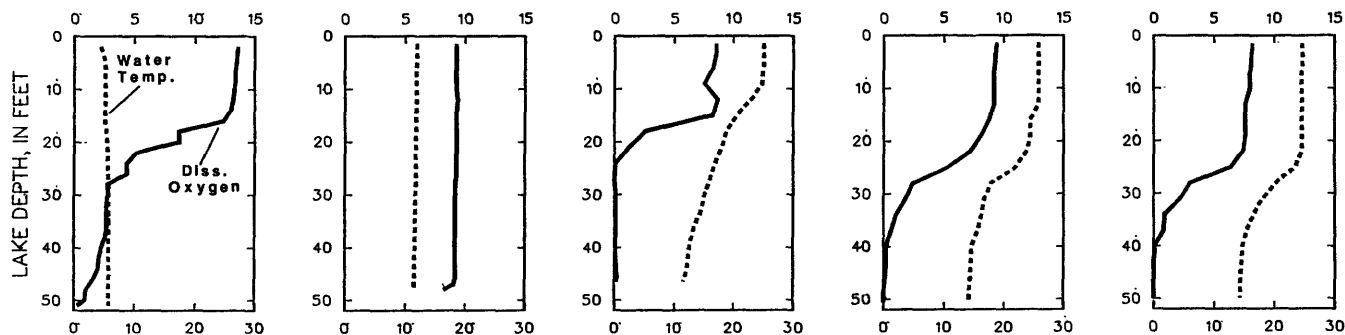
4-24-87

6-23-87

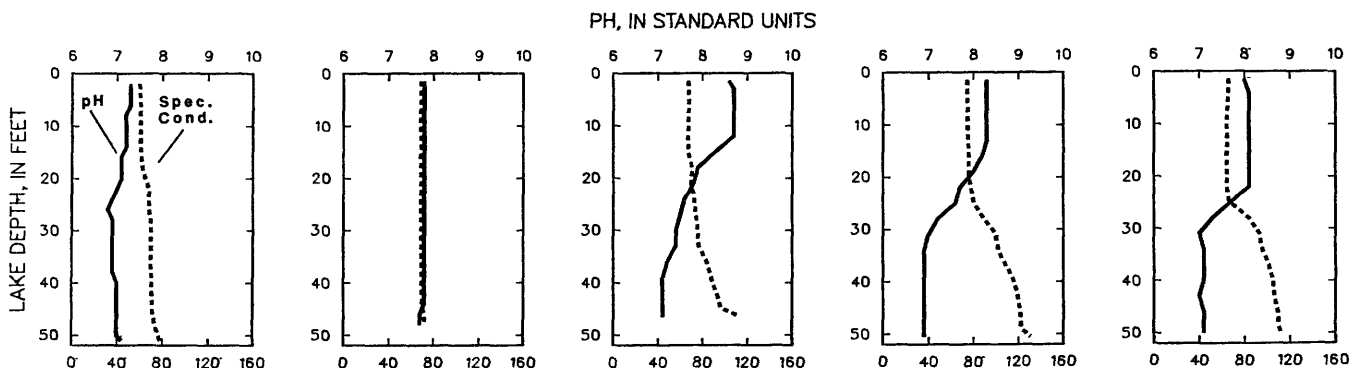
7-20-87

8-20-87

DISSOLVED OXYGEN, IN MILLIGRAMS PER LITER



WATER TEMPERATURE, IN DEGREES CELSIUS



SPECIFIC CONDUCTANCE, IN MICROSIEMENS PER CENTIMETER

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: None, except for ice periods listed in rating table below. Records good except those for ice-affected periods, which are fair. Flow from 48 percent of the drainage area regulated by Moose Lake and Lake Chippewa.

AVERAGE DISCHARGE.--73 years, 1,483 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 discharge, 5,040 ft³/s Oct. 13, gage height, 6.66 ft; maximum gage height, 7.64 ft, Dec. 9 (backwater from ice); minimum, 324 ft³/s Sept. 29, 30, gage height, 1.34 ft.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Nov. 9-29 and Dec. 3 to Mar. 19.)

1.3	301	6.0	4,300
2.0	761	7.0	5,440
4.0	2,380		

DISCHARGE, IN 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	2520	1640	1380	1400	860	460	747	421	1230	378	446	399
2	2090	1870	1330	1300	860	460	727	407	2070	383	432	396
3	1470	1770	1500	1300	840	450	685	413	2060	378	430	384
4	1400	1670	1700	1200	800	450	657	401	1420	373	434	364
5	1300	1610	1900	1100	780	460	661	359	1040	380	435	354
6	1190	1620	2100	1100	800	480	698	361	872	445	404	411
7	1150	1520	2300	1100	880	500	680	354	672	434	374	404
8	1200	1690	2400	1100	900	540	724	347	632	436	383	393
9	1200	1800	2400	1100	840	520	695	349	598	547	399	378
10	1230	1900	2300	1100	820	490	652	364	534	621	481	368
11	1170	1800	2300	1100	820	470	669	532	576	592	416	397
12	2140	1700	2200	1100	800	450	674	503	680	605	407	433
13	4750	1700	2200	1000	800	460	659	435	600	621	441	412
14	4660	1600	2100	1000	800	470	653	397	543	563	453	388
15	4100	1600	2000	1000	490	500	657	370	503	499	448	373
16	3620	1600	1900	1000	500	520	623	402	483	438	447	372
17	3180	1600	1800	1000	520	560	573	377	424	419	445	411
18	2720	1500	1700	1000	540	600	572	352	481	432	428	494
19	2580	1500	1600	1000	540	660	558	431	411	403	416	562
20	2390	1500	1600	1000	520	783	546	503	419	436	403	545
21	2310	1500	1600	980	520	861	527	561	456	520	390	517
22	2180	1500	1600	920	500	1030	518	514	465	547	392	482
23	2360	1600	1600	860	500	1230	496	496	441	463	384	447
24	2310	1700	1500	840	490	1280	469	478	426	516	378	424
25	2010	1900	1500	800	490	1330	451	467	424	521	378	392
26	1980	2100	1500	780	480	1290	423	496	411	508	374	376
27	1930	2300	1500	760	480	1180	444	517	401	474	388	363
28	1910	2000	1500	740	470	1070	433	643	396	525	388	360
29	1890	1700	1500	740	---	958	423	787	391	692	377	336
30	1760	1590	1400	760	---	829	415	1030	385	595	396	335
31	1370	---	1400	820	---	793	---	981	---	498	428	---
TOTAL	68070	51080	55310	31000	18640	22134	17709	15048	20444	15242	12795	12270
MEAN	2196	1703	1784	1000	666	714	590	485	681	492	413	409
MAX	4750	2300	2400	1400	900	1330	747	1030	2070	692	481	562
MIN	1150	1500	1330	740	470	450	415	347	385	373	374	335

CAL YR 1986 TOTAL 711140 MEAN 1948 MAX 16200 MIN 489
WTR YR 1987 TOTAL 339742 MEAN 931 MAX 4750 MIN 335

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.--36 years, 1,855 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, 8,310 ft³/s Oct. 14, gage height, 7.27 ft; minimum, 332 ft³/s June 30, gage height, 2.41 ft; minimum gage height, 2.39 ft, Aug. 18.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Shifting-control method used June 23 to Aug. 3; stage-discharge relation affected by ice Dec. 9 to Mar. 7.)

2.5	461	5.0	3,480
3.0	833	7.0	7,660
4.0	1,920		

DISCHARGE, IN 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	2560	2090	1380	1100	960	760	1400	904	1710	562	595	493
2	1630	2300	1370	1200	1000	860	1270	864	1720	565	645	471
3	1450	2220	1510	1300	960	1000	1050	845	1920	566	690	477
4	1640	2060	1460	1200	880	1100	1190	819	2040	771	719	482
5	1610	1940	1070	1200	780	1100	1140	713	1640	665	609	482
6	1910	1990	1260	1200	700	1000	1150	602	1120	798	574	655
7	1690	1940	1470	1100	760	920	945	596	1150	628	561	538
8	1620	2070	1630	1000	740	1860	1020	571	1050	708	561	556
9	1540	2250	1400	1100	860	1190	1160	585	1010	786	576	731
10	1590	2230	1200	1200	680	1130	1240	633	741	732	596	629
11	1640	2030	980	1100	760	959	1200	675	666	866	584	788
12	3360	1890	1000	1200	680	1110	1170	722	937	838	551	734
13	5270	1710	1100	1100	740	1090	1340	815	926	749	582	685
14	6500	1100	1100	1100	720	902	1280	584	767	757	738	728
15	5850	1520	1200	980	760	958	1300	571	786	940	712	723
16	3700	1810	1300	1100	580	878	1140	543	751	722	689	693
17	3800	1660	1400	960	720	814	1160	482	593	743	697	658
18	3590	1600	1500	880	700	915	1260	535	854	768	665	751
19	3160	1580	1300	760	720	884	1170	591	723	739	703	655
20	3470	1360	1100	980	640	914	1300	680	692	941	630	906
21	3060	1620	1200	900	760	1040	1060	774	702	912	542	901
22	2740	1720	1100	920	640	1790	952	815	724	800	585	776
23	2890	1670	1100	880	680	1790	1070	718	767	959	578	895
24	2530	1720	1200	840	720	1770	968	645	659	1070	534	812
25	2630	1440	1400	800	740	2170	1000	621	629	748	535	693
26	2260	1620	1300	700	780	2110	915	710	582	807	502	688
27	2330	1570	1200	840	660	2010	1050	764	542	733	467	648
28	2190	1460	1100	960	720	1760	1060	1120	575	838	491	562
29	1710	1520	1200	1000	---	1520	1010	1050	693	805	475	549
30	1710	1390	1100	1100	---	1370	900	1280	609	724	474	604
31	2390	---	1100	940	---	1420	---	1680	---	627	467	---
TOTAL	84020	53080	38730	31640	21040	39094	33870	23507	28278	23867	18327	19963
MEAN	2710	1769	1249	1021	751	1261	1129	758	943	770	591	665
MAX	6500	2300	1630	1300	1000	2170	1400	1680	2040	1070	738	906
MIN	1450	1100	980	700	580	760	900	482	542	562	467	471
CAL YR 1986	TOTAL 760122	MEAN 2083	MAX 17300	MIN 574								
WTR YR 1987	TOTAL 415416	MEAN 1138	MAX 6500	MIN 467								

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: None, except for ice period listed in rating table below. Records good except for ice-affected period, which is fair. Data-collection platform at station.

AVERAGE DISCHARGE.--72 years, 522 ft³/s, 12.31 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)
Oct. 13	0300	*7,370	*10.25	No other peak greater than base discharge.			
Minimum discharge, 45 ft ³ /s Sept. 5, gage height 3.01 ft.							

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Nov. 10 to Mar. 24.)

3.02	46	5.0	727
3.2	72	6.0	1,410
3.5	142	7.0	2,290
4.0	291	9.0	4,850
4.5	475	11.0	9,300

DISCHARGE, IN 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	1920	444	400	210	130	130	515	156	609	56	76	51
2	1340	481	390	210	140	130	443	147	536	58	72	51
3	1060	460	380	200	140	130	415	140	693	58	74	49
4	1030	444	360	200	150	130	396	131	532	56	67	47
5	981	427	370	190	160	140	394	118	377	67	57	46
6	827	405	380	190	160	200	438	109	303	85	54	51
7	716	395	370	190	160	280	512	101	242	87	51	49
8	796	497	360	180	150	450	528	95	218	75	49	73
9	1070	1030	350	170	140	680	506	90	199	82	50	70
10	886	800	350	170	140	680	481	86	196	80	51	71
11	986	580	330	170	130	640	471	85	181	80	51	76
12	5700	420	320	160	130	540	471	91	184	98	51	73
13	6810	360	280	160	130	440	453	102	217	103	52	69
14	4770	350	290	150	130	360	443	101	192	107	54	66
15	3470	360	270	150	120	330	511	93	160	93	56	65
16	2710	390	250	140	120	300	570	84	126	80	64	65
17	2170	410	240	130	110	280	534	80	104	71	99.9	71
18	1710	420	220	140	110	280	486	72	88	64	119	75
19	1340	370	210	130	110	320	436	70	78	65	100	125
20	1060	360	200	130	110	410	398	71	81	84	85	175
21	894	370	190	130	110	520	356	87	72	158	74	189
22	788	390	190	120	110	660	321	100	76	293	66	167
23	698	410	190	110	110	840	296	98	81	264	60	141
24	636	420	190	100	110	1000	260	87	84	240	56	120
25	595	440	200	100	120	1100	227	81	86	197	52	102
26	547	430	200	100	120	1180	210	86	78	177	50	92
27	513	420	200	110	120	1120	194	98	70	152	48	85
28	472	430	200	110	130	962	186	121	67	176	47	78
29	440	420	200	120	---	803	180	250	68	143	49	72
30	410	410	200	120	---	613	166	394	60	111	53	72
31	407	---	210	130	---	540	---	728	---	93	50	---
TOTAL	47752	13543	8490	4620	3600	16188	11797	4152	6058	3553	1937.9	2536
MEAN	1540	451	274	149	129	522	393	134	202	115	62.5	84.5
MAX	6810	1030	400	210	160	1180	570	728	693	293	119	189
MIN	407	350	190	100	110	130	166	70	60	56	47	46
CFSM	2.67	.78	.48	.26	.22	.91	.68	.23	.35	.20	.11	.15
IN.	3.08	.87	.55	.30	.23	1.05	.76	.27	.39	.23	.13	.16

CAL YR 1986 TOTAL 281401.0 MEAN 771 MAX 12900 MIN 66 CFSM 1.34 IN. 18.2
WTR YR 1987 TOTAL 124226.9 MEAN 340 MAX 6810 MIN 46 CFSM .59 IN. 8.02

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 September 1987.

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. 1-5, and Aug. 15-27. Records good above 5 ft³/s and fair below.

EXTREMES FOR CURRENT YEAR.--Maximum discharge during period December to September, 49 ft³/s July 28, gage height, 4.50 ft; minimum, 1.5 ft³/s May 15-18, Aug. 26-28, 31, and September 5, 7-11, gage height, 2.22 ft.

RATING TABLES (gage height, in feet, and discharge, in cubic feet per second).
(Shifting-control method used Aug. 7, 8, 10-14, 28-31, and Sept. 1-30.)

Dec. 1 to Mar. 31				Apr. 1 to Sept. 30			
2.3	1.9	3.0	5.0	2.2	1.4	3.5	8.7
2.5	2.7	3.5	10	2.5	2.4	3.7	12
2.7	3.5	4.0	22	3.0	4.4	4.0	19
				3.2	5.7		

DISCHARGE, IN 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	---	---	2.9	2.6	2.2	2.7	2.0	1.9	1.8	2.3	3.1	1.5
2	---	---	2.9	2.6	2.2	2.3	1.8	1.9	1.9	2.4	3.0	1.5
3	---	---	2.8	2.6	2.2	2.1	1.8	1.8	1.8	2.4	2.9	1.5
4	---	---	2.8	2.6	2.1	2.3	1.8	1.7	1.8	2.4	2.8	1.5
5	---	---	2.8	2.6	2.2	4.9	1.8	1.7	1.8	2.5	2.6	1.5
6	---	---	2.8	2.6	2.2	5.5	1.8	1.7	1.9	2.7	2.6	2.3
7	---	---	2.7	2.6	2.4	4.2	1.8	1.7	1.9	2.6	2.5	1.6
8	---	---	2.7	2.5	3.1	3.5	1.8	1.7	1.9	2.5	2.4	1.5
9	---	---	2.7	2.5	2.6	2.8	1.8	1.7	1.9	2.9	4.8	1.5
10	---	---	2.6	2.5	2.2	2.3	1.8	1.8	2.0	2.9	2.6	1.5
11	---	---	2.7	2.5	2.2	2.2	1.9	1.8	2.4	2.8	2.3	1.7
12	---	---	2.6	2.5	2.5	2.2	1.9	1.7	2.2	2.9	2.2	1.6
13	---	---	2.5	2.5	2.6	2.2	1.8	1.7	2.1	2.7	2.2	1.7
14	---	---	2.7	2.5	2.3	2.3	2.0	1.8	2.0	2.6	2.2	1.6
15	---	---	2.7	2.3	2.1	2.2	1.9	1.6	2.0	2.6	2.3	1.6
16	---	---	2.7	2.2	2.1	2.2	1.8	1.6	2.0	2.6	2.2	1.7
17	---	---	2.7	2.3	2.1	2.2	1.8	1.6	2.2	2.6	2.1	2.1
18	---	---	2.7	2.3	2.1	2.1	1.7	1.6	2.2	2.6	2.0	2.4
19	---	---	2.7	2.3	2.1	2.2	1.7	1.9	2.2	2.7	1.9	2.1
20	---	---	2.6	2.3	2.1	2.2	1.7	1.7	2.2	3.0	1.9	1.9
21	---	---	2.5	2.3	2.2	2.2	1.6	1.7	2.3	4.0	1.8	1.8
22	---	---	2.6	2.2	2.3	2.2	1.7	1.6	2.3	2.9	1.8	1.8
23	---	---	2.6	2.1	2.5	2.4	1.7	1.6	2.3	3.4	1.7	1.9
24	---	---	2.6	2.1	2.7	2.4	1.7	1.7	2.2	4.1	1.7	1.7
25	---	---	2.6	2.1	2.4	2.7	1.7	1.8	2.4	3.0	1.6	1.7
26	---	---	2.6	2.1	2.5	2.5	1.7	2.0	2.3	5.8	1.5	1.7
27	---	---	2.6	2.2	2.7	2.3	1.7	2.0	2.2	3.4	1.5	1.7
28	---	---	2.6	2.2	2.6	2.2	1.7	2.0	2.3	17	2.2	1.7
29	---	---	2.6	2.2	---	2.1	1.7	2.8	2.7	4.8	1.8	1.7
30	---	---	2.6	2.2	---	2.0	1.7	2.1	2.4	4.0	2.2	1.6
31	---	---	2.6	2.2	---	2.1	---	1.8	---	3.2	1.5	---
TOTAL	---	---	82.8	73.3	65.5	79.7	53.3	55.7	63.6	108.3	69.9	51.6
MEAN	---	---	2.67	2.36	2.34	2.57	1.78	1.80	2.12	3.49	2.25	1.72
MAX	---	---	2.9	2.6	3.1	5.5	2.0	2.8	2.7	17	4.8	2.4
MIN	---	---	2.5	2.1	2.1	2.0	1.6	1.6	1.8	2.3	1.5	1.5

WATER-QUALITY RECORDS

PERIOD OF RECORD.--December 1986 to September 1987.

PERIOD OF DAILY RECORD.--

SUSPENDED SEDIMENT DISCHARGE: December 1986 to September 1987.
 TOTAL PHOSPHORUS DISCHARGE: December 1986 to September 1987.
 TOTAL AMMONIA NITROGEN DISCHARGE: December 1986 to September 1987.
 WATER TEMPERATURE: May to September 1987.
 DISSOLVED OXYGEN: May to September 1987.

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

EXTREMES FOR CURRENT YEAR.--

SUSPENDED-SEDIMENT DISCHARGE: Maximum daily, 9.1 tons July 28, 1987; minimum daily, 0.02 ton on many days.
 TOTAL PHOSPHORUS DISCHARGE: Maximum daily, 190 lbs July 28, 1987; minimum daily, 2.38 lbs Sept. 30, 1987.
 TOTAL AMMONIA NITROGEN DISCHARGE: Maximum daily, 17 lbs July 28, 1987; minimum daily, 0.18 lbs July 19, 1987.
 WATER TEMPERATURE: Maximum observed, 25.0°C Aug. 1, 1987; minimum observed, 8.5°C May 23, 1987.
 DISSOLVED OXYGEN: Maximum observed, 9.1 mg/L May 23, 1987; minimum observed, 1.3 mg/L Aug. 2, 1987.

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

		STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)			STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)		
DATE	TIME				DATE	TIME					
DEC , 1986					JUL , 1987						
31...	1200	2.6	180	3.0	28...	0940	33	135	20.5		
31...	1310	2.6	180	3.0	28...	1025	40	135	20.5		
FEB , 1987					28...	1135	44	130	21.0		
05...	1100	2.1	174	1.0	28...	1220	50	130	21.0		
20...	1430	2.1	168	3.5	28...	1417	34	130	20.5		
APR					29...	0945	4.7	140	19.5		
29...	1310	1.7	--	14.5	AUG						
JUN					27...	1245	1.5	140	16.0		
10...	1345	2.1	125	13.5	27...	1305	1.5	140	16.0		
10...	1350	2.1	125	13.5	SEP						
					30...	1110	1.6	145	9.5		
					30...	1115	1.6	145	9.5		
DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)	SEDI- MENT, SUS- PENDE (MG/L) (80154)
DEC , 1986						JUL , 1987					
31...	1310	2.6	0.110	0.250	3	21...	0430	4.5	0.200	3.30	285
MAR , 1987						23...	1030	2.9	0.040	0.660	50
05...	1500	4.0	0.190	1.60	250	23...	1038	2.9	--	--	48
05...	1615	5.9	2.50	1.40	140	23...	1700	3.7	0.100	0.870	112
05...	1645	9.2	3.30	1.80	162	23...	1730	4.8	0.290	4.90	1440
05...	1715	13	3.90	1.90	201	24...	1125	3.8	--	--	34
05...	2130	6.6	3.80	1.80	100	24...	1130	3.8	0.090	0.690	--
06...	1545	10	3.10	1.40	98	24...	1730	3.3	0.130	1.00	132
06...	2145	5.6	2.70	1.30	144	26...	0100	4.4	0.160	6.70	1300
APR						26...	0430	6.0	0.170	2.30	438
28...	1330	1.7	--	--	10	26...	0530	8.6	--	--	145
29...	1330	1.8	0.040	0.420	--	26...	1515	4.8	0.090	0.730	93
MAY						27...	1515	3.2	0.090	1.10	53
29...	1145	1.9	0.170	0.630	39	27...	2000	4.1	0.180	4.00	401
29...	1315	3.8	3.50	--	3870	28...	0615	5.5	0.180	5.40	482
29...	1330	4.1	0.930	17.0	3660	28...	0645	9.2	0.330	11.0	1500
29...	1345	3.9	--	--	2150	28...	0730	13	0.210	5.60	708
29...	1415	3.8	0.370	3.60	--	28...	0915	20	0.360	2.70	222
29...	1430	3.8	--	--	484	28...	1000	32	0.380	2.20	187
29...	1530	4.5	--	--	845	28...	1130	48	0.190	1.40	183
29...	1615	4.5	--	--	576	28...	1417	34	0.160	1.60	103
29...	1630	4.6	0.480	3.30	--	28...	1600	20	0.120	1.20	111
29...	1645	4.6	--	--	434	28...	1900	11	0.120	1.20	86
29...	1815	4.3	--	--	202	28...	2345	6.0	0.080	1.10	62
29...	1930	3.9	--	--	135	29...	0940	4.8	0.130	0.940	--
29...	1945	3.8	--	--	123	AUG					
29...	2000	3.7	0.200	1.10	--	09...	0330	3.2	0.290	2.00	308
JUN						09...	0630	4.3	0.190	1.30	99
01...	1043	1.8	0.190	0.240	--	09...	0745	6.3	0.210	1.30	73
09...	1350	2.0	--	--	22	09...	1140	7.8	0.070	2.50	--
10...	1350	2.1	0.090	0.490	--	09...	2015	3.5	0.090	0.910	63
29...	1107	2.3	0.120	0.720	66	27...	1245	1.5	0.080	0.330	10
JUL						SEP					
09...	1135	3.0	0.060	0.490	--	30...	1115	1.6	0.050	0.270	10
20...	2045	3.4	<0.010	1.00	181						

05364850 DUNCAN CREEK TRIBUTARY NEAR TILDEN, WI--CONTINUED

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	---	---	---	.02	.02	.02	.05	.06	1.80	.37	.22	.04
2	---	---	---	.02	.02	.02	.05	.06	.06	.36	.21	.04
3	---	---	---	.02	.02	.02	.05	.06	.06	.34	.19	.04
4	---	---	---	.02	.02	.22	.05	.06	.07	.32	.18	.04
5	---	---	.02	.02	.02	1.50	.05	.06	.08	.31	.16	.04
6	---	---	.02	.02	.02	1.70	.05	.06	.09	.33	.15	.12
7	---	---	.02	.02	.02	.92	.05	.07	.09	.29	.14	.04
8	---	---	.02	.02	.02	.15	.05	.07	.11	.27	.13	.04
9	---	---	.02	.02	.02	.08	.05	.07	.11	.29	1.70	.04
10	---	---	.02	.02	.02	.06	.05	.08	.13	.28	.14	.04
11	---	---	.02	.02	.02	.06	.05	.09	.65	.25	.12	.05
12	---	---	.02	.02	.02	.06	.05	.08	.15	.25	.11	.04
13	---	---	.02	.02	.02	.06	.05	.09	.15	.22	.11	.04
14	---	---	.02	.02	.02	.06	.05	.10	.16	.20	.10	.04
15	---	---	.02	.02	.02	.06	.05	.09	.16	.19	.11	.04
16	---	---	.02	.02	.02	.06	.05	.09	.18	.18	.10	.05
17	---	---	.02	.02	.02	.06	.05	.10	.20	.17	.10	.08
18	---	---	.02	.02	.02	.06	.05	.10	.22	.16	.09	.14
19	---	---	.02	.02	.02	.06	.05	.13	.22	.16	.09	.08
20	---	---	.02	.02	.02	.06	.05	.12	.24	.64	.08	.05
21	---	---	.02	.02	.02	.06	.04	.13	.27	2.30	.08	.05
22	---	---	.02	.02	.02	.06	.05	.13	.28	.40	.07	.05
23	---	---	.02	.02	.02	.07	.05	.13	.29	3.20	.07	.05
24	---	---	.02	.02	.02	.06	.05	.14	.30	1.60	.07	.05
25	---	---	.02	.02	.02	.07	.05	.16	.34	4.70	.06	.05
26	---	---	.02	.02	.02	.07	.05	.19	.35	3.60	.06	.05
27	---	---	.02	.02	.02	.06	.05	.24	.35	1.50	.05	.05
28	---	---	.02	.02	.02	.06	.05	.24	.51	9.10	.10	.05
29	---	---	.02	.02	---	.06	.05	2.70	1.20	.58	.05	.05
30	---	---	.02	.02	---	.05	.05	.30	.40	.31	.10	.04
31	---	---	.02	.02	---	.06	---	.06	---	.24	.04	---
TOTAL	---	---	---	.62	.56	5.97	1.49	6.06	9.22	33.11	4.98	1.58
MEAN	---	---	---	.02	.02	.19	.05	.20	.31	1.07	.16	.05
MAX	---	---	---	.02	.02	1.7	.05	2.7	1.8	9.1	1.7	.14
MIN	---	---	---	.02	.02	.02	.04	.06	.06	.16	.04	.04

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	---	---	---	3.57	4.79	8.78	5.54	4.21	2.44	8.44	8.09	4.30
2	---	---	---	3.61	4.94	7.66	4.89	4.21	2.71	8.28	7.82	4.14
3	---	---	---	3.62	4.89	7.30	4.79	3.97	2.81	7.89	7.55	4.03
4	---	---	---	3.67	4.88	8.04	4.72	3.85	2.97	7.57	7.32	3.94
5	---	---	2.57	3.74	4.99	37.0	4.71	3.87	3.25	7.60	6.98	3.95
6	---	---	2.60	3.87	5.11	36.0	4.69	3.89	3.62	12.0	6.80	8.22
7	---	---	2.59	3.83	5.80	21.0	4.65	3.91	3.92	7.34	6.57	3.93
8	---	---	2.62	3.87	7.40	12.0	4.67	3.90	4.38	10.0	6.29	3.76
9	---	---	2.65	3.90	6.32	9.12	4.65	3.89	4.70	13.0	44.0	3.59
10	---	---	2.56	3.90	5.56	7.44	4.57	4.29	5.32	13.0	13.0	3.50
11	---	---	2.69	3.96	5.64	7.07	4.84	4.29	7.94	12.0	11.0	4.94
12	---	---	2.62	3.99	6.30	7.09	4.72	3.76	6.05	7.62	10.0	3.64
13	---	---	2.62	4.04	6.78	6.92	4.50	3.78	5.81	7.17	10.0	3.61
14	---	---	2.82	4.08	6.17	7.20	4.93	4.29	5.83	6.94	9.86	3.36
15	---	---	2.84	3.95	5.71	6.88	4.68	3.66	5.79	6.93	11.0	3.30
16	---	---	2.88	3.81	5.61	6.70	4.52	3.56	6.06	6.88	10.0	3.46
17	---	---	2.93	3.96	5.68	6.65	4.35	3.57	6.64	6.85	10.0	7.06
18	---	---	3.01	4.07	5.79	6.41	4.26	3.62	6.96	6.83	9.69	8.84
19	---	---	3.00	4.07	5.89	6.54	4.15	4.77	6.93	7.19	9.33	7.06
20	---	---	2.98	4.12	6.05	6.61	4.11	3.93	7.28	14.0	8.98	3.51
21	---	---	2.96	4.22	6.44	6.51	3.95	3.86	7.68	39.0	8.73	3.18
22	---	---	3.04	4.17	6.82	6.61	4.15	3.73	7.66	11.00	8.37	3.12
23	---	---	3.11	3.96	7.59	7.11	4.10	3.73	7.75	27.0	8.05	3.30
24	---	---	3.18	3.99	8.20	6.91	3.96	3.76	7.77	49.0	7.73	2.92
25	---	---	3.24	4.09	7.41	7.69	3.94	4.16	8.46	9.31	7.41	2.80
26	---	---	3.29	4.20	7.91	7.19	3.94	5.26	8.37	47.0	7.13	2.75
27	---	---	3.34	4.38	8.79	6.56	3.90	5.26	8.27	32.0	5.86	2.65
28	---	---	3.39	4.43	8.47	6.14	3.88	4.53	8.83	190	7.63	2.55
29	---	---	3.44	4.60	---	5.87	3.87	31.0	12.0	25.0	5.52	2.51
30	---	---	3.50	4.62	---	5.65	3.84	5.85	8.87	17.0	7.63	2.38
31	---	---	3.55	4.67	---	5.69	---	2.75	---	9.79	4.49	---
TOTAL	---	---	---	124.96	175.93	294.34	132.47	153.11	187.07	633.63	292.83	120.30
MEAN	---	---	---	4.03	6.28	9.49	4.42	4.94	6.24	20.4	9.45	4.01
MAX	---	---	---	4.67	8.79	37.0	5.54	31.0	12.0	190	44.0	8.84
MIN	---	---	---	3.57	4.79	5.65	3.84	2.75	2.44	6.83	4.49	2.38

CHIPPEWA RIVER BASIN

05364850 DUNCAN CREEK TRIBUTARY NEAR TILDEN, WI--CONTINUED

NITROGEN, AMMONIA, 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	---	---	---	1.55	1.31	1.58	1.11	1.51	1.82	1.32	1.17	.49
2	---	---	---	1.54	1.33	1.35	.95	1.51	1.81	1.26	1.11	.48
3	---	---	---	1.52	1.29	1.27	.91	.38	1.60	1.16	1.05	.47
4	---	---	---	1.52	1.27	1.38	.87	.37	1.44	1.08	.99	.47
5	---	---	1.67	1.53	1.28	58.0	.85	.37	1.34	1.33	.92	.48
6	---	---	1.66	1.56	1.29	58.0	.82	.37	1.28	1.51	.88	.72
7	---	---	1.63	1.52	1.45	18.0	.79	.37	1.18	.96	.83	.49
8	---	---	1.63	1.51	1.82	4.30	.78	.37	1.12	.88	.78	.48
9	---	---	1.62	1.50	1.53	3.35	.75	.37	1.03	1.70	3.69	.47
10	---	---	1.55	1.48	1.32	2.66	.72	1.27	1.00	1.70	.98	.46
11	---	---	1.60	1.48	1.32	2.46	.74	1.27	3.17	1.61	.85	.53
12	---	---	1.53	1.47	1.46	2.40	.71	.36	1.10	1.70	.83	.50
13	---	---	1.51	1.47	1.55	2.29	.66	.36	1.05	.47	.83	.50
14	---	---	1.60	1.46	1.39	2.32	.70	1.27	1.05	.39	.82	.47
15	---	---	1.59	1.39	1.26	2.16	.65	.35	1.04	.33	.93	.47
16	---	---	1.59	1.32	1.22	2.04	.61	.34	1.08	.28	.90	.51
17	---	---	1.59	1.35	1.22	1.98	.57	.34	1.18	.24	.88	.61
18	---	---	1.61	1.37	1.22	1.86	.54	.34	1.23	.20	.86	.70
19	---	---	1.58	1.35	1.23	1.84	.52	1.51	1.22	.18	.85	.61
20	---	---	1.54	1.34	1.24	1.81	.50	.37	1.27	.25	.83	.55
21	---	---	1.51	1.36	1.30	1.74	.47	.37	1.33	3.15	.82	.50
22	---	---	1.53	1.32	1.36	1.72	.48	.35	1.32	.63	.80	.50
23	---	---	1.54	1.24	1.49	1.80	.46	.36	1.33	2.41	.78	.54
24	---	---	1.55	1.23	1.59	1.71	.43	.36	1.33	2.76	.76	.49
25	---	---	1.56	1.24	1.41	1.85	.42	.40	3.17	1.83	.75	.48
26	---	---	1.56	1.25	1.48	1.68	.41	1.77	1.42	5.21	.73	.48
27	---	---	1.56	1.29	1.62	1.50	.39	1.77	1.39	2.04	.61	.47
28	---	---	1.56	1.28	1.54	1.37	.38	1.77	1.48	17.0	.74	.46
29	---	---	1.56	1.31	---	1.27	.37	4.55	4.61	2.63	.59	.46
30	---	---	1.56	1.30	---	1.19	.37	1.47	1.43	1.59	.73	.44
31	---	---	1.56	1.29	---	1.17	---	1.57	---	1.24	.50	---
TOTAL	---	---	---	43.34	38.79	188.05	18.93	28.14	45.82	59.04	28.79	15.28
MEAN	---	---	---	1.40	1.39	6.07	.63	.91	1.53	1.90	.93	.51
MAX	---	---	---	1.6	1.8	58.0	1.1	4.6	4.6	17.0	3.7	.72
MIN	---	---	---	1.2	1.2	1.2	.37	.34	1.0	.18	.50	.44

05364850 DUNCAN CREEK TRIBUTARY NEAR TILDEN, WI--CONTINUED

WATER TEMPERATURE, DEGREES CENTIGRADE, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	---	---	---	---	---	---	---	---	---	---	---	---
2	---	---	---	---	---	---	---	---	---	---	---	---
3	---	---	---	---	---	---	---	---	---	---	---	---
4	---	---	---	---	---	---	---	---	---	---	---	---
5	---	---	---	---	---	---	---	---	---	---	---	---
6	---	---	---	---	---	---	---	---	---	---	---	---
7	---	---	---	---	---	---	---	---	---	---	---	---
8	---	---	---	---	---	---	---	---	---	---	---	---
9	---	---	---	---	---	---	---	---	---	---	---	---
10	---	---	---	---	---	---	---	---	---	---	---	---
11	---	---	---	---	---	---	---	---	---	---	---	---
12	---	---	---	---	---	---	---	---	---	---	---	---
13	---	---	---	---	---	---	---	---	---	---	---	---
14	---	---	---	---	---	---	---	---	---	---	---	---
15	---	---	---	---	---	---	---	---	---	---	---	---
16	---	---	---	---	---	---	---	---	---	---	---	---
17	---	---	---	---	---	---	---	---	---	---	---	---
18	---	---	---	---	---	---	---	---	---	---	---	---
19	---	---	---	---	---	---	---	---	---	---	---	---
20	---	---	---	---	---	---	---	---	---	17.5	12.5	14.5
21	---	---	---	---	---	---	---	---	---	20.5	15.0	17.5
22	---	---	---	---	---	---	---	---	---	17.5	10.5	13.5
23	---	---	---	---	---	---	---	---	---	16.0	8.5	12.0
24	---	---	---	---	---	---	---	---	---	15.0	11.0	13.5
25	---	---	---	---	---	---	---	---	---	15.5	12.0	13.5
26	---	---	---	---	---	---	---	---	---	20.0	12.5	14.0
27	---	---	---	---	---	---	---	---	---	22.0	16.0	19.5
28	---	---	---	---	---	---	---	---	---	19.5	16.5	18.0
29	---	---	---	---	---	---	---	---	---	20.0	15.5	18.5
30	---	---	---	---	---	---	---	---	---	22.0	15.5	17.5
31	---	---	---	---	---	---	---	---	---	21.0	16.0	19.0
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	22.0	15.5	18.5	20.5	14.5	17.0	25.0	21.0	22.5	17.0	12.0	14.5
2	21.0	16.0	18.5	22.0	16.5	19.0	25.0	20.0	22.5	17.0	12.5	14.5
3	18.0	13.5	16.0	21.0	16.5	18.5	22.0	19.5	20.5	17.0	12.0	14.5
4	19.0	11.0	15.5	21.0	15.0	18.0	20.0	17.0	18.5	18.5	13.5	15.5
5	20.5	13.5	17.0	19.0	16.5	18.0	20.0	15.5	17.5	20.0	15.0	17.5
6	22.5	16.0	19.5	21.0	17.0	18.5	20.0	16.5	18.5	20.0	17.0	18.5
7	23.0	17.0	19.5	21.5	17.0	19.0	20.0	16.0	18.0	18.5	14.5	16.5
8	21.0	16.0	18.5	22.0	17.0	19.0	18.0	16.5	17.0	18.0	15.0	16.5
9	19.5	13.5	16.5	21.0	18.0	19.5	21.0	16.5	19.0	16.5	12.5	15.0
10	16.5	13.5	14.0	23.5	18.0	20.0	21.5	17.0	18.5	16.0	13.0	14.5
11	20.0	13.0	16.0	21.0	19.0	20.0	21.0	16.5	18.5	17.0	14.0	15.5
12	22.0	15.0	19.0	21.0	18.0	19.5	19.0	17.0	18.0	15.5	13.5	14.5
13	23.0	16.0	19.5	20.5	16.5	18.5	18.5	16.5	17.5	16.0	12.0	14.0
14	24.0	17.0	20.0	19.5	15.0	17.5	17.5	16.5	17.0	15.5	11.0	13.5
15	22.5	16.5	20.0	20.0	15.0	17.5	22.5	17.0	19.5	17.0	12.5	14.5
16	21.5	15.5	20.0	21.0	15.5	18.0	22.5	19.0	20.5	15.0	14.5	15.0
17	19.0	16.0	17.0	24.0	17.5	20.5	20.5	17.0	19.0	17.0	15.0	15.5
18	22.5	15.5	19.0	22.0	19.0	20.5	20.0	16.0	17.5	15.5	13.5	14.5
19	22.5	17.5	19.5	24.5	19.5	21.5	19.5	14.5	17.0	15.0	12.0	13.0
20	19.5	16.5	17.5	21.5	20.0	20.5	20.0	14.5	17.0	15.5	12.5	13.5
21	20.5	16.0	18.0	23.5	19.0	21.0	18.0	16.5	17.5	15.0	12.5	13.5
22	22.5	16.0	19.0	24.0	19.0	21.5	18.5	15.0	16.5	16.0	13.0	14.0
23	22.5	17.0	20.0	23.5	19.5	21.0	17.5	13.0	15.0	16.5	12.0	14.0
24	22.5	17.0	19.5	22.5	19.5	20.5	17.5	12.0	14.5	15.5	12.5	14.0
25	21.0	16.5	18.5	22.5	18.0	20.0	16.0	13.5	15.0	14.0	10.0	12.5
26	19.5	15.0	17.0	22.5	20.5	21.5	15.0	14.0	14.5	16.0	11.0	13.5
27	19.5	13.5	16.5	20.5	18.5	19.5	16.5	13.5	14.5	17.5	13.5	15.5
28	20.0	14.5	17.5	19.5	19.0	19.5	17.0	14.5	16.0	16.5	14.5	15.5
29	21.0	16.0	18.0	---	---	---	18.0	13.5	15.5	15.5	13.5	14.0
30	21.0	14.5	18.0	---	---	---	18.0	15.5	17.0	14.5	12.0	13.0
31	---	---	---	---	---	---	17.0	12.5	15.0	---	---	---
MONTH	24.0	11.0	18.1	---	---	---	25.0	12.0	17.6	20.0	10.0	14.7

05364850 DUNCAN CREEK TRIBUTARY NEAR TILDEN, WI--CONTINUED

OXYGEN, DISSOLVED (DO), MG/L, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

[illegible][illegible]

05364850 DUNCAN CREEK TRIBUTARY NEAR TILDEN, WI--CONTINUED

PRECIPITATION QUANTITY

PERIOD OF RECORD.--May to September 1987.

GAGE.--Micrologger.

REMARKS.--Records good.

EXTREMES FOR CURRENT YEAR.--Maximum daily rainfall, 1.80 in., July 28.

RAINFALL, ACCUMULATED (INCHES), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	.30	.05	.01	.00	.00
2	---	---	---	---	---	---	---	.01	.02	.05	.00	.00
3	---	---	---	---	---	---	---	.00	.00	.00	.05	.00
4	---	---	---	---	---	---	---	.00	.00	.00	.00	.00
5	---	---	---	---	---	---	---	.00	.00	.44	.00	.28
6	---	---	---	---	---	---	---	.00	.04	.00	.00	.40
7	---	---	---	---	---	---	---	.00	.04	.00	.00	.03
8	---	---	---	---	---	---	---	.00	.00	.31	.03	.00
9	---	---	---	---	---	---	---	.00	.00	.23	1.43	.00
10	---	---	---	---	---	---	---	.40	.08	.36	.00	.04
11	---	---	---	---	---	---	---	.00	.58	.25	.00	.22
12	---	---	---	---	---	---	---	.01	.00	.03	.00	.11
13	---	---	---	---	---	---	---	.27	.00	.00	.00	.01
14	---	---	---	---	---	---	---	.00	.00	.00	.26	.00
15	---	---	---	---	---	---	---	.00	.00	.00	.71	.01
16	---	---	---	---	---	---	---	.00	.00	.00	.36	.23
17	---	---	---	---	---	---	---	.00	.28	.00	.00	.24
18	---	---	---	---	---	---	---	.00	.00	.00	.02	.21
19	---	---	---	---	---	---	---	.28	.00	.00	.00	.00
20	---	---	---	---	---	---	---	.00	.01	.00	.00	.13
21	---	---	---	---	---	---	---	.00	.07	.00	.00	.00
22	---	---	---	---	---	---	---	.02	.01	.00	.00	.01
23	---	---	---	---	---	---	---	.00	.00	1.32	.00	.00
24	---	---	---	---	---	---	---	.01	.00	.08	.00	.00
25	---	---	---	---	---	---	---	.54	.26	.05	.00	.00
26	---	---	---	---	---	---	---	.07	.00	.92	.00	.00
27	---	---	---	---	---	---	---	.47	.00	.83	.00	.00
28	---	---	---	---	---	---	---	.04	.57	1.80	.75	.00
29	---	---	---	---	---	---	---	.92	.00	---	.01	.01
30	---	---	---	---	---	---	---	.00	.00	---	.40	.01
31	---	---	---	---	---	---	---	.00	---	---	.00	---
TOTAL	---	---	---	---	---	---	---	3.34	2.01	---	4.02	1.94

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 September 1987. 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: Oct. 1-10. Records are good except for estimated daily discharges and Nov. 15 to Dec. 10, 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.--96 years (1889-1983, 1987), 5,116 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, 32,200 ft³/s Oct. 12, gage height, 13.82 ft; minimum daily, 317 ft³/s July 4, Aug. 8.

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

1.4	288	6.0	6,400
2.0	585	8.0	11,200
3.0	1,440	11.0	20,700
4.0	2,800	14.0	33,000

DISCHARGE, IN 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	12000	4480	4040	3640	1300	1460	3850	1870	4610	1690	744	968
2	12000	5860	4420	3450	3100	2900	4140	1340	4620	2030	567	892
3	10000	5880	3930	3320	3120	2830	3210	480	5170	764	3390	1410
4	5200	5160	3450	3200	2300	2860	1840	2210	5140	317	1790	561
5	6200	5740	4800	4250	2650	2490	1540	1840	4670	1180	1880	737
6	6200	4560	3180	3470	2910	3140	2830	1980	1830	2100	1810	2160
7	6400	5230	2770	3000	1030	4710	2740	1610	2740	2460	1880	952
8	6000	5600	5070	3050	1280	3730	1840	1320	2380	1480	317	1890
9	5800	7440	4300	3110	2870	5760	2060	788	2740	1180	992	951
10	4900	7640	4410	2690	2950	4760	3720	679	1260	2450	2540	1850
11	6700	6650	3780	2410	2870	3330	4080	2570	1830	1130	2240	1460
12	18500	5190	3850	3410	2500	3410	2710	987	2670	835	1710	1280
13	30500	4590	2460	3360	1930	3770	3350	787	1440	1740	1140	674
14	26900	3740	3420	2550	565	1910	4150	2790	1570	2090	2630	2030
15	23200	2740	4660	2590	964	2400	3050	1230	2240	2200	2290	2120
16	13300	4260	4840	3430	2790	3320	3700	443	2090	958	1470	1730
17	12500	6230	5000	2010	2220	5170	1560	399	923	2750	2240	2310
18	13700	4890	4300	1600	2210	5030	1270	1700	1270	387	1820	2330
19	11200	3660	4300	2980	3010	3100	2380	1490	2190	838	1680	1470
20	8020	4240	3440	2540	1880	3290	3310	1530	731	2960	1840	1650
21	9350	4180	2890	2370	442	2470	3740	2360	656	2700	1810	2670
22	8690	3930	4830	2570	753	2930	3300	1790	2100	2800	591	2490
23	7860	5070	3410	2480	3400	6680	2460	879	1920	3180	806	1660
24	7540	4420	3350	1820	2350	6660	2170	1250	846	3580	1270	2080
25	6390	4560	3340	1510	3160	7710	1090	1680	1950	3190	1460	1820
26	6420	4770	3810	2380	1330	5920	775	2280	1590	2840	2150	1260
27	6040	3960	3650	2730	2090	7520	3790	2980	1030	3200	864	943
28	6250	4350	3570	2280	1140	5190	2690	1940	1150	9350	1190	2390
29	6060	4400	3530	2510	---	4920	1190	2820	1340	6510	579	1300
30	4600	3550	3660	2250	---	4870	2360	2120	1250	6210	768	1450
31	6580	---	3600	2230	---	4090	---	4180	---	3850	1890	---
TOTAL	315000	146970	120060	85190	59114	128330	80895	52322	65946	78949	48348	47488
MEAN	10160	4899	3873	2748	2111	4140	2696	1688	2198	2547	1560	1583
MAX	30500	7640	5070	4250	3400	7710	4150	4180	5170	9350	3390	2670
MIN	4600	2740	2460	1510	442	1460	775	399	656	317	317	561

CAL YR 1986 TOTAL 2463970 MEAN 6751 MAX 56200 MIN 800
WTR YR 1987 TOTAL 1228610 MEAN 3366 MAX 30500 MIN 317

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: None, except for ice periods listed in rating table below. Records good except for ice-affected periods, which are fair to 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, 1.0 ft³/s July 18, 19, 1987, gage height, 1.23 ft.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,400 ft³/s Oct. 12, gage height, 5.96 ft; minimum discharge, 1.0 ft³/s July 18, 19, gage height, 1.23 ft.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Shifting-control method used July 28-30; stage-discharge relation affected by ice Nov. 9-22, Nov. 30 to Mar. 4, and Mar. 11-15.)

1.19	1.1	3.0	156
1.3	2.9	3.5	258
1.4	5.3	4.0	400
1.6	12	5.0	800
2.0	36	6.0	1,430
2.5	85		

DISCHARGE, IN 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	105	29	14	8.4	4.4	5.6	33	7.4	14	2.8	33	3.8
2	73	29	14	8.4	4.4	5.8	29	8.0	10	2.5	22	4.3
3	60	28	14	8.2	4.3	6.4	28	7.3	7.3	2.2	18	3.5
4	87	26	13	8.0	4.3	14	29	6.3	5.5	1.8	13	3.1
5	79	23	13	8.0	4.3	56	30	6.0	4.5	1.5	9.2	3.2
6	58	22	13	7.8	4.4	259	30	5.6	3.8	1.4	7.5	3.6
7	50	22	12	7.8	5.4	376	31	5.1	3.9	1.3	6.1	3.3
8	109	60	12	7.6	5.2	350	30	4.5	8.1	1.4	5.6	2.9
9	72	60	11	7.6	5.0	333	30	4.3	6.2	1.7	219	2.9
10	58	35	11	7.6	4.9	234	27	3.9	4.9	1.7	220	8.7
11	277	25	10	7.4	5.0	80	25	4.2	8.2	1.6	116	8.3
12	919	17	9.4	7.4	5.2	40	24	3.5	11	2.2	52	6.1
13	565	14	8.8	7.4	5.2	27	24	3.2	9.8	2.1	31	6.6
14	306	13	8.4	7.2	5.2	24	43	3.2	6.4	1.8	23	5.9
15	222	12	8.2	7.2	5.0	25	61	2.9	4.8	1.5	25	4.8
16	153	12	8.4	7.0	5.0	25	52	2.9	3.6	1.3	24	4.5
17	109	13	8.6	6.8	5.0	25	41	2.5	3.2	1.1	20	7.7
18	78	13	8.8	6.6	5.0	27	31	3.7	2.8	1.1	16	11
19	62	13	9.0	6.4	5.0	26	27	3.0	2.5	1.4	13	21
20	52	14	9.2	6.2	5.0	32	23	3.4	2.2	1.5	11	30
21	44	14	9.2	6.0	5.0	47	20	3.2	2.3	8.7	9.2	26
22	40	14	9.4	5.8	5.0	64	17	3.3	2.3	5.5	8.0	18
23	35	15	9.4	5.6	5.0	82	17	2.6	2.1	25	7.6	13
24	32	15	9.4	5.4	5.0	89	14	2.6	2.0	218	6.1	10
25	30	15	9.2	5.2	5.0	106	12	2.7	2.1	199	5.1	10
26	28	16	9.2	5.0	5.2	131	12	3.6	2.4	94	4.7	8.1
27	26	18	9.0	4.9	5.4	105	11	4.3	2.0	35	4.5	6.5
28	25	16	9.0	4.8	5.4	77	10	5.0	1.9	154	4.0	5.2
29	24	16	9.0	4.7	---	59	8.6	7.8	2.6	200	3.8	5.7
30	22	15	8.8	4.6	---	39	7.8	17	2.4	119	4.1	5.4
31	22	---	8.6	4.5	---	33	---	21	---	55	4.0	---
TOTAL	3822	634	316.0	205.5	138.2	2802.8	777.4	164.0	144.8	1147.1	945.5	253.1
MEAN	123	21.1	10.2	6.63	4.94	90.4	25.9	5.29	4.83	37.0	30.5	8.44
MAX	919	60	14	8.4	5.4	376	61	21	14	218	220	30
MIN	22	12	8.2	4.5	4.3	5.6	7.8	2.5	1.9	1.1	3.8	2.9
CFSM	2.42	.41	.20	.13	.10	1.77	.51	.10	.09	.73	.60	.17
IN.	2.79	.46	.23	.15	.10	2.04	.57	.12	.11	.84	.69	.18

CAL YR 1986 TOTAL 26583.9 MEAN 96.7 MAX 3670 MIN 3.1 CFSM 1.90 IN. 19.4
WTR YR 1987 TOTAL 11350.3 MEAN 31.1 MAX 919 MIN 1.1 CFSM .61 IN. 8.28

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: Jan. 7-19 and ice periods listed in rating table below. Records good except those for estimated daily discharges, which are fair.

AVERAGE DISCHARGE.--37 years, 310 ft³/s, 10.07 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)
Oct. 13	0900	*1,180	*6.60				

Minimum discharge, 176 ft³/s, July 5, gage height, 3.09 ft.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Nov. 11-23, Dec. 6-23, Jan. 20 to Feb. 21, and Mar. 10-15.)

3.1	178	6.0	930
4.0	348	7.0	1,360
5.0	600		

DISCHARGE, IN 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	525	397	291	273	260	284	275	238	223	193	287	227
2	492	381	291	272	260	272	271	261	229	189	269	223
3	496	356	294	267	260	263	265	248	216	184	259	219
4	488	347	280	273	270	260	261	235	207	183	258	217
5	448	337	280	270	270	329	261	231	203	184	247	215
6	422	334	280	270	280	504	261	228	200	206	240	214
7	408	332	270	280	280	645	261	225	197	205	232	211
8	432	337	270	280	270	560	262	224	197	209	228	213
9	427	364	270	280	260	410	263	223	194	230	360	213
10	403	336	270	280	260	330	263	226	195	251	423	208
11	456	300	270	280	250	320	264	232	214	234	284	221
12	940	290	260	270	250	310	271	223	221	223	259	224
13	1110	290	260	270	250	300	266	220	210	215	254	221
14	776	300	260	270	250	290	265	222	201	205	257	217
15	594	290	270	270	250	290	265	218	194	200	301	211
16	527	290	270	270	250	297	262	216	190	196	448	212
17	493	290	270	270	250	293	260	213	195	192	355	244
18	463	280	270	270	240	292	256	211	212	189	297	335
19	436	280	270	270	240	288	254	218	203	197	273	329
20	417	280	270	70	250	292	252	222	198	202	260	289
21	401	280	270	260	250	298	247	221	198	228	253	280
22	392	290	270	260	252	293	243	216	199	238	247	260
23	386	290	270	260	253	308	244	214	194	225	239	246
24	379	295	272	240	259	342	239	211	190	297	234	236
25	373	299	273	240	259	345	237	211	192	292	232	232
26	377	299	272	240	257	333	236	213	191	273	230	228
27	378	300	274	250	270	318	234	215	186	265	229	227
28	375	298	276	260	267	302	230	215	188	323	236	224
29	368	297	277	260	---	287	231	218	234	468	242	222
30	353	294	276	260	---	276	228	237	229	378	237	223
31	351	---	276	260	---	270	---	228	---	317	234	---
TOTAL	14886	9353	8472	8245	7217	10201	7627	6933	6100	7391	8404	7041
MEAN	480	312	273	266	258	329	254	224	203	238	271	235
MAX	1110	397	294	280	280	645	275	261	234	468	448	335
MIN	351	280	260	240	240	260	228	211	186	183	228	208
CFSM	1.15	.75	.65	.64	.62	.79	.61	.54	.49	.57	.65	.56
IN.	1.32	.83	.75	.73	.64	.91	.68	.62	.54	.66	.75	.63

CAL YR 1986 TOTAL 151343 MEAN 415 MAX 3950 MIN 200 CFSM .99 IN. 13.5
WTR YR 1987 TOTAL 101870 MEAN 279 MAX 1110 MIN 183 CFSM .67 IN. 9.07

05369000 RED CEDAR RIVER AT MENOMONIE, WI

LOCATION.--Lat 44°53'02", long 91°55'57", in NW 1/4 sec.26, T.28 N., R.13 W., Dunn County, Hydrologic Unit 07050007, on right bank at Menomonie, 900 ft downstream from powerplant of Northern States Power Co., and 1,000 ft downstream from Wilson Creek.

DRAINAGE AREA.--1,770 mi².

PERIOD OF RECORD.--June 1907 to September 1908, May 1913 to current year. Monthly discharge only for some periods, published in WSP 1308.

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

GAGE.--Water-stage recorder. Datum of gage is 780 ft above National Geodetic Vertical Datum of 1929 (Northern States Power Co. bench mark). Prior to Sept. 3, 1908, nonrecording gage at site 1 mi downstream at different datum. May 9, 1913, to Sept. 30, 1923, water-stage recorder at same site at datum 0.42 ft lower than present datum.

REMARKS.--Estimated daily discharges: Nov. 10-11. Records good except for period of estimated discharge, which is fair. Flow regulated by powerplants at Menomonie and Cedar Falls.

AVERAGE DISCHARGE.--75 years, 1,279 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, 4,570 ft³/s Mar. 3, gage height, 4.18 ft; minimum, 173 ft³/s July 30, gage height, 1.07 ft; minimum daily, 550 ft³/s June 24.

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

1.6	489	3.0	2,340
2.0	865	4.0	4,190
2.5	1,540		

DISCHARGE, IN 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	2930	1930	1580	1360	1060	1260	1160	1160	948	660	1690	876
2	2600	1890	1550	1290	1130	1150	1160	1010	909	770	1340	814
3	1840	1800	1440	1290	1240	1260	1200	897	998	626	1150	743
4	557	1630	1410	1330	1120	1310	975	861	1090	555	1150	803
5	1070	1920	977	1330	1190	1380	812	935	960	712	1060	755
6	1960	1540	1380	1250	1130	1720	1020	816	653	738	1200	771
7	1890	1820	1280	1280	1220	2410	1090	939	710	708	1180	784
8	1790	1540	1230	1350	1270	2300	929	760	855	661	978	756
9	1550	2050	1350	1050	1150	2260	1040	849	798	875	1420	711
10	1370	1530	851	1280	1130	1670	1070	781	656	898	1650	780
11	2010	1670	824	1250	1170	1380	1010	951	873	845	1140	907
12	2460	1320	1050	1210	1210	1280	996	769	887	831	999	896
13	3390	1080	845	1380	1260	1380	1010	873	850	738	986	827
14	3010	1090	860	1130	1220	1280	1100	866	775	648	1060	904
15	2560	1290	1400	997	1100	1240	961	686	760	639	1340	813
16	2540	1580	1370	826	930	1300	1110	715	666	678	1900	833
17	2170	1620	1440	659	1020	1230	1140	759	797	764	1440	1020
18	2300	1730	1400	1020	1030	1130	1010	879	798	557	1240	1350
19	2070	1550	1300	1020	1060	1260	925	745	806	750	1170	1750
20	2220	1390	1080	928	1230	1280	1040	770	591	768	1020	1490
21	1980	1500	1340	1050	1060	1230	1020	915	757	899	986	1350
22	1990	1690	1320	1140	1120	1260	919	882	1020	970	945	1010
23	1830	1750	1330	771	1070	1450	971	814	678	1110	767	905
24	1710	1630	1230	731	1260	1400	921	818	550	1300	820	950
25	1800	1660	1390	768	1200	1540	964	851	775	1510	1030	913
26	1570	1580	1180	978	1150	1400	972	710	728	1680	811	920
27	1570	1720	1310	1080	1260	1380	902	1030	761	1670	750	886
28	1520	1590	1520	1090	1180	1360	890	972	818	1950	1060	879
29	1700	1440	1260	1210	---	1170	887	1100	788	2090	882	958
30	1540	1450	1270	1080	---	1240	918	1180	744	2230	879	827
31	1390	---	1330	1140	---	1160	---	1100	---	2050	852	---
TOTAL	60887	47980	39097	34268	32170	44070	30122	27393	23999	31880	34895	28181
MEAN	1964	1599	1261	1105	1149	1422	1004	884	800	1028	1126	939
MAX	3390	2050	1580	1380	1270	2410	1200	1180	1090	2230	1900	1750
MIN	557	1080	824	659	930	1130	812	686	550	555	750	711

CAL YR 1986 TOTAL 636929 MEAN 1745 MAX 8400 MIN 557
WTR YR 1987 TOTAL 434942 MEAN 1192 MAX 3390 MIN 550

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: None, except for ice periods listed in rating table below. Records good except for ice-affected periods, which are fair. Flow regulated by powerplants, Moose Lake, Lake Chippewa, Rest Lake, Flambeau Flowage, and Lake Wissota on Chippewa and Flambeau Rivers. Gage-height telemeter and data-collection platform at station.

AVERAGE DISCHARGE.--59 years, 7,700 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, 38,100 ft³/s Oct. 14, gage height, 11.09 ft; minimum discharge, 2,140 ft³/s July 5, gage height, 0.68 ft.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Dec. 5-28, and Jan. 15 to Feb. 17.)

0.7	2,170	6.0	15,100
1.0	2,650	8.0	22,400
2.0	4,360	10.0	31,800
4.0	9,150	11.0	37,500

DISCHARGE, IN 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	21800	9460	6520	5770	4300	3400	6880	4430	5890	2980	9010	3570
2	18600	7990	7210	5720	3400	3450	6230	4240	6490	3570	5500	2910
3	15900	8660	6340	5680	4500	4990	6190	3600	6310	3310	4190	3170
4	11000	8920	6370	5530	5200	5230	5510	3160	6910	2430	5740	2650
5	10600	8210	6400	6060	4500	4760	4360	4050	6780	2220	4660	2690
6	12000	8230	6000	6400	4700	5360	3870	3600	5450	2470	4380	2720
7	11300	7500	5400	5520	4900	6810	5200	3810	3810	3570	4390	3560
8	10100	8080	5400	5230	3500	8690	5120	3520	4510	3500	4210	2800
9	10100	9090	4800	5380	3000	8650	4300	3520	4290	3160	3700	3670
10	10300	10100	4000	5080	4300	9790	4520	2710	3980	3080	4100	2940
11	9510	9860	4300	5210	5000	8860	5380	2750	3450	3810	4910	3250
12	15400	8560	5400	4650	5000	6750	6340	3920	3640	2990	5050	3560
13	27700	7410	5800	5750	4500	6200	5030	2920	3970	2810	4600	3150
14	36400	6690	5200	5210	3600	6240	5480	2950	3240	3190	3930	2710
15	35800	5900	4400	4600	2800	5360	6110	3870	3280	3400	5120	3770
16	28100	5550	6400	4500	3300	5060	5380	3100	4280	3580	5600	3650
17	18600	7230	7400	4800	4300	5920	5670	2570	3260	2910	4760	3660
18	18000	8450	7800	3500	4010	7260	4130	2680	3370	3840	5340	4460
19	17500	6940	7600	3300	4220	7330	3870	2920	3180	2600	4540	5040
20	13900	6470	7200	4700	4730	5720	4880	3410	3800	2490	4020	4040
21	12900	6660	6800	4500	3980	5590	5350	3340	2550	4260	4270	4330
22	13000	7030	5600	4300	3240	5120	5630	3800	2670	4460	3860	4470
23	12100	6840	7200	4500	3060	6080	5430	3560	3150	4570	2960	4350
24	10700	7470	6800	4700	4500	9430	4510	2630	3140	5040	2950	3800
25	11100	7110	6000	3600	4500	9550	4610	2860	2690	5790	3030	4170
26	9460	7230	5800	3000	4980	9580	3560	3640	3700	6170	3410	3600
27	9420	7690	6000	3500	4280	9180	3590	4050	2630	5800	4140	3660
28	9050	6600	6000	4500	4350	9510	5250	4630	2880	7860	3290	2900
29	9240	6910	6060	4300	---	8720	4720	4120	3140	14300	3470	4160
30	8870	6740	6170	4600	---	7000	3230	4820	2920	13300	2960	3110
31	7780	---	5650	4400	---	6980	---	4470	---	12600	2930	---
TOTAL	466230	229580	188020	148490	116650	212570	150330	109650	119360	146060	135020	106520
MEAN	15040	7653	6065	4790	4166	6857	5011	3537	3979	4712	4355	3551
MAX	36400	10100	7800	6400	5200	9790	6880	4820	6910	14300	9010	5040
MIN	7780	5550	4000	3000	2800	3400	3230	2570	2550	2220	2930	2650

CAL YR 1986 TOTAL 3742770 MEAN 10250 MAX 66300 MIN 2990
WTR YR 1987 TOTAL 2128480 MEAN 5831 MAX 36400 MIN 2220

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 1986 TO SEPTEMBER 1987

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	BARO- METRIC PRES- SURE (MM OF HG)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)
		(00061)	(00095)	(00400)	(00010)	(00076)	(00300)	(00025)	(00301)	(31625)
NOV , 1986										
11...	1230	10100	117	7.80	2.0	4.0	13.0	763	94	210
JAN , 1987										
06...	1050	6270	146	7.80	1.0	2.4	12.8	748	92	>1200
FEB										
24...	1130	4460	175	7.80	1.0	2.5	12.8	766	90	K4400
APR										
01...	1100	7050	152	7.80	4.0	4.0	12.9	751	100	>1200
JUN										
02...	1050	6760	136	8.10	21.5	3.2	9.3	758	106	74
AUG										
18...	1040	5450	142	7.80	22.0	2.9	8.0	762	92	460
DATE		STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD- NESS WH WAT TOT FLD MG/L AS CACO3 (00900)	HARD- NESS NONCARB CALCIUM DIS- SOLVED MG/L AS CACO3 (00915)	MAGNE- SIUM, DIS- SOLVED MG/L AS MG (00925)	SODIUM, DIS- SOLVED MG/L AS NA (00930)	PERCENT SODIUM (00932)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED MG/L AS K (00935)	
NOV , 1986										
11...	150	48	9	12	4.4	2.7	11	0.2	1.3	
JAN , 1987										
06...	88	63	14	16	5.6	3.4	10	0.2	1.1	
FEB										
24...	--	72	13	18	6.5	4.4	12	0.2	1.5	
APR										
01...	77	63	10	16	5.5	3.3	10	0.2	1.8	
JUN										
02...	410	67	10	17	6.0	4.0	11	0.2	1.3	
AUG										
18...	660	64	9	16	5.9	4.8	13	0.3	2.4	
DATE		BICAR- BONATE WATER DISSOLV FIELD AS HCO3 (MG/L) (00453)	ALKA- LINITY WATER DISSOLV FLD. AS CACO3 (MG/L) (39086)	CARBON DIOXIDE DIS- SOLVED (MG/L AS CO2) (00405)	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)
NOV , 1986										
11...	46	37	1.2	18	4.5	<0.10	11	84	78	
JAN , 1987										
06...	57	46	1.5	13	5.4	<0.10	13	95	87	
FEB										
24...	69	56	1.8	2.1	7.4	0.10	14	97	95	
APR										
01...	62	50	1.6	14	6.7	0.10	11	104	91	
JUN										
02...	67	54	0.9	16	5.3	0.10	5.0	88	89	
AUG										
18...	63	52	1.7	17	6.4	0.10	11	99	97	
DATE		SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS- SOLVED (TONS PER DAY) (70302)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P) (00671)
NOV , 1986										
11...	0.11	2290	0.570	0.030	0.030	0.70	0.070	0.040	0.030	
JAN , 1987										
06...	0.13	1610	0.860	0.060	0.060	0.60	0.040	0.030	0.040	
FEB										
24...	0.13	1170	1.20	0.060	0.070	1.3	0.020	0.050	0.030	
APR										
01...	0.14	1980	0.660	0.020	0.010	0.70	0.080	0.040	0.020	
JUN										
02...	0.12	1610	0.340	<0.010	<0.010	1.0	0.150	0.030	<0.010	
AUG										
18...	0.13	1460	0.510	<0.010	<0.010	0.80	0.150	0.070	0.050	

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 1986 TO SEPTEMBER 1987

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (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 , 1986											
11...	1230	10100	40	<1	17	<0.5	<1	<1	<3	6	420
FEB , 1987											
24...	1130	4460	20	<1	18	<0.5	<1	<1	<3	1	390
APR											
01...	1100	7050	30	<1	17	<0.5	<1	<1	<3	3	430
AUG											
18...	1040	5450	10	1	18	<0.5	<1	<1	<4	3	240

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 , 1986										
11...	<5	4	17	<0.1	<10	2	<1	29	<6	15
FEB , 1987										
24...	<5	4	40	<0.1	<10	<1	<1	36	<6	7
APR										
01...	<5	<4	18	<0.1	<10	2	<1	32	<6	9
AUG										
18...	<5	<4	<1	<0.1	<10	<1	<1	40	<6	<3

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (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 (PCI/L AS METHOD (09511)	URANIUM DIS- SOLVED, EXTRAC- TION (UG/L) (80020)
NOV , 1986										
11...	1230	10100	<0.4	<0.4	2.1	19	1.8	19	0.03	0.04
JUN , 1987										
02...	1050	6760	<0.4	0.8	1.9	1.1	1.6	1.1	0.03	0.06

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (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 , 1986							
03...	0900	15900	125	16.0	--	--	--
NOV							
11...	1230	10100	117	2.0	33	900	20
DEC							
08...	1130	5400	180	1.0	--	--	--
JAN , 1987							
06...	1050	6270	146	1.0	15	254	18
FEB							
24...	1130	4460	175	1.0	21	253	29
APR							
01...	1100	7050	152	4.0	24	457	29
MAY							
11...	1050	2320	215	13.5	--	--	--
JUN							
02...	1050	6760	136	21.5	23	420	60
29...	1530	3400	180	24.5	--	--	--
AUG							
18...	1040	5450	142	22.0	16	235	67
18...	1200	5370	142	22.0	--	--	--

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.--Estimated daily discharges: Nov. 11, 12, July 15-24, Aug. 27 to Sept. 15, Sept. 28-30. Records good below 300 ft³/s, poor above 300 ft³/s, and fair for estimated periods.

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, 1,510 ft³/s Aug. 9, gage height, 5.49 ft, from rating curve extended above 140 ft³/s on basis of indirect measurement of peak flow; minimum discharge, 6.1 ft³/s Sept. 27, gage height, 1.42 ft.

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

1.4	6.5	2.7	109
1.6	12	3.1	194
1.8	20	3.5	311
2.0	32	4.0	510
2.3	56	4.5	772

DISCHARGE, IN 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	33	29	18	15	12	12	13	13	8.7	7.9	10	11
2	29	23	18	15	12	11	12	13	8.6	9.5	10	10
3	37	22	18	14	11	11	12	14	8.2	11	10	11
4	40	20	17	14	11	13	12	11	7.9	10	10	11
5	31	20	17	14	11	45	12	11	8.0	11	9.9	12
6	26	20	17	15	11	66	12	11	8.0	12	10	13
7	25	20	17	14	12	70	12	10	8.0	11	10	47
8	24	46	17	14	19	45	13	10	7.9	12	11	30
9	25	34	16	14	19	19	12	11	7.8	24	573	17
10	23	22	16	14	14	16	12	11	7.9	8.5	56	12
11	198	19	17	14	13	14	12	11	8.9	7.7	18	14
12	444	18	16	14	12	13	12	10	7.8	7.9	13	12
13	81	18	16	14	13	13	12	10	7.7	9.4	11	11
14	44	19	17	13	14	13	12	11	7.6	9.6	11	11
15	37	19	17	12	12	12	12	10	7.5	9.8	14	10
16	32	18	17	12	11	12	12	9.9	8.8	10	82	10
17	28	18	16	13	11	12	12	9.9	12	10	35	11
18	25	18	16	13	11	12	11	9.7	11	11	14	11
19	24	18	16	13	11	12	11	10	9.4	12	11	12
20	24	18	15	12	11	12	11	9.9	12	14	10	14
21	24	18	15	13	11	13	11	9.8	13	19	11	25
22	24	18	16	12	11	13	11	9.6	13	15	11	12
23	23	18	16	12	11	15	11	9.2	13	12	12	7.9
24	22	18	15	13	11	32	11	9.2	13	29	11	7.5
25	22	18	15	13	11	24	11	9.2	14	8.2	12	7.1
26	22	18	15	13	11	29	11	9.3	13	103	12	12
27	22	18	15	13	11	19	11	9.3	13	114	13	6.7
28	21	18	15	13	11	16	11	9.2	19	27	16	6.8
29	20	18	15	13	---	14	11	9.1	11	14	15	7.0
30	20	18	15	13	---	13	11	9.1	7.9	15	13	7.2
31	21	---	15	12	---	13	---	8.7	---	10	12	---
TOTAL	1471	619	501	413	339	634	349	318.1	303.6	584.5	1066.9	389.2
MEAN	47.5	20.6	16.2	13.3	12.1	20.5	11.6	10.3	10.1	18.9	34.4	13.0
MAX	444	46	18	15	19	70	13	14	19	114	573	47
MIN	20	18	15	12	11	11	11	8.7	7.5	7.7	9.9	6.7
CFSM	.99	.43	.34	.28	.25	.43	.24	.21	.21	.39	.72	.27
IN.	1.14	.48	.39	.32	.26	.49	.27	.25	.24	.45	.83	.30

CAL YR 1986 TOTAL 10482.0 MEAN 41.4 MAX 846 MIN 14 CFSM .86 IN. 8.14
WTR YR 1987 TOTAL 6988.3 MEAN 19.1 MAX 573 MIN 6.7 CFSM .40 IN. 5.43

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 to September 1987.

INSTRUMENTATION.--Water-quality monitor since March 24, 1987.

REMARKS.--Field and recorded water temperatures differed by as much as 4.5°C during March through September period. Record was rated poor because of these large variations.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum temperature during period March to September 1987, 27.0°C July 30; minimum, 1.5°C March 30.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)	DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)
OCT , 1986					APR , 1987				
02...	0920	29	390	12.0	07...	1300	13	372	8.0
NOV					MAY				
12...	1300	20	590	0.5	14...	1230	11	400	15.5
DEC					JUN				
09...	0945	17	456	1.0	18...	1300	10	395	18.0
JAN , 1987					AUG				
05...	1440	14	460	4.0	07...	1225	11	420	17.5
FEB					SEP				
02...	1230	12	405	0.5	15...	1235	9.4	403	13.5
MAR									
04...	1000	11	390	3.5					

TEMPERATURE, WATER, DEGREES CENTIGRADE, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	---	---	---	---	---	---	5.5	4.0	4.5	12.0	10.0	10.5
2	---	---	---	---	---	---	5.5	2.5	4.0	11.5	9.5	10.5
3	---	---	---	---	---	---	7.0	2.5	4.5	15.5	10.0	12.5
4	---	---	---	---	---	---	8.0	3.5	5.5	15.0	9.5	12.0
5	---	---	---	---	---	---	9.0	5.0	7.0	15.0	10.0	12.0
6	---	---	---	---	---	---	9.5	6.0	8.0	15.5	11.0	13.0
7	---	---	---	---	---	---	10.5	7.0	9.0	15.0	11.0	13.0
8	---	---	---	---	---	---	11.0	8.0	9.5	16.0	10.5	13.5
9	---	---	---	---	---	---	11.5	8.0	10.0	18.0	13.5	15.5
10	---	---	---	---	---	---	11.0	9.5	10.5	18.0	15.5	16.5
11	---	---	---	---	---	---	10.5	8.5	9.5	18.5	15.5	16.5
12	---	---	---	---	---	---	11.0	7.5	9.0	16.5	12.0	15.0
13	---	---	---	---	---	---	10.5	9.0	10.0	16.5	13.0	15.0
14	---	---	---	---	---	---	10.0	9.5	10.0	18.0	15.0	16.0
15	---	---	---	---	---	---	9.5	9.0	9.5	17.0	13.0	15.5
16	---	---	---	---	---	---	12.0	8.0	10.0	19.5	15.0	17.0
17	---	---	---	---	---	---	14.5	9.0	11.5	21.0	16.0	18.0
18	---	---	---	---	---	---	16.0	10.5	13.0	18.5	12.5	15.5
19	---	---	---	---	---	---	16.5	11.5	14.5	12.5	11.0	11.5
20	---	---	---	---	---	---	17.5	14.5	16.0	15.5	12.0	13.5
21	---	---	---	---	---	---	15.5	11.0	12.0	17.5	15.0	16.0
22	---	---	---	---	---	---	11.0	9.5	10.0	16.5	11.0	13.5
23	---	---	---	---	---	---	13.0	8.5	10.5	15.0	10.0	12.0
24	---	---	---	9.0	7.5	8.0	12.0	10.0	11.0	13.5	11.0	12.0
25	---	---	---	8.0	7.5	8.0	14.5	10.0	12.0	13.0	11.5	12.5
26	---	---	---	7.5	6.5	7.0	15.5	10.5	12.5	17.0	11.5	14.0
27	---	---	---	8.5	5.5	7.0	15.0	11.0	13.0	19.0	15.5	17.0
28	---	---	---	7.5	5.5	6.5	14.5	9.5	11.5	18.0	17.0	17.5
29	---	---	---	5.5	3.5	4.5	15.5	11.0	12.5	17.0	15.5	16.0
30	---	---	---	5.0	1.5	3.5	13.0	10.0	11.5	20.0	15.5	17.0
31	---	---	---	5.5	1.5	3.5	---	---	---	19.0	16.5	18.0
MONTH	---	---	---	---	---	---	17.5	2.5	10.1	21.0	9.5	14.5

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

TEMPERATURE, WATER, DEGREES CENTIGRADE, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	20.5	16.0	18.0	20.0	16.0	18.0	25.5	23.0	24.0	17.0	13.5	15.5
2	19.5	17.0	18.0	22.5	17.5	19.5	26.0	22.0	24.0	16.5	14.5	15.5
3	17.5	15.5	16.0	21.0	17.5	19.5	24.5	21.5	22.5	16.0	13.5	15.0
4	17.5	12.5	15.0	21.5	17.5	19.5	21.0	18.5	19.5	17.5	15.5	16.5
5	18.0	15.0	16.5	20.5	18.5	19.5	21.0	17.0	19.0	18.0	16.5	17.0
6	21.0	16.5	18.5	21.0	18.0	19.5	20.5	18.0	19.0	19.0	17.0	17.5
7	21.5	18.0	19.5	20.5	19.0	19.5	20.0	17.0	18.5	17.5	16.0	16.5
8	20.5	18.0	19.0	22.0	18.0	20.0	19.5	17.5	18.0	17.5	16.0	16.5
9	19.0	16.0	17.5	22.0	18.5	20.5	23.5	17.0	20.5	16.5	14.5	15.5
10	17.0	14.5	15.5	23.5	19.5	21.0	23.0	19.5	21.5	16.0	14.5	15.0
11	17.5	14.0	15.5	22.0	20.0	21.0	23.0	19.0	21.0	16.0	14.5	15.5
12	20.5	15.5	18.0	21.5	19.5	20.5	21.5	19.0	20.0	15.5	14.5	15.0
13	22.5	17.0	19.5	20.5	17.5	19.0	19.0	17.5	18.5	15.5	12.5	14.0
14	23.5	18.5	21.0	18.5	16.0	17.5	18.0	17.0	17.5	14.5	12.0	13.5
15	22.5	18.0	20.5	19.5	16.0	17.5	22.0	17.0	19.0	16.0	13.0	14.5
16	22.0	17.5	19.5	21.5	17.0	19.0	26.0	21.0	23.0	15.5	15.0	15.5
17	20.0	17.0	18.0	24.5	19.5	21.5	23.5	20.0	22.0	15.5	15.5	15.5
18	21.5	16.5	18.5	22.5	21.0	22.0	21.5	18.5	20.0	15.5	14.0	15.0
19	21.5	18.5	20.0	25.5	20.5	22.5	20.0	16.5	18.5	14.0	12.0	13.0
20	20.5	18.0	19.0	23.5	22.0	22.5	20.5	16.5	18.5	15.0	12.5	13.5
21	19.5	17.5	18.5	25.5	20.5	22.5	20.0	18.0	18.5	15.0	12.0	13.5
22	22.0	17.5	19.5	25.5	21.5	23.0	18.0	16.5	17.0	15.5	12.5	14.0
23	21.5	18.5	20.0	24.0	22.0	23.0	16.5	15.0	16.0	15.5	12.0	13.5
24	21.5	18.5	20.0	23.5	20.0	22.0	16.5	12.5	15.0	14.5	12.0	13.5
25	21.0	18.0	19.5	24.0	20.0	21.5	16.0	15.5	15.5	13.0	11.0	12.0
26	19.0	17.0	18.0	24.5	22.5	23.5	16.0	15.0	15.5	15.5	11.5	13.0
27	19.5	15.5	17.0	24.5	22.0	23.5	16.0	14.5	15.5	16.5	13.0	15.0
28	19.0	16.5	17.5	24.0	21.0	22.5	16.5	15.0	16.0	16.0	15.5	16.0
29	20.5	16.5	18.5	24.0	21.0	22.5	17.5	15.0	16.0	16.0	14.0	15.0
30	20.5	16.0	18.0	27.0	21.5	24.0	17.5	16.0	17.0	14.0	12.0	12.5
31	---	---	---	26.5	22.0	24.5	16.0	14.0	15.5	---	---	---
MONTH	23.5	12.5	18.3	27.0	16.0	21.0	26.0	12.5	18.8	19.0	11.0	14.8

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: Oct. 1-23, Jan. 23, 24, Feb. 26 to Mar. 3, May 9-19. Records good. Low flow slightly regulated and high flow completely regulated by flood-control dam 770 ft upstream.

AVERAGE DISCHARGE.--19 years (1969-87), 34.1 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, 1,150 ft³/s Oct. 12, gage height, 17.00 ft; minimum discharge, 13 ft³/s June 17, 23, 24, 26, 27, 28, gage height, 13.48 ft.

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

13.5	13	14.3	62
13.7	18	14.6	120
13.9	27	15.1	280
14.1	40	16.0	660

DISCHARGE, IN 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	56	33	26	20	20	20	20	22	15	16	20	14
2	52	33	26	20	19	21	19	22	15	16	18	15
3	44	31	25	20	18	20	19	22	18	16	17	15
4	48	29	25	20	18	21	18	20	17	14	17	15
5	52	29	24	19	18	34	18	19	15	14	17	15
6	46	29	24	19	18	66	18	18	15	16	16	16
7	40	28	24	19	19	77	20	17	15	16	16	16
8	38	38	24	19	24	59	19	17	15	15	16	40
9	36	46	23	19	28	38	17	17	14	28	326	33
10	36	34	22	19	26	29	19	18	14	25	144	23
11	220	30	23	19	23	25	19	18	17	20	48	27
12	560	27	21	19	21	22	19	18	17	18	30	22
13	100	26	21	19	21	21	19	17	15	16	24	19
14	80	26	21	19	22	21	19	17	15	15	21	18
15	60	26	21	18	22	20	19	18	14	14	20	17
16	47	26	21	18	21	20	20	17	14	14	42	19
17	41	26	21	18	20	19	21	17	19	14	52	21
18	37	26	21	18	20	19	21	17	24	14	34	23
19	34	27	21	18	19	20	19	17	18	15	25	22
20	32	28	21	18	19	20	21	17	16	15	20	26
21	31	27	20	19	19	20	22	16	16	20	19	31
22	31	26	20	19	20	21	21	16	15	17	16	30
23	32	26	20	19	20	23	21	15	14	16	15	25
24	31	26	20	18	20	36	21	14	18	30	15	22
25	30	26	20	18	20	35	21	15	18	23	15	19
26	30	26	20	18	20	35	20	16	15	72	16	18
27	30	26	20	18	20	33	21	16	13	111	17	19
28	30	26	20	19	20	27	19	16	17	60	20	19
29	29	26	20	20	---	24	18	16	28	32	20	18
30	28	26	20	20	---	22	18	17	19	27	18	16
31	30	---	20	20	---	21	---	16	---	23	15	---
TOTAL	1991	859	675	586	575	889	586	538	495	762	1109	633
MEAN	64.2	28.6	21.8	18.9	20.5	28.7	19.5	17.4	16.5	24.6	35.8	21.1
MAX	560	46	26	20	28	77	22	22	28	111	326	40
MIN	28	26	20	18	18	19	17	14	13	14	15	14

CAL YR 1986 TOTAL 18932 MEAN 51.9 MAX 1050 MIN 14
WTR YR 1987 TOTAL 9698 MEAN 26.6 MAX 560 MIN 13

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 was moved to 170 ft downstream from dam on Oct. 30, 1986, to prevent damage from high velocities at peak flows. The monitor was located 100 ft downstream from dam for July 2 to Oct. 30, 1986 period. Prior to July 2, 1986, poor water circulation due to aquatic macrophytes, and ground-water seepage from the streambed, caused local water temperature and specific conductance differences. Records from Oct. 1 to 30 were fair and from Oct. 31 to Sept. 30 were 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 July 26; minimum, 2.5°C Dec. 21-23, Jan. 19, 25-29.

SPECIFIC CONDUCTANCE: Maximum, 514 microsiemens/cm Jan. 20; minimum, 159 microsiemens/cm Oct. 12.

TEMPERATURE, WATER, DEGREES CENTIGRADE, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	15.0	14.5	15.0	10.0	9.0	9.0	4.5	4.5	4.5	3.0	3.0	3.0
2	15.0	14.0	14.5	8.5	8.5	8.5	4.5	4.5	4.5	3.0	3.0	3.0
3	15.5	14.5	15.0	8.5	8.0	8.0	4.5	4.0	4.5	3.0	3.0	3.0
4	15.0	14.0	14.5	8.0	7.5	8.0	4.0	4.0	4.0	3.0	3.0	3.0
5	14.0	14.0	14.0	7.5	7.5	7.5	4.0	4.0	4.0	3.0	3.0	3.0
6	14.0	13.0	13.5	7.5	7.0	7.5	4.0	4.0	4.0	3.0	3.0	3.0
7	13.5	12.5	13.0	7.5	7.0	7.5	4.0	4.0	4.0	3.0	3.0	3.0
8	13.5	13.0	13.0	7.5	6.5	7.0	4.0	4.0	4.0	3.0	3.0	3.0
9	13.5	12.5	13.0	6.0	4.0	5.0	4.0	4.0	4.0	3.0	3.0	3.0
10	12.5	11.5	12.0	4.5	3.0	3.5	4.0	4.0	4.0	3.0	3.0	3.0
11	12.0	11.5	12.0	4.0	3.0	3.5	4.0	3.5	4.0	3.0	3.0	3.0
12	11.5	9.0	10.0	4.0	3.5	4.0	3.5	3.5	3.5	3.0	3.0	3.0
13	9.5	8.0	8.5	4.0	3.5	4.0	3.5	3.0	3.5	3.0	3.0	3.0
14	8.0	7.5	8.0	4.5	4.0	4.5	3.0	3.0	3.0	3.0	3.0	3.0
15	8.0	7.5	7.5	4.5	4.0	4.5	3.0	2.5	3.0	3.0	2.5	3.0
16	8.0	7.5	7.5	4.5	4.0	4.5	2.5	2.5	2.5	3.0	2.5	3.0
17	8.0	7.5	8.0	4.5	4.0	4.5	2.5	2.5	2.5	3.0	2.5	3.0
18	7.5	7.5	7.5	4.5	4.0	4.0	2.5	2.5	2.5	3.0	2.5	2.5
19	9.0	7.5	8.0	4.0	4.0	4.0	2.5	2.5	2.5	2.5	2.5	2.5
20	10.0	8.0	8.5	4.0	4.0	4.0	2.5	2.5	2.5	3.0	2.5	2.5
21	11.0	9.0	9.5	4.5	4.0	4.0	2.5	2.5	2.5	3.0	2.5	3.0
22	10.5	9.0	9.5	4.0	4.0	4.0	2.5	2.5	2.5	2.5	2.5	2.5
23	11.0	9.5	10.0	4.0	4.0	4.0	2.5	2.5	2.5	2.5	2.5	2.5
24	11.0	9.5	10.0	4.0	4.0	4.0	2.5	2.5	2.5	2.5	2.5	2.5
25	10.0	10.0	10.0	4.5	4.0	4.5	3.0	2.5	3.0	2.5	2.5	2.5
26	10.5	10.0	10.0	4.5	4.5	4.5	3.0	3.0	3.0	2.5	2.5	2.5
27	11.0	10.0	10.0	4.5	4.5	4.5	3.0	3.0	3.0	2.5	2.5	2.5
28	12.0	10.5	11.5	4.5	4.5	4.5	3.0	3.0	3.0	2.5	2.5	2.5
29	10.5	10.0	10.5	4.5	4.5	4.5	3.0	3.0	3.0	2.5	2.5	2.5
30	10.0	9.5	10.0	4.5	4.5	4.5	3.0	3.0	3.0	2.5	2.5	2.5
31	10.0	9.5	10.0	---	---	---	3.0	3.0	3.0	2.5	2.5	2.5
MONTH	15.5	7.5	10.8	10.0	3.0	5.20	4.5	2.5	3.29	3.0	2.5	2.79

CHIPPEWA RIVER BASIN

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

TEMPERATURE, WATER, DEGREES CENTIGRADE, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	3.0	2.5	3.0	---	---	---	5.5	5.0	5.0	14.5	14.0	14.5
2	3.5	3.0	3.5	---	---	---	5.5	4.0	5.0	14.5	14.0	14.0
3	3.5	3.5	3.5	---	---	---	6.5	5.0	5.5	15.0	13.5	14.5
4	4.0	3.5	4.0	5.5	5.5	5.5	7.5	5.0	6.5	15.0	13.5	14.5
5	4.0	4.0	4.0	5.5	5.5	5.5	7.5	5.5	6.5	16.5	14.5	15.0
6	---	---	---	5.5	5.5	5.5	8.0	6.5	7.5	15.5	14.5	15.0
7	---	---	---	5.5	5.5	5.5	10.0	7.5	8.5	17.0	14.5	15.5
8	---	---	---	5.5	5.5	5.5	10.5	8.0	9.0	17.0	14.5	15.5
9	---	---	---	6.0	5.5	5.5	10.5	8.5	9.0	17.5	15.0	16.0
10	---	---	---	6.0	5.5	6.0	10.5	9.0	10.0	17.0	16.0	16.5
11	---	---	---	6.0	5.5	6.0	10.5	9.0	9.5	18.0	16.5	17.0
12	---	---	---	6.0	5.5	6.0	10.5	9.5	9.5	17.0	16.0	16.5
13	---	---	---	6.0	5.5	5.5	10.5	10.0	10.0	17.0	15.5	16.0
14	---	---	---	5.5	5.5	5.5	10.5	10.0	10.0	17.5	16.5	17.0
15	---	---	---	6.0	5.5	6.0	10.5	10.0	10.0	18.0	16.0	17.0
16	---	---	---	6.5	5.5	6.0	12.0	10.0	10.5	18.0	16.5	17.0
17	---	---	---	6.5	6.0	6.0	12.5	10.5	11.0	19.0	17.0	17.5
18	---	---	---	6.0	6.0	6.0	13.5	11.0	12.0	18.0	17.0	17.5
19	---	---	---	6.0	5.5	6.0	13.0	10.5	12.0	17.5	17.0	17.5
20	---	---	---	6.5	5.5	6.0	16.5	12.0	13.5	18.0	17.0	17.5
21	---	---	---	6.0	6.0	6.0	14.5	12.5	13.5	18.0	17.0	17.5
22	---	---	---	7.0	6.0	6.5	13.0	12.0	12.5	17.5	16.5	17.0
23	---	---	---	7.0	6.0	6.5	14.0	12.0	13.0	17.5	16.0	16.5
24	---	---	---	7.0	6.5	7.0	13.0	12.0	12.5	17.0	16.0	16.5
25	---	---	---	7.0	6.5	7.0	14.0	11.5	13.0	16.5	16.0	16.0
26	---	---	---	7.0	6.0	6.5	14.5	12.5	13.5	18.0	13.0	16.5
27	---	---	---	7.0	6.0	6.5	16.0	13.5	14.5	18.0	17.0	17.5
28	---	---	---	7.0	6.0	6.5	15.0	13.5	14.5	18.5	17.5	18.0
29	---	---	---	6.0	5.0	5.5	16.0	13.5	14.5	19.0	18.0	18.0
30	---	---	---	6.5	3.5	5.0	15.5	13.5	14.5	19.5	18.0	19.0
31	---	---	---	5.5	5.0	5.5	---	---	---	20.0	18.0	19.0
MONTH	---	---	---	---	---	---	16.5	4.0	10.5	20.0	13.0	16.5

TEMPERATURE, WATER, DEGREES CENTIGRADE, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	19.5	18.0	18.5	21.5	20.5	21.0	26.0	25.0	25.5	19.0	17.5	18.0
2	19.5	18.0	19.0	22.5	20.5	21.5	26.0	24.5	25.0	19.5	17.5	18.0
3	19.5	18.0	19.0	22.0	20.5	21.0	25.0	24.0	24.5	18.0	17.5	18.0
4	19.0	18.0	18.5	22.0	20.5	21.0	24.5	23.0	23.5	18.0	17.5	17.5
5	18.5	18.0	18.5	22.0	20.5	21.0	23.0	22.0	22.5	19.0	18.0	18.5
6	20.0	18.0	19.0	22.5	21.0	21.5	23.0	21.5	22.5	20.0	18.0	19.0
7	20.0	18.5	19.5	23.0	21.5	22.0	23.5	21.5	22.5	19.0	18.5	18.5
8	20.0	18.5	19.5	23.5	21.5	22.5	22.5	21.5	22.0	22.0	18.5	19.5
9	19.5	18.5	19.0	25.0	22.5	24.0	24.0	21.5	22.5	20.5	19.0	19.5
10	19.0	18.5	18.5	25.0	23.0	24.0	23.0	21.0	21.5	18.5	18.0	18.5
11	20.0	19.0	19.5	24.0	22.5	23.5	23.0	20.5	21.5	19.0	18.0	18.5
12	22.0	19.0	20.0	23.5	22.5	23.0	22.5	21.5	22.0	18.0	18.0	18.0
13	22.0	19.5	20.5	22.5	21.0	21.5	22.0	20.5	21.0	18.5	17.5	18.0
14	22.5	20.0	21.0	21.5	20.5	21.0	20.5	20.5	20.5	18.0	17.0	17.5
15	21.0	20.0	20.5	21.5	20.0	21.0	22.0	20.5	21.0	18.0	17.0	17.5
16	21.0	20.0	20.5	21.0	20.0	20.5	24.5	21.5	23.0	18.0	17.5	18.0
17	23.0	20.0	21.5	22.5	20.5	21.5	24.0	22.0	23.0	18.0	17.5	18.0
18	25.0	22.0	23.0	22.0	21.0	21.5	23.0	21.5	22.0	17.5	17.5	17.5
19	23.0	21.5	22.5	23.5	21.5	22.5	22.5	20.5	21.5	17.5	16.5	17.0
20	22.0	21.0	21.5	23.5	22.0	22.5	22.5	20.0	21.0	17.5	17.0	17.0
21	22.0	21.0	21.5	25.0	23.5	24.0	21.0	20.0	20.5	17.0	16.5	17.0
22	22.5	21.0	21.5	24.5	23.5	24.0	20.5	19.5	20.0	17.5	16.0	16.5
23	22.0	21.5	21.5	24.0	23.0	23.5	19.5	18.5	19.0	17.5	16.0	16.5
24	24.5	21.0	23.0	26.0	24.0	25.0	20.0	18.5	19.0	17.5	16.0	16.5
25	23.0	21.0	22.5	26.0	24.0	25.0	19.0	18.0	18.5	17.0	15.5	16.0
26	21.5	20.0	21.0	26.5	25.0	25.5	18.5	18.0	18.0	17.0	15.5	16.0
27	21.5	19.5	20.5	25.5	24.5	25.0	19.0	18.0	18.5	17.0	16.0	16.5
28	22.5	20.0	21.0	25.5	23.0	24.5	21.0	18.0	19.0	17.0	16.5	16.5
29	22.5	21.5	22.0	25.5	24.0	24.5	18.5	18.0	18.5	18.0	16.0	16.5
30	22.5	21.0	21.5	26.0	24.5	25.0	18.5	18.0	18.5	17.0	15.5	16.5
31	---	---	---	26.0	24.5	25.5	18.5	17.5	18.0	---	---	---
MONTH	25.0	18.0	20.5	26.5	20.0	22.9	26.0	17.5	21.2	22.0	15.5	17.5

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

SPECIFIC CONDUCTANCE MICROSIEMENS/CM AT 25 DEG C, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

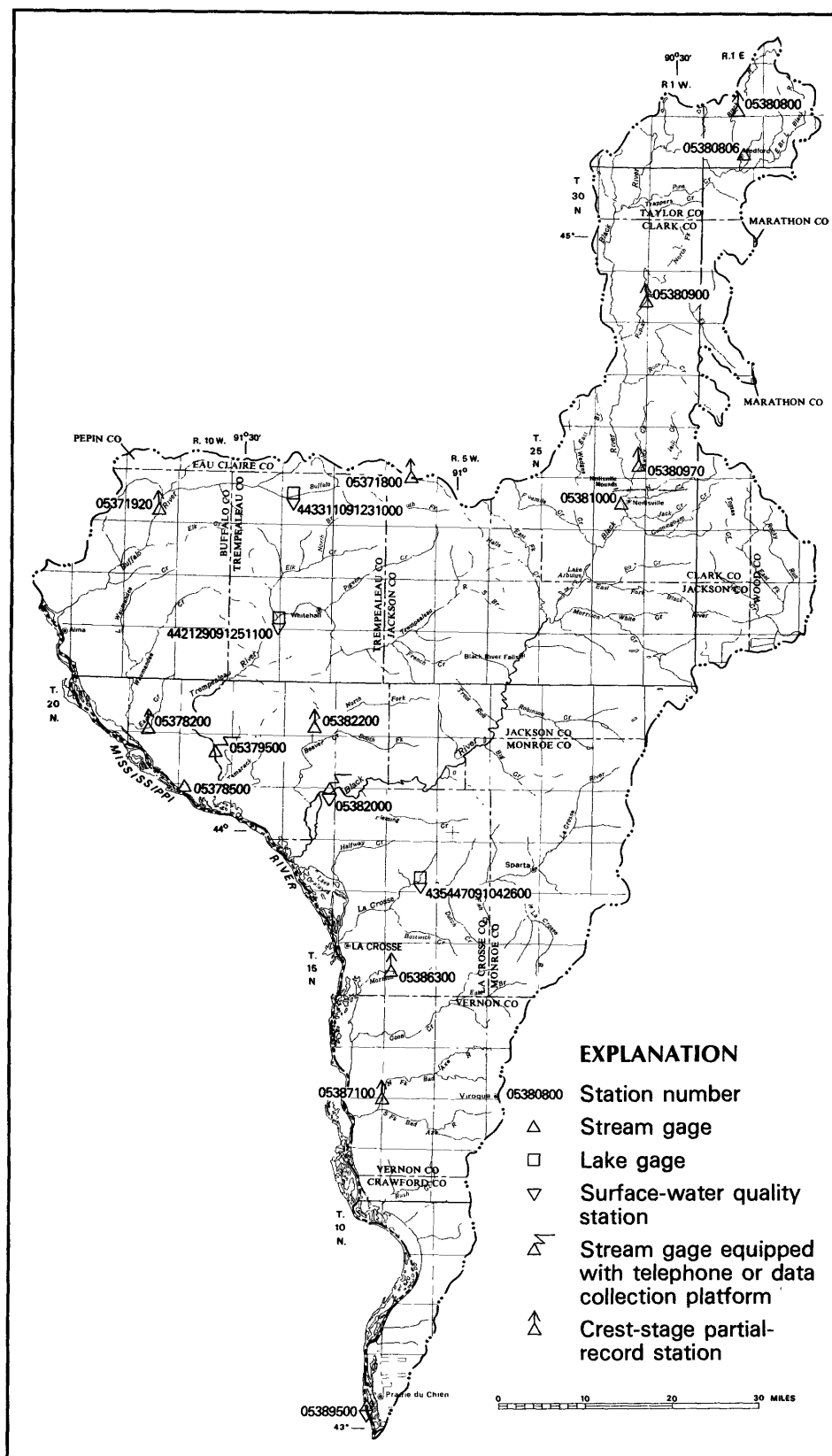
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	272	256	264	329	321	325	396	393	395	447	440	444
2	274	261	266	330	324	327	397	396	396	444	438	442
3	262	245	253	334	330	332	401	396	398	445	440	442
4	262	250	254	337	330	334	406	400	402	444	440	442
5	267	254	261	340	335	337	406	400	403	445	442	443
6	283	270	277	345	338	341	407	399	404	445	436	443
7	285	281	282	351	344	347	410	399	405	446	436	444
8	288	277	281	349	346	347	410	408	409	446	443	444
9	294	282	288	357	348	351	412	406	409	446	436	443
10	324	292	306	357	353	356	414	409	412	446	431	445
11	303	241	297	360	353	356	425	412	417	446	435	443
12	269	159	206	365	360	361	422	410	418	447	437	443
13	243	174	217	369	361	365	424	413	421	454	446	448
14	215	204	210	368	362	365	430	422	426	467	451	453
15	221	208	213	370	366	368	430	422	428	454	447	453
16	219	210	217	373	367	371	432	424	430	456	452	454
17	252	219	228	375	369	372	435	426	432	457	454	456
18	249	231	243	384	373	378	438	422	433	457	452	455
19	254	234	249	384	378	381	440	427	436	457	452	455
20	258	243	252	382	378	380	440	430	436	514	455	476
21	261	249	255	384	378	382	440	436	438	510	457	474
22	267	254	260	385	377	382	442	433	439	462	457	460
23	267	258	263	392	385	387	440	436	439	463	454	460
24	298	263	273	392	383	388	441	436	439	463	460	461
25	296	280	286	390	383	387	443	436	440	463	458	461
26	296	279	282	394	384	388	441	437	439	465	454	460
27	305	282	298	394	387	391	441	437	440	460	444	455
28	304	272	283	395	389	392	441	436	439	458	442	453
29	319	288	310	395	389	393	441	437	440	457	450	454
30	335	316	323	395	393	394	444	441	443	459	454	456
31	334	319	323	---	---	---	445	438	443	461	445	456
MONTH	335	159	265	395	321	366	445	393	424	514	431	452
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	459	449	454	---	---	---	354	344	349	335	328	332
2	447	438	444	---	---	---	354	348	351	335	329	332
3	445	440	444	---	---	---	357	349	353	332	325	329
4	447	443	445	---	---	---	357	352	355	330	318	327
5	446	439	443	412	408	410	359	352	355	330	321	327
6	---	---	---	410	381	400	355	349	353	329	322	325
7	---	---	---	381	346	364	359	348	354	329	320	326
8	---	---	---	345	331	338	357	348	352	329	321	326
9	---	---	---	330	325	327	357	349	352	331	325	329
10	---	---	---	329	324	326	361	352	356	334	326	329
11	---	---	---	333	329	330	354	346	350	330	323	327
12	---	---	---	341	334	339	355	350	353	335	329	333
13	---	---	---	343	341	342	354	349	351	341	333	336
14	---	---	---	341	339	340	351	347	350	336	329	333
15	---	---	---	342	338	341	349	346	348	339	331	336
16	---	---	---	345	339	342	350	345	348	341	334	338
17	---	---	---	343	335	339	350	346	348	341	334	338
18	---	---	---	341	338	339	351	347	349	342	337	340
19	---	---	---	342	339	341	355	348	352	341	338	339
20	---	---	---	343	330	337	354	342	349	342	340	340
21	---	---	---	336	332	333	350	344	347	343	338	341
22	---	---	---	338	331	334	348	346	347	343	338	341
23	---	---	---	332	323	327	348	343	346	343	338	341
24	---	---	---	333	323	328	348	346	347	347	342	345
25	---	---	---	330	308	319	350	344	347	348	345	347
26	---	---	---	320	299	305	348	342	346	348	340	345
27	---	---	---	321	307	315	348	326	337	348	337	343
28	---	---	---	327	299	318	342	337	339	342	334	338
29	---	---	---	349	324	336	342	326	335	338	327	333
30	---	---	---	352	343	349	342	333	337	336	328	331
31	---	---	---	354	342	348	---	---	---	336	330	333
MONTH	---	---	---	---	---	---	361	326	349	348	318	335

CHIPPEWA RIVER BASIN

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

SPECIFIC CONDUCTANCE MICROSIEMENS/CM AT 25 DEG C, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	338	332	335	314	309	312	312	297	304	334	323	329
2	338	331	335	311	300	305	312	302	306	336	324	331
3	336	317	325	312	304	308	318	306	313	335	329	331
4	337	330	332	312	305	309	319	309	314	333	326	330
5	338	335	336	319	299	310	325	317	321	329	320	326
6	338	332	336	304	298	301	327	322	325	327	307	318
7	341	334	337	301	297	299	329	325	328	321	305	314
8	341	332	337	301	287	293	333	326	330	310	245	286
9	340	335	337	287	248	259	320	244	283	298	272	282
10	340	333	336	286	259	268	257	233	245	317	299	307
11	335	330	332	295	277	283	257	242	252	309	299	304
12	335	330	333	300	291	295	260	256	258	318	312	314
13	336	333	334	318	298	309	268	257	262	325	318	322
14	337	333	335	323	315	319	275	268	271	331	322	327
15	336	331	333	323	315	319	282	275	278	329	322	325
16	335	329	332	340	317	328	279	258	269	325	320	322
17	336	300	316	331	325	327	270	260	264	324	316	320
18	315	304	309	329	324	326	274	268	271	326	315	320
19	319	314	317	326	317	322	283	274	278	334	323	328
20	320	316	317	325	313	322	292	283	286	330	319	325
21	319	315	318	310	301	304	294	287	291	325	316	321
22	321	316	319	317	307	311	303	292	296	333	321	325
23	326	316	320	324	303	318	310	303	307	342	322	333
24	326	292	308	303	284	289	317	309	314	344	330	338
25	318	305	308	306	294	302	318	313	316	346	332	338
26	328	310	319	296	263	278	319	313	317	348	336	342
27	331	328	330	286	265	273	320	315	318	346	338	341
28	334	287	319	289	269	280	318	304	310	345	337	340
29	304	291	295	291	283	287	322	309	315	349	320	338
30	315	305	308	295	284	288	327	313	319	351	323	342
31	---	---	---	309	289	298	330	303	324	---	---	---
MONTH	341	287	325	340	248	301	333	233	296	351	245	324



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, 14.65 ft, July 25; minimum observed, 14.23 ft, June 17.

