1969

Water Resources Data for Wisconsin

Part 1. Surface Water Records

Part 2. Water Quality Records

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

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

CALENDAR FOR WATER YEAR 1969

OCTOBER 1968

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

NOVEMBER 1968

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
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17	18	19	20	21	22	23
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DECEMBER 1968

S	M	T	W	T	F	S
1	2	3	4	5	6	7
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29	30	31				

JANUARY 1969

S	M	T	W	T	F	S
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5	6	7	8	9	10	11
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19	20	21	22	23	24	25
26	27	28	29	30	31	

FEBRUARY 1969

S	M	T	W	T	F	S
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MARCH 1969

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30	31					

APRIL 1969

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27	28	29	30			

MAY 1969

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JUNE 1969

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15	16	17	18	19	20	21
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29	30					

JULY 1969

S	M	T	W	T	F	S
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6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

AUGUST 1969

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

SEPTEMBER 1969

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

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Water Resources Data for Wisconsin

Part 1. Surface Water Records

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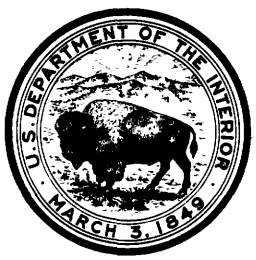

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

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

Prepared in cooperation with

Wisconsin Department of Natural Resources
Wisconsin Department of Transportation
University Extension--The University of Wisconsin
Geological and Natural History Survey
Southeastern Wisconsin Regional Planning Commission
Corps of Engineers, U. S. Army
Fish and Wildlife Service, Department of the Interior
Soil Conservation Service, Department of Agriculture

Copies of this report may be obtained from
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Madison, Wisconsin 53706

1971

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WATER RESOURCES DATA FOR WISCONSIN, 1969

Part 1. Surface-Water Records
Part 2. Water-Quality Records

INTRODUCTION

Water resources data for the 1969 water year for Wisconsin including records of streamflow or reservoir storage at gaging stations, partial-record stations, and miscellaneous sites, and records of water-quality data on the chemical and physical characteristics of surface-water, are given in this report. Records for a few pertinent gaging stations in bordering States are also included. The records were collected and computed by the Water Resources Division of the U.S. Geological Survey under the direction of C. L. R. Holt, Jr., district chief. These data represent that portion of the National Water Data System collected by the U.S. Geological Survey and cooperating State and Federal agencies in Wisconsin.

Through September 30, 1960, the records of discharge and stage of streams and contents and stage of lakes or reservoirs were published in an annual series of U.S. Geological Survey water-supply papers entitled, "Surface Water Supply of the United States."

Beginning with the 1961 water year, streamflow records and related data have been released by the Geological Survey in annual reports on a State-boundary basis. Distribution of these reports is limited; they are designed primarily for rapid release of data shortly after the end of the water year to meet local needs. The streamflow records for 1961-65 will also be published in a Geological Survey water-supply paper series entitled, "Surface Water Supply of the United States 1961-65."

The Geological Survey has published records of chemical quality, suspended sediment, and water temperatures since 1941 in an annual series of water-supply papers entitled, "Quality of Surface Waters of the United States." Beginning with the 1964 water year, water-quality records also have been released on a State-boundary basis in conjunction with streamflow records or in a separate volume.

COOPERATION

The U.S. Geological Survey and organizations of the State of Wisconsin have had cooperative agreements for the systematic collection of streamflow records since 1913, and for water-quality records since 1963. Organizations that supplied data are acknowledged in station descriptions. Organizations that assisted in collecting records through cooperative agreement with the Survey are:

Wisconsin Department of Natural Resources, L. P. Voigt, secretary.

Wisconsin Department of Transportation, G. H. Bakke, secretary, and W. A. Kline, chief bridge engineer.

University Extension--The University of Wisconsin Geological and Natural History Survey, George F. Hanson, state geologist and director.

Southeastern Wisconsin Regional Planning Commission, Kurt W. Bauer, executive director.

Assistance in the form of funds or services was given by the Corps of Engineers, U. S. Army, in collecting surface-water records for 24 gaging stations published in this report.

Assistance was also furnished by the Fish and Wildlife Service of the United States Department of Interior and the Soil Conservation Service of the United States Department of Agriculture.

The following organizations aided in collecting surface-water 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-Edwards Paper Co.; Wisconsin River Power Co.; and Milwaukee County Park Commission.

DEFINITION OF TERMS

Definition of terms related to streamflow, water-quality, and other hydrologic data, as used in this report, are defined as follows:

Biochemical oxygen demand (BOD) is the amount of oxygen required by bacteria while stabilizing decomposable organic matter under aerobic conditions.

Coliform and fecal coliform organisms are groups of bacteria used as indicators of the sanitary quality of the water. The number of coliform colonies per 100 milliliters is determined by the membrane filter method.

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

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

Cfs-day is the volume of water represented by a flow of 1 cubic foot per second for 24 hours. It is equivalent to 86,400 cubic feet, 1.9835 acre-feet, or 646,317 gallons, and represents a runoff of 0.0372 inch from 1 square mile.

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 (cfs) is the rate of discharge representing a volume of 1 cubic foot passing a given point during 1 second and is equivalent to 7.48 gallons per second or 448.8 gallons per minute.

Discharge is the volume of water (or more broadly, total fluids), that passes a given point within a given period of time.

Mean discharge is the arithmetic average of individual daily mean discharges during a specific period.

Instantaneous discharge is the discharge at a particular instant of time. If this discharge is reported instead of the daily mean, the heading of the discharge column in the tables is "Discharge (cfs)."

Drainage area of a stream at a specified location is that area, measured in a horizontal plane, enclosed by a topographic divide from which direct surface runoff from precipitation normally drains by gravity into the stream above the specified point. Figures of drainage area given herein include all closed basins, or noncontributing areas, within the area unless otherwise 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 used with a reading on a gage.

Gaging station is a particular site on a stream, canal, lake, or reservoir where systematic observations of gage height or discharge are obtained. When used in connection with a discharge record, the term is applied only to those gaging stations where a continuous record of discharge is obtained.

Hardness of water is a physical-chemical characteristic attributable to the presence of alkaline earths (principally calcium and magnesium) and is expressed as equivalent calcium carbonate ($CaCO_3$).