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	GAGE HEIGHT	DATE	GAGE HEIGHT	DATE	GAGE HEIGHT	DATE	GAGE HEIGHT	DATE	GAGE HEIGHT	DATE	GAGE HEIGHT
MAY 5	14.39	MAY 26	14.35	JUNE 24	14.37	JULY 14	14.33	AUG. 6	14.37	AUG. 21	14.29
MAY 12	14.37	JUNE 2	14.41	JULY 2	14.31	JULY 25	14.65	AUG. 7	14.33	AUG. 28	14.29
MAY 18	14.33	JUNE 17	14.23	JULY 7	14.29						

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 1986 TO SEPTEMBER 1987

DATE	SECCHI DEPTH	DATE	SECCHI DEPTH	DATE	SECCHI DEPTH	DATE	SECCHI DEPTH	DATE	SECCHI DEPTH	DATE	SECCHI DEPTH
MAY 5	1.14	MAY 26	1.14	JUNE 24	0.91	JULY 14	0.69	AUG. 6	0.76	AUG. 21	1.14
MAY 12	1.22	JUNE 2	0.91	JULY 2	0.91	JULY 25	0.61	AUG. 7	0.84	AUG. 28	1.07
MAY 18	0.99	JUNE 17	0.91	JULY 7	0.84	JULY 30	0.53				

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, 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 dam, and powerplants at low and medium stages. Flood flow not materially affected by artificial storage.

AVERAGE DISCHARGE.--59 years, 28,010 ft³/s, 6.43 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 Corps of Engineers.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 135,000 ft³/s Oct. 1, gage height, 14.29 ft, was not independent of the same peak discharge that occurred Sept. 27, 1986; maximum independent peak, 40,900 ft³/s July 29, gage height, 6.65 ft; minimum daily discharge, 12,100 ft³/s Sept. 5; minimum gage height, 5.08 ft Sept. 1.

DISCHARGE, IN 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	134000	50200	36100	27900	23200	24900	38500	21300	30700	16300	35300	13700
2	131000	49800	36000	28000	23400	24000	38300	20900	31600	14000	31700	13000
3	128000	47500	35700	27900	23600	22600	37700	21300	31900	14000	26300	12900
4	122000	46200	35600	26700	23500	21000	36500	21500	31900	14300	24700	13100
5	115000	46100	34800	26600	23000	20500	35300	20900	31700	12800	22600	12100
6	109000	45900	33700	27300	23400	20700	34400	20500	31400	13200	19800	13300
7	102000	44900	32900	28800	22900	22600	33000	20600	30900	14300	18000	13500
8	95800	43500	31600	28500	22500	24600	32300	20600	29400	16600	17200	14200
9	91700	42100	30500	26600	22700	25300	31100	20300	26100	17800	18100	14500
10	86200	42700	30100	25000	22200	28800	29800	18500	24300	17400	22200	13500
11	82400	44400	27300	24200	22100	31400	28900	15100	23200	17000	22700	12600
12	82200	45000	22900	23500	21500	32600	28700	12800	23000	17100	20800	12300
13	81400	44300	23600	23700	21200	30800	28700	14600	23100	17100	19000	13000
14	83900	40300	26500	24000	22100	29300	29000	19200	22600	15100	16800	13600
15	90100	37500	27500	26600	22200	28700	29800	22200	20700	14100	15900	14300
16	94600	35800	30400	23200	22100	28100	29200	20900	17900	13300	17800	14200
17	95000	33600	31300	23100	21900	27400	29000	17400	15000	12700	18900	14300
18	90600	31900	34500	23100	21700	26500	29000	14300	15500	13900	19300	14500
19	83300	31700	33800	23000	21900	26600	28100	14500	17100	17500	19500	15400
20	78700	34800	33800	22900	20900	27700	25100	15700	17400	21400	18700	15500
21	75600	37100	33600	21200	20500	27800	25200	15700	16400	20300	16800	16900
22	72000	36800	33500	20600	20400	27000	28100	18600	15400	19600	15300	18300
23	69400	36200	31900	18000	20400	25200	28600	20200	15700	18500	14500	18500
24	68600	35800	32200	15800	20800	24300	28600	21600	15500	21600	13500	17700
25	66000	35000	32300	15700	20700	27700	25600	23300	15500	29400	13400	16000
26	61200	34800	31800	15900	21600	30500	21900	25600	14900	32100	13200	15500
27	58300	35200	30700	16600	23200	33400	22400	27900	15200	34300	14100	15200
28	55700	35900	30400	18700	24900	34800	25200	28300	15200	36800	16300	14800
29	54100	36800	30600	21200	---	35600	24200	28700	16200	39200	16300	14200
30	53800	36700	30200	23200	---	37200	23000	29400	16900	38800	16800	14100
31	52000	---	28100	23100	---	38300	---	30500	---	37500	16800	---
TOTAL	2663600	1198500	973900	720600	620500	865900	885200	642900	652300	638000	592300	434700
MEAN	85920	39950	31420	23250	22160	27930	29510	20740	21740	20580	19110	14490
MAX	134000	50200	36100	28800	24900	38300	38500	30500	31900	39200	35300	18500
MIN	52000	31700	22900	15700	20400	20500	21900	12800	14900	12700	13200	12100
CFSM	1.45	.67	.53	.39	.37	.47	.50	.35	.37	.35	.32	.24
IN.	1.67	.75	.61	.45	.39	.54	.56	.40	.41	.40	.37	.27

CAL YR 1986 TOTAL 21518400 MEAN 58950 MAX 166000 MIN 18200 CFSM .99 IN. 13.5
WTR YR 1987 TOTAL 10888400 MEAN 29830 MAX 134000 MIN 12100 CFSM .50 IN. 6.84

TREMPEALEAU RIVER BASIN

442129091251100 BUGLE LAKE AT INDEPENDENCE, WI

LAKE-STAGE RECORDS

LOCATION.--Lat 44°21'29", long 91°25'11", in NW 1/4 sec.25, T.22 N., R.9 W., Trempealeau County, Hydrologic Unit 07040005, at dam at Independence.

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

GAGE.--Staff gage read by Ralph Wiersgalla. Elevation of gage is 779 ft, from topographic map.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height observed, 1.90 ft, Sept. 9, 30, 1985; minimum observed, 1.60 ft, many days in July and August 1985; Apr. 15, 1986, and many days in 1987.

EXTREMES FOR CURRENT YEAR.--Maximum gage height observed, 1.80 ft, Oct. 31; minimum observed, 1.60 ft, many days during April, May, June, and July 1987.

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	GAGE HEIGHT	DATE	GAGE HEIGHT	DATE	GAGE HEIGHT	DATE	GAGE HEIGHT	DATE	GAGE HEIGHT
OCT. 15	1.70	APR. 15	1.60	MAY 15	1.60	JUNE 15	1.60	JULY 15	1.60
OCT. 31	1.80	APR. 30	1.60	MAY 29	1.70	JULY 1	1.60		

WATER-QUALITY RECORDS

LOCATION.--Lat 44 21'39", long 91 25'20", in NW 1/4 sec.25, T.22 N., R.9 W., Trempealeau County, Hydrologic Unit 07040005, near center of lake, at Independence.

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

REMARKS.--Secchi disc readings made by Ralph Wiersgalla.

SECCHI DISC TRANSPARENCY (IN METERS) WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	SECCHI DEPTH	DATE	SECCHI DEPTH	DATE	SECCHI DEPTH	DATE	SECCHI DEPTH	DATE	SECCHI DEPTH
OCT. 15	1.22	APR. 15	1.22	MAY 15	1.52	JUNE 15	0.91	JULY 15	1.22
OCT. 31	1.22	APR. 30	1.52	MAY 29	0.91	JULY 1	1.22		

TREMPEALEAU RIVER BASIN

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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: None, except for ice periods listed in rating table below. Records are good except those for ice-affected periods, which are fair. Gage-height telemeter and data-collection platform at station.

AVERAGE DISCHARGE.--58 years (1915-19, 1935-87), 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)
Oct. 5	1100	1,310	6.98	July 29	1300	*2,860	*9.62
Oct. 14	2100	1,800	7.97				

Minimum daily discharge, 317 ft³/s July 5.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Shifting-control method used Oct. 1 to Nov. 12, Nov. 24 to Dec. 10, July 25 to Sept. 30; stage-discharge relation affected by ice Nov. 13-23, Dec. 11 to Jan. 2, Jan. 16 to Feb. 22.)

3.4	310	7.0	1,520
4.0	452	8.0	2,040
5.0	735	9.0	2,750
6.0	1,090	10.0	4,200

DISCHARGE, IN 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	946	584	520	500	460	515	524	424	506	360	1590	347
2	862	603	522	500	480	511	532	548	478	338	1100	336
3	977	582	529	489	500	486	517	586	460	328	695	328
4	1210	569	527	484	520	470	502	522	416	321	603	323
5	1300	554	530	481	520	492	492	454	389	317	514	319
6	1220	550	530	484	520	721	484	425	374	323	471	368
7	1020	543	546	492	540	1100	475	414	361	344	440	398
8	865	585	553	484	540	1180	468	407	352	330	416	368
9	773	622	515	480	520	1100	463	396	344	381	438	346
10	711	602	520	483	520	877	460	394	339	395	436	337
11	764	574	520	478	510	683	460	477	352	372	410	333
12	1240	552	500	475	500	600	460	495	367	965	386	334
13	1480	540	500	475	500	569	466	458	363	1190	378	336
14	1750	540	490	474	500	577	484	494	347	762	435	335
15	1590	540	480	466	500	585	546	458	333	570	626	334
16	1250	520	480	460	500	572	576	416	325	460	673	351
17	959	520	490	460	490	557	537	393	321	416	707	387
18	829	520	500	460	490	550	493	384	341	401	571	433
19	760	520	500	460	490	552	467	392	352	398	476	490
20	717	520	520	460	490	546	447	401	393	374	423	473
21	694	540	520	450	490	550	438	399	382	429	399	442
22	674	560	540	430	480	553	480	386	396	456	379	423
23	661	560	540	400	468	549	610	377	383	426	363	404
24	649	555	540	390	467	569	650	370	363	494	347	385
25	632	546	540	380	469	583	567	374	351	529	341	375
26	616	541	540	380	469	645	497	419	354	417	337	364
27	601	545	520	380	478	663	464	431	350	903	335	362
28	591	546	520	390	491	606	444	451	338	1720	370	358
29	579	537	520	400	---	566	431	496	367	2660	470	358
30	568	527	520	420	---	539	423	552	371	2400	429	350
31	561	---	500	440	---	523	---	587	---	2020	369	---
TOTAL	28049	16597	16072	14005	13902	19589	14857	13780	11168	21799	15927	11097
MEAN	905	553	518	452	496	632	495	445	372	703	514	370
MAX	1750	622	553	500	540	1180	650	587	506	2660	1590	490
MIN	561	520	480	380	460	470	423	370	321	317	335	319
CFSM	1.41	.86	.81	.70	.77	.98	.77	.69	.58	1.09	.80	.58
IN.	1.62	.96	.93	.81	.80	1.13	.86	.80	.65	1.26	.92	.64

CAL YR 1986 TOTAL 221155 MEAN 606 MAX 4420 MIN 300 CFSM .94 IN. 12.8
WTR YR 1987 TOTAL 196842 MEAN 539 MAX 2660 MIN 317 CFSM .84 IN. 11.4

BLACK RIVER BASIN

05380806 BLACK RIVER AT MEDFORD, WI

LOCATION.--Lat 45°08'09", long 90°20'45", in SE 1/4 SW 1/4 sec.27, T.31 N., R.1 E., Taylor County, Hydrologic Unit 07040007, on right bank 0.2 mi downstream from dam at outlet of Medford Flowage in Medford, and 2.1 mi upstream from Little Black River.

DRAINAGE AREA.--47.9 mi².

PERIOD OF RECORD.--September 1984 to September 1987 (discontinued).

GAGE.--Water-stage recorder. Datum of gage is 1,395.22 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Estimated daily discharges: None, except for ice period listed in rating table below. Records are good.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 867 ft³/s Apr. 1, 1986, gage height, 5.08 ft; minimum, 0.88 ft³/s June 6, 1986, gage height, 1.29 ft.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 501 ft³/s, Oct. 12, gage height, 4.28 ft; minimum, 2.9 ft³/s, Sept. 5, 6, gage height, 1.56 ft.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Jan. 24-27.)

1.5	2.2	2.2	32
1.6	3.5	2.5	62
1.7	5.4	3.0	144
1.8	8.1	3.5	253
1.9	12	4.0	400
2.0	18		

DISCHARGE, IN 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	138	40	20	13	7.5	9.6	41	14	36	3.7	17	7.9
2	93	38	20	13	7.6	9.7	33	12	27	4.3	14	5.7
3	76	36	21	13	7.8	9.7	33	11	21	6.8	12	4.1
4	80	35	19	13	7.8	9.4	33	10	16	12	10	4.1
5	73	33	19	13	7.8	10	36	10	13	10	9.1	3.4
6	60	30	18	13	7.8	15	43	9.6	11	7.7	8.3	6.0
7	55	30	17	14	9.7	40	46	8.7	10	6.3	7.1	6.2
8	71	69	17	14	9.8	83	44	7.9	9.7	4.7	5.8	24
9	38	79	17	13	8.4	76	41	8.0	9.6	12	13	18
10	38	51	14	13	8.0	50	40	8.6	8.5	11	13	12
11	114	40	14	13	8.3	38	43	9.8	14	14	10	9.5
12	398	33	14	13	8.4	28	40	11	20	13	8.6	8.8
13	376	25	13	12	8.4	23	36	9.5	16	12	8.1	8.9
14	321	22	13	11	8.4	21	43	11	12	10	9.6	8.2
15	219	21	12	11	8.4	20	67	11	9.4	8.8	18	6.9
16	159	21	12	9.8	8.2	19	59	9.7	7.6	9.6	21	8.7
17	125	21	13	9.7	8.1	19	52	8.7	5.9	9.2	17	14
18	95	19	14	9.7	8.1	21	43	8.3	6.2	6.2	13	39
19	76	18	14	9.2	8.1	24	38	13	6.7	6.7	10	52
20	66	19	13	8.7	8.1	28	33	21	8.2	13	9.6	45
21	58	19	11	8.7	8.1	40	33	18	20	33	8.7	35
22	59	20	11	8.2	8.1	54	30	14	19	39	7.1	28
23	56	21	11	7.9	8.1	71	26	12	17	30	5.3	23
24	50	21	12	7.8	7.9	89	22	11	12	71	4.6	18
25	47	21	12	7.6	7.8	105	19	13	10	78	3.8	13
26	43	22	12	7.6	8.2	116	17	13	9.0	43	3.2	11
27	38	21	12	7.6	8.7	99	17	19	8.0	33	3.3	10
28	36	22	12	7.5	8.9	82	15	39	6.8	32	9.1	8.6
29	33	21	13	7.5	---	62	14	38	6.3	29	8.9	8.4
30	32	21	13	7.5	---	44	12	47	4.8	24	11	8.6
31	33	---	13	7.5	---	41	---	44	---	20	8.1	---
TOTAL	3156	889	446	324.5	230.5	1356.4	1049	480.8	380.7	613.0	307.3	456.0
MEAN	102	29.6	14.4	10.5	8.23	43.8	35.0	15.5	12.7	19.8	9.91	15.2
MAX	398	79	21	14	9.8	116	67	47	36	78	21	52
MIN	32	18	11	7.5	7.5	9.4	12	7.9	4.8	3.7	3.2	3.4
CFSM	2.13	.62	.30	.22	.17	.91	.73	.32	.26	.41	.21	.32
IN.	2.45	.69	.35	.25	.18	1.05	.81	.37	.30	.48	.24	.35

CAL YR 1986 TOTAL 20977.4 MEAN 57.5 MAX 812 MIN 5.0 CFSM 1.20 IN. 16.3
WTR YR 1987 TOTAL 9689.1 MEAN 26.5 MAX 398 MIN 3.2 CFSM .55 IN. 7.52

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: None, except for ice period listed in rating table below. Records good except those for ice-affected period, which is fair.

AVERAGE DISCHARGE.--77 years (1906-8, 1914-87), 600 ft³/s, 10.88 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)
Oct. 12	0815	*12,300	*13.12	No other peak greater than base discharge.			
Minimum, 44 ft ³ /s July 6-9, gage height, 2.71 ft.							

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Nov. 11 to Mar. 16.)

2.6	41	6.0	1,500
3.0	104	7.0	2,370
3.5	224	9.0	4,740
4.0	392	11.0	7,940
5.0	850	13.0	12,000

DISCHARGE, IN 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	2680	358	240	230	160	170	553	178	250	69	440	78
2	1640	382	240	230	170	170	531	188	230	64	322	75
3	3060	399	230	220	170	180	493	180	191	60	256	75
4	2550	392	230	220	180	210	483	160	159	56	204	75
5	1890	362	220	220	180	330	531	150	139	50	172	72
6	1320	342	220	220	180	500	565	140	118	46	151	67
7	963	337	220	210	190	1000	564	134	104	44	138	64
8	1450	484	220	210	180	2000	517	124	95	44	123	89
9	1620	773	220	210	170	1500	472	113	98	49	162	95
10	1260	770	220	210	170	1200	433	112	94	58	533	188
11	1120	350	220	200	160	800	439	121	105	66	571	171
12	10400	290	220	200	160	660	462	116	121	241	378	149
13	8820	260	220	200	150	520	410	111	114	189	525	127
14	5510	240	220	200	150	470	545	116	124	123	611	113
15	3630	240	220	190	150	450	729	113	115	121	1210	101
16	2420	230	220	190	150	436	759	108	98	112	1900	106
17	1710	230	220	190	150	426	694	102	85	94	932	140
18	1260	230	220	180	140	422	575	96	77	82	540	146
19	972	220	220	180	140	430	483	95	70	78	356	235
20	801	220	220	180	150	487	412	97	66	80	265	410
21	688	230	220	170	150	591	363	97	64	119	215	425
22	605	230	210	160	150	750	433	97	68	442	181	334
23	550	230	210	140	160	930	507	97	68	427	156	267
24	507	230	210	120	160	1030	386	102	63	364	134	223
25	475	240	210	120	160	1090	317	104	71	1160	118	185
26	445	240	220	120	170	1280	278	106	81	941	107	160
27	420	250	220	120	170	1290	245	113	74	614	99	141
28	394	250	220	130	170	1120	216	120	69	660	98	124
29	368	250	220	130	---	923	197	142	102	1410	107	107
30	340	240	230	140	---	745	182	166	83	1280	96	99
31	323	---	230	150	---	600	---	233	---	695	85	---
TOTAL	60191	9499	6860	5590	4540	22710	13774	3931	3196	9838	11185	4641
MEAN	1942	317	221	180	162	733	459	127	107	317	361	155
MAX	10400	773	240	230	190	2000	759	233	250	1410	1900	425
MIN	323	220	210	120	140	170	182	95	63	44	85	64
CFSM	2.59	.42	.30	.24	.22	.98	.61	.17	.14	.42	.48	.21
IN.	2.99	.47	.34	.28	.23	1.13	.68	.20	.16	.49	.56	.23

CAL YR 1986 TOTAL 377483 MEAN 1034 MAX 20200 MIN 56 CFSM 1.38 IN. 18.7
WTR YR 1987 TOTAL 155955 MEAN 427 MAX 10400 MIN 44 CFSM .57 IN. 7.75

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: Oct. 1-2, Feb. 27 to Mar. 2, and May 12-29, and ice periods listed in rating tables below. 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.--55 years, 1,758 ft³/s, 11.48 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)
Oct. 1	----	(a)14,000	--	Oct. 15	0500	*15,500	*12.39

(a) Estimated, daily mean discharge, recession from Sept. 24, 1986 peak.

Minimum discharge, 476 ft³/s, Sept. 15, gage height, 1.75 ft.

RATING TABLES (gage height, in feet, and discharge, in cubic feet per second).
(Shifting-control method used Oct. 3 to Dec. 9 and Mar. 7-9; stage-discharge relation affected by ice Nov. 14-16, Dec. 10 to Jan. 12 and Jan. 18 to Feb. 22.)

Oct. 1 to Mar. 10				Mar. 10 to Sept. 30			
2.0	480	6.0	3,900	1.7	450	6.0	4,020
3.0	1,040	8.0	6,500	2.0	610	8.0	6,670
4.0	1,840			4.0	2,030		

DISCHARGE, IN 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	14000	1550	1300	1000	960	980	2350	1360	868	815	2810	621
2	9400	1550	1330	1000	980	940	2220	1570	787	684	2170	683
3	6620	1540	1360	1000	1000	1120	2030	1300	965	652	1670	615
4	5330	1540	1330	1000	1000	1100	2210	1230	1010	638	1490	547
5	6600	1520	1270	1000	1100	1010	2120	1270	822	596	1400	543
6	7680	1510	1360	1000	1100	1210	2050	1510	733	504	1180	538
7	6810	1620	1270	1000	1100	1370	2010	1100	684	527	1070	504
8	5200	1780	1160	1000	1100	1960	1990	888	721	617	1040	498
9	3780	1640	1230	980	1100	3760	1960	1130	675	572	988	516
10	3720	1720	980	980	1100	4890	1820	1140	621	584	894	551
11	3880	2000	1000	980	1100	4860	1480	1190	673	566	915	541
12	4130	1900	1100	1000	1000	3460	1770	1000	709	634	892	591
13	5110	1750	1100	1050	1000	2780	1810	960	604	624	1180	631
14	11200	1700	1100	1130	1000	2810	1970	940	670	663	1240	519
15	14400	1500	1000	1070	1000	2280	2250	900	700	663	1260	508
16	10500	1300	1000	1020	1000	2090	3140	860	593	663	1560	576
17	7860	1180	1000	923	1000	2010	2980	820	616	666	2680	699
18	5720	1190	1000	1000	1000	1980	2560	780	576	621	2700	777
19	4140	1290	980	1000	1000	1940	2430	780	558	582	1850	783
20	3280	1460	980	1000	960	1910	2110	760	795	512	1550	726
21	2860	1420	960	980	940	1950	2000	760	851	519	1100	640
22	2700	1170	960	940	920	2020	2160	780	738	617	934	663
23	2360	1140	960	900	892	2060	2340	780	737	801	841	995
24	2090	1200	980	840	876	2190	2920	780	828	832	706	1030
25	2080	1230	980	820	891	2510	3250	780	714	994	713	1010
26	2030	1230	1000	800	887	2710	2450	800	676	1080	773	852
27	1940	1310	1000	840	900	3290	2300	800	669	2450	720	725
28	1850	1240	1000	920	940	3570	2100	800	668	3180	716	560
29	1750	1290	1000	1000	---	3380	1880	800	729	3770	685	566
30	1590	1310	1000	980	---	3130	1600	850	619	4100	662	614
31	1550	---	1000	940	---	2620	---	985	---	3220	624	---
TOTAL	162160	43780	33690	30093	27846	73890	66260	30403	21609	33946	39013	19622
MEAN	5231	1459	1087	971	994	2384	2209	981	720	1095	1258	654
MAX	14400	2000	1360	1130	1100	4890	3250	1570	1010	4100	2810	1030
MIN	1550	1140	960	800	876	940	1480	760	558	504	624	498
CFSM	2.51	.70	.52	.47	.48	1.15	1.06	.47	.35	.53	.61	.31
IN.	2.90	.78	.60	.54	.50	1.32	1.19	.54	.39	.61	.70	.35

CAL YR 1986 TOTAL 989781 MEAN 2712 MAX 32000 MIN 515 CFSM 1.30 IN. 17.7
WTR YR 1987 TOTAL 582312 MEAN 1595 MAX 14400 MIN 498 CFSM .77 IN. 10.4

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 1986 TO SEPTEMBER 1987

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	TUR- BID- ITY (NTU) (00076)	OXYGEN, DIS- SOLVED (MG/L) (00300)	BARO- METRIC PRES- SURE (MM HG) (00025)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)
NOV , 1986										
04...	1300	1560	100	6.20	5.5	3.6	11.7	752	94	93
JAN , 1987										
13...	1600	1090	135	6.10	0.5	3.7	12.8	738	92	K12
MAR										
10...	1400	5070	112	6.20	1.0	12	--	--	--	97
MAY										
12...	1400	991	125	7.20	23.5	15	9.1	745	110	K2000
JUL										
21...	1300	512	150	8.50	26.0	5.5	10.7	748	134	430
AUG										
25...	1235	663	175	7.80	18.0	3.7	9.5	749	102	310
DATE		STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD- NESS (MG/L AS CACO3) (00900)	HARD- NESS NONCARB WH WAT TOT FLD 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)	PERCENT SODIUM (00932)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)
NOV , 1986										
04...	120	47	9	11	4.8	2.6	10	0.2	2.0	
JAN , 1987										
13...	130	63	14	15	6.2	3.5	10	0.2	1.6	
MAR										
10...	240	40	6	9.7	3.9	3.2	13	0.2	5.4	
MAY										
12...	750	65	11	15	6.6	2.7	8	0.2	2.2	
JUL										
21...	98	67	7	15	7.2	5.0	14	0.3	1.7	
AUG										
25...	92	73	8	17	7.4	3.2	8	0.2	2.6	
DATE		BICAR- BONATE WATER DISSOLV FIELD AS HCO3 (MG/L) (00453)	ALKA- LINITY WATER DISSOLV FLD. AS CACO3 (MG/L) (39086)	CARBON DIOXIDE DIS- SOLVED (MG/L AS CO2) (00405)	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 CONSTIT- UENTS, DIS- SOLVED (MG/L) (70301)
NOV , 1986										
04...	43	36	46	16	4.9	<0.10	11	93	78	
JAN , 1987										
13...	55	45	75	14	5.9	<0.10	14	84	90	
MAR										
10...	34	28	42	10	7.4	<0.10	8.9	81	74	
MAY										
12...	63	51	6.6	9.8	4.9	<0.10	7.4	93	82	
JUL										
21...	--	52	0.4	15	5.8	0.20	7.7	92	94	
AUG										
25...	75	62	2.0	16	5.8	0.10	11	105	100	
DATE		SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS- SOLVED (TONS PER DAY) (70302)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P) (00671)
NOV , 1986										
04...	0.13	392	0.560	0.020	0.040	1.2	0.090	0.080	0.030	
JAN , 1987										
13...	0.11	247	0.950	0.050	0.050	0.70	0.100	0.050	0.050	
MAR										
10...	0.11	1110	0.740	0.460	0.440	1.9	0.170	0.110	0.070	
MAY										
12...	0.13	249	0.560	<0.010	0.020	1.3	0.190	0.060	0.050	
JUL										
21...	0.13	127	<0.100	<0.010	0.020	2.1	0.160	0.080	0.030	
AUG										
25...	0.14	188	0.930	0.010	<0.010	1.3	0.180	0.060	0.030	

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 1986 TO SEPTEMBER 1987

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (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 , 1986 04...	1300	1560	50	<1	19	<0.5	<1	<1	<3	7	400
MAR , 1987 10...	1400	5070	80	<1	27	<0.5	<1	<1	<3	8	650
MAY 12...	1400	991	20	<1	24	<0.5	<1	<1	<3	1	330
AUG 25...	1235	663	10	<1	23	<0.5	<1	<1	<3	3	350

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 , 1986 04...	<5	6	26	0.2	<10	5	<1	31	<6	12
MAR , 1987 10...	7	<4	56	<0.1	<10	2	<1	28	<6	26
MAY 12...	<5	<4	24	<0.1	<10	2	<1	39	<6	10
AUG 25...	8	<4	36	<0.1	<10	2	<1	41	<6	13

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (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 , 1986 02...	1200	9100	90	15.5	--	--	--
NOV 04...	1300	1560	100	5.5	13	55	94
MAR , 1987 17...	1100	1170	140	0.5	--	--	--
JAN , 1987 13...	1600	1090	135	0.5	10	29	74
MAR 10...	1400	5070	112	1.0	83	1140	67
MAY 12...	1400	991	125	23.5	569	1520	27
JUL 21...	1300	512	150	26.0	35	--	96
AUG 25...	1235	663	175	18.0	24	43	73

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, 8.70 ft, July 31; minimum observed, 7.02 ft, June 15.

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	GAGE HEIGHT	DATE	GAGE HEIGHT	DATE	GAGE HEIGHT	DATE	GAGE HEIGHT	DATE	GAGE HEIGHT	DATE	GAGE HEIGHT
OCT. 10	8.18	NOV. 16	7.95	MAY 27	7.62	JULY 11	7.42	JULY 31	8.70	AUG. 21	7.57
OCT. 18	8.08	APR. 23	8.40	JUNE 3	7.65	JULY 18	7.42	AUG. 2	8.30	SEPT. 5	7.52
OCT. 28	8.20	APR. 30	7.72	JUNE 15	7.02	JULY 24	7.52	AUG. 11	7.82	SEPT. 14	7.90
NOV. 6	8.10	MAY 18	8.00	JULY 4	7.75						

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 1986 TO SEPTEMBER 1987

DATE	SECCHI DEPTH	DATE	SECCHI DEPTH	DATE	SECCHI DEPTH	DATE	SECCHI DEPTH	DATE	SECCHI DEPTH	DATE	SECCHI DEPTH
OCT. 10	0.48	NOV. 16	1.60	MAY 27	0.38	JULY 11	0.53	JULY 31	0.30	AUG. 21	0.56
OCT. 18	0.61	APR. 13	0.38	JUNE 3	0.53	JULY 18	0.53	AUG. 2	0.66	SEPT. 5	0.56
OCT. 28	0.84	APR. 30	0.38	JUNE 15	0.76	JULY 24	0.46	AUG. 11	0.66	SEPT. 14	0.61
NOV. 6	1.14	MAY 18	0.38	JULY 4	0.48						

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 discharge: Jan. 17-29. Records good except those for estimated daily discharges, 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.

COOPERATION.--Auxillary gage-height and discharge data at Lock and Dam No. 9 furnished by U.S. Army Corps of Engineers.

AVERAGE DISCHARGE.--51 years, 35,730 ft³/s, 7.19 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, 158,000 ft³/s Oct. 1; maximum gage height, 20.22 ft Oct. 4; minimum daily discharge, 10,100 ft³/s Sept. 4; minimum gage height, 5.84 ft Sept. 4.

DISCHARGE, IN 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	158000	64300	40700	38000	34000	32000	47200	28000	36200	21400	51400	26100
2	156000	61600	41200	37700	36000	33300	46700	26200	36700	21200	51200	23800
3	154000	60700	41800	37000	37300	33600	45900	25300	36900	19800	48700	13600
4	152000	57200	42000	36600	37800	31200	45000	24500	36700	19000	41100	10100
5	151000	54600	40500	36400	37800	27900	45300	24700	36200	17700	34100	10800
6	149000	53700	39900	35800	37700	26500	44000	26800	35800	16300	27500	13900
7	146000	52300	39900	34900	37600	27000	41600	29800	35900	15800	23100	18600
8	140000	51000	40100	34000	37100	28100	40500	30200	35500	18200	21900	22300
9	132000	51100	39700	33000	36100	29600	39800	29800	35000	19900	22600	21900
10	126000	51300	36700	31100	35400	34800	37900	27100	32800	24400	24900	19900
11	119000	51800	35800	32100	34600	39500	36700	24600	29000	23900	26100	17100
12	116000	51800	34100	32200	33100	42100	36400	21600	26400	24100	26200	15700
13	112000	50300	32600	32100	32000	43600	35200	18100	25700	25100	26900	15100
14	111000	47400	32600	30600	30600	44600	35000	16200	26700	24800	28000	15600
15	110000	45100	31800	30400	30700	44700	35200	18300	26200	22400	27200	17100
16	109000	49800	33200	31900	31400	42500	36600	21700	24000	19700	27300	18100
17	111000	51100	38300	31000	31200	36600	37000	24200	20500	17400	28000	18400
18	112000	49500	45000	31000	30100	32900	37100	25300	15800	17200	26200	20100
19	112000	45300	48600	31000	29300	32700	37100	24900	15800	17100	24800	20800
20	111000	38000	50600	30000	28100	33400	36900	21100	17400	22600	24200	21500
21	109000	36600	50800	29000	27200	34300	36400	18900	21700	25800	24600	23000
22	105000	32500	50600	29000	26500	34800	37000	20000	23500	28300	23300	23800
23	101000	38300	49200	28000	26300	34800	36800	23200	21700	28500	22700	23900
24	96000	43300	48200	27000	26000	34300	35400	25800	18000	29900	20200	23500
25	91600	43200	47700	26000	25700	34800	33800	27700	18900	31000	16600	23100
26	88400	43600	46600	26000	27600	36400	33600	30700	20200	32300	14300	22200
27	84600	43000	45400	25000	28600	37600	34200	32800	21300	36200	14100	21700
28	80800	42000	44400	25000	29700	39700	34300	33400	21400	41500	17100	20400
29	75700	40900	42900	26000	---	43700	32500	35200	21900	44600	21400	19600
30	69400	40400	41700	28200	---	47100	31100	36200	22100	47400	24200	19000
31	64400	---	39500	31200	---	47500	---	36500	---	50000	26400	---
TOTAL	3552900	1441700	1293100	967200	895500	1121600	1142200	808800	795900	803500	836300	580700
MEAN	114600	48060	41710	31200	31980	36180	38070	26090	26530	25920	26980	19360
MAX	158000	64300	50800	38000	37800	47500	47200	36500	36900	50000	51400	26100
MIN	64400	32500	31800	25000	25700	26500	31100	16200	15800	15800	14100	10100
CFSM	1.70	.71	.62	.46	.47	.54	.56	.39	.39	.38	.40	.29
IN.	1.96	.79	.71	.53	.49	.62	.63	.45	.44	.44	.46	.32
CAL YR 1986	TOTAL 24517300	MEAN 67170	MAX 168000	MIN 21000	CFSM .99	IN. 13.5						
WTR YR 1987	TOTAL 14239400	MEAN 39010	MAX 158000	MIN 10100	CFSM .58	IN. 7.85						

WATER-QUALITY RECORDS

SEDIMENT LOADS: Maximum daily, 21,200 tons Oct. 3; minimum daily, 218 tons Sept. 4.

[illegible]

MISSISSIPPI RIVER MAIN STEM

05389500 MISSISSIPPI RIVER AT MCGREGOR, IA--Continued

WATER-QUALITY RECORDS

TEMPERATURE, WATER, DEGREES CENTIGRADE, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
INSTANTANEOUS VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19.0	---	---	---	---	---	---	---	---	---	---	18.0
2	18.0	---	1.0	2.0	.0	4.0	---	---	28.0	---	---	---
3	16.0	---	---	---	---	---	8.0	---	---	28.0	28.0	---
4	16.0	---	---	---	---	---	---	14.0	---	---	---	---
5	16.0	8.0	1.0	1.0	.0	5.0	---	---	28.0	---	---	18.0
6	16.0	8.0	---	---	---	---	11.0	---	---	26.0	28.0	---
7	---	---	---	---	---	---	---	---	---	---	---	---
8	16.0	---	---	---	---	---	---	14.0	25.0	---	---	20.0
9	16.0	---	.0	1.0	.0	6.0	---	---	---	26.0	---	---
10	---	6.0	---	---	---	---	14.0	28.0	---	---	26.0	---
11	---	---	---	---	---	---	---	21.0	---	---	---	16.0
12	---	---	---	1.0	---	---	---	---	---	---	---	---
13	---	.0	.0	---	1.0	6.0	14.0	---	---	---	---	17.0
14	10.0	---	---	---	---	---	---	14.0	27.0	25.0	26.0	---
15	---	---	---	1.0	---	---	13.0	13.0	---	---	---	16.0
16	10.0	---	.0	---	1.0	5.0	11.0	---	---	---	---	---
17	---	.0	---	---	---	---	---	---	28.0	26.0	27.0	---
18	---	---	---	---	---	---	---	18.0	---	---	---	---
19	---	---	.0	.0	---	5.0	15.0	---	---	---	26.0	---
20	10.0	.0	---	---	1.0	---	---	18.0	---	28.0	---	---
21	---	---	---	---	---	---	11.0	---	---	---	---	16.0
22	---	---	.0	.0	---	---	---	---	26.0	28.0	26.0	---
23	14.0	---	---	---	4.0	8.0	---	---	---	---	---	---
24	---	.0	---	---	---	---	11.0	---	---	---	---	---
25	---	---	---	---	---	---	---	18.0	28.0	---	25.0	16.0
26	---	---	.0	.0	---	---	---	---	---	---	---	---
27	---	.0	---	---	---	8.0	12.0	---	---	28.0	---	---
28	10.0	---	---	---	4.0	---	---	---	---	---	---	18.0
29	---	---	2.0	---	---	---	15.0	19.0	---	---	---	---
30	10.0	---	---	.0	---	8.0	---	---	29.0	28.0	---	16.0
31	---	---	---	---	---	---	---	---	---	---	---	---

SUSPENDED-SEDIMENT, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

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	33	14100	34	5900	16	1760	30	3080	26	2390	20	1730
2	33	13900	33	5490	17	1890	35	3560	12	1170	24	2160
3	51	21200	32	5240	17	1920	45	4500	11	1110	40	3630
4	15	6160	28	4320	17	1930	56	5530	11	1120	40	3370
5	26	10600	28	4130	17	1860	77	7570	12	1220	28	2110
6	18	7240	28	4060	19	2050	84	8120	13	1320	23	1650
7	18	7100	28	3950	21	2260	67	6310	13	1320	23	1680
8	19	7180	51	7020	23	2490	38	3490	11	1100	33	2500
9	28	9980	77	10600	25	2680	19	1690	8	780	82	6550
10	30	10200	79	10900	20	1980	14	1180	7	669	114	10700
11	28	9000	70	9790	48	4640	9	780	5	467	102	10900
12	27	8460	58	8110	67	6170	13	1130	12	1070	66	7500
13	25	7560	47	6380	28	2540	34	2950	11	950	35	4120
14	24	7190	38	4860	18	1580	27	2230	10	826	26	3130
15	30	8910	29	3530	11	944	21	1720	10	829	23	2780
16	36	10600	21	2820	5	448	17	1460	10	848	21	2410
17	32	9590	13	1790	5	517	14	1170	9	758	19	1880
18	28	8470	10	1340	4	486	10	837	7	569	19	1690
19	24	7260	10	1220	2	262	8	670	10	791	33	2910
20	20	5990	23	2360	2	273	8	648	12	910	42	3790
21	20	5890	46	4550	2	274	8	626	16	1180	42	3890
22	19	5390	50	4390	3	410	8	626	14	1000	45	4230
23	18	4910	33	3410	4	531	30	2270	36	2560	50	4700
24	20	5180	22	2570	4	521	29	2110	37	2600	51	4720
25	24	5940	19	2220	5	644	22	1540	22	1530	44	4130
26	27	6440	16	1880	7	881	12	842	25	1860	33	3240
27	30	6850	13	1510	9	1100	18	1220	38	2930	25	2540
28	33	7200	13	1470	11	1320	13	877	23	1840	47	5040
29	38	7770	14	1550	15	1740	9	632	---	---	98	11600
30	38	7120	15	1640	20	2250	12	914	---	---	148	18800
31	36	6260	---	---	25	2670	27	2270	---	---	146	18700
TOTAL	---	259640	---	129000	---	51021	---	72552	---	35717	---	158780

05389500 MISSISSIPPI RIVER AT MCGREGOR, IA--Continued

WATER-QUALITY RECORDS

SUSPENDED-SEDIMENT, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

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	96	12200	22	1660	50	4890	31	1790	23	3190	14	987
2	47	5930	21	1490	41	4060	30	1720	22	3040	12	771
3	23	2850	19	1300	40	3990	35	1870	22	2890	9	330
4	19	2310	17	1120	38	3770	47	2410	22	2440	8	218
5	24	2940	13	867	37	3620	43	2050	22	2030	16	467
6	33	3920	11	796	37	3580	29	1280	21	1560	28	1050
7	42	4720	12	966	39	3780	25	1070	19	1190	15	753
8	46	5030	21	1710	39	3740	22	1080	18	1060	23	1380
9	38	4080	41	3300	38	3590	28	1500	15	915	39	2310
10	25	2560	44	3220	36	3190	43	2830	26	1750	25	1340
11	23	2280	34	2260	35	2740	49	3160	42	2960	14	646
12	25	2460	29	1690	33	2350	69	4490	35	2480	14	593
13	30	2850	33	1610	32	2220	48	3250	21	1530	29	1180
14	38	3590	51	2230	64	4610	42	2810	27	2040	23	969
15	45	4280	39	1930	98	6930	63	3810	26	1910	12	554
16	70	6920	44	2580	69	4470	58	3090	29	2140	11	538
17	78	7790	23	1500	34	1880	34	1600	43	3250	27	1340
18	54	5410	38	2600	24	1020	20	929	36	2550	24	1300
19	40	4010	82	5510	28	1190	24	1110	91	6090	13	730
20	43	4280	64	3650	54	2540	34	2070	88	5750	13	755
21	57	5600	71	3620	87	5100	43	3000	83	5510	24	1490
22	67	6690	71	3830	62	3930	40	3060	57	3590	36	2310
23	74	7350	126	7890	40	2340	35	2690	37	2270	48	3100
24	79	7550	185	12900	37	1800	38	3070	24	1310	55	3490
25	68	6210	142	10600	34	1740	56	4690	18	807	52	3240
26	41	3720	159	13200	62	3380	52	4530	15	579	38	2280
27	25	2310	193	17100	104	5980	28	2740	12	457	23	1350
28	23	2130	178	16100	107	6180	40	4480	13	600	20	1100
29	23	2020	145	13800	79	4670	37	4460	39	2250	18	953
30	23	1930	108	10600	42	2510	28	3580	58	3790	15	769
31	---	---	74	7290	---	---	23	3110	25	1780	---	---
TOTAL	---	135920	---	158919	---	105790	---	83329	---	73708	---	38293

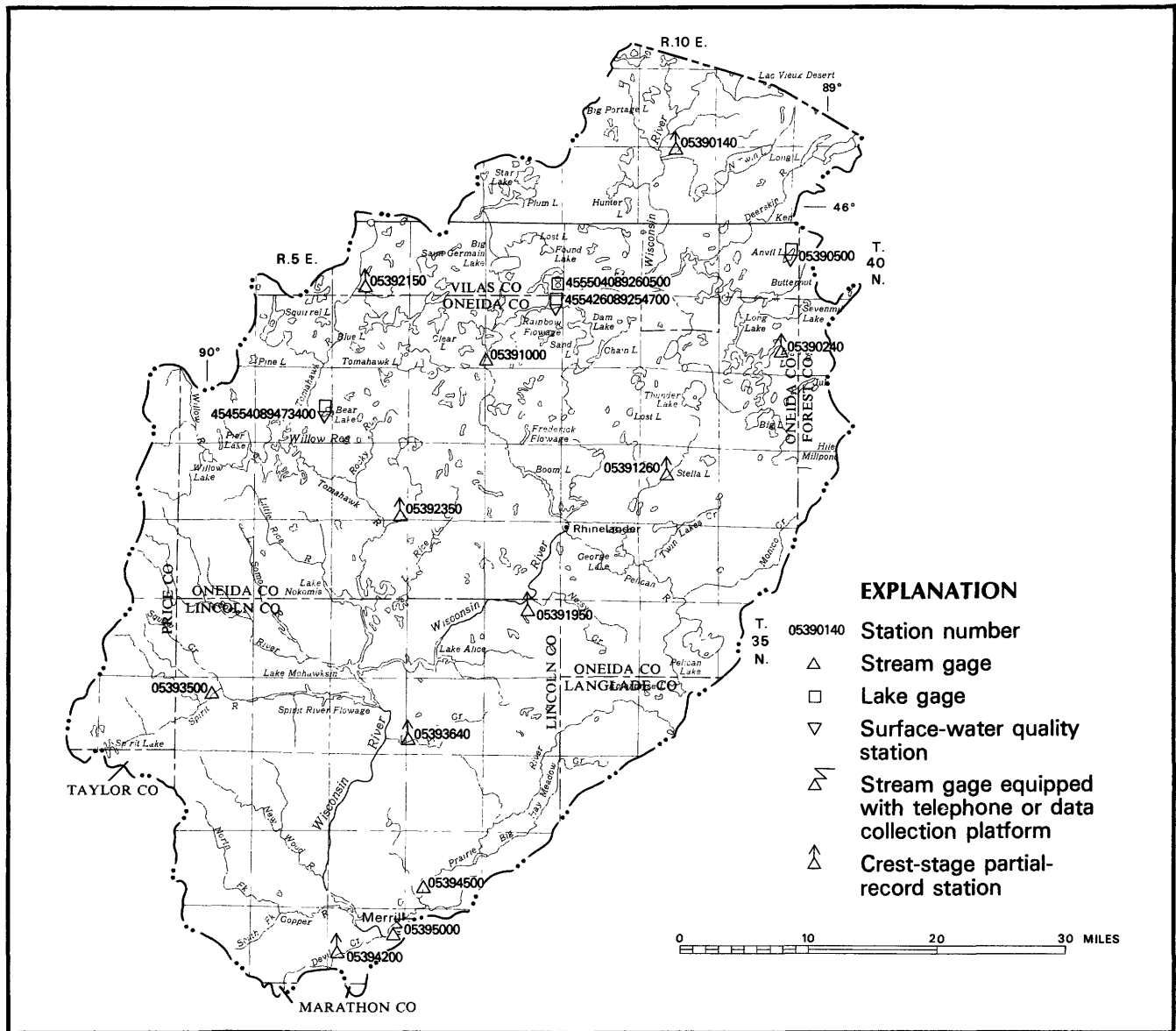
TOTAL LOAD FOR YEAR: 1302669 TONS.

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	TEMPER- ATURE WATER (DEG C) (00010)	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	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 , 1986						
29...	1400	--	71300	37	7120	99
APR , 1987						
15...	1430	13.0	34800	37	3480	96
AUG						
20...	1324	26.0	26100	33	2330	91

PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	NUMBER OF SAM- PLING POINTS (00063)	BED MAT. FALL DIAM. % FINER THAN .004 MM (80157)	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)
APR , 1987											
15...	1440	34800	6	5	12	18	49	82	96	99	100



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

UPPER WISCONSIN RIVER BASIN

05390500 ANVIL LAKE NEAR EAGLE RIVER, WI

LAKE-STAGE RECORDS

LOCATION.--Lat 45°57'07", long 89°03'26", in NW 1/4 NE 1/4 sec.13, T.40 N., R.11 E., Vilas County, Hydrologic Unit 07070001, 9.6 mi east of Eagle River.

DRAINAGE AREA.--4.11 mi². Area of Anvil Lake, 380 acres.

PERIOD OF RECORD.--August 1936 to September 1981 (fragmentary), June 1985 to current year.

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

GAGE.--Nonrecording gage. Datum of gage is 90.00 ft above datum assumed by Wisconsin Department of Natural Resources: gage readings have been reduced to elevations above this datum. Prior to Aug. 13, 1950, staff gage 0.3 mi southeast at same datum; Aug. 14 to Sept. 30, 1981, staff gage 0.2 mi east at same datum. Gage read by James Sachse.

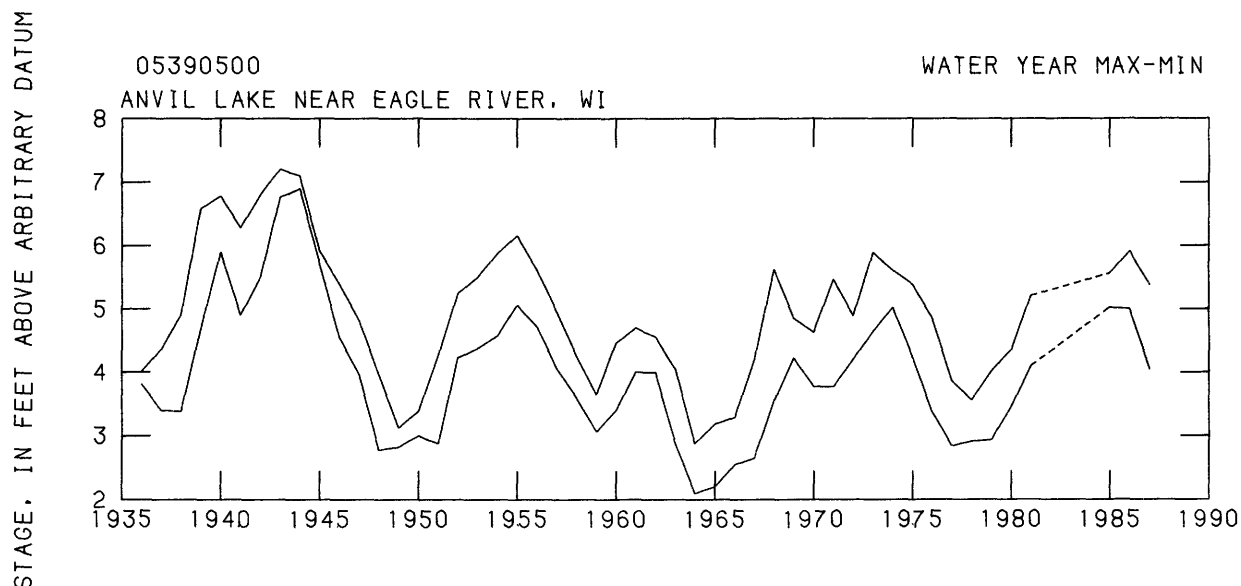
REMARKS.--Add 90 ft to obtain elevation above datum assumed for this lake by Wisconsin Department of Natural Resources. Lake has no surface outlet.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height observed, 7.20 ft, May 3, 7, 17, 21, 24, 28, June 20 and 24, 1943; minimum observed, 2.10 ft July 31, 1964.

EXTREMES FOR CURRENT YEAR.--Maximum gage height observed, 5.39 ft, Oct. 16; minimum observed, 4.05 ft, Sept. 12.

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	GAGE HEIGHT	DATE	GAGE HEIGHT	DATE	GAGE HEIGHT	DATE	GAGE HEIGHT	DATE	GAGE HEIGHT	DATE	GAGE HEIGHT
OCT. 8	5.28	MAY 23	4.98	JUNE 14	4.90	JUNE 30	4.68	JULY 29	4.61	AUG. 31	4.19
OCT. 16	5.39	JUNE 5	4.98	JUNE 15	4.87	JULY 11	4.70	AUG. 15	4.40	SEPT. 5	4.09
OCT. 25	5.36	JUNE 9	4.91	JUNE 23	4.77	JULY 21	4.64	AUG. 16	4.40	SEPT. 12	4.05
MAY 16	4.92	JUNE 11	4.91	JUNE 28	4.72	JULY 24	4.69	AUG. 23	4.29	SEPT. 22	4.07



WATER-QUALITY RECORDS

LOCATION.--Lat 45°56'39", long 89°03'44", in NE 1/4 SW 1/4 sec.13, T.40 N., R.11 E., Vilas County, Hydrologic Unit 07070001, near center of lake, and 9.2 mi east of Eagle River.

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

REMARKS.--Secchi disc readings made by James Sachse.

SECCHI DISC TRANSPARENCY (IN METERS) WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	SECCHI DEPTH	DATE	SECCHI DEPTH	DATE	SECCHI DEPTH	DATE	SECCHI DEPTH	DATE	SECCHI DEPTH	DATE	SECCHI DEPTH
JUNE 11	4.92	JUNE 28	4.27	JULY 4	5.03	JULY 29	6.10	AUG. 23	2.67	SEPT. 22	2.59
JUNE 15	5.03	JUNE 30	4.72	JULY 21	3.89	AUG. 16	2.90	AUG. 31	2.51		

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.

REMARKS.--

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height observed, 12.35 ft, Apr. 11, 12, 1986; minimum observed, 10.34 ft, Sept. 30, 1987.

EXTREMES FOR CURRENT YEAR.--Maximum gage height observed, 11.41 ft, Apr. 10; minimum observed, 10.34 ft, Sept. 30.

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	11.29	11.17	10.91	10.93	10.53
2	---	---	---	---	---	---	---	11.27	11.21	10.89	10.93	10.52
3	---	---	---	---	---	---	---	11.26	11.19	10.87	10.91	10.51
4	---	---	---	---	---	---	---	11.25	11.17	10.85	10.89	10.50
5	---	---	---	---	---	---	---	11.24	11.17	10.83	10.88	10.49
6	---	---	---	---	---	---	---	11.23	11.15	10.82	10.87	10.48
7	---	---	---	---	---	---	---	11.21	11.11	10.81	10.85	10.47
8	---	---	---	---	---	---	---	11.19	11.11	10.81	10.83	10.47
9	---	---	---	---	---	---	---	11.17	11.11	10.87	10.81	10.46
10	---	---	---	---	---	---	11.41	11.17	11.11	10.89	10.79	10.46
11	---	---	---	---	---	---	11.40	11.15	11.11	10.91	10.77	10.45
12	---	---	---	---	---	---	11.39	11.14	11.11	10.95	10.77	10.45
13	---	---	---	---	---	---	11.39	11.13	11.11	10.95	10.78	10.44
14	---	---	---	---	---	---	11.41	11.12	11.09	10.95	10.78	10.43
15	---	---	---	---	---	---	11.41	11.11	11.07	10.93	10.78	10.42
16	---	---	---	---	---	---	11.41	11.09	11.05	10.93	10.77	10.41
17	---	---	---	---	---	---	11.39	11.07	11.03	10.93	10.76	10.41
18	---	---	---	---	---	---	11.37	11.11	11.02	10.92	10.75	10.41
19	---	---	---	---	---	---	11.37	11.11	11.01	10.91	10.74	10.41
20	---	---	---	---	---	---	11.36	11.11	10.99	10.91	10.73	10.40
21	---	---	---	---	---	---	11.35	11.11	10.97	10.90	10.71	10.40
22	---	---	---	---	---	---	11.35	11.12	10.97	10.89	10.69	10.39
23	---	---	---	---	---	---	11.33	11.12	10.96	10.91	10.65	10.39
24	---	---	---	---	---	---	11.33	11.12	10.96	11.01	10.63	10.38
25	---	---	---	---	---	---	11.33	11.13	10.96	10.99	10.63	10.38
26	---	---	---	---	---	---	11.33	11.13	10.95	10.97	10.63	10.37
27	---	---	---	---	---	---	11.31	11.13	10.94	10.95	10.61	10.36
28	---	---	---	---	---	---	11.30	11.15	10.93	10.95	10.59	10.35
29	---	---	---	---	---	---	11.30	11.15	10.93	10.94	10.57	10.35
30	---	---	---	---	---	---	11.30	11.17	10.93	10.93	10.55	10.34
31	---	---	---	---	---	---	---	11.17	---	10.91	10.54	---
MEAN	---	---	---	---	---	---	---	11.2	11.1	10.9	10.7	10.4
MAX	---	---	---	---	---	---	---	11.29	11.21	11.01	10.93	10.53
MIN	---	---	---	---	---	---	---	11.07	10.93	10.81	10.54	10.34

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 1986 TO SEPTEMBER 1987

DATE	SECCHI DEPTH	DATE	SECCHI DEPTH	DATE	SECCHI DEPTH	DATE	SECCHI DEPTH	DATE	SECCHI DEPTH	DATE	SECCHI DEPTH
APR. 15	2.44	MAY 8	3.05	JUNE 7	3.05	JULY 9	2.74	AUG. 7	2.74	SEPT. 9	2.44
APR. 24	2.74	MAY 23	3.35	JUNE 22	2.74	JULY 25	2.74	AUG. 28	2.44	SEPT. 25	2.44

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.

SECCHI DISC TRANSPARENCY (IN METERS) WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	SECCHI DEPTH	DATE	SECCHI DEPTH	DATE	SECCHI DEPTH	DATE	SECCHI DEPTH	DATE	SECCHI DEPTH	DATE	SECCHI DEPTH
APR. 15	2.74	MAY 8	3.66	JUNE 7	4.57	JULY 9	3.96	AUG. 7	3.66	SEPT. 9	3.35
APR. 24	3.35	MAY 23	4.88	JUNE 22	4.27	JULY 25	3.66	AUG. 28	3.35	SEPT. 25	3.05

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.--51 years, 703 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, 1,460 ft³/s Oct. 15, gage height, 4.22 ft; minimum daily, 182 ft³/s June 12, 14.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Shifting-control method used Sept. 7-30.)

0.6	176	3.0	889
1.0	261	5.0	1,890
2.0	515		

DISCHARGE, IN 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	1060	784	811	847	811	733	396	324	198	229	292	288
2	1130	786	848	844	809	725	395	325	199	248	293	291
3	1040	784	884	844	803	714	390	323	196	243	296	294
4	860	787	885	842	801	709	382	321	198	244	295	294
5	773	783	891	864	800	703	374	296	225	244	303	291
6	755	784	885	888	797	705	366	275	245	243	310	289
7	744	779	880	885	793	706	315	273	244	239	308	285
8	741	787	874	885	784	702	283	272	243	224	307	285
9	743	783	869	882	788	699	283	271	243	204	299	284
10	750	790	874	876	783	704	312	271	244	236	298	283
11	714	788	874	875	781	706	339	268	209	312	302	279
12	835	781	871	872	771	707	345	267	182	360	301	275
13	1080	822	871	872	769	710	347	265	183	343	298	274
14	1350	855	871	868	763	706	346	245	182	285	300	274
15	1450	837	868	864	760	697	349	237	205	265	304	271
16	1450	832	868	862	757	686	354	238	236	279	302	265
17	1440	831	866	861	752	673	352	236	264	281	303	266
18	1410	831	864	858	744	654	348	236	274	280	305	258
19	1270	833	864	856	736	634	349	242	259	280	305	247
20	1200	824	863	854	731	604	357	246	249	283	304	232
21	945	819	861	852	725	585	325	235	250	245	302	229
22	702	820	855	846	716	580	304	221	249	220	305	245
23	667	819	847	844	709	576	305	222	234	256	302	269
24	838	823	847	842	750	485	306	226	232	282	301	274
25	1010	822	847	837	776	387	311	230	237	296	297	273
26	1010	819	847	835	765	329	315	235	248	280	297	281
27	873	825	851	826	755	306	316	237	248	283	292	273
28	776	822	852	824	744	301	316	207	247	298	288	272
29	771	817	848	820	---	295	319	187	221	300	289	266
30	770	815	847	817	---	364	320	189	202	298	287	263
31	778	---	850	815	---	402	---	192	---	296	288	---
TOTAL	29935	24282	26733	26457	21473	18487	10119	7812	6846	8376	9273	8170
MEAN	966	809	862	853	767	596	337	252	228	270	299	272
MAX	1450	855	891	888	811	733	396	325	274	360	310	294
MIN	667	779	811	815	709	295	283	187	182	204	287	229
CAL YR 1986	TOTAL 266727	MEAN 731	MAX 1450	MIN 228								
WTR YR 1987	TOTAL 197963	MEAN 542	MAX 1450	MIN 182								

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, 8.24 ft, Oct. 16; minimum observed, 7.50 ft, May 17.

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	GAGE HEIGHT	DATE	GAGE HEIGHT	DATE	GAGE HEIGHT	DATE	GAGE HEIGHT	DATE	GAGE HEIGHT	DATE	GAGE HEIGHT
OCT. 10	8.17	NOV. 11	8.05	MAY 6	7.58	MAY 30	7.66	JULY 4	7.76	AUG. 8	7.78
OCT. 16	8.24	APR. 18	7.74	MAY 17	7.50	JUNE 13	7.76	JULY 15	7.80	AUG. 25	7.70
OCT. 20	8.19	APR. 26	7.68	MAY 20	7.56	JUNE 23	7.68	JULY 20	7.84	SEPT. 12	7.62
NOV. 4	8.05	MAY 1	7.63	MAY 28	7.63	JUNE 29	7.66	JULY 23	7.84	SEPT. 17	7.68

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 1986 TO SEPTEMBER 1987

DATE	SECCHI DEPTH	DATE	SECCHI DEPTH	DATE	SECCHI DEPTH	DATE	SECCHI DEPTH	DATE	SECCHI DEPTH	DATE	SECCHI DEPTH
OCT. 4	3.51	NOV. 8	3.81	MAY 16	4.88	JUNE 28	2.74	AUG. 2		SEPT. 6	3.66
OCT. 9	3.66	APR. 18	3.81	MAY 26	4.72	JULY 4	2.29	AUG. 23		SEPT. 27	3.51
OCT. 19	3.81	MAY 9	4.27	JUNE 12	4.11	JULY 19	2.44				

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 and crest-stage gage. 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: None, except for ice periods listed in rating table below. Records good except those for ice-affected periods, which are fair.

AVERAGE DISCHARGE.--45 years, 86.8 ft³/s, 14.45 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)
Oct. 12	1900	*1,420	*6.04	No other peak greater than base discharge.			
Minimum discharge, 3.8 ft ³ /s Sept. 7, 8, gage height, 1.06 ft.							

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Nov. 10 to Mar. 24, and Mar. 30 to Apr. 2.)

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	6.0	1,400
2.0	58		

DISCHARGE, IN 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	316	73	42	30	20	20	74	24	72	21	14	5.8
2	230	69	42	30	21	21	70	23	81	16	13	5.5
3	206	67	43	28	23	22	68	21	61	20	12	6.3
4	241	65	39	30	23	24	68	19	42	28	11	5.2
5	220	59	40	29	21	26	91	17	31	28	10	4.7
6	166	58	38	30	22	31	134	16	26	14	9.7	4.4
7	136	57	40	28	22	40	138	14	22	18	8.6	4.2
8	224	94	39	27	23	110	123	13	24	51	6.8	10
9	216	121	36	25	21	100	107	12	24	45	11	18
10	156	100	33	27	20	70	98	13	21	86	10	14
11	179	80	35	26	19	58	101	17	33	90	7.9	12
12	1070	60	31	26	19	48	93	17	49	82	6.6	11
13	1010	54	28	26	19	40	86	14	36	60	6.5	12
14	507	50	30	25	19	37	105	14	27	43	7.0	12
15	385	45	33	24	18	35	143	13	21	31	11	10
16	325	43	32	20	17	37	126	12	16	25	14	9.5
17	263	40	34	21	17	40	109	11	14	19	12	12
18	203	37	34	22	17	43	96	14	13	16	9.9	21
19	165	33	31	20	16	45	85	23	12	14	8.4	23
20	142	36	29	21	16	50	76	33	11	15	7.4	25
21	128	41	26	20	17	58	67	27	13	38	6.9	23
22	115	43	27	21	18	76	57	23	15	31	6.5	19
23	104	45	29	18	20	100	49	20	13	23	6.3	17
24	97	46	27	16	19	140	43	17	12	26	5.9	14
25	90	45	28	14	19	167	38	15	11	24	5.5	13
26	85	48	29	14	19	185	35	17	16	26	5.2	12
27	90	46	29	14	19	154	34	26	17	23	4.9	11
28	72	49	28	15	19	125	31	36	20	20	4.9	9.2
29	67	46	28	17	---	100	28	40	21	19	4.9	8.7
30	72	43	27	19	---	90	26	78	19	18	5.8	9.1
31	62	---	29	19	---	80	---	74	---	16	6.2	---
TOTAL	7342	1693	1016	702	543	2172	2399	713	793	986	259.8	361.6
MEAN	237	56.4	32.8	22.6	19.4	70.1	80.0	23.0	26.4	31.8	8.38	12.1
MAX	1070	121	43	30	23	185	143	78	81	90	14	25
MIN	62	33	26	14	16	20	26	11	11	14	4.9	4.2
CFSM	2.90	.69	.40	.28	.24	.86	.98	.28	.32	.39	.10	.15
IN.	3.35	.77	.46	.32	.25	.99	1.09	.33	.36	.45	.12	.16
CAL YR 1986	TOTAL 42816.7	MEAN 117	MAX 2460	MIN 6.9	CFSM 1.44	IN. 19.5						
WTR YR 1987	TOTAL 18980.4	MEAN 52.0	MAX 1070	MIN 4.2	CFSM .64	IN. 8.65						

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: None, except for ice periods listed in table below. Records good except those for ice-affected periods, which are fair.

AVERAGE DISCHARGE.--65 years (1914-31, 1939-87), 181 ft³/s, 13.36 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)
Oct. 12	2300	*1,800	*6.21	No other peak greater than base discharge.			

Minimum daily, 72 ft³/s Sept. 6.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Nov. 14-16, Dec. 10-24, 27-28, Jan. 2, 4, 6-15, Jan. 17 to Feb. 22, and Mar. 31 to Apr. 3.)

1.9	62	4.0	630
2.1	90	5.0	1,070
2.4	141	6.0	1,650
3.0	285	7.0	2,400

DISCHARGE, IN 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	544	213	160	117	140	111	140	131	197	92	83	78
2	416	206	169	120	140	109	140	130	174	97	89	78
3	358	200	165	114	130	105	140	128	146	106	84	74
4	342	193	139	120	120	109	154	118	127	135	78	74
5	325	186	154	115	120	113	179	116	115	137	75	75
6	283	183	154	110	120	118	231	114	106	127	93	72
7	250	178	149	110	130	150	258	108	103	109	78	73
8	317	198	145	100	110	216	258	106	108	101	75	78
9	346	214	144	100	100	189	236	105	107	99	104	79
10	308	184	130	120	110	157	221	107	105	103	122	77
11	325	160	160	120	120	149	207	114	119	112	100	78
12	1360	158	150	110	110	130	197	108	132	154	89	73
13	1670	144	150	120	110	123	187	104	125	169	107	77
14	1300	140	140	120	100	120	216	109	110	147	117	77
15	916	140	150	110	94	116	282	105	99	122	131	77
16	710	150	140	99	92	116	275	96	97	109	132	74
17	566	158	140	100	96	117	251	95	88	100	114	85
18	449	153	140	100	96	120	224	93	85	95	100	91
19	370	143	150	100	98	127	200	119	84	94	94	91
20	323	159	140	100	100	145	183	160	90	105	90	97
21	304	160	130	100	96	164	186	165	93	131	89	97
22	272	157	130	100	100	182	184	144	101	120	87	93
23	269	168	130	100	103	208	196	130	97	107	85	85
24	263	165	140	100	101	239	202	122	93	107	83	83
25	255	161	133	100	103	258	179	113	94	100	82	83
26	223	173	131	110	103	258	164	116	98	98	81	77
27	224	162	130	120	106	237	155	134	95	89	79	78
28	220	167	130	130	106	210	147	174	95	87	77	79
29	208	168	124	130	---	189	137	207	93	87	78	79
30	197	158	127	130	---	156	130	265	90	82	76	81
31	189	---	122	130	---	140	---	233	---	81	73	---
TOTAL	14102	5099	4396	3455	3054	4881	5859	4069	3266	3402	2845	2413
MEAN	455	170	142	111	109	157	195	131	109	110	91.8	80.4
MAX	1670	214	169	130	140	258	282	265	197	169	132	97
MIN	189	140	122	99	92	105	130	93	84	81	73	72
CFSM	2.47	.92	.77	.61	.59	.86	1.06	.71	.59	.60	.50	.44
IN.	2.85	1.03	.89	.70	.62	.99	1.18	.82	.66	.69	.58	.49

CAL YR 1986 TOTAL 89053 MEAN 244 MAX 1720 MIN 91 CFMS 1.33 IN. 18.0
WTR YR 1987 TOTAL 56841 MEAN 156 MAX 1670 MIN 72 CFMS .85 IN. 11.5

05395000 WISCONSIN RIVER AT MERRILL, WI

LOCATION.--Lat 45°10'41", long 89°40'52", on line between secs.12 and 13, T.31 N., R.6 E., Lincoln County, Hydrologic Unit 07070002, on left bank 300 ft downstream from U.S. Highway 51 bridge at east end of Merrill, and 0.5 mi downstream from Prairie River.

DRAINAGE AREA.--2,760 mi².

PERIOD OF RECORD.--November 1902 to current year.

REVISED RECORDS.--WSP 1308: 1904-7, 1909-11, 1913. WSP 1508: 1908, 1915-16(M), 1917, 1920-21(M), 1925(M), 1930, 1935-36. WDR WI-77-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,228.85 ft above National Geodetic Vertical Datum of 1929. Prior to June 18, 1903, nonrecording gage at different datum. June 18, 1903, to Sept. 10, 1914, nonrecording gage at present datum.

REMARKS.--Estimated daily discharges: Aug. 27, Sept. 4-11, and ice periods 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.--84 years, 2,687 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, 14,100 ft³/s Oct. 12, gage height, 10.40 ft; minimum daily, 686 ft³/s Aug. 1.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Dec. 5-7, Dec. 10-24, 30, 31, Jan. 2, 3, and Jan. 7 to Mar. 2.)

3.6	680	7.0	5,440
4.0	1,040	9.0	10,100
5.0	2,120	11.0	15,900

DISCHARGE, IN 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	5900	2780	2610	2410	2300	2000	2110	1050	1270	990	686	752
2	5560	2950	2630	2600	2300	2000	1770	1230	1490	971	875	922
3	5110	2910	2930	2500	2400	2070	1710	1230	1260	1060	1170	937
4	5100	3020	2580	2480	2400	2190	1770	1170	1100	952	851	780
5	5230	2840	2800	2540	2500	2130	1720	1120	776	978	807	820
6	4450	2810	2700	2690	2300	2090	2080	1120	868	1090	877	900
7	3210	3060	2600	2700	2300	2070	2090	1110	1080	986	1180	760
8	3450	2940	2780	2700	2300	2350	1890	795	1190	1030	1060	780
9	3900	3280	2670	2600	2200	2670	1760	932	1040	933	1240	940
10	4050	3100	2800	2600	2200	2090	1740	1040	897	992	1140	940
11	3910	3150	2800	2600	2100	1980	1670	1200	890	961	1040	920
12	12500	3070	2800	2600	2000	1980	1670	1140	1280	1160	937	913
13	13200	2790	2700	2800	2200	1820	1560	929	994	1490	897	898
14	11700	2750	2600	2600	2100	1930	2140	928	1110	982	900	852
15	8880	2940	2700	2500	2000	1910	2100	924	906	935	1340	805
16	8020	2560	2700	2500	2100	1940	1820	894	752	919	1370	909
17	6850	2700	2700	2500	2000	1700	2030	733	784	1150	1160	985
18	6430	2810	2800	2300	2000	1680	1840	1030	957	1030	1240	979
19	6180	2810	2800	2400	2100	1700	1650	1010	926	1070	1090	913
20	5110	2790	2700	2400	2100	1800	1680	1190	960	994	878	1120
21	4690	2830	2500	2400	2100	1870	1710	1440	1110	876	873	952
22	4030	2890	2600	2400	2000	2060	1410	1410	1030	954	950	906
23	3680	2860	2700	2500	2000	2430	1740	891	1120	1070	917	852
24	3820	2800	2500	2300	2000	2430	1330	853	959	1380	889	838
25	3300	2740	2230	2300	2100	2520	1640	850	853	1070	819	733
26	2920	2830	2460	2300	2000	2400	1300	936	936	923	829	777
27	3260	2950	2720	2200	2000	2310	1280	985	1010	822	1120	845
28	3470	2990	2660	2300	2000	2130	1470	1190	894	866	950	754
29	3050	2980	2700	2400	---	2060	1340	1380	941	901	1250	853
30	3040	2900	2800	2400	---	1430	1280	1260	808	1120	1280	847
31	2900	---	2700	2300	---	1640	---	1560	---	1010	849	---
TOTAL	166900	86830	82970	76820	60100	63380	51300	33530	30191	31665	31464	26182
MEAN	5384	2894	2676	2478	2146	2045	1710	1082	1006	1021	1015	873
MAX	13200	3280	2930	2800	2500	2670	2140	1560	1490	1490	1370	1120
MIN	2900	2560	2230	2200	2000	1430	1280	733	752	822	686	733

CAL YR 1986 TOTAL 1204550 MEAN 3300 MAX 20000 MIN 1150
WTR YR 1987 TOTAL 741332 MEAN 2031 MAX 13200 MIN 686

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

CENTRAL 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: None, except for ice periods listed in table below. Records good except for ice-affected periods, which are fair.

AVERAGE DISCHARGE.--60 years, 253 ft³/s, 9.17 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, 9.45 ft Mar. 24, 1979, 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)
Oct. 14	0500	*3,270	*6.66	No other peak greater than base discharge.			

Minimum daily discharge, 57 ft³/s Sept. 10, 13, 15.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Nov. 11 to Mar. 16 and Mar. 31 to Apr. 3.)

0.8	54	2.0	407
1.0	81	3.0	900
1.2	120	5.0	2,000
1.5	207	7.0	3,600

DISCHARGE, IN 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	979	250	190	150	100	98	200	138	410	78	74	65
2	687	251	180	150	100	100	190	129	262	80	73	63
3	877	241	180	150	110	110	200	121	194	106	75	61
4	831	233	170	140	110	120	206	114	155	114	72	61
5	675	224	170	140	110	130	257	107	134	97	68	60
6	542	219	180	140	110	140	350	103	118	85	71	59
7	441	216	180	130	110	170	398	98	108	78	68	58
8	542	232	180	130	100	400	399	95	104	77	66	61
9	552	254	180	130	100	350	354	95	100	80	88	60
10	479	249	170	120	100	290	310	101	94	76	96	57
11	408	220	180	120	98	260	277	96	97	78	88	58
12	1330	200	170	130	100	240	255	89	100	101	80	58
13	2360	190	160	130	100	190	234	91	104	105	78	57
14	2930	180	170	120	100	160	257	91	97	112	83	59
15	1670	180	160	110	94	180	362	87	88	98	118	57
16	1050	190	160	110	94	190	400	84	81	88	119	62
17	775	190	150	110	94	204	357	82	77	81	109	80
18	605	180	150	110	96	221	301	80	75	76	95	94
19	506	180	150	100	100	163	259	93	74	79	85	103
20	444	170	150	100	100	220	228	170	76	86	78	101
21	404	180	150	96	96	247	234	195	78	136	75	98
22	369	190	150	92	96	289	277	157	86	157	70	98
23	350	190	150	90	98	364	310	140	108	131	67	86
24	333	200	150	88	98	380	303	126	101	107	65	78
25	310	210	150	90	98	411	266	114	88	95	62	71
26	302	200	150	92	100	459	227	115	82	98	62	68
27	288	200	150	94	96	424	210	121	81	91	62	69
28	272	200	140	96	94	369	188	154	82	85	61	66
29	261	190	140	96	---	321	167	240	85	82	60	68
30	249	180	140	98	---	259	150	321	85	78	61	74
31	238	---	150	100	---	210	---	434	---	73	63	---
TOTAL	22059	6189	5000	3552	2802	7669	8126	4181	3424	2908	2392	2110
MEAN	712	206	161	115	100	247	271	135	114	93.8	77.2	70.3
MAX	2930	254	190	150	110	459	400	434	410	157	119	103
MIN	238	170	140	88	94	98	150	80	74	73	60	57
CFSM	1.90	.55	.43	.31	.27	.66	.72	.36	.30	.25	.21	.19
IN.	2.19	.61	.50	.35	.28	.76	.81	.41	.34	.29	.24	.21

CAL YR 1986	TOTAL 122958	MEAN 337	MAX 3690	MIN 93	CFSM .90	IN. 12.2
WTR YR 1987	TOTAL 70412	MEAN 193	MAX 2930	MIN 57	CFSM .51	IN. 6.98

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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.

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

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: May 7-10, 12-15, and ice-affected periods, Nov. 9, 12, 13, 18, 21-30, Dec. 2-24, and Dec. 27 to Feb. 19. Records good. Flow regulated by 20 reservoirs and 12 powerplants upstream from station.

AVERAGE DISCHARGE.--43 years, 3,566 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, 670 ft³/s Dec. 9, 1976.

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, 37,300 ft³/s Oct. 13, gage height, 25.96 ft; minimum daily, 725 ft³/s Aug. 5.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10500	3620	3280	3000	2600	2450	2980	1610	2450	964	1080	954
2	8180	3700	3300	2800	2500	2410	2970	1560	2390	1510	903	921
3	8630	4090	3300	2900	2500	2440	2250	1550	2040	1530	1050	1110
4	8870	4060	2900	2900	2600	2480	2690	1540	1820	1750	1480	1180
5	8490	4010	2700	2800	2700	2430	2630	1570	1350	1250	725	903
6	7480	3860	3200	2900	2700	2600	3160	1510	922	1260	1120	860
7	5780	4000	3200	3000	2400	2950	3690	1120	1130	1350	1230	1260
8	6120	4020	3100	3100	2300	4410	3480	1110	1750	1320	1210	1170
9	6690	4300	3100	2900	2400	4530	3030	1190	1350	1210	1920	964
10	6660	4250	2700	2900	2400	3890	3000	1160	1210	1170	1490	1150
11	6040	4110	2600	2900	2200	3280	2770	1730	1260	1470	1260	1120
12	21700	3500	2900	2900	2200	2960	2700	1290	1400	1450	1250	1160
13	32500	3300	2900	3100	2300	2820	2600	1240	1500	1890	1460	1120
14	22700	3030	2900	3100	2300	2780	2820	1430	1180	1760	1790	973
15	15300	3790	3100	2900	2100	2420	3990	1110	1220	1190	1950	1040
16	12300	3650	3200	2600	1900	2560	3650	1040	1100	1070	1990	1060
17	10200	3350	3300	2300	2000	2550	3340	858	937	1370	1870	1330
18	8890	3300	3200	2200	1900	2350	3230	935	816	1270	1660	1340
19	8460	3220	3300	2400	1900	2460	2660	1860	1050	1370	1640	1290
20	7400	3360	3000	2600	2140	2680	2630	1750	979	1530	1120	1290
21	6910	3500	2700	2400	2430	2610	2720	2000	1490	1540	935	1470
22	6040	3500	2800	2600	2460	3400	2430	2040	1770	1450	1120	1120
23	5340	3400	2900	2800	2340	3510	2670	1810	1310	1620	1070	1050
24	6140	3400	3200	2800	2330	4730	2820	1260	1510	1740	1050	1070
25	5290	3400	3080	2600	2230	4530	2410	1050	908	1820	1160	934
26	4410	3300	2840	2600	2150	4830	2330	1090	1230	1320	1020	765
27	4680	3400	2900	2700	2640	4140	2080	1310	953	1100	1030	883
28	4700	3500	3100	2400	2350	3960	2160	1930	1230	1040	1100	1010
29	4270	3500	3000	2500	---	3440	2090	2320	1070	1090	1340	852
30	4190	3400	3100	2800	---	2760	2050	2380	1130	1420	1520	949
31	4120	---	3400	2600	---	1930	---	2620	---	1100	1610	---
TOTAL	278980	108820	94200	85000	64970	97290	84030	46973	40455	42924	41153	32298
MEAN	8999	3627	3039	2742	2320	3138	2801	1515	1348	1385	1328	1077
MAX	32500	4300	3400	3100	2700	4830	3990	2620	2450	1890	1990	1470
MIN	4120	3030	2600	2200	1900	1930	2050	858	816	964	725	765
CAL YR 1986	TOTAL 1782150		MEAN 4883	MAX 41100	MIN 1420							
WTR YR 1987	TOTAL 1017090		MEAN 2787	MAX 32500	MIN 725							

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: None, except for ice periods listed in rating table below. Records good except those for ice-affected periods, which are fair.

AVERAGE DISCHARGE.--61 years (1914-25, 1937-87), 177 ft³/s, 10.73 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 41,000 ft³/s Sept. 9, 1938, gage height, 24.5 ft, from floodmarks, 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)
Oct. 12	0615	*9,540	*15.83	No other peak greater than base discharge.			

Minimum discharge, 6.5 ft³/s, July 11.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Rate of change of stage used as factor Oct. 5, 8, 9, 11, 13; stage-discharge relation affected by ice Nov. 8 to Mar. 25 and Mar. 31 to Apr. 2.)

2.3	5.0	3.0	48	6.0	670
2.4	8.0	3.5	104	8.0	1,540
2.6	17	4.0	175	10.0	2,850
2.8	30	5.0	375	13.0	5,710
				15.0	8,280

DISCHARGE, IN 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	347	70	33	26	17	44	100	28	13	28	46	10
2	225	70	35	27	18	6	110	27	13	18	32	10
3	1180	68	35	28	19	52	111	26	12	16	25	9.4
4	892	62	32	28	18	58	130	23	11	16	20	8.9
5	503	53	31	27	18	70	223	21	9.8	13	16	8.0
6	277	51	33	27	18	120	221	19	9.0	12	14	7.5
7	196	49	34	25	19	400	170	15	9.0	11	12	7.2
8	720	56	31	24	18	1000	135	16	11	9.5	11	8.4
9	464	84	30	22	17	800	110	14	10	9.3	117	10
10	273	76	29	23	16	500	96	13	12	8.2	423	23
11	775	52	27	25	15	330	89	15	14	8.0	170	23
12	7510	41	26	24	15	250	86	14	17	104	81	16
13	2010	36	23	23	15	200	79	13	18	176	93	13
14	794	32	24	24	16	180	125	15	18	69	121	11
15	631	31	25	21	15	160	275	14	13	37	172	11
16	386	32	27	19	15	150	204	12	11	24	231	11
17	265	32	28	19	16	130	153	11	9.4	17	128	33
18	195	30	29	19	17	130	118	10	8.7	13	71	80
19	152	31	29	19	16	130	91	11	7.9	12	57	165
20	128	32	27	20	17	140	75	12	7.9	13	42	123
21	115	33	26	20	18	160	70	12	13	18	27	80
22	104	34	27	19	21	210	66	13	30	118	19	57
23	96	33	26	18	22	250	75	12	31	78	16	43
24	87	34	26	16	24	230	70	11	21	49	13	32
25	80	35	26	14	26	270	95	11	15	121	12	25
26	74	36	26	14	29	433	82	15	13	95	17	20
27	69	37	26	14	33	331	51	16	11	56	18	18
28	65	36	26	15	38	246	38	20	11	61	18	14
29	60	35	26	15	---	190	34	20	31	205	12	12
30	56	34	26	16	---	145	30	17	28	129	12	11
31	53	---	27	16	---	110	---	15	---	69	11	---
TOTAL	18782	1335	876	647	546	7475	3312	491	438.7	1613.0	2057	900.4
MEAN	606	44.5	28.3	20.9	19.5	241	110	15.8	14.6	52.0	66.4	30.0
MAX	7510	84	35	28	38	1000	275	28	31	205	423	165
MIN	53	30	23	14	15	44	30	10	7.9	8.0	11	7.2
CFSM	2.70	.20	.13	.09	.09	1.08	.49	.07	.07	.23	.30	.13
IN.	3.12	.22	.15	.11	.09	1.24	.55	.08	.07	.27	.34	.15

CAL YR 1986 TOTAL 105241.1 MEAN 288 MAX 8480 MIN 6.2 CFSM 1.29 IN. 17.5
WTR YR 1987 TOTAL 38473.1 MEAN 105 MAX 7510 MIN 7.2 CFSM .47 IN. 6.39

05400650 LITTLE PLOVER RIVER AT PLOVER, WI

LOCATION.--Lat 44°28'26", long 89°31'44", in SW 1/4 sec.14, T.23 N., R.8 E., Portage County, Hydrologic Unit 07070003, on right bank at bridge on town road, 1.0 mi northeast of Plover and 1.2 mi upstream from mouth.

DRAINAGE AREA.--19.0 mi², of which 7.33 mi² probably is noncontributing.

PERIOD OF RECORD.--July 1959 to current year.

REVISED RECORDS.--WDR WI-76-1: Drainage area.

GAGE.--Water-stage recorder and parshall flume. Datum of gage is 1,068.34 ft above National Geodetic Vertical Datum of 1929. Prior to May 1960, nonrecording gage at same site and datum 0.88 ft lower.

REMARKS.--Estimated daily discharges: May 15-17, 20-23, 30, June 27, 30, Aug. 25-27, Sept. 7, 10-13, 17-24, 27, 28, 30, and ice periods listed in rating table below. Records good, except for estimated daily discharges, which are fair.

AVERAGE DISCHARGE.--28 years, 10.7 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 105 ft³/s Nov. 1, 1984, gage height, 3.19 ft; minimum, 1.4 ft³/s Nov. 16, 1974, gage height, 0.28 ft, result of temporary dam at flume entrance.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 22 ft³/s and maximum (*):

DATE	TIME	DISCHARGE (ft ³ /s)	GAGE HEIGHT (ft)	DATE	TIME	DISCHARGE (ft ³ /s)	GAGE HEIGHT (ft)
Oct. 3	1345	29	1.87	Nov. 1	0830	22	1.76
Oct. 12	1515	27	1.81	Mar. 8	0030	*30	1.92
				May 16	0400	Debris in flume	*2.14

Minimum daily discharge, 6.6 ft³/s Sept. 22.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Shifting-control method used Oct. 31 to Nov. 18; stage-discharge relation affected by ice Dec. 11, Jan. 17-21, 24, and Feb. 7-15.)

0.7	5.9	1.5	20
0.8	7.3	2.0	32
1.0	10		

DISCHARGE, IN 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	20	19	15	14	9.8	13	14	13	11	9.0	8.0	6.8
2	19	17	15	14	9.8	12	13	13	11	9.2	7.7	6.9
3	25	17	15	14	9.6	12	13	12	10	9.7	7.6	6.7
4	26	17	15	14	9.4	12	14	12	9.9	9.4	7.5	6.7
5	23	17	15	14	9.3	12	14	12	9.9	9.3	7.3	6.9
6	20	17	15	14	9.1	13	13	12	10	9.9	7.2	6.8
7	19	17	15	14	11	18	13	12	9.9	9.5	7.1	6.9
8	24	17	15	13	11	21	13	12	9.9	9.2	7.3	8.0
9	21	16	15	13	10	16	13	11	9.7	9.0	8.9	7.2
10	19	16	14	13	10	14	13	11	9.7	8.9	8.1	6.7
11	19	16	14	13	11	13	13	13	9.9	8.8	7.7	6.7
12	23	16	14	13	11	13	13	12	9.6	9.4	7.6	6.7
13	22	18	14	13	11	13	12	11	9.2	8.9	7.7	6.7
14	21	15	14	13	11	13	14	12	8.9	8.6	8.1	6.7
15	20	16	14	13	11	13	13	11	8.6	8.6	8.1	6.9
16	19	16	14	12	12	13	13	11	8.5	8.4	8.0	7.8
17	19	16	14	12	12	13	13	11	8.4	8.1	7.8	8.8
18	18	15	14	12	12	13	12	11	8.3	7.8	7.5	7.2
19	18	15	14	12	11	13	12	11	8.6	7.9	7.5	6.9
20	18	16	14	12	11	13	11	11	9.0	7.9	7.3	6.7
21	18	15	14	12	12	13	13	10	12	8.0	7.3	6.7
22	17	16	14	12	12	13	16	9.1	13	7.6	7.2	6.6
23	17	16	14	11	12	13	17	7.8	11	7.5	7.0	6.9
24	17	15	14	11	12	13	14	7.1	10	7.6	7.0	7.2
25	17	15	14	11	12	15	13	7.0	10	7.3	7.0	7.4
26	17	15	13	11	12	17	13	8.6	9.9	8.0	7.0	7.3
27	17	15	14	11	12	15	13	12	9.0	7.6	6.9	7.2
28	17	15	14	10	12	14	13	11	8.7	8.6	6.9	7.2
29	16	15	14	10	---	14	13	11	9.9	8.8	6.8	7.1
30	16	15	14	10	---	14	13	11	9.4	8.5	7.0	7.0
31	17	---	14	9.9	---	14	---	11	---	8.1	7.5	---
TOTAL	599	481	442	380.9	308.0	428	397	339.6	292.9	265.1	231.6	211.3
MEAN	19.3	16.0	14.3	12.3	11.0	13.8	13.2	11.0	9.76	8.55	7.47	7.04
MAX	26	19	15	14	12	21	17	13	13	9.9	8.9	8.8
MIN	16	15	13	9.9	9.1	12	11	7.0	8.3	7.3	6.8	6.6

CAL YR 1986 TOTAL 5234.4 MEAN 14.3 MAX 45 MIN 8.6
WTR YR 1987 TOTAL 4376.4 MEAN 12.0 MAX 26 MIN 6.6

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 1986 to September 1987, were as follows:

Sept. 16	22	Sept. 19	100	Sept. 22	100	Sept. 25	100	Sept. 28	100
17	83	20	100	23	100	26	100	29	100
18	100	21	100	24	100	27	100	30	35

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.--65 years (1914-50, 1957-87), 5,008 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, 46,600 ft³/s Oct. 13; minimum daily, 935 ft³/s Aug. 31.