Micrograms per liter (ug/l, UG/L) is a more precise unit for expressing the concentration of chemical constituents in solution. One thousand micrograms per liter is equivalent to one milligram per liter. See below.

Milligrams per liter (mg/l, MG/L) is a unit for expressing the concentration of chemical constituents in solution. Milligrams per liter represents the weight of solute per unit volume of water. Milligrams or micrograms per liter may be converted to milliequivalents (one thousandth of a gram-equivalent weight of a constituent) per liter by multiplying by the factors in table 1, page 5. Concentration of suspended sediment expressed in milligrams per liter is based on the weight of sediment in a liter of water-sediment mixture. Sediment concentrations that are expressed in parts per million may be converted to milligrams per liter by using the factors in table 2, page 5.

Table 1.--Factors for conversion of chemical constituents in milligrams or micrograms per liter to milliequivalents per liter

Ion	Multiply by	Ion	Multiply by
Aluminum (Al^{+3})*...	0.11119	Iodide (I^{-1}).....	0.00788
Ammonia as NH_4^{+1}...	.05544	Iron (Fe^{+3})*.....	.05372
Barium (Ba^{+2}).....	.01456	Lead (Pb^{+2})*.....	.00965
Bicarbonate (HCO_3^{-1})	.01639	Lithium (Li^{+1})*...	.14411
Bromide (Br^{-1}).....	.01251	Magnesium (Mg^{+2})..	.08226
Calcium (Ca^{+2}).....	.04990	Manganese (Mn^{+2})*.	.03640
Carbonate (CO_3^{-2})..	.03333	Nickel (Ni^{+2})*....	.03406
Chloride (Cl^{-1})....	.02821	Nitrate (NO_3^{-1})...	.01613
Chromium (Cr^{+6})*...	.11539	Nitrite (NO_2^{-1})...	.02174
Cobalt (Co^{+2})*.....	.03394	Phosphate (PO_4^{-3}).	.03159
Copper (Cu^{+2})*.....	.03148	Potassium (K^{+1})...	.02557
Cyanide (CN^{-1})*....	.03844	Sodium (Na^{+1}).....	.04350
Fluoride (F^{-1}).....	.05264	Strontium (Sr^{+2})*.	.02283
Hydrogen (H^{+1}).....	.99209	Sulfate (SO_4^{-2})...	.02082
Hydroxide (OH^{-1})...	.05880	Zinc (Zn^{+2})*.....	.03060

*Constituent reported in micrograms per liter; multiply by factor and divide results by 1,000.

Table 2.--Factors for conversion of sediment concentration in parts per million to milligrams per liter*
(All values calculated to three significant figures)

Range of concentration (ppm)	Multiply by	Range of concentration (ppm)	Multiply by
0 - 15,900	1.00	322,000 - 341,000	1.26
16,000 - 46,800	1.02	342,000 - 361,000	1.28
46,900 - 76,500	1.04	362,000 - 380,000	1.30
76,600 - 105,000	1.06	381,000 - 399,000	1.32
106,000 - 133,000	1.08	400,000 - 416,000	1.34
134,000 - 159,000	1.10	417,000 - 434,000	1.36
160,000 - 185,000	1.12	435,000 - 451,000	1.38
186,000 - 210,000	1.14	452,000 - 467,000	1.40
211,000 - 233,000	1.16	468,000 - 483,000	1.42
234,000 - 256,000	1.18	484,000 - 498,000	1.44
257,000 - 279,000	1.20	499,000 - 514,000	1.46
280,000 - 300,000	1.22	515,000 - 528,000	1.48
301,000 - 321,000	1.24	529,000 - 542,000	1.50

*Based on water density of 1.000 g/ml and sediment density of 2.65 g/cc.

Partial-record station is a particular site where limited streamflow or water-quality data are collected systematically over a period of years for use in hydrologic analyses.

Particle size is the diameter, in millimeters (mm), of suspended sediment or bed material determined by sieve and sedimentation methods.

Particle-size classification, used in this report, agrees closely with recommendations made by the American Geophysical Union Subcommittee on Sediment Terminology (Lane and others, 1947, p. 937). The classification is as follows:

Clay:	Smaller than 0.004 mm.
Silt:	Between 0.004 and 0.062 mm.
Sand:	Between 0.062 and 2.0 mm.
Gravel:	Between 2.0 and 64.0 mm.

The particle-size distributions given in this report are not necessarily representative of the particle sizes of sediment in transport in the natural stream. Most of the organic matter is removed, and the sample is subjected to mechanical and chemical dispersion before analysis of the silt and clay.

Runoff in inches (IN.) shows the depth to which the drainage area would be covered if all the runoff for a given time period were uniformly distributed on it.

Sediment is solid material that originates mostly from disintegrated rocks and is transported by, suspended in, or deposited from water; it includes chemical and biochemical precipitates and decomposed organic material such as humus. The quantity, characteristics, and cause of the occurrence of sediment in streams are influenced by environmental factors. Some major factors are degree of slope, length of slope, soil characteristics, land usage, and quantity and intensity of precipitation.

Sediment discharge is the rate at which dry weight of sediment passes a section of a stream or is the quantity of sediment, as measured by dry weight, or by volume, that is discharged in a given time.

Sodium adsorption ratio (SAR) is the expression of relative activity of sodium ions in exchange reactions with soil and is an index of sodium or alkali hazard to the soil. This ratio should be known especially for water used for irrigating farmland.

Solute is any substance derived from the atmosphere, vegetation, soil, or rocks that is dissolved in water.

Specific conductance is a measure of the ability of a water to conduct an electrical current and is expressed in micromhos per centimeter at 25°C. Because the specific conductance is related to the number and specific chemical types of ions in solution, it can be used for approximating the dissolved-solids content in the water. Commonly, the amount of dissolved solids (in milligrams per liter) is about 65 percent of the specific conductance (in micromhos). This relation is not constant from stream to stream or from well to well, and it may even vary in the same source with changes in the composition of the water.

Stage-discharge relation is the relation between gage height and the amount of water flowing in a channel, expressed as volume per unit of time.

Suspended sediment is the sediment that at any given time is maintained in suspension by the upward components of turbulent currents or that exists in suspension as a colloid.

Thermograph is a thermometer that continuously and automatically records, on a chart, the water temperature of a stream. "Temperature recorder" is the term used to indicate the presence of a thermograph or a digital mechanism that automatically records water temperatures on paper tape.

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

Tons per day is the quantity of a substance in solution or suspension that passes a stream section during a 24-hour period.

WRD is used as an abbreviation for "Water-Resources Data" in the summary REVISIONS paragraph to refer to previously published state annual basic-data reports.

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

SPECIAL NETWORKS AND PROGRAMS

Hydrologic bench-mark station is one that provides hydrologic data for a basin in which the hydrologic regimen will likely be governed solely by natural conditions. Data collected at a bench-mark station may be used to separate effects of natural from manmade changes in other basins which have been developed and in which the physiography, climate, and geology are similar to those in the undeveloped bench-mark basin.

DOWNSTREAM ORDER AND STATION NUMBERS

Records are listed in a downstream direction along the main stream, and stations on tributaries are listed between stations on the main stream in the order in which those tributaries enter the main stream. Stations on tributaries entering above all mainstream stations are listed before the first mainstream station. Stations on tributaries to tributaries are listed in a similar manner. In the lists of gaging stations in the front of this report the rank of tributaries is indicated by indention, each indention representing one rank.

As an added means of identification, each gaging station, partial-record station, and water-quality station has been assigned a station number. These are in the same downstream order used in this report. In assigning station numbers, no distinction is made between partial-record stations and continuous-record gaging stations; therefore, the station number for a partial-record station indicates downstream order position in a list made up of both types of stations. Water-quality stations located at or near gaging stations or partial-record stations have the same number as the gaging or partial-record station. Gaps are left in the numbers to allow for new stations that may be established; hence, the numbers are not consecutive. The complete 8-digit number for each station, such as 05-3895.00, includes the part number "05" and a 6-digit station number. In this report, the nonessential zeros are not shown. For example, the complete number, 05-3895.00, would appear as 5-3895, just to the left of the station name. However, in the 1969 quality-water data prepared by ADP, the station number appears as an 8-digit number without dash or decimal point. This number appears just to the left of the station name. In this report, the records are listed in downstream order by parts. All records for a drainage basin

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encompassing more than one State could be arranged in downstream order by assembling pages from the various State reports by station number to include all records in the basin.

PART 1. SURFACE WATER RECORDS

Collection and computation of data

The base data collected at gaging stations consists of records of stage and measurements of discharge of streams or canals, and stage, surface area, and contents of lakes or reservoirs. In addition, observations of factors affecting the stage-discharge relation or the stage-capacity relation, weather records, and other information are used to supplement base data in determining the daily flow or volume of water in storage. Records of stage are obtained from a water-stage recorder that gives a continuous graph of the fluctuations (for digital recorders, a tape punched at 15-, 30-, or 60-minute intervals) or from direct readings on a nonrecording gage. Measurements of discharge are made with a current meter, using the general methods adopted by the Geological Survey on the basis of experience in stream gaging since 1888. These methods are described in standard textbooks on the measurement of stream discharge. (See also SELECTED REFERENCES). Surface areas of lakes or reservoirs are determined from instrument surveys using standard methods. The configuration of the reservoir bottom is determined by sounding at many points.

For a stream-gaging station, rating tables giving the discharge for any stage are prepared from stage-discharge relation curves defined by discharge measurements. If extensions to the rating curves are necessary to define the extremes of discharge, they are made on the basis of indirect measurements of peak discharge (such as slope-area or contracted-opening measurements, computation of flow over dams or weirs), velocity-area studies, and logarithmic plotting. The application of the daily mean gage height to the rating table gives the daily mean discharge, from which the monthly and the yearly mean discharge are computed. If the stage-discharge relation is subject to change because of frequent or continual change in the physical features that form the control, the daily mean discharge is determined by the shifting-control method, in which correction factors based on individual discharge measurements and notes by engineers and observers are used in applying the gage heights to the rating tables. If the stage-discharge relation for a station is temporarily changed by the presence of aquatic growth or debris on the control, the daily mean discharge is computed by what is basically the shifting-control method.

At some stream-gaging stations the stage-discharge relation is affected by backwater from reservoirs, tributary streams, or other sources. This necessitates the use of the slope method in which the slope or fall in a reach of the stream is a factor in determining discharge. Information required for determining the slope or fall is obtained by means of an auxiliary gage set at some distance from the base gage. At some stations the stage-discharge relation is affected by changing stage; at these stations the rate of change in stage is used as a factor in determining discharge.

At some stream-gaging stations the stage-discharge relation is affected by ice in the winter, and it becomes impossible to compute the discharge in the usual manner. Discharge for periods of ice effect is computed on the basis of the gage-height record and occasional winter discharge measurements, consideration being given to the available information on temperature and precipitation, notes by gage observers and hydrologists, and comparable records of discharge for other stations in the same or nearby basins.

For some gaging stations there are periods when no gage-height record is obtained or the recorded gage height is so faulty that it cannot be used to compute daily discharge or contents. This happens when the recorder stops or otherwise fails to operate properly, intakes are plugged, the float is frozen in the well, or for various other reasons. For such periods the daily discharges are estimated on the basis of recorded range in stage, adjoining good record, discharge measurements, weather records, and comparison with other station records from the same or nearby basins.

The data in this report generally comprise a description of the station and tabulations of basic data. For gaging stations on streams or canals a table showing the daily discharge and monthly and yearly discharge is given. For gaging stations on lakes, periodic gage heights are given. For reservoir stations, month-end contents are given. Records are published for the water year, which begins on October 1 and ends on September 30. A calendar for the 1969 water year is shown on the reverse side of the front cover to facilitate finding the day of the week for any date.

The description of the gaging stations gives the location, drainage area, period of record, type and history of gages, average discharge, extremes of discharge, and general remarks. The location of the gaging station and the drainage area are obtained from the most accurate maps available.