DISCHARGE, IN 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	16600	4540	4380	4050	3080	3270	3450	2310	2780	1420	1250	946
2	12900	4490	4390	3920	3050	3220	3930	2290	2870	1390	1360	1050
3	15100	4500	4240	3890	3040	3330	3900	2160	2800	1140	1150	1080
4	16100	4940	4140	3930	3160	3260	3630	2080	2580	1190	1200	1070
5	16500	5030	4140	3960	3360	3270	3640	1940	2350	1240	1140	1110
6	11700	4800	4200	3910	3500	3290	3580	1860	2300	1460	1040	1140
7	9420	4220	4200	3940	3530	3300	3710	1670	1640	1490	1010	1150
8	10800	4340	4190	3860	3450	5100	3840	1560	1560	1560	995	1380
9	10500	5820	3890	3970	3350	6860	3780	1460	1290	1600	1360	1370
10	10200	4650	3950	3880	3370	7350	3600	1520	1310	1590	1740	1230
11	10100	4690	4050	3870	3370	5950	3470	1770	1270	1630	1920	1220
12	25100	4750	3900	3790	3370	4890	3470	1750	2070	1860	1690	1130
13	43700	4320	3910	3910	3350	4050	3470	1660	1960	2120	1470	1160
14	34700	4230	3750	4130	3330	3680	3520	1630	1980	2440	1640	1260
15	24800	3990	3370	4180	3350	3630	3550	1640	1580	2040	1980	1300
16	19000	3580	3600	4210	3310	3530	4190	1330	1430	1420	3020	1300
17	16800	3860	3840	3890	3220	3570	3690	1300	1140	1190	2430	1650
18	11800	4100	3860	3500	3210	3400	3570	1310	1170	1280	2200	1620
19	10800	4110	4000	3510	3040	3390	3530	1290	1330	1330	2010	1540
20	10600	4040	4080	3570	3040	3120	3320	1210	1290	1360	1480	1780
21	9580	4260	4110	3560	3080	3100	3500	1090	1720	2550	1480	1340
22	8100	4360	4090	3340	3060	3440	4080	1210	2440	2000	1560	1540
23	6850	4450	4020	3220	3090	5370	4280	1820	1800	1610	1220	1350
24	6640	4370	4000	3280	3100	5340	3830	1790	1230	1400	954	1430
25	6580	4340	3690	3180	3120	5710	3820	1540	1380	1640	1030	1450
26	5880	4380	3790	3210	3210	6550	3760	1290	1150	1860	1270	1440
27	4670	4250	3820	3150	3000	6700	3270	1240	1140	1840	1250	1390
28	4820	4360	3800	2940	3250	6050	3140	1290	1090	1960	1290	1160
29	5060	4410	3430	2840	---	5840	3010	2040	1280	1320	1280	1150
30	5170	4400	3970	2840	---	5440	2670	2170	1220	1240	1150	988
31	4540	---	4090	3070	---	3830	---	2510	---	1220	935	---
TOTAL	405110	132580	122890	112500	90390	138830	108200	51730	51150	49390	45504	38724
MEAN	13070	4419	3964	3629	3228	4478	3607	1669	1705	1593	1468	1291
MAX	43700	5820	4390	4210	3530	7350	4280	2510	2870	2550	3020	1780
MIN	4540	3580	3370	2840	3000	3100	2670	1090	1090	1140	935	946

CAL YR 1986	TOTAL 2451510	MEAN 6716	MAX 55100	MIN 1880
WTR YR 1987	TOTAL 1347000	MEAN 3690	MAX 43700	MIN 935

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: None, except for ice-affected period of Nov. 24 to Feb. 25. Records good except for estimated daily discharges, which are fair. There is a large recreation dam about 5.0 mi upstream.

AVERAGE DISCHARGE.--43 years, 160 ft³/s, 10.11 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)
Oct. 5	1900	1,650	9.19	Oct. 13	0300	*2,450	10.59
				Oct. 13	0715	--	*10.87

Minimum daily discharge, 9.1 ft³/s July 7.

DISCHARGE, IN 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	642	72	39	27	24	37	196	58	34	25	132	13
2	509	69	38	27	22	43	197	60	32	20	103	13
3	511	73	38	27	21	45	168	56	30	17	87	14
4	1280	76	37	27	20	46	182	51	27	14	71	14
5	1270	71	35	27	19	49	192	46	21	11	53	15
6	1100	66	35	27	19	59	199	42	19	10	40	15
7	673	63	34	27	19	108	183	40	18	9.1	34	13
8	551	67	33	27	19	549	159	35	18	13	28	13
9	646	80	33	27	19	1020	138	32	20	18	28	14
10	611	94	35	27	20	1040	122	30	17	14	32	18
11	511	93	34	28	21	799	113	32	15	12	32	18
12	747	76	33	30	21	503	129	35	17	16	29	15
13	2270	82	32	35	21	324	137	35	18	22	27	14
14	1620	63	32	42	21	228	142	34	16	22	31	13
15	1120	55	31	37	20	171	234	34	15	21	35	13
16	736	49	31	32	20	148	349	24	13	18	130	20
17	598	45	31	30	20	146	301	24	12	15	407	23
18	305	44	31	27	19	147	225	23	11	13	465	27
19	266	43	30	26	18	158	169	23	13	11	392	27
20	210	48	30	25	19	166	132	23	39	12	258	28
21	174	46	29	24	19	199	121	23	60	19	159	30
22	150	44	29	23	19	239	156	23	98	22	98	30
23	134	45	29	22	20	264	383	23	93	21	59	24
24	122	44	29	22	21	279	417	22	65	26	40	24
25	113	43	29	22	23	265	301	19	47	34	30	23
26	103	42	28	22	25	421	188	22	36	44	25	24
27	96	41	28	22	28	496	177	24	27	53	21	31
28	93	41	28	21	31	450	152	27	21	49	18	37
29	86	40	28	21	---	344	45	32	23	71	16	38
30	76	40	28	21	---	258	54	33	31	117	14	38
31	70	---	28	22	---	203	---	33	---	147	14	---
TOTAL	17393	1755	985	824	588	9204	5661	1018	906	916.1	2908	639
MEAN	561	58.5	31.8	26.6	21.0	297	189	32.8	30.2	29.6	93.8	21.3
MAX	2270	94	39	42	31	1040	417	60	98	147	465	38
MIN	70	40	28	21	18	37	45	19	11	9.1	14	13
CFSM	2.61	.27	.15	.12	.10	1.38	.88	.15	.14	.14	.44	.10
IN.	3.01	.30	.17	.14	.10	1.59	.98	.18	.16	.16	.50	.11

CAL YR 1986 TOTAL 99610.0 MEAN 273 MAX 7260 MIN 10 CFSM 1.27 IN. 17.2
WTR YR 1987 TOTAL 42797.1 MEAN 117 MAX 2270 MIN 9.1 CFSM .55 IN. 7.40

05403500 LEMONWEIR RIVER AT NEW LISBON, WI.

LOCATION.--Lat 43°52'47", long 90°09'40", in SE 1/4 sec.8 T.16 N., R.3 E., Juneau County, Hydrologic Unit 07070003, on right bank 5 ft downstream of bridge on State Highway 80 in New Lisbon, 200 ft downstream from recreation dam and 1.2 mi upstream from Webster Creek.

DRAINAGE AREA.--507 mi².

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

REVISED RECORDS.--WSP 1308: 1944(M), 1949-50(M). WDR WI-78-1: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 867.05 ft above National Geodetic Vertical Datum of 1929. Prior to May 5, 1948, nonrecording gage at site 100 ft downstream at same datum, and May 5, 1948 to Aug. 21, 1984, nonrecording gage near center of span on downstream side of bridge at same datum.

REMARKS.--Estimated daily discharge: None, except for ice-affected periods listed in rating table below. Records good except those for ice-affected periods, which are fair. Occasional regulation by dam 200 ft upstream. Water diverted periodically into the basin from the Yellow and Black River basins for cranberry culture.

AVERAGE DISCHARGE.--43 years, 381 ft³/s, 10.21 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,880 ft³/s May 8, 1960, gage height, 12.94 ft from graph based on gage readings; minimum observed, 29 ft³/s June 9, 1976, gage height, 0.47 ft during period of dam repair.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,160 ft³/s Oct. 1, gage height, 9.47 ft, occurred on recession following peak of Sept. 26, 1986; maximum independent peak discharge, 1,950 ft³/s, Apr. 25, gage height, 9.13 ft; minimum daily, 123 ft³/s Sept. 15.

RATING TABLES (gage height, in feet, and discharge, in cubic feet per second).
(Shifting-control method used Sept. 28-30; stage-discharge relation affected by ice Dec. 7-22 and Jan. 17 to Feb. 6.)

Oct. 1 to Jan. 31				Feb. 1 to Sept. 30			
2.3	175	6.0	695	1.6	122	6.0	740
2.5	191	7.0	950	2.0	152	7.0	950
3.0	241	8.0	1,310	3.0	250	8.0	1,310
4.0	353	10.0	2,530	4.0	382	10.0	2,530
5.0	505			5.0	540		

DISCHARGE, IN 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	2040	419	380	269	230	306	550	681	299	382	449	153
2	1800	410	382	266	230	296	521	616	283	338	483	147
3	1670	421	384	264	230	298	505	570	253	284	505	140
4	1680	424	382	261	230	304	494	551	235	268	478	137
5	1820	418	348	256	230	340	491	552	219	238	403	134
6	1930	407	352	254	240	429	503	530	206	211	318	132
7	1880	396	360	254	251	498	511	483	194	205	259	130
8	1730	386	350	253	263	574	489	436	197	215	241	135
9	1530	388	340	255	268	634	463	394	196	215	245	135
10	1350	384	310	257	254	658	434	358	195	200	247	130
11	1190	383	280	258	250	669	402	444	187	198	250	127
12	1070	367	290	259	251	648	374	518	183	200	235	125
13	975	321	290	263	259	604	350	535	178	187	215	124
14	869	303	290	276	262	560	377	543	169	178	213	124
15	841	324	280	275	254	496	462	544	158	168	218	123
16	893	327	280	246	227	467	523	483	146	162	270	125
17	925	322	270	200	218	460	569	406	136	156	352	136
18	892	316	270	210	232	461	616	343	135	150	382	154
19	844	308	270	220	226	513	616	319	135	145	389	176
20	795	304	270	210	219	587	557	280	135	142	370	189
21	736	310	260	210	228	615	523	284	206	145	310	187
22	660	324	260	210	253	606	921	291	429	150	255	174
23	588	335	258	200	281	586	1460	282	627	156	225	166
24	537	342	265	190	286	555	1830	263	771	154	210	163
25	510	349	264	180	283	532	1940	251	818	146	191	159
26	503	354	261	180	292	547	1800	266	736	177	178	153
27	510	362	262	180	300	568	1490	295	587	203	172	154
28	461	372	269	190	304	590	1170	302	475	230	169	154
29	423	379	269	210	---	635	947	303	440	269	169	145
30	451	381	266	220	---	625	802	317	405	318	167	137
31	440	---	266	220	---	585	---	312	---	388	160	---
TOTAL	32543	10836	9278	7196	7051	16246	22690	12752	9333	6578	8728	4368
MEAN	1050	361	299	232	252	524	756	411	311	212	282	146
MAX	2040	424	384	276	304	669	1940	681	818	388	505	189
MIN	423	303	258	180	218	296	350	251	135	142	160	123
CFSM	2.07	.71	.59	.46	.50	1.03	1.49	.81	.61	.42	.56	.29
IN.	2.39	.80	.68	.53	.52	1.19	1.66	.94	.68	.48	.64	.32

CAL YR 1986 TOTAL 198473 MEAN 544 MAX 3670 MIN 123 CFSM 1.07 IN. 14.6
WTR YR 1987 TOTAL 147599 MEAN 404 MAX 2040 MIN 123 CFSM .80 IN. 10.8

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: None, except for ice periods listed in rating table below. Records good, except those for ice-affected periods 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.--53 years, 6,876 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, 51,800 ft³/s Oct. 1, gage height, 17.62 ft, occurred on recession following peak of Sept. 30, 1986; maximum independent peak discharge, 40,600 ft³/s Oct. 15, gage height, 15.47 ft; minimum daily, 1,730 ft³/s June 19.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Shifting-control method used July 1-17; stage-discharge relation affected by ice Dec. 11-22 and Jan. 21 to Feb. 3.)

3.3	1,720	11.0	21,800
4.0	2,980	14.0	33,900
6.0	7,110	17.0	48,300
8.0	12,200		

DISCHARGE, IN 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	46900	6980	6470	5590	4800	5610	6870	5190	3210	2790	4130	1900
2	27900	7870	6410	5670	4800	5540	6330	4870	3300	2720	4160	1910
3	19900	7270	6230	6170	5200	5560	6280	4600	3810	2600	4060	1920
4	24100	6950	6300	6060	5350	5500	5960	4140	3470	2560	3360	1920
5	23800	7080	6420	5550	5280	5760	5560	3750	3270	2670	3040	2460
6	21600	7280	6600	6020	5580	5620	4910	3810	2990	2500	3060	2370
7	16900	7480	6640	6050	5620	5760	4860	3580	2800	2860	2890	2420
8	15700	7110	6680	5930	5740	5960	4810	3590	2840	3010	2880	2140
9	17500	6740	6650	6220	5550	7160	4870	3490	3520	3210	3200	2310
10	17700	7540	6420	6390	5460	8710	4510	3510	3710	2700	3040	2390
11	16500	7910	6400	6650	5420	9140	4340	3600	3560	3290	3000	2340
12	15900	7690	6000	6610	5250	8250	4410	3790	3790	3360	2990	2640
13	27100	6830	5400	6150	5240	7920	4260	3890	3780	3230	2850	2780
14	36400	6350	6200	6060	5260	7680	4400	3850	4050	3370	2650	2640
15	39400	6270	6000	6140	5330	7380	4530	3650	4000	3280	3400	2440
16	36400	5820	5800	5970	5370	6920	4410	3680	3560	3390	3520	2440
17	26700	5820	6000	6070	5320	6520	4470	3400	2830	3190	3870	2790
18	18800	5850	6000	6030	5240	6460	4370	3500	2440	2580	4180	3190
19	15400	6230	6000	5450	4920	6210	4350	3130	1730	2920	3620	2940
20	14600	6410	6000	5260	4910	5750	3850	3190	2330	2660	3430	3200
21	14900	7220	6000	5000	5180	5920	3790	3310	3170	2990	3240	3200
22	14800	6790	6000	4900	5300	5560	4650	3280	4400	3010	2980	3130
23	11000	6380	6110	4700	5380	5690	4750	3740	5070	3070	2770	2990
24	10500	6680	6050	4300	5430	6110	5180	3800	4230	3090	2630	2720
25	10500	6410	5630	4800	5860	5890	6040	3830	4660	2900	2190	2290
26	10400	6520	5640	4900	5860	6260	5970	3940	5090	3170	1880	2480
27	9030	6100	5590	5200	5840	7040	6240	3300	4590	3590	2150	2400
28	8760	5920	5800	5000	5510	7720	6050	3240	4350	3410	2080	2340
29	7650	5920	5510	5000	---	7960	5640	3130	4120	3510	2080	1940
30	7890	5950	5710	4800	---	8290	5440	3390	3730	3640	2030	1810
31	8200	---	5650	4800	---	7170	---	3530	---	3730	1900	---
TOTAL	592830	201370	188310	173440	150000	207020	152100	114700	108400	95000	93260	74440
MEAN	19120	6712	6075	5595	5357	6678	5070	3700	3613	3065	3008	2481
MAX	46900	7910	6680	6650	5860	9140	6870	5190	5090	3730	4180	3200
MIN	7650	5820	5400	4300	4800	5500	3790	3130	1730	2500	1880	1810

CAL YR 1986 TOTAL 3242790 MEAN 8884 MAX 52700 MIN 3370
WTR YR 1987 TOTAL 2150870 MEAN 5893 MAX 46900 MIN 1730

LOWER WISCONSIN RIVER BASIN

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

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, 7.11 ft, July 20-24, 1985.

EXTREMES FOR CURRENT YEAR.--Maximum gage height observed, 7.81 ft, Apr. 24; minimum observed, 7.12 ft, July 18-27.

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	7.30	7.16	---	---
2	---	---	---	---	---	---	---	7.49	7.30	7.16	7.28	---
3	---	---	---	---	---	---	7.31	7.45	7.28	7.20	---	---
4	---	---	---	---	---	---	---	7.36	7.26	7.18	---	---
5	---	---	---	---	---	---	---	7.37	7.26	7.18	---	---
6	---	---	---	---	---	---	---	7.35	7.22	7.20	---	7.16
7	---	---	---	---	---	---	---	7.36	7.20	7.22	---	---
8	---	---	---	---	---	---	---	7.30	7.18	7.20	---	---
9	---	---	---	---	---	---	7.31	7.28	7.18	7.20	7.20	---
10	---	---	---	---	---	---	---	7.28	7.18	7.20	---	---
11	---	---	---	---	---	---	---	7.40	7.16	7.20	---	---
12	---	---	---	---	---	---	---	7.38	7.16	7.18	---	---
13	---	---	---	---	---	---	---	7.36	---	7.16	---	7.16
14	---	---	---	---	---	---	---	7.36	7.16	7.16	---	---
15	---	---	---	---	---	---	7.29	7.34	7.16	7.14	---	---
16	---	---	---	---	---	---	---	7.30	7.16	7.14	7.14	---
17	---	---	---	---	---	---	---	7.28	7.16	7.14	---	---
18	---	---	---	---	---	---	---	7.32	7.16	7.12	---	---
19	---	---	---	---	---	---	---	7.32	7.16	7.12	---	---
20	---	---	---	---	---	---	---	7.32	7.16	7.12	---	7.32
21	---	---	---	---	---	7.41	---	7.32	7.16	7.12	---	---
22	---	---	---	---	---	---	---	7.30	7.16	7.12	---	---
23	---	---	---	---	---	---	7.67	7.28	7.16	7.12	---	---
24	---	---	---	---	---	---	7.81	7.26	7.16	7.12	---	---
25	---	---	---	---	---	---	---	7.26	7.18	7.12	---	---
26	---	---	---	---	---	---	7.59	7.26	7.18	7.12	---	---
27	7.36	---	---	---	---	7.33	7.51	7.28	7.16	7.12	---	---
28	---	---	---	---	---	---	7.45	7.30	7.16	7.16	---	---
29	---	---	---	---	---	---	7.43	7.32	7.16	7.22	---	---
30	---	---	---	---	---	---	7.39	7.32	7.16	7.32	7.32	7.18
31	---	---	---	---	---	---	---	7.32	---	7.32	---	---
MEAN	---	---	---	---	---	---	---	---	---	7.17	---	---
MAX	---	---	---	---	---	---	---	---	---	7.32	---	---
MIN	---	---	---	---	---	---	---	---	---	7.12	---	---

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 1986 TO SEPTEMBER 1987

DATE	SECCHI DEPTH	DATE	SECCHI DEPTH	DATE	SECCHI DEPTH	DATE	SECCHI DEPTH	DATE	SECCHI DEPTH	DATE	SECCHI DEPTH
OCT. 27	1.22	APR. 26	1.98	MAY 30	2.90	JULY 4	1.07	AUG. 2	0.76	SEPT. 6	0.76
MAR. 21	1.68	MAY 4	2.21	JUNE 6	1.52	JULY 12	0.84	AUG. 9	0.76	SEPT. 13	0.76
MAR. 27	1.83	MAY 10	2.29	JUNE 14	0.91	JULY 19	0.69	AUG. 16	0.76	SEPT. 20	0.76
APR. 3	1.68	MAY 17	2.82	JUNE 19	0.91	JULY 26	0.76	AUG. 30	0.84	SEPT. 30	0.99
APR. 9	1.68	MAY 23	2.90	JUNE 27	0.76						

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. Elevation of lake from reference mark read about twice a week except in winter. Datum of gage is 955.00 ft, National Geodetic Vertical Datum of 1929.

REMARKS.--Lake has no surface outlet. Lake was ice covered

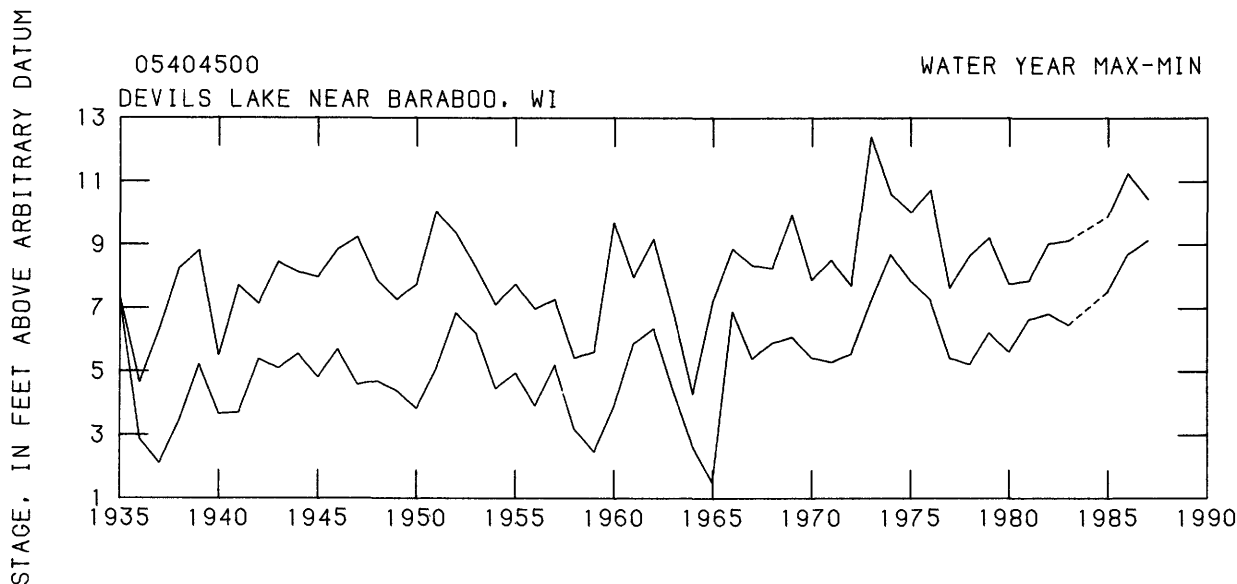
COOPERATION.--Gage readings furnished by Kenneth Lange of Devils Lake State Park.

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, 10.45 ft, May 14; minimum observed, 9.11 ft, Sept. 17.

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	GAGE HEIGHT	DATE	GAGE HEIGHT	DATE	GAGE HEIGHT	DATE	GAGE HEIGHT	DATE	GAGE HEIGHT	DATE	GAGE HEIGHT
OCT. 3	10.11	NOV. 4	9.96	JUNE 19	9.98	JULY 21	9.50	AUG. 13	9.43	AUG. 31	9.17
OCT. 8	10.19	NOV. 10	9.86	JUNE 29	9.88	JULY 27	9.40	AUG. 17	9.51	SEPT. 17	9.11
OCT. 16	10.18	MAY 14	10.45	JULY 6	9.77	AUG. 4	9.41	AUG. 24	9.33	SEPT. 25	9.12
OCT. 21	10.10	MAY 20	10.43	JULY 15	9.65						



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.

SECCHI DISC TRANSPARENCY (IN METERS) WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	SECCHI DEPTH	DATE	SECCHI DEPTH	DATE	SECCHI DEPTH	DATE	SECCHI DEPTH	DATE	SECCHI DEPTH	DATE	SECCHI DEPTH
OCT. 1	3.26	FEB. 25	12.40	MAY 12	8.31	JUNE 24	8.76	AUG. 5	7.24	SEPT. 2	2.51
OCT. 8	2.71	APR. 2	5.50	MAY 27	6.71	JULY 8	8.84	AUG. 19	3.51	SEPT. 16	2.59
OCT. 15	3.90	APR. 15	7.00	JUNE 10	8.92	JULY 22	8.53	AUG. 27	2.97	SEPT. 28	2.51
OCT. 28	3.05	APR. 29	7.00	JUNE 12	9.98						

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 discharge: None, except for ice periods listed in rating table below. Records good except those for ice-affected periods, which are fair.

AVERAGE DISCHARGE.--52 (water years 1915-21, 1943-87), 382 ft³/s, 8.52 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, 1,480 ft³/s Apr. 23, gage height, 12.30 ft; minimum, 185 ft³/s July 20, gage height, 6.78 ft.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Shifting-control method used Oct. 19 to Nov. 2; stage-discharge relation affected by ice Dec. 10-21 and Jan. 18 to Feb. 14.)

6.8	190	11.0	1,170
7.0	235	13.0	1,650
9.0	697		

DISCHARGE, IN 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	1110	372	388	327	280	366	500	431	411	232	532	226
2	885	398	398	330	280	380	502	546	344	232	472	222
3	737	380	410	329	290	406	503	606	313	234	362	218
4	833	350	409	326	300	417	496	607	289	226	294	212
5	1060	363	387	319	308	449	489	581	289	225	252	212
6	1040	352	379	319	306	534	474	485	272	245	254	211
7	960	349	363	319	312	636	450	405	252	271	254	209
8	871	350	364	317	338	760	425	374	246	258	314	209
9	698	357	369	314	347	791	402	353	236	364	393	220
10	550	355	270	317	324	736	386	339	234	425	458	221
11	484	350	310	318	346	650	382	358	234	306	416	217
12	512	336	330	315	338	527	378	387	233	248	346	215
13	576	278	300	318	334	438	367	441	236	235	288	224
14	633	260	290	317	337	455	445	505	245	233	301	222
15	639	294	300	316	327	482	626	466	234	228	477	226
16	591	312	310	303	285	495	699	425	221	218	620	273
17	532	312	310	240	277	493	679	424	222	216	598	322
18	479	316	310	270	296	480	613	407	217	214	537	397
19	436	313	310	280	288	521	504	369	214	213	487	390
20	409	322	300	280	287	563	431	365	216	194	430	420
21	394	348	300	280	290	562	388	393	233	198	334	418
22	386	356	298	270	309	544	782	388	262	217	279	395
23	385	391	305	250	319	510	1370	361	258	217	263	349
24	385	402	306	250	330	488	1410	331	280	212	245	305
25	385	416	313	260	338	487	1260	308	271	199	237	270
26	400	420	317	260	338	517	1200	312	237	212	235	251
27	416	414	320	270	330	545	1110	341	256	207	233	242
28	421	409	322	270	328	522	841	393	275	245	233	236
29	416	404	319	270	---	526	585	450	249	309	238	231
30	396	400	322	270	---	507	469	475	230	409	236	233
31	376	---	326	270	---	497	---	523	---	457	229	---
TOTAL	18395	10679	10255	9094	8782	16284	19166	13149	7709	7899	10847	7996
MEAN	593	356	331	293	314	525	639	424	257	255	350	267
MAX	1110	420	410	330	347	791	1410	607	411	457	620	420
MIN	376	260	270	240	277	366	367	308	214	194	229	209
CFSM	.97	.58	.54	.48	.52	.86	1.05	.70	.42	.42	.57	.44
IN.	1.12	.65	.63	.56	.54	.99	1.17	.80	.47	.48	.66	.49

CAL YR 1986 TOTAL 182122 MEAN 499 MAX 3090 MIN 214 CFSM .82 IN. 11.1
WTR YR 1987 TOTAL 140255 MEAN 384 MAX 1410 MIN 194 CFSM .63 IN. 8.57

WISCONSIN RIVER BASIN

05406050 FISH LAKE NEAR SAUK CITY, WI

LAKE-STAGE RECORDS

LOCATION.--Lat 43°17'02", long 89°39'15", in NE 1/4 SW 1/4 sec.3, T.9 N., R.7 E., Dane County, Hydrologic Unit 07070005, on south side of lake near Ganser's Tavern and Dance Hall, 0.4 mi southwest of Crystal Lake, and 3.1 mi east of Sauk City.

DRAINAGE AREA.--8.97 mi², includes 7.11 mi² without surface drainage. Area of Fish Lake, 252 acres.

PERIOD OF RECORD.--November 1966 to September 1981 (fragmentary). April 1985 to current year.

REVISED RECORDS.--WDR WI 77-1: Drainage area.

GAGE.--Nonrecording gage in lake bed. Datum of gage is 848.07 ft above National Geodetic Vertical Datum of 1919. Staff gage read by James Vennie.

REMARKS.--Lake has no surface outlet.

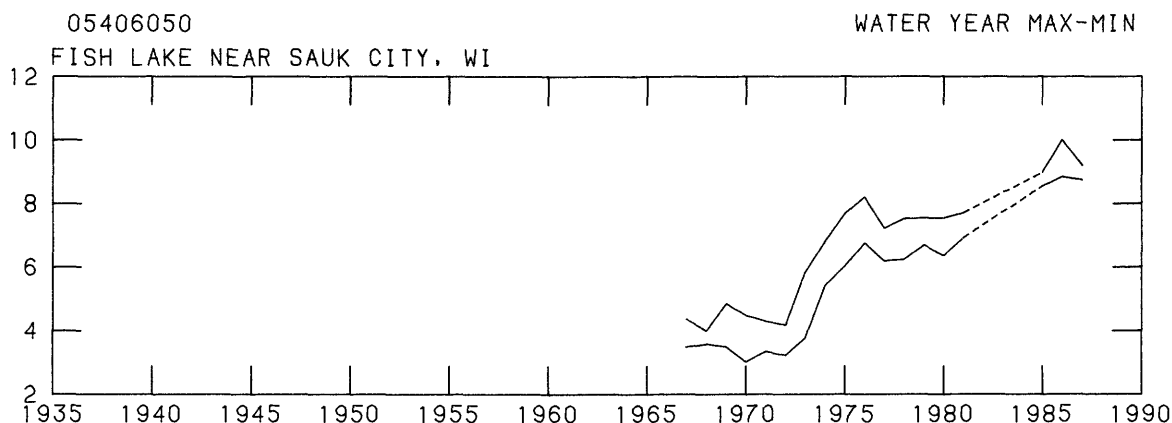
EXTREMES FOR PERIOD OF RECORD.--Maximum gage height observed, 10.00 ft, Sept. 17, 1986; minimum observed, 3.02 ft, Aug. 29, 1970.

EXTREMES FOR CURRENT YEAR.--Maximum gage height observed, 9.20 ft, Apr. 25; minimum observed, 8.74 ft, July 19.

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	GAGE HEIGHT	DATE	GAGE HEIGHT	DATE	GAGE HEIGHT	DATE	GAGE HEIGHT
MAR. 28	9.05	APR. 25	9.20	JULY 19	8.74	SEPT. 18	8.98
APR. 12	9.04	JUNE 27	8.87	AUG. 23	9.07		

STAGE, IN FEET ABOVE ARBITRARY DATUM



WATER-QUALITY RECORDS

LOCATION.--Lat 43°17'14", long 89°39'08", in NW 1/4 sec.3, T.9 N., R.7 E., Dane County, Hydrologic Unit 07070005, near center of lake, and 3.6 mi east of Sauk City.

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

REMARKS.--Secchi disc readings made by James Vennie.

SECCHI DISC TRANSPARENCY (IN METERS) WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	SECCHI DEPTH	DATE	SECCHI DEPTH	DATE	SECCHI DEPTH	DATE	SECCHI DEPTH
MAR. 28	2.74	APR. 25	2.97	JULY 19	1.37	SEPT. 18	3.05
APR. 12	2.35	JUNE 27	1.37	AUG. 23	1.68		

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: None, except for ice period listed in rating table below. Records are good.

AVERAGE DISCHARGE.--33 years, 33.5 ft³/s, 10.63 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)
Oct. 4	1345	*123	*2.86				
Minimum daily, 24 ft ³ /s Sept. 4.							

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second.
(Shifting-control method used Oct. 1 to Nov. 28; stage-discharge relation
affected by ice Jan. 23-26.)

1.6	17	2.0	63
1.7	25	2.5	126

DISCHARGE, IN 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	72	42	43	35	36	86	45	35	47	28	40	26
2	65	42	45	35	37	60	45	58	50	30	42	25
3	61	40	45	37	40	49	42	53	48	34	37	25
4	96	38	41	36	37	45	38	47	45	28	34	24
5	78	34	40	36	36	44	38	42	43	29	32	26
6	66	32	40	36	36	44	36	37	42	30	28	28
7	57	33	40	36	39	49	35	36	40	34	26	29
8	54	41	41	36	42	50	34	35	38	34	51	29
9	49	39	40	36	36	45	33	34	37	37	49	29
10	49	38	36	38	36	39	33	35	34	34	37	30
11	47	37	36	37	37	37	35	38	39	29	32	31
12	52	35	35	37	37	36	34	39	38	28	31	31
13	49	34	35	37	37	37	32	38	36	27	34	34
14	49	35	35	38	35	49	51	46	33	27	35	33
15	48	35	35	38	34	43	61	38	31	30	36	31
16	45	36	36	36	33	40	51	36	31	28	48	51
17	44	36	37	37	34	39	47	34	31	27	71	64
18	42	37	36	37	33	43	44	36	30	27	51	61
19	43	37	35	36	33	49	40	37	31	28	42	52
20	43	40	35	36	34	44	37	56	35	28	35	57
21	43	37	34	36	35	44	35	65	36	27	31	50
22	42	38	35	36	35	42	57	50	36	28	29	45
23	44	48	35	35	34	44	67	44	31	28	27	42
24	42	45	35	34	34	41	54	41	29	34	26	38
25	44	42	35	34	34	43	46	40	31	33	26	37
26	47	44	35	34	34	45	42	41	30	31	37	35
27	45	43	36	34	35	41	40	95	30	45	37	35
28	39	41	36	34	36	39	37	97	29	34	37	35
29	37	44	36	34	---	43	36	70	29	34	34	33
30	35	45	36	34	---	44	35	55	29	45	31	32
31	35	---	35	34	---	41	---	49	---	44	27	---
TOTAL	1562	1168	1154	1109	999	1395	1260	1457	1069	980	1133	1098
MEAN	50.4	38.9	37.2	35.8	35.7	45.0	42.0	47.0	35.6	31.6	36.5	36.6
MAX	96	48	45	38	42	86	67	97	50	45	71	64
MIN	35	32	34	34	33	36	32	34	29	27	26	24
CFSM	1.10	.85	.82	.78	.78	.99	.92	1.03	.78	.69	.80	.80
IN.	1.27	.95	.94	.90	.81	1.14	1.03	1.19	.87	.80	.92	.90

CAL YR 1986	TOTAL	18302	MEAN	50.1	MAX	190	MIN	32	CFSM	1.10	IN.	14.9
WTR YR 1987	TOTAL	14384	MEAN	39.4	MAX	97	MIN	24	CFSM	.86	IN.	11.7

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: None, except for ice periods listed in rating table below. Records good except those for ice-affected periods, which are fair. Flow regulated by 23 reservoirs and many powerplants upstream from station. In 1938 when the maximum of record occurred, there were 21 reservoirs upstream from station, the two large reservoirs, Petenwell and Castle Rock were not yet in existence. Usually 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.--74 years (1914-87), 8,752 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 80,800 ft³/s Sept. 16, 1938, gage height, 11.48 ft; minimum daily, 2,000 ft³/s Feb. 11, 1918.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 55,500 ft³/s Oct. 3, gage height, 9.77 ft; minimum discharge, 3,300 ft³/s Sept. 5, 6, gage height, 0.66 ft.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Dec. 10 to Jan. 1 and Jan. 18 to Feb. 19.)

0.6	3,160	6.0	25,800
1.0	4,180	8.0	40,000
2.0	7,260	10.0	57,600
4.0	15,300		

DISCHARGE, IN 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	46900	10900	8200	8000	6200	7920	10600	8360	4960	6120	6600	3740
2	53100	11100	8330	8250	6600	7950	9540	8530	5500	5570	6530	3680
3	54300	9610	8630	8000	6800	7840	9360	8630	5780	4380	6390	3680
4	46200	10800	8720	7810	7000	7410	8850	7890	5670	4090	6610	3420
5	32400	10100	9120	8130	7400	7880	8570	6390	5600	4020	6200	3330
6	28700	9630	8470	7960	7600	7770	8520	5970	5150	4110	5120	3460
7	28000	9700	8570	7580	7400	7720	7570	6060	4920	4390	4360	3900
8	26200	10100	9150	7860	8000	8050	7030	5790	4250	4690	5410	4230
9	22800	9960	8790	7930	8200	8290	7090	5630	4490	4630	6850	3920
10	20000	9460	8200	8010	7800	9010	6960	5480	4620	4710	6120	3820
11	19700	9410	7400	8060	7400	9420	7040	5640	4710	4840	5790	3750
12	20600	10100	6800	8330	7000	11200	6700	5810	5130	4650	5580	3650
13	19700	10100	7000	8580	7600	11200	6480	5900	5310	4970	5170	3640
14	19800	9320	7400	8230	7200	10500	6700	5710	5310	4980	5440	3810
15	23400	8710	8000	7850	7400	10900	7230	6020	5320	4940	5490	4060
16	29300	8780	9000	7620	6800	9660	7100	5980	5980	4720	4890	4280
17	36100	8790	9400	7880	6000	9100	7190	5610	5550	4910	6350	4650
18	39600	8340	9200	7000	6400	9400	6990	5390	4740	4870	8130	5420
19	35100	8140	8600	7400	7400	9060	7260	5720	4450	4850	6850	5620
20	25700	8390	9000	7000	7380	8720	6910	5670	3880	4180	7560	5650
21	19800	8590	9000	6200	7000	8710	6610	5480	3700	4470	5710	5590
22	17800	8920	8800	5800	6930	8150	7060	5420	3720	4660	5530	5530
23	17600	9930	9000	5600	7160	8050	8210	5190	4820	4520	5420	5400
24	17400	9640	8800	5600	6940	7880	9200	5180	5950	4740	4800	5040
25	14400	8970	8400	5400	7270	8110	9200	4930	6660	4570	4410	5030
26	13800	8770	8600	5000	7300	8320	9130	5030	6320	4660	4560	4230
27	13600	8790	7800	6200	7540	8560	9970	4960	6340	4960	4520	4010
28	13400	8710	8000	6800	7570	9010	9130	5350	6760	5410	4220	4030
29	11900	8750	8200	6600	---	9780	9570	5610	6570	5900	3920	4000
30	11700	8460	8200	6800	---	10700	9120	5390	6260	6310	4040	3830
31	10200	---	7800	6400	---	10600	---	5270	---	6460	3780	---
TOTAL	789200	280970	260580	223880	201290	276870	240890	183990	158420	151280	172350	128400
MEAN	25460	9366	8406	7222	7189	8931	8030	5935	5281	4880	5560	4280
MAX	54300	11100	9400	8580	8200	11200	10600	8630	6760	6460	8130	5650
MIN	10200	8140	6800	5000	6000	7410	6480	4930	3700	4020	3780	3330
CAL YR 1986	TOTAL 4366410	MEAN 11960	MAX 54300	MIN 4840								
WTR YR 1987	TOTAL 3068120	MEAN 8406	MAX 54300	MIN 3330								

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 1986 TO SEPTEMBER 1987

DATE	TIME	DIS-CHARGE, IN CUBIC FEET PER SECOND (00060)	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	
NOV , 1986											
05...	1015	--	9940	210	7.80	7.5	5.4	11.0	743	94	
DEC											
11...	1200	7400	--	230	7.70	0.0	3.7	13.6	740	96	
MAR , 1987											
24...	0930	--	7710	260	7.90	7.5	4.5	12.4	737	107	
MAY											
04...	1230	--	8020	225	8.80	12.5	2.2	12.3	754	117	
JUN											
24...	1000	--	5820	220	7.90	25.5	3.9	6.6	736	84	
AUG											
26...	1200	--	4590	295	8.50	17.5	6.0	9.4	744	101	
DATE		COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCOCCI, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS WH WAT TOT FLD AS CACO3 (MG/L CACO3) (00900)	HARD-NESS NONCARB WH WAT TOT FLD AS CACO3 (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)	PERCENT SODIUM RATIO (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)
NOV , 1986											
05...	K2	26	93	14	21	9.8	4.6	9	0.2	2.6	
DEC											
11...	K1	74	110	16	24	11	5.4	10	0.2	2.0	
MAR , 1987											
24...	K5	K6	110	14	27	11	7.5	12	0.3	2.0	
MAY											
04...	K190	36	110	14	25	12	5.8	10	0.2	2.5	
JUN											
24...	73	39	120	14	27	12	6.8	11	0.3	2.0	
AUG											
26...	150	45	140	19	31	15	7.5	10	0.3	2.3	
DATE		BICAR-BONATE WATER DISSOLV FIELD AS HCO3 (MG/L) (00453)	CAR-BONATE WATER DISSOLV FIELD AS CO3 (MG/L) (00452)	ALKA-LINITY WATER DISSOLV FLD. AS CACO3 (MG/L) (39086)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	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)
NOV , 1986											
05...	98	--	80	2.4	12	8.3	<0.10	8.3	140	110	
DEC											
11...	104	--	85	3.4	18	10	<0.10	9.7	143	140	
MAR , 1987											
24...	112	--	92	2.4	19	12	0.10	10	155	150	
MAY											
04...	105	5	94	0.3	13	10	0.10	1.1	128	130	
JUN											
24...	126	--	104	2.5	13	11	<0.10	5.8	145	140	
AUG											
26...	138	5	122	0.7	13	11	0.10	1.9	162	150	
DATE		SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P) (00671)	
NOV , 1986											
05...	0.19	3760	0.620	0.020	0.020	1.1	0.080	0.020	0.030		
DEC											
11...	0.19	2860	0.920	--	0.080	--	--	0.050	0.030		
MAR , 1987											
24...	0.21	3230	0.860	<0.010	0.020	0.90	0.070	0.030	0.020		
MAY											
04...	0.17	2770	0.200	0.030	0.060	1.6	0.070	0.080	0.010		
JUN											
24...	0.20	2280	0.360	0.240	0.270	0.70	0.090	0.050	0.020		
AUG											
26...	0.22	2010	0.150	<0.010	<0.010	1.5	0.060	0.030	0.030		

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

WISCONSIN RIVER BASIN

05407000 WISCONSIN RIVER AT MUSCODA, WI--CONTINUED

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (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 , 1986											
05...	1015	9940	20	<1	23	<0.5	<1	<1	<3	6	560
MAR , 1987											
24...	0930	7710	10	<1	20	<0.5	<1	<1	<3	4	450
MAY											
04...	1230	8020	<10	<1	16	<0.5	1	<1	<3	3	120
AUG											
26...	1200	4590	<10	1	19	<0.5	3	<1	<3	1	8

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 , 1986										
05...	<5	5	16	0.1	<10	5	<1	38	<6	7
MAR , 1987										
24...	<5	<4	10	<0.1	<10	2	<1	38	<6	7
MAY										
04...	<5	6	6	<0.1	<10	2	<1	37	<6	8
AUG										
26...	<5	<4	3	<0.1	<10	<1	<1	44	<6	10

DATE	TIME	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
NOV , 1986								
05...	1015	--	9940	210	7.5	16	429	59
DEC								
11...	1200	7400	--	230	0.0	--	--	--
MAR , 1987								
24...	0930	--	7710	260	7.5	21	437	30
MAY								
04...	1230	--	8020	225	12.5	31	671	79
JUN								
24...	1000	--	5820	220	25.5	29	456	86
AUG								
26...	1200	--	4590	295	17.5	24	297	83

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: Oct. 1, June 20 to July 11, and ice periods listed in rating table below. Records good except those for estimated daily discharges, which are fair. Gage-height telemeter at station.

AVERAGE DISCHARGE.--49 years, 179 ft³/s, 9.14 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)
Apr. 22	2115	*1,450	*8.13				
Minimum daily discharge, 92 ft ³ /s Jan. 16, result of freezeup.							

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Shifting-control method used Apr. 21 to July 25, stage-discharge relation affected by ice Dec. 10-29, and Jan. 17 to Feb. 21.)

2.3	87	6.0	813
3.0	183	8.0	1,380
4.0	358		

DISCHARGE, IN 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	230	189	160	144	140	154	203	190	185	130	298	128
2	216	180	164	144	140	147	193	289	182	130	208	129
3	263	176	171	143	140	145	183	242	167	120	184	128
4	477	175	162	140	140	152	179	162	151	120	190	118
5	378	170	118	139	150	236	180	186	141	120	120	121
6	266	173	187	140	150	289	167	183	141	130	156	130
7	239	171	163	145	150	266	166	179	145	180	153	132
8	228	190	146	140	160	301	162	179	144	140	168	131
9	212	185	164	129	160	240	164	169	146	130	187	129
10	198	171	e150	149	160	187	162	172	134	130	165	126
11	200	159	150	145	160	172	162	254	143	130	148	118
12	271	163	150	135	160	156	162	258	151	144	146	125
13	258	156	140	139	160	159	161	182	148	145	153	141
14	237	228	140	150	150	195	187	318	137	126	219	137
15	232	204	150	132	150	190	237	235	129	122	231	131
16	216	183	150	92	160	186	200	187	126	118	343	152
17	206	168	150	120	160	163	181	179	125	119	357	201
18	189	174	150	130	150	171	173	173	125	111	211	169
19	185	184	150	140	150	199	159	209	130	112	178	142
20	193	186	150	150	150	189	160	202	150	124	162	144
21	187	179	150	150	150	181	181	186	150	120	150	152
22	184	172	150	140	165	178	864	175	150	120	157	142
23	190	175	150	140	180	183	825	171	140	110	146	142
24	188	165	150	140	146	182	374	161	130	120	143	131
25	176	159	150	140	140	196	287	164	130	128	140	132
26	187	161	150	140	139	242	253	183	130	116	140	125
27	190	164	150	140	144	212	232	183	130	454	141	134
28	183	163	150	140	144	186	213	182	130	468	141	128
29	173	158	150	140	---	194	205	181	130	249	134	121
30	172	158	153	140	---	190	195	172	130	388	145	130
31	170	---	145	140	---	187	---	160	---	646	134	---
TOTAL	6894	5239	4713	4296	4248	6028	7170	6066	4250	5500	5548	4069
MEAN	222	175	152	139	152	194	239	196	142	177	179	136
MAX	477	228	187	150	180	301	864	318	185	646	357	201
MIN	170	156	118	92	139	145	159	160	125	110	120	118
CFSM	.84	.66	.57	.52	.57	.73	.90	.74	.53	.67	.67	.51
IN.	.96	.73	.66	.60	.59	.84	1.00	.85	.59	.77	.78	.57

CAL YR 1986	TOTAL 76846	MEAN 211	MAX 2040	MIN 100	CFSM .79	IN. 10.7
WTR YR 1987	TOTAL 64021	MEAN 175	MAX 864	MIN 92	CFSM .66	IN. 8.95

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: None, except for ice periods listed in rating table below. Records good except for ice-affected periods, which are fair. Gage-height telemeter at station.

AVERAGE DISCHARGE.--54 years, 487 ft³/s, 9.63 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)
Apr. 25	0300	*1,260	*10.52				

Minimum daily discharge, 370 ft³/s Jan. 17, 25, 26, result of freezeup.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Shifting-control method used Oct. 13 to Nov. 10, Apr. 26 to July 28, and July 30, 31; stage-discharge relation affected by ice Nov. 13-16, Dec. 10-27, and Jan. 18 to Feb. 20.)

6.2	364	9.0	882
7.0	486	10.0	1,120
8.0	676	11.0	1,400

DISCHARGE, IN 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	853	510	497	464	380	476	545	586	493	420	979	400
2	714	515	503	461	380	489	549	627	521	404	861	389
3	710	526	513	460	390	493	546	667	549	394	567	383
4	797	513	515	458	400	485	522	687	501	391	481	381
5	959	507	505	455	400	493	509	599	469	393	460	381
6	1010	504	477	456	410	544	499	535	461	385	439	377
7	814	502	470	458	410	632	492	548	445	403	393	388
8	719	508	515	456	420	651	486	537	439	464	447	403
9	676	510	495	455	420	666	477	522	433	458	484	396
10	637	520	470	453	420	635	471	517	431	416	479	390
11	607	507	460	448	420	559	472	515	432	404	452	387
12	632	491	450	460	430	508	472	532	437	401	423	384
13	685	450	440	452	430	499	466	611	446	418	416	384
14	721	440	440	447	430	502	476	561	436	422	472	397
15	666	480	440	452	420	527	506	580	426	409	510	411
16	646	520	450	444	380	543	572	633	409	390	576	409
17	618	526	470	370	400	514	559	541	407	386	635	476
18	594	506	470	400	410	511	513	515	397	375	779	495
19	573	495	470	430	410	519	489	537	404	381	593	513
20	557	474	460	430	410	534	473	550	414	379	496	478
21	551	485	450	420	429	541	461	576	433	377	467	454
22	549	522	450	410	442	526	576	545	451	376	448	444
23	549	516	450	390	453	521	1010	516	445	373	429	442
24	542	515	460	380	476	516	1230	501	443	385	420	430
25	540	509	460	370	470	529	1200	495	422	391	410	421
26	542	503	470	370	449	555	881	500	414	390	411	411
27	537	502	470	380	446	599	738	517	420	450	409	409
28	542	502	469	380	449	596	676	537	418	758	414	402
29	536	504	468	380	---	565	638	527	409	929	418	404
30	525	500	466	380	---	557	609	512	414	712	413	403
31	508	---	465	380	---	554	---	500	---	688	401	---
TOTAL	20109	15062	14588	13149	11784	16839	18113	17126	13219	13922	15582	12442
MEAN	649	502	471	424	421	543	604	552	441	449	503	415
MAX	1010	526	515	464	476	666	1230	687	549	929	979	513
MIN	508	440	440	370	380	476	461	495	397	373	393	377
CFSM	.94	.73	.68	.62	.61	.79	.88	.80	.64	.65	.73	.60
IN.	1.09	.82	.79	.71	.64	.91	.98	.93	.72	.75	.84	.67

CAL YR 1986 TOTAL 209015 MEAN 573 MAX 2170 MIN 400 CFSM .83 IN. 11.3
WTR YR 1987 TOTAL 181935 MEAN 498 MAX 1230 MIN 370 CFSM .73 IN. 9.85

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 Saxner, used as a reservoir since 1908, has a usable capacity of 202,000,000 ft³. Drainage area, 73.1 mi².
- 05390800 Pickerel Lake on St. Germain River, lat 45°52'22", long 89°31'47", in NE 1/4 sec.18, T.39 N., R.8 E., Oneida County, 5.0 mi northeast of town of Lake Tomahawk, used as a reservoir since 1935, has a usable capacity of 338,000,000 ft³. Drainage area, 86.2 mi².
- 05390900 Rainbow Lake on Wisconsin River, lat 45°50'02", long 89°32'42", in SW 1/4 sec.30, T.39 N., R.8 E., Oneida County, 800 ft upstream from U.S. Geological Survey river gaging station, 2.7 mi northeast of town of Lake Tomahawk, used as a reservoir since 1935, has a usable capacity of 2,181,000,000 ft³. Drainage area, 744 mi².
- 05391100 South Pelican Lake on Pelican River, lat 45°31'37", long 89°12'24", in S 1/2 sec.11, T.35 N., R.10 E., Oneida County, 2.8 mi northwest of town of Pelican Lake, used as a reservoir since 1909, has a usable capacity of 305,000,000 ft³. Drainage area, 19.8 mi².
- 05391300 North Pelican Lake (includes Moen Lakes) on North Branch Pelican River, lat 45°38'05", long 89°14'38", in SE 1/4 sec.4, T.36 N., R.10 E., Oneida County, 0.2 mi below Twin Lakes Creek and 8.0 mi east of Rhinelander city limits, used as a reservoir since 1908, has a usable capacity of 218,000,000 ft³. Drainage area, 95 mi².
- 05392100 Minocqua Lake on Tomahawk River, lat 45°52'35", long 89°43'38", on line between secs.10 and 15, T.39 N., R.6 E., Oneida County, 1.0 mi west of Minocqua, used as a reservoir since 1910, has a usable capacity of 628,000,000 ft³. Drainage area, 72.5 mi².
- 05392200 Squirrel Lake on Squirrel River, lat 45°50'37", long 89°54'13", in NE 1/4 sec.30, T.39 N., R.5 E., Oneida County, 9.4 mi west of Minocqua, used as a reservoir since 1908, has a usable capacity of 182,000,000 ft³. Drainage area, 15.2 mi².
- 05392300 Willow Reservoir on Tomahawk River, lat 45°42'45", long 89°50'38", in NE 1/4 sec.10, T.37 N., R.5 E., Oneida County, 8.8 mi southwest of Hazelhurst, used as a reservoir since 1927, has a usable capacity of 3,302,000,000 ft³. Drainage area, 310 mi².
- 05392500 Lake Nokomis on Tomahawk River, lat 45°32'20", long 89°44'48", in NW 1/4 sec.9, T.35 N., R.6 E., Lincoln County, at U.S. Geological Survey river gaging station, 0.5 mi east of Bradley, used as a reservoir since 1912, has a usable capacity of 1,808,000,000 ft³. Drainage area, 544 mi².
- 05393600 Spirit River Flowage on Spirit River, lat 45°26'18", long 89°44'30", in NE 1/4 sec.16, T.34 N., R.6 E., Lincoln County, 2.0 mi south of Tomahawk, used as a reservoir since 1923, has a usable capacity of 756,000,000 ft³. Drainage area, 158 mi².

RESERVOIRS IN WISCONSIN RIVER BASIN--CONTINUED

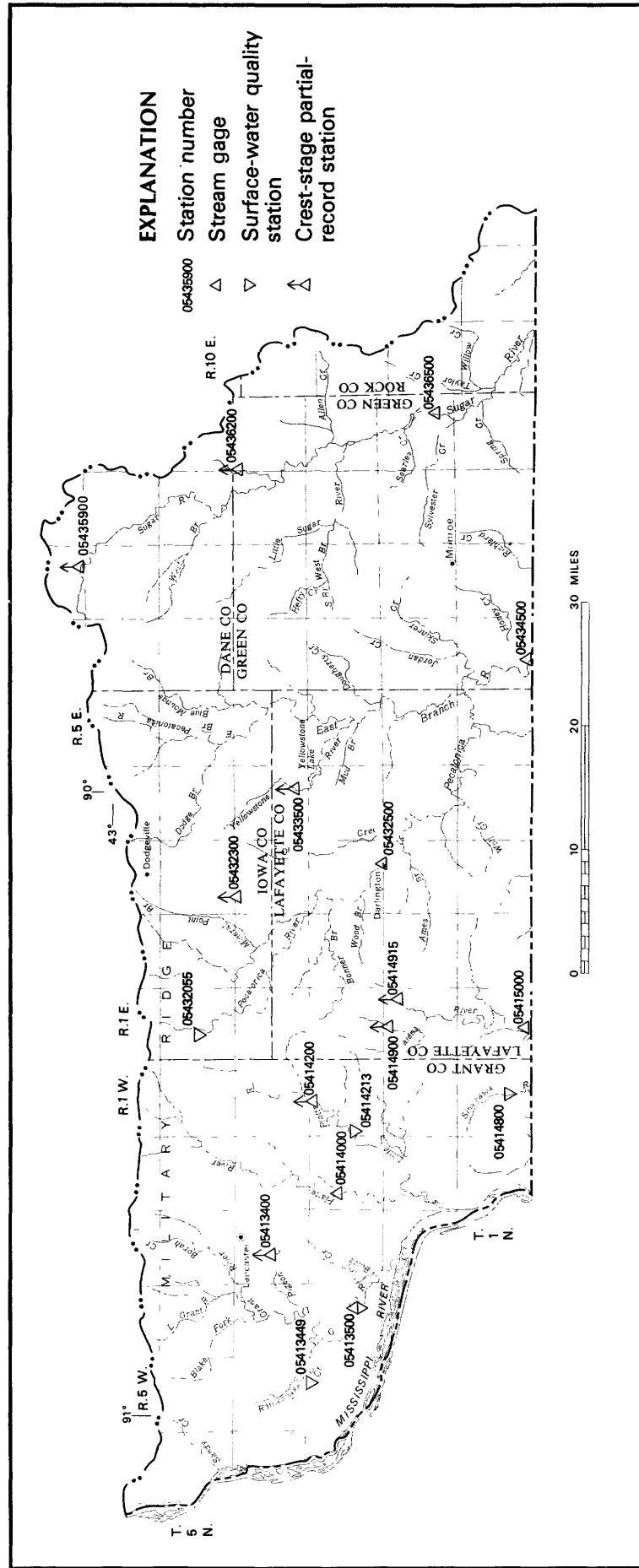
- 05399600 Big Eau Pleine Reservoir on Big Eau Pleine River, lat 44°43'52", long 89°45'35", in SW 1/4 sec.14, T.26 N., R.6 E., Marathon County, 3.0 mi northeast of Dancy, used as a reservoir since 1937, has a capacity of 4,457,000,000 ft³. Drainage area, 363 mi².
- 05400295 Lake Dubay on Wisconsin River, lat 44°39'54", long 89°39'03", in sec.10, T.25 N., R.7 E., Wood County, 1.5 mi downstream of Little Eau Pleine River and 10.5 mi northwest of Stevens Point, has a usable capacity of 2,117,000,000 ft³. Drainage area, 4,900 mi².
- 05401400 Petenwell Flowage on Wisconsin River, lat 44°03'26", long 90°01'18", in SE 1/4 sec.4, T.18 N., R.4 E., Adams County, 5.2 mi upstream from Roche a Cri Creek, 2.4 mi west of Strongs Prairie, and 3.5 mi northeast of Necedah, used as a reservoir since 1950, has a total capacity of 19,880,000,000 ft³. Drainage area, 5,970 mi².
- 05403200 Castle Rock Flowage on Wisconsin River, lat 43°51'48", long 89°57'38", in sec.13, T.16 N., R.4 E., Adams County, 4.5 mi upstream from Duck Creek, and 2.0 mi south of Germantown, and 7.0 mi northeast of Mauston, used as a reservoir since 1950, has a total capacity of 7,630,000,000 ft³. Drainage area, 7,056 mi².

MONTH-END CONTENTS, IN MILLIONS OF CUBIC FEET, WATER YEAR OCTOBER 1986 to SEPTEMBER 1987

	LAC VIEUX DESERT	TWIN LAKES	BUCKATABON LAKE	SEVENMILE LAKE	LOWER NINEMILE LAKE	BURNT ROLLWAYS RESERVOIR	LONG LAKE	DEERSKIN LAKE
SEPT. 30.....	311	195	114	63	103	546	263	20
OCT. 31.....	367	217	114	68	103	581	233	17
NOV. 30.....	232	178	96	38	70	420	149	19
DEC. 31.....	88	89	63	9	6	157	105	18
JAN. 31.....	38	30	38	8	32	0	34	17
FEB. 28.....	31	8	27	6	41	0	37	15
MAR. 31.....	58	25	65	19	81	84	60	14
APR. 30.....	92	58	99	35	102	332	192	14
MAY 31.....	127	83	115	45	101	463	200	15
JUNE 30.....	109	72	112	49	103	435	187	15
JULY 31.....	161	111	114	53	100	487	198	16
AUG. 31.....	123	100	112	53	92	426	171	13
SEPT. 30.....	123	67	114	56	101	389	161	12

	SUGAR CAMP RESERVOIR	LITTLE ST. GERMAIN LAKE	BIG ST. GERMAIN LAKE	PICKEREL LAKE	RAINBOW LAKE	SOUTH PELICAN LAKE	NORTH PELICAN LAKE	MINOCQUA LAKE
SEPT. 30.....	447	69	156	271	2,119	305	149	556
OCT. 31.....	414	71	158	265	2,068	263	129	545
NOV. 30.....	325	49	87	234	2,037	155	84	406
DEC. 31.....	269	28	36	199	1,906	92	74	198
JAN. 31.....	60	11	23	175	1,467	40	21	293
FEB. 28.....	0	9	19	162	776	6	27	15
MAR. 31.....	192	31	21	155	456	48	90	92
APR. 30.....	277	42	103	262	438	103	132	172
MAY 31.....	309	50	162	275	554	108	130	250
JUNE 30.....	302	50	155	268	747	136	119	258
JULY 31.....	325	69	159	269	1,019	124	127	332
AUG. 31.....	305	63	156	267	857	102	107	296
SEPT. 30.....	294	57	156	263	774	79	92	277

	SQUIRREL LAKE	WILLOW RESERVOIR	LAKE NOKOMIS	SPIRIT RIVER FLOWAGE	BIG EAU PLEINE RESERVOIR	LAKE DUBAY	PETENWELL FLOWAGE	CASTLE ROCK FLOWAGE
SEPT. 30.....	169	3,190	1,737	691	4,277	4,017	17,307	5,773
OCT. 31.....	169	3,141	1,752	692	4,349	4,178	17,641	5,936
NOV. 30.....	131	2,764	1,302	600	3,957	4,213	17,756	5,857
DEC. 31.....	69	2,134	985	387	3,075	4,191	16,995	5,671
JAN. 31.....	21	1,408	594	178	2,209	3,996	16,066	5,418
FEB. 28.....	20	903	320	35	1,488	3,478	15,302	4,384
MAR. 31.....	62	1,224	536	341	2,334	3,338	15,486	4,490
APR. 30.....	91	1,684	1,059	652	2,740	4,150	17,571	5,956
MAY 31.....	112	1,721	1,311	638	2,688	4,559	18,125	6,022
JUNE 30.....	103	1,652	1,358	544	2,591	4,233	17,932	6,214
JULY 31.....	138	1,675	1,385	467	2,645	4,245	17,984	6,068
AUG. 31.....	130	1,346	1,056	297	2,707	4,265	17,703	5,857
SEPT. 30.....	140	1,162	848	253	2,410	4,138	17,756	5,890



PECATONICA-SUGAR RIVER BASIN

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

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.

PERIOD OF RECORD.--July to September 1987.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: July to September 1987.

DISSOLVED OXYGEN: July to September 1987.

INSTRUMENTATION.--Continuous water temperature and dissolved oxygen recorder since July 17, 1987.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum observed, 30.5°C July 20, 1987; minimum observed, 12.5°C September 25, 1987.

DISSOLVED OXYGEN: Maximum observed, 15.3 mg/L September 12, 1987; minimum observed, 0.0 mg/L September 17, 1987.

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	PH (STAND- ARD UNITS) (00400)	PH LAB (STAND- ARD UNITS) (00403)	TEMPER- ATURE WATER (DEG C) (00010)	TUR- BID- ITY (NTU) (00076)	OXYGEN, DIS- SOLVED (MG/L) (00300)	SOLIDS, RESIDUE 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)
JUL , 1987									
30...	1100	--	7.80	22.5	>40	0.6	432	2.10	3.00
30...	1130	--	7.70	22.5	>40	0.1	410	2.10	4.10
30...	1200	--	7.60	23.0	>40	0.1	420	2.20	3.30
30...	1400	--	7.30	24.5	>80	1.2	264	--	1.10
30...	2245	--	7.50	25.5	50	2.9	120	--	0.550
AUG									
08...	0415	--	7.80	21.0	>80	7.3	258	3.10	0.050
08...	0615	--	7.90	20.5	>80	7.3	480	2.90	0.130
08...	0830	--	7.80	20.0	>80	6.2	924	2.50	0.640
08...	1045	--	7.80	19.5	>80	6.3	402	2.40	1.10
08...	1600	--	7.70	19.5	58	5.2	182	2.30	0.940
09...	0100	--	7.70	19.5	15	6.2	38	3.00	0.140
SEP									
17...	0515	--	8.20	18.0	31	6.9	166	--	0.240
17...	0645	--	8.20	18.0	60	6.5	352	--	0.500
17...	0945	--	7.60	17.5	130	3.8	640	--	3.00
17...	1110	7.90	7.80	18.5	170	4.0	680	--	1.50
17...	1111	7.80	--	18.5	96	4.0	--	--	1.70
17...	1300	7.80	8.00	18.5	96	4.8	380	--	1.10
17...	1301	8.00	--	18.5	--	4.8	--	--	1.20

TEMPERATURE, WATER, DEGREES CENTIGRADE, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

OXYGEN, DISSOLVED (DO), MG/L, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

[illegible]

05413449 RATTLESNAKE CREEK NEAR NORTH ANDOVER, WI--CONTINUED

PRECIPITATION QUANTITY

PERIOD OF RECORD.--July to September 1987.

GAGE.--Micrologger.

REMARKS.--Records good.

EXTREMES FOR CURRENT YEAR.--Maximum daily rainfall, 2.96 in., August 8.

RAINFALL, ACCUMULATED (INCHES), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	---	---	.00	.05
2	---	---	---	---	---	---	---	---	---	---	.03	.00
3	---	---	---	---	---	---	---	---	---	---	.45	.00
4	---	---	---	---	---	---	---	---	---	---	.00	.01
5	---	---	---	---	---	---	---	---	---	---	.00	.03
6	---	---	---	---	---	---	---	---	---	---	.00	.14
7	---	---	---	---	---	---	---	---	---	---	.11	.07
8	---	---	---	---	---	---	---	---	---	---	2.96	.00
9	---	---	---	---	---	---	---	---	---	---	.00	.00
10	---	---	---	---	---	---	---	---	---	---	.00	.04
11	---	---	---	---	---	---	---	---	---	---	.00	.00
12	---	---	---	---	---	---	---	---	---	---	.00	.01
13	---	---	---	---	---	---	---	---	---	---	.26	.40
14	---	---	---	---	---	---	---	---	---	---	.20	.45
15	---	---	---	---	---	---	---	---	---	---	.09	.02
16	---	---	---	---	---	---	---	---	---	---	.02	.25
17	---	---	---	---	---	---	---	---	---	---	.00	.97
18	---	---	---	---	---	---	---	---	---	---	.73	.00
19	---	---	---	---	---	---	---	---	---	---	.02	.08
20	---	---	---	---	---	---	---	---	---	---	.10	.09
21	---	---	---	---	---	---	---	---	---	.00	.59	.10
22	---	---	---	---	---	---	---	---	---	.00	.00	.00
23	---	---	---	---	---	---	---	---	---	.00	.00	.00
24	---	---	---	---	---	---	---	---	---	.78	.00	.00
25	---	---	---	---	---	---	---	---	---	.00	.34	.00
26	---	---	---	---	---	---	---	---	---	.00	.76	.00
27	---	---	---	---	---	---	---	---	---	.60	.00	.00
28	---	---	---	---	---	---	---	---	---	.00	.00	.02
29	---	---	---	---	---	---	---	---	---	.15	.00	.00
30	---	---	---	---	---	---	---	---	---	2.75	.01	.00
31	---	---	---	---	---	---	---	---	---	.00	.00	---
TOTAL	---	---	---	---	---	---	---	---	---	---	6.67	2.73

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: None, except for ice periods listed in rating table below. Records good except for ice-affected periods, which are fair.

AVERAGE DISCHARGE.--53 years, 169 ft³/s, 8.53 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)
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July 30	0915	*1,800	*15.56				
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Minimum discharge, 80 ft³/s, Jan. 16, result of freezeup.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Nov. 13-17, Dec. 10-26, and Jan. 17 to Feb. 14.)

4.7	96	8.0	442
5.0	120	10.0	721
6.0	213	12.0	1,040

DISCHARGE, IN 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	191	159	147	132	120	222	183	152	363	112	167	129
2	179	155	153	131	120	227	177	156	240	112	136	127
3	175	152	155	130	140	320	168	156	160	114	131	124
4	293	153	147	128	130	169	164	146	147	113	133	123
5	273	151	133	128	120	157	160	142	142	112	121	122
6	209	150	155	129	120	153	156	142	139	112	116	122
7	190	149	147	130	130	151	153	141	136	114	114	122
8	178	152	148	127	150	149	150	139	133	113	397	136
9	166	149	146	122	140	144	148	137	130	113	447	129
10	159	143	150	133	130	132	147	137	127	112	192	121
11	159	143	140	129	130	133	148	152	132	110	161	122
12	183	139	140	125	130	132	145	140	137	110	148	121
13	180	160	130	129	130	131	141	133	129	112	145	123
14	168	150	150	131	130	140	161	138	126	109	165	130
15	162	150	140	128	127	147	182	139	123	217	192	130
16	159	150	140	107	123	143	161	131	119	136	152	130
17	156	150	140	130	132	141	151	131	119	115	144	219
18	153	152	140	120	130	151	148	147	119	110	152	217
19	151	147	140	120	126	196	144	197	119	110	176	150
20	150	151	140	120	124	189	141	162	125	112	143	147
21	149	146	140	120	124	177	141	161	146	107	151	153
22	148	143	140	110	131	169	176	145	145	106	149	146
23	151	154	140	100	128	163	221	138	125	105	134	140
24	149	152	140	120	125	163	206	136	120	114	129	136
25	156	145	140	130	124	180	185	139	120	134	130	133
26	188	145	140	120	124	183	178	153	120	111	152	131
27	193	147	137	120	122	171	171	146	116	115	183	129
28	170	144	133	120	127	165	162	148	115	160	149	127
29	163	144	132	120	---	183	161	145	117	126	148	127
30	157	144	133	120	---	184	156	139	116	887	139	126
31	156	---	132	120	---	177	---	139	---	264	134	---
TOTAL	5414	4469	4388	3829	3587	5242	4885	4507	4205	4597	5130	4092
MEAN	175	149	142	124	128	169	163	145	140	148	165	136
MAX	293	160	155	133	150	320	221	197	363	887	447	219
MIN	148	139	130	100	120	131	141	131	115	105	114	121
CFSM	.65	.55	.53	.46	.48	.63	.61	.54	.52	.55	.62	.51
IN.	.75	.62	.61	.53	.50	.72	.68	.62	.58	.64	.71	.57
CAL YR 1986	TOTAL 63638	MEAN 174	MAX 1790	MIN 88	CFSM .65	IN. 8.80						
WTR YR 1987	TOTAL 54345	MEAN 149	MAX 887	MIN 100	CFSM .55	IN. 7.52						

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 during considerable discharge (greater than 300 ft³/s) are good because sampling and analysis effort were concentrated on high-discharge periods. Records for remaining periods are fair because of infrequent (about twice per week) sampling. 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, 2,870 mg/L July 30, minimum daily mean, 10 mg/L Jan. 17 to Feb. 2, and Feb. 7. Maximum observed, 10,260 mg/L July 30; minimum observed, 11 mg/L Jan. 13, Feb. 24.

SUSPENDED-SEDIMENT DISCHARGE: Maximum daily, 10,100 tons July 30; minimum daily, 2.7 tons Jan. 23.

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SEDI- MENT, SUS- PENDE D (MG/L) (80154)	DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SEDI- MENT, SUS- PENDE D (MG/L) (80154)
OCT , 1986				JUN , 1987			
02...	0900	179	89	01...	0755	137	190
04...	1330	322	453	04...	0750	147	293
07...	0955	190	131	08...	0745	134	216
09...	0930	168	112	11...	0810	128	269
27...	1215	193	74	15...	0805	123	172
27...	1216	193	104	26...	1145	119	170
NOV				JUL			
19...	1000	147	27	07...	1300	114	72
DEC				07...	1301	114	62
02...	1140	154	20	11...	0830	110	48
10...	0945	150*	21	25...	0855	142	178
JAN , 1987				27...	1050	113	110
13...	1145	117	11	30...	0730	1520	10300
FEB				30...	1220	1390	4230
24...	1330	125	11	30...	1615	1120	2050
24...	1331	125	28	AUG			
MAR				01...	0905	166	361
27...	0740	127	106	03...	0845	129	180
27...	0900	127	82	06...	0750	117	140
APR				08...	1555	558	1470
01...	0745	185	57	09...	0925	484	656
04...	0905	164	54	12...	0830	149	171
07...	0745	153	57	15...	0850	205	266
07...	1320	153	33	17...	0950	145	112
07...	1321	153	31	17...	1220	146	124
09...	0745	148	118	17...	1221	146	148
13...	0745	141	90	20...	0840	144	116
16...	0745	162	81	23...	0930	134	90
20...	0940	142	69	27...	0855	190	168
24...	0745	213	118	27...	1300	188	111
27...	0750	172	137	27...	1301	187	144
30...	0745	156	91	31...	0745	134	650
MAY				SEP			
04...	0745	146	65	03...	0745	124	85
05...	1045	141	46	08...	0745	122	454
07...	0745	141	104	10...	0745	121	107
11...	0745	158	134	15...	0850	131	102
14...	0750	136	134	17...	0745	149	107
18...	0750	130	119	21...	0745	154	137
21...	0735	163	199	24...	0745	137	92
26...	0740	157	182	28...	0745	127	89
28...	0745	149	224				

05413500 GRANT RIVER AT BURTON, WI--CONTINUED

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

		DIS-CHARGE, IN CUBIC FEET PER SECOND (00060)	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	
NOV , 1986											
19...	1000	--	147	580	8.30	0.0	2.7	14.2	749	99	
DEC 10...		0945	150	--	640	8.30	0.0	3.4	14.4	752	100
MAR , 1987											
27...	0900	--	127	630	8.40	6.5	9.0	11.8	745	98	
MAY 05...		1045	--	141	610	8.20	12.5	2.0	10.6	754	101
JUN 26...		1145	--	119	625	8.30	32	7.9	744	93	
AUG 27...		1300	--	188	600	8.30	28	8.8	749	90	
		COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCHI, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS (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)	PERCENT SODIUM (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)
NOV , 1986											
19...	140	1800	330	46	73	35	7.1	4	0.2	2.0	
DEC 10...		K8	96	350	44	79	37	7.4	4	0.2	2.0
MAR , 1987											
27...	770	33000	340	44	78	35	8.8	5	0.2	3.6	
MAY 05...		K66	K53	330	40	73	36	7.1	4	0.2	2.2
JUN 26...		1100	330	340	46	78	36	8.2	5	0.2	3.2
AUG 27...		>6000	>10000	340	110	77	35	9.3	6	0.2	4.2
		BICAR-BONATE WATER DISSOLV FIELD AS HCO3 (MG/L) (00453)	CAR-BONATE WATER DISSOLV FIELD AS CO3 (MG/L) (00452)	ALKA-LINITY WATER DISSOLV FLD. AS CAC03 (MG/L) (39086)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	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 SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)
NOV , 1986											
19...	301	27	292	2.7	24	17	0.20	9.9	329	340	
DEC 10...		374	9	322	2.9	25	20	0.10	9.7	334	380
MAR , 1987											
27...	307	15	282	2.2	23	22	0.10	7.8	357	370	
MAY 05...		332	--	272	3.5	24	16	0.10	8.4	340	340
JUN 26...		327	14	292	2.9	23	16	0.10	12	381	360
AUG 27...		320	22	298	2.2	23	17	0.10	13	371	320
		SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00665)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P) (00671)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (MG/L) (70331)
NOV , 1986											
19...	0.45	131	3.70	<0.010	<0.010	1.0	0.070	0.070	0.060	27	79
DEC 10...		0.45	135	3.80	0.010	0.020	0.40	0.090	0.060	21	--
MAR , 1987											
27...	0.49	122	3.70	0.060	0.070	0.070	1.2	0.200	0.130	82	84
MAY 05...		0.46	129	2.80	0.080	0.080	<0.20	0.120	0.130	46	84
JUN 26...		0.52	122	2.80	0.070	0.060	1.4	0.270	0.190	170	94
AUG 27...		0.50	188	3.40	0.030	0.040	1.8	0.260	0.220	111	89

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

GRANT RIVER BASIN

05413500 GRANT RIVER AT BURTON, WI--CONTINUED

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	ALUM- NUM, 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 , 1986											
19...	1000	147	<10	<1	59	<0.5	<1	<1	<3	4	10
MAR , 1987											
27...	0900	172	<10	<1	70	<0.5	<1	<1	<3	3	14
MAY											
05...	1045	141	10	<1	65	<0.5	2	<1	<3	2	9
AUG											
27...	1300	187	<10	1	73	<0.5	<1	<1	<3	<1	8

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 , 1986										
19...	<5	9	46	<0.1	<10	3	1	73	<6	23
MAR , 1987										
27...	<5	8	94	<0.1	<10	2	<1	80	<6	8
MAY										
05...	<5	10	90	<0.1	<10	<1	<1	74	<6	12
AUG										
27...	<5	<4	26	<0.1	<10	1	<1	79	<6	8

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)
OCT , 1986				
27...	1215	193	620	10.5
NOV				
19...	1000	147	580	0.0
DEC				
02...	1144	156	620	3.0
10...	0945	150*	640	0.0
JAN , 1987				
13...	1140	102	680	2.5
FEB				
24...	1243	131	600	3.5
MAR				
27...	0900	127	630	6.5
APR				
07...	1330	157	580	12.5
MAY				
05...	1045	141	610	12.5
27...	1745	140	560	13.0
JUN				
26...	1145	119	625	22.0
JUL				
07...	1300	114	590	23.0
AUG				
17...	1230	145	670	23.0
27...	1300	188	600	15.5

*DISCHARGE, IN CUBIC GEET PER SECOND (00060).

SUSPENDED-SEDIMENT, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

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	89	46	38	16	20	8.1	14	5.0	10	3.2	33	21
2	89	43	37	15	20	8.3	14	4.8	10	3.2	61	46
3	90	42	35	15	20	8.4	13	4.5	15	5.7	206	209
4	349	309	34	14	20	7.9	13	4.5	13	4.6	80	36
5	280	213	33	13	20	7.2	13	4.5	12	3.9	66	28
6	173	98	32	13	38	16	13	4.5	11	3.6	59	24
7	133	68	31	12	33	13	12	4.2	10	3.5	52	21
8	120	58	30	12	28	11	12	4.1	25	10	47	19
9	112	50	28	11	24	9.6	12	4.0	24	9.1	42	16
10	108	46	27	11	21	8.5	12	4.3	23	8.1	37	13
11	105	45	26	10	21	7.9	11	3.9	22	7.7	36	13
12	102	50	26	9.6	20	7.6	11	3.7	21	7.4	37	13
13	97	47	55	24	20	7.0	11	3.8	20	7.0	38	14
14	80	36	54	22	19	7.7	11	4.0	19	6.7	40	15
15	70	31	47	19	19	7.2	11	3.8	18	6.1	41	16
16	55	24	41	17	19	7.2	11	3.2	17	5.6	43	16
17	50	21	35	14	18	6.8	10	3.5	16	5.7	44	17
18	50	21	31	13	18	6.8	10	3.2	15	5.3	80	33
19	50	20	27	11	18	6.8	10	3.2	14	4.9	183	98
20	50	20	26	11	17	6.5	10	3.2	14	4.6	221	92
21	50	20	26	10	17	6.5	10	3.2	13	4.4	171	82
22	50	20	25	9.6	17	6.4	10	3.0	12	4.3	145	66
23	50	20	25	10	16	6.0	10	2.7	12	4.1	136	60
24	51	21	24	9.9	16	6.0	10	3.2	18	6.1	127	56
25	49	21	23	9.2	16	6.0	10	3.5	25	5.7	119	58
26	90	46	23	9.0	15	5.7	10	3.2	22	5.7	112	55
27	105	55	22	8.8	15	5.5	10	3.2	19	5.6	89	41
28	85	39	22	8.6	15	5.4	10	3.2	17	5.8	75	33
29	65	29	21	8.3	15	5.3	10	3.2	---	---	77	38
30	50	21	21	8.2	14	5.0	10	3.2	---	---	82	41
31	45	19	---	---	14	5.0	10	3.2	---	---	67	32
TOTAL	---	1599	---	374.2	---	232.3	---	114.7	---	157.6	---	1322

DAY	MEAN CONCEN- TRATION (MG/L)	LOAD (TONS/ DAY)	MEAN CONCEN- TRATION (MG/L)	LOAD (TONS/ DAY)	MEAN CONCEN- TRATION (MG/L)	LOAD (TONS/ DAY)	MEAN CONCEN- TRATION (MG/L)	LOAD (TONS/ DAY)	MEAN CONCEN- TRATION (MG/L)	LOAD (TONS/ DAY)	MEAN CONCEN- TRATION (MG/L)	LOAD (TONS/ DAY)
APRIL			MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	57	28	82	34	508	872	115	35	368	170	298	104
2	56	27	76	32	412	280	107	32	245	90	151	52
3	55	25	70	29	333	144	99	30	181	64	95	32
4	54	24	61	24	290	115	91	28	163	59	127	42
5	55	24	51	20	268	103	84	25	150	49	177	58
6	56	24	73	28	248	93	78	24	139	44	248	81
7	45	19	103	39	230	84	68	21	133	41	346	114
8	65	26	112	42	221	79	58	18	864	1340	382	138
9	112	45	119	44	235	82	54	17	721	1040	198	69
10	109	43	127	47	253	87	51	15	267	139	111	36
11	102	41	134	55	261	93	49	15	210	91	106	35
12	95	37	134	50	236	87	51	15	166	66	105	34
13	90	34	134	48	211	74	55	16	134	53	104	34
14	86	43	133	50	189	64	58	17	165	74	103	36
15	83	54	129	48	173	58	681	445	233	124	102	36
16	80	35	126	44	172	55	240	91	129	53	105	37
17	77	32	122	43	172	55	197	61	124	48	215	161
18	74	30	146	59	171	55	195	58	153	65	244	153
19	71	28	252	136	171	55	192	57	222	108	170	69
20	69	26	200	87	171	58	190	58	120	46	151	60
21	66	25	198	86	171	67	187	54	105	43	134	55
22	132	65	195	76	171	67	185	53	97	39	117	46
23	200	119	191	71	171	58	182	52	89	32	103	39
24	131	73	188	69	170	55	180	56	83	29	93	34
25	125	62	185	69	170	55	170	62	78	27	91	33
26	131	63	187	77	168	54	137	41	116	48	90	32
27	133	61	206	81	157	49	113	35	149	74	90	31
28	117	51	221	88	145	45	114	49	121	49	89	31
29	102	44	213	84	135	43	118	40	165	66	89	31
30	90	38	205	77	124	39	2870	10100	355	133	90	31
31	---	---	197	74	---	---	924	659	539	194	---	---
TOTAL	---	1246	---	1811	---	3125	---	12279	---	4498	---	1744
TOTAL LOAD FOR YEAR:			28503 TONS.									

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 discharge: None, except for ice periods listed in rating table below. Records good except for ice-affected periods, which are fair.

AVERAGE DISCHARGE.--53 years, 100 ft³/s, 9.56 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 43,500 ft³/s July 16, 1950, gage height, 17.26 ft, from rating curve extended above 7,000 ft³/s on basis of slope-area measurement of peak flow; no flow Nov. 24, 1950.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,100 ft³/s and maximum (*):

DATE	TIME	DISCHARGE (ft ³ /s)	GAGE HEIGHT (ft)	DATE	TIME	DISCHARGE (ft ³ /s)	GAGE HEIGHT (ft)
June 20	2000	*672	*6.06				

Minimum daily, 42 ft³/s, Jan. 23, result of freezeup.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Shifting-control method used June 17 to Sept. 30; stage-discharge relation affected by ice Nov. 12-14, Dec. 5, 10-22, Jan. 4, 5, and Jan. 17 to Feb. 15.)

3.5	36	4.0	121
3.7	66	5.0	364

DISCHARGE, IN 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	110	84	75	65	54	144	105	109	132	71	101	70
2	98	79	80	65	56	133	100	122	148	69	81	70
3	93	80	79	62	60	164	96	110	98	68	78	68
4	149	77	74	58	58	97	95	99	87	69	80	68
5	130	75	74	60	56	92	91	94	84	71	70	68
6	107	75	76	63	56	90	86	93	83	68	67	68
7	96	76	75	62	60	87	82	89	81	66	65	68
8	93	78	76	62	68	85	80	86	78	64	234	98
9	88	74	74	60	64	80	78	84	74	65	189	76
10	84	72	46	66	62	70	78	83	72	65	115	71
11	85	71	64	63	62	73	77	89	75	64	97	72
12	96	66	60	63	62	71	73	83	73	62	87	68
13	87	56	56	62	60	72	72	78	64	61	84	70
14	82	68	58	65	60	83	89	98	63	61	87	76
15	77	70	60	62	60	80	103	84	60	87	90	76
16	81	70	60	47	59	77	88	75	55	71	80	76
17	79	70	60	54	67	80	83	74	53	65	77	116
18	75	73	58	52	66	89	80	82	77	64	83	118
19	74	68	58	52	62	109	78	110	86	64	92	95
20	73	76	58	52	62	105	75	96	143	66	76	90
21	73	71	56	50	64	100	77	105	117	61	79	89
22	74	69	64	45	68	94	192	89	99	59	77	83
23	79	80	66	42	65	94	246	81	86	58	70	79
24	78	76	66	56	65	93	228	81	84	60	68	77
25	85	72	65	52	64	103	191	90	85	61	70	74
26	100	72	63	52	64	107	164	110	87	63	92	72
27	95	73	63	52	64	100	145	92	85	78	98	70
28	86	72	63	52	71	94	130	97	83	82	81	68
29	83	72	65	50	---	108	123	94	80	69	86	69
30	79	73	65	50	---	102	114	88	76	136	77	69
31	80	---	66	50	---	99	---	81	---	241	74	---
TOTAL	2769	2188	2023	1746	1739	2975	3319	2846	2568	2309	2805	2332
MEAN	89.3	72.9	65.3	56.3	62.1	96.0	111	91.8	85.6	74.5	90.5	77.7
MAX	149	84	80	66	71	164	246	122	148	241	234	118
MIN	73	56	46	42	54	70	72	74	53	58	65	68
CFSM	.63	.51	.46	.40	.44	.68	.78	.65	.60	.52	.64	.55
IN.	.73	.57	.53	.46	.46	.78	.87	.75	.67	.60	.73	.61

CAL YR 1986	TOTAL 39143	MEAN 107	MAX 1240	MIN 46	CFSM .76	IN. 10.3
WTR YR 1987	TOTAL 29619	MEAN 81.1	MAX 246	MIN 42	CFSM .57	IN. 7.76

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.

PERIOD OF RECORD.--July to September 1987.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: July to September 1987.

DISSOLVED OXYGEN: July to September 1987.

INSTRUMENTATION.--Continuous water temperature and dissolved oxygen recorder since July 1987.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum observed, 26.0°C August 21, 1987; minimum observed, 14.0°C September 1, 1987.

DISSOLVED OXYGEN: Maximum observed, 13.3 mg/L September 25, 1987; minimum observed, 4.0 mg/L July 31, 1987.

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	PH LAB (STAND- ARD UNITS) (00403)	TEMPER- ATURE WATER (DEG C) (00010)	TUR- BID- ITY (NTU) (00076)	OXYGEN, DIS- SOLVED (MG/L) (00300)	SOLIDS, RESIDUE 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)
JUL , 1987								
27...	0915	7.60	--	>40	6.7	266	3.70	0.130
30...	1245	7.90	--	5.6	9.0	73	--	0.040
31...	0015	7.60	--	>80	5.9	496	--	0.250
31...	0030	7.60	--	>80	5.9	1090	--	0.240
31...	1800	7.20	--	>80	5.5	304	--	0.590
AUG								
08...	0445	7.50	--	40	6.9	172	4.40	0.050
08...	0715	7.60	--	62	7.1	308	3.00	0.090
08...	0815	7.60	--	>80	7.1	578	2.70	0.080
09...	0630	7.50	--	70	7.0	254	3.00	0.340
26...	1300	8.10	15.0	31	8.9	168	--	0.070

TEMPERATURE, WATER, DEGREES CENTIGRADE, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	---	---	---	---	---	---	---	---	---	21.5	14.0	17.5
2	---	---	---	---	---	---	---	---	---	---	---	---
3	---	---	---	---	---	---	---	---	---	---	---	---
4	---	---	---	---	---	---	---	---	---	---	---	---
5	---	---	---	---	---	---	---	---	---	---	---	---
6	---	---	---	---	---	---	---	---	---	---	---	---
7	---	---	---	---	---	---	---	---	---	---	---	---
8	---	---	---	---	---	---	---	---	---	---	---	---
9	---	---	---	---	---	---	---	---	---	---	---	---
10	---	---	---	---	---	---	---	---	---	---	---	---
11	---	---	---	---	---	---	---	---	---	---	---	---
12	---	---	---	---	---	---	---	---	---	---	---	---
13	---	---	---	---	---	---	---	---	---	---	---	---
14	---	---	---	---	---	---	---	---	---	---	---	---
15	---	---	---	---	---	---	---	---	---	---	---	---
16	---	---	---	---	---	---	---	---	---	---	---	---
17	---	---	---	---	---	---	---	---	---	---	---	---
18	---	---	---	---	---	---	---	---	---	---	---	---
19	---	---	---	---	---	---	---	---	---	---	---	---
20	---	---	---	---	---	---	---	---	---	---	---	---
21	---	---	---	---	---	---	26.0	20.5	23.0	---	---	---
22	---	---	---	---	---	---	24.0	19.5	22.0	---	---	---
23	---	---	---	---	---	---	22.0	16.0	19.0	---	---	---
24	---	---	---	---	---	---	19.5	14.5	17.0	---	---	---
25	---	---	---	---	---	---	17.5	15.0	16.0	---	---	---
26	---	---	---	---	---	---	15.5	14.5	15.0	---	---	---
27	---	---	---	---	---	---	17.5	14.5	16.0	---	---	---
28	---	---	---	---	---	---	19.5	15.5	17.0	---	---	---
29	---	---	---	---	---	---	21.5	15.5	18.5	---	---	---
30	---	---	---	---	---	---	21.5	17.0	19.0	---	---	---
31	---	---	---	---	---	---	20.5	15.0	17.5	---	---	---

05414213 LITTLE PLATTE RIVER NEAR PLATTEVILLE, WI--CONTINUED

OXYGEN, DISSOLVED (DO), MG/L, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	---	---	---	---	---	---	7.2	5.3	6.1	11.3	7.5	9.0
2	---	---	---	---	---	---	7.7	5.5	6.2	11.6	7.5	8.9
3	---	---	---	---	---	---	7.6	5.6	6.6	12.0	7.7	9.2
4	---	---	---	---	---	---	8.7	6.2	7.1	12.5	7.2	9.3
5	---	---	---	---	---	---	9.2	6.3	7.4	12.1	6.7	8.8
6	---	---	---	---	---	---	9.8	6.3	7.7	11.7	6.7	8.5
7	---	---	---	---	---	---	10.1	6.4	7.7	12.0	6.6	8.5
8	---	---	---	---	---	---	7.1	6.1	6.8	9.8	6.4	7.6
9	---	---	---	---	---	---	7.6	6.6	7.0	11.9	6.8	8.6
10	---	---	---	---	---	---	8.7	6.8	7.6	10.4	7.2	8.6
11	---	---	---	---	---	---	9.2	6.8	7.7	12.6	7.5	9.3
12	---	---	---	---	---	---	10.0	6.9	8.1	11.8	7.1	8.9
13	---	---	---	---	---	---	8.6	7.0	7.7	10.8	7.1	8.4
14	---	---	---	---	---	---	9.2	7.3	8.0	12.7	7.0	9.0
15	---	---	---	---	---	---	9.6	6.5	7.8	12.0	6.8	8.6
16	---	---	---	---	---	---	9.4	6.3	7.3	12.0	6.8	8.3
17	---	---	---	---	---	---	8.5	6.4	7.4	11.2	6.7	8.3
18	---	---	---	---	---	---	9.2	6.9	7.8	10.0	6.8	8.0
19	---	---	---	---	---	---	10.1	6.9	8.3	11.1	7.7	8.8
20	---	---	---	---	---	---	10.3	6.7	8.3	10.7	7.7	8.8
21	---	---	---	---	---	---	10.0	6.3	7.6	10.8	7.9	9.0
22	---	---	---	---	---	---	10.2	6.3	8.0	12.0	7.8	9.2
23	---	---	---	11.7	6.1	8.2	11.3	7.4	8.8	12.4	7.8	9.3
24	---	---	---	11.2	6.1	7.7	11.8	7.8	9.3	13.2	7.8	9.7
25	---	---	---	11.0	5.9	7.8	9.6	8.0	8.7	13.3	7.7	9.7
26	---	---	---	10.8	5.8	7.3	9.0	7.9	8.6	---	---	---
27	---	---	---	7.9	5.7	6.7	9.6	7.8	8.6	---	---	---
28	---	---	---	9.4	6.1	7.4	10.2	7.8	8.6	---	---	---
29	---	---	---	9.8	5.8	7.3	10.2	7.5	8.6	---	---	---
30	---	---	---	9.0	5.2	6.6	10.3	7.5	8.4	---	---	---
31	---	---	---	6.0	4.0	5.5	11.0	7.7	8.9	---	---	---
MONTH	---	---	---	---	---	---	11.8	5.3	7.83	---	---	---

PRECIPITATION QUANTITY

PERIOD OF RECORD.--July to September 1987.

GAGE.--Micrologger.

REMARKS.--Records good.

EXTREMES FOR CURRENT YEAR.--Maximum daily rainfall, 2.11 in., August 8.

RAINFALL, ACCUMULATED (INCHES), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
SUM VALUES

[illegible]

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.

PERIOD OF RECORD.--July to September 1987.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: July to September 1987.

DISSOLVED OXYGEN: July to September 1987.

INSTRUMENTATION.--Continuous water temperature and dissolved oxygen recorder since July 1987.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum observed, 30.0°C July 20, 1987; minimum observed, 12.5°C September 21, 23, 30, 1987.

DISSOLVED OXYGEN: Maximum observed, 12.4 mg/L September 3, 1987; minimum observed, 4.0 mg/L August 9, 1987.