River mileage, given under "LOCATION" for some stations, is that determined and used by the Corps of Engineers unless otherwise noted. Periods for which there are published records for the present station or for stations generally equivalent to the present one are given under "PERIOD OF RECORD." The type of gage currently in use, the datum of the present gage above mean sea level, and a condensed history of the types, locations, and datums of previous gages used during the period of record are given under "GAGE." In references to datum of gage, the phrase "mean sea level" denotes "Sea Level Datum of 1929" as used by the Topographic Division of the Geological Survey unless otherwise qualified. The average discharge for the number of years indicated is given under "AVERAGE DISCHARGE;" it is not given for stations having fewer than 5 complete years of record or for stations where changes in water development during the period of record cause the figure to have little significance. The maximum discharge and the maximum gage height, the minimum discharge if there is little or no regulation and the minimum gage height if it is significant are given under "EXTREMES." The minimum daily discharge is given if there is extensive regulation (also the minimum discharge and gage height if they are abnormally low). In the first paragraph headed "Current year," the data given are for the complete current water year unless otherwise specified. In the second paragraph under "EXTREMES" headed "Period of record" the data given are for the period of record given in PERIOD OF RECORD paragraph. Reliable information concerning major floods that occurred outside the period of record is given in the third or last paragraph under "EXTREMES." Unless otherwise qualified, the maximum discharge corresponds to the crest stage obtained by use of a water-stage recorder (graphic or digital), a crest-stage gage, or a nonrecording gage read at the time of the crest. If the maximum gage height did not occur at the same time as the maximum discharge, it is given separately. Information pertaining to the accuracy of the discharge records, to conditions that affect the natural flow at the gaging station, and availability of Water Quality records, is given under "REMARKS."

Previously published records of some stations have been found to be in error on the basis of data or information later obtained. Revisions of such records are usually published along with the current records in one of the annual or compilation reports. In order to make it easier to find such revised records, a paragraph head "REVISIONS (WATER YEARS)" has been added to the description of all stations for which revised records have been published. Listed therein

are all the reports in which revisions have been published, each followed by the water years for which figures are revised in that report. In listing the water years only one number is given; for instance, 1933 stands for the water year October 1, 1932, to September 30, 1933. If no daily, monthly, or annual figures of discharge were revised, that fact is brought out by notations 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 revised figure was first published is given. It should be noted that for all stations for which cubic feet per second per square mile and runoff in inches are published, a revision of the drainage area necessitates corresponding revision of all figures based on the drainage area. Revised figures of cubic feet per second per square mile and runoff in inches resulting from a revision of the drainage area only are usually not published in the annual series of reports.

Skelton rating tables are published for stream-gaging stations where they serve a useful purpose and the dates of applicability can be easily identified.

The daily table for stream-gaging stations gives the discharge corresponding to the daily mean gage height unless there are large or rapid changes in the discharge during a day. For days having large or rapid changes, discharge for the day is computed by averaging the mean discharge for several parts of a day. For digital recorders, the daily mean discharge is always the average of the discharges at each punched reading. For stations equipped with nonrecording gages, the daily discharge corresponds to once-daily readings of the gage or to the mean of twice-daily reading; but for periods of rapidly changing stage the discharge is determined from a gage-height graph based on gage readings.

The monthly summary is given below the daily table. For stream-gaging stations 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 may be expressed in cubic feet per second per square mile (line headed "CFSM") and in inches (line headed "IN."). Figures for cubic feet per second per square mile and runoff in inches are omitted if there is extensive regulation of diversion, if the drainage area includes large noncontributing areas, or if the average rainfall on the drainage basin is usually less than 20 inches.

In the yearly summary below the monthly summary, the figures of maximum are the maximum daily discharges for the calendar and water years; likewise, the minimums in this summary are minimum daily discharges.

Peak discharges and their times of occurrence and corresponding gage heights for many stations are listed below the yearly summary. All independent peaks above the selected base are given. The base discharge, which is given in parentheses, is selected so that an average of about three peaks a year can be presented. Peak discharges are not published for any canals, ditches, drains, or for any stream for which the peaks are subject to substantial control by man. Time of day is expressed in 24-hour local standard time; for example, 12:30 a.m. is 0030, 1:30 p.m. is 1330.

In a general footnote, introduced by the word "NOTE," certain periods are indicated for which the discharge is computed or estimated by special methods because of no gage-height record, backwater from various sources, or other unusual conditions. Periods of no gage-height record are indicated if the period is continuous for a month or more or includes the maximum discharge for the year. Periods of backwater from an unusual source, of indefinite stage-discharge relation, or of any other unusual condition at the gage are indicated only if they are a month or more in length and the accuracy of the records is affected. Days on which the stage-discharge relation is affected by ice are not indicated. The methods used in computing discharge for various unusual conditions have been explained in preceding paragraphs.

For gaging stations on lakes, the data presented comprise a description of the station and a monthly summary table of stage. For reservoir stations, a description and location paragraph is presented and month-end contents, in millions of cubic feet, are listed.

Accuracy of Data

The accuracy of discharge data 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 observations of stage, measurements of discharge, and interpretation of records.

The stations description under "REMARKS" states the degree of accuracy of the records. "Excellent" means that about 95 percent of the daily discharges are within 5 percent; "good" within 10 percent; and "fair" within 15 percent. "Poor" means that daily discharges have less than "fair" accuracy.

Figures of daily mean discharge in this report are shown to the nearest hundredth of a cubic foot per second for discharges of less than 1 cfs; to tenths between 1.0 and 10 cfs; to whole numbers between 10 and 1,000 cfs; and to 3 significant figures above 1,000 cfs. The number of significant figures used is based solely on the magnitude of the figure. The same rounding rules apply to discharge figures listed for partial-record stations and miscellaneous sites.

Discharge at many stations, as indicated by the monthly mean, may not reflect natural runoff due to the effects of diversion, consumptive use, regulation, evaporation or other factors. For these stations, discharge in cubic feet per second per square mile and runoff in inches are not published unless satisfactory adjustments can be made for such effects. Evaporation from a reservoir is not included in the adjustments for changes in reservoir contents, unless it is so stated. Even at those stations where adjustments are made, large errors in computed runoff may occur if adjustments or unadjusted losses (consumptive use, evaporation, seepage, etc.) are large in comparison with the observed discharge.

Publications

Each volume of the 1960 series of U.S. Geological Survey water-supply papers entitled "Surface Water Supply of the United States" contains a listing of the numbers of all water-supply papers in which records of surface-water data were published for the area covered by the individual volumes. Each volume also contains a list of water-supply papers that give detailed information on major floods for the area. A new series of water-supply papers containing surface-water records for the 5-year period October 1, 1960, to September 30, 1965, also will include lists of annual and special reports published as water-supply papers.