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	PH LAB (STAND- ARD UNITS) (00403)	TEMPER- ATURE WATER (DEG C) (00010)	TUR- BID- ITY (NTU) (00076)	OXYGEN, DIS- SOLVED (MG/L) (00300)	SOLIDS, RESIDUE 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)
JUL , 1987								
29...	2245	7.60	25.0	6.5	5.0	78	5.00	0.080
30...	0015	7.80	24.5	8.4	5.6	147	4.90	0.090
AUG								
08...	0600	7.10	20.5	74	6.4	278	4.50	0.210
08...	0730	7.10	20.0	>80	6.5	434	4.00	0.440
26...	0415	7.90	14.0	97	8.0	526	--	0.590
26...	0515	8.00	14.0	140	8.2	428	--	0.310
26...	1200	7.70	14.0	86	7.4	380	--	0.760
26...	2300	7.70	15.0	62	6.9	214	--	1.00

TEMPERATURE, WATER, DEGREES CENTIGRADE, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	---	---	---	---	---	---	28.5	23.5	26.0	19.5	13.5	17.0
2	---	---	---	---	---	---	29.5	24.5	27.0	20.0	16.0	18.0
3	---	---	---	---	---	---	27.0	23.0	24.5	18.5	13.5	16.5
4	---	---	---	---	---	---	25.0	21.0	23.0	19.5	14.0	17.0
5	---	---	---	---	---	---	24.0	21.0	22.5	21.0	16.5	19.0
6	---	---	---	---	---	---	24.5	20.0	22.5	20.5	18.0	19.5
7	---	---	---	---	---	---	23.5	21.0	22.5	20.5	18.0	19.0
8	---	---	---	---	---	---	22.5	19.0	20.0	21.5	17.5	19.5
9	---	---	---	---	---	---	22.5	19.0	20.5	19.5	16.0	18.0
10	---	---	---	---	---	---	24.0	18.5	21.5	18.5	15.5	16.0
11	---	---	---	---	---	---	24.5	20.0	22.0	19.0	14.5	17.0
12	---	---	---	---	---	---	24.0	19.0	21.5	18.5	16.0	17.5
13	---	---	---	---	---	---	22.5	19.0	20.0	17.0	14.5	16.0
14	---	---	---	---	---	---	22.5	18.5	20.5	17.5	13.5	16.0
15	---	---	---	---	---	---	27.0	21.0	24.0	18.5	16.5	17.5
16	---	---	---	---	---	---	26.0	23.0	24.5	20.0	17.5	18.5
17	---	---	---	27.5	21.0	24.0	24.5	20.0	22.5	19.5	17.5	19.0
18	---	---	---	26.5	22.5	25.0	23.0	18.5	21.5	19.0	15.5	17.5
19	---	---	---	27.5	22.5	25.0	22.0	17.5	20.0	15.5	13.0	14.0
20	---	---	---	30.0	24.0	26.5	23.5	17.5	21.0	14.0	13.0	13.5
21	---	---	---	28.5	22.5	25.5	25.0	20.5	22.5	14.0	12.5	13.0
22	---	---	---	27.5	22.5	25.5	24.0	18.5	21.0	15.0	13.0	14.0
23	---	---	---	28.0	22.5	25.5	20.0	15.5	18.0	17.0	12.5	15.0
24	---	---	---	26.0	21.5	24.0	18.5	14.5	17.0	17.0	14.0	15.5
25	---	---	---	28.0	22.0	25.0	17.5	14.5	15.5	16.5	13.0	15.0
26	---	---	---	27.5	23.0	25.5	15.0	13.5	14.5	18.0	13.5	16.0
27	---	---	---	25.5	20.5	22.5	16.0	14.5	15.0	19.5	16.5	18.0
28	---	---	---	24.0	19.0	21.5	19.0	14.0	16.0	19.0	16.5	18.0
29	---	---	---	27.0	21.0	24.0	20.5	15.0	18.0	17.5	15.0	16.0
30	---	---	---	27.0	21.5	24.0	20.0	17.0	18.5	15.0	12.5	14.0
31	---	---	---	27.0	22.5	25.0	19.0	14.5	17.0	---	---	---
MONTH	---	---	---	---	---	---	29.5	13.5	20.7	21.5	12.5	16.7

05414800 SINSINAWA RIVER NEAR HAZEL GREEN, WI--CONTINUED

OXYGEN, DISSOLVED (DO), MG/L, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	---	---	---	---	---	---	9.0	4.3	6.1	11.8	7.5	9.3
2	---	---	---	---	---	---	9.2	4.3	6.2	12.0	7.5	9.2
3	---	---	---	---	---	---	7.5	4.5	5.9	12.4	7.6	9.4
4	---	---	---	---	---	---	9.6	5.5	7.1	12.2	7.0	9.2
5	---	---	---	---	---	---	9.5	5.4	7.1	11.7	6.5	8.4
6	---	---	---	---	---	---	10.1	5.6	7.4	10.2	6.3	7.9
7	---	---	---	---	---	---	10.1	5.6	7.2	10.3	6.7	7.9
8	---	---	---	---	---	---	6.7	5.5	6.0	10.8	6.7	8.2
9	---	---	---	---	---	---	8.1	4.0	5.8	11.4	6.9	8.6
10	---	---	---	---	---	---	9.1	4.6	6.9	10.3	7.2	8.4
11	---	---	---	---	---	---	9.9	5.8	7.4	11.0	7.0	8.7
12	---	---	---	---	---	---	9.9	6.0	7.5	10.6	7.0	8.3
13	---	---	---	---	---	---	8.3	5.7	7.0	10.7	7.5	8.6
14	---	---	---	---	---	---	8.8	6.2	7.4	11.5	7.3	9.0
15	---	---	---	---	---	---	8.9	5.3	7.0	10.3	7.0	8.2
16	---	---	---	---	---	---	8.0	5.2	6.2	9.8	6.8	7.8
17	---	---	---	---	---	---	8.9	5.5	6.9	8.9	6.5	7.3
18	---	---	---	---	---	---	7.3	5.8	6.3	8.7	6.4	7.4
19	---	---	---	---	---	---	9.0	6.0	7.1	9.8	7.5	8.6
20	---	---	---	---	---	---	10.2	6.5	7.9	10.1	8.2	8.8
21	---	---	---	---	---	---	9.3	6.0	7.3	10.2	8.3	9.0
22	---	---	---	10.8	5.0	7.4	8.9	5.6	7.3	10.6	8.3	9.1
23	---	---	---	11.3	5.1	7.6	10.4	7.2	8.5	11.0	7.8	9.2
24	---	---	---	10.7	5.1	7.0	10.7	7.1	8.5	11.0	7.7	9.0
25	---	---	---	11.1	5.0	7.4	9.1	7.1	8.0	11.3	7.9	9.2
26	---	---	---	10.4	4.8	6.8	8.2	6.6	7.4	11.3	7.3	8.9
27	---	---	---	9.1	4.9	6.4	8.0	7.0	7.5	10.7	6.8	8.3
28	---	---	---	10.5	5.7	7.6	9.6	7.3	8.2	10.2	6.9	8.1
29	---	---	---	10.0	4.4	7.1	10.1	7.0	8.3	10.5	7.3	8.6
30	---	---	---	7.8	4.4	5.9	10.4	6.9	8.3	11.3	8.0	9.3
31	---	---	---	9.0	4.4	6.1	11.4	7.6	9.1	---	---	---
MONTH	---	---	---	---	---	---	11.4	4.0	7.25	12.4	6.3	8.60

PRECIPITATION QUANTITY

PERIOD OF RECORD.--July to September 1987.

GAGE.--Micrologger.

REMARKS.--Records good.

EXTREMES FOR CURRENT YEAR.--Maximum daily rainfall, 2.37 in., August 8.

RAINFALL, ACCUMULATED (INCHES), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
SUM VALUES

[illegible]

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: None, except for ice periods listed in rating table below. Records good except for ice-affected periods, which are fair. Gage-height telemeter at station.

AVERAGE DISCHARGE.--48 years, 79.9 ft³/s, 8.68 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)
Oct. 4	1230	*1,050	*6.40				

Minimum discharge, 54 ft³/s, July 21, 22, 23, 26, gage height 2.81 ft.

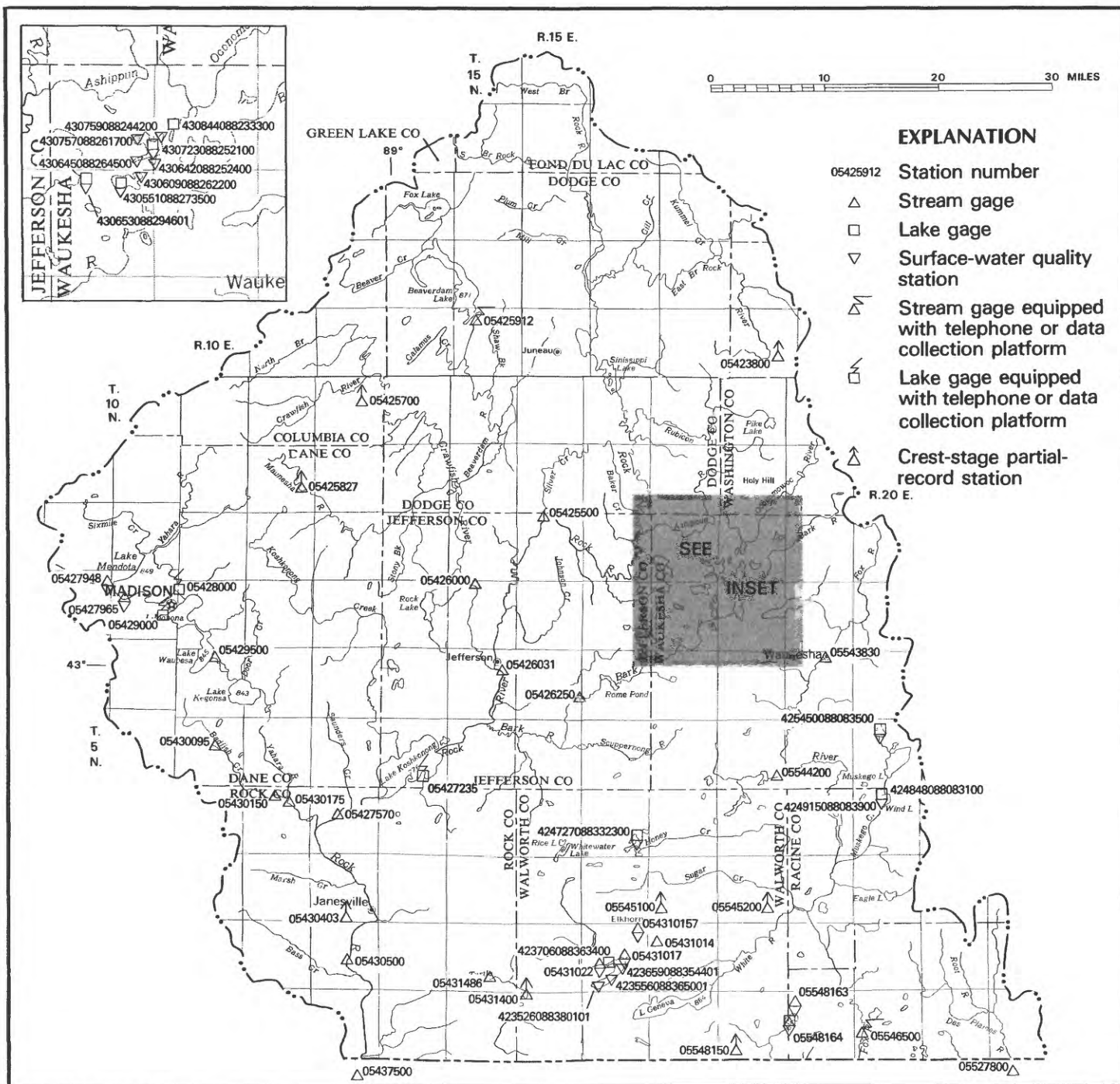
RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Nov. 13-15, Dec. 5, 10-17, 21, 22, and Jan. 16 to Feb. 19.)

2.8	53	4.5	396
3.0	77	5.0	548
3.5	156	5.5	712
4.0	264		

DISCHARGE, IN 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	338	153	126	98	96	498	118	80	144	64	81	78
2	274	146	136	97	100	219	109	89	124	64	68	74
3	250	147	134	96	130	120	103	88	104	70	63	72
4	560	148	122	94	100	96	100	79	95	65	65	72
5	340	145	120	94	86	94	97	76	91	65	59	71
6	272	143	121	97	86	92	95	76	87	70	58	72
7	248	139	123	95	94	92	93	76	85	71	57	72
8	230	142	123	92	94	92	92	75	82	66	179	75
9	208	132	121	96	84	87	90	74	79	65	118	72
10	196	127	100	97	84	77	90	73	77	64	79	70
11	192	127	120	92	84	84	92	74	87	63	70	71
12	220	124	110	95	84	81	89	71	85	62	67	69
13	202	120	110	93	82	81	86	70	79	60	66	69
14	196	120	110	101	82	87	104	121	78	59	67	70
15	178	120	110	97	80	84	107	88	75	71	67	70
16	171	126	110	96	80	87	95	77	73	63	68	72
17	163	124	110	94	78	88	92	76	73	60	94	73
18	157	129	110	92	76	101	88	78	71	58	98	69
19	153	123	109	90	74	118	85	91	71	58	85	65
20	152	130	105	88	75	109	82	98	87	57	70	67
21	150	121	100	88	77	103	82	119	98	55	78	65
22	147	123	100	84	78	99	105	88	79	55	72	62
23	148	142	102	80	75	98	110	82	74	59	65	61
24	146	130	103	78	74	101	97	80	72	60	62	60
25	174	125	102	80	74	126	91	96	102	57	65	59
26	226	128	99	82	74	131	89	120	75	55	206	59
27	195	129	98	84	74	117	87	117	69	65	176	58
28	176	125	98	88	82	110	83	149	68	73	112	60
29	165	123	99	90	---	127	85	137	68	64	99	60
30	156	125	98	90	---	116	82	163	66	125	90	58
31	154	---	98	92	---	113	---	111	---	209	83	---
TOTAL	6537	3936	3427	2830	2357	3628	2818	2892	2518	2152	2687	2025
MEAN	211	131	111	91.3	84.2	117	93.9	93.3	83.9	69.4	86.7	67.5
MAX	560	153	136	101	130	498	118	163	144	209	206	78
MIN	146	120	98	78	74	77	82	70	66	55	57	58
CFSM	1.69	1.05	.88	.73	.67	.94	.75	.75	.67	.56	.69	.54
IN.	1.95	1.17	1.02	.84	.70	1.08	.84	.86	.75	.64	.80	.60

CAL YR 1986 TOTAL 50200 MEAN 138 MAX 1180 MIN 54 CFSM 1.10 IN. 14.9
WTR YR 1987 TOTAL 37807 MEAN 104 MAX 560 MIN 55 CFSM .83 IN. 11.3



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

ROCK-FOX 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, 10.00 ft, July 21-23, 1985.

EXTREMES FOR CURRENT YEAR.--Maximum gage height observed, 13.16 ft, Oct. 5; minimum observed, 10.14 ft, July 1-4.

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	10.92	10.96	---	10.14	10.34	10.38
2	---	---	---	---	---	---	10.90	10.96	---	10.14	10.34	10.38
3	---	---	---	---	---	---	10.87	10.91	---	10.14	10.30	10.38
4	---	---	---	---	---	---	10.85	10.86	---	10.14	10.28	10.36
5	13.16	---	---	---	---	---	10.80	10.81	---	10.16	10.26	10.34
6	---	---	---	---	---	---	10.77	10.77	---	10.16	10.22	10.34
7	---	---	---	---	---	---	10.74	10.76	---	10.16	10.22	10.34
8	---	---	---	---	---	---	10.71	10.68	---	10.56	10.34	10.34
9	---	---	---	---	---	---	10.68	10.66	---	10.56	10.34	10.34
10	---	---	---	---	---	---	10.65	10.64	---	10.54	10.34	10.30
11	---	---	---	---	---	---	10.68	10.64	---	10.48	10.32	10.28
12	---	---	---	---	---	---	10.71	10.64	---	10.46	10.30	10.28
13	---	---	---	---	---	---	10.88	10.61	---	10.44	10.28	10.28
14	---	---	---	---	---	---	10.96	10.66	---	10.38	10.32	10.28
15	---	---	---	---	---	---	11.06	10.64	---	10.44	10.34	10.30
16	---	---	---	---	---	---	11.20	10.62	---	10.38	10.34	10.34
17	---	---	---	---	---	---	11.26	10.58	---	10.36	10.38	10.36
18	---	---	---	---	---	---	11.26	10.56	---	10.34	10.38	10.36
19	---	---	---	---	---	---	11.21	10.58	---	10.30	10.40	10.36
20	---	---	---	---	---	---	11.16	10.60	---	10.28	10.44	10.30
21	---	---	---	---	---	---	11.19	10.62	---	10.36	10.46	10.44
22	---	---	---	---	---	---	11.21	10.64	---	10.34	10.46	10.46
23	---	---	---	---	---	---	11.26	10.60	---	10.34	10.40	10.46
24	---	---	---	---	---	10.87	11.29	10.58	---	10.32	10.38	10.44
25	---	---	---	---	---	10.87	11.26	10.58	---	10.30	10.36	10.44
26	---	---	---	---	---	10.92	11.24	10.57	---	10.30	10.40	10.44
27	---	---	---	---	---	10.92	11.16	10.56	---	10.34	10.40	10.44
28	---	---	---	---	---	10.92	11.10	10.56	---	10.35	10.44	10.44
29	---	---	---	---	---	10.92	11.04	10.56	---	10.33	10.42	10.50
30	---	---	---	---	---	10.94	11.02	10.54	---	10.36	10.40	10.52
31	---	---	---	---	---	10.94	---	10.52	---	10.34	10.38	---
MEAN	---	---	---	---	---	---	11.0	10.7	---	10.3	10.4	10.4
MAX	---	---	---	---	---	---	11.29	10.96	---	10.56	10.46	10.52
MIN	---	---	---	---	---	---	10.65	10.52	---	10.14	10.22	10.28

430723088252100 OKAUCHEE LAKE AT OKAUCHEE, WI

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, 3.87 ft, Mar. 4, 1986.

EXTREMES FOR CURRENT YEAR.--Maximum gage-height observed, 4.82 ft, July 4, 7, 8, 30; minimum observed, 4.11 ft, Feb. 25. During dam repairs, no readings were made which were likely less than minimum observed reading.

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
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 February 25. Water-quality analyses by U.S. Geological Survey National Water Quality Laboratory through April, and Wisconsin State Laboratory of Hygiene thereafter.

WATER QUALITY DATA, FEBRUARY 25 TO AUGUST 18, 1987
(Milligrams per liter unless otherwise indicated)

	Feb. 25		Apr. 7		June 17		July 28		Aug. 18	
Depth of sample (ft)	3.0	90.0	3.0	93.0	3.0	90.0	3.0	90.0	3.0	90.0
Specific conductance ($\mu\text{S}/\text{cm}$)	514	584	497	507	400	408	464	538	443	528
pH (units)	7.8	8.1	8.5	8.4	8.5	7.8	8.2	7.4	8.2	7.3
Water temperature ($^{\circ}\text{C}$)	2.9	3.1	5.3	4.6	26.0	4.8	26.3	5.5	24.5	6.1
Color (Pt-Co. scale)	--	--	18	17	--	--	--	--	--	--
Turbidity (NTU)	--	--	1.0	.8	--	--	--	--	--	--
Secchi-disc (meters)	--	--	--	2.4	--	2.6	--	2.0	--	2.0
Dissolved oxygen	12.0	3.5	13.0	12.6	7.1	0	8.1	1.0	7.8	0
Hardness, as CaCO_3	--	--	279	277	--	--	--	--	--	--
Calcium, dissolved (Ca)	--	--	59	58	--	--	--	--	--	--
Magnesium, dissolved (Mg)	--	--	32	32	--	--	--	--	--	--
Sodium, dissolved (Na)	--	--	8.5	8.4	--	--	--	--	--	--
Potassium, dissolved (K)	--	--	2.2	2.2	--	--	--	--	--	--
Alkalinity as CaCO_3	--	--	244	244	--	--	--	--	--	--
Sulfate, dissolved (SO_4)	--	--	28	28	--	--	--	--	--	--
Chloride, dissolved (Cl)	--	--	20	20	--	--	--	--	--	--
Silica, dissolved (SiO_2)	--	--	6.1	6.1	--	--	--	--	--	--
Solids, dissolved, at 180°C	--	--	308	306	--	--	--	--	--	--
Nitrogen, nitrate, total (as N)	--	--	.50	.50	--	--	--	--	--	--
Nitrogen, nitrite, total (as N)	--	--	<.010	<.010	--	--	--	--	--	--
Nitrogen, ammonia, total (as N)	--	--	.030	.030	--	--	--	--	--	--
Nitrogen, organic, total (as N)	--	--	.77	.47	--	--	--	--	--	--
Nitrogen, total (as N)	--	--	1.3	1.0	--	--	--	--	--	--
Total phosphorus (as P)	--	--	.032	.022	.011	.140	.020	.164	.012	.060
Phosphorus, ortho, diss. (as P)	--	--	.004	.001	--	.126	--	.103	--	.046
Iron, dissolved (Fe) $\mu\text{g}/\text{L}$	--	--	5	7	--	--	--	--	--	--
Manganese, dissolved (Fe) $\mu\text{g}/\text{L}$	--	--	1	1	--	--	--	--	--	--
Chlorophyll a, phyto. ($\mu\text{g}/\text{L}$)	--	--	15	--	4	--	4	--	5	--

2-25-87

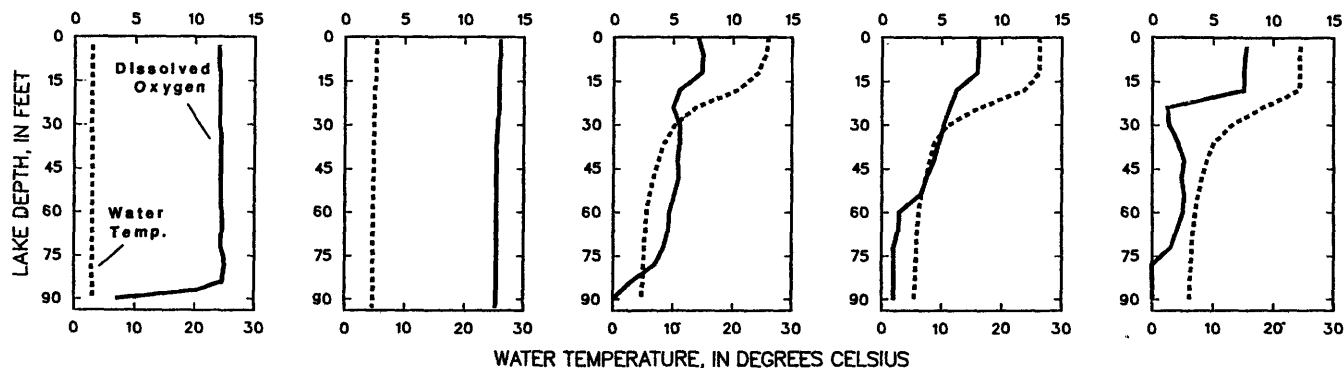
4-7-87

6-17-87

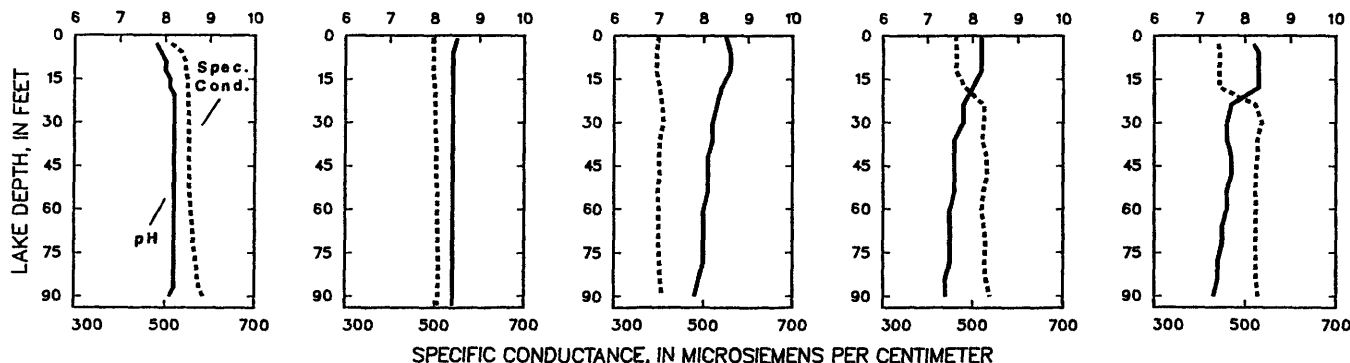
7-28-87

8-18-87

DISSOLVED OXYGEN, IN MILLIGRAMS PER LITER



PH, IN STANDARD UNITS



ROCK RIVER BASIN
WATER-QUALITY RECORDS

430759088244200 OKAUCHEE LAKE, NO. 1, NEAR OKAUCHEE, WI

LOCATION.--Lat 43°07'59", long 88°24'42", in NE 1/4 NW 1/4 sec.30, T.8 N., R.18 E., Waukesha County, Hydrologic Unit 07090001, near Okauchee.

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

REMARKS.--Sampling site is located in Crane's Nest Bay, in the northeast part of the lake, at a depth of 10 ft. Water-quality analyses by U.S. Geological Survey National Water Quality Laboratory through April, and Wisconsin State Laboratory of Hygiene thereafter.

WATER-QUALITY DATA, APRIL 7 TO AUGUST 18, 1987
(Milligrams per liter unless otherwise indicated)

	<u>Apr. 7</u>	<u>June 17</u>	<u>July 23</u>	<u>Aug. 18</u>
Depth of sample (ft)	1.5	1.5	1.5	1.5
Specific conductance (µS/cm)	503	399	473	464
pH (units)	8.4	8.6	8.4	8.2
Water temperature (°C)	6.0	27.5	28.5	24.5
Secchi-disc (meters)	--- 2.4	--- 3.1	--- 2.5	--- 1.8
Dissolved oxygen	13.4	9.2	8.8	7.5
Total phosphorus (as P)	0.031	0.016	0.015	0.020
Chlorophyll <u>a</u> , phyto. (µg/L)	11.0	6.0	5.0	13.0

430645088264500 OKAUCHEE LAKE, NO. 2, AT OKAUCHEE, WI

LOCATION.--Lat 43°06'45", long 88°26'45", in NE 1/4 NE 1/4 sec.35, T.8 N., R.17 E., Waukesha County, Hydrologic Unit 07090001, at Okauchee.

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

REMARKS.--Sampling site is located in Lower Okauchee Lake, at a depth of 10 ft. Water-quality analyses by U.S. Geological Survey National Water Quality Laboratory through April, and Wisconsin State Laboratory of Hygiene thereafter.

WATER-QUALITY DATA, APRIL 7 TO AUGUST 18, 1987
(Milligrams per liter unless otherwise indicated)

	<u>Apr. 7</u>	<u>June 17</u>	<u>July 23</u>	<u>Aug. 18</u>
Depth of sample (ft)	1.5	1.5	1.5	1.5
Specific conductance (µS/cm)	497	383	441	410
pH (units)	8.6	8.4	8.5	8.4
Water temperature (°C)	8.4	28.5	29.5	25.0
Secchi-disc (meters)	--- 2.0	--- 2.2	--- 1.8	--- 2.2
Dissolved oxygen	13.6	7.9	8.7	8.1
Total phosphorus (as P)	0.019	0.016	0.014	0.018
Chlorophyll <u>a</u> , phyto. (µg/L)	9.0	5.0	4.0	8.0

430642088252400 OKAUCHEE LAKE, NO. 3, AT OKAUCHEE, WI

LOCATION.--Lat 43°06'42", long 88°25'24", in NE 1/4 NE 1/4 sec.36, T.8 N., R.17 E., Waukesha County, Hydrologic Unit 07090001, at Okauchee.

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

REMARKS.--Sampling site is located in Ice House Bay, in the south bay of Okauchee Lake, at a depth of 10 ft. Water-quality analyses by U.S. Geological Survey National Water Quality Laboratory through April, and Wisconsin State Laboratory of Hygiene thereafter.

WATER-QUALITY DATA, APRIL 7 TO AUGUST 18, 1987
(Milligrams per liter unless otherwise indicated)

	<u>Apr. 7</u>	<u>June 17</u>	<u>July 23</u>	<u>Aug. 18</u>
Depth of sample (ft)	1.5	1.5	1.5	1.5
Specific conductance (µS/cm)	493	398	469	430
pH (units)	8.6	8.4	8.4	8.3
Water temperature (°C)	8.0	27.0	28.5	24.5
Secchi-disc (meters)	--- 1.7	--- 2.0	--- 1.6	--- 1.4
Dissolved oxygen	12.9	7.3	8.8	8.5
Total phosphorus (as P)	0.023	0.011	0.012	0.018
Chlorophyll <u>a</u> , phyto. (µg/L)	11.0	4.0	---	8.0

ROCK RIVER BASIN
WATER-QUALITY RECORDS

219

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 U.S. Geological Survey National Water Quality Laboratory through April, and Wisconsin State Laboratory of Hygiene thereafter.

WATER-QUALITY DATA, APRIL 7 TO AUGUST 18, 1987
(Milligrams per liter unless otherwise indicated)

	<u>Apr. 7</u>	<u>June 17</u>	<u>July 23</u>	<u>Aug. 18</u>
Depth of sample (ft)	1.5	1.5	1.5	1.5
Specific conductance (µS/cm)	498	401	461	472
pH (units)	8.5	8.5	8.5	8.3
Water temperature (°C)	8.0	27.0	28.0	25.0
Secchi-disc (meters)	--- 1.5	--- 1.5	--- 1.6	--- 1.4
Dissolved oxygen	12.7	6.6	8.8	8.5
Total phosphorus (as P)	0.040	0.013	0.009	0.014
Chlorophyll <u>a</u> , phyto. (µg/L)	12.0	4.0	3.0	8.0

LOCATION.--Lat 43°05'51", long 88°27'35", in NW 1/4 SE 1/4 sec.2, T.7 N., R.17 E., Waukesha County, Hydrologic Unit 07090001, at Oconomowoc.

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

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, 9.28 ft, Oct. 5; minimum observed, 6.90 ft, Feb. 24.

[illegible]

430551088273500 OCONOMOWOC LAKE NO. 1 (CENTER) AT OCONOMOWOC, WI--CONTINUED

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 February 24. Water-quality analyses by U.S. Geological Survey National Water Quality Laboratory through April, and Wisconsin State Laboratory of Hygiene thereafter.

WATER QUALITY DATA, FEBRUARY 24 TO AUGUST 18, 1987
(Milligrams per liter unless otherwise indicated)

	Feb. 24		Apr. 8		June 17		July 21		Aug. 18	
Depth of sample (ft)	3.0	57.0	3.0	62.5	3.0	61.5	3.0	60.0	3.0	63.0
Specific conductance ($\mu\text{S}/\text{cm}$)	518	569	489	497	400	410	468	523	448	532
pH (units)	8.2	8.1	8.3	8.3	8.6	7.9	8.5	7.6	8.3	7.0
Water temperature ($^{\circ}\text{C}$)	3.0	2.9	5.7	5.1	27.0	6.2	26.8	7.5	24.7	7.6
Color (Pt-Co. scale)	--	--	5	7	--	--	--	--	--	--
Turbidity (NTU)	--	--	.5	.6	--	--	--	--	--	--
Secchi-disc (meters)	--	--	4.8	--	2.9	--	2.0	--	1.6	--
Dissolved oxygen	12.2	3.8	12.3	12.0	9.1	0.8	8.4	0	8.0	0
Hardness, as CaCO_3	--	--	270	270	--	--	--	--	--	--
Calcium, dissolved (Ca)	--	--	57	55	--	--	--	--	--	--
Magnesium, dissolved (Mg)	--	--	32	33	--	--	--	--	--	--
Sodium, dissolved (Na)	--	--	9.9	9.9	--	--	--	--	--	--
Potassium, dissolved (K)	--	--	2.1	2.1	--	--	--	--	--	--
Alkalinity as CaCO_3	--	--	232	232	--	--	--	--	--	--
Sulfate, dissolved (SO_4)	--	--	27	27	--	--	--	--	--	--
Chloride, dissolved (Cl)	--	--	20	20	--	--	--	--	--	--
Silica, dissolved (SiO_2)	--	--	6.1	6.1	--	--	--	--	--	--
Solids, dissolved, at 180°C	--	--	298	301	--	--	--	--	--	--
Nitrogen, nitrate, total (as N)	--	--	.49	.49	--	--	--	--	--	--
Nitrogen, nitrite, total (as N)	--	--	<.010	<.010	--	--	--	--	--	--
Nitrogen, ammonia, total (as N)	--	--	.040	.040	--	--	--	--	--	--
Nitrogen, organic, total (as N)	--	--	1.06	.56	--	--	--	--	--	--
Nitrogen, total (as N)	--	--	1.6	1.1	--	--	--	--	--	--
Total phosphorus (as P)	--	--	.015	.018	.008	.017	.009	.092	.012	.025
Phosphorus, ortho, diss. (as P)	--	--	.003	.002	--	.009	--	.075	--	.005
Iron, dissolved (Fe) $\mu\text{g}/\text{L}$	--	--	3	4	--	--	--	--	--	--
Manganese, dissolved (Fe) $\mu\text{g}/\text{L}$	--	--	1	<1	--	--	--	--	--	--
Chlorophyll a, phyto. ($\mu\text{g}/\text{L}$)	--	--	3	--	<5	--	2	--	4	--

2-24-87

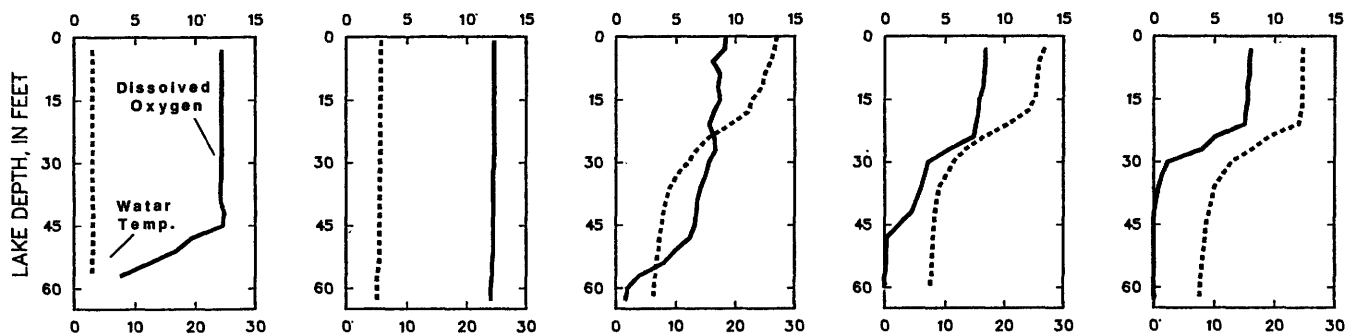
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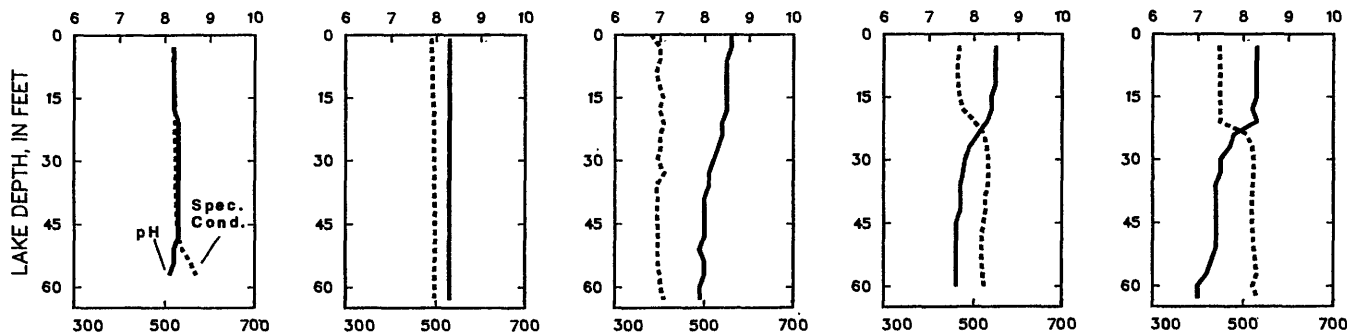
8-18-87

DISSOLVED OXYGEN, IN MILLIGRAMS PER LITER



WATER TEMPERATURE, IN DEGREES CELSIUS

PH, IN STANDARD UNITS



SPECIFIC CONDUCTANCE, IN MICROSIEMENS PER CENTIMETER

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 February 24. Water-quality analyses by U.S. Geological Survey National Water Quality Laboratory through April, and Wisconsin State Laboratory of Hygiene thereafter.

WATER QUALITY DATA, FEBRUARY 24 TO AUGUST 18, 1987
(Milligrams per liter unless otherwise indicated)

	Feb. 24		Apr. 8		June 17		July 21		Aug. 18	
Depth of sample (ft)	3.0	45.0	3.0	48.0	3.0	48.0	3.0	48.0	3.0	48.0
Specific conductance (μS/cm)	529	592	520	521	406	426	485	550	475	573
pH (units)	8.3	8.1	8.3	8.2	8.5	7.7	8.5	7.6	8.2	7.3
Water temperature (°C)	4.0	3.5	6.8	5.3	25.6	6.1	26.8	7.3	24.5	7.6
Secchi-disc (meters)	--	--	--	6.8	--	2.3	--	2.8	--	2.1
Dissolved oxygen	11.6	2.2	12.1	11.8	6.0	0	8.5	0	8.1	0
Total phosphorus (as P)	--	--	--	.010	--	.007	--	.006	--	.010
Phosphorus, ortho, diss. (as P)	--	--	--	<.005	--	.009	--	.038	--	.041
Chlorophyll a, phyto. (μg/L)	--	--	--	.001	--	.004	--	.005	--	.005
	--	--	<5	--	<5	--	<5	--	3	--

2-24-87

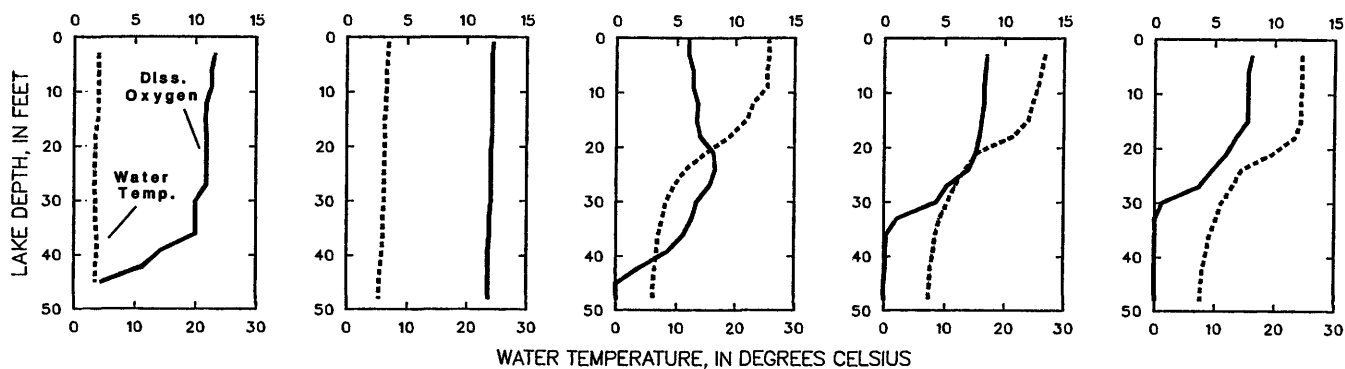
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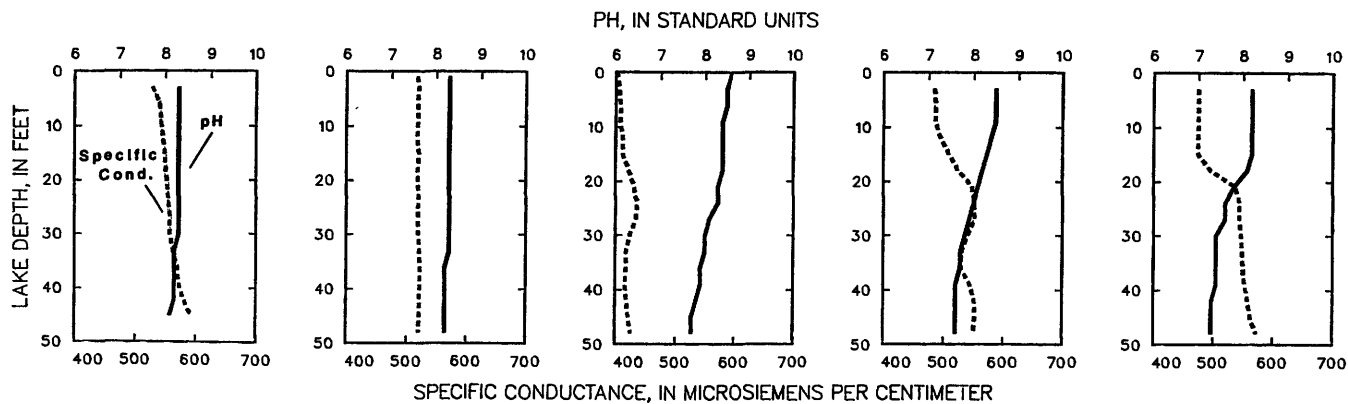
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8-18-87

DISSOLVED OXYGEN, IN MILLIGRAMS PER LITER



WATER TEMPERATURE, IN DEGREES CELSIUS



SPECIFIC CONDUCTANCE, IN MICROSIEMENS PER CENTIMETER

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 September 30, 1987.

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, 8.55 ft, July 20, 1987.

EXTREMES FOR CURRENT YEAR.--Maximum gage-height observed, 9.45 ft, Oct. 6, 7, 9; minimum observed, 8.55 ft, July 20.

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	8.96	---	---	---
2	---	---	9.03	---	---	---	---	---	---	---	---	---
3	---	9.21	---	---	---	---	---	---	---	---	---	---
4	---	---	9.02	---	---	---	---	---	---	---	---	---
5	---	9.20	9.02	---	---	---	---	---	8.70	---	---	---
6	9.45	9.16	---	---	---	---	---	---	---	---	---	---
7	9.45	9.19	---	9.00	---	---	9.00	8.76	---	---	---	---
8	---	---	---	---	---	---	---	8.88	---	---	---	---
9	9.45	---	---	---	8.94	---	---	---	---	---	---	---
10	9.44	9.18	---	---	---	8.91	9.02	---	8.60	---	---	---
11	---	9.19	---	---	---	---	---	9.00	---	---	---	---
12	---	9.17	---	---	---	---	---	---	---	---	---	---
13	9.43	---	---	---	---	---	8.96	8.97	---	---	---	---
14	9.41	9.16	---	---	---	---	---	8.91	---	---	---	---
15	9.41	---	---	---	---	---	---	8.90	---	---	---	---
16	9.39	---	9.05	---	---	9.07	---	---	---	---	---	---
17	9.38	9.09	---	---	8.85	---	---	---	---	---	---	---
18	---	---	---	---	---	---	---	8.70	---	---	---	---
19	---	9.06	---	---	---	---	---	---	---	---	---	---
20	9.34	9.01	---	9.04	---	---	8.82	---	---	8.55	---	---
21	9.33	9.02	---	---	---	---	---	---	---	8.60	---	---
22	9.33	---	---	---	---	---	---	---	8.62	---	---	---
23	9.32	---	---	---	---	---	---	---	---	---	---	---
24	---	---	---	---	8.90	---	---	---	8.60	---	---	---
25	---	9.01	---	---	---	---	---	---	---	---	---	---
26	---	9.00	9.01	---	8.90	---	---	---	---	---	8.90	---
27	9.28	---	---	---	---	---	---	---	---	---	---	---
28	9.28	---	---	---	---	---	---	---	---	---	---	---
29	9.27	---	---	---	---	---	---	---	---	---	---	---
30	9.27	---	---	---	---	---	---	---	---	---	---	---
31	9.24	---	---	---	---	9.01	---	---	---	---	---	---

WATER-QUALITY RECORDS

PERIOD OF RECORD.--January to December 1984 and February to September 1987.

REMARKS.--Lake sampled near center at a lake depth of 52 ft. Lake ice-covered February 24. Water-quality analyses by U.S. Geological Survey National Water Quality Laboratory through April, and Wisconsin State Laboratory of Hygiene thereafter.

WATER QUALITY DATA, FEBRUARY 24 TO AUGUST 26, 1987
(Milligrams per liter unless otherwise indicated)

	Feb. 24		Apr. 7		June 17		July 21		Aug. 26	
Depth of sample (ft)	3.0	48.0	3.0	49.5	3.0	48.0	3.0	48.0	3.0	48.0
Specific conductance ($\mu\text{S}/\text{cm}$)	503	540	498	495	490	538	451	525	464	552
pH (units)	8.2	8.0	8.3	8.3	8.8	7.5	8.6	7.5	8.4	7.5
Water temperature ($^{\circ}\text{C}$)	2.9	3.3	9.0	4.9	26.2	5.5	26.2	5.9	20.8	6.4
Color (Pt-Co. scale)	--	--	7	10	--	--	--	--	--	--
Turbidity (NTU)	--	--	1.0	2.0	--	--	--	--	--	--
Secchi-disc (meters)	--	--	--	3.8	--	5.1	--	3.6	--	4.2
Dissolved oxygen	11.5	2.8	12.7	12.3	10.5	.5	8.5	0	7.9	0
Hardness, as CaCO_3	--	--	270	270	--	--	--	--	--	--
Calcium, dissolved (Ca)	--	--	55	54	--	--	--	--	--	--
Magnesium, dissolved (Mg)	--	--	33	33	--	--	--	--	--	--
Sodium, dissolved (Na)	--	--	10	10	--	--	--	--	--	--
Potassium, dissolved (K)	--	--	2.2	2.2	--	--	--	--	--	--
Alkalinity as CaCO_3	--	--	234	230	--	--	--	--	--	--
Sulfate, dissolved (SO_4)	--	--	29	29	--	--	--	--	--	--
Chloride, dissolved (Cl)	--	--	23	23	--	--	--	--	--	--
Silica, dissolved (SiO_2)	--	--	5.1	5.4	--	--	--	--	--	--
Solids, dissolved, at 180°C	--	--	300	296	--	--	--	--	--	--
Nitrogen, nitrate, total (as N)	--	--	.39	.39	--	--	--	--	--	--
Nitrogen, nitrite, total (as N)	--	--	<.010	<.010	--	--	--	--	--	--
Nitrogen, ammonia, total (as N)	--	--	.040	.040	--	--	--	--	--	--
Nitrogen, organic, total (as N)	--	--	1.1	.96	--	--	--	--	--	--
Nitrogen, total (as N)	--	--	1.5	1.4	--	--	--	--	--	--
Total phosphorus (as P)	--	--	.035	.031	.009	.011	.011	.115	.013	.070
Phosphorus, ortho, diss. (as P)	--	--	.002	<.001	--	.006	--	.089	--	.046
Iron, dissolved (Fe) $\mu\text{g}/\text{L}$	--	--	7	5	--	--	--	--	--	--
Manganese, dissolved (Fe) $\mu\text{g}/\text{L}$	--	--	2	<1	--	--	--	--	--	--
Chlorophyll a, phyto. ($\mu\text{g}/\text{L}$)	--	--	2	--	<5	--	2	--	4	--

2-24-87

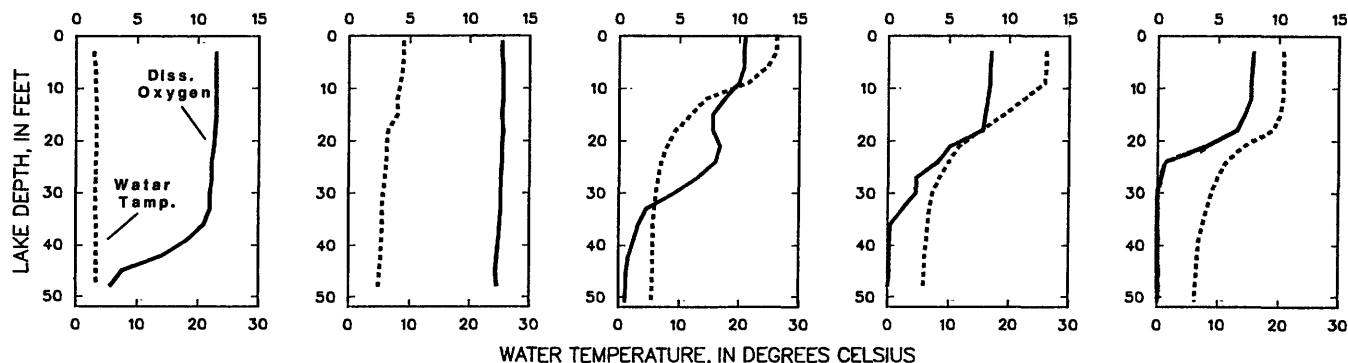
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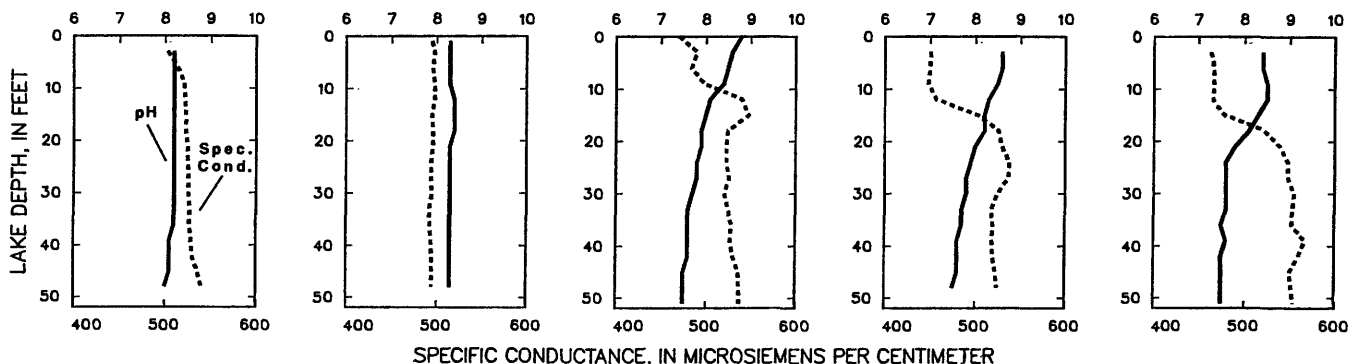
7-21-87

8-26-87

DISSOLVED OXYGEN, IN MILLIGRAMS PER LITER



PH, IN STANDARD UNITS



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: None, except for ice periods listed in rating table below. Records good except those for ice-affected periods, which are fair. Some regulation caused by manipulation of gates at dams on Horicon Marsh, Lake Sinissippi, and other dams in the basin.

AVERAGE DISCHARGE.--50 years, (water years 1932-70, 1977-87), 478 ft³/s, 6.70 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)
Oct. 5	0215	*3,960	*5.49	Apr. 23	2000	1,600	3.66

Minimum daily discharge, 59 ft³/s, June 20.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Shifting-control method used Feb. 28 to Apr. 14; stage-discharge relation affected by ice Jan. 18-31, and Feb. 7-11.)

1.0	48	3.0	977
1.2	78	4.0	1,970
1.5	146	5.0	3,240
2.0	311	6.0	4,770
2.5	594		

DISCHARGE, IN 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	3460	1950	1030	484	342	365	988	1350	375	85	187	340
2	3490	1910	1010	464	339	535	1020	1360	332	77	192	328
3	3510	1860	1000	443	346	690	1020	1330	409	70	163	316
4	3720	1790	990	443	349	749	1010	1280	497	66	150	321
5	3900	1730	899	439	345	770	994	1220	515	68	157	326
6	3760	1670	948	429	337	798	982	1170	495	86	154	306
7	3670	1600	760	440	330	833	972	1090	428	136	137	306
8	3600	1540	966	449	340	884	967	1040	344	207	161	316
9	3540	1470	946	420	340	914	958	996	287	300	142	303
10	3460	1430	746	382	350	902	946	954	274	330	161	330
11	3370	1380	740	506	370	881	1010	927	232	296	173	321
12	3400	1330	740	526	390	869	1050	852	187	266	188	291
13	3390	1150	783	550	399	856	1000	730	156	233	176	235
14	3270	1060	802	537	389	838	1090	501	114	213	181	173
15	3150	1180	855	527	347	801	1280	394	109	223	173	182
16	3070	1250	900	479	240	793	1260	405	90	215	207	216
17	2990	1230	911	405	231	808	1230	426	78	210	236	345
18	2910	1190	902	400	255	815	1200	422	78	184	419	510
19	2820	1140	820	380	253	866	1190	413	68	157	583	483
20	2730	1100	678	370	253	908	1160	434	59	151	622	518
21	2640	1060	570	360	255	933	1140	489	69	179	632	573
22	2560	1030	537	350	263	932	1290	533	87	213	629	609
23	2470	1040	542	340	262	936	1560	571	72	225	625	620
24	2380	1060	556	330	269	939	1460	610	72	208	603	598
25	2310	1060	585	330	268	929	1390	650	67	185	580	538
26	2270	1070	575	330	270	922	1370	690	67	184	549	494
27	2220	1070	592	330	267	907	1370	710	79	182	482	398
28	2170	1050	594	330	275	907	1390	714	82	187	434	309
29	2110	1040	588	330	---	954	1380	619	79	184	386	275
30	2060	1050	578	340	---	967	1370	478	86	223	358	251
31	2010	---	536	340	---	979	---	394	---	254	332	---
TOTAL	92410	39490	23679	12783	8674	26180	35047	23752	5887	5797	10172	11131
MEAN	2981	1316	764	412	310	845	1168	766	196	187	328	371
MAX	3900	1950	1030	550	399	979	1560	1360	515	330	632	620
MIN	2010	1030	536	330	231	365	946	394	59	66	137	173
CFSM	3.08	1.36	.79	.43	.32	.87	1.21	.79	.20	.19	.34	.38
IN.	3.55	1.52	.91	.49	.33	1.01	1.35	.91	.23	.22	.39	.43
CAL YR 1986	TOTAL 441611	MEAN 1210	MAX 3900	MIN 181	CFSM 1.25	IN. 17.0						
WTR YR 1987	TOTAL 295002	MEAN 808	MAX 3900	MIN 59	CFSM .83	IN. 11.3						

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: May 27-28 and ice period listed in rating table below. Records are 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, 616 ft³/s Oct. 4, gage height, 8.90 ft; minimum daily, 0.68 ft³/s Feb. 14.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Jan. 23-26.)

5.37	0.65	6.0	32
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
		9.0	644

DISCHARGE, IN 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	572	305	239	128	43	107	125	170	124	37	33	100
2	531	277	242	128	58	108	118	170	126	38	41	100
3	506	261	244	126	82	106	104	170	129	53	37	94
4	539	263	231	125	84	105	107	166	146	42	39	85
5	553	282	220	124	81	104	110	167	139	37	33	86
6	521	285	213	124	50	105	136	169	118	50	28	87
7	472	304	207	121	1.0	106	157	167	118	55	32	81
8	504	288	203	159	1.4	110	148	162	123	63	37	80
9	510	324	201	206	.78	113	125	157	110	54	42	81
10	489	303	187	199	.83	108	136	152	89	44	36	76
11	492	328	187	194	.79	142	146	144	82	43	31	92
12	509	315	180	189	.82	174	136	130	110	49	30	96
13	506	255	173	184	.78	171	111	101	95	55	31	95
14	502	329	170	174	.68	167	114	123	93	45	30	93
15	489	315	166	157	.77	164	120	108	82	40	30	89
16	476	300	165	135	.76	159	121	97	77	33	51	79
17	469	286	163	118	.77	155	119	99	68	33	73	108
18	451	333	161	106	10	150	120	97	68	32	80	103
19	441	361	156	95	14	147	114	95	79	34	85	100
20	426	356	152	90	11	148	128	94	61	41	83	112
21	417	334	150	76	25	143	165	78	61	44	91	131
22	402	317	149	72	24	137	165	109	64	41	108	144
23	387	307	145	60	48	136	162	104	55	42	102	148
24	371	310	143	50	87	143	159	87	53	43	104	148
25	365	320	141	43	95	143	153	78	67	43	106	140
26	353	303	139	40	80	147	155	89	75	50	106	124
27	340	288	138	39	100	147	181	100	62	40	110	121
28	323	272	136	39	99	147	176	110	47	37	113	120
29	327	258	105	39	---	159	171	120	51	38	109	128
30	296	245	131	42	---	133	171	122	43	38	108	129
31	281	---	131	42	---	121	---	131	---	36	113	---
TOTAL	13820	9024	5368	3424	1000.38	4205	4153	3866	2615	1330	2052	3170
MEAN	446	301	173	110	35.7	136	138	125	87.2	42.9	66.2	106
MAX	572	361	244	206	100	174	181	170	146	63	113	148
MIN	281	245	105	39	.68	104	104	78	43	32	28	76

CAL YR 1986 TOTAL 77709.00 MEAN 213 MAX 572 MIN 14
WTR YR 1987 TOTAL 54027.36 MEAN 148 MAX 572 MIN .68

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: None, except for ice periods listed in rating table below. Records are good except for ice-affected periods, which are fair. Some diurnal fluctuation at lower flows, due to manipulation of gates on small dams upstream.

AVERAGE DISCHARGE.--56 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)
Oct. 4	1400	*3,530	*8.78	Apr. 27	1600	1,500	4.88

Minimum daily discharge, 95 ft³/s Aug. 6.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Shifting-control method used Oct. 24 to Nov. 9, Nov. 16 to Dec. 5, and Mar. 9 to Apr. 28; stage-discharge relation affected by ice Nov. 10-15, Dec. 6-15, Jan. 5, 6, Jan. 16 to Feb. 3, Feb. 16-20, 23-28.)

1.9	81	4.0	1,030
2.2	171	6.0	1,950
2.5	282	8.0	3,040
3.0	510	10.0	4,340

DISCHARGE, IN 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	3380	1330	821	418	230	433	772	1180	467	144	138	264
2	3440	1270	820	417	240	555	812	1170	470	126	127	270
3	3460	1200	818	413	250	696	761	1130	446	128	124	258
4	3500	1170	776	413	258	751	758	1080	408	123	123	238
5	3510	1110	726	410	269	810	765	1020	377	119	115	223
6	3520	1050	720	410	279	803	716	967	346	128	95	213
7	3460	1020	700	408	294	787	659	921	317	153	97	209
8	3430	907	680	411	317	813	625	849	318	171	111	208
9	3390	931	660	452	318	899	581	753	315	172	153	199
10	3250	900	640	416	308	787	574	707	282	172	157	185
11	3110	860	620	420	321	746	593	671	260	174	151	182
12	3030	760	600	452	329	712	608	631	274	175	150	178
13	2950	640	580	461	333	667	628	566	250	179	157	177
14	2830	700	580	441	307	704	741	558	234	162	155	187
15	2720	660	560	444	288	703	889	520	224	163	153	193
16	2610	641	561	400	260	707	955	473	213	145	148	209
17	2500	644	551	360	250	709	979	449	198	136	209	276
18	2370	695	544	340	240	711	991	438	171	131	239	349
19	2260	640	534	310	230	732	962	415	167	134	312	501
20	2160	626	528	290	230	748	920	403	162	163	346	689
21	2080	653	515	270	223	768	928	405	159	166	341	827
22	1990	671	499	250	228	774	1000	430	190	159	374	900
23	1910	732	478	230	230	771	1180	444	177	140	342	912
24	1830	738	469	220	240	773	1300	421	166	142	297	922
25	1760	760	460	220	260	756	1380	417	169	143	263	893
26	1690	812	451	230	270	782	1430	398	165	135	265	838
27	1610	784	444	240	280	781	1460	378	158	123	274	769
28	1530	796	446	240	290	784	1400	382	137	128	265	702
29	1480	824	430	230	---	848	1340	396	142	144	275	658
30	1410	833	425	230	---	810	1270	429	162	155	264	609
31	1330	---	422	230	---	774	---	459	---	153	276	---
TOTAL	79500	25357	18058	10676	7572	23094	27977	19460	7524	4586	6496	13238
MEAN	2565	845	583	344	270	745	933	628	251	148	210	441
MAX	3520	1330	821	461	333	899	1460	1180	470	179	374	922
MIN	1330	626	422	220	223	433	574	378	137	119	95	177
CFSM	3.37	1.11	.76	.45	.35	.98	1.22	.82	.33	.19	.27	.58
IN.	3.88	1.24	.88	.52	.37	1.13	1.37	.95	.37	.22	.32	.65

CAL YR 1986 TOTAL 410477 MEAN 1125 MAX 3730 MIN 185 CFSM 1.48 IN. 20.0
WTR YR 1987 TOTAL 243538 MEAN 667 MAX 3520 MIN 95 CFSM .88 IN. 11.9

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. 14 to Jan. 2, Jan. 16-31, and Feb. 5-15. Records good except for ice-affected periods and July and August, which are fair.

AVERAGE DISCHARGE.--9 years, 1,517 ft³/s, 11.14 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, 90 ft³/s July 18, 1985.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 7,190 ft³/s Oct. 6, gage height, 9.53 ft; minimum daily discharge, 204 ft³/s July 5.

DISCHARGE, IN 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	6720	3450	2070	1000	683	785	1760	2580	990	235	366	711
2	6830	3310	2050	1000	671	1030	1810	2630	921	237	401	694
3	6860	3200	2050	1020	687	1310	1780	2610	887	225	467	654
4	6940	3100	2010	972	706	1540	1750	2550	890	214	236	619
5	7090	2970	1700	986	720	1630	1740	2460	923	204	233	600
6	7120	2870	1930	978	740	1700	1690	2390	902	222	275	569
7	7060	2790	1920	950	740	1730	1650	2280	864	282	265	597
8	6940	2710	1880	957	760	1740	1610	2170	789	314	304	590
9	6790	2610	1950	1040	780	1790	1580	2090	670	394	318	590
10	6600	2570	1920	978	780	1730	1560	2010	574	467	313	568
11	6390	2490	1840	1030	800	1710	1590	1920	524	482	316	567
12	6300	2390	1720	1100	800	1690	1660	1760	512	461	320	565
13	6240	1950	1650	1130	820	1630	1700	1570	430	426	332	527
14	6090	2240	1600	1130	820	1650	1870	1490	375	384	344	489
15	5930	2130	1600	1090	760	1650	2270	1260	342	392	353	475
16	5740	2110	1600	1000	733	1620	2400	1000	308	379	348	490
17	5560	2100	1600	940	612	1610	2400	992	300	375	434	641
18	5380	2120	1600	880	578	1630	2360	969	275	376	520	831
19	5210	2030	1500	820	570	1640	2290	942	260	351	742	1070
20	5060	2000	1500	780	547	1670	2210	926	241	345	936	1310
21	4890	2040	1400	740	514	1690	2190	1020	260	351	1040	1520
22	4700	1990	1300	700	498	1710	2330	1110	284	349	1080	1740
23	4540	2040	1300	660	509	1720	2770	1120	269	366	1050	1720
24	4380	2110	1200	640	518	1720	2910	1130	266	357	1000	1730
25	4240	2140	1200	640	518	1710	2920	1130	265	337	952	1700
26	4130	2150	1200	660	542	1720	2880	1190	262	348	979	1650
27	4030	2150	1200	660	543	1710	2820	1250	257	316	964	1530
28	3910	2140	1100	660	563	1700	2760	1260	270	316	918	1300
29	3790	2140	1100	660	---	1720	2720	1280	263	326	883	1180
30	3660	2120	1100	660	---	1730	2620	1190	252	342	822	1040
31	3530	---	1100	680	---	1730	---	1080	---	362	762	---
TOTAL	172650	72160	48890	27141	18512	50345	64600	49359	14625	10535	18273	28267
MEAN	5569	2405	1577	876	661	1624	2153	1592	487	340	589	942
MAX	7120	3450	2070	1130	820	1790	2920	2630	990	482	1080	1740
MIN	3530	1950	1100	640	498	785	1560	926	241	204	233	475
CFSM	3.01	1.30	.85	.47	.36	.88	1.16	.86	.26	.18	.32	.51
IN.	3.47	1.45	.98	.55	.37	1.01	1.30	.99	.29	.21	.37	.57
CAL YR 1986	TOTAL 898270	MEAN 2461	MAX 7120	MIN 438	CFSM 1.33	IN. 18.1						
WTR YR 1987	TOTAL 575357	MEAN 1576	MAX 7120	MIN 204	CFSM .85	IN. 11.6						

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: Oct. 2-27 and ice period listed in rating table below. Records are good except for estimated daily discharges, which are fair.

AVERAGE DISCHARGE.--6 years (water years 1981-82, 1984-87), 99.2 ft³/s, 11.04 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, 10 ft³/s July 22, 23, 1985.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 402 ft³/s Oct. 1, gage height, 2.40 ft; minimum, 14 ft³/s June 19, 20, gage height, 0.57 ft.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Shifting-control method used Aug. 18-20; stage-discharge relation affected by ice Jan. 23-26.)

0.5	12	1.5	171
0.6	18	2.0	293
0.7	28	2.5	430
1.0	73		

DISCHARGE, IN 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	391	187	150	93	89	92	133	116	78	35	41	80
2	360	184	146	92	88	98	127	157	63	33	43	79
3	340	183	138	92	88	103	135	182	73	31	47	73
4	310	180	140	92	87	106	129	178	69	28	55	63
5	300	176	137	92	84	107	124	176	48	30	32	64
6	300	176	136	92	84	108	120	159	49	33	66	52
7	290	179	134	89	87	109	113	147	47	41	52	43
8	270	162	135	90	84	117	110	131	46	62	46	42
9	250	158	134	89	81	124	109	113	49	75	47	44
10	220	170	121	95	80	109	115	109	49	72	58	53
11	200	170	114	93	83	87	121	102	49	68	75	61
12	190	159	112	95	81	91	133	97	48	69	78	63
13	190	141	108	94	79	104	140	95	43	70	69	60
14	180	153	110	94	78	131	169	93	42	71	73	60
15	180	141	110	93	75	129	184	90	41	78	78	68
16	170	140	113	93	70	123	200	86	38	79	77	68
17	160	140	116	85	71	122	213	83	35	77	71	81
18	160	141	116	85	72	121	200	82	42	73	96	89
19	160	141	116	81	70	121	189	86	16	67	112	79
20	160	139	114	89	69	123	177	85	15	60	104	87
21	160	134	108	88	70	126	151	94	17	57	83	92
22	150	139	105	88	70	128	185	112	17	47	77	92
23	150	146	104	84	69	125	223	110	18	34	71	91
24	150	148	102	82	68	124	223	109	20	34	65	88
25	150	153	100	82	68	122	220	109	23	37	78	84
26	160	152	99	84	67	122	212	109	24	44	86	78
27	170	151	97	86	68	125	192	108	24	44	77	73
28	187	149	96	87	71	127	182	108	24	44	90	71
29	189	149	96	88	---	134	174	101	28	43	93	77
30	190	152	95	89	---	132	150	94	38	43	89	82
31	192	---	94	89	---	137	---	88	---	42	79	---
TOTAL	6629	4693	3596	2765	2151	3627	4853	3509	1173	1621	2208	2137
MEAN	214	156	116	89.2	76.8	117	162	113	39.1	52.3	71.2	71.2
MAX	391	187	150	95	89	137	223	182	78	79	112	92
MIN	150	134	94	81	67	87	109	82	15	28	32	42
CFSM	1.75	1.28	.95	.73	.63	.96	1.33	.93	.32	.43	.58	.58
IN.	2.02	1.43	1.10	.84	.66	1.11	1.48	1.07	.36	.49	.67	.65

CAL YR 1986 TOTAL 51829 MEAN 142 MAX 391 MIN 57 CFSM 1.16 IN. 15.8
WTR YR 1987 TOTAL 38962 MEAN 107 MAX 391 MIN 15 CFSM .87 IN. 11.9

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 to September 1987.

GAGE.--Water-stage recorder. Datum of gage is 770.00 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily lake levels. Records good. Lake level regulated by dam at Indianford. Gage-height telemeter at station.

EXTREMES FOR CURRENT PERIOD.--July to September 1987: Maximum gage height, 6.95 ft Sept. 27 and 28; minimum, 5.93 ft Aug. 12.

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1										6.21	6.34	6.44
2										6.21	6.38	6.38
3										6.22	6.42	6.31
4										6.20	6.46	6.26
5										6.18	6.41	6.22
6										6.21	6.34	6.19
7										6.28	6.27	6.17
8										6.32	6.42	6.16
9										6.35	6.48	6.16
10										6.41	6.47	6.14
11										6.46	6.41	6.14
12										6.50	6.17	6.13
13										6.51	6.21	6.13
14										6.48	6.17	6.11
15										6.51	6.13	6.11
16										6.49	6.08	6.11
17										6.49	6.09	6.19
18										6.47	6.06	6.23
19										6.48	6.10	6.30
20										6.49	6.12	6.43
21										6.51	6.17	6.56
22										6.48	6.24	6.69
23										6.47	6.27	6.78
24										6.45	6.30	6.84
25										6.44	6.34	6.87
26										6.43	6.44	6.91
27										6.40	6.51	6.91
28										6.38	6.54	6.90
29										6.38	6.55	6.90
30										6.38	6.52	6.83
31										6.35	6.50	---
MEAN										6.39	6.32	6.42
MAX										6.51	6.55	6.91
MIN										6.18	6.06	6.11

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: Period of ice effect, Mar. 8-11. Records fair. Natural flow of stream affected by dam in Indianford. Discharge is adjusted for flow through wicket gates.

AVERAGE DISCHARGE.--12 years, 1,924 ft³/s, 9.93 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,900 ft³/s Apr. 5, 1979, gage height, 16.23 ft; minimum daily, 69 ft³/s May 13, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 9,360 ft³/s Oct. 10, gage height, 15.31 ft; minimum daily discharge, 342 ft³/s June 28.

DISCHARGE, IN 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	7940	5300	2980	1560	934	1110	2390	3730	1770	433	568	1160
2	8140	5110	2790	1570	925	1180	2540	3870	1750	369	582	1230
3	8380	4880	2570	1530	921	1340	2510	3890	1640	394	591	1140
4	8700	4890	2620	1500	924	1470	2510	3740	1640	417	623	1080
5	8710	4700	2550	1470	916	1640	2550	3630	1530	424	568	1030
6	8880	4510	2620	1430	900	1710	2450	3530	1450	407	467	997
7	8840	4440	2660	1430	921	1810	2370	3480	1300	453	484	942
8	9020	4010	2670	1370	978	1900	2350	3330	1400	479	590	817
9	9090	3960	2600	1370	975	2100	2270	3140	1280	477	580	813
10	9020	4120	2250	1390	1020	2000	2220	3150	1020	527	620	789
11	8860	3990	2290	1300	1050	2100	2240	3120	963	550	892	756
12	8880	3800	2250	1350	1060	2220	2280	3090	939	578	1260	720
13	8900	3600	2170	1350	1070	2230	2300	2780	941	645	1160	752
14	8610	3410	2120	1380	1150	2340	2610	2660	899	644	1090	758
15	8570	3300	2140	1400	1180	2440	2560	2570	940	704	1010	771
16	8390	3220	2130	1400	1160	2380	2640	2350	827	642	984	765
17	8220	3150	2070	1400	1090	2360	2750	2190	763	592	909	802
18	7900	3160	2040	1380	1040	2410	2830	2150	705	588	829	857
19	7690	3060	2030	1360	1030	2330	2890	2100	547	572	850	875
20	7430	3020	2050	1260	1020	2290	2930	2010	348	637	889	991
21	7230	2940	2000	1260	1010	2330	3160	1860	375	659	855	1160
22	7060	2880	1880	1260	1000	2370	3220	1760	423	667	999	1390
23	6860	2880	1860	1170	1010	2410	3210	1850	378	612	824	1480
24	6700	2820	1830	1130	1020	2430	3550	1840	379	650	784	1640
25	6530	2840	1770	1100	1040	2330	3650	1830	399	643	825	1640
26	6370	2910	1730	1060	1040	2370	3800	1740	370	680	1010	1670
27	6100	2790	1670	1050	1050	2410	3900	1880	373	625	1070	1650
28	5900	2820	1630	1050	1110	2510	3850	1930	342	611	1160	1640
29	5770	2860	1620	1050	---	2670	3830	1880	367	606	1330	1640
30	5590	3050	1610	993	---	2530	3860	1880	433	617	1240	1630
31	5330	---	1550	976	---	2470	---	1820	---	602	1250	---
TOTAL	239610	108420	66750	40299	28544	66190	86220	80780	26491	17504	26893	33585
MEAN	7729	3614	2153	1300	1019	2135	2874	2606	883	565	868	1119
MAX	9090	5300	2980	1570	1180	2670	3900	3890	1770	704	1330	1670
MIN	5330	2790	1550	976	900	1110	2220	1740	342	369	467	720
CFSM	2.94	1.37	.82	.49	.39	.81	1.09	.99	.34	.21	.33	.43
IN.	3.39	1.53	.94	.57	.40	.94	1.22	1.14	.37	.25	.38	.48

CAL YR 1986 TOTAL 1239000 MEAN 3395 MAX 9090 MIN 860 CFSM 1.29 IN. 17.5
WTR YR 1987 TOTAL 821286 MEAN 2250 MAX 9090 MIN 342 CFSM .86 IN. 11.6

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: Oct. 26 to Nov. 1, Jan. 26-29, and ice period listed in rating table below. Records good except for October to January and June, which are fair.

AVERAGE DISCHARGE.--13 years, 4.24 ft³/s, 3.15 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)
Oct. 4	1100	*85	*5.55				

Minimum discharge, 0.95 ft³/s July 26, 27, gage height, 3.84 ft.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Shifting-control method used Nov. 14 to Jan. 5, Apr. 1-9, and June 6 to July 1; stage-discharge relation affected by ice Jan. 16-25.)

3.8	0.84	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, IN 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	3.0	2.4	2.1	1.8	45	2.8	2.3	3.2	1.4	1.2	1.4
2	6.9	3.0	2.4	2.1	2.3	13	2.4	11	2.9	1.2	1.7	1.3
3	5.6	2.9	2.5	2.1	5.3	4.1	2.1	4.0	2.5	1.2	1.3	1.3
4	51	2.8	2.3	2.1	3.3	2.8	2.1	3.2	2.3	1.1	1.2	1.3
5	20	2.8	2.3	2.1	2.4	2.9	2.1	2.9	2.1	1.6	1.1	1.2
6	9.8	2.8	2.3	2.1	2.2	3.2	2.1	2.6	2.1	1.3	1.1	1.2
7	5.9	2.8	2.3	2.0	4.1	3.5	2.1	2.4	2.1	1.2	1.1	1.2
8	5.1	2.9	2.3	1.9	4.3	3.7	2.1	2.4	2.0	1.2	6.3	1.3
9	4.6	2.7	2.3	1.9	2.3	3.2	2.2	2.1	1.9	1.2	3.8	1.3
10	4.2	2.6	2.2	1.9	1.9	2.4	2.2	2.0	1.9	1.1	1.8	1.3
11	4.0	2.5	2.1	1.9	1.9	2.2	2.3	2.2	2.1	1.1	1.4	1.3
12	5.0	2.4	2.1	1.9	1.9	2.1	2.3	2.0	1.9	1.1	1.3	1.3
13	4.6	2.2	2.0	2.0	1.8	2.6	2.2	1.9	1.8	1.0	1.4	2.0
14	4.4	2.2	2.1	2.2	1.8	5.0	8.4	4.9	1.8	1.0	1.9	1.5
15	3.9	2.2	2.1	2.2	1.7	3.5	8.6	2.1	1.7	1.6	1.7	1.4
16	3.8	2.3	2.2	1.8	1.6	3.1	4.1	2.0	1.7	1.1	13	6.7
17	3.6	2.3	2.2	1.7	1.6	2.9	3.5	2.0	1.7	1.1	15	15
18	3.4	2.3	2.2	1.7	1.6	4.1	3.1	1.9	1.7	1.0	3.1	7.8
19	3.2	2.2	2.2	1.7	1.6	5.9	2.7	2.5	1.6	1.4	2.3	3.4
20	3.2	2.3	2.1	1.6	1.6	3.9	2.5	8.5	1.6	3.3	1.6	4.2
21	3.2	2.3	2.1	1.6	1.7	3.5	2.4	7.4	1.6	1.3	1.5	3.4
22	3.2	2.3	2.1	1.4	1.8	3.3	13	3.2	1.6	1.1	1.4	2.8
23	3.2	2.7	2.1	1.3	1.8	3.1	9.3	2.6	1.5	1.0	1.3	2.5
24	3.2	2.5	2.2	1.2	1.8	3.0	4.9	2.4	1.4	1.1	1.2	2.1
25	3.2	2.4	2.2	1.2	1.8	3.3	3.9	2.6	1.5	1.0	1.2	1.9
26	3.2	2.4	2.1	1.2	1.8	3.4	3.2	2.7	1.4	1.0	6.1	1.7
27	3.2	2.5	2.1	1.3	1.8	3.0	2.9	20	1.3	2.1	3.4	1.6
28	3.1	2.4	2.1	1.4	2.7	2.7	2.7	8.7	1.3	1.3	1.9	1.6
29	3.1	2.4	2.1	1.5	---	3.6	2.5	5.5	1.3	3.4	1.6	1.6
30	3.1	2.4	2.1	1.7	---	2.9	2.3	3.6	1.2	2.9	1.5	1.6
31	3.1	---	2.1	1.6	---	2.7	---	3.2	---	1.6	1.4	---
TOTAL	199.0	75.5	67.9	54.4	62.2	153.6	109.0	126.8	54.7	44.0	85.8	78.2
MEAN	6.42	2.52	2.19	1.75	2.22	4.95	3.63	4.09	1.82	1.42	2.77	2.61
MAX	51	3.0	2.5	2.2	5.3	45	13	20	3.2	3.4	15	15
MIN	3.1	2.2	2.0	1.2	1.6	2.1	2.1	1.9	1.2	1.0	1.1	1.2
CFSM	.35	.14	.12	.10	.12	.27	.20	.22	.10	.08	.15	.14
IN.	.40	.15	.14	.11	.13	.31	.22	.26	.11	.09	.17	.16

CAL YR 1986 TOTAL 1927.7 MEAN 5.28 MAX 79 MIN 1.4 CFSM .29 IN. 3.92
WTR YR 1987 TOTAL 1111.1 MEAN 3.04 MAX 51 MIN 1.0 CFSM .17 IN. 2.26

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 1986 TO SEPTEMBER 1987

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (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- PHORUS, TOTAL (MG/L AS P) (00665)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P) (00666)
OCT , 1986									
04...	0445	50	1.80	1.00	3.7	4.7	6.5	1.20	0.520
04...	0745	80	3.30	0.580	2.9	3.5	6.8	1.00	0.780
04...	1045	84	3.10	1.00	3.6	4.6	7.7	0.530	<0.010
04...	2045	41	5.00	2.10	6.9	9.0	14	1.50	0.070
MAY , 1987									
27...	0530	28	3.50	0.310	2.2	2.5	6.0	0.530	0.240
27...	0630	43	10.0	2.60	11	14	24	6.00	2.30
27...	0730	47	4.30	3.60	17	21	25	7.80	1.80
27...	1000	33	5.20	3.20	12	15	20	6.50	1.60
27...	1230	22	4.80	2.40	9.6	12	17	4.40	1.40
27...	1720	20	2.10	1.60	2.8	4.4	6.5	1.90	0.450
27...	1721	20	2.20	1.60	2.7	4.3	6.5	0.640	0.460
29...	1015	5.0	3.00	6.00	6.0	12	15	2.40	1.70
SEP									
16...	0815	15	1.40	0.070	2.3	2.4	3.8	0.810	0.120
16...	1515	17	1.20	0.080	1.2	1.3	2.5	0.690	0.130
17...	1215	18	1.00	1.00	3.6	4.6	5.6	0.920	0.530
17...	1630	24	4.90	0.560	3.0	3.6	8.5	0.900	0.400
17...	1930	24	0.400	0.080	1.0	1.1	1.5	0.120	<0.010
18...	0030	19	5.80	0.540	2.6	3.1	8.9	0.930	0.440
18...	0630	11	7.00	0.750	3.6	4.3	11	1.30	0.700

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY) (80155)	DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY) (80155)
OCT , 1986					MAY , 1987				
04...	0415	26	180	13	27...	1721	20	681	37
04...	0645	83	1470	329	29...	1015	5.0	168	2.3
04...	0945	79	958	204	JUL				
04...	1345	66	411	73	20...	2000	25	412	28
04...	2145	37	169	17	AUG				
MAY , 1987					17...	1108	6.4	227	3.9
02...	0200	23	205	13	17...	1355	4.8	144	1.9
02...	0215	25	309	21	26...	1300	11	122	3.6
02...	0245	29	484	38	26...	1500	11	174	5.2
02...	0315	31	658	55	26...	2015	12	150	4.9
14...	0445	25	248	17	26...	2215	11	351	10
14...	0500	32	397	34	SEP				
14...	0530	28	1150	87	16...	0730	16	96	4.1
20...	0645	33	385	34	16...	0915	11	252	7.5
20...	0700	37	1430	143	16...	1615	15	352	14
20...	0800	25	1520	103	16...	1715	11	330	9.8
27...	0500	22	159	9.4	17...	1315	19	235	12
27...	0600	35	705	67	17...	1515	19	168	8.6
27...	0700	46	2750	342	17...	1730	24	244	16
27...	0800	45	2810	341	17...	2030	24	253	16
27...	0930	36	2380	231	17...	2330	20	200	11
27...	1100	27	1830	133	18...	0230	15	166	6.7
27...	1200	23	1520	94	18...	0530	11	123	3.7
27...	1720	20	740	40					

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 and concrete control. Datum of gage is 855.3 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Estimated daily discharge: May 27. Records are good except those for flow less than 0.3 ft³/s, which are poor.

AVERAGE DISCHARGE.--11 years (1977-87), 1.40 ft³/s, 5.78 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, 437 ft³/s Aug. 16, gage height, 3.31 ft; no flow on many days during current year.

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

0.41	0.0	0.9	12
0.5	0.55	1.0	18
0.6	1.8	1.1	26
0.7	3.8	1.2	34
0.8	6.7		

DISCHARGE, IN 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	.25	.92	.01	.11	.87	10	.68	1.3	.90	.00	.13	.04
2	.11	.01	.98	.09	1.2	.52	.12	17	1.3	1.4	.86	.23
3	.30	.00	.17	.22	.79	.24	.06	.44	.04	.65	.13	.00
4	20	.00	.01	.11	.27	.15	.06	.00	.00	.01	.06	.00
5	.21	.00	.00	.08	.22	.15	.05	.11	.02	3.0	.00	.00
6	.02	.00	.04	.12	.56	.17	.00	.45	.02	3.3	.00	.00
7	.01	.00	.22	.11	1.2	.24	.00	.00	.62	.72	.00	.08
8	.00	.21	.18	.06	.45	.18	.00	.00	.07	.11	20	.14
9	.00	.00	.28	.06	.11	.07	.00	.00	.00	.01	4.1	.05
10	.08	.00	.03	.03	.04	.03	.20	.00	.03	.00	.26	.00
11	.05	.13	.00	.06	.12	.06	1.2	.30	2.7	.00	.04	.00
12	2.0	.02	.00	.26	.22	.06	.33	.06	.18	.00	.02	.00
13	1.1	.00	.00	.58	.15	4.9	.26	.06	.04	.00	.67	4.0
14	1.6	.00	.00	.40	.12	2.6	18	2.6	.01	.00	6.7	.69
15	.20	.00	.00	.16	.02	.23	.81	.25	.02	2.8	4.2	.40
16	1.5	.00	.12	.04	.00	.13	.13	.16	.02	.10	30	17
17	1.5	.00	.07	.00	.00	.07	.04	.06	.03	.00	13	12
18	.07	.00	.00	.00	.00	5.6	.00	.91	.03	.00	4.3	.52
19	.00	.00	.00	.00	.02	.41	.00	2.7	.07	1.1	.28	.63
20	.07	.14	.00	.00	.05	.19	.00	17	.05	8.3	.02	1.2
21	.14	.15	.00	.00	.09	.06	2.0	1.6	1.0	.67	.40	.00
22	.00	.72	.00	.00	.57	.06	21	.08	.16	.02	.02	.00
23	.10	3.5	.00	.00	.18	.06	1.2	.11	.0	.00	.00	.00
24	.09	.06	.00	.00	.13	.15	.15	.00	.00	.69	.00	.00
25	1.1	.06	.00	.00	.07	1.8	.01	1.1	2.6	.06	.00	.00
26	4.6	.17	.00	.00	.06	.33	.00	.61	.09	.30	13	.00
27	.36	.08	.00	.00	.06	.06	.03	3.8	.00	8.7	.36	.00
28	.68	.00	.00	.00	7.6	.11	.00	4.3	.00	1.3	.19	.00
29	.00	.00	.03	.02	---	5.1	.00	1.2	.02	10	.02	.04
30	.00	.00	.22	.10	---	.32	.08	.29	.00	1.7	.00	.00
31	.01	---	.19	.13	---	.27	---	.00	---	1.3	.00	---
TOTAL	36.15	6.17	2.55	2.74	15.17	34.32	46.41	56.49	10.02	46.24	98.76	37.02
MEAN	1.17	.21	.08	.09	.54	1.11	1.55	1.82	.33	1.49	3.19	1.23
MAX	20	3.5	.98	.58	7.6	10	21	17	2.7	10	30	17
MIN	.00	.00	.00	.00	.00	.03	.00	.00	.00	.00	.00	.00
CFSM	.35	.06	.0	.0	.16	.34	.47	.55	.10	.45	.97	.38
IN.	.41	.07	.0	.0	.17	.39	.52	.64	.11	.52	1.12	.42

CAL YR 1986 TOTAL 481.68 MEAN 1.32 MAX 35 MIN .00 CFSM .40 IN. 5.45
WTR YR 1987 TOTAL 392.04 MEAN 1.07 MAX 30 MIN .00 CFSM .33 IN. 4.43

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 1986 TO SEPTEMBER 1987

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY) (80155)	DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY) (80155)
OCT , 1986					MAY , 1987				
04...	0315	8.7	199	4.7	02...	0655	12	54	1.7
04...	0345	73	382	75	20...	0540	24	822	53
04...	0415	91	375	92	20...	0610	131	554	196
04...	0445	69	184	34	20...	0640	92	1320	328
04...	0545	119	282	91	20...	0810	41	167	18
04...	0845	37	89	8.9	20...	1040	15	57	2.3
MAR , 1987					JUL				
13...	2010	19	276	14	20...	1820	7.7	282	5.9
13...	2040	33	252	22	20...	1850	77	409	85
13...	2240	29	85	6.7	20...	1920	92	378	94
14...	0050	9.6	35	0.91	20...	2050	38	76	7.8
APR					20...	2250	6.7	39	0.71
14...	0145	23	230	14	29...	0810	29	456	36
14...	0545	30	125	10	29...	1915	21	366	21
14...	1600	11	59	1.8	29...	1945	87	822	193
14...	1700	44	97	12	29...	2045	53	578	83
14...	1730	70	285	54	29...	2245	37	431	43
14...	1830	52	502	70	30...	0115	6.7	400	7.2
14...	1930	27	204	15	AUG				
21...	1900	16	265	11	26...	0445	17	36	1.7
22...	0205	29	118	9.2	26...	0515	21	197	11
22...	0635	28	34	2.6	26...	0615	13	42	1.5
22...	1035	65	238	42	26...	0715	21	33	1.9
22...	1036	65	266	47	26...	0815	34	84	7.7
22...	1135	53	157	22	26...	0945	17	35	1.6
22...	1335	35	68	6.4	26...	1145	41	106	12
22...	1705	9.1	50	1.2	26...	1345	41	132	15
MAY					26...	1645	7.2	251	4.9
01...	2325	16	103	4.4	SEP				
01...	2355	38	172	18	16...	0545	8.2	104	2.3
02...	0025	56	187	28	16...	0615	102	261	72
02...	0125	81	223	49	16...	0715	57	234	36
02...	0225	109	482	142	16...	0945	6.4	265	4.6
02...	0425	37	97	9.7					

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, 11.40 ft Oct. 5; minimum, 8.62 ft Feb. 2.

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11.08	10.40	9.85	9.39	8.67	8.95	9.62	10.14	10.03	9.83	9.93	10.18
2	11.09	10.34	9.87	9.38	8.65	8.99	9.63	10.23	10.05	9.82	9.95	10.15
3	11.10	10.28	9.91	9.35	8.67	9.02	9.61	10.24	10.05	9.83	9.96	10.10
4	11.20	10.23	9.91	9.33	8.68	9.04	9.63	10.23	10.02	9.81	9.95	10.05
5	11.26	10.18	9.88	9.31	8.68	9.06	9.64	10.22	10.01	9.83	9.91	10.02
6	11.23	10.12	9.88	9.29	8.69	9.07	9.64	10.20	10.00	9.85	9.89	10.00
7	11.20	10.07	9.90	9.27	8.70	9.08	9.65	10.18	9.99	9.86	9.88	9.97
8	11.21	10.03	9.92	9.24	8.72	9.11	9.66	10.15	9.97	9.86	9.96	9.94
9	11.18	10.0	9.95	9.23	8.72	9.14	9.67	10.12	9.94	9.86	10.04	9.91
10	11.15	9.91	9.93	9.23	8.73	9.12	9.68	10.09	9.91	9.85	10.04	9.87
11	11.11	9.86	9.89	9.20	8.74	9.13	9.71	10.07	9.92	9.85	10.03	9.83
12	11.11	9.82	9.85	9.18	8.75	9.14	9.72	10.05	9.95	9.85	10.02	9.79
13	11.07	9.73	9.81	9.16	8.76	9.15	9.73	10.01	9.94	9.83	10.03	9.77
14	11.04	9.66	9.79	9.15	8.77	9.21	9.81	10.01	9.95	9.80	10.05	9.75
15	10.99	9.63	9.77	9.12	8.77	9.23	9.89	9.98	9.93	9.81	10.10	9.72
16	10.95	9.63	9.75	9.10	8.78	9.23	9.91	9.96	9.92	9.80	10.17	9.77
17	10.91	9.64	9.72	9.08	8.78	9.24	9.92	9.93	9.91	9.78	10.36	9.90
18	10.87	9.66	9.70	9.06	8.79	9.25	9.94	9.90	9.91	9.78	10.37	9.97
19	10.83	9.67	9.68	9.04	8.79	9.30	9.95	9.93	9.91	9.79	10.38	10.01
20	10.79	9.73	9.65	9.01	8.80	9.32	9.96	9.92	9.90	9.81	10.37	10.05
21	10.77	9.73	9.63	8.99	8.80	9.33	10.00	9.97	9.91	9.85	10.36	10.07
22	10.73	9.73	9.60	8.96	8.82	9.35	10.10	9.97	9.92	9.86	10.37	10.08
23	10.71	9.80	9.58	8.93	8.83	9.36	10.18	9.93	9.91	9.85	10.33	10.08
24	10.67	9.80	9.56	8.89	8.83	9.38	10.21	9.90	9.91	9.85	10.30	10.07
25	10.65	9.80	9.53	8.86	8.84	9.42	10.21	9.88	9.93	9.85	10.27	10.07
26	10.65	9.83	9.51	8.83	8.84	9.45	10.22	9.88	9.92	9.85	10.30	10.07
27	10.62	9.83	9.48	8.80	8.85	9.47	10.24	9.89	9.88	9.84	10.32	10.06
28	10.57	9.83	9.46	8.77	8.87	9.49	10.20	9.94	9.86	9.88	10.30	10.07
29	10.54	9.84	9.45	8.75	---	9.57	10.18	9.99	9.84	9.90	10.29	10.07
30	10.48	9.84	9.44	8.73	---	9.59	10.16	10.01	9.84	9.92	10.27	10.06
31	10.42	---	9.41	8.70	---	9.58	---	10.03	---	9.93	10.24	---
MEAN	10.9	9.89	9.72	9.08	8.76	9.25	9.89	10.0	9.94	9.84	10.2	9.98
MAX	11.26	10.40	9.95	9.39	8.87	9.59	10.24	10.24	10.05	9.93	10.38	10.18
MIN	10.42	9.63	9.41	8.70	8.65	8.95	9.61	9.88	9.84	9.78	9.88	9.72
CAL YR 1986	MEAN 9.95		MAX 11.26		MIN 8.95							
WTR YR 1987	MEAN 9.79		MAX 11.26		MIN 8.65							

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DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.26	6.25	5.29	5.38	5.33	4.53	4.62	5.19	5.45	4.90	5.09	5.33
2	6.24	6.25	5.27	5.38	5.31	4.56	4.60	5.34	5.45	4.89	5.09	5.35
3	6.22	6.25	5.21	5.38	5.22	4.55	4.64	5.37	5.40	4.90	5.07	5.36
4	6.28	6.25	5.18	5.38	5.15	4.55	4.65	5.35	5.36	4.92	5.03	5.37
5	6.29	6.25	5.17	5.38	5.10	4.54	4.65	5.34	5.33	4.93	5.00	5.39
6	6.25	6.25	5.16	5.38	5.04	4.53	4.66	5.34	5.31	4.95	4.96	5.40
7	6.23	6.26	5.15	5.37	5.00	4.52	4.67	5.35	5.29	5.00	4.93	5.43
8	6.21	6.25	5.14	5.36	4.93	4.52	4.68	5.35	5.29	5.01	5.05	5.43
9	6.17	6.19	5.11	5.36	4.89	4.50	4.70	5.34	5.26	5.02	5.11	5.43
10	6.14	6.19	5.08	5.37	4.85	4.47	4.70	5.35	5.23	5.02	5.10	5.44
11	6.16	6.17	5.14	5.37	4.82	4.44	4.72	5.35	5.21	5.03	5.06	5.44
12	6.18	6.13	5.17	5.36	4.78	4.42	4.73	5.35	5.19	5.03	5.03	5.45
13	6.18	6.11	5.20	5.36	4.75	4.43	4.75	5.35	5.16	5.01	5.01	5.48
14	6.17	6.11	5.23	5.36	4.71	4.49	4.84	5.36	5.13	4.99	5.03	5.51
15	6.18	6.08	5.26	5.35	4.68	4.49	4.90	5.36	5.11	5.04	5.07	5.52
16	6.18	5.97	5.28	5.34	4.65	4.46	4.91	5.36	5.07	5.05	5.13	5.60
17	6.18	5.88	5.29	5.34	4.62	4.44	4.93	5.37	5.05	5.04	5.30	5.66
18	6.17	5.81	5.30	5.34	4.60	4.46	4.94	5.39	5.02	5.04	5.30	5.69
19	6.17	5.75	5.32	5.33	4.57	4.46	4.96	5.41	5.01	5.03	5.28	5.66
20	6.17	5.70	5.32	5.32	4.55	4.44	4.96	5.47	4.99	5.05	5.25	5.62
21	6.17	5.63	5.33	5.32	4.54	4.43	4.96	5.55	4.98	5.07	5.22	5.57
22	6.17	5.58	5.34	5.32	4.53	4.41	5.11	5.52	4.97	5.06	5.20	5.51
23	6.18	5.54	5.34	5.33	4.51	4.41	5.22	5.49	4.95	5.05	5.15	5.45
24	6.18	5.49	5.35	5.34	4.49	4.41	5.24	5.48	4.94	5.05	5.12	5.41
25	6.17	5.46	5.35	5.34	4.48	4.45	5.24	5.48	4.94	5.05	5.13	5.35
26	6.19	5.41	5.35	5.34	4.47	4.47	5.22	5.48	4.91	5.05	5.21	5.30
27	6.19	5.38	5.35	5.34	4.45	4.50	5.19	5.50	4.89	5.06	5.25	5.26
28	6.21	5.36	5.36	5.33	4.45	4.53	5.18	5.53	4.89	5.07	5.29	5.22
29	6.22	5.33	5.37	5.35	---	4.58	5.19	5.53	4.89	5.10	5.34	5.17
30	6.22	5.33	5.38	5.34	---	4.58	5.18	5.52	4.89	5.11	5.32	5.11
31	6.23	---	5.39	5.34	---	4.62	---	5.48	---	5.10	5.31	---
MEAN	6.20	5.89	5.26	5.35	4.77	4.49	4.90	5.41	5.12	5.02	5.14	5.43
MAX	6.29	6.26	5.39	5.38	5.33	4.62	5.24	5.55	5.45	5.11	5.34	5.69
MIN	6.14	5.33	5.08	5.32	4.45	4.41	4.60	5.19	4.89	4.89	4.93	5.11
CAL YR 1986	MEAN 5.43	MAX 6.29	MIN 4.70									
WTR YR 1987	MEAN 5.25	MAX 6.29	MIN 4.41									

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 except for June 19 to August 19, which are poor. Flow regulated by dams at outlets of Lake Mendota and Lake Waubesa. The Madison Metropolitan Sewerage District diverted an average of 57 ft³/s of effluent into the Badfish Creek basin during 1987 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.--57 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, 387 ft³/s Nov. 9, gage height, 5.92 ft; maximum gage height, 5.97 ft Oct. 4, 5, backwater from aquatic vegetation; minimum, 3.8 ft³/s June 30.

DISCHARGE, IN 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	352	370	201	264	291	150	39	226	213	5.7	132	177
2	349	371	204	267	292	160	40	241	211	5.2	129	180
3	345	371	206	268	288	156	35	248	210	7.9	120	185
4	358	372	202	269	277	148	36	270	201	9.6	103	188
5	363	374	189	270	265	147	37	279	194	6.0	94	188
6	357	374	177	272	256	150	38	271	186	10	76	187
7	348	374	178	274	247	155	38	263	178	19	70	204
8	342	375	179	273	244	161	39	256	173	28	113	211
9	337	381	180	274	232	163	41	247	169	34	161	213
10	330	376	181	279	223	160	43	239	160	25	152	205
11	327	372	175	279	216	156	46	239	154	30	141	200
12	332	373	179	277	208	153	47	231	155	37	126	204
13	337	366	184	276	200	153	45	223	148	33	118	208
14	341	356	190	275	192	166	57	226	142	39	128	213
15	337	354	196	277	183	168	75	223	134	49	133	234
16	338	347	203	276	175	168	81	214	126	49	144	259
17	337	331	209	275	168	166	89	209	118	43	164	292
18	336	320	215	275	160	170	94	203	112	34	161	309
19	336	301	220	274	153	167	98	208	108	37	162	306
20	338	295	224	272	147	150	87	221	107	44	159	302
21	340	280	228	271	142	155	77	238	111	39	151	295
22	341	262	231	274	140	157	144	235	114	32	147	285
23	344	264	236	281	138	108	221	227	70	35	136	273
24	345	254	239	280	134	38	220	217	32	35	130	261
25	347	240	244	282	129	36	213	208	24	37	123	249
26	357	236	247	283	127	32	210	205	15	39	135	237
27	357	226	248	283	124	31	222	209	9.5	29	151	227
28	357	219	250	285	124	33	235	220	5.4	33	158	219
29	360	213	255	288	---	39	237	228	4.9	74	165	215
30	362	207	260	292	---	41	235	226	5.7	128	168	207
31	358	---	262	291	---	38	---	220	---	136	173	---
TOTAL	10708	9554	6592	8576	5475	3875	3119	7170	3590.5	1162.4	4223	6933
MEAN	345	318	213	277	196	125	104	231	120	37.5	136	231
MAX	363	381	262	292	292	170	237	279	213	136	173	309
MIN	327	207	175	264	124	31	35	203	4.9	5.2	70	177
CFSM	1.06	.97	.65	.85	.60	.38	.32	.71	.37	.11	.42	.71
IN.	1.22	1.09	.75	.98	.62	.44	.35	.82	.41	.13	.48	.79

CAL YR 1986 TOTAL 91252.0 MEAN 250 MAX 412 MIN 74 CFSM .76 IN. 10.4
WTR YR 1987 TOTAL 70977.9 MEAN 194 MAX 381 MIN 4.9 CFSM .59 IN. 8.07

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: None, except for ice period listed in rating table below. Records good except those for ice-affected period, which is fair. Approximately 55 percent of flow is effluent from Nine Springs treatment plant. (Data provided by Madison Metropolitan Sewerage District.)

AVERAGE DISCHARGE.--10 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, 324 ft³/s Apr. 22, gage height, 5.95 ft; minimum daily, 67 ft³/s Aug. 3 and 6.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Jan. 23-26 and 30.)

4.5	64	5.0	152
4.7	98	6.0	340

DISCHARGE, IN 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	207	122	112	90	89	200	114	92	98	93	75	102
2	174	115	115	88	95	118	111	172	104	90	69	99
3	162	118	121	92	101	102	102	141	100	90	67	100
4	225	117	109	91	97	97	99	117	95	86	74	107
5	190	116	104	94	93	98	99	108	96	82	69	99
6	157	115	104	97	97	99	97	104	94	87	67	92
7	148	113	103	95	101	101	98	100	90	106	68	98
8	141	113	107	95	104	100	101	103	92	96	125	103
9	131	108	107	97	96	100	103	100	99	94	97	106
10	127	110	102	96	96	95	104	96	102	93	77	103
11	122	112	101	91	95	93	104	102	104	88	81	95
12	150	110	100	97	96	92	102	105	108	82	80	92
13	143	105	99	99	95	93	96	104	103	80	73	95
14	141	107	94	101	91	108	144	113	97	82	107	93
15	133	104	97	102	88	99	177	109	96	90	115	94
16	127	103	100	99	92	98	129	105	102	82	101	126
17	123	105	101	95	93	95	115	102	100	81	139	155
18	114	108	99	92	92	104	106	104	99	77	105	152
19	110	109	106	92	92	131	94	120	99	74	93	119
20	114	108	97	96	94	113	89	122	99	76	91	114
21	119	108	96	93	92	104	105	144	107	90	94	103
22	115	104	95	94	92	101	216	121	106	81	89	107
23	117	131	98	96	95	105	202	105	107	79	79	103
24	117	127	99	94	97	107	142	98	101	78	84	105
25	117	123	91	92	94	112	119	93	107	74	87	96
26	139	125	87	94	92	116	106	119	100	69	141	88
27	135	115	91	93	90	110	103	160	90	82	155	84
28	132	106	87	92	95	103	100	148	87	82	143	82
29	126	107	91	94	---	110	101	139	87	81	132	92
30	123	106	95	96	---	106	95	110	96	93	106	89
31	122	---	93	90	---	107	---	98	---	84	98	---
TOTAL	4301	3370	3101	2927	2644	3317	3473	3554	2965	2622	2981	3093
MEAN	139	112	100	94.4	94.4	107	116	115	98.8	84.6	96.2	103
MAX	225	131	121	102	104	200	216	172	108	106	155	155
MIN	110	103	87	88	88	92	89	92	87	69	67	82

CAL YR 1986 TOTAL 43076 MEAN 118 MAX 365 MIN 82
WTR YR 1987 TOTAL 38348 MEAN 105 MAX 225 MIN 67

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: None, except for ice periods listed in rating tables 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.--10 years, 375 ft³/s, 9.85 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, 1,070 ft³/s Oct. 1, gage height, 5.46 ft; minimum daily, 140 ft³/s June 15.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Dec. 12, 13, and Jan. 23-26.)

3.2	134	4.5	561
3.5	210	5.0	796
4.0	366	6.0	1,410

DISCHARGE, IN 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	852	492	489	415	430	503	171	424	389	149	155	330
2	731	511	425	397	409	449	168	540	317	146	149	342
3	694	520	472	370	441	404	162	523	423	144	146	257
4	750	484	466	403	454	383	162	477	378	215	150	273
5	726	568	443	402	435	379	267	479	255	212	145	369
6	675	570	411	426	454	331	276	527	410	144	143	410
7	656	555	278	407	448	452	145	555	384	162	144	402
8	646	592	452	402	450	254	146	516	241	155	371	417
9	611	555	449	406	431	433	167	453	293	176	403	399
10	566	551	431	409	388	418	235	439	288	180	430	373
11	571	558	428	395	416	232	294	466	269	152	438	368
12	542	558	410	430	455	420	176	460	267	146	335	369
13	535	592	400	425	423	398	146	447	268	144	374	377
14	550	541	390	395	419	309	250	458	180	147	416	281
15	607	501	385	399	420	352	372	445	140	158	297	374
16	592	457	340	413	409	416	309	406	146	230	346	454
17	561	507	393	450	416	251	276	395	151	223	417	581
18	542	525	383	438	405	398	285	415	148	149	467	548
19	493	536	384	423	384	419	279	412	149	147	233	490
20	507	530	382	430	380	424	269	424	151	153	333	493
21	517	526	380	441	305	405	240	475	188	233	326	458
22	518	523	385	449	397	390	320	462	330	155	383	556
23	537	553	373	430	378	295	599	414	158	153	410	594
24	517	552	368	430	278	308	486	413	152	151	210	603
25	510	545	329	420	361	303	416	418	161	151	315	573
26	655	543	424	420	304	175	390	413	281	145	353	490
27	650	533	377	417	265	168	392	530	218	160	330	515
28	620	518	374	379	291	161	397	482	144	161	491	438
29	589	525	382	434	---	175	440	459	144	159	488	446
30	469	515	395	430	---	346	465	430	151	218	351	453
31	483	---	405	427	---	249	---	435	---	307	228	---
TOTAL	18472	16036	12403	12912	11046	10600	8700	14192	7174	5325	9777	13033
MEAN	596	535	400	417	394	342	290	458	239	172	315	434
MAX	852	592	489	450	455	503	599	555	423	307	491	603
MIN	469	457	278	370	265	161	145	395	140	144	143	257
CFSM	1.15	1.03	.77	.81	.76	.66	.56	.89	.46	.33	.61	.84
IN.	1.33	1.15	.89	.93	.79	.76	.63	1.02	.52	.38	.70	.94
CAL YR 1986	TOTAL 171319	MEAN 469	MAX 1070	MIN 129	CFSM .91	IN. 12.3						
WTR YR 1987	TOTAL 139670	MEAN 383	MAX 852	MIN 140	CFSM .74	IN. 10.0						

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: None, except for ice periods listed in rating table below. Records are good except those for ice-affected periods and periods of discharge below 800 ft³/s, which are fair. Diurnal fluctuation caused by powerplants above station.

AVERAGE DISCHARGE.--73 years, 1,861 ft³/s, 7.57 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, 9,560 ft³/s Oct. 9, gage height, 10.74 ft; minimum daily, 492 ft³/s June 20.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Dec. 11-15, and Jan. 23 to Feb. 1.)

2.5	420	8.0	5,480
3.0	740	10.0	8,360
4.0	1,440	11.0	10,000
6.0	3,160		

DISCHARGE, IN 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	8720	5680	3510	2070	1600	1790	2450	4130	2200	750	934	1600
2	8840	5460	3360	2080	1580	1780	2520	4400	2170	721	859	1690
3	8980	5280	3090	2010	1540	1830	2640	4550	2090	627	866	1660
4	9260	5230	3040	2000	1560	1910	2640	4350	2060	666	850	1550
5	9450	5090	2950	1960	1540	2030	2750	4190	1930	813	831	1570
6	9460	4990	3050	1990	1540	2090	2800	4100	1860	749	773	1540
7	9420	4840	3050	1930	1560	2200	2520	4080	1840	775	707	1560
8	9420	4580	3000	1950	1590	2290	2460	3960	1770	774	886	1450
9	9530	4290	3130	1920	1560	2430	2380	3710	1670	1020	1060	1410
10	9410	4430	2730	1970	1590	2530	2410	3510	1480	571	1180	1370
11	9270	4400	2800	1840	1610	2410	2430	3480	1390	752	1200	1340
12	9300	4200	2800	1840	1660	2430	2460	3450	1340	877	1720	1300
13	9180	4050	2700	1910	1680	2630	2340	3250	1350	1060	1630	1300
14	9010	3750	2600	1920	1700	2720	2650	3090	1270	950	1800	1340
15	8880	3770	2600	1880	1750	2710	2980	2950	1230	987	1580	1250
16	8800	3600	2580	1910	1730	2780	2940	2740	1170	960	1530	1410
17	8660	3540	2520	1940	1670	2720	3030	2520	1100	1070	1490	1530
18	8410	3590	2470	1930	1650	2680	3090	2390	943	861	1520	1650
19	8150	3520	2430	1910	1580	2810	3150	2510	1010	861	1470	1590
20	7900	3510	2430	1880	1570	2700	3160	2370	492	893	1350	1630
21	7710	3400	2400	1810	1520	2700	3260	2500	703	961	1410	1760
22	7520	3350	2330	1860	1470	2680	3590	2350	1020	928	1500	1980
23	7350	3380	2260	1900	1540	2680	3760	2330	808	932	1590	2260
24	7190	3320	2250	1800	1530	2620	3940	2330	707	831	1300	2360
25	7020	3340	2170	1700	1460	2550	3970	2300	721	907	1210	2410
26	6940	3400	2160	1700	1530	2520	4060	2300	780	890	1500	2360
27	6700	3320	2140	1700	1480	2460	4150	2450	804	969	1630	2330
28	6380	3300	2090	1600	1490	2510	4180	2540	697	888	1610	2340
29	6220	3350	2100	1700	---	2740	4150	2520	592	912	2030	2280
30	6020	3460	2090	1700	---	2690	4280	2390	719	888	1890	2260
31	5700	---	2080	1600	---	2680	---	2340	---	1040	1770	---
TOTAL	254800	121420	80910	57910	44280	76300	93140	96080	37916	26883	41676	52080
MEAN	8219	4047	2610	1868	1581	2461	3105	3099	1264	867	1344	1736
MAX	9530	5680	3510	2080	1750	2810	4280	4550	2200	1070	2030	2410
MIN	5700	3300	2080	1600	1460	1780	2340	2300	492	571	707	1250
CFSM	2.46	1.21	.78	.56	.47	.74	.93	.93	.38	.26	.40	.52
IN.	2.84	1.35	.90	.64	.49	.85	1.04	1.07	.42	.30	.46	.58

CAL YR 1986 TOTAL 1409890 MEAN 3863 MAX 9530 MIN 1380 CFSM 1.16 IN. 15.7
WTR YR 1987 TOTAL 983395 MEAN 2694 MAX 9530 MIN 492 CFSM .81 IN. 11.0

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: Mar. 16-24, June 23 to July 9, 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, 125 ft³/s Apr. 23, gage height, 7.68 ft; minimum daily, 0.03 ft³/s, Aug. 7, 12.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Nov. 11-14, Dec. 10-27, Jan. 4, 9-31, and Feb. 1-27.)

4.8	0.02	6.1	11
5.0	.12	6.3	14
5.1	.38	6.5	19
5.2	.61	6.7	26
5.3	1.2	7.0	46
5.5	3.2	7.5	96
5.7	5.4	8.0	170
5.9	7.8	8.6	298

DISCHARGE, IN 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	32	3.2	1.7	.92	.17	19	3.1	5.3	1.9	.09	.05	1.2
2	20	3.1	2.0	.94	.60	7.3	2.3	24	2.1	.08	.04	.79
3	16	3.1	2.3	.94	2.5	5.1	1.7	65	1.7	.10	.04	.57
4	23	2.7	1.9	.90	1.7	3.6	1.5	25	1.3	.08	.04	.40
5	21	2.6	1.6	.94	1.3	3.4	1.4	14	1.4	.15	.04	.32
6	14	2.5	1.3	.98	2.0	3.4	1.3	12	1.3	.10	.04	.30
7	11	2.4	1.5	1.0	3.5	4.2	1.2	9.5	1.5	.20	.03	.30
8	9.1	2.4	1.7	.92	3.8	4.7	1.1	8.8	1.4	.11	.30	.31
9	7.3	2.0	2.0	.90	1.6	3.6	1.1	7.9	1.1	.08	.28	.21
10	6.6	1.6	1.6	.86	1.3	2.6	1.0	7.1	1.2	.06	.07	.17
11	6.2	1.4	1.2	.86	1.2	2.0	2.5	6.2	1.5	.06	.04	.22
12	8.2	1.2	.94	.80	1.1	1.8	6.0	5.0	1.8	.05	.03	.23
13	8.4	1.1	.80	.74	1.0	1.7	4.8	4.5	1.0	.04	.04	.16
14	7.7	1.0	.78	.96	.92	2.4	24	4.4	.95	.04	.94	.16
15	6.3	1.4	.80	.84	.80	2.0	28	3.8	.84	.21	1.8	.19
16	5.8	1.5	.83	.70	.72	4.5	14	3.4	.58	.10	3.3	.22
17	5.1	1.4	.82	.60	.66	6.2	11	3.2	.49	.06	6.1	.40
18	4.6	1.4	.82	.50	.62	8.6	8.6	2.9	.35	.05	2.9	.34
19	4.3	1.3	.80	.40	.58	9.2	6.9	3.0	.26	.04	2.2	.35
20	4.3	1.6	.80	.35	.54	6.0	5.9	3.1	.19	.05	.81	.33
21	4.2	1.4	.76	.30	.56	4.5	5.2	4.9	.23	.10	.40	.35
22	3.9	1.5	.74	.25	.60	4.0	58	4.6	.19	.06	.27	.32
23	3.6	4.0	.78	.22	.58	3.5	70	4.2	.11	.04	.17	.27
24	3.3	3.7	.80	.20	.58	3.3	25	3.9	.09	.05	.13	.24
25	3.4	3.1	.84	.18	.56	3.2	15	3.7	.13	.06	.13	.23
26	4.3	2.9	.84	.17	.56	3.2	12	3.6	.09	.06	9.7	.36
27	5.4	2.5	.86	.16	.58	2.8	9.9	3.1	.08	.05	17	.22
28	4.9	2.4	.86	.16	2.0	2.2	7.9	2.4	.08	.05	8.0	.25
29	4.2	2.2	.87	.15	---	4.5	7.2	2.3	.07	.05	4.9	.33
30	3.7	2.0	.87	.15	---	4.2	5.8	2.2	.11	.05	3.2	.28
31	3.5	---	.87	.14	---	3.2	---	2.0	---	.05	1.9	---
TOTAL	265.3	64.6	35.28	18.13	32.63	139.9	343.4	255.0	24.04	2.37	64.89	10.02
MEAN	8.56	2.15	1.14	.58	1.17	4.51	11.4	8.23	.80	.08	2.09	.33
MAX	32	4.0	2.3	1.0	3.8	19	70	65	2.1	.21	17	1.2
MIN	3.3	1.0	.74	.14	.17	1.7	1.0	2.0	.07	.04	.03	.16
CFSM	.96	.24	.13	.07	.13	.50	1.28	.92	.09	.0	.23	.0
IN.	1.10	.27	.15	.08	.14	.58	1.43	1.06	.10	.0	.27	.0
CAL YR 1986	TOTAL 2355.35	MEAN 6.45	MAX 285	MIN .14	CFSM .72	IN. 9.78						
WTR YR 1987	TOTAL 1255.54	MEAN 3.44	MAX 70	MIN .03	CFSM .38	IN. 5.21						

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: June 5-22 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, 118 ft³/s Apr. 22, gage height, 8.63 ft; minimum daily, 0.11 ft³/s, Sept. 23-24.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Shifting-control method used Sept. 1-30; stage-discharge relation affected by ice Nov. 11-16, Dec. 11-15, 19, Jan. 12-31, Feb. 1-10, and 16-25.)

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, IN 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	2.4	1.8	1.0	.80	11	2.1	3.1	1.2	.46	.80	.47
2	8.8	1.9	3.1	1.3	2.5	3.5	1.6	24	2.7	.46	.34	.39
3	6.0	2.1	2.5	1.2	2.0	2.5	1.4	41	1.1	.56	.39	.35
4	16	1.9	1.8	1.1	1.0	2.0	1.2	10	.95	.42	.37	.32
5	8.3	1.8	1.5	1.2	.80	2.4	1.1	6.6	.80	.81	.31	.24
6	5.9	1.7	1.5	1.5	1.6	2.6	1.4	5.0	.70	.50	.32	.24
7	4.7	1.7	2.6	1.3	2.0	3.0	1.9	3.6	.62	1.0	.32	.24
8	4.0	1.7	2.6	1.2	1.5	3.1	1.8	3.0	.56	.50	6.7	.20
9	3.2	1.3	3.4	1.1	.90	2.3	1.8	2.6	.52	.38	.54	.20
10	3.0	1.4	1.9	1.2	.94	1.6	1.9	2.8	.48	.38	.44	.24
11	2.7	1.3	1.3	1.2	1.0	1.4	7.5	2.7	1.6	.35	.42	.23
12	6.7	1.1	1.0	1.4	.90	1.3	6.3	1.8	1.1	.42	.35	.22
13	4.4	.90	.90	1.5	.93	2.1	2.8	1.6	.90	.41	.36	.19
14	3.8	.94	1.0	1.7	.83	4.4	31	2.2	1.1	.42	8.2	.21
15	3.1	1.0	1.1	1.4	.69	4.2	13	1.3	1.3	3.5	1.0	.25
16	2.8	1.2	1.3	1.2	.66	3.9	7.1	1.3	1.1	.44	9.7	.28
17	2.6	1.4	1.4	1.1	.64	3.7	5.0	1.2	.90	.40	3.7	.55
18	2.5	2.1	1.3	1.0	.62	5.1	3.8	2.1	.70	.35	7.2	.14
19	2.4	1.3	1.2	.92	.62	5.5	3.0	3.9	.60	.33	1.5	.15
20	2.5	2.0	1.1	.84	.62	3.6	2.4	4.8	.70	.59	.70	.16
21	2.5	1.9	1.0	.78	.64	2.9	2.0	7.1	.90	.50	.67	.13
22	2.5	2.3	1.1	.74	.68	2.4	58	3.9	.70	.44	.89	.13
23	2.4	4.8	1.2	.72	.66	2.2	26	2.5	.58	.41	.56	.11
24	2.2	3.1	1.2	.68	.70	2.0	11	2.1	.50	.73	1.2	.11
25	2.6	2.8	1.2	.68	.74	2.2	7.5	2.5	.66	.36	2.8	.14
26	4.3	2.8	1.2	.66	.76	2.3	5.9	2.5	.48	.45	23	.14
27	3.9	2.2	1.0	.66	.82	1.7	5.0	1.8	.43	.51	6.1	.15
28	2.9	2.1	1.1	.66	6.1	1.3	4.0	2.0	.44	.49	2.5	.99
29	2.4	1.8	1.3	.64	---	7.3	3.7	1.6	.76	.35	1.5	.49
30	2.2	1.7	1.1	.64	---	2.9	3.2	1.3	.73	.34	1.1	.42
31	2.2	---	1.0	.64	---	2.2	---	1.2	---	.33	.79	---
TOTAL	135.5	56.64	46.70	31.86	32.65	98.6	224.4	153.1	25.81	17.59	84.77	8.08
MEAN	4.37	1.89	1.51	1.03	1.17	3.18	7.48	4.94	.86	.57	2.73	.27
MAX	16	4.8	3.4	1.7	6.1	11	58	41	2.7	3.5	23	.99
MIN	2.2	.90	.90	.64	.62	1.3	1.1	1.2	.43	.33	.31	.11
CFSM	1.01	.44	.35	.24	.27	.73	1.72	1.14	.20	.13	.63	.06
IN.	1.16	.49	.40	.27	.28	.85	1.92	1.31	.22	.15	.73	.07

CAL YR 1986 TOTAL 1548.69 MEAN 4.24 MAX 110 MIN .47 CFSM .98 IN. 13.3
WTR YR 1987 TOTAL 915.69 MEAN 2.51 MAX 58 MIN .11 CFSM .58 IN. 7.85

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 1987.

TOTAL PHOSPHORUS CONCENTRATIONS: Maximum observed, 8.20 mg/L Aug. 7, 1984; minimum observed, 0.04 mg/L Oct. 12, 1984.

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, 1,780 mg/L Feb. 28; minimum observed, 9 mg/L Mar. 30.

SUSPENDED-SEDIMENT DISCHARGE: Maximum daily, 38 tons Apr. 22; minimum daily, 0.01 ton Sept. 21-26.

TOTAL PHOSPHORUS CONCENTRATIONS: Maximum observed, 1.60 mg/L Apr. 11; minimum observed, 0.11 mg/L May 7 and Aug. 27.

TOTAL PHOSPHORUS DISCHARGE: Maximum daily, 133 lb May 3; minimum daily, 0.03 lb on Sept. 23-24.

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)	SEDI- MENT, SUS- PENDED (MG/L) (80154)
OCT , 1986					MAR , 1987				
04...	0630	22	--	331	18...	1900	11	0.530	--
04...	0830	25	--	185	18...	1915	11	0.650	--
04...	0845	26	0.530	--	18...	1945	11	--	276
04...	0900	28	--	165	18...	2000	10	0.640	--
04...	0945	28	--	149	18...	2030	9.4	--	366
04...	1015	29	--	134	18...	2100	9.0	--	247
04...	1045	29	0.470	139	22...	0745	2.4	--	82
04...	1115	29	--	135	29...	0345	11	--	148
04...	1200	28	--	114	29...	0415	16	--	544
04...	1230	26	--	110	29...	0430	17	--	407
04...	1315	25	--	106	29...	0445	17	0.240	--
04...	1400	23	--	128	29...	0500	16	--	431
04...	1415	23	0.440	108	29...	0530	14	--	596
15...	0800	3.2	0.410	113	29...	0600	12	--	427
27...	1300	3.8	--	122	29...	0645	12	0.460	--
NOV					29...	0700	12	--	120
17...	0910	1.3	--	55	29...	0800	11	--	54
22...	0845	1.7	--	93	29...	0900	9.6	--	38
DEC					29...	1000	9.0	--	23
16...	0845	1.2	--	86	30...	0850	2.7	--	9
JAN , 1987					APR				
09...	1115	1.1	--	21	09...	1330	1.9	--	25
14...	0750	1.7*	0.230	--	11...	0345	9.2	1.60	--
FEB					11...	0400	10	--	204
02...	0740	2.5*	--	103	11...	0430	11	--	248
16...	0800	0.66*	--	57	11...	0445	11	0.390	--
23...	0830	0.67	--	43	11...	0500	11	--	218
28...	2000	9.8	--	411	11...	0530	11	--	343
28...	2015	11	0.250	--	11...	0600	11	--	275
28...	2030	12	--	525	11...	0630	11	0.430	--
28...	2115	16	0.490	571	11...	0645	11	--	146
28...	2145	23	--	851	11...	0730	8.4	--	113
28...	2200	33	0.490	--	11...	1745	9.6	--	267
28...	2215	39	--	1780	11...	1800	12	0.700	--
28...	2230	43	--	1400	11...	1815	16	--	412
28...	2245	44	0.460	--	11...	1845	18	--	404
28...	2315	42	--	1330	11...	1900	18	0.700	--
28...	2345	43	--	715	11...	1915	17	--	518
28...	2400	42	0.630	--	11...	1930	16	--	482
MAR					11...	2000	14	--	359
01...	0015	40	--	522	11...	2015	13	0.360	--
01...	0100	35	--	342	12...	1000	6.6	--	20
01...	0130	31	0.720	--	12...	1100	6.0	0.130	--
01...	0145	29	--	251	13...	0925	2.7	0.200	78
01...	0230	25	0.680	--	14...	0030	11	--	241
01...	0245	23	--	159	14...	0045	18	1.20	--
01...	0930	8.2	0.370	58	14...	0100	22	--	638
02...	0830	3.0	--	109	14...	0115	23	0.500	--
16...	1400	3.3	--	37	14...	0130	22	--	863
18...	1845	10	--	209	14...	0200	17	--	813

*DAILY MEAN DISCHARGE, IN CUBIC FEET PER SECOND (00060).

054310157 JACKSON CREEK TRIBUTARY NEAR ELKHORN, WI--CONTINUED

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)	SEDI- MENT, SUS- PENDE (MG/L) (80154)
APR , 1987					MAY, 1987				
14...	0245	16	--	376	07...	1020	3.7	--	15
14...	0300	16	0.340	--	07...	1021	3.7	0.110	--
14...	0315	16	--	181	21...	0805	6.5	--	65
14...	0400	17	--	131	JUN				
14...	0445	17	--	109	15...	0905	1.3*	--	67
14...	0500	17	0.430	--	22...	1045	0.70*	--	76
14...	0530	17	--	98	29...	0910	0.45	--	89
14...	0615	17	--	94	JUL				
14...	0645	17	0.450	--	09...	1230	0.40	0.430	53
14...	0715	17	--	69	13...	0915	0.35	--	50
14...	0830	15	0.310	62	15...	1325	4.5	--	132
14...	1045	18	--	126	AUG				
14...	1115	23	--	255	08...	0845	25	0.370	--
14...	1200	24	--	334	08...	0900	26	--	413
14...	1245	23	0.290	--	08...	0930	25	0.200	--
14...	1300	23	--	161	08...	0945	21	--	430
14...	1345	27	--	159	08...	1015	16	--	266
14...	1445	26	--	176	08...	1030	15	0.170	--
14...	1516	26	0.310	--	08...	1045	13	--	182
14...	1530	28	--	123	14...	0530	16	--	268
14...	1615	36	--	292	14...	0545	17	0.350	--
14...	1645	46	--	513	14...	0600	17	--	237
14...	1715	66	--	899	14...	0630	15	0.310	--
14...	1730	74	0.300	--	14...	0645	14	--	232
15...	0930	13	--	244	14...	1145	19	--	336
15...	1030	12	0.210	--	14...	1200	21	1.00	--
20...	0930	2.4	--	138	14...	1230	22	--	312
22...	0730	28	0.210	--	14...	1300	20	--	286
22...	0745	32	--	364	14...	1330	16	--	292
22...	0801	46	0.420	924	14...	1350	14	0.340	--
22...	0830	57	--	526	16...	1115	20	--	286
22...	1000	41	--	269	16...	1130	21	0.380	--
22...	1030	44	0.590	--	16...	1145	21	--	317
22...	1100	50	--	229	16...	1200	21	--	293
22...	1230	96	--	474	16...	1215	19	0.580	--
22...	1330	112	--	438	16...	1245	15	--	313
22...	1400	117	0.390	--	16...	1315	15	0.450	--
22...	1430	118	--	373	16...	1330	20	--	335
22...	1500	118	0.460	--	16...	1400	28	--	346
22...	1530	116	--	279	16...	1430	30	0.560	--
22...	1630	108	--	204	16...	1445	28	--	298
22...	1730	98	0.480	--	16...	1515	22	--	295
22...	1800	95	--	141	16...	1545	18	0.820	--
22...	1900	83	0.410	--	16...	1600	16	--	327
22...	1930	78	--	110	16...	1615	15	--	354
23...	0830	27	0.340	55	16...	1630	14	0.450	--
23...	1455	20	0.240	31	16...	2130	22	--	550
MAY					16...	2200	25	--	411
02...	0130	36	--	720	16...	2215	23	0.870	--
02...	0145	41	0.950	--	16...	2245	19	--	334
02...	0215	48	--	594	19...	1032	1.7	0.150	--
02...	0230	50	1.10	--	19...	1035	1.7	--	49
02...	0300	51	--	345	26...	0715	16	0.140	--
02...	0330	50	--	256	26...	0730	17	--	161
02...	0400	57	--	238	26...	0800	17	--	120
02...	0415	60	--	276	26...	0815	17	0.130	151
02...	0430	62	1.00	--	26...	0816	17	0.130	122
02...	0500	58	--	290	26...	0845	17	--	94
02...	0530	53	0.840	--	26...	0915	21	0.140	--
02...	0600	49	--	167	26...	0945	28	--	199
02...	0645	42	0.700	--	26...	1115	37	--	114
02...	0700	39	--	114	26...	1145	36	0.230	--
02...	0800	32	--	92	26...	1245	35	--	97
02...	0815	31	0.490	--	26...	1315	33	0.230	--
02...	1045	20	0.300	40	26...	1415	29	--	106
03...	0230	33	--	846	26...	1445	32	--	121
03...	0245	37	0.800	--	26...	1446	32	0.290	--
03...	0300	40	0.900	--	26...	1515	36	--	117
03...	0315	43	--	397	26...	1645	49	--	132
03...	0400	57	--	350	26...	1715	50	0.330	--
03...	0415	63	0.670	--	26...	1815	43	--	136
03...	0445	74	--	375	26...	1845	38	0.300	--
03...	0530	82	0.590	--	26...	1915	21	--	190
03...	0545	86	--	420	27...	1330	5.3	0.110	--
03...	0615	89	--	364	31...	0935	0.93	--	81
03...	0645	90	--	299	SEP				
03...	0700	90	0.970	--	28...	0845	0.32	--	68
03...	0730	90	--	225	28...	1915	4.7	--	190
03...	0815	86	--	169	28...	1930	5.8	--	150
03...	0900	79	0.760	147	28...	2000	7.0	--	120
03...	1030	59	0.550	79	28...	2045	5.8	--	87

*DAILY MEAN DISCHARGE, IN CUBIC FEET PER SECOND (00060).

054310157 JACKSON CREEK TRIBUTARY NEAR ELKHORN, WI--CONTINUED

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

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	1.8	.41	.42	.09	.05	4.7	.05	.21	.20	.09	.15	.09
2	1.2	.33	.71	.10	.55	.75	.04	12	1.1	.09	.04	.07
3	.81	.35	.57	.09	.40	.32	.03	21	.25	.10	.04	.05
4	6.0	.31	.41	.08	.15	.23	.03	.72	.16	.07	.04	.04
5	2.8	.29	.35	.08	.10	.25	.03	.38	.14	.13	.03	.03
6	1.7	.27	.33	.10	.28	.25	.04	.24	.12	.08	.03	.03
7	.89	.28	.59	.08	.40	.26	.07	.14	.11	.16	.03	.03
8	.67	.26	.60	.07	.26	.25	.09	.10	.10	.07	3.2	.02
9	.47	.20	.77	.06	.12	.17	.11	.08	.09	.05	.04	.02
10	.37	.22	.42	.07	.16	.11	.11	.07	.08	.05	.03	.03
11	.30	.20	.35	.06	.17	.08	4.2	.07	.50	.05	.03	.03
12	2.1	.17	.27	.08	.15	.07	1.1	.04	.28	.05	.02	.03
13	1.3	.13	.22	.08	.15	.42	.49	.04	.15	.05	.02	.02
14	1.1	.14	.25	.09	.13	1.2	37	.05	.28	.05	4.6	.02
15	.91	.15	.27	.08	.10	1.1	9.2	.03	.36	1.7	.20	.03
16	.79	.17	.29	.06	.10	.43	3.9	.03	.25	.05	7.7	.03
17	.69	.20	.28	.06	.09	.26	2.4	.03	.15	.04	1.6	.06
18	.64	.33	.25	.05	.08	1.5	1.7	.42	.12	.03	4.3	.02
19	.61	.23	.23	.05	.08	1.6	1.2	1.0	.10	.03	.22	.02
20	.60	.40	.20	.05	.08	.94	.84	1.3	.12	.09	.08	.02
21	.59	.41	.17	.04	.08	.67	.58	1.8	.15	.06	.07	.01
22	.56	.55	.17	.04	.08	.50	38	1.0	.12	.05	.14	.01
23	.53	1.1	.18	.04	.07	.42	3.7	.42	.12	.04	.05	.01
24	.46	.74	.17	.03	.07	.36	.85	.35	.10	.13	.21	.01
25	.55	.67	.15	.03	.07	.37	.54	.42	.14	.04	.86	.01
26	1.1	.65	.15	.03	.07	.35	.40	.42	.10	.05	7.8	.01
27	1.0	.52	.12	.03	.07	.25	.32	.31	.09	.04	2.3	.02
28	.55	.48	.12	.03	14	.17	.24	.33	.10	.03	.65	.25
29	.43	.42	.14	.03	---	2.4	.21	.26	.17	.02	.35	.06
30	.38	.40	.11	.03	---	.08	.17	.22	.16	.02	.24	.05
31	.38	---	.09	.03	---	.05	---	.20	---	.02	.16	---
TOTAL	32.28	10.98	9.35	1.84	18.11	20.51	107.64	43.68	5.91	3.53	35.23	1.13

WATER YEAR 1987 TOTAL 290.19

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	31.0	4.37	3.28	1.41	.82	31.0	3.04	1.80	1.55	.94	.65	.25
2	19.0	3.44	6.00	1.75	4.30	5.63	2.16	81.0	4.30	.95	.26	.20
3	11.0	3.59	4.20	1.58	3.20	4.78	1.81	133	1.42	1.19	.28	.17
4	38.0	3.09	3.14	1.50	1.20	3.25	1.45	10.0	1.28	.89	.25	.16
5	14.0	2.78	2.67	1.57	.82	4.10	1.26	5.54	1.08	1.76	.20	.11
6	8.91	2.58	2.53	1.93	2.40	4.50	1.54	3.53	.94	1.12	.19	.11
7	6.72	2.55	4.43	1.65	3.20	5.60	2.26	2.20	.87	2.34	.18	.11
8	5.46	2.39	4.45	1.53	2.10	6.00	2.41	1.79	.79	1.14	8.92	.09
9	4.11	1.78	5.78	1.43	1.00	4.00	2.58	1.53	.76	.89	.43	.09
10	3.55	1.84	3.13	1.60	1.10	2.30	2.93	1.60	.70	.88	.32	.10
11	3.09	1.61	2.18	1.49	.97	1.31	19.0	1.57	2.00	.80	.28	.10
12	15.0	1.37	1.62	1.74	.85	1.14	7.53	1.02	1.10	.94	.22	.09
13	9.73	1.07	1.46	1.86	.88	2.81	2.93	.89	.80	.92	.21	.07
14	8.44	1.07	1.62	2.11	.77	5.52	54.0	1.25	1.10	.93	21.0	.08
15	6.90	1.08	1.78	1.74	.64	6.77	16.0	.72	1.40	6.40	1.01	.10
16	6.07	1.36	2.14	1.49	.61	6.39	8.02	.70	1.78	.89	28.0	.10
17	5.32	1.73	2.13	1.31	.59	4.63	5.64	.64	1.46	.78	7.56	.20
18	4.95	2.71	2.01	1.19	.57	11.0	4.36	3.00	1.17	.64	17.0	.05
19	4.75	1.80	1.88	1.09	.56	14.0	3.39	7.50	1.00	.57	1.49	.05
20	4.69	2.96	1.75	1.00	.54	7.45	2.77	10.0	1.21	.94	.51	.05
21	4.59	2.92	1.56	.93	.55	5.36	2.32	17.0	1.56	.76	.45	.04
22	4.44	4.58	1.69	.84	.59	3.94	119	7.50	1.24	.63	.56	.04
23	4.21	11.0	1.81	.82	.57	3.26	33.0	3.90	1.04	.56	.33	.03
24	3.66	6.03	1.79	.77	.60	2.71	13.0	2.35	.90	.92	.71	.03
25	4.50	5.35	1.71	.77	.64	2.65	8.04	2.88	1.23	.44	1.90	.04
26	9.00	5.20	1.72	.75	.63	2.45	5.69	2.89	.90	.52	30.0	.04
27	8.00	4.11	1.51	.71	.68	1.66	4.33	2.15	.82	.54	5.02	.04
28	5.40	3.78	1.52	.70	14.0	1.11	3.13	2.36	.86	.49	1.47	1.02
29	4.20	3.34	1.88	.69	---	14.0	2.59	1.87	1.51	.33	.85	.48
30	3.60	3.13	1.59	.69	---	4.66	2.01	1.59	1.46	.30	.60	.31
31	3.50	---	1.41	.69	---	3.27	---	1.49	---	.28	.43	---
TOTAL	265.79	94.61	76.37	39.33	45.38	177.25	338.19	315.26	38.23	31.68	131.28	4.35

WATER YEAR 1987 TOTAL 1557.69

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 left 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.--Acoustical velocity meter and staff gage. Acoustical velocity meter removed May 7 due to bridge reconstruction. 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 1987, daily mean discharges less than 20 ft³/s were estimated based on discharges from upstream stations 05431014 and 054310157, and daily mean discharges of 20 ft³/s or greater are from acoustical velocity meter records. Instantaneous discharges are negative in many instances due to seiche affects caused by wind action. Records fair except estimated discharges less than 20 ft³/s, which are 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 discharge, 421 ft³/s Apr. 21; minimum daily (estimated), 0.38 ft³/s, Aug. 7.

DISCHARGE, IN 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	91	8.6	5.1	2.8	1.1	68	8.1	15	4.9	.64	.90	2.8
2	69	7.9	7.0	3.1	3.7	18	6.1	86	6.8	.62	.42	1.9
3	67	8.1	7.0	3.0	6.9	12	4.7	154	4.4	.75	.47	1.5
4	79	7.2	5.5	2.9	4.3	9.0	4.1	65	3.5	.58	.45	1.1
5	69	6.9	4.6	3.0	3.3	9.0	3.8	49	3.5	1.1	.39	.86
6	49	6.6	4.0	3.4	5.5	9.2	3.9	32	3.2	.69	.40	.82
7	38	6.4	5.5	3.2	8.8	11	4.2	22	3.5	1.4	.38	.82
8	29	6.4	5.9	3.0	8.9	12	4.0	20	3.3	.71	7.3	.80
9	23	5.2	7.3	2.9	4.0	9.3	4.0	18	2.7	.54	1.1	.61
10	19	4.5	5.0	2.9	3.5	6.7	3.8	17	2.8	.50	.58	.57
11	15	4.0	3.6	2.9	3.3	5.3	12	15	4.5	.47	.50	.66
12	23	3.4	2.8	3.0	3.0	4.8	18	12	4.6	.52	.41	.67
13	21	3.0	2.5	2.9	2.9	5.4	12	10	2.8	.49	.44	.50
14	19	2.9	2.5	3.6	2.6	9.1	89	11	3.0	.50	10	.52
15	15	3.7	2.7	3.0	2.2	8.1	93	8.7	2.9	3.9	4.5	.62
16	14	4.1	2.9	2.6	2.1	13	50	7.9	2.2	.63	16	.71
17	13	4.1	3.0	2.3	1.9	16	39	7.4	1.9	.52	16	1.3
18	11	4.8	2.9	2.0	1.8	21	27	7.8	1.6	.45	13	.80
19	11	3.8	2.8	1.7	1.8	25	20	9.8	1.1	.41	5.8	.83
20	11	5.1	2.7	1.5	1.7	15	16	11	1.1	.69	2.3	.80
21	11	4.6	2.5	1.4	1.7	12	12	17	1.4	.69	1.4	.81
22	10	5.2	2.5	1.2	1.8	10	160	13	1.1	.56	1.4	.75
23	9.4	13	2.7	1.2	1.8	9.0	163	11	.79	.49	.89	.64
24	8.6	10	2.8	1.1	1.8	8.4	71	9.7	.68	.83	1.4	.58
25	9.2	8.8	2.8	1.0	1.8	8.4	48	9.7	.91	.48	3.0	.59
26	13	8.4	2.8	.99	1.8	8.5	40	9.5	.66	.57	42	.84
27	14	7.1	2.7	.97	2.0	7.2	31	7.8	.59	.61	39	.58
28	12	6.8	2.8	.97	10	5.6	24	6.7	.60	.59	18	1.5
29	11	6.1	3.0	.93	---	16	18	6.1	.90	.45	11	1.1
30	9.4	5.6	2.8	.93	---	11	15	5.6	.94	.44	7.3	.97
31	9.0	---	2.7	.91	---	8.4	---	5.1	---	.43	4.5	---
TOTAL	802.6	182.3	115.4	67.30	96.0	391.4	1004.7	679.8	72.87	22.25	211.23	27.55
MEAN	25.9	6.08	3.72	2.17	3.43	12.6	33.5	21.9	2.43	.72	6.81	.92
MAX	91	13	7.3	3.6	10	68	163	154	6.8	3.9	42	2.8
MIN	8.6	2.9	2.5	.91	1.1	4.8	3.8	5.1	.59	.41	.38	.50

CAL YR 1986 TOTAL 6309.55 MEAN 17.3 MAX 665 MIN .80
WTR YR 1987 TOTAL 3673.36 MEAN 10.1 MAX 163 MIN .38

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. Instantaneous discharges (00061) are from acoustical velocity meter records. When instantaneous discharge data are not available, estimated daily mean discharges (00060) are shown. 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, 0.08 mg/L Jan. 24, 1985.

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, 0.53 mg/L Aug. 19; minimum observed, 0.12 mg/L Jan. 15.

TOTAL PHOSPHORUS DISCHARGE: Maximum daily, 224 lb May 3; minimum daily, 0.22 lb Sept. 27.

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	DIS- CHARGE, IN CUBIC FEET PER SECOND (00060)	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)
OCT , 1986				
01...	0830	--	131	0.330
01...	1400	--	80	0.410
02...	0915	--	73	0.360
02...	1145	--	40	0.190
03...	1020	--	82	0.340
03...	1350	--	57	0.270
03...	1505	--	146	0.450
04...	0940	--	167	0.180
04...	1450	--	86	0.160
15...	0815	15	--	0.180
JAN , 1987				
15...	1450	3.0	--	0.120
MAR				
01...	1015	--	92	0.270
APR				
13...	1350	12	--	0.120
14...	0820	--	120	0.440
15...	1100	--	70	0.150
15...	1300	--	77	0.150
15...	1500	--	67	0.150
23...	0910	--	172	0.300
23...	1510	--	114	0.160
24...	0900	--	123	0.180
24...	1155	--	116	0.160
MAY				
02...	1140	--	65	0.240
02...	1545	--	1.8	0.200
03...	0915	--	259	0.270
03...	1145	--	294	0.230
03...	1545	--	145	0.310
07...	1340	22	--	0.380
JUL				
09...	0905	0.54	--	0.440
AUG				
08...	1120	7.3	--	0.380
19...	0915	5.8	--	0.530
26...	0900	42	--	0.210
27...	1340	39	--	0.200

ROCK RIVER BASIN

05431017 DELAVAN LAKE INLET AT U.S. HIGHWAY 50 AT LAKE LAWN, WI--CONTINUED

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	178	7.90	4.10	2.00	.71	93.0	6.10	13.0	10.6	1.50	.92	2.10
2	108	7.20	5.70	2.20	2.80	22.4	4.00	100	14.7	1.40	.41	1.30
3	118	7.40	5.70	2.10	5.60	13.0	3.00	224	9.70	1.70	.43	.97
4	81.0	6.60	4.50	2.00	3.20	8.30	2.70	112	7.70	1.40	.41	.65
5	59.0	6.00	3.70	2.10	2.30	8.30	2.30	91.0	7.70	2.60	.34	.46
6	42.0	5.70	3.20	2.40	4.80	7.90	2.30	62.0	7.10	1.60	.35	.44
7	32.0	5.50	4.50	2.20	9.50	9.50	2.50	44.0	7.70	3.30	.31	.44
8	24.0	5.50	4.80	2.10	7.70	10.4	2.40	41.0	7.30	1.70	15.0	.43
9	19.0	4.50	5.90	1.90	3.00	8.00	2.20	36.9	6.00	1.30	1.90	.33
10	16.0	3.90	4.00	1.90	2.30	5.80	2.10	34.9	6.20	1.20	.85	.31
11	12.0	3.50	2.70	1.90	2.10	4.60	8.40	30.8	10.0	1.00	.62	.36
12	29.0	2.90	2.10	1.90	1.90	3.90	14.6	25.3	10.2	1.10	.44	.33
13	25.0	2.60	1.90	1.90	1.90	4.40	7.80	21.1	6.20	1.00	.66	.24
14	20.5	2.50	1.90	2.30	1.70	7.40	152	23.2	6.80	1.00	21.6	.25
15	14.6	3.20	2.00	1.90	1.30	6.60	88.0	18.3	6.60	12.6	7.30	.30
16	13.6	3.50	2.20	1.70	1.20	11.9	38.0	16.6	5.00	1.50	51.8	.35
17	12.6	3.50	2.30	1.50	1.10	17.3	28.0	15.6	4.30	.93	49.2	.63
18	10.7	4.10	2.20	1.30	1.10	25.0	17.0	16.4	3.60	.78	38.6	.39
19	10.7	3.10	2.10	1.10	1.10	34.0	12.0	20.6	2.50	.69	16.6	.36
20	10.7	4.10	2.00	.97	1.00	17.0	9.50	26.1	2.50	1.10	5.00	.35
21	10.7	3.70	1.90	.83	1.00	11.0	7.20	45.9	3.20	1.10	2.30	.35
22	9.70	4.20	1.90	.71	1.10	9.20	168	33.0	2.50	.85	1.50	.32
23	9.10	17.6	2.00	.71	.97	7.80	204	25.5	1.80	.71	.72	.28
24	8.40	11.9	2.10	.65	.97	7.30	64.0	21.0	1.50	1.20	1.30	.25
25	8.40	9.50	2.00	.59	.97	7.30	41.0	21.0	2.10	.65	3.10	.25
26	11.9	8.60	2.00	.59	.97	6.90	35.0	20.5	1.50	.74	47.6	.32
27	12.8	6.90	1.90	.58	1.10	5.80	26.0	16.8	1.40	.76	42.1	.22
28	11.0	6.20	2.00	.52	9.20	4.50	20.0	14.5	1.40	.70	18.5	.57
29	10.1	5.30	2.10	.50	---	17.3	15.0	13.2	2.10	.51	10.1	.42
30	8.60	4.80	2.00	.50	---	10.1	12.2	12.1	2.20	.48	6.30	.37
31	8.30	---	1.90	.49	---	6.80	---	11.0	---	.46	3.60	---
TOTAL	945.40	171.90	89.30	44.04	72.59	412.70	997.30	1207.3	162.10	47.56	349.86	14.34

WTR YR 1987 TOTAL 4514.33

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.

WATER QUALITY DATA, OCTOBER 15 TO JULY 1, 1987
(Milligrams per liter unless otherwise indicated)

	Oct. 15		Jan. 15		Apr. 17		May 27		July 1	
Depth of sample (ft)	3.0	30.5	3.0	30.5	3.0	28.5	1.5	28.5	3.0	30.5
Specific conductance (µm/cm)	480	480	480	490	481	481	508	523	472	526
pH (units)	8.7	8.8	9.1	9.6	8.8	8.5	8.5	8.4	8.8	8.0
Water temperature (°C)	14.0	13.5	2.0	2.0	11.0	8.0	18.5	16.5	23.5	20.5
Secchi-disc (meters)	---	0.8	---	8.5	---	0.9	---	2.8	---	1.5
Dissolved oxygen	7.5	7.1	13.4	12.6	14.2	8.5	9.2	7.2	10.3	1.0
Silica, dissolved (SiO ₂)	---	---	---	---	<0.1	<0.1	---	---	---	---
Nitrogen, nitrate, total (as N)	---	---	---	---	0.19	0.29	---	---	---	---
Nitrogen, nitrite, total (as N)	---	---	---	---	0.01	0.01	---	---	---	---
Nitrogen, ammonia, total (as N)	---	---	---	---	0.02	0.09	---	---	---	---
Nitrogen, organic, total (as N)	---	---	---	---	0.88	0.71	---	---	---	---
Nitrogen, total (as N)	---	---	---	---	1.1	1.1	---	---	---	---
Total phosphorus (as P)	0.135	0.124	0.095	0.095	0.063	0.068	0.121	0.154	0.111	0.064
Phosphorus, ortho, diss. (as P)	0.046	0.069	0.066	0.067	0.007	0.044	0.037	0.039	0.004	0.011
Chlorophyll a, phyto. (µg/L)	8.3	---	---	---	27.0	---	6.6	---	42	---
Chlorophyll b, phyto. (µg/L)	0.5	---	---	---	1.70	---	1.1	---	1.6	---

10-15-86

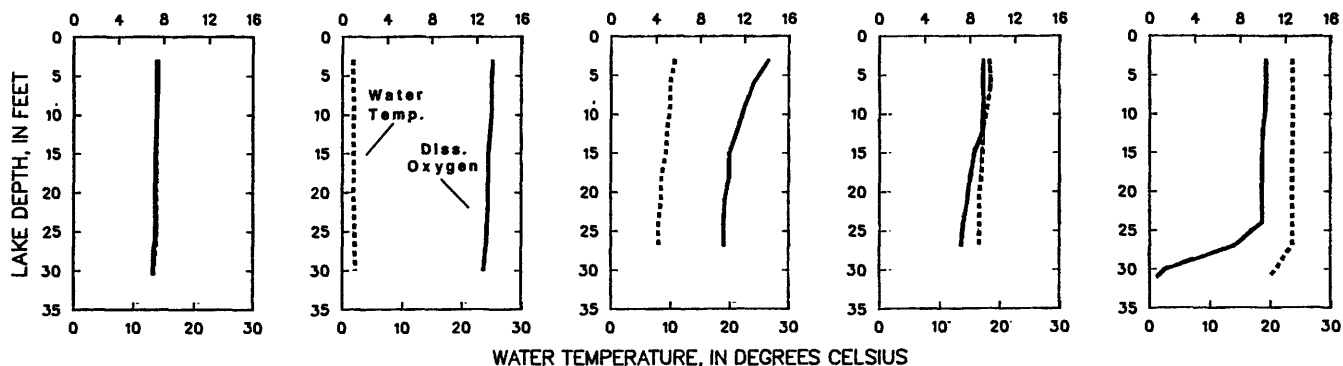
1-15-87

4-17-87

5-27-87

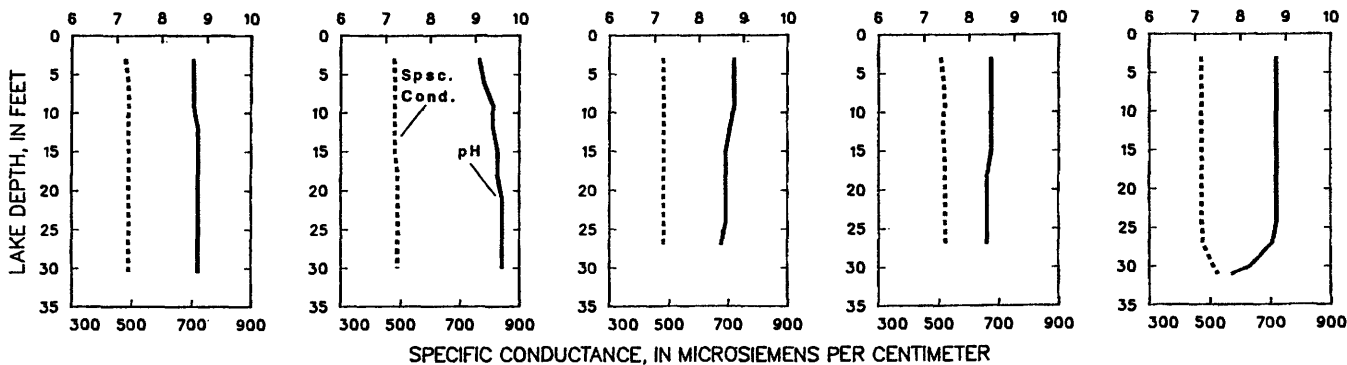
7-1-87

DISSOLVED OXYGEN, IN MILLIGRAMS PER LITER



WATER TEMPERATURE, IN DEGREES CELSIUS

PH, IN STANDARD UNITS



SPECIFIC CONDUCTANCE, IN MICROSIEMENS PER CENTIMETER

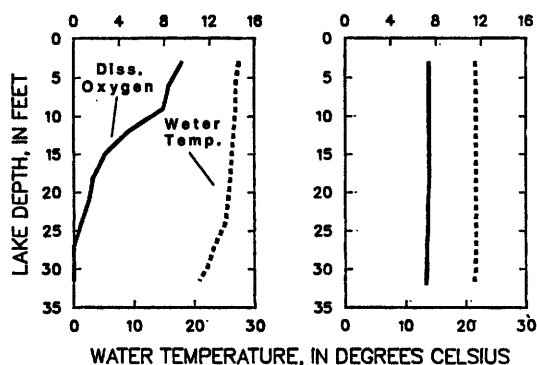
WATER QUALITY DATA, JULY 29 TO AUGUST 27, 1987
(Milligrams per liter unless otherwise indicated)

	July 29			Aug. 27	
Depth of sample (ft)	3.0	25.0	30.5	1.5	32.0
Specific conductance ($\mu\text{m}/\text{cm}$)	488	522	547	482	481
pH (units)	9.0	8.2	7.8	8.7	8.7
Water temperature ($^{\circ}\text{C}$)	27.5	24.5	21.5	21.5	21.5
Secchi-disc (meters)	---	1.2	---	---	1.0
Dissolved oxygen	9.6	1.1	0.0	7.4	7.1
Total phosphorus (as P)	0.057	0.037	0.058	0.037	0.035
Phosphorus, ortho, diss. (as P)	<0.001	<0.001	0.011	0.001	0.001

7-29-87

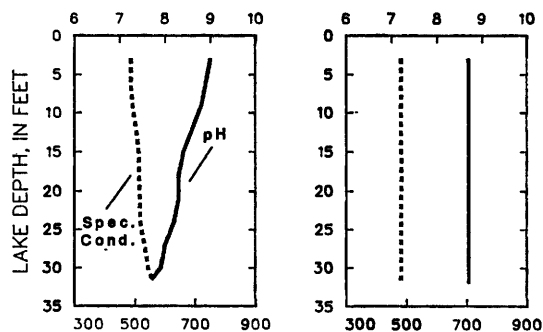
8-27-87

DISSOLVED OXYGEN, IN MILLIGRAMS PER LITER



WATER TEMPERATURE, IN DEGREES CELSIUS

PH, IN STANDARD UNITS



SPECIFIC CONDUCTANCE, IN MICROSIEMENS PER CENTIMETER

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.

WATER QUALITY DATA, OCTOBER 15 TO MAY 27, 1987
(Milligrams per liter unless otherwise indicated)

	Oct. 15		Jan. 15			Apr. 17		May 27			
Depth of sample (ft)	3.0	51.5	3.0	40.0	52.5	3.0	55.5	1.5	25.0	40.0	47.5
Specific conductance (µm/cm)	490	500	480	500	630	491	480	510	519	527	532
pH (units)	8.5	8.6	9.3	9.6	8.9	8.8	8.5	8.5	8.4	8.0	7.7
Water temperature (°C)	14.0	13.5	1.5	2.5	3.5	10.0	6.5	18.5	16.5	14.0	12.5
Secchi-disc (meters)	---	0.5	---	5.1	---	---	1.2	---	3.2	---	---
Dissolved oxygen	7.5	7.2	12.9	9.9	0.4	12.9	8.4	9.4	7.2	3.3	0
Silica, dissolved (SiO ₂)	---	---	---	---	---	<0.1	0.1	---	---	---	---
Nitrogen, nitrate, total (as N)	---	---	---	---	---	0.29	0.29	---	---	---	---
Nitrogen, nitrite, total (as N)	---	---	---	---	---	0.01	0.01	---	---	---	---
Nitrogen, ammonia, total (as N)	---	---	---	---	---	0.02	0.21	---	---	---	---
Nitrogen, organic, total (as N)	---	---	---	---	---	1.38	1.29	---	---	---	---
Nitrogen, total (as N)	---	---	---	---	---	1.7	1.8	---	---	---	---
Total phosphorus (as P)	0.150	0.135	0.099	0.132	0.247	0.124	0.095	0.074	0.093	0.192	0.270
Phosphorus, ortho, diss. (as P)	0.070	0.032	0.065	0.093	0.260	0.021	0.083	0.033	0.056	0.150	0.210
Chlorophyll a, phyto. (µg/L)	13.0	---	---	---	---	9.9	---	10.0	---	---	---
Chlorophyll b, phyto. (µg/L)	0.4	---	---	---	---	1.0	---	1.5	---	---	---

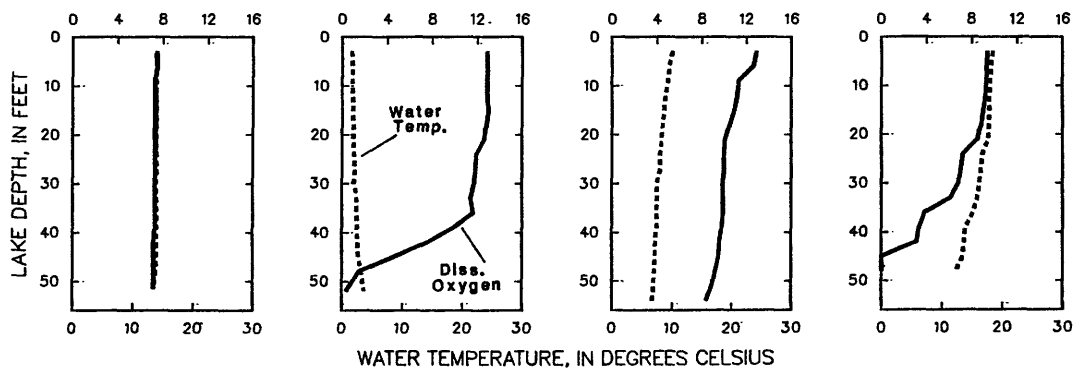
10-15-86

1-15-87

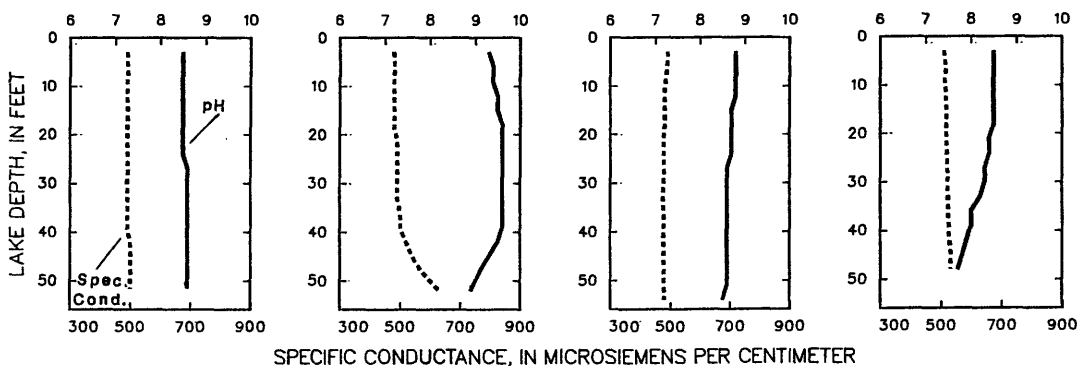
4-17-87

5-27-87

DISSOLVED OXYGEN, IN MILLIGRAMS PER LITER



PH, IN STANDARD UNITS



WATER QUALITY DATA, JULY 1 TO AUGUST 27, 1987
(Milligrams per liter unless otherwise indicated)

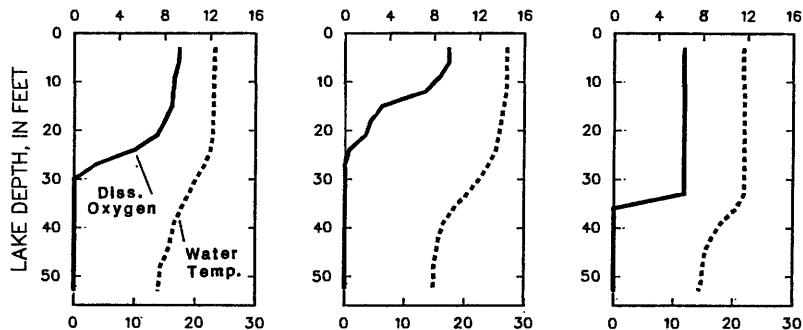
	July 1				July 29				Aug. 27			
Depth of sample (ft)	1.5	30.0	45.0	52.5	1.5	21.0	42.0	52.5	1.5	36.0	45.0	53.0
Specific conductance ($\mu\text{m}/\text{cm}$)	476	526	550	570	488	515	602	628	486	545	623	684
pH (units)	9.2	7.9	7.4	7.2	9.0	8.3	7.5	7.4	8.6	7.6	7.2	6.9
Water temperature ($^{\circ}\text{C}$)	23.5	20.0	15.5	14.0	27.0	25.5	16.0	15.0	22.0	20.5	15.5	14.5
Secchi-disc (meters)	---	---	1.5	---	---	---	1.2	---	---	---	1.5	---
Dissolved oxygen	9.3	0	0	0	9.3	1.8	0	0	6.3	0	0	0
Total phosphorus (as P)	0.060	0.059	0.360	0.590	0.053	0.038	0.400	0.560	0.032	0.155	0.500	0.700
Phosphorus, ortho, diss. (as P)	0.002	0.034	0.290	0.495	0.005	0.013	0.340	0.440	0.005	0.160	0.450	0.001
Chlorophyll a, phyto. ($\mu\text{g}/\text{L}$)	53	---	---	---	---	---	---	---	---	---	---	---
Chlorophyll b, phyto. ($\mu\text{g}/\text{L}$)	1.7	---	---	---	---	---	---	---	---	---	---	---

7-1-87

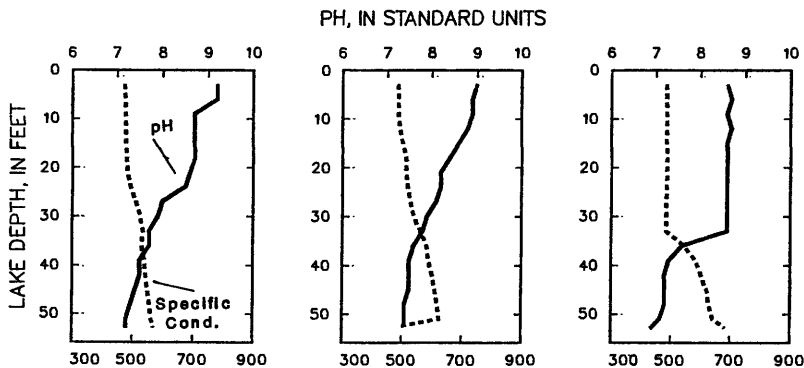
7-29-87

8-27-87

DISSOLVED OXYGEN, IN MILLIGRAMS PER LITER



WATER TEMPERATURE, IN DEGREES CELSIUS



SPECIFIC CONDUCTANCE, IN MICROSIEMENS PER CENTIMETER

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.

WATER QUALITY DATA, OCTOBER 15 TO JULY 1, 1987
(Milligrams per liter unless otherwise indicated)

	Oct. 15		Jan. 15		Apr. 17		May 27		July 1	
Depth of sample (ft)	3.0	30.5	3.0	28.5	3.0	29.5	1.5	27.5	1.5	30.5
Specific conductance (µm/cm)	490	500	490	490	491	477	513	520	480	536
pH (units)	8.4	8.6	9.4	9.5	8.8	8.6	8.5	8.4	8.6	7.7
Water temperature (°C)	13.5	13.5	2.0	2.0	10.0	8.0	19.0	18.0	23.0	20.0
Secchi-disc (meters)	---	0.5	---	6.1	---	1.5	---	3.0	---	1.0
Dissolved oxygen	8.0	8.1	13.2	12.8	12.9	10.0	9.5	8.6	7.8	0
Silica, dissolved (SiO ₂)	---	---	---	---	0.39	0.29	---	---	---	---
Nitrogen, nitrate, total (as N)	---	---	---	---	0.01	0.01	---	---	---	---
Nitrogen, nitrite, total (as N)	---	---	---	---	0.05	0.10	---	---	---	---
Nitrogen, ammonia, total (as N)	---	---	---	---	0.85	0.80	---	---	---	---
Nitrogen, organic, total (as N)	---	---	---	---	1.3	1.2	---	---	---	---
Total phosphorus (as P)	0.15	0.124	0.093	0.066	0.078	0.037	0.082	0.036	0.083	0.029
Phosphorus, ortho, diss. (as P)	0.067	0.066	0.091	0.066	0.088	0.047	0.113	0.063	0.013	0.003
Chlorophyll a, phyto. (µg/L)	23.0	---	---	---	12.0	---	14.0	---	---	---
Chlorophyll b, phyto. (µg/L)	0.6	---	---	---	0.5	---	1.2	---	2.1	---

10-15-86

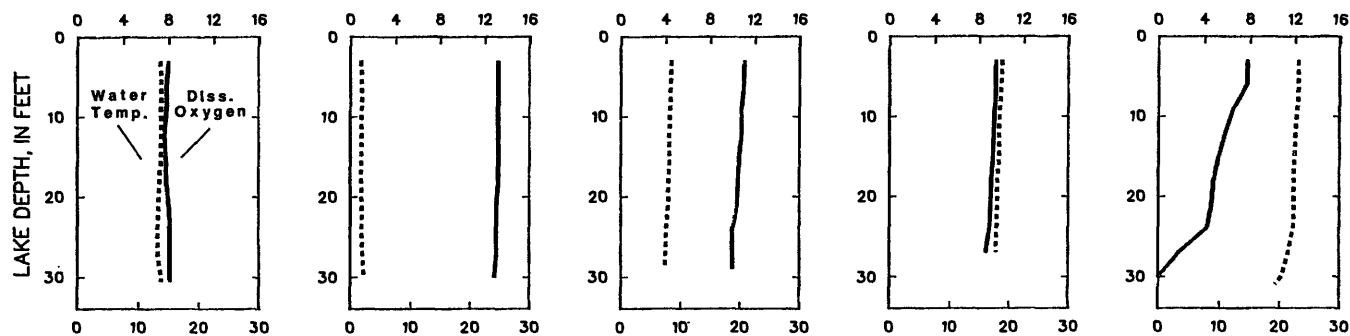
1-15-87

4-17-87

5-27-87

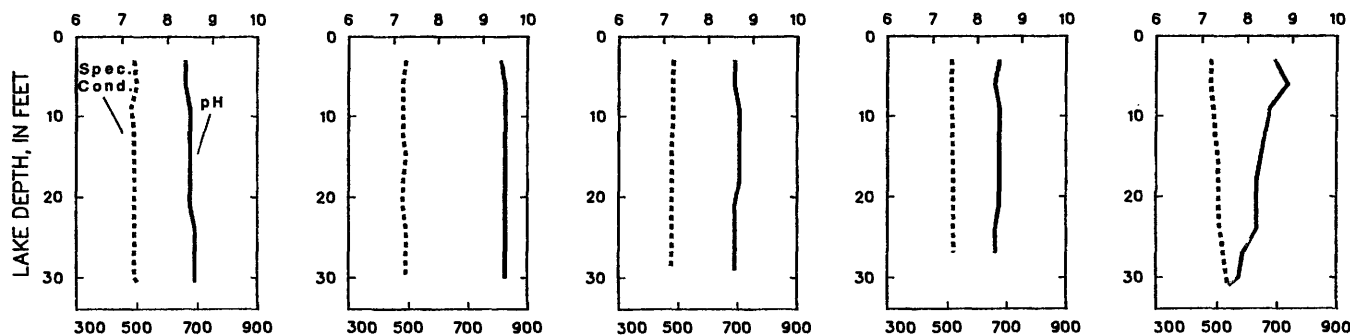
7-1-87

DISSOLVED OXYGEN, IN MILLIGRAMS PER LITER



WATER TEMPERATURE, IN DEGREES CELSIUS

PH, IN STANDARD UNITS



SPECIFIC CONDUCTANCE, IN MICROSIEMENS PER CENTIMETER

423659088354401 DELAVAN LAKE AT NORTH END NEAR LAKE LAWN, WI--CONTINUED

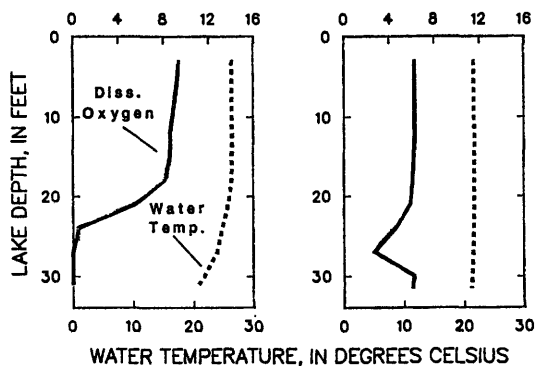
WATER QUALITY DATA, JULY 29 TO AUGUST 27, 1987
(Milligrams per liter unless otherwise indicated)

	July 29			Aug. 27	
Depth of sample (ft)	1.5	22.5	30.5	1.5	32.5
Specific conductance ($\mu\text{m}/\text{cm}$)	509	515	562	486	496
pH (units)	9.1	8.4	7.8	8.6	8.6
Water temperature ($^{\circ}\text{C}$)	26.5	25.5	21.5	21.5	21.0
Secchi-disc (meters)	---	1.0	---	---	1.25
Dissolved oxygen	9.4	3.0	0	6.3	6.1
Total phosphorus (as P)	0.058	0.059	0.07	0.134	0.003
Phosphorus, ortho, diss. (as P)	<0.001	<0.001	0.018	0.053	0.019

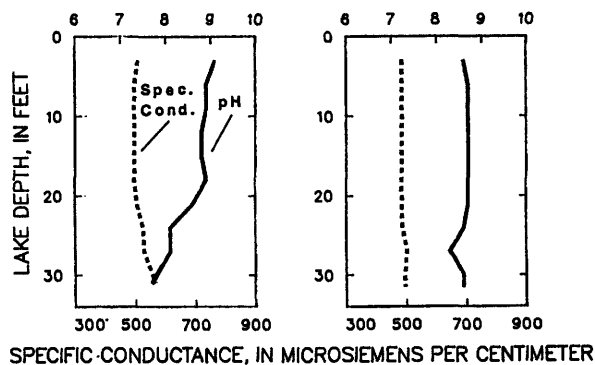
7-29-87

8-27-87

DISSOLVED OXYGEN, IN MILLIGRAMS PER LITER



PH, IN STANDARD UNITS



DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.78	4.80	4.24	4.18	4.23	4.30	4.66	4.92	4.96	4.69	4.70	5.02
2	5.65	4.75	4.22	4.20	4.16	4.36	4.66	5.06	4.96	4.67	4.72	5.00
3	5.52	4.74	4.22	4.17	4.18	4.39	4.64	5.18	4.94	4.66	4.73	5.00
4	5.48	4.68	4.20	4.20	4.17	4.39	4.65	5.25	4.90	4.68	4.74	4.99
5	5.32	4.66	4.22	4.22	4.18	4.40	4.63	5.23	4.90	4.65	4.70	4.99
6	5.22	4.64	4.22	4.22	4.18	4.40	4.63	5.28	4.88	4.66	4.66	4.98
7	5.18	4.60	4.21	4.20	4.18	4.40	4.63	5.10	4.88	4.68	4.66	5.00
8	5.08	4.60	4.25	4.22	4.18	4.42	4.64	5.02	4.80	4.70	4.77	5.00
9	5.04	4.60	4.26	4.24	4.16	4.42	4.64	4.96	4.80	4.70	4.80	4.99
10	4.92	4.54	4.26	4.26	4.18	4.42	4.65	4.88	4.80	4.70	4.78	4.98
11	4.78	4.50	4.26	4.28	4.16	4.42	4.66	4.85	4.78	4.69	4.76	4.97
12	4.82	4.45	4.26	4.28	4.19	4.42	4.78	4.83	4.80	4.69	4.76	4.98
13	4.77	4.45	4.26	4.27	4.16	4.45	4.80	4.76	4.80	4.68	4.75	4.96
14	4.74	4.38	4.26	4.26	4.16	4.48	4.82	4.78	4.81	4.66	4.82	4.96
15	4.70	4.35	4.26	4.25	4.16	4.48	5.02	4.80	4.78	4.70	4.90	4.96
16	4.67	4.35	4.20	4.25	4.14	4.55	5.00	4.80	4.78	4.72	4.92	5.00
17	4.67	4.35	4.20	4.25	4.18	4.60	4.95	4.80	4.76	4.69	5.07	5.02
18	4.65	4.35	4.20	4.26	4.14	4.62	4.95	4.80	4.76	4.69	5.08	5.03
19	4.67	4.32	4.20	4.24	4.14	4.65	4.93	4.86	4.75	4.69	5.10	5.02
20	4.70	4.32	4.20	4.24	4.14	4.68	4.92	4.90	4.76	4.69	5.06	5.02
21	4.72	4.32	4.20	4.23	4.14	4.70	4.92	4.98	4.75	4.72	5.06	5.00
22	4.72	4.32	4.19	4.23	4.14	4.70	4.90	4.98	4.76	4.71	5.02	4.98
23	4.75	4.32	4.18	4.23	4.15	4.73	5.26	5.02	4.76	4.71	4.93	4.98
24	4.75	4.30	4.18	4.23	4.14	4.70	5.26	5.04	4.78	4.70	4.86	4.97
25	4.76	4.28	4.19	4.23	4.15	4.70	5.22	5.00	4.76	4.70	4.86	4.96
26	4.78	4.26	4.19	4.22	4.16	4.68	5.17	5.06	4.75	4.69	4.98	4.96
27	4.80	4.24	4.19	4.23	4.16	4.69	5.16	5.04	4.73	4.66	5.02	4.94
28	4.85	4.22	4.19	4.23	4.19	4.67	5.02	5.00	4.74	4.70	5.02	4.90
29	4.85	4.24	4.18	4.23	---	4.68	4.95	5.00	4.70	4.71	5.05	4.92
30	4.86	4.24	4.18	4.23	---	4.67	4.95	4.99	4.70	4.70	5.06	4.92
31	4.85	---	4.18	4.23	---	4.66	---	4.97	---	4.70	5.05	---
MEAN	4.94	4.44	4.21	4.23	4.16	4.54	4.87	4.97	4.80	4.69	4.88	4.98
MAX	5.78	4.80	4.26	4.28	4.23	4.73	5.26	5.28	4.96	4.72	5.10	5.03
MIN	4.65	4.22	4.18	4.17	4.14	4.30	4.63	4.76	4.70	4.65	4.66	4.90
CAL YR 1986	MEAN 4.76	MAX 5.85	MIN 4.18									
WTR YR 1987	MEAN 4.65	MAX 5.78	MIN 4.14									

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: Nov. 23 to Jan. 7 and June 5-8. 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, 228 ft³/s Oct. 1, gage height, 7.92 ft; minimum daily discharge, 0.01 ft³/s on several days.

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

5.07	0.01	5.50	7.9
5.10	0.15	6.00	40
5.15	0.57	6.50	78
5.20	1.1	7.00	124
5.30	2.5	7.50	178
5.40	4.6	8.00	239

DISCHARGE, IN 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	220	40	22	6.6	15	2.8	16	30	35	.15	.28	.69
2	208	39	16	6.6	15	8.9	16	34	35	.07	.28	.85
3	203	37	16	6.4	15	13	16	52	35	.15	.16	.98
4	199	37	15	6.4	14	14	16	69	34	.22	.13	1.0
5	194	37	14	6.6	14	14	16	96	1.0	.20	.11	1.0
6	157	36	15	6.8	15	14	6.8	109	.80	.19	.08	.98
7	119	36	15	7.0	15	14	3.2	105	.70	.18	.01	.88
8	105	34	15	6.5	14	15	3.2	102	.60	.22	.07	.77
9	95	32	15	6.5	14	7.8	3.2	99	.25	.18	.01	.70
10	94	33	14	6.5	14	2.2	1.3	98	.24	.21	.04	.90
11	91	32	14	6.6	14	1.3	.48	67	.25	.31	.03	1.2
12	87	31	14	11	14	1.8	.47	32	.25	.43	.09	1.1
13	65	21	13	16	14	2.0	.57	32	.21	.57	.01	.99
14	52	31	14	16	14	3.2	40	14	.21	.51	.24	.99
15	52	30	14	15	14	3.2	92	1.3	.55	.62	.34	1.1
16	21	29	15	15	14	2.5	90	1.4	.44	.66	.68	1.4
17	7.2	29	15	15	14	2.5	68	1.5	.55	.85	1.1	5.7
18	6.9	29	15	15	9.8	2.4	44	1.7	.39	.91	1.7	10
19	7.0	28	15	15	6.5	3.0	44	1.9	.37	.94	23	9.8
20	6.5	28	14	15	6.5	3.9	39	2.6	.45	.64	24	9.5
21	6.7	28	14	15	6.5	4.2	44	3.4	.36	.64	42	8.8
22	6.7	27	14	15	6.5	4.7	68	3.3	.30	.73	56	8.7
23	6.6	27	14	14	2.5	17	104	3.5	.36	.77	54	7.6
24	6.5	26	8.0	15	.32	32	106	3.9	.41	.73	19	8.1
25	6.5	25	7.4	14	.30	37	102	3.9	.34	.97	.01	7.2
26	6.7	25	7.0	14	.30	35	99	20	.17	.78	41	7.6
27	6.7	24	6.8	14	.30	35	95	31	.16	.67	27	7.9
28	8.0	24	6.8	15	.71	36	93	34	.17	.35	.80	7.9
29	8.2	23	6.6	15	---	36	71	35	.17	.38	.90	8.5
30	20	23	6.6	15	---	35	30	35	.19	.38	.80	7.7
31	40	---	6.6	14	---	24	---	35	---	.37	.67	---
TOTAL	2112.2	901	397.8	365.5	283.23	427.4	1328.22	1157.4	148.89	14.98	294.54	130.53
MEAN	68.1	30.0	12.8	11.8	10.1	13.8	44.3	37.3	4.96	.48	9.50	4.35
MAX	220	40	22	16	15	37	106	109	35	.97	56	10
MIN	6.5	21	6.6	6.4	.30	1.3	.47	1.3	.16	.07	.01	.69
CFSM	1.62	.71	.30	.28	.24	.33	1.05	.89	.12	.0	.23	.10
IN.	1.87	.80	.35	.32	.25	.38	1.17	1.02	.13	.0	.26	.12

CAL YR 1986 TOTAL 11804.62 MEAN 32.3 MAX 220 MIN .32 CFSM .77 IN. 10.4
WTR YR 1987 TOTAL 7561.62 MEAN 20.7 MAX 220 MIN .01 CFSM .49 IN. 6.68

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 sampler 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, 0.05 mg/L Apr. 30, May 1, 1986, Apr. 23 and Aug. 26, 1987.

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, 0.78 mg/L Apr. 14; minimum observed, 0.05 mg/L Apr. 23 and Aug. 26.

TOTAL PHOSPHORUS DISCHARGE: Maximum daily, 266 lb Oct. 1; minimum daily, 0.00 lb Aug. 9, 13.

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)
OCT , 1986			
01...	0820	221	0.270
01...	1300	219	0.220
02...	0900	207	0.150
03...	1010	204	0.080
03...	1455	202	0.090
15...	0745	52	0.090
JAN , 1987			
14...	0810	16	0.090
MAR			
01...	1005	1.8	0.290
APR			
13...	1410	0.60	0.130
14...	0810	19	0.780
15...	1045	92	0.060
15...	1450	92	0.070
22...	0825	48	0.190
23...	0850	104	0.070
23...	1530	105	0.050
24...	0940	106	0.080
MAY			
02...	1120	34	0.080
02...	1530	35	0.070
03...	0705	38	0.090
03...	1530	70	0.080
07...	1316	105	0.080
JUL			
09...	1100	0.22	0.070
AUG			
08...	1100	0.12	0.090
19...	1425	48	0.240
20...	1047	13	0.200
26...	1500	63	0.050
27...	1350	1.1	0.060

05431022 DELAVAN LAKE OUTLET AT BORG ROAD NEAR DELAVAN, WI--CONTINUED

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	266	22.0	12.0	3.20	7.11	3.12	12.0	13.0	15.0	.06	.13	.21
2	157	21.0	8.60	3.20	7.15	14.0	12.0	14.0	15.0	.03	.13	.26
3	98.0	20.0	8.60	3.10	7.22	7.94	12.0	24.0	15.0	.06	.08	.30
4	97.0	20.0	8.10	3.10	6.96	6.66	12.0	46.0	15.0	.08	.06	.31
5	94.0	20.0	7.60	3.20	6.80	6.80	12.0	93.0	.43	.08	.05	.30
6	76.0	20.0	8.10	3.30	7.13	6.80	5.07	76.0	.35	.07	.04	.29
7	58.0	19.0	7.30	3.44	7.31	6.89	2.36	49.0	.30	.07	.01	.26
8	51.0	18.0	7.30	3.17	6.86	7.18	2.32	44.0	.26	.08	.03	.22
9	46.0	17.0	7.30	3.17	6.81	3.81	2.31	43.0	.10	.07	.00	.20
10	46.0	18.0	6.80	3.16	6.92	1.07	.96	42.0	.10	.08	.02	.26
11	44.0	17.0	6.80	3.24	6.82	.66	.34	29.0	.10	.12	.01	.34
12	42.0	16.0	6.80	5.23	6.87	.90	.33	14.0	.10	.17	.04	.32
13	31.0	11.0	6.30	7.72	6.80	1.06	.40	14.0	.08	.22	.00	.28
14	25.0	16.0	6.80	7.72	6.80	1.69	66.0	5.95	.09	.20	.12	.27
15	23.0	16.0	6.80	7.49	6.80	1.72	41.0	.57	.22	.25	.20	.30
16	9.39	15.0	7.30	7.41	6.80	1.41	35.0	.62	.18	.27	.49	.38
17	3.10	15.0	7.30	7.41	6.80	1.43	31.0	.64	.22	.34	.96	2.25
18	3.00	15.0	7.30	7.37	4.73	1.42	24.0	.73	.16	.37	1.77	9.47
19	3.04	15.0	7.30	7.11	3.06	1.79	28.0	.82	.15	.39	29.0	6.92
20	2.79	15.0	6.80	7.31	2.99	2.36	30.0	1.14	.18	.27	26.0	4.58
21	2.87	15.0	6.80	7.21	2.93	2.62	40.0	1.46	.14	.27	35.0	2.97
22	2.88	14.0	6.80	7.11	2.86	3.02	38.0	1.42	.12	.31	38.0	2.63
23	2.86	14.0	6.80	6.99	1.09	16.0	35.0	1.51	.14	.33	29.0	2.12
24	2.81	14.0	3.90	7.11	.14	66.0	44.0	1.40	.16	.31	8.99	2.11
25	2.80	14.0	3.60	7.02	.13	36.0	44.0	1.69	.13	.42	.01	1.75
26	2.91	14.0	3.40	6.98	.13	28.0	43.0	10.0	.07	.34	11.0	1.72
27	2.91	13.0	3.30	7.01	.13	28.0	41.0	26.0	.06	.30	8.08	1.65
28	3.44	13.0	3.30	7.11	.40	28.0	40.0	19.0	.06	.15	.26	1.53
29	3.53	12.0	3.20	7.11	---	28.0	31.0	15.0	.07	.17	.29	1.54
30	14.0	12.0	3.20	7.10	---	27.0	13.0	15.0	.08	.17	.25	1.30
31	26.0	---	3.20	7.04	---	18.0	---	15.0	---	.17	.21	---
TOTAL	1242.33	481.0	198.70	177.84	136.55	359.35	698.09	618.95	64.05	6.22	190.23	47.04
MEAN	40.1	16.0	6.41	5.74	4.88	11.6	23.3	20.0	2.13	.20	6.14	1.57
MAX	266	22.0	12.0	7.72	7.31	66.0	66.0	93.0	15.0	.42	38.0	9.47
MIN	2.79	11.0	3.20	3.10	.13	.66	.33	.57	.06	.03	.00	.20
CAL YR 1986	TOTAL 9397.90	MEAN 25.7	MAX 281	MIN .09								
WTR YR 1987	TOTAL 4220.29	MEAN 11.6	MAX 266	MIN .00								

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: None, except for 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.--48 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)
Apr. 23	0230	*854	*6.30				

Minimum discharge, 42 ft³/s Jan. 23, gage height, 3.32 ft, result of freezeup.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Nov. 13-15, Dec. 10-21, Jan. 9-11, Jan. 17 to Feb. 4, and Feb. 16-18.)

3.4	48	5.0	374
4.0	140	6.0	726
4.5	246	7.0	1,180

DISCHARGE, IN 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	734	171	140	101	100	268	146	176	133	71	64	107
2	673	172	140	101	100	185	129	273	133	69	66	101
3	586	170	138	101	110	152	126	341	130	70	65	94
4	561	168	124	101	110	138	121	308	123	69	66	90
5	554	166	122	101	119	132	118	276	121	73	64	85
6	470	164	130	101	120	131	115	226	106	76	64	82
7	414	162	126	101	146	135	106	238	93	75	62	85
8	341	160	127	101	150	145	99	239	89	83	98	95
9	288	149	129	100	127	144	98	234	87	89	101	91
10	269	148	120	100	124	115	96	225	80	84	80	86
11	262	148	110	100	112	105	114	219	77	75	73	82
12	284	145	110	104	111	105	174	195	82	71	68	80
13	290	140	110	105	110	102	158	156	79	68	67	79
14	266	130	110	109	111	116	288	148	78	65	146	81
15	234	140	110	108	104	124	471	132	76	65	189	86
16	220	140	110	104	96	122	373	115	74	68	171	89
17	185	140	110	100	94	122	323	113	73	64	241	102
18	159	138	110	100	94	132	264	111	73	62	185	108
19	155	138	110	96	95	197	220	128	73	61	192	106
20	150	138	110	96	92	185	196	145	75	61	146	103
21	150	138	110	96	94	163	162	234	80	62	125	104
22	146	138	109	90	94	149	433	168	82	62	117	102
23	146	165	111	90	94	142	734	153	81	66	125	96
24	142	178	111	90	93	146	494	144	77	66	122	91
25	142	166	109	90	90	156	387	140	78	64	104	88
26	172	160	106	90	90	162	330	140	78	59	202	86
27	175	153	106	90	90	162	278	145	73	64	419	84
28	165	149	103	94	95	157	249	151	71	67	259	83
29	156	145	102	98	---	174	244	145	71	67	155	101
30	151	143	102	100	---	184	222	139	73	67	127	97
31	155	---	101	100	---	165	---	137	---	65	115	---
TOTAL	8795	4562	3566	3058	2965	4615	7268	5694	2619	2128	4078	2764
MEAN	284	152	115	98.6	106	149	242	184	87.3	68.6	132	92.1
MAX	734	178	140	109	150	268	734	341	133	89	419	108
MIN	142	130	101	90	90	102	96	111	71	59	62	79
CFSM	1.43	.76	.58	.50	.53	.75	1.22	.92	.44	.34	.66	.46
IN.	1.64	.85	.67	.57	.55	.86	1.36	1.06	.49	.40	.76	.52
CAL YR 1986	TOTAL 70927	MEAN 194	MAX 2100	MIN 69	CFSM .98	IN. 13.3						
WTR YR 1987	TOTAL 52112	MEAN 143	MAX 734	MIN 59	CFSM .72	IN. 9.74						

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.

PERIOD OF RECORD.--July to September 1987.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: July to September 1987.

DISSOLVED OXYGEN: July to September 1987.

INSTRUMENTATION.--Continuous water temperature and dissolved oxygen recorder since July 17, 1987.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum observed, 32.5°C July 20, 1987; minimum observed, 11.0°C September 25, 1987.

DISSOLVED OXYGEN: Maximum observed, 14.2 mg/L September 6, 7, 1987; minimum observed, 0.5 mg/L July 31, 1987.

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	PH (STAND- ARD UNITS) (00400)	PH LAB (STAND- ARD UNITS) (00403)	TEMPER- ATURE WATER (DEG C) (00010)	TUR- BID- ITY (NTU) (00076)	OXYGEN, DIS- SOLVED (MG/L) (00300)	SOLIDS, RESIDUE 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)
JUL , 1987									
30...	0615	--	7.00	20.5	28	6.8	492	7.40	0.380
30...	0630	--	7.00	20.5	>40	6.4	1120	6.20	0.450
30...	0645	--	7.00	20.5	>40	5.6	1280	4.70	0.690
30...	0700	--	7.00	20.5	>40	5.1	3890	4.80	0.750
30...	0833	--	7.10	21.0	>40	5.0	1600	4.00	0.820
30...	2315	--	7.70	23.5	>80	5.3	1290	--	1.50
31...	0045	--	7.60	22.5	>80	4.2	1710	--	1.10
31...	0100	--	7.50	22.5	>80	3.3	5010	--	1.20
31...	0115	--	7.50	22.5	>80	1.9	3720	--	1.40
31...	0500	--	7.50	21.0	>80	4.5	1600	--	0.980
31...	0915	--	7.50	20.5	>80	5.2	672	--	1.10
AUG									
08...	0815	--	7.10	19.0	>80	3.7	1160	6.00	0.360
08...	0915	--	7.20	19.0	>80	3.6	1260	5.60	0.340
08...	1130	--	7.10	19.0	>80	3.2	1180	3.40	1.10
08...	1830	--	7.10	20.0	>80	5.0	532	3.10	1.20
28...	1115	--	8.00	14.5	28	8.2	228	--	0.160
SEP									
17...	0900	--	8.00	16.5	38	6.5	272	--	0.690
17...	1345	--	7.80	18.0	73	2.9	600	--	2.30
17...	1630	7.70	7.80	19.0	89	3.7	484	--	2.30
17...	1631	7.70	--	19.0	--	3.7	--	--	2.30

05432055 LIVINGSTON BRANCH PEGATONICA RIVER NEAR LIVINGSTON, WI--CONTINUED

TEMPERATURE, WATER, DEGREES CENTIGRADE, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	---	---	---	---	---	---	31.5	21.0	26.0	22.5	13.0	17.5
2	---	---	---	---	---	---	31.5	22.0	26.5	22.5	15.0	18.0
3	---	---	---	---	---	---	26.0	21.0	23.5	22.0	13.0	17.0
4	---	---	---	---	---	---	27.5	19.0	23.0	22.0	13.5	17.5
5	---	---	---	---	---	---	26.0	19.0	22.0	24.0	16.0	19.5
6	---	---	---	---	---	---	27.0	18.0	22.0	22.0	17.0	19.5
7	---	---	---	---	---	---	27.0	19.0	22.5	22.0	17.0	19.0
8	---	---	---	---	---	---	21.5	19.0	19.5	23.0	16.5	19.0
9	---	---	---	---	---	---	24.5	18.0	20.5	21.5	13.5	17.5
10	---	---	---	---	---	---	25.5	17.0	21.0	16.5	14.5	15.0
11	---	---	---	---	---	---	26.0	18.5	21.5	21.0	13.5	17.0
12	---	---	---	---	---	---	25.0	17.5	21.0	20.5	14.0	16.5
13	---	---	---	---	---	---	20.5	18.0	19.0	18.0	13.0	15.0
14	---	---	---	---	---	---	22.5	18.0	20.0	20.0	11.5	15.5
15	---	---	---	26.0	17.0	20.5	28.5	19.5	23.5	19.5	14.5	17.0
16	---	---	---	27.0	16.5	21.0	27.0	21.5	23.0	20.5	16.5	18.0
17	---	---	---	30.0	19.5	24.5	25.0	18.5	21.5	---	---	---
18	---	---	---	28.5	20.5	24.5	23.0	17.0	20.0	17.5	14.0	16.0
19	---	---	---	30.5	21.0	25.5	23.0	16.0	19.0	---	---	---
20	---	---	---	32.5	22.5	26.5	25.0	15.5	20.0	15.0	12.5	13.5
21	---	---	---	32.0	20.5	25.5	26.0	18.5	22.0	15.5	12.0	13.5
22	---	---	---	---	---	---	22.0	17.5	20.0	16.0	12.5	14.0
23	---	---	---	---	---	---	22.0	14.0	17.5	20.0	11.5	15.0
24	---	---	---	---	---	---	20.0	13.5	16.5	19.5	12.0	15.0
25	---	---	---	31.0	20.5	25.5	16.5	14.5	15.0	19.0	11.0	14.5
26	---	---	---	29.5	21.5	25.0	15.0	14.0	14.5	20.5	11.5	15.5
27	---	---	---	24.5	19.0	21.0	18.5	14.0	16.0	22.5	14.5	18.0
28	---	---	---	26.0	18.0	21.0	18.5	14.5	16.5	19.5	15.0	17.0
29	---	---	---	29.5	20.0	24.0	22.5	13.5	17.5	17.0	13.5	15.0
30	---	---	---	28.5	20.5	24.0	22.5	15.5	18.5	16.0	11.5	13.0
31	---	---	---	29.0	20.5	24.0	21.5	14.0	17.0	---	---	---
MONTH	---	---	---	---	---	---	31.5	13.5	20.2	---	---	---

OXYGEN, DISSOLVED (DO), MG/L, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	---	---	---	---	---	---	7.2	5.5	6.3	11.2	5.2	7.9
2	---	---	---	---	---	---	7.4	5.7	6.4	12.2	5.3	8.1
3	---	---	---	---	---	---	7.8	5.9	6.8	12.8	5.5	8.5
4	---	---	---	---	---	---	8.5	6.5	7.4	13.4	4.7	8.4
5	---	---	---	---	---	---	8.7	4.7	6.6	13.6	4.7	8.0
6	---	---	---	---	---	---	---	---	---	14.2	4.7	8.4
7	---	---	---	---	---	---	---	---	---	14.2	4.2	7.7
8	---	---	---	---	---	---	---	---	---	13.7	3.1	7.7
9	---	---	---	---	---	---	---	---	---	14.0	5.8	9.0
10	---	---	---	---	---	---	10.3	6.5	8.4	11.9	6.2	8.7
11	---	---	---	---	---	---	9.6	6.4	7.8	14.0	5.8	9.6
12	---	---	---	---	---	---	10.8	6.0	8.2	10.9	5.5	7.9
13	---	---	---	---	---	---	9.3	6.3	7.6	10.0	5.6	7.3
14	---	---	---	---	---	---	9.2	5.8	7.4	11.4	5.1	7.9
15	---	---	---	10.4	6.5	8.2	9.9	4.8	7.2	9.0	5.6	6.7
16	---	---	---	12.5	5.8	8.9	10.0	2.7	6.4	7.0	3.8	5.7
17	---	---	---	12.1	5.8	7.9	9.8	1.9	6.6	6.5	2.8	5.2
18	---	---	---	11.6	5.7	8.3	8.0	5.5	6.8	7.5	5.4	6.7
19	---	---	---	11.5	5.3	7.8	10.0	5.7	7.5	9.5	7.3	8.4
20	---	---	---	11.5	5.5	7.7	10.9	5.5	7.9	---	---	---
21	---	---	---	11.9	5.1	8.0	11.4	5.2	7.3	---	---	---
22	---	---	---	---	---	---	12.4	5.3	8.4	9.6	7.5	8.4
23	---	---	---	---	---	---	12.8	6.6	9.1	10.3	7.3	8.7
24	---	---	---	---	---	---	13.6	6.3	9.4	10.7	7.6	8.9
25	---	---	---	11.6	4.9	7.7	10.1	6.4	7.7	10.9	7.7	9.2
26	---	---	---	11.2	5.2	7.3	8.4	5.5	7.0	10.3	6.6	8.6
27	---	---	---	6.9	5.3	6.1	11.5	6.5	8.6	---	---	---
28	---	---	---	7.8	4.6	6.3	9.0	3.6	6.5	---	---	---
29	---	---	---	8.6	4.7	6.3	9.1	5.6	7.2	---	---	---
30	---	---	---	6.8	2.9	4.9	10.1	5.8	7.5	---	---	---
31	---	---	---	5.9	.5	5.0	10.8	6.0	8.0	---	---	---

ROCK RIVER BASIN

05432055 LIVINGSTON BRANCH PECATONICA RIVER NEAR LIVINGSTON, WI--CONTINUED

PRECIPITATION QUANTITY

PERIOD OF RECORD.--July to September 1987.

GAGE.--Micrologger.

REMARKS.--Records good.

EXTREMES FOR CURRENT YEAR.--Maximum daily rainfall, 2.36 in., August 8.