Records through September 1950 for the area covered by this report have been compiled and published in Water-Supply Papers 1307 (4) and 1308 (5); records for October 1950 to September 1960 have been compiled and published in Water-Supply

Papers 1727 (4) and 1728 (5). These reports contain summaries of monthly and annual discharge and monthend storage for all previously published records, as well as some records not contained in the annual series of water-supply papers. All records were reexamined and revised where warranted. Estimates of discharge were made to fill short gaps whenever practical. The yearly summary table for each gaging station lists the numbers of the water-supply papers in which daily records were published for that station.

Special reports on major floods or droughts or of other hydrologic studies for the area have been issued in publications other than water-supply papers. Information relative to these reports may be obtained from the district office.

Other Data Available

Data collected at partial-record stations and at miscellaneous sites are given in three tables at the end of the surface-water records in this report. The first is a table of discharge measurements at low-flow partial-record stations, the second is a table of annual maximum stage and discharge at crest-stage stations, and the third is a table of discharge measurements at miscellaneous sites.

More detailed information than that published for most of the gaging stations, such as discharge measurements, gage-height record, and rating tables, is on file in the district office. Most gaging-station records in Wisconsin through 1967 have been analyzed to give several statistical summaries as: (1) the number of days in each year that the daily discharge was between selected limits (duration tables); (2) the lowest mean discharge for selected numbers of consecutive days in each year; and (3) the highest mean discharge for selected numbers of consecutive days in each year.

PART 2. WATER QUALITY RECORDS

Collection and examination of data

Water samples for analyses usually are collected at or near gaging stations. The discharge records at these stations are used in conjunction with the computations of the sediment loads in this report.

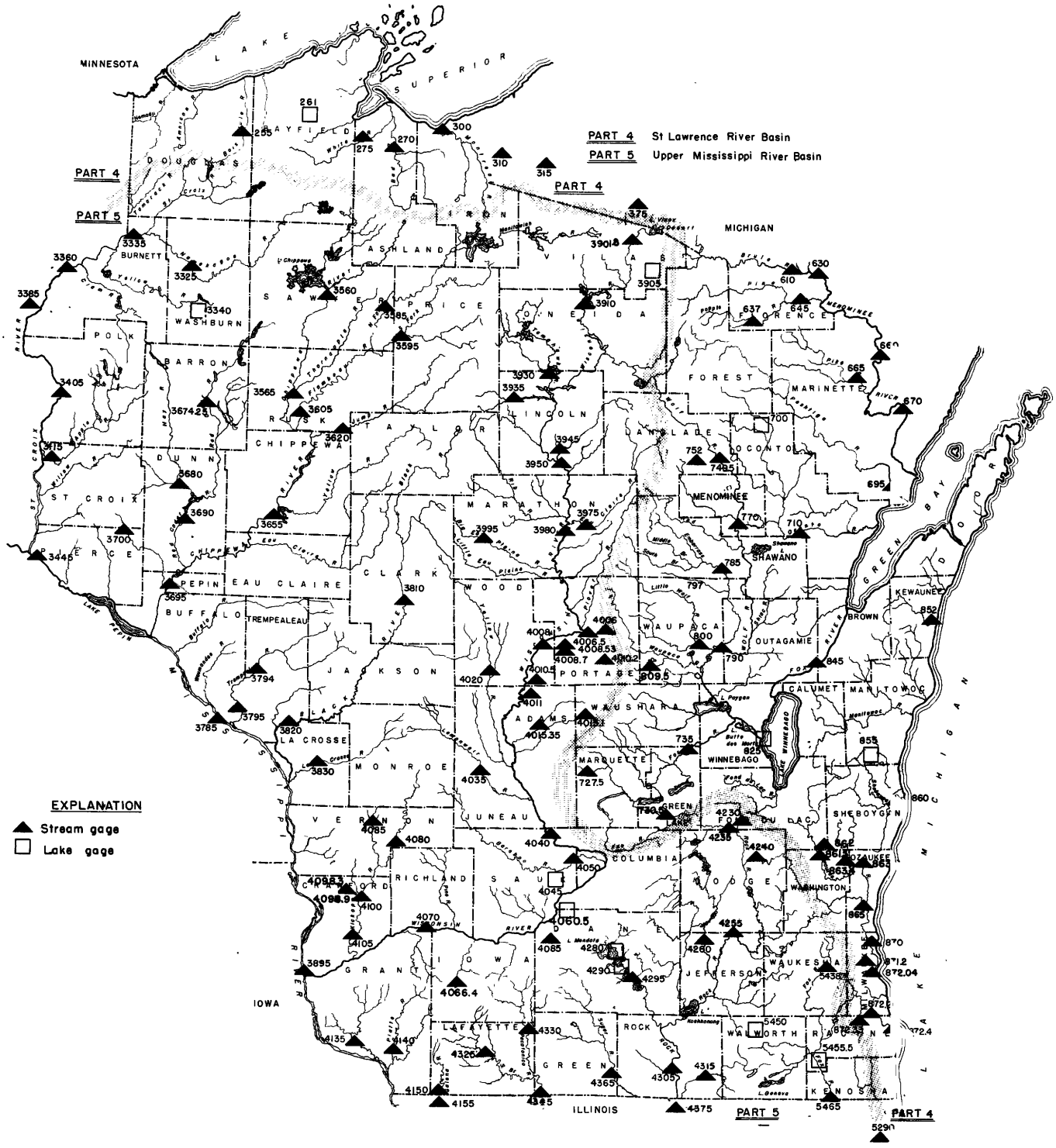

Figure 1. Map of Wisconsin showing location of lake and stream gaging stations.

A descriptive statement is given for the bench-mark water-quality station located at a streamflow station. Given in the description are location, drainage area, periods of record for the various water-quality data, extremes of pertinent data, and general remarks, in a format similar to that used for streamflow gaging stations.

Data on the quality of surface water were collected monthly or less frequently.

Water-quality information is presented for chemical quality, microbiological, water temperature, and fluvial sediment. Chemical quality includes concentrations of individual dissolved constituents and certain properties or characteristics such as hardness, sodium adsorption ratio, specific conductance, and pH. Microbiological information includes quantitative identification of certain bacteriological indicator organisms. Water-temperature data represent once-daily observations except for stations where a continuous temperature recorder furnished information from daily minimums and maximums are obtained. Fluvial-sediment information is given for suspended-sediment discharges and concentrations and for particle-size distribution of suspended sediment and bed material.