RAINFALL, ACCUMULATED (INCHES), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	---	---	.00	.00
2	---	---	---	---	---	---	---	---	---	---	.00	.00
3	---	---	---	---	---	---	---	---	---	---	.10	.00
4	---	---	---	---	---	---	---	---	---	---	.00	.00
5	---	---	---	---	---	---	---	---	---	---	.00	.00
6	---	---	---	---	---	---	---	---	---	---	.00	.00
7	---	---	---	---	---	---	---	---	---	---	.10	.54
8	---	---	---	---	---	---	---	---	---	---	2.31	.00
9	---	---	---	---	---	---	---	---	---	---	.00	.00
10	---	---	---	---	---	---	---	---	---	---	.00	.10
11	---	---	---	---	---	---	---	---	---	---	.00	.00
12	---	---	---	---	---	---	---	---	---	---	.00	.00
13	---	---	---	---	---	---	---	---	---	---	.10	.54
14	---	---	---	---	---	---	---	---	---	.50	.31	.43
15	---	---	---	---	---	---	---	---	---	.19	.00	.00
16	---	---	---	---	---	---	---	---	---	.00	.88	.45
17	---	---	---	---	---	---	---	---	---	.00	.00	.44
18	---	---	---	---	---	---	---	---	---	.00	.63	.10
19	---	---	---	---	---	---	---	---	---	.19	.00	.00
20	---	---	---	---	---	---	---	---	---	.00	.00	.10
21	---	---	---	---	---	---	---	---	---	.00	.33	.10
22	---	---	---	---	---	---	---	---	---	.00	.00	.00
23	---	---	---	---	---	---	---	---	---	.00	.00	.00
24	---	---	---	---	---	---	---	---	---	.10	.00	.00
25	---	---	---	---	---	---	---	---	---	.00	.17	.00
26	---	---	---	---	---	---	---	---	---	.00	.64	.00
27	---	---	---	---	---	---	---	---	---	1.06	.00	.00
28	---	---	---	---	---	---	---	---	---	.21	.51	.00
29	---	---	---	---	---	---	---	---	---	.33	.00	.00
30	---	---	---	---	---	---	---	---	---	2.36	.00	.00
31	---	---	---	---	---	---	---	---	---	.00	.00	---
TOTAL	---	---	---	---	---	---	---	---	---	---	6.08	2.80

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: None, except for ice periods listed in rating table below. Records good except for ice-affected periods, which are fair.

AVERAGE DISCHARGE.--48 years, 188 ft³/s, 9.35 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)
Oct. 4	2100	*531	*6.19				

Minimum discharge, 64 ft³/s Jan. 16, result of freezeup.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Shifting-control method used Oct. 18 to Nov. 13; stage-discharge relation affected by ice Dec. 9-19 and Jan. 17 to Feb. 10.)

2.0	89	5.0	385
3.0	172	6.0	512
4.0	270		

DISCHARGE, IN 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	338	190	169	131	110	347	217	170	212	112	208	128
2	282	183	175	131	120	390	215	202	316	110	130	123
3	257	176	180	130	130	289	197	216	241	119	116	119
4	416	174	163	128	120	203	189	180	196	120	113	115
5	465	171	121	125	120	170	183	166	180	113	108	114
6	329	169	191	129	120	168	177	162	171	116	104	113
7	284	166	166	129	140	166	170	158	163	121	102	116
8	261	169	163	125	160	166	165	154	157	122	185	185
9	239	165	140	102	160	160	161	149	150	130	362	137
10	219	155	100	130	150	139	158	146	144	129	185	120
11	214	152	160	141	142	138	159	151	148	113	140	119
12	235	147	150	114	151	137	157	152	159	109	126	117
13	244	123	130	129	154	136	150	139	147	107	121	117
14	230	165	130	139	159	155	178	201	140	105	125	131
15	215	155	140	130	105	165	259	191	135	126	130	131
16	204	155	140	89	120	158	222	151	129	124	126	133
17	196	156	140	120	153	158	190	145	127	108	231	154
18	186	156	140	120	133	175	179	144	126	104	199	169
19	181	143	140	120	125	235	169	171	128	102	175	156
20	178	163	137	110	125	233	161	192	130	103	145	142
21	176	175	133	110	130	207	157	301	134	100	138	140
22	174	152	141	100	127	194	195	206	134	97	142	135
23	177	172	138	100	123	188	323	174	128	96	126	128
24	180	186	136	100	120	189	272	164	123	96	118	124
25	193	166	137	100	120	212	230	164	127	103	118	121
26	243	164	135	110	122	240	212	197	127	98	172	117
27	251	169	132	110	123	223	201	253	119	109	237	116
28	218	164	130	110	125	202	189	282	116	155	170	114
29	202	161	134	110	---	219	183	260	117	145	169	114
30	190	162	134	110	---	230	177	266	116	137	152	114
31	184	---	132	110	---	208	---	217	---	283	137	---
TOTAL	7361	4904	4457	3642	3687	6200	5795	5824	4540	3712	4810	3862
MEAN	237	163	144	117	132	200	193	188	151	120	155	129
MAX	465	190	191	141	160	390	323	301	316	283	362	185
MIN	174	123	100	89	105	136	150	139	116	96	102	113
CFSM	.87	.60	.53	.43	.48	.73	.71	.69	.55	.44	.57	.47
IN.	1.00	.67	.61	.50	.50	.84	.79	.79	.62	.51	.66	.53

CAL YR 1986	TOTAL 86049	MEAN 236	MAX 2180	MIN 100	CFSM .86	IN. 11.7
WTR YR 1987	TOTAL 58794	MEAN 161	MAX 465	MIN 89	CFSM .59	IN. 8.01

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: None, except for ice periods listed in rating table below. Records good except those for ice-affected periods, which are fair.

AVERAGE DISCHARGE.--48 years, 730 ft³/s, 9.59 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)
Oct. 1	0100	*2,060	(a)*10.71	Aug. 27	2200	(b)1,300	(b)7.81

(a) Recession from peak of 10.72 ft on Sept. 30, 1986.

(b) Maximum independent peak.

Minimum daily discharge, 422 ft³/s July 23.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Dec. 12-25 and Jan. 19 to Feb. 12.)

4.0	396	8.0	1,340
5.0	626	10.0	1,860
6.0	856	12.0	2,460

DISCHARGE, IN 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	2030	947	803	643	540	784	805	757	859	506	898	712
2	1890	934	819	643	560	1110	800	776	834	492	861	666
3	1630	920	838	643	620	1110	799	842	861	504	663	635
4	1610	899	837	635	640	893	762	880	850	499	578	618
5	1800	891	798	629	620	774	732	805	757	507	558	587
6	1820	881	734	627	600	695	713	746	708	502	546	577
7	1630	867	772	628	600	680	697	718	672	502	536	572
8	1420	862	801	624	620	679	679	700	652	575	577	576
9	1290	857	790	618	660	674	664	679	633	554	810	619
10	1190	844	717	608	680	648	654	664	611	506	952	625
11	1120	820	737	604	660	612	651	655	603	520	797	575
12	1110	802	800	626	640	595	650	657	610	487	619	559
13	1130	738	800	614	614	595	647	649	617	470	553	551
14	1150	673	780	614	619	611	690	640	599	462	547	555
15	1100	813	780	637	602	655	889	707	578	472	559	577
16	1050	816	760	625	523	682	989	747	561	502	630	611
17	1010	793	760	525	463	684	920	664	540	507	904	663
18	973	792	740	544	601	689	824	637	535	472	1040	728
19	938	786	740	580	606	801	771	695	529	451	1130	820
20	917	778	720	580	558	890	732	797	545	448	867	775
21	905	777	720	560	552	878	707	942	604	447	742	691
22	893	789	700	540	554	819	844	1010	605	435	696	665
23	889	818	700	520	562	778	1080	898	587	422	661	653
24	889	875	680	500	556	748	1150	777	559	424	616	629
25	917	871	680	500	547	746	1060	732	549	432	583	603
26	1130	844	670	500	544	804	953	734	575	433	713	586
27	1260	841	656	520	544	852	883	812	568	470	1190	570
28	1210	836	650	520	551	826	838	938	529	535	1230	561
29	1110	821	646	520	---	791	804	1010	517	617	1010	555
30	1020	807	649	520	---	816	777	958	519	680	843	547
31	975	---	651	520	---	836	---	917	---	785	771	---
TOTAL	38006	24992	22928	17967	16436	23755	24164	24143	18766	15618	23680	18661
MEAN	1226	833	740	580	587	766	805	779	626	504	764	622
MAX	2030	947	838	643	680	1110	1150	1010	861	785	1230	820
MIN	889	673	646	500	463	595	647	637	517	422	536	547
CFSM	1.19	.81	.72	.56	.57	.74	.78	.75	.60	.49	.74	.60
IN.	1.37	.90	.82	.65	.59	.85	.87	.87	.68	.56	.85	.67

CAL YR 1986	TOTAL 359071	MEAN 984	MAX 4740	MIN 482	CFSM .95	IN. 12.9
WTR YR 1987	TOTAL 269116	MEAN 737	MAX 2030	MIN 422	CFSM .71	IN. 9.68

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: None, except for 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.--73 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)
Oct. 1	1500	*1,490	*4.73	No other peak greater than base discharge.			

Minimum discharge, 196 ft³/s Nov. 13 and Feb. 17, gage height, 0.36 ft, result of freezeup.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Dec. 12-15, 19-22, and Jan. 18 to Feb. 2.)

0.50	216	3.0	922
1.0	319	5.0	1,780
2.0	592		

DISCHARGE, IN 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	1440	460	416	334	310	415	420	387	438	276	382	371
2	1340	452	424	335	320	556	416	428	410	270	377	346
3	1060	445	436	334	329	547	405	546	409	273	309	330
4	945	436	434	334	386	422	383	660	382	267	284	319
5	943	428	403	332	348	364	364	551	360	266	274	311
6	938	435	399	332	338	356	356	474	346	271	266	304
7	893	419	390	332	338	361	344	410	335	276	263	304
8	745	420	396	330	356	370	338	392	324	281	317	314
9	588	414	396	326	352	370	333	383	313	283	470	316
10	541	402	363	330	319	355	321	369	306	267	543	303
11	514	403	300	329	314	352	327	364	309	261	463	296
12	548	394	340	322	309	328	353	358	316	259	346	292
13	609	360	420	321	308	323	348	349	311	255	314	289
14	599	343	400	324	307	353	379	354	302	254	325	292
15	563	406	370	330	302	396	560	371	292	259	385	304
16	523	419	359	324	280	402	640	364	284	265	438	325
17	496	393	371	302	286	402	595	344	280	262	490	419
18	475	390	374	300	316	418	477	346	277	255	597	484
19	456	385	360	300	296	512	415	375	275	249	708	523
20	445	389	350	290	289	585	389	462	282	247	625	490
21	449	387	350	290	289	550	358	523	340	246	449	417
22	457	385	350	290	295	471	481	580	422	242	394	370
23	432	417	344	280	295	425	786	565	364	237	370	354
24	436	487	336	270	295	405	902	469	313	232	340	340
25	447	514	337	270	294	419	866	411	297	232	325	316
26	564	479	335	280	294	443	638	409	305	230	365	315
27	647	466	333	280	294	466	481	563	303	237	571	306
28	688	459	333	290	298	439	442	735	289	280	705	303
29	607	440	333	290	---	430	418	725	284	330	695	304
30	504	424	333	290	---	441	399	622	282	343	575	307
31	473	---	333	300	---	432	---	494	---	386	416	---
TOTAL	20365	12651	11418	9591	8757	13108	13934	14383	9750	8291	13381	10264
MEAN	657	422	368	309	313	423	464	464	325	267	432	342
MAX	1440	514	436	335	386	585	902	735	438	386	708	523
MIN	432	343	300	270	280	323	321	344	275	230	263	289
CFSM	1.26	.81	.70	.59	.60	.81	.89	.89	.62	.51	.83	.65
IN.	1.45	.90	.81	.68	.62	.93	.99	1.02	.69	.59	.95	.73
CAL YR 1986	TOTAL 178027	MEAN 488	MAX 1970	MIN 259	CFSM .93	IN. 12.7						
WTR YR 1987	TOTAL 145893	MEAN 400	MAX 1440	MIN 230	CFSM .76	IN. 10.4						

05437500 ROCK RIVER AT ROCKTON, IL

LOCATION.--Lat 42°26'55", long 89°04'11", in SW 1/4 NE 1/4 sec.24, T.46 N., R.1 E., Winnebago County, Hydrologic Unit 07090005, on right bank 750 ft downstream from State Highway 75 in Rockton, 1.0 mi downstream from Pecatonica River, and at mile 156.1.

DRAINAGE AREA.--6,363 mi².

PERIOD OF RECORD.--June 1903 to July 1906, October 1906 to March 1909, July 1914 to September 1919, October 1939 to current year. Published as "below mouth of Pecatonica River at Rockton" 1903-9; as "at Rockford" 1914-19. Monthly discharge only for some periods, published in WSP 1308.

REVISED RECORD.--WSP 325: 1903-9. WSP 895: 1904(M). WSP 1508: 1915, 1916-17(M). WDR IL-75-1: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 707.94 ft above National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers). Prior to Oct. 1, 1906, nonrecording gage at site 800 ft upstream at datum about 1 ft higher. Oct. 1, 1906, to Mar. 31, 1909, nonrecording gage at site 800 ft upstream at datum about 2 ft higher. July 30, 1914, to Apr. 30, 1919, nonrecording gage at site at Rockford about 21 mi downstream, at different datum. Oct. 1, 1939, to Aug. 10, 1973, at site 800 ft upstream at same datum.

REMARKS.--Estimated daily discharges: Jan. 22, 24-31. Water-discharge records good except those for estimated daily discharges, which are poor. Low flow regulated by powerplant above station.

AVERAGE DISCHARGE.--55 years (water years 1904-5, 1915-19, 1940-87), 4,105 ft³/s, 8.76 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, 17,400 ft³/s, Oct. 5, gage height, 10.82 ft; minimum daily, 2,370 ft³/s, July 26.

DISCHARGE, IN 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	16800	9280	6350	4230	3440	3980	5220	6880	5580	2600	3260	4880
2	17000	8920	6210	4240	3520	4730	5080	7020	5220	2550	3270	4520
3	17200	8590	5890	4110	3790	4710	5120	7270	5040	2480	3070	4300
4	17200	8240	5700	4140	3970	4760	5120	7280	4850	2420	3030	3990
5	17400	8190	5640	4050	4200	4740	5050	7130	4670	2490	2820	3860
6	17100	8010	5670	4030	3940	4650	5170	7050	4390	2550	2600	3810
7	16800	7830	5680	4060	4020	4490	4940	6870	4400	2550	2420	3790
8	16400	7650	5590	3980	4230	4630	4620	6660	4100	2600	2820	3670
9	16000	7140	5770	3970	3980	4550	4590	6410	4030	2680	2970	3530
10	15500	7160	5330	3980	3900	4760	4490	6070	3750	2420	3270	3480
11	14800	7170	5010	3940	3880	4550	4590	5900	3510	2580	3490	3470
12	14200	6970	5000	3780	3960	4430	4670	5810	3490	2510	3840	3430
13	14000	6650	4810	3880	3830	4550	4580	5690	3480	2710	3890	3350
14	13800	6320	5710	3890	3850	4690	4880	5510	3470	2620	4180	3340
15	13300	6200	5540	3940	3720	4730	5810	5340	3280	2690	4200	3310
16	13100	6140	5390	3870	3660	4820	5990	5110	3170	2650	4150	3500
17	12800	6040	5250	3890	3540	4910	6140	4900	3040	2710	4440	3400
18	12300	6280	5170	3920	3410	4900	6280	4760	2930	2560	4390	3900
19	11800	6180	4950	3540	3350	5290	6140	4960	2810	2520	4850	3910
20	11400	6140	5000	3610	3270	5430	5890	5060	2620	2440	4510	4000
21	11100	5990	4850	3400	3260	5460	5790	5560	2410	2550	4630	4100
22	10800	5930	4700	3200	3210	5500	6310	5860	2950	2560	4420	4240
23	10500	6000	4640	2990	3180	5370	7270	5760	3200	2430	4190	4470
24	10200	6220	4550	2880	3220	5240	7690	5630	2860	2400	3870	4370
25	10100	6300	4520	2800	3100	5080	7780	5390	2760	2440	3470	4560
26	10300	6390	4400	2800	3130	5080	7890	5230	2740	2370	4110	4480
27	10600	6380	4430	2850	3220	4930	7880	5100	2710	2670	5830	4360
28	10700	6200	4260	2910	3050	5030	7540	5380	2660	2520	6270	4350
29	10500	6240	4230	3000	---	5360	7210	5760	2490	2680	6560	4320
30	10200	6240	4260	3100	---	5400	7100	6020	2500	2950	6260	4280
31	9650	---	4160	3210	---	5400	---	5910	---	3280	5590	---
TOTAL	413550	206990	158660	112190	100830	152150	176830	183280	105110	80180	126670	118970
MEAN	13340	6900	5118	3619	3601	4908	5894	5912	3504	2586	4086	3966
MAX	17400	9280	6350	4240	4230	5500	7890	7280	5580	3280	6560	4880
MIN	9650	5930	4160	2800	3050	3980	4490	4760	2410	2370	2420	3310
CFSM	2.10	1.08	.80	.57	.57	.77	.93	.93	.55	.41	.64	.62
IN.	2.42	1.21	.93	.66	.59	.89	1.03	1.07	.61	.47	.74	.70
CAL YR 1986	TOTAL	2599910	MEAN	7123	MAX	17400	MIN	2830	CFSM	1.12	IN.	15.20
WTR YR 1987	TOTAL	1935410	MEAN	5302	MAX	17400	MIN	2370	CFSM	.83	IN.	11.31

05527800 DES PLAINES RIVER AT RUSSELL, IL

LOCATION.--Lat 42°29'22", long 87°55'32", in SE 1/4 sec.3, T.46 N., R.11 E., Lake County, Hydrologic Unit 07120004, on right bank at upstream side of Russell Road bridge, 0.3 mi west of Russell, 7.2 mi upstream from Mill Creek, and at mile 109.3.

DRAINAGE AREA.--123 mi².

PERIOD OF RECORD.--Occasional low-flow measurements, water years 1961-63, and annual maximum, water years 1962-66. June 1967 to current year.

REVISED RECORDS.--WDR IL-75-1: Drainage area. WDR IL-76-1: 1960-68(M), 1973(M).

GAGE.--Water-stage recorder. 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. 23 to Feb. 7, Sept. 26-28. Water-discharge records good except those for estimated daily discharges, which are poor.

AVERAGE DISCHARGE.--20 years, 101 ft³/s, 11.15 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, 1,350 ft³/s, Oct. 1, stage falling, peak occurred Sept. 27, 1986; maximum peak discharge, 435 ft³/s, Apr. 17, gage height, 8.32 ft; minimum daily discharge, 1.2 ft³/s, July 31.

DISCHARGE, IN 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	1260	96	38	29	17	101	102	181	45	5.9	1.3	177
2	1120	86	40	28	18	146	95	178	38	4.5	1.9	152
3	998	78	44	30	20	160	86	196	35	3.3	3.1	113
4	891	71	46	30	29	162	75	220	30	2.6	3.9	76
5	812	65	51	30	39	155	66	237	23	2.6	3.5	60
6	726	62	44	29	17	143	60	241	19	2.7	2.9	49
7	653	60	42	30	47	132	56	230	16	12	2.8	47
8	583	59	51	30	74	124	53	216	13	11	3.5	50
9	511	54	77	34	84	115	52	198	11	10	3.8	62
10	434	49	93	36	66	107	50	178	9.5	15	3.1	52
11	379	45	88	35	54	93	67	156	9.7	12	2.5	40
12	333	42	80	32	46	82	126	131	11	9.4	2.6	32
13	292	45	62	27	42	74	153	107	11	7.9	4.4	26
14	256	42	50	30	38	73	184	88	10	6.5	70	25
15	222	37	45	34	51	77	282	77	8.3	7.2	148	28
16	191	37	44	42	52	86	353	69	6.6	8.6	141	30
17	164	37	44	36	33	98	417	61	5.6	10	174	50
18	138	38	44	36	33	110	421	66	5.1	8.2	196	82
19	113	42	45	37	31	133	374	93	6.6	5.8	199	87
20	95	44	40	33	28	147	326	105	6.4	5.1	193	80
21	85	47	37	30	23	150	285	124	6.1	7.0	184	76
22	79	47	35	27	23	146	268	145	5.7	5.8	168	91
23	74	48	33	24	27	137	290	148	5.1	5.0	130	105
24	68	51	31	21	22	125	306	137	4.7	4.9	75	101
25	65	51	31	19	22	113	312	116	11	5.1	44	87
26	92	49	31	17	20	105	305	101	23	5.1	71	72
27	125	48	31	17	20	101	283	93	46	6.3	164	58
28	139	46	34	17	23	95	256	81	32	5.1	187	50
29	139	43	31	17	---	93	230	65	14	6.0	193	54
30	128	40	30	17	---	97	204	51	8.2	4.4	193	57
31	110	---	29	17	---	102	---	45	---	1.2	187	---
TOTAL	11275	1559	1421	871	999	3582	6137	4134	475.6	206.2	2756.3	2069
MEAN	364	52.0	45.8	28.1	35.7	116	205	133	15.9	6.65	88.9	69.0
MAX	1260	96	93	42	84	162	421	241	46	15	199	177
MIN	65	37	29	17	17	73	50	45	4.7	1.2	1.3	25
CFSM	2.96	.42	.37	.23	.29	.94	1.66	1.08	.13	.05	.72	.56
IN.	3.41	.47	.43	.26	.30	1.08	1.86	1.25	.14	.06	.83	.63
CAL YR 1986	TOTAL	53230.4	MEAN	146	MAX	1600	MIN	7.1	CFSM	1.19	IN.	16.09
WTR YR 1987	TOTAL	35485.0	MEAN	97.2	MAX	1260	MIN	1.2	CFSM	.79	IN.	10.73

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: None, except for 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.--24 years, 99.8 ft³/s, 10.76 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, 890 ft³/s Oct. 1, gage height, 5.44 ft, occurred on recession following peak of Sept. 28, 1986; maximum independent peak discharge, 653 ft³/s June 21, gage height, 4.78 ft; minimum, 8.4 ft³/s Jan. 14, gage height, 1.76 ft.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Nov. 14-16, Dec. 5-23, and Jan. 20 to Feb. 2.)

2.0	21	3.0	166
2.2	40	4.0	411
2.4	64	5.0	729
		5.5	912

DISCHARGE, IN 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	851	143	104	64	49	221	138	148	83	41	68	80
2	763	136	109	67	54	232	131	142	78	38	61	78
3	676	133	114	67	64	197	117	133	77	38	63	73
4	673	128	111	68	63	170	107	120	73	37	54	61
5	658	125	90	68	61	152	100	93	68	45	50	54
6	583	121	88	66	59	134	95	95	63	145	66	49
7	516	117	86	68	61	126	94	85	58	333	40	69
8	462	114	84	69	72	130	92	80	45	387	74	86
9	417	112	82	65	66	131	92	74	54	306	114	71
10	378	108	80	67	65	114	90	71	55	245	79	63
11	346	101	74	66	62	109	106	68	46	177	62	52
12	341	98	68	101	64	94	114	66	43	117	46	45
13	331	80	66	75	62	89	107	61	40	80	38	43
14	307	78	64	50	62	95	221	62	36	72	67	43
15	282	80	64	64	57	96	390	58	34	107	123	80
16	264	84	66	71	55	96	408	53	31	120	293	89
17	251	87	68	68	55	94	371	51	29	94	352	123
18	238	95	70	66	52	103	333	95	30	77	330	260
19	226	92	70	63	50	125	277	127	31	65	255	231
20	228	101	68	54	51	155	227	146	27	67	183	223
21	191	105	68	52	51	156	193	199	133	80	119	224
22	197	107	66	48	54	148	273	195	153	71	93	210
23	189	122	66	45	55	140	420	144	92	57	75	191
24	180	131	65	42	54	130	454	109	62	50	66	172
25	173	131	65	40	54	131	409	94	50	51	60	151
26	178	128	65	40	55	134	339	110	47	62	131	125
27	197	122	68	40	54	130	284	117	42	65	193	106
28	115	67	41	72	123	242	104	39	62	159	113	
29	144	112	67	42	---	152	207	99	44	63	128	142
30	155	108	66	43	---	167	171	95	43	69	107	127
31	151	---	64	45	---	150	---	87	---	66	91	---
TOTAL	10725	3314	2353	1825	1633	4224	6602	3181	1706	3287	3640	3434
MEAN	346	110	75.9	58.9	58.3	136	220	103	56.9	106	117	114
MAX	851	143	114	101	72	232	454	199	153	387	352	260
MIN	144	78	64	40	49	89	90	51	27	37	38	43
CFSM	2.75	.88	.60	.47	.46	1.08	1.75	.81	.45	.84	.93	.91
IN.	3.17	.98	.69	.54	.48	1.25	1.95	.94	.50	.97	1.07	1.01
CAL YR 1986	TOTAL 61865	MEAN 169	MAX 900	MIN 38	CFSM 1.35	IN. 18.3						
WTR YR 1987	TOTAL 45924	MEAN 126	MAX 851	MIN 27	CFSM .99	IN. 13.6						

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: Aug. 30 to Sept. 24 and Sept. 29-30. Records good except for estimated daily discharges, which are poor. Discharge affected by manipulation of gates at dams 800 ft and 11.4 mi upstream.

AVERAGE DISCHARGE.--14 years, 59.5 ft³/s, 10.90 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, 223 ft³/s Oct. 1, stage falling, peak occurred Sept. 29, 1986; maximum peak discharge, 201 ft³/s Apr. 3, gage height, 3.00 ft; minimum daily, 10 ft³/s Apr. 4.

RATING TABLE (gage height, in feet, and discharge, in cubic feet per second).
(Shifting-control method used Oct. 1-9, July 8-18, and July 29 to Sept. 30.)

1.8	8	2.6	103
2.0	15	2.8	151
2.2	34	3.0	199
2.4	64	3.2	247

DISCHARGE, IN 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	211	71	61	52	38	79	134	49	50	16	29	72
2	220	70	65	52	38	96	124	51	48	17	30	70
3	184	70	71	51	38	90	62	58	31	17	30	62
4	141	69	81	51	38	86	10	85	17	16	28	56
5	136	68	60	51	37	82	13	92	26	19	26	49
6	131	68	80	51	37	56	16	104	31	26	25	40
7	127	47	76	52	39	51	20	81	30	60	23	32
8	122	42	73	52	41	53	35	68	32	69	28	29
9	98	48	72	53	43	53	48	64	33	67	31	32
10	69	44	69	55	44	55	53	49	31	66	34	34
11	72	46	67	57	45	56	55	45	30	71	36	37
12	77	52	63	57	47	56	57	46	32	69	36	40
13	79	80	59	56	48	56	70	38	31	58	40	40
14	83	50	59	59	46	59	106	35	31	51	43	40
15	83	53	39	60	44	58	140	37	38	55	43	42
16	82	51	34	56	41	65	140	36	35	59	81	46
17	82	59	37	54	41	66	116	33	32	69	141	54
18	81	61	41	52	42	66	101	31	29	70	132	64
19	78	61	45	51	43	82	93	47	28	63	122	80
20	79	62	47	49	41	86	88	52	26	49	63	76
21	78	63	48	48	39	81	71	71	27	38	76	74
22	76	62	49	47	40	77	71	88	33	39	84	70
23	74	64	58	44	42	57	84	89	59	36	42	64
24	72	66	58	43	41	51	94	84	68	34	24	52
25	71	68	56	41	39	53	97	79	61	32	23	45
26	74	70	54	33	39	54	99	69	56	33	27	31
27	78	72	54	32	40	54	120	63	54	38	33	30
28	79	69	52	33	40	53	96	60	47	38	39	28
29	77	69	52	34	---	57	75	59	36	36	45	30
30	74	63	51	35	---	68	60	57	19	32	76	34
31	73	---	51	37	---	89	---	54	---	29	74	---
TOTAL	3061	1838	1782	1498	1151	2045	2348	1874	1101	1372	1564	1453
MEAN	98.7	61.3	57.5	48.3	41.1	66.0	78.3	60.5	36.7	44.3	50.5	48.4
MAX	220	80	81	60	48	96	140	104	68	71	141	80
MIN	69	42	34	32	37	51	10	31	17	16	23	28
CFSM	1.33	.83	.78	.65	.55	.89	1.06	.82	.50	.60	.68	.65
IN.	1.54	.92	.89	.75	.58	1.03	1.18	.94	.55	.69	.79	.73

CAL YR 1986 TOTAL 25848 MEAN 70.8 MAX 258 MIN 18 CFSM .96 IN. 13.0
WTR YR 1987 TOTAL 21087 MEAN 57.8 MAX 220 MIN 10 CFSM .78 IN. 10.6

ILLINOIS RIVER BASIN

425450088083500 LITTLE MUSKEGO LAKE AT MUSKEGO, WI

LOCATION.--Lat 42°54'50", 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 to September 1987.

GAGE.--Reference point at dam outlet read by Thomas Skowronski. 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.

EXTREMES FOR CURRENT YEAR.--Maximum gage-height observed, 99.75 ft, Aug. 17; minimum observed, 97.44 ft, Jan. 28.

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	99.17	---	98.92	---	---
2	---	---	---	---	---	---	---	99.14	---	---	99.02	99.18
3	---	---	---	---	97.48	---	---	99.12	99.04	---	---	---
4	---	---	---	---	97.50	---	---	99.10	---	---	---	---
5	---	---	---	---	---	---	---	99.08	---	98.96	99.00	---
6	---	---	---	---	---	---	---	99.07	98.98	---	---	---
7	---	---	---	---	---	---	98.03	99.04	---	---	98.96	---
8	---	---	---	---	---	---	---	99.03	---	99.00	---	---
9	---	---	---	---	---	---	---	99.02	98.92	---	99.11	---
10	---	---	---	---	---	---	---	99.01	---	---	---	---
11	---	---	---	---	---	---	---	98.99	---	99.09	---	98.98
12	---	---	---	---	---	---	---	---	98.92	---	---	---
13	---	---	---	---	---	---	---	---	---	---	---	---
14	---	---	---	---	---	---	---	98.95	---	---	99.13	---
15	---	---	---	---	---	---	---	98.98	98.92	---	---	---
16	---	---	---	---	---	---	---	---	---	---	99.32	---
17	---	---	---	---	---	---	---	---	98.96	99.04	99.75	---
18	---	---	---	---	---	---	---	---	---	---	---	99.54
19	---	---	---	---	---	---	---	---	---	---	---	---
20	---	---	---	---	---	---	---	---	98.96	---	---	99.42
21	---	---	---	---	---	---	---	99.05	---	---	---	---
22	---	---	---	---	---	---	---	99.12	---	99.00	99.17	---
23	---	---	---	---	---	---	---	---	98.96	99.04	---	---
24	---	---	---	---	97.49	---	---	---	---	---	---	99.33
25	---	---	---	---	---	---	---	99.17	---	---	---	---
26	---	---	---	97.46	---	---	---	---	---	---	99.24	99.27
27	---	---	---	97.45	---	---	---	99.08	---	---	---	---
28	---	---	---	97.44	---	---	99.18	99.09	99.00	---	---	---
29	---	---	---	97.45	---	---	99.17	---	---	98.98	---	99.21
30	---	---	---	97.48	---	---	99.17	---	99.02	---	99.20	---
31	---	---	---	---	---	---	---	99.07	---	---	---	---

425450088083500 LITTLE MUSKEGO LAKE AT MUSKEGO, WI--CONTINUED

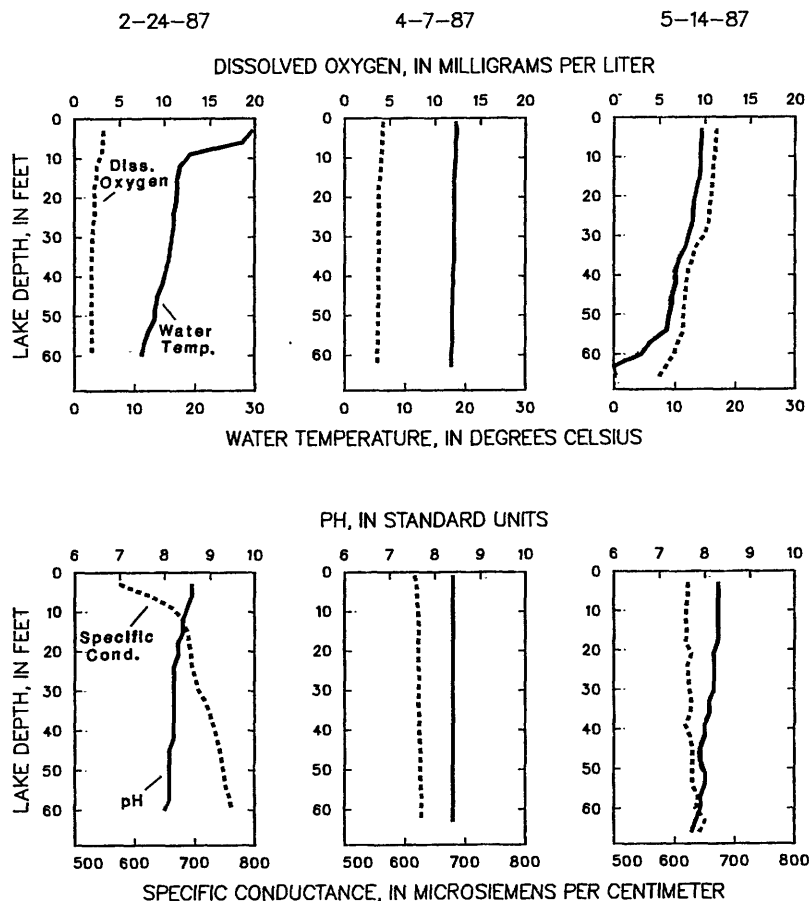
WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 17, 1986 to September 30, 1987.

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. Lake ice-covered January 16 to February 24. Water-quality analyses by U.S. Geological Survey National Water Quality Laboratory, except those indicated by an asterisk (*) which are by Wisconsin State Laboratory of Hygiene.

WATER QUALITY DATA, OCTOBER 17, 1986 TO MAY 14, 1987
(Milligrams per liter unless otherwise indicated)

	Oct. 17			Jan. 16		Feb. 24		Apr. 7		May 14		
Depth of sample (ft)	3.0	45.0	63.0	3.0	62.5	3.0	61.0	3.0	63.5	3.0	32.0	65.5
Specific conductance (µS/cm)	610	680	740	630	700	575	760	620	628	622	627	644
pH (units)	8.3	7.8	7.8	9.2	8.6	8.6	8.0	8.4	8.4	8.6	8.1	7.5
Water temperature (°C)	11.4	8.4	6.8	2.5	2.5	4.8	3.0	6.3	5.5	16.9	13.9	7.8
Color (Pt-Co. scale)	---	---	---	---	---	---	---	9	6	---	---	---
Turbidity (NTU)	---	---	---	---	---	---	---	1.2	1.6	---	---	---
Secchi-disc (meters)	2.5	---	---	2.5	---	1.5	---	1.5	---	1.7	---	---
Dissolved oxygen	7.8	0	0	13.9	11.6	19.7	7.5	12.4	11.8	9.6	7.9	0.1
Hardness, as CaCO ₃	---	---	---	---	---	---	---	184	181	---	---	---
Calcium, dissolved (Ca)	---	---	---	---	---	---	---	56	55	---	---	---
Magnesium, dissolved (Mg)	---	---	---	---	---	---	---	35	35	---	---	---
Sodium, dissolved (Na)	---	---	---	---	---	---	---	33	33	---	---	---
Potassium, dissolved (K)	---	---	---	---	---	---	---	2.5	2.5	---	---	---
Alkalinity as CaCO ₃	---	---	---	---	---	---	---	224	224	---	---	---
Sulfate, dissolved (SO ₄)	---	---	---	---	---	---	---	42	42	---	---	---
Chloride, dissolved (Cl)	---	---	---	---	---	---	---	61	62	---	---	---
Silica, dissolved (SiO ₂)	---	---	---	---	---	---	---	1.1	1.2	---	---	---
Solids, dissolved, at 180°C	---	---	---	---	---	---	---	367	364	---	---	---
Nitrogen, nitrate, total (as N)	---	---	---	---	---	---	---	0.20	0.20	---	---	---
Nitrogen, nitrate+nitrite (as N)	0.111	<0.01	<0.01	0.196	0.342	---	---	0.20	0.20	---	---	---
Nitrogen, ammonia, total (as N)	0.27	2.0	2.3	0.04	0.30	---	---	0.04	0.04	---	---	---
Nitrogen, organic, total (as N)	0.93	0.30	0.30	0.86	1.2	---	---	1.1	1.2	---	---	---
Nitrogen, total (as N)	1.3	2.3	2.6	---	---	---	---	1.3	1.4	---	---	---
Total phosphorus (as P)	0.04	0.26	0.34	0.021	0.063	0.025	0.075	0.043	0.040	0.030*	0.020*	0.086*
Phosphorus, ortho, diss. (as P)	0.022	0.210	0.295	0.002	0.041	<0.001	0.056	0.003	<0.001	0.004*	0.005*	0.045*
Iron, dissolved (Fe) µg/L	---	---	---	---	---	---	---	7	4	---	---	---
Manganese, dissolved (Mn) µg/L	---	---	---	---	---	---	---	2	<1	---	---	---
Chlorophyll <i>a</i> , phyto. (µg/L)	8*	---	---	20*	---	25*	---	10*	---	7*	---	---



WATER QUALITY DATA, MAY 26 TO JULY 22, 1987
(Milligrams per liter unless otherwise indicated)

	May 26		June 9			June 23			July 8		July 22	
Depth of sample (ft)	1.5	64.5	2.0	36.0	63.0	3.0	47.0	67.5	1.5	62.5	1.5	60.5
Specific conductance ($\mu\text{S}/\text{cm}$)	520	533	631	660	689	584	634	673	555	631	550	610
pH (units)	8.2	7.7	8.6	8.0	7.6	8.6	7.7	7.4	8.4	7.4	8.6	7.4
Water temperature ($^{\circ}\text{C}$)	17.9	11.4	21.5	17.7	10.3	25.2	17.3	10.1	24.7	16.4	27.4	15.9
Secchi-disc (meters)	---	2.8	---	2.0	---	---	1.9	---	---	1.8	---	1.4
Dissolved oxygen	7.5	0.9	10.4	5.8	2.1	8.9	0.6	0	9.3	0	8.7	0
Total phosphorus (as P)	0.03*	0.05*	0.031*	0.037*	0.069*	0.035*	0.068*	0.338*	0.029*	0.085*	0.029*	0.250*
Phosphorus, ortho, diss. (as P)	0.011*	0.033*	0.005*	0.022*	0.057*	0.004*	0.052*	0.290*	<0.004*	0.068*	<0.004*	0.208*
Chlorophyll <i>a</i> , phyto. ($\mu\text{g}/\text{L}$)	5*	---	10*	---	---	28*	---	---	19*	---	19*	---

5-26-87

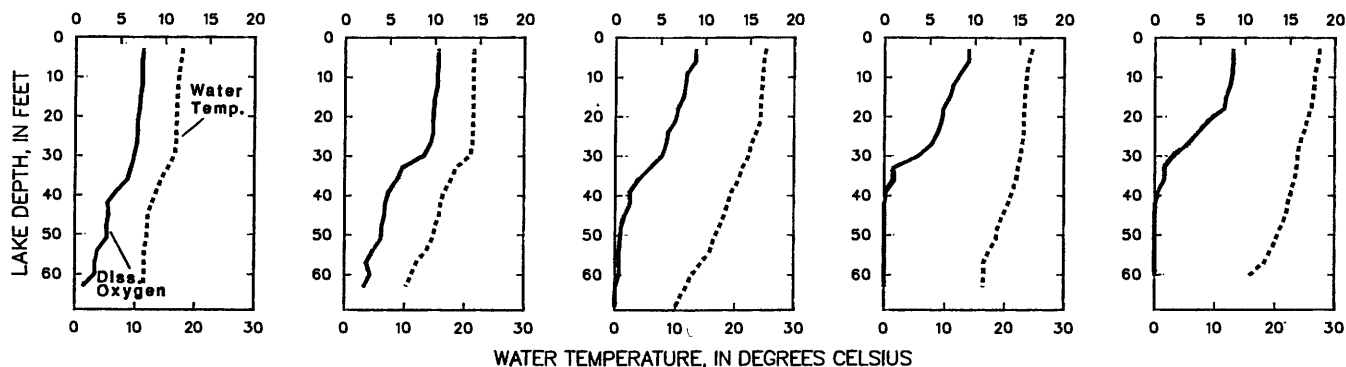
6-9-87

6-23-87

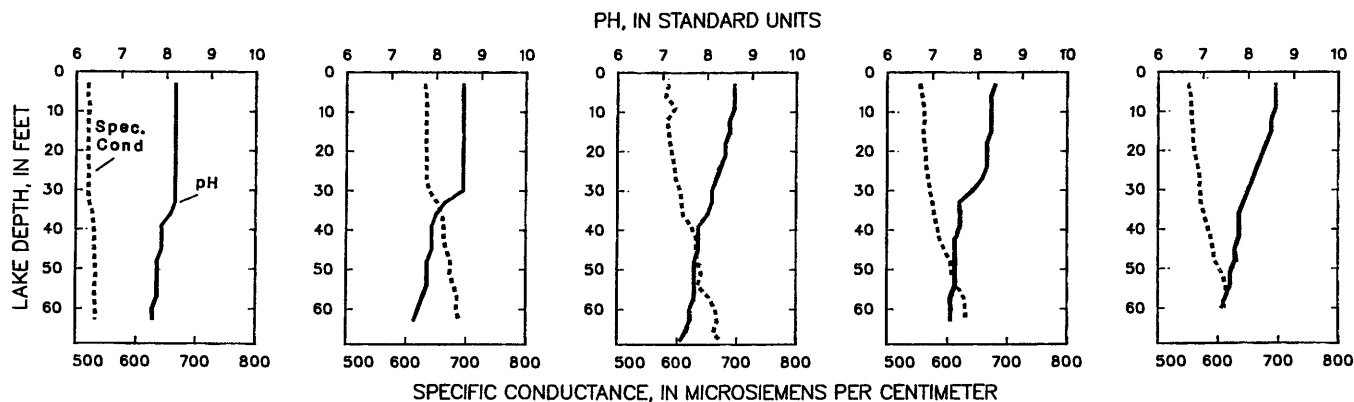
7-8-87

7-22-87

DISSOLVED OXYGEN, IN MILLIGRAMS PER LITER



WATER TEMPERATURE, IN DEGREES CELSIUS

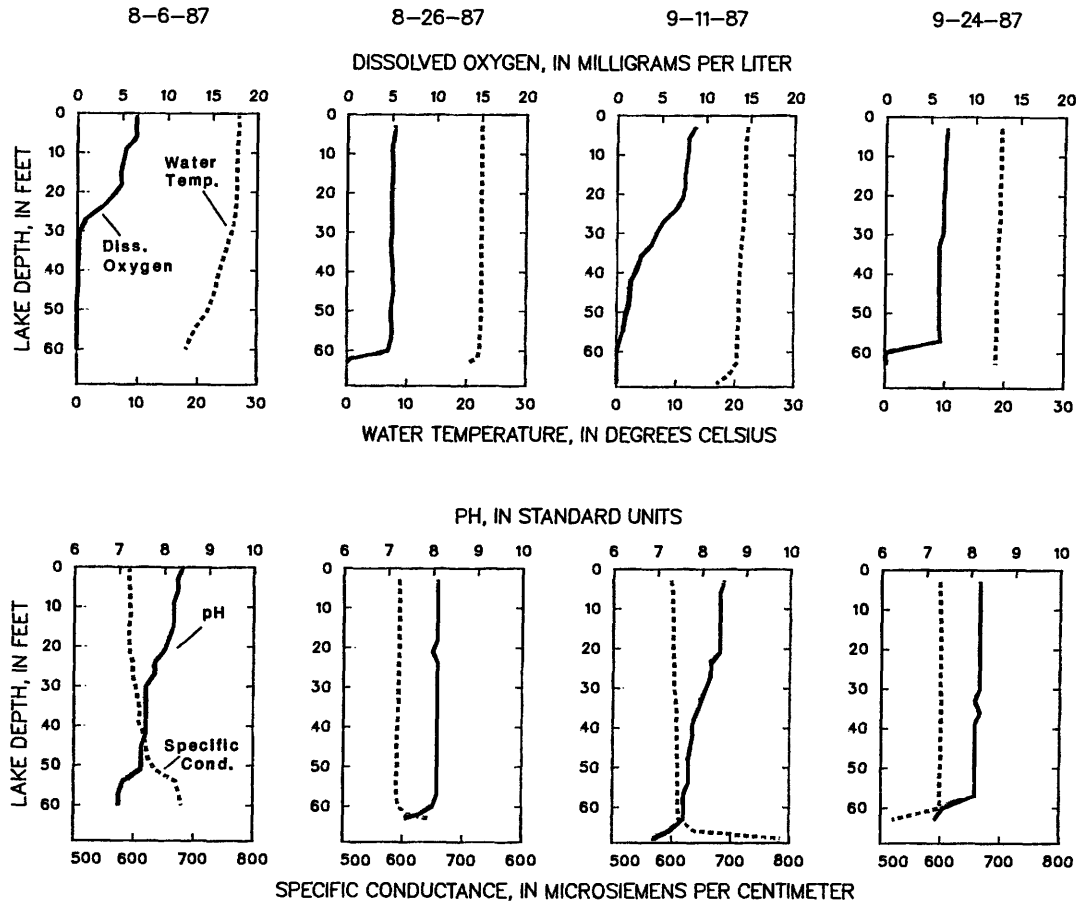


SPECIFIC CONDUCTANCE, IN MICROSIEMENS PER CENTIMETER

425450088083500 LITTLE MUSKEGO LAKE AT MUSKEGO, WI--CONTINUED

WATER QUALITY DATA, AUGUST 7 TO SEPTEMBER 24, 1987
(Milligrams per liter unless otherwise indicated)

	Aug. 7			Aug. 26			Sept. 11		Sept. 24	
Depth of sample (ft)	1.5	39.0	60.5	1.5	39.0	65.5	1.5	67.5	1.5	63.5
Specific conductance ($\mu\text{S}/\text{cm}$)	592	608	679	594	592	607	598	784	598	599
pH	8.4	7.6	7.0	8.1	8.1	7.4	8.5	6.9	8.2	7.2
Water temperature ($^{\circ}\text{C}$)	26.8	23.9	18.1	22.5	22.5	20.3	22.0	17.0	19.3	18.6
Secchi-disc (meters)	---	1.4	---	---	1.5	---	---	1.2	---	1.5
Dissolved oxygen	6.6	0.1	0	5.3	5.1	0	8.8	0	6.8	0.1
Total phosphorus (as P)	0.031*	0.061*	0.130*	0.041*	0.039*	0.550*	0.047	0.990	0.048*	0.049*
Phosphorus, ortho, diss. (as P)	0.005*	0.043*	0.116*	<0.004*	0.008*	0.500*	0.005	0.816	0.011*	0.012*
Chlorophyll <i>a</i> , phyto. ($\mu\text{g}/\text{L}$)	24*	3*	---	19*	25*	---	28*	---	15*	---



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.--40.2 mi².

LAKE-STAGE RECORDS

PERIOD OF RECORD.--March 1985, to current year.

GAGE.--Lake stages read at the outlet of the lake by M. Reisner to May 31 and B. Cook thereafter.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage-height observed, 8.54 ft Apr. 17, 24, 29, 1985; minimum observed, 6.95 ft Mar. 28, 1986.

EXTREMES FOR CURRENT YEAR.--Maximum gage-height observed, 8.50 ft, Aug. 19-24; minimum observed, 7.14 ft, Mar. 8.

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	---	8.00	---	8.25
2	---	---	---	---	---	---	---	---	---	7.90	---	8.25
3	---	---	8.09	---	---	---	---	8.16	8.30	7.90	---	8.25
4	8.45	---	---	---	---	---	---	---	8.30	7.90	---	8.25
5	---	---	---	---	---	---	7.96	---	8.30	---	---	8.25
6	---	---	---	---	---	---	7.84	---	8.30	7.90	7.80	8.25
7	---	---	---	---	---	---	---	---	8.30	8.00	7.80	8.25
8	---	7.90	---	---	---	7.14	---	---	8.30	8.10	7.90	8.25
9	7.77	---	---	---	---	---	---	---	8.20	8.10	8.00	8.25
10	---	---	---	---	---	---	---	8.29	8.20	---	8.00	8.45
11	---	---	---	---	---	---	---	---	8.20	8.10	8.00	8.45
12	---	---	---	---	---	---	8.02	---	8.30	---	7.90	8.45
13	---	---	8.02	---	---	---	---	---	8.10	8.00	---	---
14	---	---	---	---	---	7.83	---	---	8.20	8.00	---	---
15	---	7.91	---	---	---	---	---	---	8.20	8.00	8.10	---
16	8.16	---	---	---	---	---	---	---	8.10	8.00	---	---
17	---	---	---	---	---	---	---	8.32	8.10	8.00	---	---
18	---	---	---	---	---	---	---	---	8.10	---	8.30	---
19	---	---	---	---	---	---	8.25	---	8.10	8.00	8.50	---
20	---	---	---	---	---	---	---	---	8.10	8.00	8.50	---
21	---	---	---	---	---	---	---	---	8.00	8.00	8.50	---
22	---	7.91	---	---	---	8.23	---	---	8.10	---	8.50	---
23	---	---	---	---	7.16	---	---	---	8.00	7.90	8.50	---
24	---	---	---	---	---	---	---	8.30	8.00	7.90	8.50	---
25	8.19	---	---	---	---	---	---	---	8.00	7.90	---	---
26	---	---	---	---	---	---	8.25	---	8.00	8.00	8.33	---
27	---	---	---	---	---	---	---	---	8.00	7.90	8.40	---
28	---	---	---	---	---	8.04	---	---	---	7.90	8.30	---
29	---	7.91	---	---	---	---	---	---	7.90	7.90	8.25	---
30	---	---	---	---	---	---	8.23	---	8.00	7.90	---	---
31	8.23	---	---	---	---	---	---	8.21	---	---	8.25	---

424915088083900 WIND LAKE AT WIND LAKE, WI--CONTINUED

WATER-QUALITY RECORDS

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 1984, to current year.

REMARKS.--Lake sampled near center at a lake depth of about 52 feet. Lake ice-covered February 23. Water-quality analyses by U.S. Geological Survey National Water Quality Laboratory through April, and Wisconsin State Laboratory of Hygiene thereafter.

WATER QUALITY DATA, FEBRUARY 23 TO AUGUST 26, 1987
(Milligrams per liter unless otherwise indicated)

	Feb. 23		Apr. 6		June 9		July 22		Aug. 26	
Depth of sample (ft)	3.0	48.0	3.0	51.0	3.0	45.0	3.0	51.0	3.0	51.0
Specific conductance (μS/cm)	517	665	550	561	560	602	503	581	527	660
pH (units)	8.6	8.2	8.3	8.5	8.4	7.2	8.6	6.9	8.5	7.0
Water temperature (°C)	4.9	3.7	6.3	6.1	22.3	11.9	27.9	13.2	21.3	13.2
Color (Pt-Co. scale)	--	--	35	37	--	--	--	--	--	--
Turbidity (NTU)	--	--	3.2	3.2	--	--	--	--	--	--
Secchi-disc (meters)	--	--	--	.7	--	.9	--	.9	--	1.1
Dissolved oxygen	11.5	0	12.2	11.9	7.3	.7	8.4	0	6.0	0
Hardness, as CaCO ₃	--	--	250	250	--	--	--	--	--	--
Calcium, dissolved (Ca)	--	--	54	54	--	--	--	--	--	--
Magnesium, dissolved (Mg)	--	--	29	29	--	--	--	--	--	--
Sodium, dissolved (Na)	--	--	22	22	--	--	--	--	--	--
Potassium, dissolved (K)	--	--	3.3	3.3	--	--	--	--	--	--
Alkalinity as CaCO ₃	--	--	191	191	--	--	--	--	--	--
Sulfate, dissolved (SO ₄)	--	--	46	45	--	--	--	--	--	--
Chloride, dissolved (Cl)	--	--	41	40	--	--	--	--	--	--
Silica, dissolved (SiO ₂)	--	--	.2	.2	--	--	--	--	--	--
Solids, dissolved, at 180°C	--	--	334	334	--	--	--	--	--	--
Nitrogen, nitrate, total (as N)	--	--	.09	.09	--	--	--	--	--	--
Nitrogen, nitrite, total (as N)	--	--	<.010	<.010	--	--	--	--	--	--
Nitrogen, ammonia, total (as N)	--	--	.100	.090	--	--	--	--	--	--
Nitrogen, organic, total (as N)	--	--	1.6	1.6	--	--	--	--	--	--
Nitrogen, total (as N)	--	--	1.8	1.8	--	--	--	--	--	--
Total phosphorus (as P)	--	--	.087	.084	.056	.037	.068	.560	.036	.620
Phosphorus, ortho, diss. (as P)	--	--	.003	.001	--	.220	--	.480	--	.570
Iron, dissolved (Fe) μg/L	--	--	11	12	--	--	--	--	--	--
Manganese, dissolved (Fe) μg/L	--	--	2	2	--	--	--	--	--	--
Chlorophyll a, phyto. (μg/L)	--	--	35	--	30	--	18	--	18	--

2-23-87

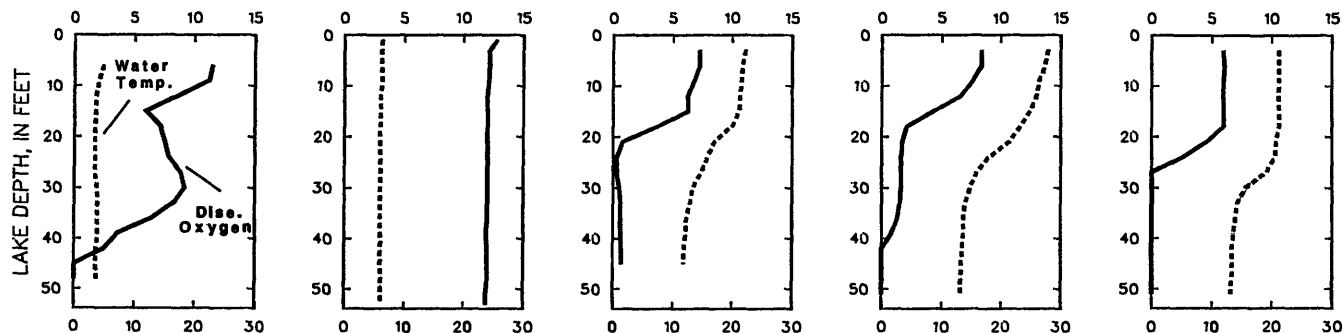
4-6-87

6-9-87

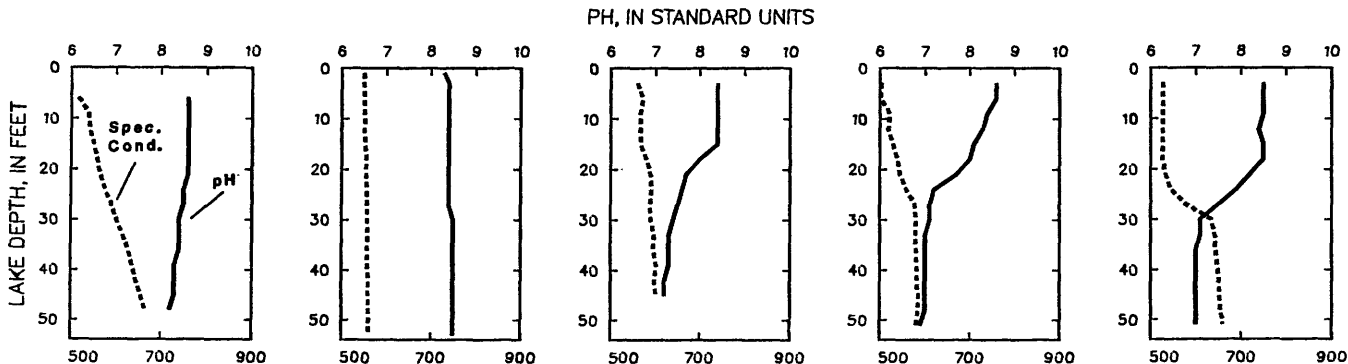
7-22-87

8-26-87

DISSOLVED OXYGEN, IN MILLIGRAMS PER LITER



WATER TEMPERATURE, IN DEGREES CELSIUS



SPECIFIC CONDUCTANCE, IN MICROSIEMENS PER CENTIMETER

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, 7.69 ft, Oct. 6, 1984.

EXTREMES FOR CURRENT YEAR.--Maximum gage height observed, 8.90 ft, Apr. 30; minimum observed, 8.08 ft, Aug. 11.

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	GAGE HEIGHT	DATE	GAGE HEIGHT	DATE	GAGE HEIGHT	DATE	GAGE HEIGHT	DATE	GAGE HEIGHT	DATE	GAGE HEIGHT
OCT. 5	8.70	APR. 5	8.70	MAY 17	8.70	JUNE 20	8.25	AUG. 11	8.08	SEPT. 12	8.18
OCT. 11	8.60	APR. 12	8.75	MAY 25	8.70	JUNE 28	8.15	AUG. 16	8.20	SEPT. 13	8.15
OCT. 19	8.50	APR. 30	8.90	MAY 31	8.65	JULY 5	8.10	AUG. 22	8.25	SEPT. 20	8.18
OCT. 29	8.48	MAY 1	8.89	JUNE 2	8.50	JULY 12	8.20	AUG. 29	8.22	SEPT. 27	8.10
NOV. 2	8.48	MAY 9	8.50	JUNE 14	8.38	AUG. 2	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 1986 TO SEPTEMBER 1987

DATE	SECCHI DEPTH	DATE	SECCHI DEPTH	DATE	SECCHI DEPTH	DATE	SECCHI DEPTH	DATE	SECCHI DEPTH	DATE	SECCHI DEPTH
OCT. 5	2.97	APR. 5	4.30	MAY 17	3.96	JUNE 20	4.04	AUG. 11	1.91	SEPT. 12	2.59
OCT. 11	2.90	APR. 12	4.30	MAY 25	3.81	JUNE 28	3.81	AUG. 16	1.98	SEPT. 13	2.51
OCT. 19	4.11	APR. 30	4.30	MAY 31	3.66	JULY 5	2.74	AUG. 22	3.05	SEPT. 20	2.29
OCT. 29	4.27	MAY 1	4.30	JUNE 2	2.67	JULY 12	2.59	AUG. 29	3.05	SEPT. 27	1.98
NOV. 2	4.27	MAY 9	3.96	JUNE 14	3.51	AUG. 2	2.13				

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: None. Records are good. 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.--48 years, 549 ft³/s, 8.59 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, 3,810 ft³/s Oct. 2, gage height, 7.96 ft; minimum daily, 193 ft³/s June 20.

DISCHARGE, IN 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	3720	869	662	452	338	641	822	1370	573	234	287	739
2	3780	871	630	464	348	934	800	1360	550	224	300	695
3	3680	857	679	466	379	886	759	1580	537	210	281	571
4	3530	837	676	466	400	902	725	1810	503	205	259	519
5	3410	795	554	462	395	857	701	1850	355	207	246	468
6	3250	680	662	461	388	876	619	1690	328	230	235	424
7	3030	727	670	471	418	878	532	1420	336	324	223	386
8	2800	719	668	469	496	894	345	1200	325	467	262	355
9	2580	703	710	396	417	901	271	1080	300	450	434	427
10	2380	682	524	367	461	826	316	930	260	443	430	325
11	2190	601	609	501	458	727	499	799	252	461	393	360
12	2040	603	627	564	480	669	1020	745	266	482	368	379
13	1970	401	577	516	479	594	1170	668	270	544	339	376
14	1920	527	593	506	487	577	1240	595	258	507	396	369
15	1780	558	604	528	433	579	1790	567	245	514	689	360
16	1580	562	544	494	338	593	2200	530	225	624	882	425
17	1390	571	561	474	467	615	2160	422	205	539	1330	467
18	1260	575	485	498	427	636	1970	412	200	479	1570	451
19	1210	606	454	305	408	726	1720	450	195	424	1470	597
20	1190	612	462	398	399	807	1560	552	193	325	1300	636
21	1160	614	468	382	394	812	1470	722	196	355	1200	762
22	1130	602	448	454	397	774	1470	833	230	375	1090	985
23	1100	644	465	298	384	748	1780	868	244	351	930	946
24	1020	708	472	363	366	757	2180	841	281	316	889	916
25	914	720	472	377	362	801	2240	803	322	237	798	849
26	999	716	470	359	357	824	2080	813	327	249	786	756
27	1050	729	462	347	357	829	1930	820	296	268	1120	672
28	1040	696	456	322	377	799	1810	816	269	269	1190	571
29	975	681	458	324	---	811	1650	739	251	275	1110	562
30	908	664	456	327	---	872	1520	644	224	269	998	485
31	876	---	448	331	---	866	---	584	---	267	874	---
TOTAL	59862	20130	17026	13142	11410	24011	39349	28513	9016	11124	22679	16833
MEAN	1931	671	549	424	407	775	1312	920	301	359	732	561
MAX	3780	871	710	564	496	934	2240	1850	573	624	1570	985
MIN	876	401	448	298	338	577	271	412	193	205	223	325
CFSM	2.22	.77	.63	.49	.47	.89	1.51	1.06	.35	.41	.84	.65
IN.	2.57	.86	.73	.56	.49	1.03	1.69	1.22	.39	.48	.97	.72
CAL YR 1986	TOTAL 336074	MEAN 921	MAX 3780	MIN 210	CFSM 1.06	IN. 14.4						
WTR YR 1987	TOTAL 273095	MEAN 748	MAX 3780	MIN 193	CFSM .86	IN. 11.7						

05548163 POWERS LAKE TRIBUTARY AT POWERS LAKE, WI

LOCATION.--Lat 42°33'06", long 88°17'18", in NE 1/4 NE 1/4 sec.18, T.1 N., R.19 E., Kenosha County,
Hydrologic Unit 07120006, on right bank, about 20 ft upstream of culvert on County Trunk P at Powers Lake.

DRAINAGE AREA.--1.83 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1986 to September 1987.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 832 ft from topographic map.

REMARKS.--Estimated daily discharge: Ice period, Dec. 12 to Feb. 27, and periods of no gage height, June 15 to July 31, Aug. 1-13, 22-24, and Sept. 5-16, 18-30. Records good except for ice-affected period, which is fair, and periods of no gage-height record, which are poor.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 9.1 ft³/s Apr. 15, gage height 4.93 ft; minimum daily, 0 on July 12-13, 22-25, 28-31, and Aug. 1-3, 6-7.

DISCHARGE, IN 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	---	1.2	1.1	.35	.30	2.3	1.5	1.3	1.1	.27	.00	.64
2	---	1.3	1.3	.40	.84	2.8	1.5	3.9	1.1	.20	.00	.53
3	---	1.2	1.3	.41	.62	4.0	1.4	4.2	1.0	.20	.00	.44
4	---	1.2	1.1	.39	.45	1.5	1.3	3.4	.87	.21	.04	.25
5	---	.98	.82	.39	.28	1.3	1.3	2.7	.69	.26	.01	.14
6	---	.97	.74	.50	.50	2.0	1.2	2.4	.54	.24	.00	.10
7	---	.95	.93	.46	.64	1.5	1.1	2.2	.48	.19	.00	.13
8	---	1.0	1.1	.42	.50	1.6	1.0	2.0	.39	.15	.18	.11
9	---	.94	1.7	.38	.30	1.8	1.0	1.9	.35	.11	.14	.09
10	---	.80	2.3	.40	.34	1.7	.95	1.8	.37	.04	.17	.07
11	---	.74	.85	.43	.34	.92	2.0	1.7	.46	.01	.19	.06
12	---	.75	.45	.36	.29	.78	3.0	1.6	.54	.00	.24	.05
13	---	.48	.39	.35	.27	.69	2.7	1.5	.41	.00	.27	.04
14	---	.39	.40	.34	.26	.68	5.1	1.5	.29	.19	.50	.03
15	---	.46	.45	.33	.24	.98	7.9	1.4	.23	.38	.42	.15
16	1.3	.60	.52	.32	.23	1.3	5.0	1.3	.20	.28	.47	.10
17	1.3	.74	.58	.32	.22	1.4	3.7	1.3	.17	.22	.78	.31
18	1.2	.85	.58	.32	.21	1.5	3.0	1.4	.15	.15	.69	.21
19	1.1	.96	.52	.32	.21	2.3	2.7	1.6	.13	.10	.63	.18
20	1.1	.95	.48	.29	.20	2.2	2.4	2.4	.12	.05	.41	.17
21	1.0	.99	.45	.27	.22	1.7	2.3	3.4	.11	.01	.29	.20
22	1.0	1.1	.40	.25	.23	1.6	4.6	2.2	.20	.00	.20	.26
23	1.0	1.5	.40	.24	.23	1.7	6.8	1.8	.15	.00	.16	.20
24	1.0	1.5	.41	.23	.23	1.7	4.5	1.6	.12	.00	.14	.16
25	1.1	1.3	.41	.22	.24	1.7	3.3	1.7	.33	.00	.27	.13
26	1.5	1.4	.41	.22	.26	1.9	2.5	2.0	.29	.10	1.3	.11
27	1.5	1.3	.35	.22	.30	1.7	2.0	1.8	.25	.05	1.7	.09
28	1.4	1.2	.38	.22	.83	1.5	1.8	1.6	.23	.00	1.4	.08
29	1.3	1.1	.44	.22	---	2.0	1.6	1.5	.22	.00	1.3	.07
30	1.1	1.1	.40	.22	---	1.8	1.4	1.4	.21	.00	1.1	.06
31	1.2	---	.35	.23	---	1.5	---	1.3	---	.00	.81	---
TOTAL	---	29.95	22.01	10.02	9.78	52.05	80.55	61.8	11.70	3.41	13.81	5.16
MEAN	---	.998	.71	.32	.35	1.68	2.68	1.99	.39	.11	.45	.17
MAX	---	1.5	2.3	.50	.84	4.0	7.9	4.2	1.1	.38	1.7	.64
MIN	---	.39	.35	.22	.20	.68	.95	1.3	.11	.00	.00	.03

05548163 POWERS LAKE TRIBUTARY AT POWERS LAKE, WI--CONTINUED

WATER-QUALITY RECORD

PERIODS OF RECORD.--October 16, 1986 to September 30, 1987.

PERIOD OF DAILY RECORD.--

TOTAL PHOSPHORUS DISCHARGE: October 16, 1986 to September 30, 1987.

EXTREMES FOR CURRENT YEAR.--

TOTAL PHOSPHORUS DISCHARGE: Maximum daily, 3.18 lbs/day May 17; minimum daily, 0 on may days during periods of no flow.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)	DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)
OCT , 1986				MAY , 1987			
16...	1630	--	0.110	20...	1830	2.8	0.160
NOV				21...	0745	3.8	0.130
18...	1600	0.85	0.140	21...	1947	2.6	0.150
JAN , 1987				22...	0645	2.2	0.150
09...	1045	0.38	0.020	22...	2008	2.0	0.130
FEB				28...	1325	1.6	0.160
12...	1420	0.29	0.140	JUN			
MAR				18...	1135	0.29	0.320
25...	1100	1.7	0.110	JUL			
APR				15...	0700	0.27	0.320
06...	1350	1.2	0.080	15...	1850	0.41	0.340
14...	0809	3.7	0.080	16...	0708	0.27	0.230
14...	1654	6.5	0.110	16...	1909	0.27	0.240
15...	0452	8.8	0.070	17...	0648	0.27	0.210
15...	1719	7.4	0.070	AUG			
16...	0539	5.5	0.050	14...	0647	0.27	0.200
16...	1750	4.6	0.050	14...	1717	0.66	0.160
MAY				15...	0702	0.54	0.100
02...	0640	3.9	0.080	15...	1904	0.33	0.090
02...	1644	4.5	0.070	16...	0735	0.27	0.200
03...	0914	4.2	0.060	16...	1901	0.54	0.080
03...	1833	4.2	0.060	17...	0711	0.89	0.090
04...	0654	3.5	0.050	17...	1910	0.60	0.080
04...	1810	3.2	0.060	26...	0710	E0.67	0.330
18...	1400	1.4	0.540	26...	1825	E2.1	0.180
18...	1950	1.4	0.150	27...	0718	E1.7	0.100
19...	0600	1.7	0.160	27...	2005	1.5	0.080
19...	1350	1.7	0.150	28...	0645	1.4	0.080
19...	2007	1.6	0.130	28...	1737	1.4	0.080
20...	0820	2.4	0.310	29...	0746	1.4	0.080
20...	1225	2.7	0.180				

E ESTIMATE.

ILLINOIS RIVER BASIN

05548163 POWERS LAKE TRIBUTARY AT POWERS LAKE, WI--CONTINUED

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	---	.83	.52	.06	.11	1.58	.75	.36	1.12	.47	.00	.27
2	---	.85	.57	.06	.36	1.94	.73	1.50	1.11	.35	.00	.22
3	---	.81	.58	.07	.27	2.70	.64	1.36	1.06	.35	.00	.19
4	---	.79	.48	.04	.22	.98	.59	1.00	.95	.36	.02	.11
5	---	.67	.33	.04	.14	.90	.57	.77	.78	.45	.01	.06
6	---	.67	.29	.05	.27	1.33	.53	.78	.63	.41	.00	.04
7	---	.67	.35	.05	.35	1.01	.48	.85	.58	.33	.00	.06
8	---	.71	.40	.05	.30	1.06	.45	.95	.48	.26	.10	.05
9	---	.66	.57	.04	.19	1.20	.43	1.08	.45	.19	.07	.04
10	---	.57	.75	.04	.22	1.10	.41	1.23	.49	.07	.08	.03
11	---	.53	.27	.05	.24	.60	1.01	1.40	.63	.02	.09	.03
12	---	.54	.15	.04	.22	.50	1.34	1.55	.76	.00	.10	.02
13	---	.35	.13	.06	.20	.44	1.16	1.73	.60	.00	.12	.02
14	---	.29	.11	.06	.20	.43	2.56	2.07	.44	.33	.45	.01
15	---	.34	.12	.05	.18	.62	3.00	2.33	.36	.68	.22	.06
16	.77	.45	.14	.05	.17	.79	1.39	2.69	.32	.37	.37	.04
17	.77	.55	.16	.07	.17	.88	.99	3.18	.28	.25	.41	.12
18	.70	.64	.16	.05	.16	.93	.82	2.89	.26	.16	.30	.08
19	.66	.70	.11	.07	.15	1.41	.72	1.33	.22	.10	.27	.07
20	.65	.67	.10	.06	.14	1.32	.66	2.53	.21	.05	.18	.06
21	.65	.67	.10	.06	.15	1.06	.61	2.55	.19	.01	.13	.08
22	.63	.69	.09	.05	.16	.97	1.67	1.70	.34	.00	.02	.10
23	.63	.97	.09	.05	.16	1.02	2.34	1.29	.26	.00	.07	.08
24	.65	.91	.09	.06	.16	.99	1.64	1.21	.21	.00	.06	.06
25	.67	.78	.09	.06	.17	1.02	1.25	1.28	.57	.00	.12	.05
26	.98	.81	.07	.05	.18	1.08	.67	1.63	.50	.08	1.34	.04
27	.97	.70	.06	.07	.21	.99	.55	1.47	.43	.04	.90	.03
28	.89	.61	.06	.07	.57	.84	.48	1.36	.40	.00	.62	.03
29	.82	.55	.07	.07	---	1.04	.43	1.30	.38	.00	.58	.03
30	.74	.55	.06	.08	---	.92	.39	1.24	.36	.00	.45	.02
31	.78	---	.06	.09	---	.78	---	1.19	---	.00	.35	---
TOTAL	---	19.53	7.13	1.77	6.02	32.43	29.26	47.80	15.37	5.33	7.43	2.10

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 January 16 and February 23. All water-quality analyses by U.S. Geological Survey National Water Quality Laboratory through April, and Wisconsin State Laboratory of Hygiene thereafter.

WATER-QUALITY DATA, OCTOBER 16 TO MAY 28, 1987
(Milligrams per liter unless otherwise indicated)

	Oct. 16		Jan. 16		Feb. 23		Apr. 6		May 28	
Depth of sample (ft)	3.0	33.5	3.0	33.5	3.0	33.0	1.5	32.5	1.5	33.0
Specific conductance (μS/cm)	390	390	440	490	383	475	454	463	459	491
pH (units)	8.4	8.2	8.7	8.2	8.4	8.1	8.8	8.7	8.4	7.6
Water temperature (°C)	11.5	11.0	2.0	3.5	5.0	4.5	6.0	6.0	21.0	13.5
Color (Pt-Co. scale)	---	---	---	---	---	---	4	1	---	---
Turbidity (NTU)	---	---	---	---	---	---	0.9	0.6	---	---
Secchi-disc (meters)	---	2.4	---	---	---	---	---	6.0	---	2.7
Dissolved oxygen	9.1	7.6	14.8	5.9	16.6	3.9	11.7	11.7	9.4	0.5
Calcium, dissolved (Ca)	---	---	---	---	---	---	41	41	---	---
Magnesium, dissolved (Mg)	---	---	---	---	---	---	30	30	---	---
Sodium, dissolved (Na)	---	---	---	---	---	---	11	11	---	---
Potassium, dissolved (K)	---	---	---	---	---	---	2.5	2.5	---	---
Alkalinity as CaCO ₃	---	---	---	---	---	---	187	187	---	---
Sulfate, dissolved (SO ₄)	---	---	---	---	---	---	30	30	---	---
Fluoride, dissolved (F)	---	---	---	---	---	---	0.1	0.1	---	---
Chloride, dissolved (Cl)	---	---	---	---	---	---	21	22	---	---
Silica, dissolved (SiO ₂)	---	---	---	---	---	---	9.1	9.1	---	---
Solids, dissolved, at 180°C	---	---	---	---	---	---	260	259	---	---
Nitrogen, nitrate, total (as N)	---	---	---	---	---	---	0.10	0.10	---	---
Nitrogen, nitrite, total (as N)	---	---	---	---	---	---	<0.01	<0.01	---	---
Nitrogen, ammonia, total (as N)	---	---	---	---	---	---	0.03	0.02	---	---
Nitrogen, organic, total (as N)	---	---	---	---	---	---	0.47	0.48	---	---
Nitrogen, total (as N)	---	---	---	---	---	---	0.6	0.6	0.7	0.5
Total phosphorus (as P)	0.018	0.025	0.007	0.013	<0.005	<0.005	0.029	0.010	0.02	0.02
Phosphorus, ortho, diss (as P)	<0.001	0.014	<0.001	0.002	<0.001	<0.001	0.010	0.001	<0.004	<0.004
Iron, dissolved (Fe) μg/L	---	---	---	---	---	---	13	5	---	---
Manganese, dissolved (Mn) μg/L	---	---	---	---	---	---	2	3	---	---
Chlorophyll a, phyto. (μg/L)	6.0	---	13.0	---	---	---	<5.0	---	---	---

10-16-86

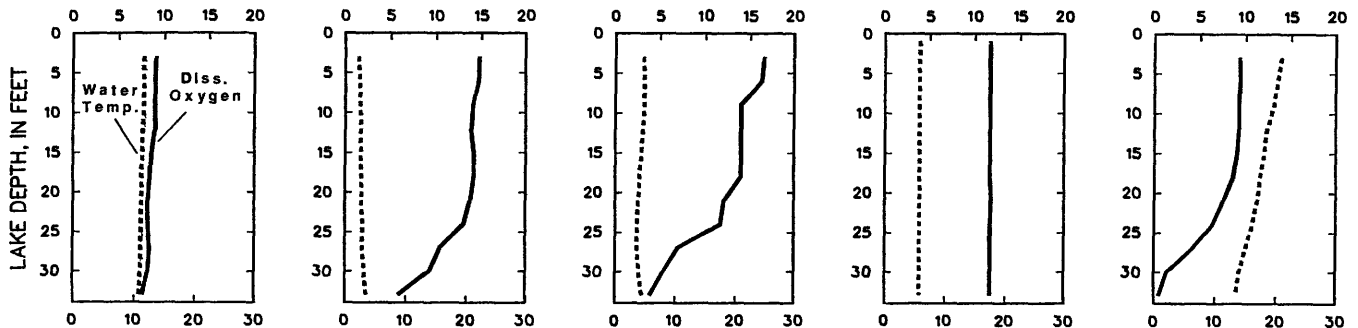
1-16-87

2-23-87

4-6-87

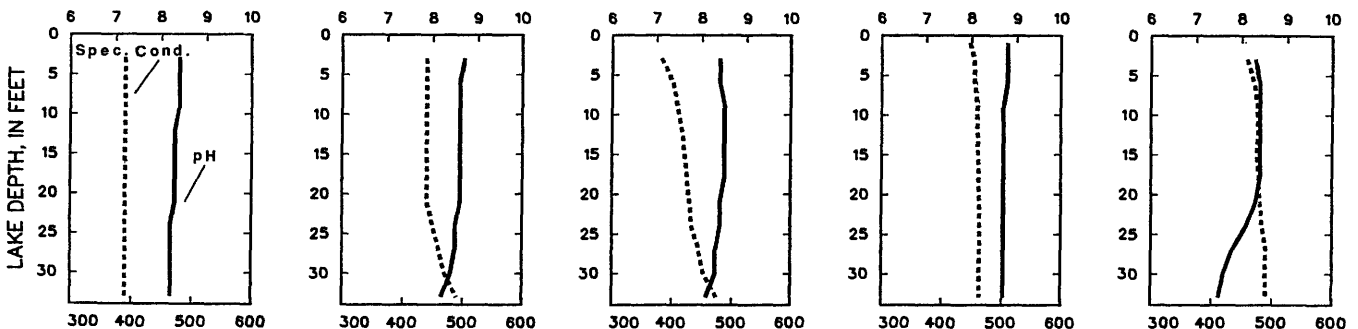
5-28-87

DISSOLVED OXYGEN, IN MILLIGRAMS PER LITER



WATER TEMPERATURE, IN DEGREES CELSIUS

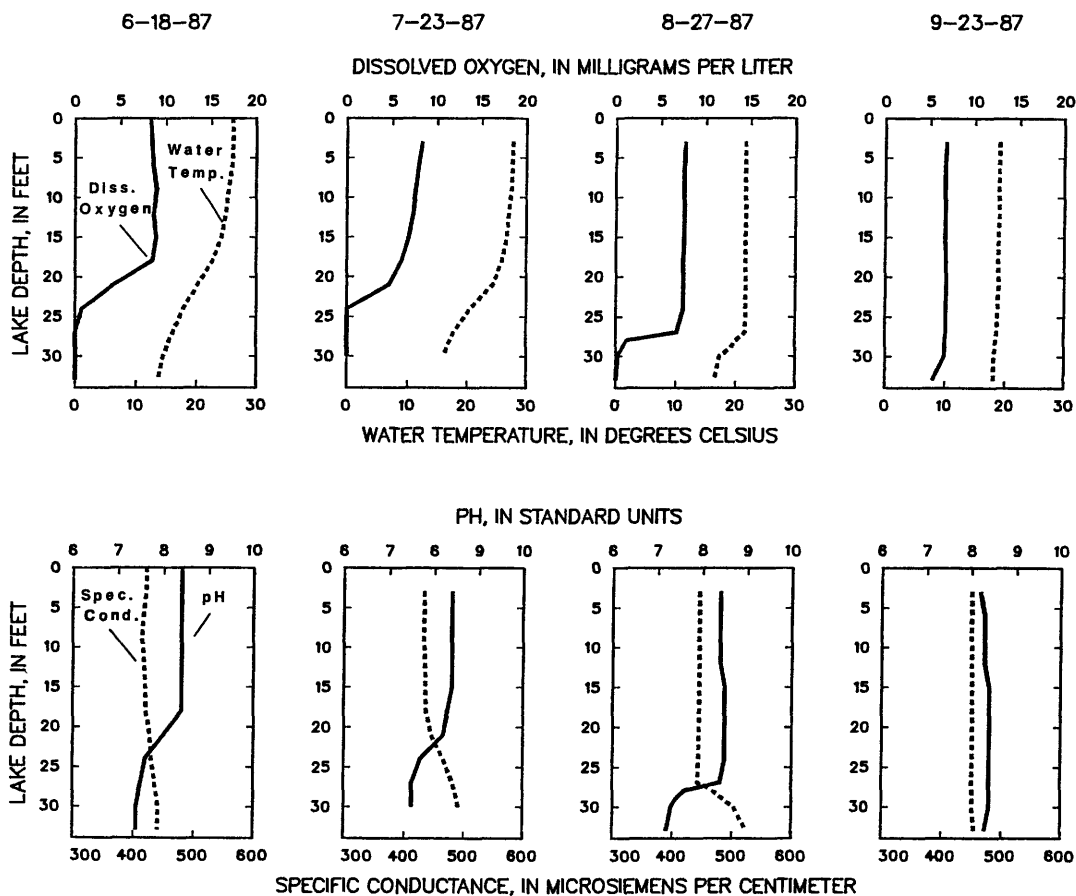
PH, IN STANDARD UNITS



SPECIFIC CONDUCTANCE, IN MICROSIEMENS PER CENTIMETER

WATER QUALITY DATA, JUNE 18 TO SEPTEMBER 23, 1987
(Milligrams per liter unless otherwise indicated)

	June 18		July 23		Aug. 27		Sept. 23	
Depth of sample (ft)	1.5	31.5	1.5	31.5	1.5	32.5	1.5	32.5
Specific conductance ($\mu\text{m}/\text{cm}$)	421	441	433	491	445	525	451	456
pH (units)	8.4	7.4	8.3	7.4	8.4	7.2	8.2	8.3
Water temperature ($^{\circ}\text{C}$)	26.0	13.5	27.5	16.0	21.5	16.5	19.0	18.0
Secchi-disc (meters)	---	2.4	---	2.0	---	3.5	---	2.6
Dissolved oxygen	8.3	0	8.3	0	7.7	0	6.8	5.3
Total phosphorus (as P)	0.012	0.010	0.011	0.026	0.012	0.054	0.015	0.015
Phosphorus, ortho, diss. (as P)	<0.004	<0.004	---	<0.004	---	<0.004	<0.004	<0.004
Chlorophyll <i>a</i> , phyto. ($\mu\text{g}/\text{L}$)	<5.0	---	<5.0	---	6.0	---	---	---



05548164 POWERS LAKE AT POWERS LAKE, WI

LOCATION.--Lat 42°32'40", long 88°18'41", in NW 1/4 SE 1/4 sec.13, T.1 N., R.18 E., Walworth County, Hydrologic Unit 07120006, 50 ft upstream of Powers Lake outlet at Powers Lake.

DRAINAGE AREA.--3.12 mi².

PERIOD OF RECORD.--January 14 to September 29, 1986.

GAGE.--Staff gage read by Ms Borchardt.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height observed, 11.05 ft Sept. 29, 1986; minimum observed, 9.90 ft Sept. 5, 1987.

EXTREMES FOR CURRENT YEAR.--Maximum gage height observed, 10.55 ft, Oct. 16; minimum observed, 9.90 ft, Sept. 5.

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	10.26	10.08	10.02	10.04	10.04	10.14	---	10.15	---	---	9.98
2	---	10.24	10.08	10.02	10.02	---	---	10.27	---	---	---	9.98
3	---	10.22	10.07	10.02	10.02	10.06	10.14	10.27	---	---	---	---
4	---	10.19	10.07	10.02	10.01	10.08	10.14	10.27	---	---	---	---
5	---	10.18	10.07	10.02	10.01	10.08	10.12	10.27	---	---	---	9.90
6	---	10.18	10.08	10.02	10.00	10.08	10.12	10.27	---	---	---	---
7	---	10.16	10.08	10.02	10.00	10.08	10.12	10.27	---	9.83	---	---
8	---	10.16	10.08	10.02	10.00	10.08	10.10	10.27	---	---	---	---
9	---	10.12	10.08	10.02	10.01	10.08	10.10	10.24	---	---	---	---
10	---	10.11	10.08	10.02	9.99	---	10.08	10.17	---	---	---	---
11	---	10.10	10.07	10.05	10.00	10.58	10.07	10.17	9.94	---	---	---
12	---	10.09	10.08	10.04	9.99	10.58	10.18	10.14	9.94	9.78	---	---
13	---	10.06	10.08	10.03	9.99	10.58	10.34	10.13	9.94	9.78	---	---
14	---	10.06	10.08	10.03	9.98	10.58	10.34	10.12	9.94	9.78	---	---
15	---	10.06	10.08	10.04	10.00	10.18	10.38	10.12	9.94	9.78	---	---
16	10.55	10.08	10.08	10.04	10.00	---	10.37	10.13	9.94	9.85	9.94	---
17	---	10.08	10.08	10.04	10.00	---	10.37	10.15	9.93	9.86	9.94	9.91
18	---	10.08	10.07	10.04	10.00	---	10.37	---	9.88	9.86	9.93	9.91
19	---	10.08	10.07	10.04	10.00	10.20	---	---	9.88	9.83	---	9.91
20	10.37	10.08	10.07	10.04	10.00	10.20	10.32	---	9.88	---	---	---
21	10.42	10.08	10.06	10.03	10.01	10.18	10.30	---	9.88	---	---	---
22	10.38	10.08	10.05	10.03	10.01	10.18	10.29	---	9.87	---	---	---
23	10.38	10.06	10.04	10.04	10.03	10.18	10.40	---	9.86	---	---	---
24	10.31	10.06	10.04	10.04	10.02	10.18	10.42	---	9.85	---	---	---
25	10.35	10.06	10.04	---	10.00	10.18	10.38	---	9.87	---	---	---
26	10.34	10.06	10.04	10.02	10.00	10.18	10.32	---	9.86	---	9.95	---
27	10.32	10.06	10.02	10.02	10.01	10.18	10.32	---	---	---	9.97	---
28	10.32	10.06	10.02	10.02	10.02	10.18	10.26	---	---	---	9.95	---
29	10.32	10.06	10.02	10.02	---	10.18	10.26	---	---	---	9.95	---
30	10.27	10.08	10.02	10.04	---	10.19	10.26	---	---	---	9.97	---
31	10.26	---	10.02	10.04	---	10.18	---	10.16	---	---	9.98	---
TOTAL	---	303.25	311.90	---	280.16	---	---	---	---	---	---	---
MEAN	---	10.1	10.1	---	10.0	---	---	---	---	---	---	---
MAX	---	10.26	10.08	---	10.04	---	---	---	---	---	---	---
MIN	---	10.06	10.02	---	9.98	---	---	---	---	---	---	---

05548164 POWERS LAKE OUTLET AT POWERS LAKE, WI

LOCATION.--Lat 42°32'40", long 88°18'41", in NW 1/4 SE 1/4 sec.13, T.1 N., R.18 E., Walworth County,
Hydrologic Unit 07120006, at culvert under Powers Lake Road, at Powers Lake.

DRAINAGE AREA.--3.42 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1986 to September 1987.

GAGE.--A staff gage read twice daily by observer. Elevation of gage is 832 ft from topographic map.

REMARKS.--Estimated daily discharge: Ice period, Dec. 11-17 and Jan. 21-25, and periods of no gage height, Oct. 17-20, Mar. 2, May 1, 18-30, June 2-10, June 27 to July 6, July 8-11, July 20 to Aug. 15, Aug. 19-25, and Sept. 3-4, 6-16, 20-30. Backwater from beaver dams Mar. 10-18, 30-31, and Apr. 2, 6-7, 19. Records fair except for estimated daily discharges, which are poor.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 11.0 ft³/s Oct. 16-17; minimum daily, 0.18 ft³/s Sept. 30.

DISCHARGE, IN 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	---	6.1	2.6	2.4	2.5	2.5	3.3	6.0	3.7	.54	.35	1.5
2	---	5.9	2.6	2.4	2.3	2.6	3.5	6.0	3.6	.54	.36	1.6
3	---	5.5	2.5	2.4	2.3	2.8	3.3	5.9	3.5	.54	.36	1.2
4	---	5.0	2.5	2.4	2.1	3.1	3.2	5.9	3.0	.60	.37	1.1
5	---	4.7	2.5	2.4	2.1	2.9	3.0	5.9	2.5	.70	.40	.92
6	---	4.7	3.1	2.4	2.0	2.9	3.2	5.9	2.0	.64	.44	.72
7	---	4.4	3.1	2.4	2.0	2.9	3.2	5.9	1.6	.52	.47	.60
8	---	4.3	3.1	2.4	2.0	2.9	2.8	5.8	1.4	.45	.52	.50
9	---	3.7	3.1	2.3	2.1	2.9	2.7	5.3	1.3	.36	.58	.40
10	---	3.5	3.1	2.4	1.9	2.8	2.5	4.2	1.2	.32	.50	.32
11	---	3.4	2.9	2.7	2.0	2.6	2.4	4.1	1.2	.30	.58	.30
12	---	3.2	2.8	2.6	1.9	2.5	4.0	3.7	1.2	.29	.70	.26
13	---	2.8	2.8	2.5	1.9	2.5	6.9	3.4	1.2	.29	.84	.25
14	---	2.8	2.9	2.5	1.8	3.0	7.3	3.3	1.3	.29	1.4	.24
15	---	2.8	3.0	2.6	2.0	4.6	8.2	3.3	1.2	.30	1.4	.25
16	11	2.6	3.1	2.6	2.0	4.7	8.3	3.4	1.2	.62	1.1	.50
17	11	2.6	3.2	2.6	2.0	4.8	8.4	3.7	1.2	.67	1.2	1.0
18	10	2.6	3.1	2.6	2.0	4.8	8.4	4.5	.80	.66	.92	1.0
19	9.4	2.6	3.1	2.6	2.0	4.9	7.8	5.0	.78	.50	.84	1.0
20	8.4	2.6	3.0	2.6	2.0	4.9	7.3	5.8	.78	.43	.76	.80
21	8.2	2.6	2.9	2.5	2.1	4.6	7.0	6.1	.78	.40	.68	.72
22	7.4	2.6	2.8	2.4	2.2	4.6	6.7	5.6	.72	.38	.62	.76
23	7.3	2.4	2.7	2.3	2.4	4.6	8.9	5.2	.66	.37	.62	.84
24	6.9	2.4	2.6	2.3	2.3	4.6	9.5	5.0	.63	.36	.62	.70
25	6.7	2.4	2.6	2.3	2.0	4.6	8.7	5.2	.72	.36	.80	.56
26	7.7	2.4	2.6	2.3	2.0	4.6	7.3	5.7	.67	.36	1.1	.47
27	7.5	2.4	2.4	2.3	2.1	4.6	7.0	5.2	.64	.36	1.3	.36
28	7.5	2.4	2.4	2.3	2.3	4.6	6.0	4.8	.60	.35	1.2	.29
29	7.4	2.4	2.4	2.3	---	4.0	5.9	4.5	.56	.35	1.2	.22
30	6.3	2.6	2.4	2.5	---	3.7	5.9	4.2	.54	.35	1.4	.18
31	6.2	---	2.4	2.5	---	3.5	---	3.7	---	.35	1.5	---
TOTAL	---	100.4	86.3	75.8	58.3	115.6	172.6	152.2	41.18	13.55	25.13	19.56
MEAN	---	3.35	2.78	2.45	2.08	3.73	5.75	4.91	1.37	.44	.81	.65
MAX	---	6.1	3.2	2.7	2.5	4.9	9.5	6.1	3.7	.70	1.5	1.6
MIN	---	2.4	2.4	2.3	1.8	2.5	2.4	3.3	.54	.29	.35	.18

05548164 POWERS LAKE OUTLET AT POWERS LAKE, WI--CONTINUED

WATER-QUALITY RECORD

PERIODS OF RECORD.--October 16, 1986 to September 30, 1987.

PERIOD OF DAILY RECORD.--

TOTAL PHOSPHORUS DISCHARGE: October 16, 1986 to September 30, 1987.

EXTREMES FOR CURRENT YEAR.--

TOTAL PHOSPHORUS DISCHARGE: Maximum daily, 1.10 lbs/day Apr. 18, 23 and 24, 1987; minimum daily, 0.01 lb/day Sept. 30.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)
NOV , 1986			
18...	1130	2.6	0.014
JAN , 1987			
09...	1155	2.3	0.010
FEB			
12...	1440	1.9	0.010
MAR			
25...	1130	4.6	0.012

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	---	.53	.18	.13	.12	.08	.30	.71	.38	.03	.02	.11
2	---	.51	.18	.13	.11	.10	.34	.71	.35	.03	.02	.11
3	---	.48	.18	.13	.11	.11	.32	.70	.34	.03	.02	.08
4	---	.43	.18	.13	.10	.12	.33	.70	.29	.04	.02	.08
5	---	.41	.18	.13	.10	.11	.32	.70	.23	.05	.02	.06
6	---	.38	.20	.13	.10	.12	.36	.70	.18	.04	.03	.05
7	---	.36	.20	.13	.10	.12	.36	.70	.14	.03	.03	.04
8	---	.35	.20	.13	.11	.12	.32	.69	.12	.03	.03	.04
9	---	.30	.20	.12	.11	.12	.32	.63	.11	.02	.03	.03
10	---	.28	.20	.13	.10	.12	.30	.48	.10	.02	.03	.02
11	---	.27	.19	.13	.11	.13	.29	.46	.10	.02	.03	.02
12	---	.26	.18	.13	.10	.12	.48	.42	.09	.02	.04	.02
13	---	.21	.18	.11	.10	.12	.82	.39	.09	.02	.05	.02
14	---	.21	.19	.11	.09	.16	.91	.37	.10	.02	.08	.02
15	---	.21	.19	.11	.10	.25	1.0	.37	.08	.02	.08	.02
16	1.10	.20	.20	.10	.09	.25	1.0	.39	.08	.03	.07	.04
17	1.10	.20	.21	.10	.09	.26	1.0	.42	.08	.04	.08	.08
18	.97	.20	.20	.10	.08	.26	1.1	.51	.05	.04	.06	.08
19	.91	.20	.20	.10	.08	.26	1.0	.57	.05	.03	.05	.08
20	.82	.20	.19	.10	.06	.29	.91	.66	.05	.02	.05	.06
21	.75	.20	.19	.11	.07	.27	.87	.69	.05	.02	.04	.06
22	.68	.20	.18	.10	.07	.27	.80	.61	.05	.02	.04	.06
23	.67	.18	.16	.10	.06	.30	1.1	.56	.04	.02	.04	.07
24	.63	.18	.15	.10	.06	.30	1.1	.54	.04	.02	.04	.06
25	.62	.18	.15	.10	.06	.30	1.0	.56	.05	.02	.05	.05
26	.71	.20	.15	.10	.06	.32	.87	.62	.04	.02	.07	.04
27	.69	.17	.14	.10	.07	.32	.83	.56	.04	.02	.08	.03
28	.65	.17	.14	.10	.08	.35	.71	.52	.04	.02	.08	.02
29	.64	.17	.14	.10	---	.32	.70	.49	.03	.02	.08	.02
30	.54	.18	.14	.11	---	.32	.70	.43	.03	.02	.09	.01
31	.54	---	.14	.12	---	.30	---	.38	---	.02	.10	---
TOTAL	---	8.02	5.51	3.52	2.49	6.59	20.46	17.24	3.42	.80	1.55	1.48

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 1987

ANNUAL MAXIMUM DISCHARGE AT CREST STAGE PARTIAL RECORD STATIONS DURING WATER YEAR 1967						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.	2.20	1959-87	10-12-86	12.87	105
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	1957-87	10-12-86	12.46	240
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	1959-87	08-18-87	13.80	333
*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.	35.2	1959-65 1966# 1967-87	10-12-86	11.09	305
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# 1976-87	07-10-87	2.58	220
*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	1960-87	05-22-87	11.04	120
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	1960-87	07-09-87	11.18	20
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# 1970-87	10-12-86	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	1970-87	09-17-87	11.22	33
*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	1958-87	10-12-86	10.75	150
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	1970-87	10-11-86	12.25	260
04067500	MENOMINEE RIVER NEAR MC ALLISTER, WI	LAT 45°19'20", LONG 87°39'40", IN SEC.17, T.33 N., R.23 E., MARINETTE COUNTY, 300 FT ABOVE BRIDGE ON COUNTY TRUNK HIGHWAY JJ, 2.9 MI EAST OF MC ALLISTER.	3,930	1945-61# 1962-80 1981-86# 1987	10-14-86	13.22	8,740

ANNUAL MAXIMUM DISCHARGE AT CREST-STAGE PARTIAL-RECORD STATIONS DURING WATER YEAR 1987

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							
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	1970-87	10-12-86	12.89	790
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	1958-87	10-13-86	10.23	106
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	1970-87	10-12-86	11.67	114
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	1958-87	03-30-87	11.55	100
*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	1961-87	10-13-86	11.78	300
*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	1959-87	10-04-86	10.98	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	1970-87	10-12-86	12.94	62
*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	1958-87	10-12-86 09-27-86 E	12.67 12.16 E	155 E 100
*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	1970-87	09-17-87	10.33	73
*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# 1973-87	10-12-86	10.7	39
*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# 1967-87	1987	B	<30
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	1961-87	08-09-87	11.37	205
*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	1960-87	04-23-87	12.60	180
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	1959-87	11-19-86	11.60	65
*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	1961-87	1987	B	<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., OZAUKEE COUNTY, AT BRIDGE ON DONGES BAY ROAD, 2.0 MI SOUTH OF FREISTADT.	8.00	1958-87	04-14-87	10.97	120

ANNUAL MAXIMUM DISCHARGE AT CREST-STAGE PARTIAL-RECORD STATIONS DURING WATER YEAR 1987

ANNUAL MAXIMUM					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	1959-87	08-26-87	20.82	510
*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	1958-87	04-22-87	15.03	210
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	1962-87	08-17-87	12.88	182
*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	1960-87	04-22-87	14.94	85
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	1961-87	05-19-87 D	13.86	40
*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# 1967-87	07-24-87	12.10	78
*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	1958-87	07-24-87 D	10.89	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	1959-87	06-28-87	12.84	1,060
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	1970-87	04-05-87	11.17	240
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.	E 7.10	1970-87	1987	B	<36
05358100	SMITH CREEK NEAR PARK FALLS, WI	LAT 45°57'06", LONG 90°28'07", IN NE 1/4 SEC.15, T.40 N., R.1 W., PRICE COUNTY, AT CULVERT ON STATE HIGHWAY 13, 1.5 MI NORTHWEST OF PARK FALLS.	9.11	1970-87	07-22-87	11.12	65
*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# 1967-87	1987	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	1961-87	10-12-86	11.79	360
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.	24.6	1970-87	10-12-87	13.39	555

ANNUAL MAXIMUM DISCHARGE AT CREST-STAGE PARTIAL-RECORD STATIONS DURING WATER YEAR 1987

STATION NO.	STATION NAME	LOCATION	DRAINAGE AREA (MI ²)	PERIOD OF RECORD	DATE	ANNUAL MAXIMUM 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	1970-87	10-12-86	11.29	40
*05364000	YELLOW RIVER AT CADOTT, WI	LAT 44°57'21", LONG 91°08'48", IN NE 1/4 SEC.31, T.29 N., R.6 W., CHIPPEWA COUNTY, AT BRIDGE ON STATE HIGHWAY 27, AT CADOTT.	351	1943-61# 1962-87	1987	F	--
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	1962-87	10-12-86	12.98	215
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# 1958-87	07-28-87	4.79	375
*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	1958-87	1987	B	<50
*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# 1958-87	10-12-86	12.17	9,900
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	1958-87	05-29-87	10.83	103
*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	1960-87	10-12-86	12.82	158
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	1958-87	1987	F	--
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	1959-87	10-12-86	12.50	220
*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	1962-87	07-24-87	12.89	250
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	1960-87	07-28-87	12.30	140
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.	280	1974-87	10-12-86	12.79	1,280
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	1961-87	07-27-87	16.45	1,910

ANNUAL MAXIMUM DISCHARGE AT CREST-STAGE PARTIAL-RECORD STATIONS DURING WATER YEAR 1987

ANNUAL MAXIMUM DISCHARGE AT CREST-STAGE PARTIAL-RECORD STATIONS DURING WATER YEAR 1987						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	1960-87	1987	F	--
*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# 1967-87	10-12-86 03-30-86	19.32 17.52	10,500 7,400
*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	1961-87	10-12-86	16.68	2,850
*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	1960-87	07-28-87	12.75	1,160
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	1961-87	1987	B	<40
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# 1967-87	07-28-87	12.92	730
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	1970-87	10-12-86	11.11	36
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	1970-87	05-19-87	12.71	110
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	1970-87	10-11-86	12.43	86
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	1970-87	03-03-87	11.35	32
*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	1958-87	09-06-87	10.96	98
*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# 1967-87	03-03-87	9.52	70
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	1970-87	03-05-87	10.83	25
*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	1961-87	10-12-86	13.94	500

ANNUAL MAXIMUM DISCHARGE AT CREST-STAGE PARTIAL-RECORD STATIONS DURING WATER YEAR 1987

STATION NO.	STATION NAME	LOCATION	DRAINAGE AREA (MI ²)	PERIOD OF RECORD	DATE	ANNUAL MAXIMUM GAGE HEIGHT (FT)	DIS-CHARGE (FT ³ /S)
WISCONSIN RIVER BASIN--CONTINUED							
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	1970-87	10-12-86	14.82	552
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	1959-87	10-12-86	15.65	330
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	1962-87	10-12-86	16.56	1,220
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	1982-87	07-02-87	5.60	125
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	1959-87	10-12-86	12.52	520
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	1973-87	10-12-86	14.59	820
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	1959-87	1987	B	<100
*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	1961-87	04-22-87	13.46	225
*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	1958-87	04-22-87	14.05	420
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# 1978-87	08-08-87	3.00	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# 1983-87	04-22-87	5.35	166
*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# 1967-87	08-08-87	11.54	425
*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	1961-87	07-06-87	12.24	220
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	1960-87	07-30-87	11.40	75
*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	1958-87	09-17-87	12.14	230
*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	1959-86	11-20-86	10.30	100

ANNUAL MAXIMUM DISCHARGE AT CREST-STAGE PARTIAL-RECORD STATIONS DURING WATER YEAR 1987

ANNUAL MAXIMUM DISCHARGE AT CREST-STAGE PARTIAL-RECORD STATIONS DURING WATER YEAR 1987					ANNUAL MAXIMUM		
STATION NO.	STATION NAME	LOCATION	DRAINAGE AREA (MI ²)	PERIOD OF RECORD	DATE	GAGE HEIGHT (FT)	DIS-CHARGE (FT ³ /3)
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# 1967-87	06-01-87	11.21	225
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	1958-87	1987	B	<200
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	1960-87	1987	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# 1984-87	1987	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	1960-87	07-29-87	12.26	210
*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	1960-87	04-22-87	10.77	70
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	1973-87	04-22-87	10.59	110
*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	1958-87	04-22-87	9.41	35
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# 1982-87	10-04-86	11.74	160
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	1982-87	07-29-87	6.21	250
*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	1962-87	1987	B	<280
*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	1959-87	1987	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# 1966-87	03-01-87	2.72	92

ANNUAL MAXIMUM DISCHARGE AT CREST-STAGE PARTIAL-RECORD STATIONS DURING WATER YEAR 1987

ANNUAL MAXIMUM DISCHARGE AT CREST-STAGE PARTIAL-RECORD STATIONS DURING WATER YEAR 1987				ANNUAL MAXIMUM			
STATION NO.	STATION NAME	LOCATION	DRAINAGE AREA (MI ²)	PERIOD OF RECORD	DATE	GAGE HEIGHT (FT)	DIS-CHARGE (FT ³ /S)
ROCK RIVER BASIN--CONTINUED							
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	1961-87	1987	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	1961-87	08-17-87	11.80	105
*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	1958-87	08-27-87	11.32	60
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	1962-87	04-15-87	11.57	95
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	1958-87	08-17-87	11.39	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	1962-87	04-22-87	10.57	110

* 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.
F Gage not operating.

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 1987

Stream	Tributary to	Location	Drainage Area (mi ²)	Measured Previously (Water Years)	Measurements	
					Date	Discharge (ft ³ /s)
STREAMS TRIBUTARY TO LAKE MICHIGAN						
Daly Creek	Kelly Brook	Lat 44°57'02", long 88°15'54", in NE 1/4 NE 1/4 sec.35, T.29 N., R.18 E., Oconto County, at bridge on CTH "G", 6.2 mi southeast of Suring.	15.0	--	07-28-87	1.07
Kelly Brook	Little River	Lat 44°57'05", long 88°06'24", in NW 1/4 NW 1/4 sec.32, T.29 N., R.20 E., Oconto County, at CTH "A", 1.4 mi west of Lena.	70.04	--	07-28-87	4.21
Kelly Brook	Little River	Lat 44°59'24", long 88°01'29", in SE 1/4 NE 1/4 sec.14, T.29 N., R.20 E., Oconto County, at Belgian Road, 2 mi northeast of Lena.	81.44	--	07-28-87	3.29
Little River	Oconto River	Lat 44°55'40", long 87°59'19", in NW 1/4 SW 1/4 sec.5, T.28 N., R.21 E., Oconto County, at CTH "J", 6.4 mi northwest of Oconto.	153	--	07-27-87	3.41
Little River	Oconto River	Lat 44°53'19", long 88°00'36", in SE 1/4 NE 1/4 sec.24, T.28 N., R.20 E., Oconto County, on State Highway 22, 2.8 mi northeast of Stiles.	170	1969	07-27-87	3.67
Red River	Wolf River	Lat 44°56'34", long 88°55'45", in SW 1/4 SE 1/4 sec.33, T.29 N., R.13 E., Menominee County, at county line, 5.7 mi southwest of Neopit.	46.4	1985	08-03-87	61.9
Miller Creek	Red River	Lat 44°52'14", long 88°47'06", in SW 1/4 SW 1/4 SE 1/4 sec.27, T.28 N., R.14 E., Shawano County, located at bridge on County Highway G, 1.5 mi north of Gresham.	--	--	08-05-87	3.45
Silver Creek	West Branch Red River	Lat 44°54'51", long 88°57'40", in SW 1/4 SW 1/4 SW 1/4 sec.8, T.28 N., R.13 E., Shawano County, located at bridge on Silver Creek Road, 3.7 mi north of Bowler, 1.1 mi upstream from mouth at West Branch.	--	--	08-04-87	7.47
West Branch Red River	Red River	Lat 44°54'28", long 88°54'39", in SE 1/4 SW 1/4 NW 1/4 sec.15, T.28 N., R.13 E., Shawano County, 4.5 mi north-east of Bowler, approximately 500 ft downstream from Sewage Disposal Pond.	--	--	08-05-87	22.8
Red River	Wolf River	Lat 44°52'44", long 88°50'02", in SE 1/4 SW 1/4 NW 1/4 sec.29, T.28 N., R.14 E., Shawano County, 3 mi northwest of Gresham, 0.25 mile upstream from mouth of Smith Creek.	--	--	08-05-87	77.4
Smith Creek	Red River	Lat 44°52'29", long 88°50'48", in SW 1/4 NW 1/4 SE 1/4 sec.30, T.28 N., R.14 E., Shawano County, 3.5 mi north-west of Gresham, 0.4 mi upstream from mouth of Red River.	--	--	08-04-87	0.209
Miller Creek	Red River	Lat 44°56'34", long 88°49'55", in SE 1/4 SW 1/4 sec.32, T.29 N., R.14 E., Menominee County, at county line, 2.7 mi south of Neopit.	10.9	1985	08-05-87	0.768
Hennig Creek	North Branch Embarrass Creek	Lat 44°52'05", long 88°57'08", in NE 1/4 NW 1/4 sec.32, T.28 N., R.13 E., Shawano County, at mouth, 1.5 mi north-east of Bowler.	8.94	--	08-04-87	2.22
Sheboygan River	Lake Michigan	Lat 43°45'14", long 88°15'56", in NE 1/4 SE 1/4 sec.19, T.15 N., R.19 E., Fond du Lac County, at County Highway T, 0.2 mi west of Dotyville.	13.84	--	09-10-87	1.54

DISCHARGE MEASUREMENTS MADE AT MISCELLANEOUS SITES DURING WATER YEAR 1987

Stream	Tributary to	Location	Drainage Area (mi ²)	Measured Previously (Water Years)	Date	Discharge (ft ³ /s)
STREAMS TRIBUTARY TO LAKE MICHIGAN--CONTINUED						
Sheboygan River	Lake Michigan	Lat 43°48'33", long 88°15'04", in NE 1/4 SW 1/4 sec.32, T.16 N., R.19 E., Fond du Lac County, at County Highway W, 10.2 mi east of downtown Fond du Lac.	27.4	1962-67# 1976-77	09-10-87	1.72
Sheboygan River Tributary	Sheboygan River	Lat 43°55'10", long 87°59'04", in SE 1/4 NE 1/4 sec.28, T.17 N., R.21 E., Manitowoc County, at mouth, 3.6 mi east of Kiel.	15.4	--	09-10-87	0.864
North Branch Milwaukee River Tributary	North Branch Milwaukee River	Lat 43°35'49", long 88°00'04", in SE 1/4 NE 1/4 sec.17, T.13 N., R.21 E., Sheboygan County, 2.5 mi east, northeast of Batavia.	3.56	--	09-10-87	0.921
Silver Creek	North Branch Milwaukee River	Lat 43°33'22", long 88°02'15", in NW 1/4 NW 1/4 sec.31, T.13 N., R.21 E., Sheboygan County, at bridge on town road, 2.5 mi southeast of Batavia.	18.7	1969	09-10-87	2.24
North Branch Milwaukee River	Milwaukee River	Lat 43°28'58", long 88°03'39", in NW 1/4 NE 1/4 sec.25, T.12 N., R.20 E., Washington County, at County Highway M, 1.1 mi south of Fillmore.	148	1968-81#	09-10-87	37.3
Milwaukee River Tributary	Milwaukee River	Lat 43°20'12", long 87°56'58", in NE 1/4 NE 1/4 sec.13, T.10 N., R.21 E., Ozaukee County, at bridge on State Highway O, 0.75 mi north of Grafton.	8.53	--	09-10-87	2.16
ST. CROIX RIVER BASIN						
North Fork Wood River	Wood River	Lat 45°48'30", long 92°33'48", in SE 1/4 NW 1/4 sec.2, T.38 N., R.18 W., Burnett County, at CTH D, 6.2 mi north-east of Grantsburg.	17.9	1985-86	10-17-86 11-17-86 12-16-86 02-10-87 03-17-87 04-06-87 05-13-87 06-02-87 07-13-87 08-13-87 09-16-87	13.1 7.83 5.79 5.83 10.7 10.4 4.61 5.82 2.02 5.82 1.69
North Fork Wood River	Wood River	Lat 45°48'35", long 92°36'03", in SE 1/4 NW 1/4 sec.4, T.38 N., R.18 W., Burnett County, at CTH D, 4.4 mi north-east of Grantsburg.	53.4	1985-86	10-17-86 11-17-86 12-16-86 01-14-87 02-10-87 03-17-87 04-06-87 05-13-87 06-02-87 07-13-87 08-13-87 09-16-87	33.9 24.8 21.8 13.7 12.8 16.5 15.1 7.06 7.27 4.38 11.6 5.83
Whiskey Creek	Wood River	Lat 45°47'40", long 92°39'09", in NE 1/4 SE 1/4 sec.12, T.38 N., R.19 W., Burnett County, at CTH D, 1.9 mi north-east of Grantsburg.	--	1985-86	10-17-86 11-17-86 12-16-86 01-14-87 02-10-87 03-17-87 04-06-87 05-13-87 06-02-87 07-13-87 08-13-87 09-16-87	2.39 4.58 9.38 3.31 1.95 2.20 0.89 0.23 0.27 0.12 0.68 0.64
Hay Creek	Wood River	Lat 45°47'34", long 92°41'33", in NW 1/4 SW 1/4 sec.11, T.38 N., R.19 W., Burnett County, at Borg Road, 1.2 mi northwest of Grantsburg.	--	1985-86	10-17-86 11-17-86 12-16-86 02-10-87 03-17-87 04-06-87 05-13-87 06-02-87 07-13-87 08-13-87	14.6 4.98 4.69 1.57 2.81 2.97 0.99 2.54 0.06 0.23

DISCHARGE MEASUREMENTS MADE AT MISCELLANEOUS SITES DURING WATER YEAR 1987

Stream	Tributary to	Location	Drainage Area (mi ²)	Measured Previously (Water Years)	Measurements	
					Date	Discharge (ft ³ /s)
CHIPPEWA RIVER BASIN						
Eau Claire River	Chippewa River	Lat 44°48'51", long 91°29'59", in NE 1/4 NW 1/4 sec.20, T.27 N., R.9 W., Eau Claire County, at bridge on Farwell Street, at Eau Claire.	883	--	09-04-87	320
Chippewa River	Mississippi River	Lat 44°48'36", long 91°30'13", in SE 1/4 NW 1/4 sec.20, T.27 N., R.9 W., Eau Claire County, at bridge on Grand Avenue, at Eau Claire.	--	--	09-04-87	1,240
BLACK RIVER BASIN						
Herman Coulee	Bell Coulee	Lat 43°59'44", long 91°01'14", in SW 1/4 NE 1/4 sec.31, T.18 N., R.5 W., LaCrosse County, at culvert on Herman Coulee Road, 4.3 mi southeast of Mindoro.	1.65	--	09-28-87	0.055
Bell Coulee	Fleming Creek	Lat 43°59'49", long 91°01'38", in NE 1/4 NW 1/4 sec.31, T.18 N., R.5 W., LaCrosse County, at County Highway D, 4.1 mi southeast of Mindoro.	4.08	--	09-28-87	0.639
Bell Coulee	Fleming Creek	Lat 44°00'32", long 91°02'44", in SE 1/4 NW 1/4 sec.25, T.18 N., R.6 W., LaCrosse County, at County Highway D, 2.8 mi southeast of Mindoro.	5.59	--	09-28-87	1.526
Fleming Creek	Black River	Lat 44°00'44", long 91°03'07", in NW 1/4 NW 1/4 sec.25, T.18 N., R.6 W., LaCrosse County, at bridge on County Highway C, 2.5 mi southeast of Mindoro.	15.5	--	09-28-87	6.03
Severson Coulee	Fleming Creek	Lat 44°01'17", long 91°06'20", in NE 1/4 SW 1/4 sec.21, T.18 N., R.6 W., LaCrosse County, at County Highway D, 0.2 mi west of Mindoro.	4.85	--	09-28-87	3.00
Fleming Creek	Black River	Lat 44°01'57", long 91°08'30", in NW 1/4 SE 1/4 sec.18, T.18 N., R.6 W., LaCrosse County, at County Highway M, 2.5 mi southeast of Stevenstown.	35.0	--	09-28-87	19.1
Fleming Creek	Black River	Lat 44°02'17", long 91°10'09", in SW 1/4 NW 1/4 sec.13, T.18 N., R.7 W., LaCrosse County, at County Highway T, at Stevenstown.	39.5	1966-70 1975-76	09-28-87	22.1
Sour Creek	Fleming Creek	Lat 44°02'23", long 91°10'44", in NW 1/4 NE 1/4 sec.14, T.18 N., R.7 W., LaCrosse County, at bridge on County Highway T, 0.4 mi northwest of Stevenstown.	5.89	1966	09-28-87	3.78
Fleming Creek	Black River	Lat 44°03'26", long 91°11'57", in SW 1/4 SE 1/4 sec.3, T.18 N., R.7 W., LaCrosse County, at Baker Road, 1.8 mi northwest of Stevenstown.	47.9	--	09-28-87	26.1
WISCONSIN RIVER BASIN						
East Branch Big Eau Pleine River	Big Eau Pleine River	Lat 44°58'28", long 90°13'50", in SE 1/4 SW 1/4 sec.23, T.29 N., R.2 E., Marathon County, at bridge on Holton Road, 2.5 mi west of Milan.	24.7	--	08-27-87	1.19
Porky Creek	Big Eau Pleine River	Lat 44°56'13", long 90°15'28", in NE 1/4 SE 1/4 sec.4, T.28 N., R.2 E., Marathon County, near State Highway 29, 3 mi east southeast of Abbotsford.	7.63	--	08-27-87	0.273
Marsh Creek	Randall Creek	Lat 44°55'38", long 90°10'47", in NE 1/4 NE 1/4 sec.7, T.28 N., R.3 E., Marathon County, 3.8 mi south of Milan.	7.73	--	08-27-87	0.252
Hamann Creek	Big Eau Pleine River	Lat 44°51'32", long 90°06'34", in SE 1/4 SW 1/4 sec.35, T.28 N., R.3 E., Marathon County, at bridge on County Highway P, 4.3 mi north of Stratford.	25.8	--	08-27-87	1.24

DISCHARGE MEASUREMENTS MADE AT MISCELLANEOUS SITES DURING WATER YEAR 1987

Stream	Tributary to	Location	Drainage Area (mi ²)	Measured Previously (Water Years)	Measurements	
					Date	Discharge (ft ³ /s)
WISCONSIN RIVER BASIN--CONTINUED						
Noisy Creek	Big Eau Pleine River	Lat 44°49'20", long 90°05'44", in NW 1/4 SW 1/4 sec.13, T.27 N., R.3 E., Marathon County, at bridge on Equity Street, 1.7 mi northwest of Stratford.	12.7	--	08-27-87	0.341
Little Baraboo River	Baraboo River	Lat 43°34'04", long 90°17'29", in NW 1/4 NW 1/4 sec.32, T.13 N., R.2 E., Sauk County, at Henderson Road, 1 mi southwest of Valton.	5.61	--	09-02-87	2.24
Little Baraboo River	Baraboo River	Lat 43°34'41", long 90°14'48", in SW 1/4 NW 1/4 sec.27, T.13 N., R.2 E., Sauk County, at bridge on Rott Road, 5.8 mi west of LaValle.	13.1	--	09-02-87	4.58
Little Baraboo River	Baraboo River	Lat 43°33'02", long 90°10'55", in SW 1/4 NE 1/4 sec.6, T.12 N., R.3 E., Sauk County, at Nash Road, 3 mi north northeast of Cazenovia.	22.54	--	09-02-87	9.06
McGlynn Creek	Little Baraboo River	Lat 43°32'25", long 90°10'21", in NW 1/4 NW 1/4 sec.8, T.12 N., R.3 E., Sauk County, 0.2 mi upstream from bridge on State Highway 58, 1.6 mi northeast of Cazenovia.	23.9	1976-77	09-02-87	7.53
Carr Valley Creek	McGlynn Creek	Lat 43°32'26", long 90°10'10", in NE 1/4 NW 1/4 sec.20, T.12 N., R.3 E., Sauk County, at Vosen Lane, 1.6 mi southeast of Cazenovia.	5.11	--	09-02-87	0.697
Carr Valley Creek	McGlynn Creek	Lat 43°31'59", long 90°10'12", in SW 1/4 NW 1/4 sec.8, T.12 N., R.3 E., Sauk County, at culvert on Marshall Road, 2.5 mi northeast of Cazenovia.	9.26	--	09-02-87	2.39

Operated as a low-flow partial-record station.

Operated as a continuous-record gaging station.

Water-quality partial-record stations are particular sites where chemical-quality, biological, physical, and/or sediment data are collected systematically over a period of years for use in hydrologic analyses.

MISCELLANEOUS WATER-QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)	DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (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 , 1986					APR , 1987				
01...	1350	743	150	12.0	13...	1340	283	185	9.0
DEC					MAY				
09...	1200	180	195	0.0	27...	1330	400	200	16.0
JAN , 1987					JUL				
21...	1130	106	177	0.0	08...	1400	77	207	23.5
MAR					AUG				
03...	1330	103	262	0.0	24...	1250	91	218	13.0
04025500 BOIS BRULE RIVER NR BRULE, WI (LAT 46 32 16 LONG 091 35 43)									
OCT , 1986					APR , 1987				
01...	1745	277	100	12.5	13...	1600	175	110	10.0
DEC					MAY				
09...	1430	164	110	0.0	27...	1015	177	120	15.0
JAN , 1987					JUL				
21...	0830	146	91	0.0	08...	1105	136	120	19.0
MAR					AUG				
03...	1445	157	125	3.5	24...	1500	121	137	17.0
04027000 BAD RIVER NEAR ODANAH, WI (LAT 46 29 15 LONG 090 41 45)									
OCT , 1986					MAY , 1987				
02...	1350	460	111	13.0	26...	1230	442	100	15.0
DEC					JUL				
10...	1250	238	121	0.0	06...	1330	108	170	21.0
JAN , 1987					AUG				
20...	1305	199	140	0.0	25...	1240	92	198	19.5
FEB					SEP				
25...	1510	202	164	0.0	24...	1500	289	141	16.0
APR									
14...	1435	546	93	10.0					
04027500 WHITE RIVER NEAR ASHLAND, WI (LAT 46 29 50 LONG 090 54 15)									
OCT , 1986					APR , 1987				
02...	1615	341	150	13.0	15...	1030	174	150	9.5
DEC					MAY				
09...	1640	149	187	0.0	26...	1500	394	120	14.5
JAN , 1987					JUL				
20...	1430	167	183	0.0	06...	1230	172	190	21.0
MAR					AUG				
04...	1125	295	190	0.5	25...	1020	166	190	17.0
STREAMS TRIBUTARY TO LAKE MICHIGAN									
04066003 MENOMINEE RIVER BELOW PEMENE CRK NR PEMBINE, WI (LAT 45 34 46 LONG 087 47 13)									
OCT , 1986					JUN , 1987				
28...	1450	1800	302	9.5	18...	1245	1170	268	27.0
MAY , 1987									
07...	1520	1170	290	16.0					
04071000 OCONTO RIVER NEAR GILLETT, WI (LAT 44 51 53 LONG 088 18 00)									
JAN , 1987					JUN , 1987				
29...	1630	351	365	0.0	17...	1200	285	280	26.0
MAR					JUL				
24...	1330	572	285	8.5	31...	1645	216	272	27.5
MAY					SEP				
06...	1615	425	265	17.0	15...	1450	189	300	20.0
04071858 PENSANKEE RIVER NEAR PENSANKEE, WI (LAT 44 49 08 LONG 087 57 12)									
OCT , 1986					JUN , 1987				
29...	1455	52	618	10.0	17...	1130	5.7	485	25.0
JAN , 1987					JUL				
28...	1640	9.7	--	0.0	31...	1415	2.6	410	27.0
MAR					SEP				
24...	1350	111	420	7.0	16...	1105	3.2	455	17.5
MAY									
06...	1805	23	545	17.5					

MISCELLANEOUS WATER-QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)	DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)
STREAMS TRIBUTARY TO LAKE MICHIGAN--CONTINUED									
04073500 FOX RIVER AT BERLIN, WI (LAT 43 57 14 LONG 088 57 08)									
OCT , 1986					APR , 1987				
28...	1415	2850	390	11.5	15...	1410	1700	350	11.0
JAN , 1987					MAY				
06...	1220	1250	410	1.0	20...	1145	1330	380	16.5
FEB					SEP				
24...	1445	1190	410	2.0	01...	1615	717	330	21.0
04074950 WOLF RIVER AT LANGLADE, WI (LAT 44 11 25 LONG 088 44 00)									
NOV , 1986					MAR , 1987				
20...	1500	383	248	0.0	26...	1120	426	198	6.0
DEC					MAY				
23...	1330	390	197	0.0	14...	1325	272	205	19.0
JAN , 1987									
28...	1225	301	258	0.0					
04077400 WOLF RIVER NEAR SHAWANO, WI (LAT 44 50 09 LONG 088 37 30)									
DEC , 1986					JUN , 1987				
10...	1625	467	190	0.5	17...	1510	493	270	26.0
JAN , 1987					AUG				
30...	1205	556	335	0.0	03...	1435	261	267	27.5
MAR					SEP				
26...	1335	1080	235	6.0	15...	1215	353	290	18.0
04079000 WOLF RIVER AT NEW LONDON, WI (LAT 44 23 32 LONG 088 44 25)									
JAN , 1987					JUN , 1987				
29...	1305	957	480	0.0	15...	1800	902	320	27.0
MAR					AUG				
25...	1400	2210	310	7.5	06...	1455	748	335	25.0
MAY					SEP				
05...	1445	1550	325	16.5	10...	1750	611	295	20.0
04085200 KEWAUNEE RIVER NEAR KEWAUNEE, WI (LAT 44 27 30 LONG 087 33 23)									
OCT , 1986					FEB , 1987				
21...	0935	112	600	9.5	24...	0820	60	520	0.0
DEC					APR				
04...	0945	62	750	0.0	08...	1105	106	620	8.0
JAN , 1987					JUL				
13...	1005	25	840	0.0	08...	1535	18	600	28.0
04085281 EAST TWIN RIVER AT MISHICOT, WI (LAT 44 14 16 LONG 087 38 11)									
OCT , 1986					FEB , 1987				
21...	1050	103	530	9.5	24...	0945	36	580	0.0
DEC					APR				
04...	1225	72	630	0.0	08...	1250	122	540	8.5
JAN , 1987					JUL				
13...	1425	52	590	0.5	08...	1230	16	550	24.5
04086000 SHEBOYGAN RIVER AT SHEBOYGAN, WI (LAT 43 44 25 LONG 087 45 35)									
OCT , 1986					APR , 1987				
20...	1430	524	520	10.0	08...	1810	323	530	12.0
DEC					JUL				
03...	1100	297	690	2.0	07...	1530	56	660	26.5
JAN , 1987					AUG				
12...	1030	155	730	0.5	20...	1120	212	620	22.5
FEB									
23...	1250	186	690	0.0					
04086500 CEDAR CREEK NEAR CEDARBURG, WI (LAT 43 19 23 LONG 087 58 43)									
OCT , 1986					FEB , 1987				
16...	1425	240	570	8.5	19...	1300	40	720	0.0
NOV					APR				
06...	1335	103	595	6.5	07...	1120	101	620	10.0
DEC					JUL				
01...	1325	98	710	2.0	01...	1335	19	730	25.0
JAN , 1987					AUG				
09...	1340	75	730	0.5	19...	1605	142	640	21.0

WATER-QUALITY PARTIAL-RECORD STATIONS

MISCELLANEOUS WATER-QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)	DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)
STREAMS TRIBUTARY TO LAKE MICHIGAN--CONTINUED									
04086600 MILWAUKEE RIVER NEAR CEDARBURG, WI (LAT 43 16 46 LONG 087 56 34)									
OCT , 1986					FEB , 1987				
20...	1045	756	570	9.5	23...	1055	286	665	0.5
NOV					APR				
06...	1105	493	610	6.5	07...	1200	525	600	12.0
DEC					JUL				
01...	1245	496	720	2.0	01...	1125	86	760	24.5
JAN , 1987					AUG				
09...	1145	196	700	0.0	19...	1540	887	590	22.0
04087030 MENOMONEE RIVER AT MENOMONEE FALLS, WI (LAT 44 10 20 LONG 088 06 14)									
OCT , 1986					FEB , 1987				
16...	1010	52	710	8.5	19...	1610	13	1120	1.0
NOV					APR				
06...	0905	21	780	5.5	07...	1640	23	875	12.5
DEC					JUN				
01...	1635	21	950	2.0	30...	1530	9.0	1050	23.0
JAN , 1987					AUG				
09...	1640	14	1080	0.5	20...	0820	16	940	19.0
04087088 UNDERWOOD CREEK AT WAUWATOSA, WI (LAT 43 03 17 LONG 088 02 46)									
OCT , 1986					JUN , 1987				
06...	1035	42	990	11.5	24...	1355	6.2	1190	33.0
NOV					AUG				
17...	1100	5.9	1290	7.0	04...	1215	5.3	1030	29.0
DEC					SEP				
29...	1138	5.0	1280	3.0	15...	1140	17	700	23.0
MAY , 1987									
13...	1127	6.4	1210	20.0					
04087120 MENOMONEE RIVER AT WAUWATOSA, WI (LAT 43 02 44 LONG 087 59 59)									
OCT , 1986					MAY , 1987				
06...	1248	398	770	11.5	13...	1412	39	1100	17.0
NOV					JUN				
17...	1400	41	1150	3.0	24...	1615	27	945	25.0
DEC					AUG				
29...	1400	29	1100	1.0	04...	1835	28	940	24.5
FEB , 1987					SEP				
10...	1320	50	1100	1.5	15...	1505	113	490	21.0
APR									
02...	1500	100	1020	5.0					
04087159 KINNICKINNIC R AT S. 11TH ST AT MILWAUKEE, WI (LAT 42 59 51 LONG 087 55 35)									
OCT , 1986					APR , 1987				
06...	1435	18	1110	15.5	02...	1713	8.8	1130	5.5
NOV					JUN				
17...	1335	11	840	8.0	25...	1400	118	325	24.0
DEC					AUG				
29...	1625	5.9	1110	4.0	05...	0825	5.8	840	19.5
FEB , 1987					SEP				
10...	1530	6.7	1120	7.0	16...	1512	40	390	21.0
04087204 OAK CREEK AT SOUTH MILWAUKEE, WI (LAT 42 55 30 LONG 087 52 12)									
OCT , 1986					MAY , 1987				
08...	0840	31	990	13.0	14...	0740	6.8	1260	14.5
NOV					JUN				
18...	0740	6.9	1310	4.0	25...	0810	3.2	1070	22.5
DEC					AUG				
30...	0904	5.6	1350	2.0	05...	1150	1.9	1170	23.5
FEB , 1987					SEP				
10...	1730	7.9	1370	1.5	15...	1815	9.3	1150	21.0
APR									
03...	0745	13	1290	2.5					
04087220 ROOT RIVER NEAR FRANKLIN, WI (LAT 42 52 25 LONG 087 59 45)									
OCT , 1986					MAY , 1987				
08...	1040	58	900	13.0	14...	1022	14	1100	17.5
NOV					JUN				
18...	0935	15	1080	2.5	25...	1701	8.4	760	23.5
DEC					AUG				
30...	1105	12	1170	1.0	05...	1435	3.4	950	23.0
FEB , 1987					SEP				
12...	0855	13	1030	0.0	16...	1155	21	790	19.5
APR									
03...	1020	25	1130	3.5					

MISCELLANEOUS WATER-QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

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STREAMS TRIBUTARY TO LAKE MICHIGAN--CONTINUED									
04087233 ROOT RIVER CANAL NEAR FRANKLIN, WI (LAT 42 48 55 LONG 087 59 40)									
OCT , 1986					MAY , 1987				
08...	1230	118	710	14.5	14...	1253	28	870	17.0
NOV					JUN				
18...	1155	15	940	3.5	26...	0743	104	660	19.0
DEC					AUG				
30...	1320	11	1000	2.0	05...	1655	3.2	1060	24.5
FEB , 1987					SEP				
11...	1205	18	910	2.0	16...	0910	10	960	20.5
APR									
03...	1335	27	920	4.5					
04087240 ROOT RIVER AT RACINE, WI (LAT 42 45 05 LONG 087 49 25)									
OCT , 1986					APR , 1987				
28...	1300	223	780	13.0	15...	0850	895	560	9.0
DEC					MAY				
15...	1455	55	1230	11.5	29...	0737	65	890	23.0
JAN , 1987					JUL				
20...	1355	35	1280	1.0	08...	1524	239	600	24.5
MAR					AUG				
03...	1450	481	615	1.5	18...	1315	877	390	22.5
04087257 PIKE RIVER NEAR RACINE, WI (LAT 42 30 49 LONG 087 51 30)									
OCT , 1986					APR , 1987				
22...	1055	18	730	14.0	15...	1030	446	420	9.0
DEC					MAY				
15...	1235	17	780	2.0	29...	1040	23	680	20.5
JAN , 1987					JUL				
20...	1155	10	770	1.0	08...	1135	12	495	24.0
MAR					AUG				
03...	1243	53	720	3.0	18...	1548	107	520	21.5
ST. CROIX RIVER BASIN									
05333500 ST. CROIX RIVER NEAR DANBURY, WI (LAT 46 04 28 LONG 092 14 50)									
OCT , 1986					APR , 1987				
01...	1010	2740	82	13.0	14...	1400	1330	103	13.0
DEC					MAY				
02...	1445	1430	125	1.0	27...	1430	1250	115	16.0
JAN , 1987					JUL				
21...	1230	1000	145	0.0	07...	1335	707	125	24.0
FEB					AUG				
19...	1130	1320	130	0.5	31...	1225	694	152	17.0
MAR									
05...	1110	1400	190	1.0					
05340500 ST. CROIX RIVER AT ST. CROIX FALLS, WI (LAT 45 24 25 LONG 092 38 49)									
OCT , 1986					APR , 1987				
09...	1150	5510	165	11.5	03...	1115	5540	140	5.0
NOV					MAY				
05...	1230	5570	155	4.0	19...	1110	3340	228	12.0
JAN , 1987					JUL				
07...	1100	3420	210	2.0	07...	1000	4020	205	25.5
FEB					AUG				
09...	1130	4020	225	2.0	14...	1040	3390	162	23.5
MAR									
02...	1225	3340	227	2.0					
CHIPPEWA RIVER BASIN									
05356000 CHIPPEWA RIVER AT BISHOPS BRIDGE NEAR WINTER, WI (LAT 45 50 57 LONG 091 04 44)									
OCT , 1986					MAY , 1987				
03...	1400	423	70	16.0	26...	1025	164	102	15.0
DEC					JUL				
10...	1530	1800	68	0.5	07...	1315	176	94	25.0
JAN , 1987					AUG				
20...	1000	693	80	0.5	24...	1110	143	105	18.5
APR									
15...	1330	105	90	9.5					

WATER-QUALITY PARTIAL-RECORD STATIONS

MISCELLANEOUS WATER-QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	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)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)
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CHIPPEWA RIVER BASIN--CONTINUED

454657091300600 BIG SISSABAGAMA TRIBUTARY NEAR STONE LAKE, WI (LAT 45 46 57 LONG 091 30 06)

APR , 1986							
24...	1530	--	60	7.00	10.5	11.0	0.140
JUN							
13...	1035	E5.0	77	6.90	20.5	7.1	0.150
JUL							
15...	1035	E5.0	73	6.80	18.5	8.6	0.150
AUG							
14...	1520	E5.0	71	7.20	19.5	7.6	0.100
APR , 1987							
24...	1050	E8.0	50	6.50	10.5	9.8	0.150
JUN							
23...	1240	E8.0	74	7.50	24.5	7.9	0.090
JUL							
20...	1415	E0.0	--	7.80	24.5	8.7	0.070
AUG							
20...	1200	E8.0	59	8.40	19.0	7.8	0.160

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)	DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (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 , 1986					MAY , 1987				
09...	1500	1220	96	11.0	12...	1200	508	110	18.0
DEC					JUN				
11...	1010	2300	100	0.0	25...	1420	430	110	26.0
FEB , 1987					AUG				
18...	1130	565	130	0.0	19...	1220	401	132	22.0
MAR									
20...	1440	747	128	6.0					
05360500 FLAMBEAU RIVER NEAR BRUCE, WI (LAT 45 22 21 LONG 091 12 34)									
OCT , 1986					MAR , 1987				
03...	1100	1630	120	14.5	12...	1510	863	170	2.5
DEC					JUN				
11...	1100	980	90	0.5	29...	1350	800	121	25.0
JAN , 1987					AUG				
13...	1300	1100	152	1.5	19...	1115	645	150	23.5
FEB									
18...	1320	643	142	0.0					
05362000 JUMP RIVER AT SHELDON, WI (LAT 45 18 29 LONG 090 57 23)									
OCT , 1986					APR , 1987				
03...	1350	1000	158	14.5	08...	1420	514	93	12.0
DEC					MAY				
02...	1045	450	140	0.5	12...	0915	90	150	18.0
JAN , 1987					JUN				
13...	1150	155	180	1.0	29...	1130	71	146	24.5
MAR					AUG				
04...	1325	129	235	0.5	13...	1400	52	165	23.0
05365707 NORTH FORK EAU CLAIRE RIVER NEAR THORP, WI (LAT 44 58 25 LONG 090 50 57)									
OCT , 1986					APR , 1987				
21...	1120	40	112	10.0	07...	1515	30	160	13.5
DEC					MAY				
02...	1340	14	120	1.0	11...	1310	4.2	218	22.5
JAN , 1987					JUN				
13...	1100	8.0	174	0.5	29...	1445	2.8	213	25.5
FEB					AUG				
05...	1420	4.3	289	1.0	13...	1000	31	142	21.0
MAR									
12...	1145	38	218	1.0					

E ESTIMATE.

MISCELLANEOUS WATER-QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)	DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)
CHIPPEWA RIVER BASIN--CONTINUED									
05368000		HAY RIVER AT WHEELER, WI (LAT 45 02 52 LONG 091 54 39)							
OCT , 1986					APR , 1987				
01...	0945	513	333	12.5	07...	1115	254	360	9.5
DEC					MAY				
09...	1420	270	390	0.5	19...	1500	205	362	13.0
JAN , 1987					JUN				
06...	1340	283	367	4.0	29...	1000	236	332	18.0
FEB					AUG				
06...	1400	250	280	1.0	10...	1420	403	290	21.5
19...	1310	241	392	1.5					
05369000		RED CEDAR RIVER AT MENOMONIE, WI (LAT 44 53 02 LONG 091 55 57)							
OCT , 1986					APR , 1987				
01...	1245	2520	180	18.0	07...	1220	572	205	9.5
DEC					JUN				
09...	1320	1260	250	2.0	02...	1350	1370	228	22.0
JAN , 1987					29...	1150	1200	218	24.0
06...	1450	2640	254	2.0	AUG				
MAR					10...	1240	2590	198	25.0
03...	1000	2590	195	1.0					
TREMPEALEAU RIVER BASIN									
05379500		TREMPEALEAU RIVER AT DODGE, WI (LAT 44 07 55 LONG 091 33 14)							
OCT , 1986					MAY , 1987				
02...	1000	845	260	13.5	13...	1115	452	260	17.0
JAN , 1987					JUL				
14...	0915	465	280	0.5	21...	1830	460	300	28.0
MAR					JUL				
11...	0830	710	220	2.0	29...	1655	2860	160	25.0
BLACK RIVER BASIN									
05380806		BLACK RIVER AT MEDFORD, WI (LAT 45 08 09 LONG 090 20 45)							
NOV , 1986					APR , 1987				
04...	1340	35	108	4.0	08...	0900	44	105	9.5
DEC					JUN				
30...	1200	13	165	1.5	29...	1230	6.6	145	23.5
JAN , 1987					AUG				
13...	1255	12	120	1.0	13...	1200	8.5	132	22.5
FEB									
18...	1100	8.4	252	1.0					
05381000		BLACK RIVER AT NEILLSVILLE, WI (LAT 44 33 35 LONG 090 36 54)							
OCT , 1986					APR , 1987				
01...	1515	2430	115	15.0	07...	0905	569	145	9.0
NOV					MAY				
18...	1215	214	140	0.5	21...	1345	90	174	14.5
JAN , 1987					JUN				
14...	1040	204	160	0.5	30...	1205	80	180	25.0
MAR									
03...	1310	180	160	1.0					
WISCONSIN RIVER BASIN									
05391000		WISCONSIN R AT RAINBOW LK NEAR LAKE TOMAHAWK, WI (LAT 45 49 58 LONG 089 32 51)							
NOV , 1986					JUN , 1987				
06...	1415	794	77	6.5	02...	1400	196	87	22.5
APR , 1987									
22...	1600	304	68	12.5					

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MISCELLANEOUS WATER-QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)	DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)
WISCONSIN RIVER BASIN--CONTINUED									
05393500 SPIRIT RIVER AT SPIRIT FALLS, WI (LAT 45 26 58 LONG 089 58 47)									
NOV , 1986					MAY , 1987				
04...	1540	63	70	2.0	05...	1440	16	98	17.5
DEC					JUN				
30...	1505	28	112	0.5	23...	1515	12	125	25.5
FEB , 1987					AUG				
13...	1315	19	134	0.0	17...	1500	11	150	23.0
MAR									
27...	1215	152	58	8.0					
05394500 PRAIRIE RIVER NEAR MERRILL, WI (LAT 45 14 09 LONG 089 38 59)									
OCT , 1986					MAY , 1987				
10...	1530	312	105	8.0	05...	1200	112	170	14.5
DEC					JUN				
05...	1430	172	155	0.5	23...	1100	96	190	21.0
JAN , 1987					AUG				
27...	1600	123	187	0.5	14...	1115	115	180	18.5
MAR					SEP				
06...	1443	121	195	1.0	23...	1120	90	190	13.0
05395000 WISCONSIN RIVER AT MERRILL, WI (LAT 45 10 41 LONG 089 40 52)									
MAY , 1987					AUG , 1987				
13...	1210	947	185	19.0	27...	1548	364	495	22.0
05397500 EAU CLAIRE RIVER AT KELLY, WI (LAT 44 55 06 LONG 089 33 00)									
NOV , 1986					APR , 1987				
05...	1625	230	195	3.0	09...	1435	360	130	11.5
DEC					MAY				
29...	1210	143	240	0.0	20...	1608	205	270	16.0
FEB , 1987					JUL				
10...	1400	99	284	0.0	22...	1630	164	205	27.0
05398000 WISCONSIN RIVER AT ROTHSCILD, WI (LAT 44 53 09 LONG 089 38 05)									
MAY , 1987					SEP , 1987				
15...	1535	1080	245	22.0	22...	1405	1180	320	18.5
					28...	1120	1050	265	18.5
05399500 BIG EAU PLEINE RIVER NEAR STRATFORD, WI (LAT 44 49 19 LONG 090 04 46)									
NOV , 1986					MAY , 1987				
10...	1605	69	230	3.0	14...	1600	16	240	22.5
DEC					JUN				
29...	1525	26	280	0.0	24...	1325	21	240	27.0
FEB , 1987					AUG				
12...	1430	15	270	0.5	20...	1200	49	238	21.0
MAR					SEP				
27...	1555	311	177	65.0	03...	1225	8.9	240	19.0
05400650 LITTLE PLOVER RIVER AT PLOVER, WI (LAT 44 28 26 LONG 089 31 44)									
OCT , 1986					MAY , 1987				
01...	1050	20	355	9.5	05...	1520	12	375	14.0
NOV					JUN				
19...	0800	15	380	2.5	16...	1440	8.5	370	18.0
JAN , 1987					JUL				
15...	1100	12	370	4.0	28...	1245	9.4	385	16.5
FEB					SEP				
18...	1513	11	360	5.5	09...	1450	7.1	400	14.0
APR									
07...	1435	14	365	12.5					

MISCELLANEOUS WATER-QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)	DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)
WISCONSIN RIVER BASIN--CONTINUED									
05402000 YELLOW RIVER AT BABCOCK, WI (LAT 44 18 05 LONG 090 07 15)									
OCT , 1986					MAY , 1987				
20...	1025	209	115	8.0	05...	1005	46	115	12.0
NOV					JUN				
19...	1315	41	125	0.5	16...	1015	13	130	20.5
JAN , 1987					JUL				
15...	0830	39	155	0.5	28...	1015	49	110	22.0
FEB					SEP				
18...	1200	19	180	0.0	09...	1150	14	130	16.5
APR									
07...	1115	180	125	8.0					
05403500 LEMONWEIR RIVER AT NEW LISBON, WI (LAT 43 52 47 LONG 090 09 40)									
OCT , 1986					APR , 1987				
29...	1430	439	115	12.0	16...	1440	537	150	14.5
DEC					MAY				
15...	1150	277	150	0.5	28...	1105	305	160	20.5
JAN , 1987					JUL				
21...	1105	213	160	1.0	09...	1015	214	185	23.0
MAR					AUG				
04...	1400	299	160	2.5	24...	1240	205	180	19.0
05404000 WISCONSIN RIVER NEAR WISCONSIN DELLS, WI (LAT 43 36 22 LONG 089 45 25)									
OCT , 1986					JUL , 1987				
02...	1120	27500	170	17.5	09...	1500	3740	190	21.5
31...	1150	8250	115	11.0	AUG				
MAR , 1987					17...	1315	4270	210	26.0
05...	1240	6010	210	4.5	SEP				
APR					04...	1000	1090	210	20.5
20...	1250	3490	190	18.0					
MAY									
27...	1255	3890	190	18.0					
05405000 BARABOO RIVER NEAR BARABOO, WI (LAT 43 28 51 LONG 089 38 09)									
OCT , 1986					APR , 1987				
28...	1230	419	260	11.5	20...	1045	421	350	17.5
DEC					MAY				
09...	1340	367	355	1.5	28...	1420	386	380	19.5
JAN , 1987					JUL				
22...	1035	271	370	0.5	07...	1330	259	350	22.0
MAR					AUG				
03...	1345	397	400	3.5	18...	1345	586	340	22.0
05406500 BLACK EARTH CREEK AT BLACK EARTH, WI (LAT 43 08 03 LONG 089 43 56)									
OCT , 1986					MAY , 1987				
27...	1345	45	610	13.0	27...	0910	104	425	16.0
DEC					JUL				
09...	1025	42	570	5.5	08...	1530	35	600	20.5
JAN , 1987					AUG				
20...	1535	34	560	4.0	04...	1200	34	580	19.5
MAR					18...	1005	51	550	16.0
05...	1425	43	600	10.5	SEP				
APR					10...	1300	29	600	14.0
14...	1445	50	580	10.0					
05408000 KICKAPOO RIVER AT LAFARGE, WI (LAT 43 34 27 LONG 090 38 35)									
OCT , 1986					MAR , 1987				
01...	1130	225	480	14.0	11...	1600	198	445	1.5
29...	0815	35	300	10.5	MAY				
29...	1145	199	225	11.5	14...	1205	438	385	17.0
DEC					JUL				
30...	1300	191	440	1.5	22...	1437	37	460	26.0
05410490 KICKAPOO RIVER AT STEUBEN, WI (LAT 43 10 58 LONG 090 51 30)									
OCT , 1986					APR , 1987				
27...	0926	531	490	10.0	07...	1020	492	480	9.0
DEC					MAY				
02...	0915	500	480	3.0	28...	1115	538	460	10.0
JAN , 1987					JUL				
13...	0910	458	480	0.5	07...	0950	394	465	22.0
FEB					AUG				
24...	1030	472	450	3.5	17...	0910	594	450	21.0

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DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)	DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)
PLATTE RIVER BASIN									
05414000 PLATTE RIVER NEAR ROCKVILLE, WI (LAT 42 43 52 LONG 090 38 25)									
OCT , 1986					APR , 1987				
27...	1410	90	600	11.5	07...	1514	81	570	14.0
DEC					MAY				
02...	1315	80	610	4.0	27...	1515	90	580	14.5
JAN , 1987					JUL				
13...	1358	63	610	2.5	07...	1612	66	580	23.5
FEB					AUG				
25...	0950	62	590	3.0	17...	1445	78	640	24.5
GALENA RIVER BASIN									
05415000 GALENA RIVER AT BUNCOMBE, WI (LAT 42 30 49 LONG 090 22 40)									
OCT , 1986					APR , 1987				
27...	1620	189	830	12.0	14...	1205	102	880	10.0
DEC					MAY				
02...	1534	137	870	4.0	27...	1100	122	850	10.5
JAN , 1987					JUL				
14...	1200	100	890	3.0	08...	1135	64	890	25.5
FEB					AUG				
25...	1320	75	900	4.5	17...	1730	87	840	26.5
ROCK RIVER BASIN									
05425912 BEAVER DAM RIVER AT BEAVER DAM, WI (LAT 43 26 57 LONG 088 50 21)									
JAN , 1987					JUL , 1987				
29...	1715	43	780	1.0	30...	1706	38	505	31.0
FEB									
11...	1510	0.85	670	7.0					
25...	1120	18	630	4.0					
05426250 BARK RIVER NEAR ROME, WI (LAT 42 57 39 LONG 088 40 09)									
OCT , 1986					MAY , 1987				
01...	0950	407	470	17.5	29...	1547	103	575	28.0
28...	1000	183	580	12.0	JUL				
DEC					09...	1140	75	600	26.5
12...	1015	105	755	1.0	AUG				
JAN , 1987					19...	1015	108	570	22.0
21...	1045	81	700	0.5	SEP				
MAR					24...	0945	89	600	16.0
04...	1035	109	565	2.0					
APR									
17...	0920	223	540	14.0					
05427570 ROCK RIVER AT INDIANFORD, WI (LAT 42 48 15 LONG 089 05 25)									
OCT , 1986					APR , 1987				
08...	1135	8980	470	15.0	14...	1110	2490	515	12.0
29...	1410	5780	535	12.5	MAY				
NOV					27...	1350	1870	570	22.0
17...	1355	3160	630	2.5	JUN				
JAN , 1987					26...	0950	358	480	25.5
14...	1300	1380	750	3.0	JUL				
MAR					10...	1514	547	455	28.0
05...	1300	1660	605	7.0	AUG				
27...	1220	2410	490	9.5	24...	1435	783	520	22.5
05429500 YAHARA RIVER NEAR MC FARLAND, WI (LAT 43 00 32 LONG 089 18 18)									
OCT , 1986					APR , 1987				
02...	1340	350	405	19.0	17...	1048	81	450	14.5
27...	0830	356	420	12.0	MAY				
NOV					05...	1205	276	455	16.0
20...	0905	293	425	3.5	26...	0935	203	470	19.0
DEC					JUN				
11...	1145	174	480	0.5	19...	0640	109	435	27.0
JAN , 1987					JUL				
06...	1045	272	450	2.5	09...	1621	34	385	30.0
21...	1325	270	475	2.5	29...	1200	37	370	28.0
FEB					AUG				
11...	1315	214	505	4.5	19...	1405	160	380	26.5
MAR					SEP				
04...	1310	147	435	7.0	11...	0825	197	400	21.5
25...	1306	33	455	8.5					

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ROCK RIVER BASIN--CONTINUED									
05430095 BADFISH CREEK AT CNTY HIGHWAY A NR STOUGHTON, WI (LAT 42 53 37 LONG 089 17 55)									
OCT , 1986					APR , 1987				
27...	1200	71	1210	16.0	13...	1220	56	1280	13.0
NOV					MAY				
17...	1535	74	1330	12.0	05...	0930	77	1200	13.0
DEC					26...	1205	57	1200	20.0
22...	0950	61	1230	8.0	JUN				
JAN , 1987					19...	0840	67	1410	21.0
07...	0940	58	1330	9.0	JUL				
22...	1200	58	1280	7.0	06...	1430	51	1300	24.0
FEB					29...	1300	59	1310	25.5
11...	1200	55	1250	9.5	AUG				
MAR					20...	0800	75	1300	19.0
02...	1235	62	1180	10.0	SEP				
27...	0800	75	1340	11.5	01...	1405	62	1270	21.5
					11...	1140	58	1430	20.5
05430150 BADFISH CREEK NEAR COOKSVILLE, WI (LAT 42 50 00 LONG 089 11 48)									
OCT , 1986					APR , 1987				
27...	1335	121	1040	15.0	13...	1140	97	1160	12.5
DEC					JUN				
22...	1245	90	1090	5.0	02...	0940	105	1120	19.5
JAN , 1987					JUL				
07...	0900	99	1160	6.5	06...	1225	92	1270	22.5
22...	1110	98	1160	4.0	AUG				
MAR					20...	1040	101	1210	20.0
05...	1110	116	955	6.5					
05430175 YAHARA RIVER NEAR FULTON, WI (LAT 42 49 50 LONG 089 10 09)									
OCT , 1986					APR , 1987				
29...	1550	577	800	14.0	13...	0952	146	1160	12.5
DEC					JUN				
22...	1110	381	1000	3.5	02...	1135	355	870	21.5
JAN , 1987					JUL				
22...	0900	462	970	2.5	06...	0945	147	1180	21.0
MAR					AUG				
02...	0935	449	830	4.5	20...	1230	480	915	23.0
05430500 ROCK RIVER AT AFTON, WI (LAT 42 36 33 LONG 089 04 14)									
FEB , 1987					AUG , 1987				
06...	1200	1570	720	3.5	24...	0930	1300	575	21.5
JUN									
26...	1205	745	660	24.5					
05431486 TURTLE CREEK AT CARVERS ROCK ROAD NR CLINTON, WI (LAT 42 35 50 LONG 088 49 45)									
OCT , 1986					APR , 1987				
29...	0830	156	690	12.5	16...	1420	382	570	13.5
DEC					MAY				
23...	0930	114	675	2.5	28...	1130	155	670	23.5
FEB , 1987					JUL				
06...	0930	112	675	1.0	07...	1050	79	860	24.5
MAR					AUG				
03...	0840	155	620	2.5	17...	1020	254	620	22.5
05432500 PECATONICA RIVER AT DARLINGTON, WI (LAT 42 40 40 LONG 090 07 07)									
OCT , 1986					APR , 1987				
28...	0806	220	570	10.0	14...	0905	165	650	10.5
DEC					MAY				
01...	1230	169	680	3.0	26...	1450	204	640	11.5
JAN , 1987					JUL				
12...	1115	93	700	0.5	08...	1420	121	570	25.0
FEB					AUG				
26...	1100	122	680	3.0	18...	1445	172	600	23.5
05434500 PECATONICA RIVER AT MARTINTOWN, WI (LAT 42 30 34 LONG 089 47 58)									
OCT , 1986					APR , 1987				
29...	0910	1090	640	11.0	08...	1005	691	630	10.5
DEC					MAY				
03...	1318	834	640	3.0	26...	1030	714	610	11.0
JAN , 1987					JUL				
15...	1410	647	630	2.5	06...	1345	507	630	24.0
FEB					AUG				
23...	1320	549	630	4.0	18...	1245	1040	550	23.0

WATER-QUALITY PARTIAL-RECORD STATIONS

MISCELLANEOUS WATER-QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)	DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)
ROCK RIVER BASIN--CONTINUED									
05436500 SUGAR RIVER NEAR BRODHEAD, WI (LAT 42 36 42 LONG 089 23 53)									
OCT , 1986					APR , 1987				
29...	1115	605	560	12.0	08...	1235	342	560	12.5
DEC					MAY				
03...	0835	436	570	2.5	26...	0800	410	540	13.0
JAN , 1987					JUL				
14...	0818	322	580	1.5	06...	1010	271	560	24.0
FEB					AUG				
23...	0900	300	560	2.5	18...	0935	602	460	22.0
ILLINOIS RIVER BASIN									
05543830 FOX RIVER AT WAUKESHA, WI (LAT 43 00 17 LONG 088 14 37)									
OCT , 1986					APR , 1987				
06...	0845	594	540	11.5	02...	0935	132	870	3.5
NOV					MAY				
17...	0835	85	900	2.5	13...	0908	61	1020	16.0
DEC					JUN				
29...	0930	66	970	2.5	24...	1035	66	825	23.5
FEB , 1987					AUG				
10...	0839	64	960	0.5	04...	0935	52	900	26.5
05544200 MUKWONAGO RIVER AT MUKWONAGO, WI (LAT 42 51 24 LONG 088 19 40)									
OCT , 1986					MAY , 1987				
01...	1150	205	450	19.0	29...	1405	61	470	26.0
22...	0845	74	520	13.0	JUL				
DEC					09...	0845	65	430	27.5
12...	1110	63	610	2.0	23...	1230	38	450	30.0
JAN , 1987					AUG				
21...	0927	49	500	2.0	19...	0855	120	495	23.5
MAR					SEP				
04...	0817	87	485	3.5	24...	1150	46	510	18.5
APR									
16...	1055	144	495	13.0					
DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	TEMPER- ATURE WATER (DEG C) (00010)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)	DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	TEMPER- ATURE WATER (DEG C) (00010)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)
05544386 MUSKEGO CANAL NEAR WIND LAKE, WI (LAT 42 51 08 LONG 088 07 52)									
FEB 1987					JUL				
23...	1715	6.1	--	0.070	08...	1320	0.0	--	0.254
APR					AUG				
13...	1000	9.8	--	0.100	06...	1230	--	--	0.160
24...	1345	108	--	0.120	21...	1300	56	--	0.210
MAY					SEP				
26...	1745	13	--	0.220	22...	1400	107	--	0.160
JUN									
09...	1400	E0.40	21.0	0.210					
05544388 UNNAMED TRIB TO MUSKEGO CANAL NEAR WIND LAKE, WI (LAT 42 51 01 LONG 088 08 21)									
AUG , 1987									
21...	1600	E16	--	0.250					
DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)	DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (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)									
APR , 1987					JUL , 1987				
15...	1600	1940	580	11.0	07...	1749	452	635	27.5

E ESTIMATE.

GROUND-WATER RECORDS



Figure 6. Location of observation wells and ground-water-quality sites in Wisconsin.

ADAMS COUNTY

435759089490001. Local number, AD-17/06E/08-0076.

LOCATION.--Lat 43°57'59", long 89°49'00", Hydrologic Unit 07070003. Owner: Wis. Dept. of Natural Resources.

AQUIFER.--Sand and gravel.

WELL CHARACTERISTICS.--Driven observation water table well, diameter 1 1/4 in, depth 21 ft, cased to 19 ft, well point 19-21 ft.

DATUM.--Altitude of land-surface is 955 ft above National Geodetic Vertical Datum of 1929. Measuring point: top of casing, 1.50 ft above land-surface datum.

PERIOD OF RECORD.--September 1969 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 9.61 ft below land-surface datum. May 29, 1973; lowest water level measured, 18.14 ft below land-surface datum, Mar. 7, 1977.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 8	11.95	DEC 8	13.42	FEB 9	14.65	APR 6	14.36	JUN 9	14.48	AUG 4	14.78
13	12.07	16	13.63	17	14.74	13	14.30	19	15.28	10	14.92
20	12.26	22	13.78	23	14.82	21	14.15	26	14.67	17	15.04
27	12.21	29	13.85	MAR 2	14.80	MAY 1	13.72	30	14.66	25	15.20
NOV 3	12.57	JAN 5	14.02	9	14.32	12	13.70	JUL 6	14.77	31	15.24
10	13.02	12	14.05	16	14.54	18	13.71	15	14.91	SEP 8	15.38
17	12.98	20	14.30	23	14.45	26	13.86	20	15.22	14	15.51
24	13.04	26	14.42	31	14.08	JUN 1	14.01	27	14.80	24	15.46
DEC 1	13.23	FEB 2	14.44								

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 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 2	26.92	DEC 22	27.20	FEB 19	27.90	APR 24	28.30	JUN 12	28.90	AUG 20	29.30
22	26.90	JAN 20	27.60	MAR 20	28.20	MAY 14	28.60	JUL 30	29.40	SEP 18	29.70
NOV 22	27.30										

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.

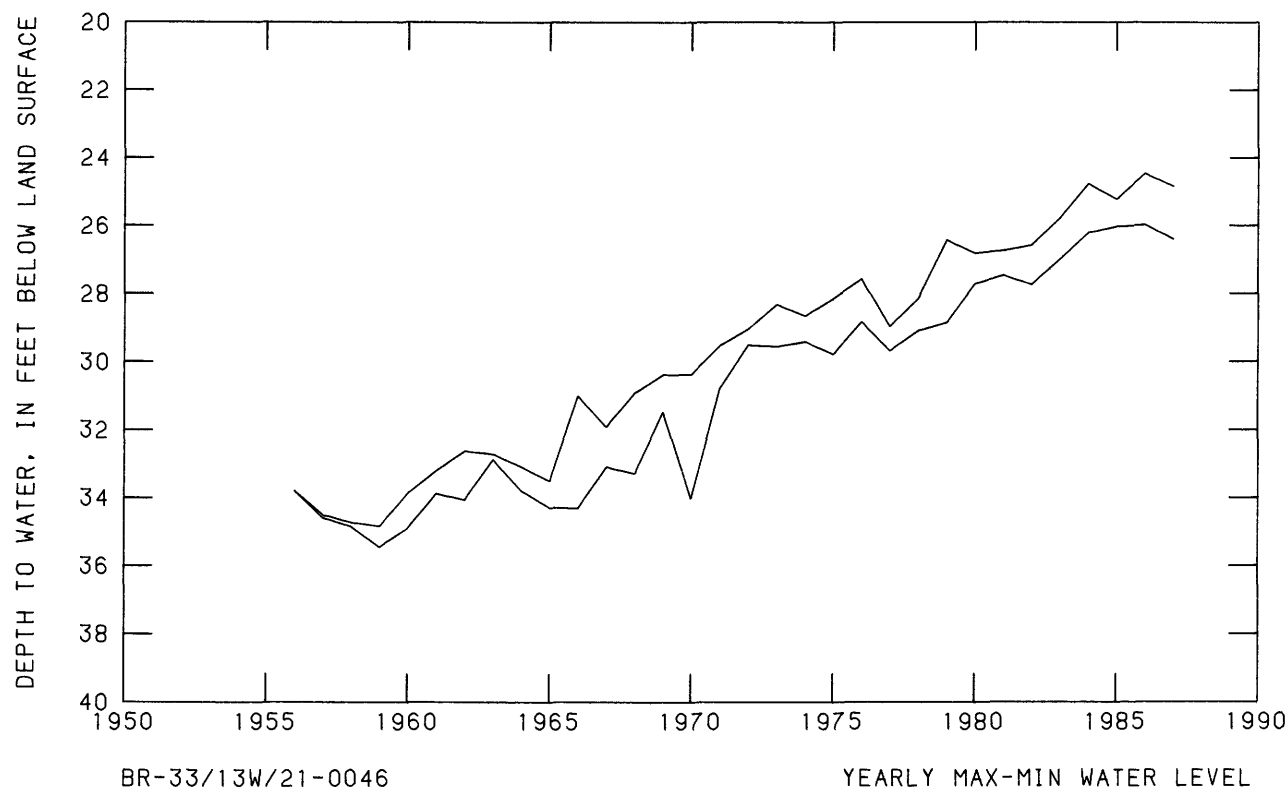
PERIOD OF RECORD.--October 1956 to current year.

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 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 2	24.77	NOV 17	24.60	JAN 27	24.93	MAR 26	25.25	MAY 26	25.59	JUL 29	25.87
9	24.89	28	24.63	FEB 4	25.28	APR 1	25.36	JUN 11	25.54	AUG 6	25.84
17	24.76	DEC 2	24.59	9	25.08	8	25.33	16	25.71	14	25.90
22	24.70	9	24.67	16	25.25	24	25.59	22	25.72	SEP 11	25.99
30	24.55	17	24.71	25	25.35	MAY 1	25.43	30	25.78	15	26.01
NOV 5	24.47	JAN 5	25.02	MAR 2	25.22	13	25.50	JUL 7	25.78	29	26.05
12	24.82	14	24.84	16	25.37	19	25.55				

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 1986 TO SEPTEMBER 1987

[illegible]

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 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 3	31.69	DEC 5	31.60	FEB 6	31.58	APR 10	31.64	JUN 12	31.80	AUG 7	32.02
10	31.80	12	31.51	13	31.62	17	31.69	19	31.91	14	32.03
17	31.75	19	31.54	20	31.71	24	31.80	26	31.92	21	32.04
24	31.66	26	31.55	27	31.67	MAY 1	31.73	JUL 3	31.91	28	32.07
31	31.60	JAN 2	31.60	MAR 6	31.64	8	31.82	10	31.93	SEP 4	32.07
NOV 7	31.58	9	31.58	13	31.71	15	31.79	17	31.97	11	32.11
14	31.59	16	31.63	20	31.65	22	31.81	24	31.98	18	32.11
21	31.56	23	31.54	27	31.64	29	31.81	31	32.01	25	32.11
28	31.60	30	31.57	APR 3	31.67	JUN 5	31.88				

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 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 6	26.90	DEC 9	26.37	FEB 9	26.78	APR 13	27.30	JUN 16	26.95	AUG 11	27.63
13	26.45	17	26.23	16	26.11	19	27.20	22	27.67	17	27.59
21	26.31	22	26.46	23	27.07	27	27.42	29	27.74	25	27.87
28	25.97	30	26.44	MAR 3	27.08	MAY 5	27.57	JUL 7	27.75	31	27.54
NOV 3	26.03	JAN 6	26.49	10	27.42	11	27.23	12	27.80	SEP 8	27.54
10	26.61	12	26.49	17	27.26	19	27.35	21	27.99	16	27.72
17	26.08	19	26.46	23	26.90	26	27.33	28	27.86	21	27.86
25	26.14	27	26.48	31	26.99	JUN 3	27.69	AUG 3	27.54	28	27.67
DEC 2	26.52	FEB 2	26.23	APR 6	27.38	8	26.67				

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 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 9	52.70	FEB 19	52.23	APR 28	50.00	JUN 12	52.40	JUL 28	53.07	JUL 30	53.50
DEC 18	51.93	MAR 11	52.40								

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 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 6	114.70	NOV 24	114.60	DEC 22	100.50	JAN 26	108.80	FEB 23	107.50	MAR 23	106.70
13	113.50	DEC 1	112.20	JAN 5	106.50	FEB 2	109.50	MAR 2	109.70	APR 6	111.50
20	113.95	8	110.50	12	105.30	9	108.50	9	106.50	14	114.50
NOV 17	113.20	15	111.50	20	110.10	16	108.40	16	110.50	SEP 23	113.93

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 1986 TO SEPTEMBER 1987
LOWEST VALUE

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	21.33	21.84	22.46	22.79	23.59	23.59	23.39	23.21	23.74	24.11	24.77	24.71
10	22.24	22.12	22.61	22.95	23.24	23.73	23.66	23.16	23.97	24.78	24.21	24.83
15	22.33	22.02	22.75	23.12	23.32	23.41	23.81	23.59	26.27	24.95	24.22	24.67
20	21.86	22.32	22.86	23.02	23.52	23.54	24.46	23.43	26.75	24.97	23.96	23.90
25	21.90	22.30	22.60	22.97	23.60	23.32	23.27	22.95		24.81	24.77	24.25
EOM	21.86	22.12	22.73	22.97	23.37	23.47	23.43	23.22		24.32	24.53	24.26

WTR YEAR 1987 MAX 27.07 JUN 18 MIN 20.47 OCT 5

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 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 30	17.65	DEC 29	20.60	FEB 27	18.94	APR 29	17.24	JUN 29	20.31	SEP 30	19.43
NOV 20	18.34	JAN 30	19.25	MAR 31	18.07	MAY 29	18.72	AUG 27	20.76		

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 111 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 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 8	28.57	JAN 13	46.16	APR 8	27.62	JUN 17	46.29	JUL 14	46.31	AUG 19	46.16
NOV 17	46.29	FEB 11	46.28								

445055087213801. Local number, DR-27/26E/05-0265

LOCATION.--Lat 44°50'55", long 87°21'38", Hydrologic Unit 04030102. Owner: U.S. Geol. Survey.

AQUIFER.--Silurian dolomite.

WELL CHARACTERISTICS.--Drilled observation, diameter 6 in, depth 442 ft, cased to 170 ft, open end.

DATUM.--Altitude of land-surface is 616 ft above National Geodetic Vertical Datum of 1929. Measuring point: top of casing, 1.57 ft above land-surface datum.

REMARKS.--Water level affected by pumping of nearby wells.

PERIOD OF RECORD.--September 1971 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 1.57 ft above land-surface datum, June 18, 1974; lowest water level, 35.33 ft below land-surface datum, Feb. 1, 1977.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
LOWEST VALUE

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	15.50	17.80	21.56	24.37	27.66	20.21	19.67	17.21		24.81	26.31	30.20
10	15.57	18.62	21.80	24.24	27.79	17.57	14.68	17.22		27.16	27.03	30.47
15	15.18	19.78	22.38	25.25	27.83	17.91	14.88	18.93		27.71	26.78	29.67
20	14.60	20.27	22.60	25.53	28.43	18.30	14.38	19.02	26.78	29.91	26.90	23.74
25	15.29	20.60	22.21	27.04	27.09	19.20	15.57	18.66	25.15	28.20	28.99	19.40
EOM	16.65	20.87	23.49	26.98	26.59	19.45	16.06		24.98	29.34	29.97	20.87

WTR YEAR 1987 MAX 30.69 SEP 8 MIN 11.98 APR 18

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 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 6	2.37	DEC 8	1.86	FEB 9	5.27	APR 13	6.08	JUN 15	8.58	AUG 10	10.45
15	0.05	15	2.11	16	5.87	20	6.51	22	8.89	17	10.67
20	0.52	22	2.35	23	6.63	27	6.52	29	9.13	24	10.93
27	1.12	29	2.47	MAR 2	7.00	MAY 4	6.65	JUL 6	8.91	31	11.09
NOV 3	1.03	JAN 5	2.60	10	7.42	11	7.27	13	9.66	SEP 8	11.25
10	0.95	12	2.68	17	7.87	19	7.56	20	9.85	14	11.34
17	1.47	20	3.16	24	5.75	26	7.55	27	9.98	21	11.56
24	1.54	26	3.82	30	4.94	JUN 1	7.85	AUG 3	10.09	28	11.71
DEC 1	1.61	FEB 3	4.65	APR 6	5.54	8	8.21				

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 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 9	13.04	NOV 17	14.28	FEB 4	17.51	MAR 30	18.47	JUN 5	17.04	AUG 3	21.13
16	13.31	JAN 13	16.37	20	18.20	MAY 8	15.42	JUL 1	20.09	SEP 1	21.72
29	13.63	19	16.54	MAR 4	18.58	19	16.56	16	20.68		

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 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 1	10.89	DEC 31	10.92	FEB 25	10.84	APR 30	11.30	JUN 24	11.60	AUG 25	11.40
29	10.96	JAN 27	11.13	APR 1	11.30	MAY 29	11.32	JUL 30	11.41	SEP 30	11.55
NOV 26	11.10										

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.

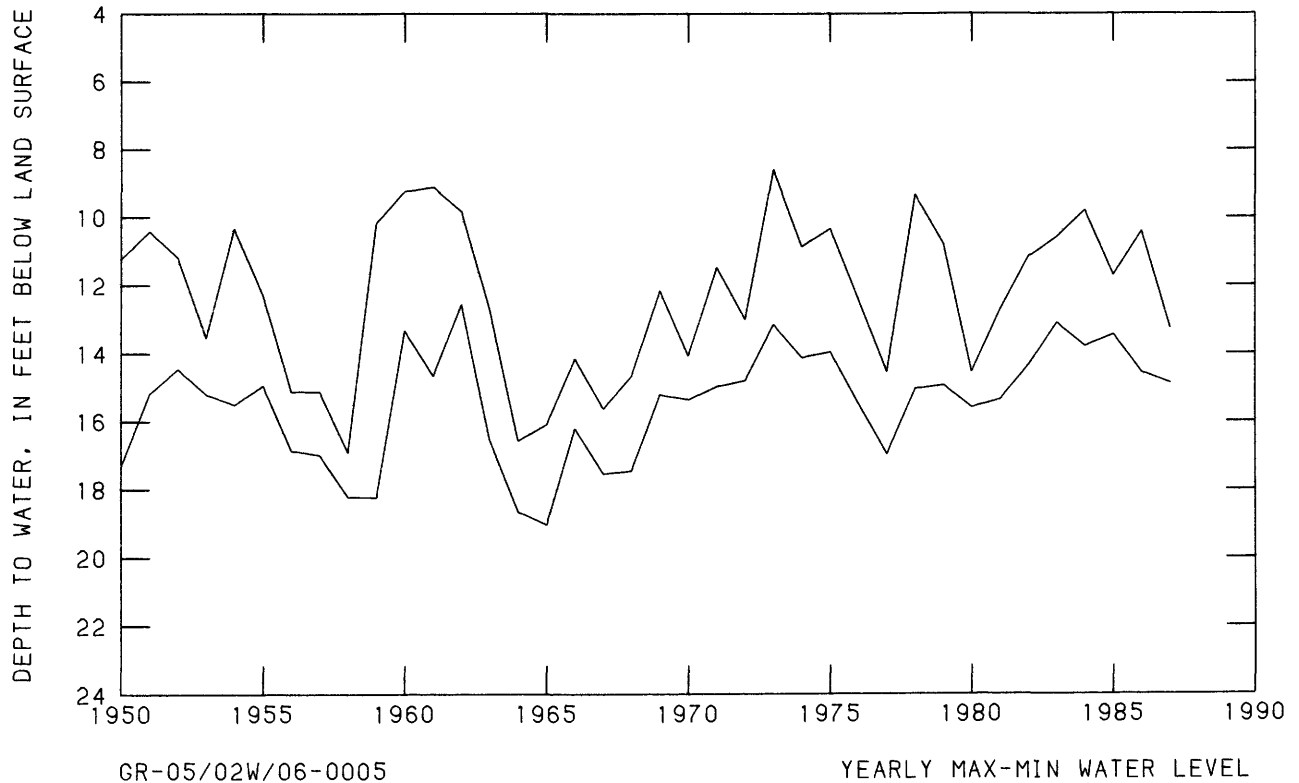
PERIOD OF RECORD.--July 1946 to current year.

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 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 17	13.62	DEC 22	14.56	FEB 16	14.82	APR 21	14.62	JUN 17	14.15	AUG 6	14.40
NOV 17	14.11	JAN 26	14.88	MAR 13	14.76	MAY 18	14.08	JUL 10	14.42	SEP 9	13.44

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 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
JAN 7	58.24	APR 6	59.24	JUN 16	57.83	JUL 21	59.29	AUG 28	54.55	SEP 10	54.48
FEB 5	58.91	MAY 26	56.98								

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 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 8	57.89	DEC 1	58.33	FEB 10	58.98	MAR 18	58.84	MAY 14	58.06	JUL 7	57.53
28	57.50	11	58.31	26	59.39	APR 6	59.11	JUN 10	58.27	AUG 17	58.22
NOV 13	58.38	JAN 8	58.88	MAR 11	58.99	7	58.93	26	57.31	SEP 21	58.39
20	57.74	12	58.74								

GROUND-WATER LEVELS

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 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 14	18.00	JAN 14	19.00	MAR 16	19.80	MAY 19	19.04	JUL 8	19.78	AUG 18	19.94
NOV 11	18.10	FEB 17	19.06	APR 20	19.94	JUN 15	19.90	17	20.35	SEP 18	19.40
DEC 11	18.18	20	19.56	MAY 13	19.76						

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 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 11	11.09	MAY 12	10.98	JUL 8	11.55	JUL 27	11.66	AUG 13	11.61	SEP 9	11.91
FEB 20	11.44										

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 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 29	198.86	DEC 15	198.63	MAR 3	206.75	MAY 29	207.71	JUL 8	207.40

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 1986 TO SEPTEMBER 1987
LOWEST VALUE

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5		23.06	26.33		30.69	32.23	32.66	32.15	32.73	33.51	34.83	35.66
10		23.85	26.40		30.64	32.62	31.87	31.71	32.89	33.73	35.01	35.74
15		23.90	26.70	29.14	31.12	32.62	31.78	32.26	32.85	34.07	34.96	35.85
20		24.57	27.24	29.13	31.52	32.68	32.00	32.01	32.89	34.40	35.47	36.02
25		25.00	27.41	29.66	31.93	32.37	32.26	32.32	33.13	34.53	35.65	36.40
EOM	23.15	25.75		29.95	31.61	32.62	31.97	32.30	33.50	34.60	35.68	36.45
WTR YEAR 1987	MAX	36.45	SEP 30	MIN	22.74	NOV 8						

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 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 28	14.02	JAN 12	15.24	MAR 18	15.33	MAY 27	11.68	JUN 23	14.55	AUG 18	15.34
NOV 20	13.53	FEB 26	15.85	APR 14	14.19	JUN 16	13.92	JUL 8	15.05	SEP 21	15.84
DEC 1	14.75										

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 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 27	8.09	DEC 19	9.50	FEB 27	10.65	APR 27	10.55	JUN 26	10.84	AUG 29	11.08
NOV 21	8.89	JAN 28	10.21	MAR 27	10.69	MAY 26	10.69	JUL 27	10.57	SEP 28	11.36

GROUND-WATER LEVELS

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 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 3	6.69	OCT 30	7.20	NOV 21	7.67	DEC 11	8.05	DEC 31	8.28	JAN 14	8.40
10	7.06	NOV 8	7.40	26	7.87	19	8.18	JAN 3	8.38	24	8.60
15	6.30	14	7.60	DEC 6	8.00	24	8.05	8	8.30	28	9.58
24	6.96										

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.

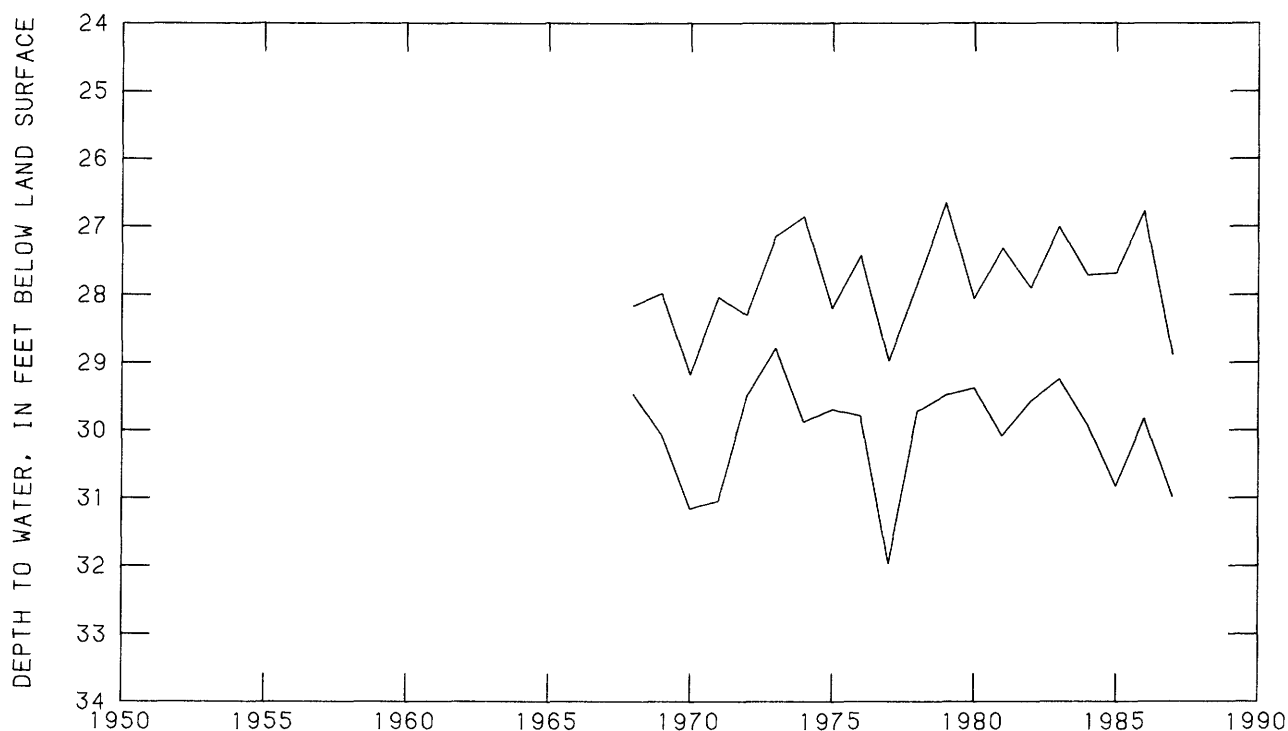
DATUM.--Altitude of land-surface is 670 ft above National Geodetic Vertical Datum of 1929. Measuring point: 1/4-in hole in pump base, 1.00 ft above land-surface datum.

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, 31.97 ft below land-surface datum, Jan. 26, 1977.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 13	27.83	JAN 16	29.20	MAR 3	29.60	MAY 21	29.03	JUL 15	30.65	AUG 25	30.70
20	27.60	FEB 4	29.60	APR 1	29.03	JUN 4	29.54	AUG 11	30.69	SEP 4	30.98
DEC 3	27.33	23	28.88	8	29.09	JUL 8	30.60				



MN-19/23E/35-0028

YEARLY MAX-MIN WATER LEVEL

MARATHON COUNTY

444114090082501. Local number, MR-26/03E/33-0007.

LOCATION.--Lat 44°41'14", long 90°08'25", Hydrologic Unit 07070002. Owner: City of Marshfield.

AQUIFER.--Sand and gravel.

WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 7 in, depth 49 ft, cased to 30 ft, screened 30-49 ft.

DATUM.--Altitude of land-surface is 1,190 ft above National Geodetic Vertical Datum of 1929. Measuring point: top of casing, 1.00 ft above land-surface datum.

REMARKS.--Water level affected by pumping of nearby wells.

PERIOD OF RECORD.--June 1950 to Aug. 31, 1987.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 1.16 ft below land-surface datum, Nov. 12, 1982; lowest water level, 38.96 ft below land-surface datum, Jan. 9, 1975.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
LOWEST VALUE

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	2.66	6.54	6.97	8.18	17.24	8.48	7.63	8.51	17.24			
10	3.59	6.74	7.16	8.60	19.47	8.24	8.10	8.68	19.27			
15	2.59	6.96	7.40	9.23	20.96	8.10	7.53	9.12				
20	4.14	7.27	7.64	10.47	22.33	8.16	7.63	9.78		22.35		
25	5.20	7.28	7.83	12.42		8.21	7.64	11.56	23.13			
EOM	6.27	7.13	7.98	15.26		7.97	7.87	14.45	24.17		7.40	
WTR YEAR 1987	MAX	24.17	JUN 30	MIN	2.70	OCT 11						

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 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 5	14.19	NOV 30	13.15	FEB 1	13.55	APR 5	14.43	JUN 7	15.26	AUG 9	16.03
12	13.82	DEC 7	13.16	8	13.81	12	14.52	14	15.33	16	16.08
19	13.45	14	13.17	15	13.95	19	14.59	21	14.43	23	16.15
26	13.18	21	13.23	22	14.06	26	14.69	28	15.48	30	16.16
NOV 2	13.18	28	13.23	MAR 1	14.06	MAY 3	14.77	JUL 5	15.63	SEP 6	16.33
5	12.92	JAN 5	13.31	8	14.08	10	14.83	12	15.63	14	16.42
9	13.18	11	13.45	15	14.14	17	14.96	20	15.79	20	16.49
16	13.18	18	13.54	22	14.24	24	15.06	26	15.89	27	16.57
23	13.05	25	13.54	29	14.35	31	15.25	AUG 2	15.94		

MARINETTE COUNTY

453816087590101. Local number, MT-37/20E/34-0007.

LOCATION.--Lat 45°38'16", long 87°59'01", Hydrologic Unit 04030108. Owner: Wis. Dept. of Natural Resources.

AQUIFER.--Sand and gravel.

WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 8 in, depth 33 ft, cased to 33 ft, open end.

DATUM.--Altitude of land-surface is 980 ft above National Geodetic Vertical Datum of 1929. Measuring point: pointer on float gage, 4.00 ft above land-surface datum.

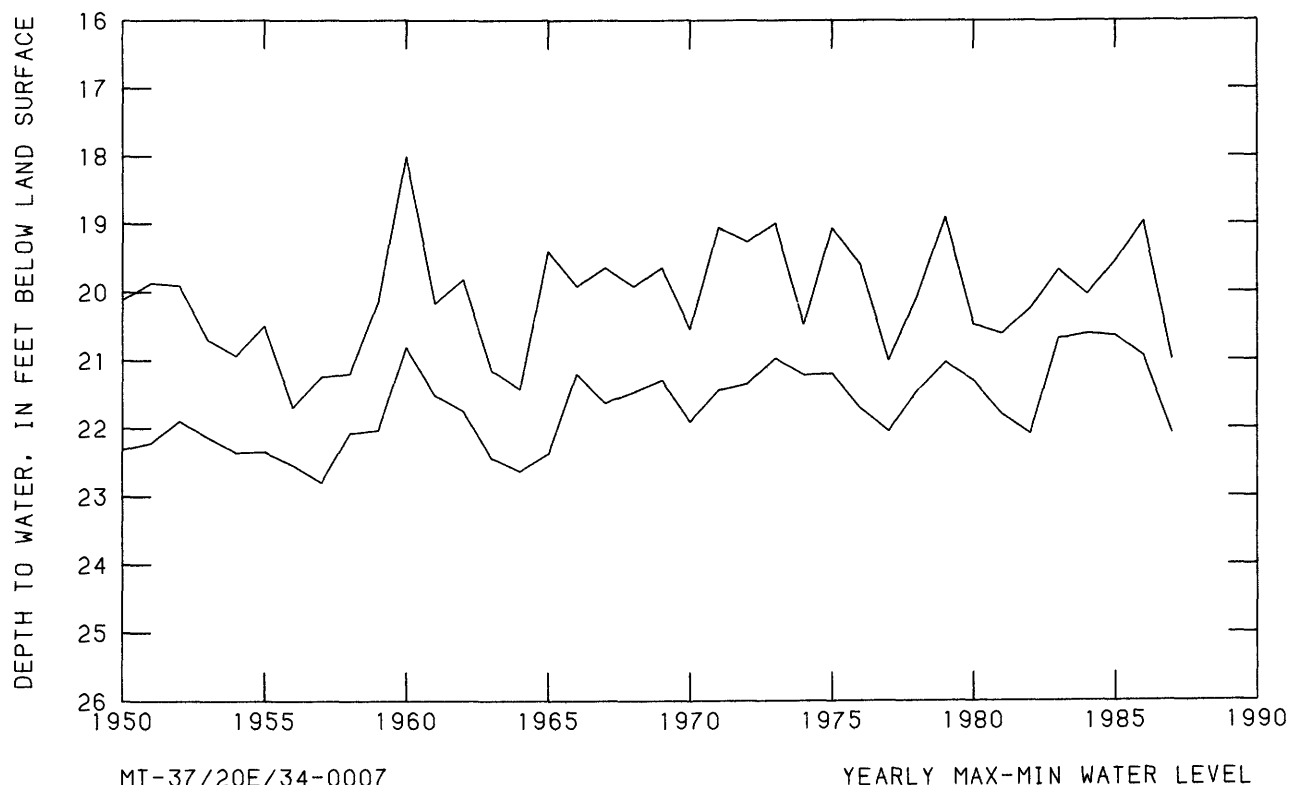
PERIOD OF RECORD.--March 1939 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 18.01 ft below land-surface datum, May 17, 1960; lowest water level measured, 23.26 ft below land-surface datum, Nov. 2, 1948.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 7	20.55	DEC 9	20.78	FEB 10	21.30	APR 14	21.38	JUN 16	21.53	AUG 11	21.84
14	20.51	16	20.83	17	21.33	21	21.28	23	21.61	18	21.86
21	20.41	23	20.88	24	21.40	28	21.20	30	21.68	25	21.92
28	20.41	30	20.94	MAR 3	21.48	MAY 5	21.24	JUL 7	21.75	SEP 1	21.98
NOV 4	20.50	JAN 6	20.99	10	21.43	12	21.35	14	21.78	8	22.08
11	20.57	13	21.03	17	21.45	19	21.44	21	21.81	15	21.98
18	20.63	20	21.09	24	21.50	26	21.38	28	21.86	22	21.99
25	20.66	27	21.18	31	21.48	JUN 2	21.33	AUG 4	21.85	29	22.00
DEC 2	20.71	FEB 3	21.24	APR 7	21.45	9	21.45				

MARINETTE COUNTY



MARQUETTE COUNTY

435244089293401. Local number, MQ-16/08E/12-0009.

LOCATION.--Lat 43°52'44", long 89°29'34", Hydrologic Unit 04030201. Owner: Village of Westfield.

AQUIFER.--Sandstone.

WELL CHARACTERISTICS.--Drilled unused artesian well, diameter 6 in, depth 274 ft.

DATUM.--Altitude of land-surface is 880 ft above National Geodetic Vertical Datum of 1929. Measuring point: top of casing, at land-surface datum.

PERIOD OF RECORD.--October 1949 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 12.89 ft below land-surface datum, Oct. 24, 1986; lowest water level measured, 18.21 ft below land-surface datum, Feb. 18, 1965.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 24	12.89	DEC 17	13.41	MAY 8	13.81	JUL 10	14.19	SEP 9	14.69	SEP 15	14.70
NOV 17	12.99	APR 20	14.00	MAY 26	13.89	AUG 13	14.48				

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 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 24	14.89	DEC 17	15.54	MAY 8	15.37	JUL 10	16.94	SEP 9	17.93	SEP 15	17.95
NOV 17	15.21	APR 20	15.72	MAY 26	15.65	AUG 13	17.50				

425819087551201. Local number. ML-06/22E/20-0085.

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, 295.09 ft below land-surface datum, Sept. 30, 1987.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	287.58	288.32	287.93	287.05	285.91	286.55	286.10	286.47	287.05	288.87		294.34
10	287.86	288.43	287.49	286.44	285.94	286.50	285.77	286.15	287.40			294.43
15	287.71	288.15	287.49	286.15	286.21	286.33	285.77	286.76	287.42			294.50
20	288.08	288.04	287.56	286.07	286.33	286.07	286.00	286.59	287.83			294.77
25	288.06	288.10	287.37	286.05	286.65	285.70	286.33	286.87	288.14			295.04
EOM	288.40	288.17	287.18	285.72	286.40	285.94	286.23	286.73	288.70		293.97	295.09

WTR YEAR 1987 MAX 295.09 SEP 30 MIN 285.13 FEB 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 1986 TO SEPTEMBER 1987

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	56.03	55.83	55.88	56.30	57.21	57.43	57.99	58.93	58.23	58.69	60.15	61.15
10	56.22	55.91	55.66	56.30	57.15	57.55	57.84	58.56	58.47	58.90	60.40	60.96
15	55.93	55.86	55.80	56.77	57.24	57.45	57.94	58.60	57.95	59.10	60.42	60.96
20	56.17	55.51	55.79	56.62	57.36	57.43	58.25	58.14	57.98	59.34	60.83	60.91
25	55.90	55.61	55.63	56.97	57.55	57.12	58.73	58.28	58.10	59.59	61.08	61.16
EOM	55.94	56.00	55.90	56.81	57.34	57.54	58.65	58.01	58.48	59.73	60.95	61.08

WTR YEAR 1987 MAX 61.20 SEP 4 MIN 55.32 NOV 20

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.

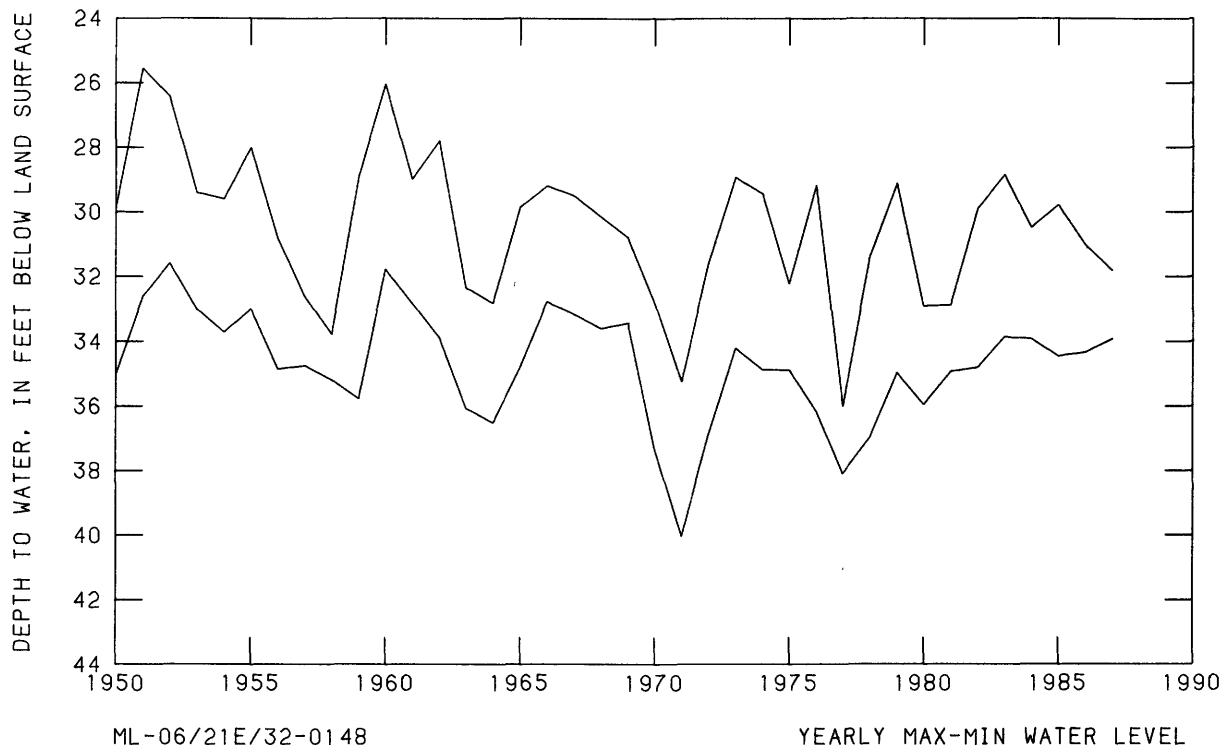
PERIOD OF RECORD.--September 1946 to current year.