Prior to the 1968 water year, data for chemical constituents and concentration of suspended sediment were reported in parts per million (ppm) and water temperatures were reported in degrees Fahrenheit (°F). In October 1967 the U.S. Geological Survey began to use the metric system; data for chemical constituents and concentrations of suspended sediment are now reported in milligrams per liter (mg/l) and water temperatures are given in degrees Celsius (centigrade, °C). In waters with a density of 1.000 g/ml (grams per milliliter), parts per million and milligrams per liter can be considered equal. In waters with a density greater than 1.000 g/ml, values in parts per million should be multiplied by the density to convert to milligrams per liter. To convert temperatures in degrees Fahrenheit to degrees Celsius, see table 3 on next page.

In October 1968, the Geological Survey began reporting many of the chemical constituents as well as the minor elements and some pollutants in micrograms per liter instead of milligrams per liter. (See "Definition of Terms," p. 4.)

Table 3.--Degrees Fahrenheit (°F) to degrees Celsius (°C)*
(Temperature reported to nearest 0.5°C)

°F	°C	°F	°C	°F	°C	°F	°C	°F	°C	°F	°C
32	0	44	6.5	56	13.5	68	20.0	80	26.5	92	33.5
33	.5	45	7.0	57	14.0	69	20.5	81	27.0	93	34.0
34	1.0	46	8.0	58	14.5	70	21.0	82	28.0	94	34.5
35	1.5	47	8.5	59	15.0	71	21.5	83	28.5	95	35.0
36	2.0	48	9.0	60	15.5	72	22.0	84	29.0	96	35.5
37	3.0	49	9.5	61	16.0	73	23.0	85	29.5	97	36.0
38	3.5	50	10.0	62	16.5	74	23.5	86	30.0	98	36.5
39	4.0	51	10.5	63	17.0	75	24.0	87	30.5	99	37.0
40	4.5	52	11.0	64	18.0	76	24.5	88	31.0	100	38.0
41	5.0	53	11.5	65	18.5	77	25.0	89	31.5	101	38.5
42	5.5	54	12.0	66	19.0	78	25.5	90	32.0	102	39.0
43	6.0	55	13.0	67	19.5	79	26.0	91	33.0	103	39.5

*C = 5/9 (°F - 32) or °F = 9/5 (°C) + 32.

Solutes

The methods of collecting and analyzing water samples for determining the kinds and concentrations of solutes are described by Skougstad and Brown (1970). One sample can define adequately 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 at several verticals across the channel to determine accurately the solute load.

Temperature

Water temperatures are measured at most of the water-quality stations. For daily stations, the water temperatures are taken about the same time each day when sample is collected. Large streams have a small diurnal temperature change while small, shallow streams may have a daily range of several degrees and may follow closely the changes in air temperature. Some streams may be affected by waste-heat discharges.

At stations where continuously recording thermographs are present, the records consist of maximum and minimum temperatures for each day and the monthly averages.

Sediment

At some stations, suspended-sediment samples are collected with depth-integrating cable-suspended samplers from fixed sampling points at one or more verticals in the cross section. A hand sampler is used at many stations during periods of low flow. Depth-integrated samples are collected periodically at many verticals in the cross section to determine the ratio of the cross-sectional distribution of the concentration of suspended sediment to the daily sampling verticals.

During periods of high or rapidly changing flow, samples are taken twice or more often throughout the day at most stations. For periods when no samples are collected, daily loads of suspended sediment are estimated on the basis of water discharge, sediment concentrations observed immediately before and after the priods, and suspended-sediment loads for other periods of similar discharge.

At other stations, suspended-sediment samples are collected periodically at many verticals in the stream cross section. Although data collected periodically may represent conditions only at the time of observation, such data are useful in establishing seasonal relations between quantity and streamflow in predicting long-term sediment-discharge characteristics of the stream.

In addition to the records of the quantities of suspended sediment, records of periodic measurements of the particle-size distribution of the suspended sediment and bed material are included.

Publications

The annual series of water-supply papers that contain information on quality of surface waters in Wisconsin are listed on the following page.

Parts 3 and 4

Water year	WSP No.	Water year	WSP No.
1941	942	1954	1350
1942	950	1955	1400
1943	970	1956	1450
1944	1022	1957	1520
1945	1030	1958	1571
1946	1050	1959	1642
1947	1102	1960	1742
1948	1132	1961	1882
1949	1162	1962	1942
1950	1186	1963	1948
1951	1197	1964	1955
1952	1250	1965	1962
1953	1290	1966	1992

Parts 5 and 6

1941	942	1954	1351
1942	950	1955	1401
1943	970	1956	1451
1944	1022	1957	1521
1945	1030	1958	1572
1946	1050	1959	1643
1947	1102	1960	1743
1948	1132	1961	1883
1949	1162	1962	1943
1950	1187	1963	1949
1951	1198	1964	1956
1952	1251	1965	1963
1953	1291	1966	1993

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Lane, E. W., and others, 1947, Report of subcommittee on sediment terminology: Am. Geophy. Union Trans., V. 28, no. 6, P. 936-938.

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Love, S. K., and Benedict, P. C., 1948, Discharge and sediment loads in the Boise River drainage basin, Idaho, 1939-40: U.S. Geol. Survey Water-Supply Paper 1048, 150 p.

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Swenson, H. A., Baldwin, H. L., 1965, A primer on water quality: Washington, U.S. Govt. Printing Office, 27 p.

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_____1957, The development and calibration of visual-accumulation tube: Rept. 11.

_____1957, Some fundamentals of particle size analysis: Rept. 12.

_____1959, Federal Inter-agency Sedimentation sedimentation instruments and reports: Rept. AA.

_____1961, The single stage sampler for suspended sediment: Rept. 13.

_____1963, Determinations of fluvial sediment discharge: Rept. 14.

_____1963, A summary of the work of the Inter-agency sedimentation project: Rept. S.

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HYDROLOGIC CONDITIONS

Streamflow in Wisconsin for the water year ending Sept. 30, 1969, varied from about 85% of long-term average to as high as 162% of average, which was measured in the Yellow River basin in central Wisconsin (see figure 2). Five widely separated basins in central and southern Wisconsin registered flows in excess of 121% of average, largely due to high flows in April and June. The Namekagon River basin in the northwest also exceeded 121% of average, but it was the result of high water in October as well as during the spring breakup in April. Total runoff of the Namekagon for the water year was the greatest in 42 years of record.