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 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 30	31.59	JAN 28	33.43	APR 22	32.68	MAY 19	31.86	JUL 23	32.97	SEP 2	32.68
NOV 26	32.13	FEB 24	33.93	28	31.81	JUN 25	32.56	AUG 26	32.62	29	32.99
DEC 29	32.76	MAR 31	33.18								

MILWAUKEE COUNTY



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 1986 TO SEPTEMBER 1987
LOWEST VALUE

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	6.28	6.87	6.98	6.95	7.04	7.06	6.89	6.88	7.05	7.18	6.70	7.05
10	6.68	6.94	7.02	6.96	7.01	6.74	6.90	6.89	7.10	7.16	6.87	7.06
15	6.69	6.90	7.01	7.05	7.04	6.91	6.94	6.95	7.09	7.18	6.89	7.09
20	6.75	6.88	6.92	7.06	7.05	6.90	6.94	6.95	7.10	7.22	6.79	7.04
25	6.80	6.90	6.90	7.11	7.08	6.85	6.49	7.01	7.13	7.23	6.91	7.08
EOM	6.85	6.94	6.90	7.04	7.06	6.83	6.76	7.00	7.17	6.54	7.00	7.10

WTR YEAR 1987 MAX 7.23 JUL 25 MIN 5.27 JUL 31

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, 7.75 ft below land-surface datum, Mar. 2, 1977.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
LOWEST VALUE

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	3.86	4.49	5.20	5.79	6.32	6.66	6.73	5.79	6.00	6.62		
10	3.77	4.63	5.29	5.89	6.39	6.66	6.70	5.92	6.14	6.71		
15	3.77	4.76	5.40	6.01	6.46	6.69	6.71	5.64	6.26			
20	4.03	4.90	5.51	6.07	6.53	6.71	6.75	5.58	6.37			
25	4.19	5.00	5.61	6.17	6.61	6.72	6.03	5.67	6.44			
EOM	4.37	5.11	5.71	6.23	6.64	6.72	5.76	5.85	6.53			

WTR YEAR 1987 MAX 6.78 JUL 14 MIN 3.69 OCT 8

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 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 18	9.80	DEC 20	9.90	FEB 12	9.97	MAY 20	9.98	JUN 12	10.03	JUL 15	10.38
DEC 16	9.92	JAN 14	9.91	APR 9	9.79						

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 1986 TO SEPTEMBER 1987
LOWEST VALUE

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	15.57	15.47	15.48	15.76	16.04	16.30	16.67	16.77	16.80	16.87	16.95	17.20
10	15.64	15.47	15.50	15.81	16.08	16.35	16.69	16.75	16.80	16.90	17.00	17.24
15	15.57	15.40	15.55	15.87	16.12	16.40	16.72	16.77	16.82	16.85	17.02	17.28
20	15.55	15.38	15.61	15.88	16.17	16.46	16.75	16.77	16.83	16.91	17.06	17.29
25	15.55	15.40	15.64		16.23	16.52	16.75	16.78	16.84	16.93	17.12	17.32
EOM	15.52	15.46		15.99	16.24	16.60	16.75	16.78	16.86	16.93	17.16	17.36

WTR YEAR 1987 MAX 17.36 SEP 30 MIN 15.36 NOV 17

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 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 6	27.88	DEC 7	27.16	FEB 9	27.49	APR 13	28.22	JUN 15	28.94	AUG 11	29.13
12	27.55	15	27.17	15	27.42	20	28.25	22	28.92	17	29.29
19	27.27	21	27.13	22	27.90	27	28.57	29	28.89	23	29.26
27	27.52	29	27.13	28	27.86	MAY 3	28.57	JUL 5	28.96	31	29.27
NOV 3	27.25	JAN 5	27.34	MAR 9	27.49	10	28.69	13	28.94	SEP 5	29.35
10	27.01	11	27.57	16	27.84	17	28.88	21	28.92	15	29.35
17	27.23	19	27.45	22	28.22	27	28.68	27	29.08	21	29.43
24	27.22	25	27.35	29	28.06	31	28.72	AUG 2	29.25	27	29.49
30	26.96	31	27.65	APR 6	28.08	JUN 8	28.82				

OUTAGAMIE COUNTY

441734088251101. Local number, OU-21/17E/15-0029.

LOCATION.--Lat 44°17'34", long 88°25'11", Hydrologic Unit 04030204. Owner: Highland Memorial Park.

AQUIFER.--Sandstone.

WELL CHARACTERISTICS.--Drilled irrigation artesian well, diameter 10 in, depth 300 ft.

DATUM.--Altitude of land-surface is 839 ft above National Geodetic Vertical Datum of 1929. Measuring point: top of breather hole, 2.00 ft above land-surface datum.

PERIOD OF RECORD.--July 1951 to May 7, 1987.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 54.84 ft below land-surface datum, Nov. 24, 1955; lowest water level measured, 64.48 ft below land-surface datum, Dec. 30, 1976.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 31	60.90	DEC 18	56.81	JAN 7	57.24	FEB 12	57.77	MAR 6	57.37	MAY 6	57.04

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 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 9	30.00	DEC 2	30.38	FEB 9	31.54	APR 3	32.36	JUN 11	33.36	AUG 13	34.17
NOV 5	30.04	JAN 7	30.92	MAR 2	31.76	MAY 19	33.03	JUL 7	33.80	SEP 15	34.57

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.

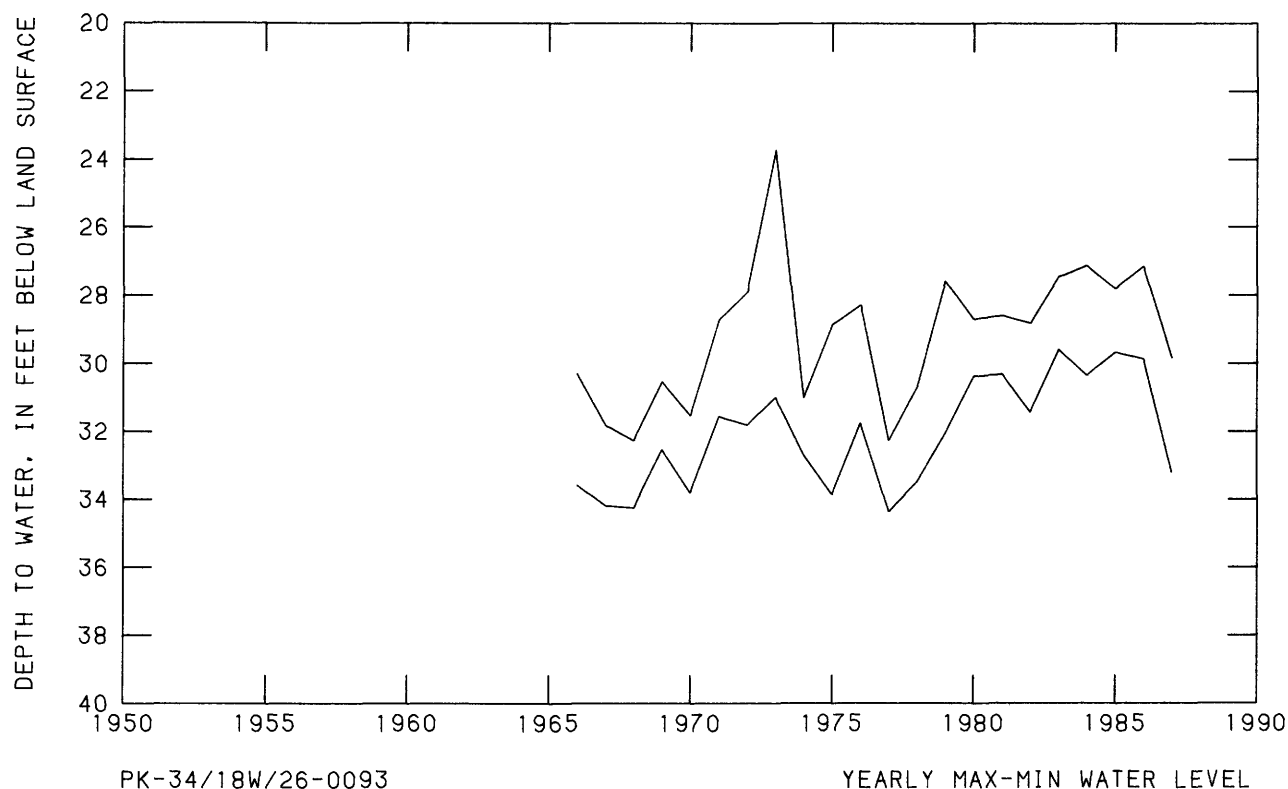
PERIOD OF RECORD.--March 10, 1966 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 23.72 ft below land-surface datum, June 20, 1973; lowest water level measured, 34.37 ft below land-surface datum, Sept. 6, 1977.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
JAN 16	29.83	MAY 19	31.60	JUN 19	32.00	JUL 24	32.40	AUG 20	32.70	SEP 10	33.10
FEB 9	30.22	21	31.60	26	32.10	31	32.50	27	32.80	15	33.01
MAR 2	30.59	29	31.60	JUL 1	32.10	AUG 7	32.60	31	32.86	25	33.10
APR 3	30.94	JUN 5	31.80	8	32.20	14	32.70	SEP 4	32.50	30	33.20
MAY 13	31.50	11	31.90	17	32.30						

POLK COUNTY



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 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 11	29.31	DEC 20	29.22	FEB 28	29.32	APR 25	29.48	JUN 20	29.71	AUG 15	29.98
25	29.30	JAN 3	29.23	MAR 14	29.36	MAY 9	29.54	JUL 4	29.78	29	30.06
NOV 8	29.28	17	29.23	28	29.40	23	29.59	18	29.84	SEP 12	30.13
22	29.26	31	29.25	APR 11	29.44	JUN 6	29.65	AUG 1	29.91	26	30.22
DEC 6	29.24	FEB 14	29.27								

GROUND-WATER LEVELS

PORTAGE COUNTY

442623089302701. Local number, PT-23/08E/25-0376.

LOCATION.--Lat 44°26'23", long 89°30'27", Hydrologic Unit 07070003. Owner: U. S. Geol. Survey.

AQUIFER.--Sand and gravel.

WELL CHARACTERISTICS.--Driven observation water table well, diameter 1 1/4 in, depth 36 ft, cased to 34 ft, well point 34-36 ft.

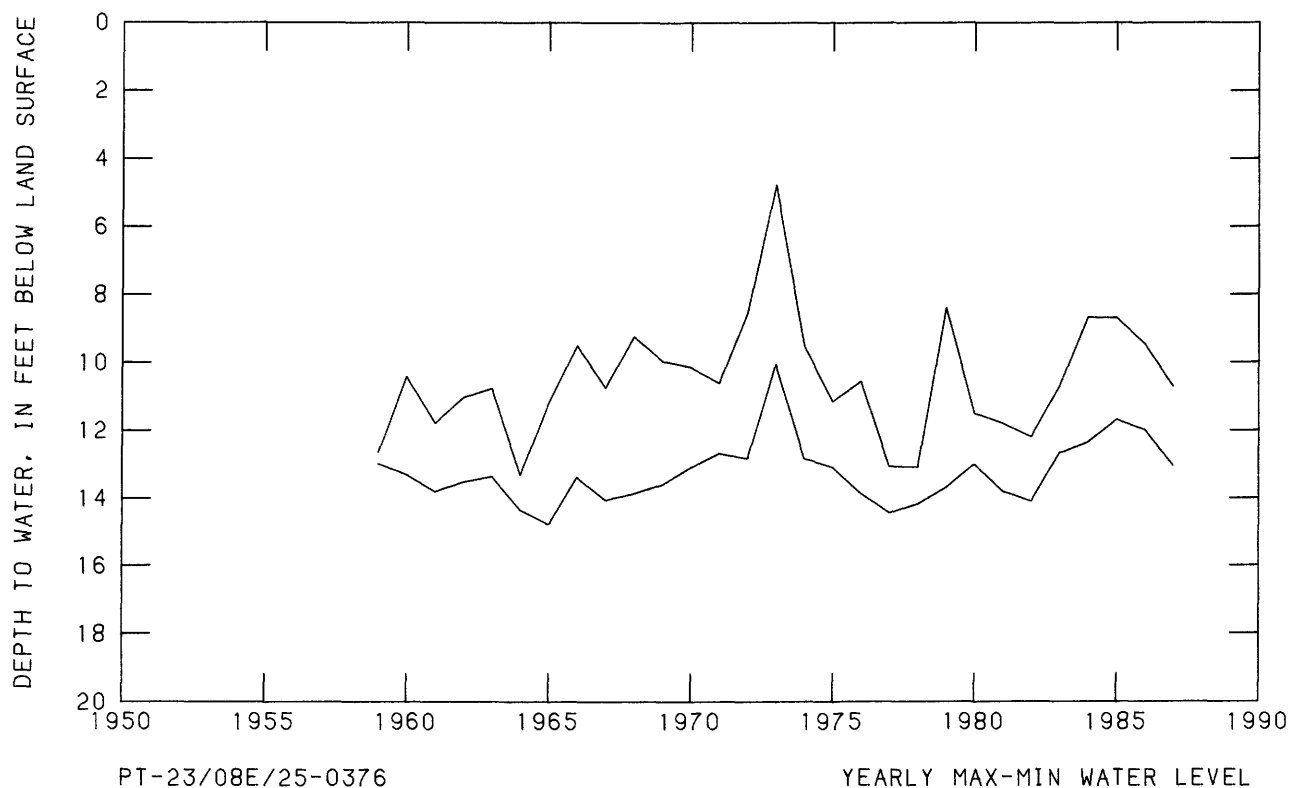
DATUM.--Altitude of land-surface is 1,099 ft above National Geodetic Vertical Datum of 1929. Measuring point: top of casing, 4.20 ft above land-surface datum.

PERIOD OF RECORD.--December 1, 1959, to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 4.77 ft below land-surface datum, June 5, 1973; lowest water level measured, 14.78 ft below sand-surface datum. Feb. 28, 1965.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 2	9.93	DEC 19	10.32	MAR 17	11.49	MAY 8	11.48	JUL 1	11.90	AUG 13	12.76
NOV 6	9.47	JAN 15	10.71	APR 16	11.57	JUN 17	11.90	27	12.53	SEP 9	13.04
19	9.75	FEB 13	11.20								



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.

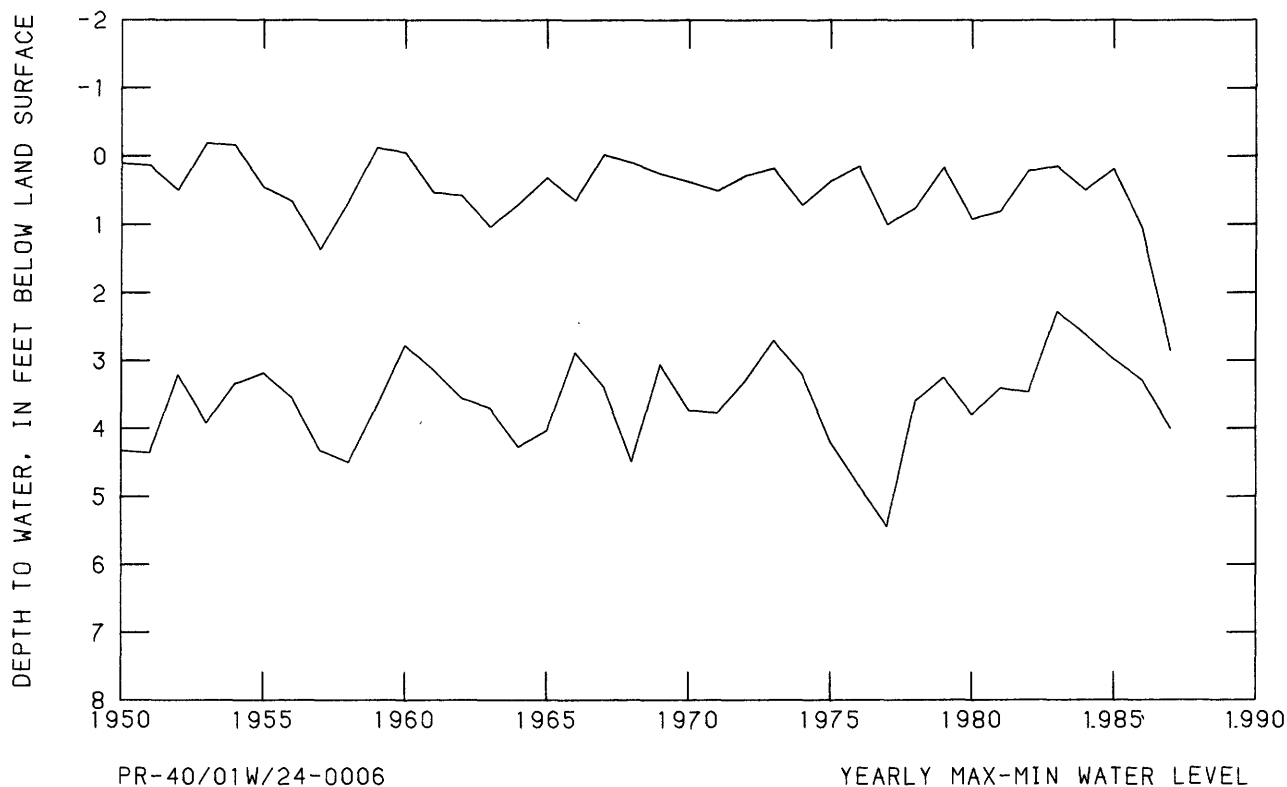
DATUM.--Altitude of land-surface is 1,510 ft above National Geodetic Vertical Datum of 1929. Measuring point: top of casing, 5.00 ft above land-surface datum.

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 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 3	2.45	DEC 5	2.92	JAN 30	3.80	APR 3	2.85	JUN 5	3.46	AUG 7	3.53
10	2.68	12	3.02	FEB 7	3.35	10	3.00	12	3.59	14	3.59
17	2.20	19	3.08	14	3.46	17	3.08	19	3.70	21	3.63
24	2.38	26	3.08	21	3.55	24	3.20	26	3.75	28	3.66
31	2.43	31	3.07	28	3.46	MAY 1	3.29	JUL 3	4.00	SEP 4	3.10
NOV 7	2.28	JAN 2	3.07	MAR 6	2.98	8	3.47	10	3.60	11	3.09
14	2.14	9	3.06	13	2.85	15	3.65	17	3.60	18	3.07
21	2.10	16	3.32	20	2.90	22	3.41	24	3.26	25	3.40
28	2.22	23	3.34	27	2.96	29	3.35	31	3.50	30	3.44



GROUND-WATER LEVELS

RACINE COUNTY

424202087542301. Local number, RA-03/22E/21-0005.

LOCATION.--Lat 42°42'02", long 87°54'23", Hydrologic Unit 04040002. Owner: Chicago, Milwaukee, St. Paul and Pacific Railroad Co.

AQUIFER.--Sandstone.

WELL CHARACTERISTICS.--Drilled unused artesian well, diameter 12 in, depth 1,176 ft, cased to 586 ft, 10 in liner 976-1,083 ft.

DATUM.--Altitude of land-surface is 730 ft above National Geodetic Vertical Datum of 1929. Measuring point: top of casing, 1.00 ft above land-surface datum.

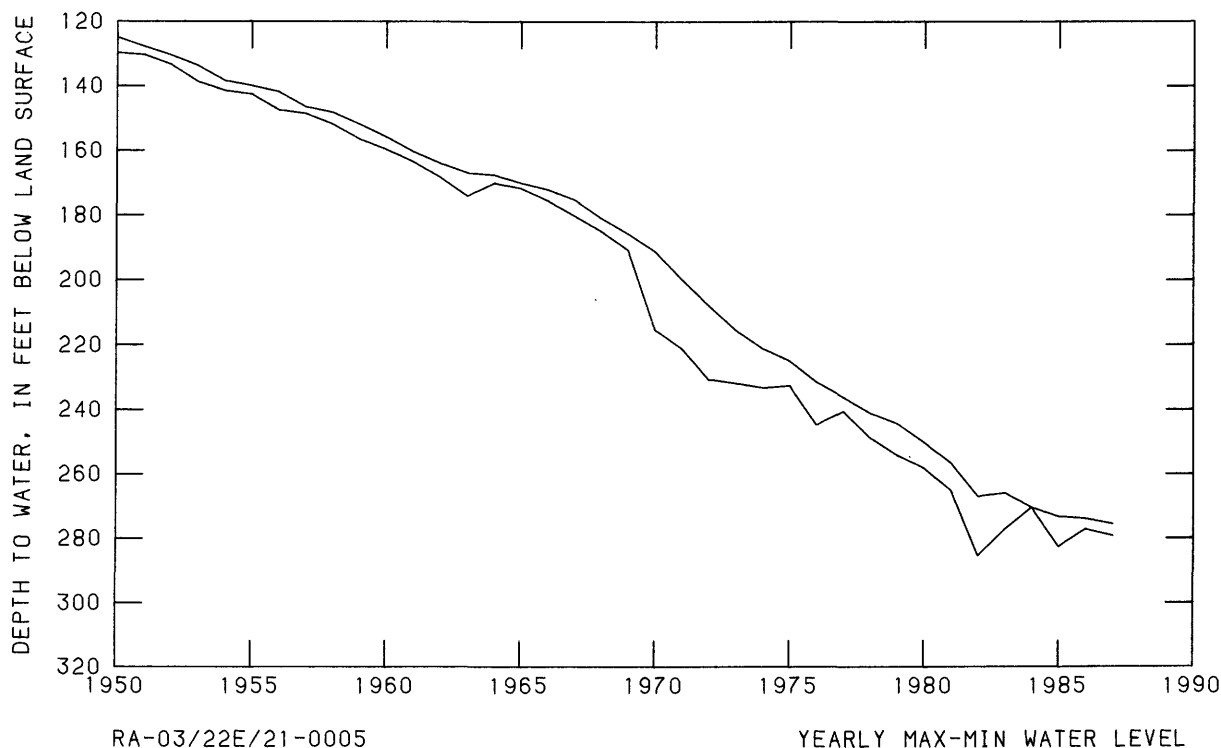
REMARKS.--Water level affected by regional pumping of wells.

PERIOD OF RECORD.--July 1946 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 109.00 ft below land-surface datum, July 29, 1946; lowest water level measured, 282.54 ft below land-surface datum, Aug. 20, 1985.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 23	276.20	DEC 5	276.42	FEB 26	275.48	MAY 27	278.10	AUG 13	279.07	SEP 29	278.48
NOV 13	276.62	JAN 19	278.22	APR 18	276.37	JUN 26	279.21				



RICHLAND COUNTY

431840090203201. Local number, RI-10/01E/26-0023.

LOCATION.--Lat 43°18'40", long 90°20'32", Hydrologic Unit 07070005. Owner: Koch Tractor, Inc.

AQUIFER.--Sandstone.

WELL CHARACTERISTICS.--Drilled domestic artesian well, diameter 6 in, depth 160 ft, cased to 135 ft, open end.

DATUM.--Altitude of land-surface is 725 ft above National Geodetic Vertical Datum of 1929. Measuring point: top of 1-in breather pipe, 1.00 ft above land-surface datum.

PERIOD OF RECORD.--February 1965 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 9.11 ft below land-surface datum, May 22, 1973; lowest water level measured, 15.70 ft below land-surface datum, Dec. 13, 1977.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 8	12.31	DEC 10	13.78	FEB 10	12.98	APR 6	13.29	JUN 9	14.47	JUL 6	13.24
NOV 12	13.99	JAN 7	12.82	MAR 10	13.09	MAY 13	12.87				

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423956089022301. Local number. RO-02/12E/02-0003.

AQUIFER.--Sandstone.

WELL CHARACTERISTICS.--Drilled unused artesian well, diameter 10 in. depth 470 ft, cased to 113 ft, open end.

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, 59.43 ft below land-surface datum, Aug. 5, 1970.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

		WATER			WATER			WATER			WATER						
DATE		LEVEL	DATE		LEVEL	DATE		LEVEL	DATE		LEVEL						
OCT	2	49.94	DEC	18	50.13	FEB	19	52.36	APR	16	51.37	JUN	18	58.49	AUG	13	58.03
	16	49.88		JAN	2		50.35	MAR		26	52.64		MAY	23		51.23	JUL
	23	49.74	8	50.37	5	52.44	30	50.94	7	54.11	27	55.61					
	30	49.89	15	50.56	12	52.25	MAY	7	50.89	24	56.01	SEP	3	54.31			
NOV	6	49.76	22	50.69	20	55.92	14	50.85	31	57.16	10	56.79					
	20	49.75	29	50.73	26	54.97	21	50.91	AUG	4	57.67	17	57.15				
DEC	4	50.08	FEB	5	50.95	APR	2	54.20	28	53.26	6	57.58	24	55.98			
	12	50.16		12	51.37		9	52.25	JUN	4	52.62						

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 1986 TO SEPTEMBER 1987

DATE		WATER LEVEL	DATE		WATER LEVEL	DATE		WATER LEVEL	DATE		WATER LEVEL	DATE		WATER LEVEL			
OCT	1	7.38	MAR	13	14.00	APR	17	13.78	JUL	9	14.81	AUG	12	15.39	SEP	9	15.75
FEB	4	13.46	APR	15	13.81	MAY	22	14.14									

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 1986 TO SEPTEMBER 1987

[illegible]

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 1986 TO SEPTEMBER 1987
LOWEST VALUE

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	63.21	63.26	64.55	65.58	64.85	64.38	64.36	64.30	64.01	64.58	64.47	64.61
10	63.13	63.59	64.51	65.33	64.69	64.52	64.01	64.44	64.57	64.81	64.51	64.50
15	62.99	64.21	64.83	65.15	64.64	64.31	63.88	64.40	65.39	65.16	64.64	64.48
20	63.15	64.35	64.83	64.76	64.50	64.13	64.15	64.05	65.00	65.55	64.85	64.17
25	62.69	64.35	64.45	65.26	64.61	63.97	64.03	63.87	64.33	65.66	65.35	64.16
EOM	63.17	64.66	64.56	64.95	64.09	64.11	63.90	63.81	64.84	64.44	64.61	64.23

WTR YEAR 1987 MAX 65.94 JUL 18 MIN 62.44 OCT 26

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, 52.86 ft below land-surface datum, Apr. 25, 1973; 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 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 5	52.75	DEC 17	55.04	FEB 17	58.01	JUN 12	57.14	JUL 15	58.04	AUG 23	59.18
NOV 5	53.49	JAN 14	55.59	APR 9	54.90	16	57.94	AUG 20	59.02	SEP 13	59.83
19	54.11	FEB 12	56.84	25	54.85						

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 1986 TO SEPTEMBER 1987
LOWEST VALUE

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	7.81	8.87	9.25	9.55	9.69	9.51	8.93	9.71	9.51	10.01	9.16	10.00
10	8.43	8.76	9.29	9.55	9.66	9.00	9.19	9.83	9.65	10.07	9.23	9.90
15	6.43	8.74	9.32	9.61	9.71	9.20	9.02	9.87	9.68	10.21	9.36	9.88
20	7.77	9.14	9.43	9.61	9.68	9.18	9.06	9.87	9.85	10.15	9.53	9.53
25	8.39	9.19	9.44	9.61	9.70	8.72	9.26	9.98	9.78	8.50	9.75	9.60
EOM	8.77	9.22	9.55	9.52	9.47	8.71	9.47	9.53	9.86	8.72	9.83	9.65

WTR YEAR 1987 MAX 10.26 JUL 18 MIN 6.07 OCT 13

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.

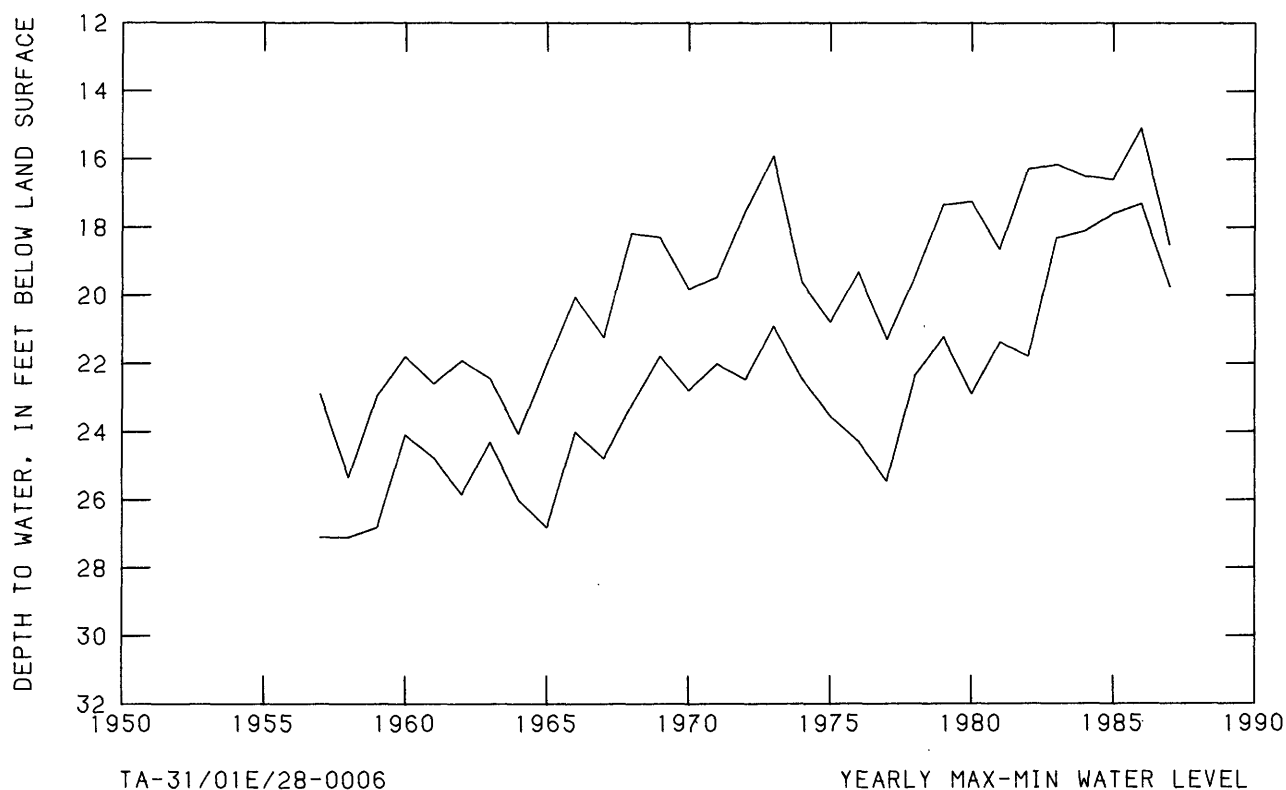
DATUM.--Altitude of land-surface is 1,460 ft above National Geodetic Vertical Datum of 1929. Measuring point: top of curb, 1.00 ft above land-surface datum.

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 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
MAR 18	18.90	MAY 15	19.46	JUN 22	19.35	JUL 15	19.75	AUG 12	19.75	SEP 15	19.69
APR 20	18.50										



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 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
MAY 15	31.30	JUN 22	28.90	JUL 15	31.45	AUG 12	33.10	SEP 15	33.20

440422091182901. Local number. TR-19/08W/35-0001.

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 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 20	135.26	DEC 23	136.31	FEB 19	136.21	APR 24	136.75	JUN 9	137.34	JUN 28	137.15
NOV 21	135.34	JAN 22	136.56	MAR 23	136.47	MAY 25	136.91				

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 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
FEB 20	45.49	APR 13	45.59	JUN 15	46.65	JUL 14	46.30	AUG 6	46.00	SEP 15	44.39
MAR 16	45.62	MAY 19	45.90								

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 1986 TO SEPTEMBER 1987

[illegible]

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, 208.91 ft below land-surface datum, July 21, 1987.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 22	205.55	DEC 12	204.90	FEB 19	205.18	APR 24	204.90	JUN 29	207.90	AUG 31	208.61
NOV 20	204.81	JAN 29	204.41	MAR 10	205.35	MAY 29	205.33	JUL 21	208.91	SEP 16	207.86

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, 472.10 ft below land-surface datum, Aug. 28, 1987.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
LOWEST VALUE

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5			455.66	450.85	457.54	456.99	456.70	454.19		469.75	470.34	470.90
10			456.29	454.31	455.57	455.73	456.94	454.99		468.82	469.98	463.38
15		459.36	457.79	454.67	456.96	454.51	455.13	456.54		468.96	467.28	466.09
20		458.32	457.64	454.00	457.23	456.04	455.63	459.58		466.75	471.06	464.50
25		456.19	454.34	453.74	452.97	453.95	456.10		469.06	469.99	470.53	
EOM		448.98	451.54	455.43	453.89	455.38	457.00		466.70	470.70	469.97	

WTR YEAR 1987 MAX 472.10 AUG 28 MIN 447.17 DEC 1

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 1986 TO SEPTEMBER 1987
LOWEST VALUE

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	129.62	129.38	129.76	130.15	130.57	130.75	131.07	130.70	131.10	132.02	131.92	131.62
10	129.50	129.53	129.71	130.07	130.56	130.85	130.95	130.62	131.33	131.70	131.84	131.63
15	129.32	129.46	129.83	130.28	130.69	130.80	130.84	130.77	131.83	131.77	131.71	131.66
20	129.36	129.55	129.98	130.19	130.77	130.82	130.88	130.71	132.35	132.05	131.61	131.54
25	129.31	129.67	129.99	130.40	130.81	130.81	130.78	130.65	132.03	131.99	131.60	131.41
EOM	129.48	129.80	130.05	130.39	130.66	131.01	130.62	130.77	132.11	131.89	131.62	131.37

WTR YEAR 1987 MAX 132.41 JUN 19 MIN 129.21 OCT 26

GROUND-WATER LEVELS

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 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 4	12.07	DEC 6	13.22	FEB 7	13.99	APR 11	13.63	JUN 13	13.77	AUG 8	14.15
11	12.13	13	13.38	14	14.12	18	13.42	20	13.80	15	14.08
17	11.72	20	13.33	21	14.17	25	13.14	27	13.91	22	14.26
25	11.88	27	13.36	28	14.22	MAY 2	13.01	JUL 4	14.02	29	14.22
NOV 1	12.16	JAN 3	13.40	MAR 7	14.03	9	12.56	11	14.04	SEP 4	14.27
8	12.54	10	13.44	14	13.91	16	13.49	18	14.03	12	14.33
15	12.95	16	13.61	21	13.90	23	13.52	25	14.06	19	14.28
22	13.04	24	13.67	28	13.84	30	13.42	AUG 1	14.07	26	14.21
29	13.17	31	13.96	APR 4	13.76	JUN 6	13.48				

WAUSHARA COUNTY

440713089320801. Local number, WS-19/08E/15-0008.

LOCATION.--Lat 44°07'13", long 89°32'08", Hydrologic Unit 07070003. Owner: University of Wisconsin Experiment Farm, Hancock.

AQUIFER.--Sand and gravel.

WELL CHARACTERISTICS.--Jetted observation water-table well, diameter 4 in, depth 18 ft, cased to 18 ft.

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 1986 TO SEPTEMBER 1987
LOWEST VALUE

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	7.21	7.03	7.42	7.81	8.24	8.58	8.67	8.30	8.36	8.08	8.70	9.27
10	7.15	7.13	7.49	7.87	8.30	8.55	8.68	8.21	8.56	8.26	8.83	9.32
15	7.05	7.13	7.55	7.95	8.38	8.56	8.73	8.17	8.55	8.37	8.89	9.36
20	7.03	7.22	7.59	8.00	8.46	8.59	8.75	8.16	8.67	8.50	9.04	9.37
25	7.03	7.29	7.62	8.08	8.53	8.60	8.67	8.22	8.07	8.55	9.07	9.41
EOM	7.02	7.37	7.68	8.14	8.55	8.64	8.40	8.24	8.01	8.60	9.16	9.45

WTR YEAR 1987 MAX 9.45 SEP 30 MIN 5.99 OCT 29

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 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 18	32.78	DEC 15	33.01	FEB 17	33.46	APR 16	33.46	JUN 19	33.47	AUG 17	34.02
NOV 18	32.83	JAN 15	33.24	MAR 16	33.51	MAY 20	33.39	JUL 16	33.77	SEP 24	34.20

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 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 30	18.66	DEC 30	19.31	MAR 6	20.75	MAY 1	19.14	JUL 1	21.33	AUG 27	21.29
NOV 28	18.79	FEB 3	20.67	31	20.38	29	20.33	30	21.66	SEP 30	21.52

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, 20.98 ft below land-surface datum, Sept. 30, 1986; lowest water level measured, 26.41 ft below land-surface datum, Aug. 19, 1986.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
LOWEST VALUE

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5											22.02	21.44
10											21.93	21.36
15											21.81	21.25
20											21.71	21.16
25											21.63	21.09
EOM										22.12	21.54	20.99
WTR YEAR 1987	MAX	24.47	NOV 6	MIN	20.98	SEP 30						

WATER-QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

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)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)
ADAMS COUNTY								
440145089365701	AD-18/07E/13-0231		110QRNR	05-28-87	19.10	375	7.50	19.5
440146089364402	AD-18/07E/13-0224		110QRNR	05-26-87	27.70	350	7.90	9.0
			110QRNR	08-26-87	27.70	382	7.80	10.0
440151089363001	AD-18/07E/13-0225		110QRNR	05-26-87	70.60	230	8.30	10.0
			110QRNR	08-26-87	70.60	222	8.20	10.5
440151089363002	AD-18/07E/13-0226		110QRNR	05-26-87	28.00	450	8.10	9.0
			110QRNR	08-26-87	28.00	420	8.00	10.5
440159089370501	AD-18/07E/13-0221		110QRNR	05-26-87	62.70	220	8.50	11.5
			110QRNR	08-26-87	62.70	175	8.60	11.0
440159089370502	AD-18/07E/13-0222		110QRNR	05-26-87	28.20	125	8.60	10.5
			110QRNR	08-26-87	28.20	180	8.60	11.0
440207089363001	AD-18/07E/13-0227		110QRNR	05-26-87	70.50	250	8.20	10.5
			110QRNR	08-26-87	70.50	245	8.20	11.5
440207089363002	AD-18/07E/13-0228		110QRNR	05-26-87	20.60	150	8.60	9.5
			110QRNR	08-26-87	20.60	158	8.70	11.0
440211089365101	AD-18/07E/13-0229		110QRNR	05-26-87	70.20	260	8.20	11.5
			110QRNR	08-26-87	70.20	255	8.10	11.0
440211089365102	AD-18/07E/13-0230		110QRNR	05-26-87	30.30	150	8.50	11.0
			110QRNR	08-26-87	30.30	178	8.10	10.5
450158089364701	AD-18/07E/13-0138		110QRNR	05-26-87	100.00	290	8.20	11.0
			110QRNR	08-28-87	100.00	318	8.20	11.0
PORTAGE COUNTY								
441650089305001	PT-21/08E/23-1003		110QRNR	05-28-87	54.70	70	6.50	10.0
			110QRNR	08-27-87	54.70	68	6.70	10.5
441650089305002	PT-21/08E/23-1004		110QRNR	05-28-87	20.40	130	8.70	9.0
			110QRNR	08-27-87	20.40	120	8.60	11.0
441651089311101	PT-21/08E/23-1001		110QRNR	05-28-87	49.00	175	8.70	9.5
			110QRNR	08-27-87	49.00	130	8.60	10.5
441651089311102	PT-21/08E/23-1002		110QRNR	05-28-87	20.60	275	8.70	8.0
			110QRNR	08-27-87	20.60	175	8.60	11.5
441702089310401	PT-21/08E/23-0403		110QRNR	05-26-87	85.00	440	8.20	12.0
			110QRNR	08-26-87	85.00	438	8.30	10.5
441704089304101	PT-21/08E/23-1009		110QRNR	05-28-87	49.40	710	8.20	10.5
			110QRNR	08-26-87	49.40	695	8.20	11.5
441704089304102	PT-21/08E/23-1010		110QRNR	05-28-87	14.80	420	7.80	9.0
			110QRNR	08-26-87	14.80	425	8.10	12.0
441706089312301	PT-21/08E/23-1005		110QRNR	05-28-87	49.20	260	8.50	10.0
			110QRNR	08-27-87	49.20	225	8.40	11.0
441706089312302	PT-21/08E/23-1006		110QRNR	05-28-87	15.50	200	8.90	9.0
			110QRNR	08-27-87	15.50	195	8.50	13.5
441714089310601	PT-21/08E/23-1007		110QRNR	05-28-87	49.90	460	8.40	11.5
			110QRNR	08-27-87	49.90	422	8.30	12.0
441714089310602	PT-21/08E/23-1008		110QRNR	05-28-87	20.40	730	8.30	8.5
			110QRNR	08-27-87	20.40	695	7.60	12.0
442317089415301	PT-22/07E/17-1024		110QRNR	05-27-87	34.00	320	7.00	9.0
			110QRNR	08-27-87	34.00	315	7.00	10.0
442317089415302	PT-22/07E/17-1025		110QRNR	05-27-87	13.10	60	5.70	8.0
			110QRNR	08-27-87	13.10	60	5.70	13.0
442318089404401	PT-22/07E/16-1015		110QRNR	05-27-87	39.50	120	7.00	9.0
			110QRNR	08-27-87	39.50	110	7.10	10.0
442318089404402	PT-22/07E/16-1016		110QRNR	05-27-87	17.70	320	5.40	8.0
			110QRNR	08-27-87	17.70	262	5.40	11.5
442318089411601	PT-22/07E/16-1017		110QRNR	05-27-87	18.40	170	5.50	8.5
			110QRNR	08-27-87	18.40	172	5.50	11.5
442329089411801	PT-22/07E/17-1021		110QRNR	05-27-87	42.00	150	7.00	9.5
			110QRNR	08-27-87	42.00	155	7.00	11.0
442329089411802	PT-22/07E/17-1022		110QRNR	05-27-87	12.90	210	6.40	8.0
			110QRNR	08-27-87	12.90	182	6.30	13.5
442329089415301	PT-22/07E/17-1023		110QRNR	05-27-87	10.00	145	5.90	9.5
			110QRNR	08-27-87	10.00	122	5.90	15.0
442330089405801	PT-22/07E/16-1018		110QRNR	05-27-87	64.00	165	7.30	12.0
			110QRNR	08-27-87	64.00	210	7.00	10.5

QUALITY OF GROUND WATER

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WATER-QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

STATION	NUMBER	DATE	HARD- NESS (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)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LINITY LAB (MG/L AS CACO3) (90410)	CARBON DIOXIDE DIS- SOLVED (MG/L AS CO2) (00405)
ADAMS COUNTY										
440145089365701		05-28-87	--	--	--	--	1.9	1.9	--	0
440146089364402		05-26-87	--	--	--	--	1.9	0.90	--	0
		08-26-87	--	--	--	--	1.9	1.1	--	0
440151089363001		05-26-87	--	--	--	--	1.1	0.30	--	0
		08-26-87	--	--	--	--	1.0	0.30	--	0
440151089363002		05-26-87	--	--	--	--	1.8	0.70	--	0
		08-26-87	--	--	--	--	1.9	0.80	--	0
440159089370501		05-26-87	--	--	--	--	1.8	0.40	--	0
		08-26-87	--	--	--	--	1.4	0.40	--	0
440159089370502		05-26-87	--	--	--	--	1.4	4.5	--	0
		08-26-87	--	--	--	--	1.3	5.5	--	0
440207089363001		05-26-87	--	--	--	--	0.90	0.40	--	0
		08-26-87	--	--	--	--	1.0	0.40	--	0
440207089363002		05-26-87	--	--	--	--	0.90	0.50	--	0
		08-26-87	--	--	--	--	0.90	0.60	--	0
440211089365101		05-26-87	--	--	--	--	1.0	0.40	--	0
		08-26-87	--	--	--	--	1.0	0.40	--	0
440211089365102		05-26-87	--	--	--	--	0.80	0.40	--	0
		08-26-87	--	--	--	--	1.9	0.50	--	0
450158089364701		05-26-87	140	34	31	16	1.6	0.70	109	1.3
		08-28-87	160	56	35	18	1.7	1.0	106	1.3
PORTAGE COUNTY										
441650089305001		05-28-87	--	--	--	--	0.80	0.60	--	0
		08-27-87	--	--	--	--	0.70	0.60	--	0
441650089305002		05-28-87	--	--	--	--	1.4	0.40	--	0
		08-27-87	--	--	--	--	1.4	0.40	--	0
441651089311101		05-28-87	--	--	--	--	0.70	0.50	--	0
		08-27-87	--	--	--	--	0.70	0.50	--	0
441651089311102		05-28-87	--	--	--	--	1.9	0.80	--	0
		08-27-87	--	--	--	--	1.8	0.70	--	0
441702089310401		05-26-87	190	130	44	19	2.9	4.5	60	0.7
		08-26-87	190	130	45	19	2.9	4.4	58	0.6
441704089304101		05-28-87	--	--	--	--	3.8	0.70	--	0
		08-26-87	--	--	--	--	3.7	0.70	--	0
441704089304102		05-28-87	--	--	--	--	2.4	3.6	--	0
		08-26-87	--	--	--	--	2.4	3.7	--	0
441706089312301		05-28-87	--	--	--	--	1.6	0.60	--	0
		08-27-87	--	--	--	--	1.5	0.60	--	0
441706089312302		05-28-87	--	--	--	--	1.8	1.9	--	0
		08-27-87	--	--	--	--	1.8	2.2	--	0
441714089310601		05-28-87	--	--	--	--	4.3	0.70	--	0
		08-27-87	--	--	--	--	3.0	0.80	--	0
441714089310602		05-28-87	--	--	--	--	4.0	31	--	0
		08-27-87	--	--	--	--	4.7	29	--	0
442317089415301		05-27-87	--	--	--	--	26	0.70	--	0
		08-27-87	--	--	--	--	31	0.80	--	0
442317089415302		05-27-87	--	--	--	--	1.6	0.60	--	0
		08-27-87	--	--	--	--	1.5	0.60	--	0
442318089404401		05-27-87	--	--	--	--	1.8	0.50	--	0
		08-27-87	--	--	--	--	1.8	0.40	--	0
442318089404402		05-27-87	--	--	--	--	1.4	13	--	0
		08-27-87	--	--	--	--	1.5	9.8	--	0
442318089411601		05-27-87	--	--	--	--	1.1	4.5	--	0
		08-27-87	--	--	--	--	1.1	5.2	--	0
442329089411801		05-27-87	--	--	--	--	2.6	0.50	--	0
		08-27-87	--	--	--	--	2.4	0.60	--	0
442329089411802		05-27-87	--	--	--	--	1.1	8.3	--	0
		08-27-87	--	--	--	--	1.8	6.5	--	0
442329089415301		05-27-87	--	--	--	--	7.3	1.3	--	0
		08-27-87	--	--	--	--	6.3	1.3	--	0
442330089405801		05-27-87	78	16	16	9.2	2.1	1.1	62	6.0
		08-27-87	93	38	19	11	2.3	2.0	55	11

QUALITY OF GROUND WATER

WATER-QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

STATION	NUMBER	DATE	SULFATE DIS- SOLVED (MG/L AS SO ₄) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)	NITRO- GEN, NO ₂ +NO ₃ DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, AM- MONIA + ORGANIC DIS. (MG/L AS N) (00623)
ADAMS COUNTY									
440145089365701		05-28-87	--	38	--	0.010	7.30	0.040	1.1
440146089364402		05-26-87	--	14	--	<0.010	10.0	0.010	0.70
		08-26-87	--	26	--	<0.010	9.80	<0.010	1.0
440151089363001		05-26-87	--	1.0	--	<0.010	0.650	0.020	0.30
		08-26-87	--	0.70	--	<0.010	0.670	<0.010	<0.20
440151089363002		05-26-87	--	20	--	<0.010	18.0	0.020	0.80
		08-26-87	--	14	--	<0.010	16.0	<0.010	1.7
440159089370501		05-26-87	--	15	--	<0.010	5.60	0.030	0.40
		08-26-87	--	10	--	<0.100	3.20	<0.010	0.30
440159089370502		05-26-87	--	2.0	--	<0.010	3.40	0.030	<0.20
		08-26-87	--	7.0	--	<0.010	6.90	<0.010	0.30
440207089363001		05-26-87	--	2.1	--	<0.010	2.90	0.020	0.40
		08-26-87	--	2.5	--	<0.010	2.60	<0.010	0.50
440207089363002		05-26-87	--	2.0	--	<0.010	3.20	0.020	1.8
		08-26-87	--	5.2	--	<0.010	3.80	<0.010	0.60
440211089365101		05-26-87	--	1.0	--	<0.010	4.10	0.010	2.0
		08-26-87	--	1.3	--	<0.010	4.30	<0.010	0.50
440211089365102		05-26-87	--	1.0	--	<0.010	0.160	0.020	<0.20
		08-26-87	--	1.8	--	<0.010	<0.100	0.010	0.80
450158089364701		05-26-87	11	8.3	168	<0.010	5.70	0.030	0.50
		08-28-87	15	12	180	<0.010	8.60	<0.010	1.8
PORTAGE COUNTY									
441650089305001		05-28-87	--	0.80	--	<0.010	1.30	0.020	1.0
		08-27-87	--	0.50	--	<0.010	1.40	<0.010	0.70
441650089305002		05-28-87	--	1.0	--	<0.010	2.00	<0.010	0.60
		08-27-87	--	0.40	--	<0.010	1.70	<0.010	0.60
441651089311101		05-28-87	--	0.50	--	<0.010	<0.100	0.010	0.40
		08-27-87	--	0.50	--	<0.010	<0.100	<0.010	0.80
441651089311102		05-28-87	--	10	--	<0.010	16.0	0.010	2.1
		08-27-87	--	3.5	--	<0.010	2.20	<0.010	0.70
441702089310401		05-26-87	20	35	280	0.040	21.0	0.060	1.2
		08-26-87	19	35	293	<0.010	20.0	<0.010	2.0
441704089304101		05-28-87	--	77	--	<0.010	40.0	0.020	2.2
		08-26-87	--	70	--	<0.010	37.0	0.020	0.70
441704089304102		05-28-87	--	30	--	<0.010	25.0	0.020	2.1
		08-26-87	--	23	--	<0.010	25.0	0.010	1.8
441706089312301		05-28-87	--	13	--	<0.010	7.20	<0.010	1.0
		08-27-87	--	9.0	--	<0.010	5.40	<0.010	1.8
441706089312302		05-28-87	--	5.1	--	<0.010	11.0	0.010	1.5
		08-27-87	--	14	--	<0.010	9.80	<0.010	1.8
441714089310601		05-28-87	--	55	--	0.920	22.0	0.560	3.0
		08-27-87	--	38	--	0.140	21.0	0.040	2.0
441714089310602		05-28-87	--	86	--	<0.010	36.0	0.010	1.9
		08-27-87	--	72	--	<0.010	35.0	0.020	2.2
442317089415301		05-27-87	--	50	--	<0.010	<0.100	0.270	0.70
		08-27-87	--	--	--	<0.010	<0.100	0.200	0.70
442317089415302		05-27-87	--	2.4	--	<0.010	1.20	<0.010	1.4
		08-27-87	--	1.5	--	<0.010	1.70	<0.010	1.5
442318089404401		05-27-87	--	1.8	--	<0.010	<0.100	0.050	0.30
		08-27-87	--	1.0	--	<0.010	<0.100	0.070	0.30
442318089404402		05-27-87	--	24	--	<0.010	18.0	0.040	0.70
		08-27-87	--	15	--	<0.010	18.0	<0.010	0.30
442318089411601		05-27-87	--	15	--	<0.010	10.0	0.010	1.2
		08-27-87	--	13	--	<0.010	9.50	<0.010	0.40
442329089411801		05-27-87	--	2.2	--	<0.010	<0.100	0.190	2.0
		08-27-87	--	1.7	--	--	<0.100	--	<0.20
442329089411802		05-27-87	--	3.1	--	<0.010	13.0	<0.010	3.0
		08-27-87	--	4.3	--	<0.010	12.0	<0.010	1.2
442329089415301		05-27-87	--	16	--	<0.010	0.540	<0.010	<0.20
		08-27-87	--	12	--	<0.010	0.800	<0.010	0.40
442330089405801		05-27-87	13	4.3	113	<0.010	0.330	0.090	0.80
		08-27-87	20	10	114	<0.010	3.10	0.030	0.60

QUALITY OF GROUND WATER
WATER-QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

STATION NUMBER	LOCAL IDENTIFIER	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)
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PORTAGE COUNTY--CONTINUED

442330089413601	PT-22/07E/17-1026	110QRNR	05-27-87	49.00	200	6.90	11.0
		110QRNR	08-27-87	49.00	220	6.90	11.0
442342089415101	PT-22/07E/17-1019	110QRNR	05-27-87	35.70	190	7.10	9.0
		110QRNR	08-27-87	35.70	195	7.00	9.5
442342089415102	PT-22/07E/17-1020	110QRNR	05-27-87	10.00	<50	5.40	7.5
		110QRNR	08-27-87	10.00	<50	5.30	12.5
442343089404501	PT-22/07E/09-1011	110QRNR	05-27-87	42.20	145	7.30	10.0
		110QRNR	08-27-87	42.20	140	7.40	9.0
442343089404502	PT-22/07E/09-1012	110QRNR	05-27-87	19.90	57	6.00	7.0
		110QRNR	08-27-87	19.90	<50	5.60	9.0
442343089411501	PT-22/07E/09-1013	110QRNR	05-27-87	19.50	<50	6.00	8.0
		110QRNR	08-27-87	19.50	<50	5.90	9.5

STATION NUMBER	DATE	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS 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)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY LAB AS CACO3 (90410)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)
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PORTAGE COUNTY--CONTINUED

442330089413601	05-27-87	77	51	20	6.5	2.8	1.5	26	6.3
	08-27-87	84	62	21	7.6	2.7	1.6	22	5.4
442342089415101	05-27-87	--	--	--	--	2.7	0.70	--	0
	08-27-87	--	--	--	--	2.7	0.90	--	0
442342089415102	05-27-87	--	--	--	--	1.3	0.90	--	0
	08-27-87	--	--	--	--	1.1	0.80	--	0
442343089404501	05-27-87	--	--	--	--	2.0	0.70	--	0
	08-27-87	--	--	--	--	1.8	0.70	--	0
442343089404502	05-27-87	--	--	--	--	1.5	1.0	--	0
	08-27-87	--	--	--	--	1.4	1.1	--	0
442343089411501	05-27-87	--	--	--	--	1.0	0.70	--	0
	08-27-87	--	--	--	--	1.0	0.60	--	0

STATION NUMBER	DATE	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	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-SOLVED (MG/L AS N) (00608)	NITRO-GEN, AMMONIA + ORGANIC DIS. (MG/L AS N) (00623)
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PORTAGE COUNTY--CONTINUED

442330089413601	05-27-87	17	17	157	<0.010	4.50	0.120	1.9
	08-27-87	20	20	146	<0.010	5.00	0.050	0.20
442342089415101	05-27-87	--	4.0	--	<0.010	<0.100	0.170	1.2
	08-27-87	--	4.3	--	<0.010	<0.100	0.110	0.60
442342089415102	05-27-87	--	0.50	--	<0.010	0.140	<0.010	0.40
	08-27-87	--	0.40	--	<0.010	0.200	<0.010	0.20
442343089404501	05-27-87	--	1.0	--	<0.010	<0.100	0.090	0.40
	08-27-87	--	1.3	--	<0.010	<0.100	0.040	0.50
442343089404502	05-27-87	--	1.1	--	<0.010	<0.100	0.020	0.40
	08-27-87	--	1.2	--	<0.010	0.170	<0.010	0.90
442343089411501	05-27-87	--	0.70	--	<0.010	<0.100	0.030	0.70
	08-27-87	--	0.70	--	<0.010	0.200	<0.010	0.60

ACID DEPOSITION RECORDS

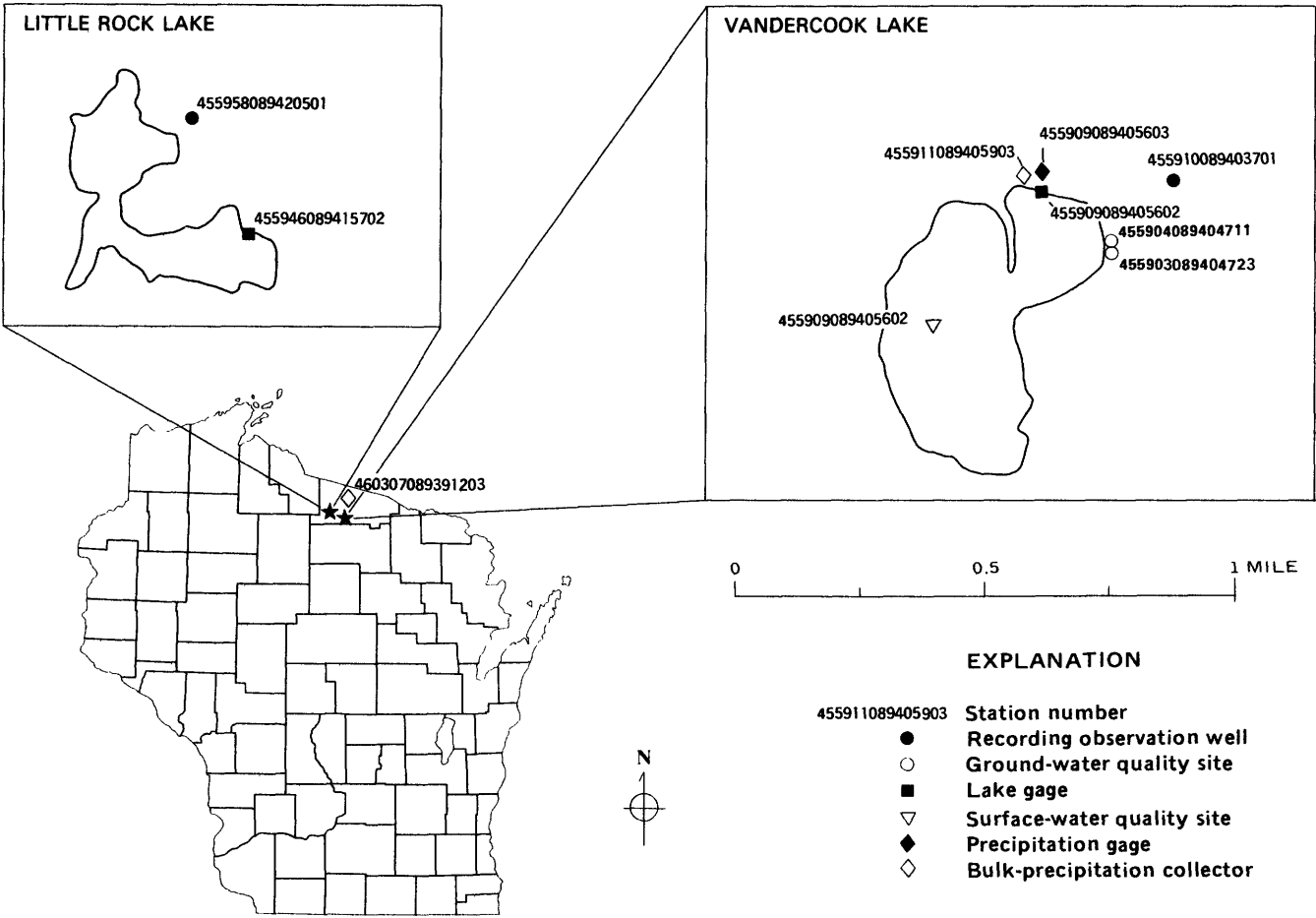


Figure 7. Location of acid deposition sites in Wisconsin.

STAGE RECORDS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	31.98	31.98	31.90	31.85	31.84	31.81	31.75	31.60	31.54	31.22	31.24	30.89
2	31.97	31.98	31.90	31.85	31.84	31.82	31.75	31.59	31.55	31.23	31.23	30.88
3	31.96	31.97	31.92	31.84	31.84	31.82	31.75	31.57	31.52	31.24	31.22	30.86
4	31.95	31.96	31.91	31.84	31.83	31.81	31.75	31.56	31.50	31.22	31.19	30.85
5	31.94	31.96	31.91	31.84	31.83	31.81	31.74	31.55	31.49	31.20	31.16	30.84
6	31.92	31.96	31.91	31.84	31.83	31.81	31.74	31.54	31.48	31.21	31.15	30.94
7	31.92	31.95	31.91	31.84	31.83	31.82	31.74	31.52	31.47	31.22	31.15	30.93
8	31.92	31.95	31.90	31.83	31.83	31.80	31.73	31.50	31.45	31.21	31.13	30.92
9	31.91	31.94	31.91	31.83	31.82	31.79	31.73	31.50	31.43	31.23	31.13	30.92
10	31.89	31.93	31.90	31.83	31.82	31.79	31.72	31.48	31.41	31.26	31.12	30.91
11	31.92	31.92	31.90	31.83	31.82	31.78	31.72	31.48	31.43	31.31	31.10	30.90
12	32.03	31.91	31.89	31.83	31.82	31.78	31.71	31.46	31.43	31.35	31.09	30.90
13	32.02	31.90	31.89	31.83	31.81	31.77	31.72	31.45	31.42	31.34	31.13	30.90
14	32.04	31.90	31.90	31.82	31.81	31.77	31.72	31.43	31.41	31.32	31.14	30.89
15	32.04	31.91	31.90	31.82	31.80	31.77	31.73	31.41	31.39	31.30	31.14	30.88
16	32.03	31.91	31.89	31.81	31.79	31.77	31.73	31.41	31.38	31.28	31.13	30.87
17	32.03	31.91	31.89	31.80	31.80	31.76	31.72	31.40	31.36	31.27	31.12	30.89
18	32.02	31.90	31.89	31.81	31.79	31.75	31.72	31.38	31.36	31.26	31.09	30.90
19	32.02	31.90	31.88	31.80	31.79	31.75	31.71	31.45	31.37	31.26	31.08	30.91
20	32.02	31.93	31.88	31.81	31.78	31.74	31.71	31.45	31.34	31.25	31.07	30.90
21	32.01	31.92	31.87	31.80	31.78	31.74	31.68	31.45	31.33	31.28	31.05	30.88
22	32.01	31.92	31.88	31.81	31.80	31.74	31.67	31.43	31.33	31.28	31.04	30.87
23	32.01	31.93	31.88	31.80	31.80	31.73	31.66	31.42	31.32	31.26	31.01	30.86
24	32.01	31.93	31.87	31.80	31.79	31.73	31.65	31.41	31.30	31.35	30.99	30.85
25	32.00	31.93	31.87	31.79	31.79	31.73	31.66	31.40	31.29	31.34	30.98	30.83
26	31.99	31.93	31.87	31.79	31.78	31.72	31.66	31.41	31.28	31.32	30.97	30.82
27	31.99	31.92	31.86	31.80	31.78	31.72	31.66	31.44	31.26	31.31	30.96	30.81
28	31.98	31.92	31.86	31.80	31.78	31.71	31.64	31.48	31.25	31.29	30.94	30.80
29	31.98	31.91	31.86	31.81	---	31.72	31.64	31.50	31.26	31.28	30.93	30.79
30	31.97	31.90	31.86	31.84	---	31.72	31.61	31.55	31.24	31.27	30.92	30.78
31	31.97	---	31.85	31.84	---	31.72	---	31.54	---	31.25	30.90	---
TOTAL	991.45	957.88	988.51	986.43	890.62	984.70	951.12	975.76	941.59	969.41	963.50	926.19
MEAN	32.0	31.9	31.9	31.8	31.8	31.8	31.7	31.5	31.4	31.3	31.1	30.9
MAX	32.04	31.98	31.92	31.85	31.84	31.82	31.75	31.60	31.55	31.35	31.24	30.94
MIN	31.89	31.90	31.85	31.79	31.78	31.71	31.61	31.38	31.24	31.20	30.90	30.78
CAL YR 1986	TOTAL 11667.44		MEAN 32.0	MAX 32.26	MIN 31.73							
WTR YR 1987	TOTAL 11526.95		MEAN 31.6	MAX 32.04	MIN 30.78							

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, 1.74 in., Oct. 11.

RAINFALL, ACCUMULATED (INCHES), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.01	---	---	---	---	---	.01	.31	.00	.13	.08
2	.00	.00	---	---	---	---	---	.00	.01	.61	.01	.00
3	.19	.02	---	---	---	---	---	.00	.01	.01	.00	.00
4	.00	.01	---	---	---	---	---	.00	.11	.00	.00	.00
5	.05	.00	---	---	---	---	---	.00	.01	.00	.00	1.06
6	.01	.00	---	---	---	---	---	.00	.00	.47	.30	.15
7	.16	.00	---	---	---	---	---	.00	.00	.06	.01	.00
8	.00	.26	---	---	---	---	---	.00	.00	.00	.00	.21
9	.01	.01	---	---	---	---	---	.00	.01	.59	.19	.00
10	.00	.02	---	---	---	---	---	.15	.04	.36	.00	.00
11	1.74	.04	---	---	---	---	---	.00	.35	1.20	.00	.11
12	.25	.01	---	---	---	---	---	.00	.00	.15	.68	.27
13	.02	.03	---	---	---	---	---	.00	.01	.02	.24	.01
14	.31	.00	---	---	---	---	---	.00	.01	.01	.04	.00
15	.02	.00	---	---	---	---	---	.01	.00	.00	.07	.00
16	.05	.09	---	---	---	---	---	.10	.01	.00	.03	.09
17	.00	.00	---	---	---	---	---	.00	.00	.00	.01	.57
18	.00	.05	---	---	---	---	---	.47	.38	.11	.13	.25
19	.00	.00	---	---	---	---	---	.66	.00	.00	.00	.03
20	.00	---	---	---	---	---	---	.00	.00	.25	.00	.02
21	.00	---	---	---	---	---	.00	.05	.10	.38	.07	.03
22	.16	---	---	---	---	---	.00	.02	.00	.00	.00	.01
23	.05	---	---	---	---	---	.00	.02	.00	.28	.02	.00
24	.00	---	---	---	---	---	.00	.00	.00	1.11	.00	.00
25	.00	---	---	---	---	---	.42	.23	.32	.00	.00	.00
26	.00	---	---	---	---	---	.04	.01	.16	.00	.00	.00
27	.00	---	---	---	---	---	.05	.75	.01	.00	.00	.00
28	.05	---	---	---	---	---	.00	.03	.38	.00	.00	.00
29	.01	---	---	---	---	---	.00	1.03	.04	.01	.00	.04
30	.00	---	---	---	---	---	.00	.01	.00	.00	.19	.00
31	.31	---	---	---	---	---	---	.00	---	.00	.00	---
TOTAL	3.39	---	---	---	---	---	---	3.55	2.27	5.62	2.12	2.93

455910089403701 WELL VI-41/07E/31-0085

EXTREMES FOR CURRENT YEAR.--Maximum observed water level, 33.29 ft, Oct. 14; minimum observed water level, 31.48 ft, Sept. 30.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	33.19	33.18	33.03	32.87	32.71	32.54	32.42	32.34	32.16	31.98	31.80	31.63
2	33.19	33.19	33.07	32.87	32.71	32.53	32.41	32.32	32.15	31.97	31.80	31.62
3	33.19	33.22	33.08	32.86	32.69	32.51	32.39	32.30	32.15	31.96	31.79	31.63
4	33.18	33.19	33.03	32.85	32.67	32.51	32.38	32.28	32.15	31.96	31.79	31.62
5	33.18	33.21	33.01	32.85	32.68	32.46	32.38	32.28	32.15	31.95	31.79	31.61
6	33.16	33.20	32.99	32.87	32.70	32.42	32.37	32.28	32.15	31.95	31.78	31.60
7	33.18	33.18	32.99	32.85	32.72	32.43	32.39	32.28	32.13	31.95	31.77	31.60
8	33.16	33.24	32.98	32.85	32.68	32.44	32.40	32.27	32.11	31.94	31.76	31.60
9	33.13	33.16	32.99	32.85	32.70	32.44	32.42	32.26	32.11	31.94	31.74	31.59
10	33.15	33.14	32.97	32.83	32.69	32.44	32.43	32.26	32.11	31.92	31.74	31.59
11	33.16	33.14	32.97	32.85	32.68	32.44	32.43	32.25	32.11	31.92	31.74	31.59
12	33.20	33.11	32.94	32.82	32.67	32.43	32.43	32.24	32.10	31.92	31.74	31.59
13	33.24	33.09	32.93	32.82	32.67	32.42	32.43	32.23	32.09	31.92	31.74	31.59
14	33.29	33.14	32.95	32.81	32.65	32.42	32.43	32.21	32.09	31.91	31.74	31.58
15	33.28	33.13	32.92	32.79	32.63	32.39	32.44	32.20	32.08	31.90	31.73	31.58
16	33.28	33.14	32.94	32.79	32.62	32.38	32.44	32.20	32.08	31.90	31.72	31.57
17	33.25	33.11	32.98	32.79	32.61	32.37	32.43	32.20	32.07	31.89	31.72	31.56
18	33.24	33.08	32.96	32.80	32.60	32.37	32.43	32.20	32.04	31.89	31.72	31.55
19	33.24	33.09	32.95	32.78	32.59	32.36	32.43	32.20	32.02	31.89	31.73	31.55
20	33.27	33.08	32.93	32.77	32.58	32.35	32.42	32.20	32.02	31.87	31.73	31.54
21	33.28	33.06	32.92	32.77	32.59	32.35	32.41	32.20	32.02	31.85	31.72	31.53
22	33.28	33.07	32.93	32.75	32.59	32.36	32.40	32.20	32.02	31.85	31.71	31.53
23	33.25	33.07	32.91	32.74	32.56	32.38	32.39	32.20	32.02	31.84	31.71	31.53
24	33.23	33.06	32.91	32.72	32.55	32.41	32.38	32.20	32.02	31.84	31.71	31.52
25	33.23	33.06	32.90	32.72	32.54	32.44	32.37	32.18	32.01	31.84	31.68	31.51
26	33.25	33.05	32.89	32.71	32.53	32.44	32.37	32.17	32.00	31.84	31.67	31.50
27	33.26	33.06	32.89	32.72	32.53	32.44	32.37	32.17	32.00	31.84	31.66	31.50
28	33.24	33.05	32.88	32.69	32.53	32.44	32.37	32.17	31.99	31.83	31.66	31.49
29	33.20	33.04	32.88	32.71	---	32.44	32.36	32.16	31.98	31.83	31.65	31.49
30	33.19	33.02	32.87	32.70	---	32.45	32.34	32.16	31.98	31.82	31.64	31.48
31	33.21	---	32.88	32.70	---	32.44	---	32.16	---	31.81	31.64	---
TOTAL	1029.78	993.56	1021.47	1016.50	913.67	1005.24	972.06	998.97	962.11	988.72	983.52	946.87
MEAN	33.2	33.1	33.0	32.8	32.6	32.4	32.4	32.2	32.1	31.9	31.7	31.6
MAX	33.29	33.24	33.08	32.87	32.72	32.54	32.44	32.34	32.16	31.98	31.80	31.63
MIN	33.13	33.02	32.87	32.69	32.53	32.35	32.34	32.16	31.98	31.81	31.64	31.48
CAL YR 1986	TOTAL 12157.30		MEAN 33.3	MAX 33.83	MIN 32.87							
WTR YR 1987	TOTAL 11832.28		MEAN 32.4	MAX 33.29	MIN 31.48							

ACID DEPOSITION RECORDS

VANDERCOOK LAKE

QUALITY OF SURFACE WATER

WATER-QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

455909089405602 VANDERCOOK LAKE NEAR WOODRUFF, WI (LAT 45 59 09 LONG 089 40 56)

DATE	TIME	SAM- PLING DEPTH	SPE- CIFIC CON- DUCT- ANCE	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER	OXYGEN, DIS- SOLVED	ACIDITY (MG/L AS H)	CALCIUM DIS- SOLVED	MAGNE- SIUM, DIS- SOLVED	SODIUM, DIS- SOLVED	POTAS- SIUM, DIS- SOLVED	ALKA- LINITY LAB	
		(FEET) (000003)	(US/CM) (00095)	(00400)	(DEG C) (00010)	(MG/L) (00300)	(71825)	(MG/L AS CA) (00915)	(MG/L AS MG) (00925)	(MG/L AS NA) (00930)	(MG/L AS K) (00935)	(MG/L AS CACO3) (90410)	
OCT , 1986													
14...	0820	3.00	13	6.00	10.0	9.7	0.03	1.1	0.30	0.50	0.18	1.0	
14...	0830	18.0	13	6.00	10.0	9.7	0.03	1.1	0.30	0.50	0.18	1.0	
JAN , 1987													
26...	1230	18.0	15	--	4.5	7.1	0.04	1.2	0.34	<0.05	0.36	1.1	
26...	1220	3.00	16	--	2.0	16.4	0.02	1.5	0.43	<0.05	0.47	0.8	
MAR													
04...	1215	3.00	12	5.50	3.0	8.7	0.07	1.2	0.38	0.65	0.38	1.0	
**04...	1245	18.0	14	5.50	4.0	5.9	0.07	1.2	0.39	0.59	0.38	1.0	
**04...	1246	18.0	14	5.50	4.0	5.9	0.06	1.2	0.37	0.44	0.38	0.9	
**30...	1115	3.00	15	5.90	4.0	6.9	0.03	1.2	0.39	0.50	0.32	0.8	
**30...	1116	3.00	15	6.00	4.0	6.9	0.03	1.2	0.40	0.69	0.14	0.8	
30...	1125	18.0	15	5.90	4.5	6.7	0.03	1.2	0.38	0.54	0.28	0.8	
MAY													
04...	1030	3.00	13	6.30	13.0	10.1	0.02	1.1	0.34	0.53	0.13	0.6	
04...	1045	18.0	13	6.30	12.5	10.0	0.04	1.1	0.35	0.54	0.13	1.0	
JUN													
01...	1115	3.00	14	5.90	22.0	8.5	0.02	1.0	0.35	0.39	0.31	0.9	
01...	1130	18.0	15	5.90	17.0	7.1	0.03	1.7	0.36	0.79	0.08	1.4	
**30...	0800	3.00	14	6.30	22.0	8.3	0.03	1.3	0.42	0.76	0.06	0.9	
**30...	0801	3.00	13	6.30	22.0	8.0	--	1.0	0.38	0.74	0.04	--	
30...	0830	18.0	18	6.00	19.5	4.0	0.05	2.1	0.51	1.0	<0.01	3.9	
AUG													
03...	1115	3.00	14	6.20	26.0	7.9	0.02	1.1	0.36	0.49	0.18	1.1	
03...	1130	18.0	16	5.70	23.0	3.8	0.04	1.5	0.42	0.63	0.26	2.5	
31...	1200	3.00	14	6.00	20.0	8.3	0.03	1.2	0.36	0.45	0.36	1.0	
31...	1210	18.0	14	6.10	20.0	8.2	0.02	1.1	0.35	0.55	0.18	0.9	
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 CONSTITUENTS, 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- PHORUS, 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 , 1986													
14...	3.8	0.27	0.03	0.07	7	<0.010	<0.005	<0.001	10	13	5	4.3	
14...	3.7	0.27	0.03	0.07	7	<0.010	<0.005	<0.001	7	12	5	3.6	
JAN , 1987													
26...	4.0	0.30	0.02	0.08	--	0.010	0.200	<0.001	3	10	<1	4.0	
26...	4.9	0.38	0.04	0.02	--	<0.010	0.030	<0.001	5	4	<1	5.3	
MAR													
04...	4.1	0.30	0.04	0.12	8	0.050	0.150	<0.001	20	6	13	3.6	
04...	4.0	0.30	0.03	0.12	8	0.060	0.170	<0.001	5	6	14	3.1	
04...	4.0	0.35	0.05	0.09	8	0.060	0.170	<0.001	7	6	12	3.4	
30...	4.1	0.29	0.03	0.04	8	0.070	0.110	0.001	<1	9	14	3.5	
30...	4.0	0.29	0.03	0.03	8	0.060	0.100	0.002	<1	6	13	3.4	
30...	4.0	0.29	0.03	0.03	8	0.070	0.110	0.001	<1	6	13	3.4	
MAY													
04...	3.8	0.27	0.03	<0.01	--	0.060	0.033	0.002	7	6	10	3.3	
04...	3.7	0.27	0.02	<0.01	--	0.060	0.067	0.003	8	6	10	3.7	
JUN													
01...	3.4	0.29	0.06	0.05	6	<0.010	0.010	<0.001	5	10	13	3.6	
01...	3.4	0.28	0.05	0.11	8	<0.010	0.074	<0.001	4	11	19	1.2	
30...	3.7	0.28	0.04	0.20	7	<0.010	0.022	<0.001	4	4	2	4.3	
30...	3.6	0.28	0.04	--	--	<0.010	0.023	<0.001	--	--	--	3.7	
30...	3.0	0.32	0.06	0.30	--	<0.010	0.034	<0.001	3	19	42	3.5	
AUG													
03...	3.5	0.29	0.05	<0.01	--	<0.010	0.031	<0.001	10	6	<1	4.8	
03...	3.2	0.31	0.05	0.01	8	<0.010	0.041	<0.001	5	24	36	4.7	
31...	3.7	0.29	0.05	0.11	7	<0.010	0.048	<0.001	3	5	3	4.4	
31...	3.7	0.30	0.05	0.08	7	<0.010	0.038	<0.001	2	5	3	4.2	

**SAMPLES WITH SAME DATES AND SAMPLING DEPTHS ARE REPLICATES.

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QUALITY OF PRECIPITATION

WATER-QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	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)	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- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P) (00671)
455911089405903 VANDERCOOK LK BULK PRECIP COLL NR WOODRUFF, WI (LAT 45 59 11 LONG 089 40 59)												
NOV 02, 1986- DEC 01, 1986	13	4.70	0.47	0.09	0.33	0.07	1.2	0.16	0.01	0.420	0.290	<0.010
DEC 01, 1986- JAN 01, 1987	17	4.60	0.38	0.08	0.33	0.05	1.3	0.29	0.03	0.520	0.380	<0.010
JAN 01, 1987- JAN 26, 1987	28	--	0.71	0.11	0.82	0.04	2.6	0.33	0.05	0.900	0.850	<0.010
JAN 26, 1987- MAR 03, 1987	15	--	0.80	0.10	0.37	0.03	1.4	0.22	0.03	0.560	0.360	<0.010
MAR 03, 1987- MAR 30, 1987	37	--	1.0	0.22	0.48	0.16	3.7	0.29	0.15	0.920	0.730	0.013
MAR 30, 1987- MAY 04, 1987	16	5.80	0.91	0.14	0.26	0.17	2.7	0.16	0.01	0.620	1.00	0.001
MAY 04, 1987- JUN 01, 1987	15	4.90	0.50	0.10	0.19	0.19	2.2	0.19	0.03	0.360	0.450	<0.001
JUN 01, 1987- JUN 30, 1987	16	6.30	0.75	0.16	0.44	0.26	2.6	0.19	0.03	0.460	0.720	0.010
JUN 30, 1987- AUG 03, 1987	11	5.00	0.55	0.08	0.24	0.12	1.9	0.18	0.02	0.350	0.570	<0.001
AUG 03, 1987- AUG 31, 1987	27	4.40	1.2	0.18	0.25	0.12	2.9	0.16	0.03	0.480	0.610	<0.001
AUG 31, 1987- OCT 07, 1987	12	4.20	0.69	0.11	0.47	0.08	2.3	0.13	<0.01	0.240	0.380	<0.001
460307089391203 TROUT LK BULK PRECIP COLL NR BOULDER JCT, WI (LAT 46 03 07 LONG 089 39 12)												
NOV 02, 1986- DEC 01, 1986	14	4.70	0.41	0.09	0.28	1.8	1.3	0.13	0.01	0.420	0.290	<0.010
DEC 01, 1986- JAN 01, 1987	19	4.50	0.39	0.08	0.32	0.04	1.5	0.25	0.04	0.550	0.390	<0.010
JAN 01, 1987- JAN 26, 1987	26	--	0.28	0.04	0.12	0.03	2.1	0.21	0.03	0.650	0.730	<0.010
MAR 03, 1987- MAR 30, 1987	42	3.00	1.1	0.24	0.43	0.16	4.3	0.25	0.15	1.00	0.800	0.012
MAY 04, 1987- JUN 01, 1987	14	5.10	0.50	0.11	0.21	0.51	2.5	0.20	0.05	0.360	0.350	<0.001
JUN 01, 1987- JUN 30, 1987	28	4.40	1.0	0.20	0.64	0.21	4.1	0.20	0.03	0.560	0.730	<0.001
JUN 30, 1987- AUG 03, 1987	9	5.00	0.45	0.07	0.25	0.09	1.4	0.16	0.02	0.300	0.510	<0.001
AUG 03, 1987- AUG 31, 1987	28	4.40	0.59	0.09	0.28	0.13	3.3	0.17	0.03	0.440	0.660	<0.001
AUG 31, 1987- OCT 07, 1987	14	4.90	0.68	0.10	0.41	0.10	2.6	0.14	0.02	0.270	0.460	<0.001

ACID DEPOSITION RECORDS

VANDERCOOK LAKE

QUALITY OF GROUND WATER

WATER-QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

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)	ACIDITY (MG/L AS H) (71825)		
VILAS COUNTY											
455903089404723	VI-41/06E/36-0877		110QRNR	09-01-87	80.00	104	8.10	9.0	<0.01		
455904089404711	VI-41/06E/36-0957		110QRNR	10-14-86	18.00	54	6.30	7.5	<0.01		
			110QRNR	01-26-87	18.00	55	--	5.0	0.06		
			110QRNR	01-26-87	18.00	54	--	5.0	0.04		
			110QRNR	03-04-87	18.00	56	--	5.0	0.40		
				03-30-87	18.00	53	6.40	--	0.03		
			110QRNR	05-04-87	18.00	56	6.50	5.0	0.04		
			110QRNR	05-04-87	18.00	51	6.50	5.0	0.03		
			110QRNR	06-01-87	18.00	58	6.50	11.0	0.02		
			110QRNR	06-30-87	18.00	58	6.50	7.5	0.05		
			110QRNR	08-03-87	18.00	58	6.20	12.0	0.02		
			110QRNR	08-31-87	18.00	56	4.40	11.0	0.03		
STATION	NUMBER	DATE	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	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)	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)
455903089404723	09-01-87	13	3.4	2.1	0.97	--	7.5	0.60	0.10	16	
455904089404711	10-14-86	6.7	1.6	2.1	0.35	20	7.4	0.33	0.06	17	
	01-26-87	6.7	1.6	1.7	0.47	20	7.4	0.35	0.07	17	
	01-26-87	6.5	1.6	1.7	0.46	21	7.2	0.36	0.08	17	
	03-04-87	--	--	--	0.45	20	7.5	0.37	0.07	--	
	03-30-87	7.2	1.8	2.4	0.26	20	7.4	0.36	0.06	18	
	05-04-87	6.4	1.5	2.0	0.29	19	7.4	0.34	0.06	16	
	05-04-87	6.4	1.5	2.0	0.29	19	7.3	0.34	0.06	16	
	06-01-87	6.4	1.6	2.0	0.35	19	7.1	0.34	0.10	16	
	06-30-87	6.8	1.7	2.4	0.15	19	7.7	0.40	0.10	16	
	08-03-87	6.4	1.6	2.1	0.36	19	7.3	0.35	0.09	17	
	08-31-87	6.6	1.6	2.2	0.36	--	7.8	0.37	0.09	17	
STATION	NUMBER	DATE	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L) (70301)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N) (00618)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	PHOS- PHORUS, 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)
455903089404723	09-01-87	--	--	<0.100	0.022	0.001	5	37	2	1.5	
455904089404711	10-14-86	48	0.070	--	<0.001	<0.001	7	6	1	1.2	
	01-26-87	48	0.070	--	0.015	0.006	3	5	<1	1.1	
	01-26-87	48	0.070	--	0.020	0.006	2	2	<1	1.2	
	03-04-87	--	0.070	--	0.016	0.002	--	--	--	1.2	
	03-30-87	50	0.070	--	0.011	0.005	<1	5	2	1.1	
	05-04-87	46	0.100	--	0.037	0.007	7	5	<1	1.3	
	05-04-87	47	0.440	--	0.037	0.007	6	4	1	1.3	
	06-01-87	46	0.040	--	0.019	<0.001	3	17	3	1.1	
	06-30-87	47	0.070	--	0.009	0.003	4	200	5	1.3	
	08-03-87	47	0.020	--	0.013	<0.001	3	3	4	2.9	
	08-31-87	--	0.060	--	0.017	<0.001	2	4	2	1.7	

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455946089415702 LITTLE ROCK LAKE NEAR WOODRUFF, WI

EXTREMES FOR CURRENT YEAR.--Maximum observed gage height, 27.86 ft, Oct. 12-17; minimum observed gage height, 26.60 ft, Sept. 30.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	27.80	27.79	27.73	27.65	27.59	27.52	27.49	27.31	27.26	26.94	27.06	26.69
2	27.79	27.79	27.73	27.64	27.58	27.53	27.50	27.30	27.28	26.95	27.06	26.67
3	27.78	27.79	27.74	27.64	27.58	27.52	27.49	27.28	27.26	26.96	27.05	26.66
4	27.78	27.79	27.74	27.63	27.58	27.52	27.49	27.26	27.23	26.94	27.02	26.64
5	27.76	27.77	27.73	27.63	27.57	27.52	27.48	27.26	27.23	26.92	26.99	26.63
6	27.75	27.77	27.73	27.62	27.57	27.52	27.48	27.24	27.22	26.93	26.98	26.72
7	27.73	27.77	27.73	27.62	27.57	27.52	27.48	27.23	27.21	26.94	26.97	26.71
8	27.73	27.78	27.72	27.62	27.57	27.52	27.48	27.21	27.20	26.93	26.96	26.71
9	27.72	27.78	27.72	27.61	27.56	27.51	27.48	27.19	27.17	26.95	26.95	26.71
10	27.71	27.78	27.72	27.61	27.55	27.51	27.47	27.18	27.15	27.06	26.94	26.70
11	27.73	27.77	27.73	27.60	27.55	27.51	27.46	27.18	27.17	27.15	26.93	26.69
12	27.86	27.76	27.72	27.60	27.55	27.50	27.46	27.16	27.18	27.18	26.91	26.69
13	27.86	27.73	27.72	27.60	27.54	27.49	27.45	27.15	27.16	27.17	26.93	26.69
14	27.86	27.73	27.71	27.60	27.54	27.49	27.45	27.14	27.15	27.15	26.94	26.68
15	27.86	27.73	27.71	27.60	27.53	27.49	27.45	27.12	27.13	27.13	26.94	26.66
16	27.86	27.73	27.71	27.59	27.53	27.49	27.45	27.11	27.11	27.11	26.93	26.66
17	27.86	27.73	27.70	27.58	27.52	27.48	27.44	27.10	27.10	27.10	26.92	26.68
18	27.85	27.73	27.70	27.58	27.52	27.48	27.44	27.09	27.10	27.10	26.89	26.70
19	27.84	27.73	27.70	27.58	27.52	27.47	27.43	27.15	27.11	27.09	26.88	26.70
20	27.84	27.74	27.69	27.58	27.51	27.46	27.42	27.15	27.09	27.09	26.86	26.70
21	27.83	27.75	27.69	27.57	27.51	27.46	27.41	27.15	27.07	27.11	26.85	26.69
22	27.82	27.74	27.68	27.58	27.51	27.46	27.38	27.14	27.07	27.10	26.84	26.69
23	27.82	27.75	27.68	27.58	27.51	27.45	27.37	27.12	27.05	27.09	26.81	26.68
24	27.82	27.75	27.68	27.57	27.51	27.45	27.35	27.11	27.04	27.17	26.79	26.66
25	27.82	27.75	27.67	27.57	27.50	27.46	27.37	27.11	27.02	27.17	26.77	26.64
26	27.82	27.76	27.67	27.57	27.50	27.46	27.37	27.11	27.01	27.16	26.76	26.64
27	27.80	27.75	27.66	27.57	27.50	27.46	27.37	27.14	26.98	27.14	26.75	26.63
28	27.80	27.75	27.66	27.56	27.49	27.46	27.35	27.18	26.97	27.11	26.73	26.63
29	27.79	27.74	27.65	27.57	---	27.46	27.34	27.21	26.98	27.10	26.72	26.62
30	27.79	27.74	27.65	27.59	---	27.47	27.32	27.28	26.96	27.09	26.72	26.60
31	27.79	---	27.65	27.59	---	27.46	---	27.27	---	27.07	26.70	---
TOTAL	861.87	832.67	858.72	855.50	771.06	852.10	822.92	842.63	813.66	839.10	833.55	800.17
MEAN	27.8	27.8	27.7	27.6	27.5	27.5	27.4	27.2	27.1	27.1	26.9	26.7
MAX	27.86	27.79	27.74	27.65	27.59	27.53	27.50	27.31	27.28	27.18	27.06	26.72
MIN	27.71	27.73	27.65	27.56	27.49	27.45	27.32	27.09	26.96	26.92	26.70	26.60
CAL YR 1986	TOTAL 10153.63	MEAN 27.8	MAX 28.10	MIN 27.61								
WTR YR 1987	TOTAL 9983.80	MEAN 27.4	MAX 27.86	MIN 26.60								

GROUND-WATER LEVELS

455958089420501 WELL VI-41/06E/26-0895

LOCATION.--Lat 45°59'58", long 89°42'05", in NE 1/4 SE 1/4 SE 1/4 sec.2, T.41 N., R.6 E., Vilas County, Hydrologic Unit 07070001, 0.05 mi northeast of Little Rock Lake, about 7 mi north of Woodruff.

AQUIFER.--Sand and gravel.

WELL CHARACTERISTICS.--Augered water-table observation well, diameter 3 in., depth 22 ft, cased to 20 ft, screened 20-22 ft.

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.

EXTREMES FOR PERIOD OF RECORD.--Maximum observed water level, 27.08 ft, Apr. 26-28, 1986; minimum observed water level, 24.55 ft, Sept. 30, 1987.

EXTREMES FOR CURRENT YEAR.--Maximum observed water level, 26.21 ft, Oct. 27-29; minimum observed water level, 24.55 ft, Sept. 30.

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26.07	26.19	26.00	25.87	25.65	25.49	25.38	25.34	25.18	24.68	25.00	24.74
2	26.07	26.19	26.01	25.86	25.64	25.48	25.37	25.34	25.20	24.99	24.56	24.73
3	26.08	26.19	26.02	25.85	25.63	25.46	25.37	25.32	25.20	24.98	24.68	24.73
4	26.08	26.19	25.99	25.85	25.61	25.46	25.36	25.31	25.19	24.97	24.98	24.72
5	26.08	26.19	25.98	25.85	25.61	25.45	25.36	25.31	25.19	24.96	24.97	24.70
6	26.08	26.19	25.97	25.86	25.61	25.45	25.36	25.31	25.19	24.95	24.96	24.67
7	26.08	26.18	25.97	25.84	25.62	25.45	25.36	25.30	25.18	24.95	24.96	24.67
8	26.08	26.18	25.97	25.84	25.61	25.45	25.36	25.30	25.18	24.94	24.95	24.67
9	26.05	26.17	25.97	25.83	25.60	25.43	25.37	25.29	25.16	24.91	24.94	24.67
10	26.05	26.14	25.96	25.83	25.59	25.43	25.37	25.27	25.16	24.91	24.93	24.66
11	26.05	26.14	25.96	25.82	25.59	25.43	25.37	25.27	25.16	24.93	24.92	24.66
12	26.08	26.13	25.95	25.83	25.59	25.43	25.36	25.25	25.16	24.96	24.92	24.66
13	26.11	26.12	25.94	25.82	25.58	25.42	25.36	25.25	25.15	24.98	24.92	24.66
14	26.14	26.12	25.95	25.77	25.58	25.42	25.36	25.23	25.15	25.02	24.91	24.66
15	26.15	26.12	25.93	25.71	25.57	25.42	25.36	25.23	25.14	25.02	24.91	24.65
16	26.16	26.12	25.92	25.70	25.56	25.41	25.36	25.22	25.13	25.02	24.88	24.64
17	26.16	26.11	25.92	25.70	25.55	25.40	25.36	25.22	25.12	25.02	24.88	24.63
18	26.17	26.08	25.92	25.71	25.55	25.40	25.36	25.21	25.10	25.02	24.88	24.62
19	26.18	26.08	25.92	25.70	25.54	25.40	25.36	25.21	25.09	25.01	24.87	24.62
20	26.19	26.08	25.92	25.70	25.53	25.39	25.36	25.21	25.09	25.01	24.87	24.62
21	26.20	26.06	25.91	25.69	25.53	25.39	25.36	25.20	25.08	25.01	24.86	24.61
22	26.20	26.06	25.91	25.69	25.53	25.38	25.37	25.20	25.07	25.01	24.86	24.61
23	26.20	26.06	25.90	25.68	25.51	25.38	25.37	25.19	25.06	25.01	24.84	24.60
24	26.20	26.05	25.90	25.67	25.51	25.38	25.37	25.18	25.05	25.00	24.83	24.59
25	26.20	26.05	25.90	25.67	25.50	25.38	25.35	25.18	25.05	25.00	24.82	24.59
26	26.20	26.04	25.89	25.66	25.49	25.38	25.35	25.16	25.04	25.01	24.81	24.59
27	26.21	26.03	25.89	25.66	25.49	25.38	25.34	25.16	25.04	25.01	24.80	24.58
28	26.21	26.02	25.88	25.65	25.49	25.38	25.34	25.15	25.02	25.01	24.79	24.56
29	26.21	26.01	25.88	25.65	---	25.37	25.35	25.15	25.02	25.01	24.77	24.56
30	26.20	26.01	25.87	25.64	---	25.37	25.34	25.16	24.82	25.01	24.77	24.55
31	26.20	---	25.88	25.64	---	25.38	---	25.17	---	25.01	24.75	---
TOTAL	810.34	783.30	803.98	798.24	715.86	787.84	760.81	782.29	753.37	774.32	770.79	739.22
MEAN	26.1	26.1	25.9	25.7	25.6	25.4	25.4	25.2	25.1	25.0	24.9	24.6
MAX	26.21	26.19	26.02	25.87	25.65	25.49	25.38	25.34	25.20	25.02	25.00	24.74
MIN	26.05	26.01	25.87	25.64	25.49	25.37	25.34	25.15	24.82	24.68	24.56	24.55

CAL YR 1986	TOTAL 9610.22	MEAN 26.3	MAX 27.08	MIN 25.87
WTR YR 1987	TOTAL 9280.22	MEAN 25.4	MAX 26.21	MIN 24.55

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
04030000	Montreal River near Saxon, WI	262	1938-70
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, WI	3,730	1907-09, 1913-81
04067500	Menominee River near McAllister, WI	3,930	1945-61, 1979-86
04068000	Peshigo 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
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
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

Station number	Station name	Drainage area (sq mi)	Period of record
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
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
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
05401050	Tenmile Creek near Nekoosa, WI	73.3	1963-79
05401100	Fourteenmile Creek near New Rome, WI	91.9	1964-79
05401500	Wisconsin River near Necedah, WI	5,860	1902-14, 1944-50
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
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

Station number	Station name	Drainage area (sq mi)	Period of record
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
05423500	South Branch Rock River at Waupun, WI	62.8	1948-69
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
05433000	East Branch Pecatonica River near Blanchardville, WI	221	1939-86
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 Waldwick, WI	5.9	1977-79
05434235	Skinner Creek at Skinner Hollow Road near Monroe, WI	32.6	1978-81
05434240	Skinner Creek at Klondyke Road near Monroe, WI	35.0	1978-81
05435980	West Branch Sugar River near Mount Vernon, WI	32.7	1979-80
05436000	Mount Vernon Creek near Mount Vernon, WI	16.4	1954-65, 1975-80
05545300	White River near Burlington, WI	110	1973-82

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.

WATER-SUPPLY PAPERS

- U.S. Geological Survey, 1988, National Water Summary, 1986 Hydrologic events, selected water quality trends, and ground water quality. U.S. Geological Survey Water Supply Paper 2325, 569 p.
- 1986, National water summary, 1985 Hydrologic events and surface water resources. U.S. Geological Survey Water Supply Paper 2300, 506 p.
- 1985, National water summary, 1984 Hydrologic events, selected water quality trends, and ground water resources. U.S. Geological Survey Water Supply Paper 2275, 467 p.
- 1984, National water summary, 1983 Hydrologic events and issues, U.S. Geological Survey Water Supply Paper 2250, 243 p.
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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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