Streamflow in 1969 for the greater part of Wisconsin ranged from 100 to 120% of long-term average. Streamflow was below long-term average only in an area generally comprising a narrow band from southwestern Wisconsin to east central Wisconsin.

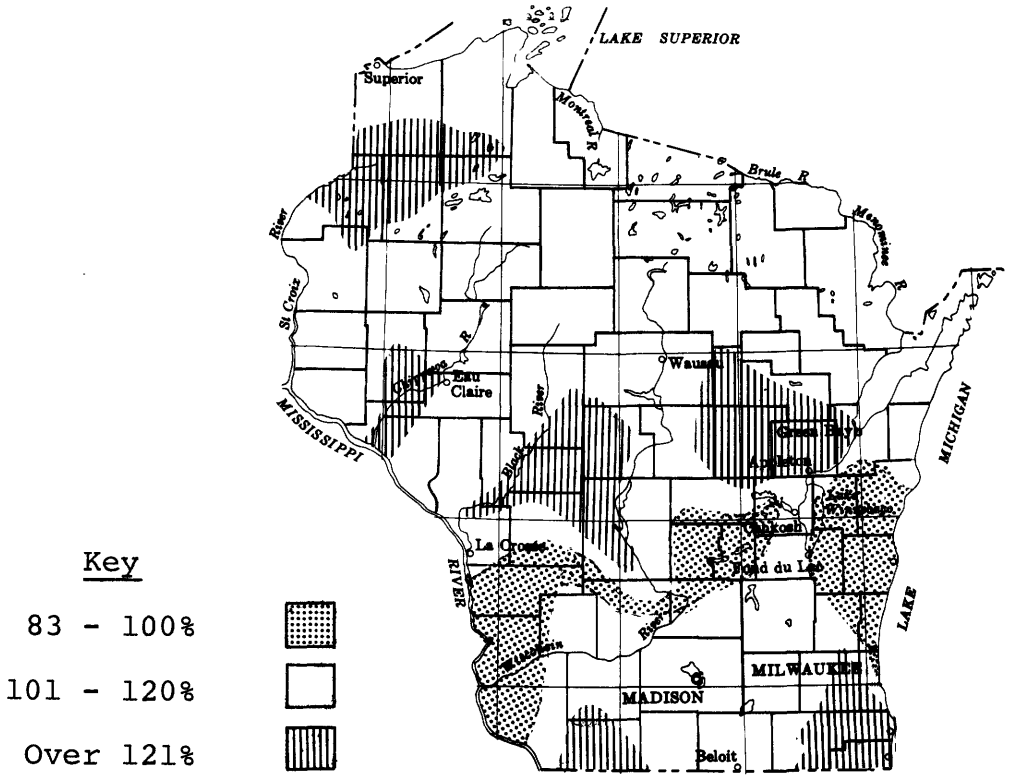

Figure 2. Variation of the 1969 mean annual streamflow as a percent of the long-term average flow.

Streamflow at gaging stations in the north was well above normal in late fall and throughout the winter (see figure 3). This was a result of heavy precipitation in the fall of 1968 and normal or above normal ground-water levels.

Snowfall was heavy in the north during December and January and the water content in the snow at the time of spring breakup was about six inches. Ideal weather conditions during spring breakup (nightly lows below freezing, daytime temperatures in the forties, and light precipitation) resulted in near mean-annual flood peaks. The most significant peak discharges were on the St. Croix River. The mean flow for the month of April at the gaging station at St. Croix Falls was the fourth highest in 68 years of record.

On June 23-26 and again on June 29-30, severe thunderstorm activity occurred in southwest Wisconsin. Precipitation amounts in excess of five inches fell in a small area during the night of June 29. Extreme flooding in the Pecatonica and Galena River basins and their tributaries resulted. New peaks of record occurred on the Galena River at Buncombe and Pecatonica River at Martintown, and the second highest peak of record was recorded on the Pecatonica River at Darlington.

Summer flow was generally above normal. The July runoff of the Fox River at Wilmot was the highest for that month since the record was begun in 1940. Only for September were monthly flows generally below normal.

Figures 4 and 5 indicate for selected lakes the extremes of stage for the water year 1969 compared with those of each year since 1937. No new maximum or minimum stage occurred on these lakes during the 1969 water year.

GPO 823-131-3

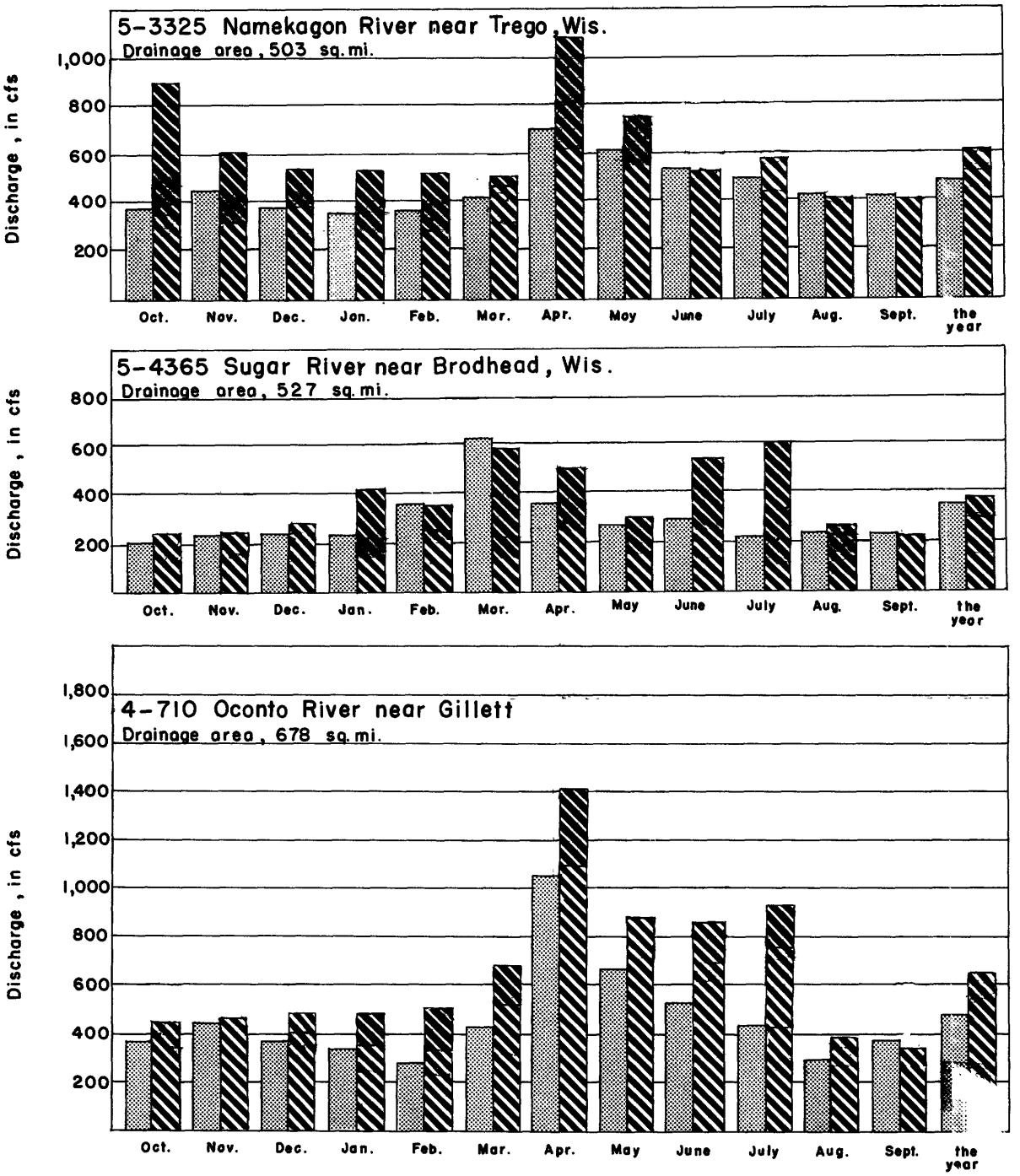

Figure 3. Comparison of discharge at three long-term representative gaging stations during 1969 water year with median discharge for period 1931-60.

Median of monthly and yearly mean discharge for period 1931-60.

Monthly and yearly mean discharge for 1969 water year.

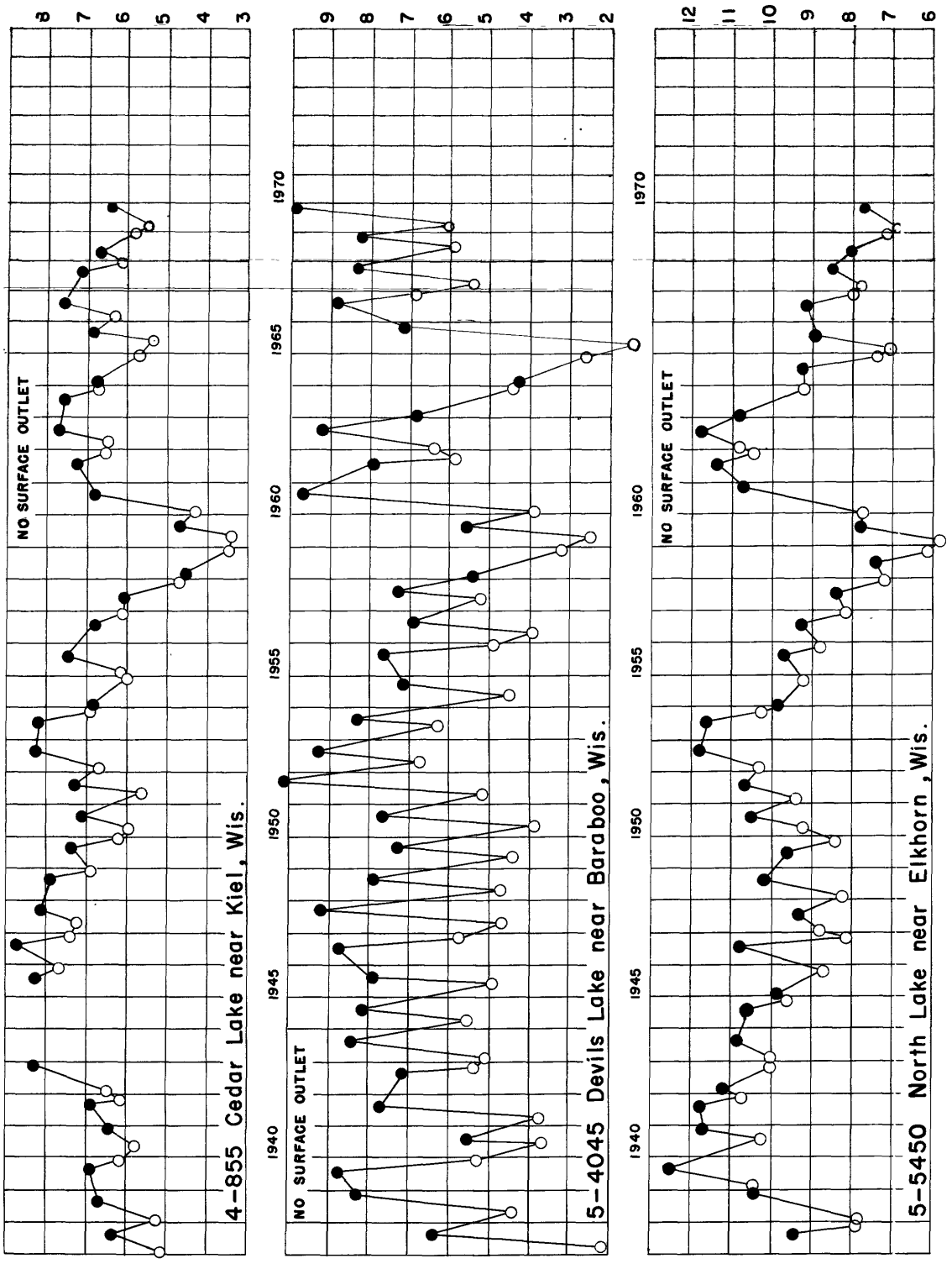

Figure 4. A comparison of extremes of stage of three southern lakes for each water year since 1937.

● Maximum stage observed ○ Minimum stage observed Connecting lines do not indicate actual stage between extremes.

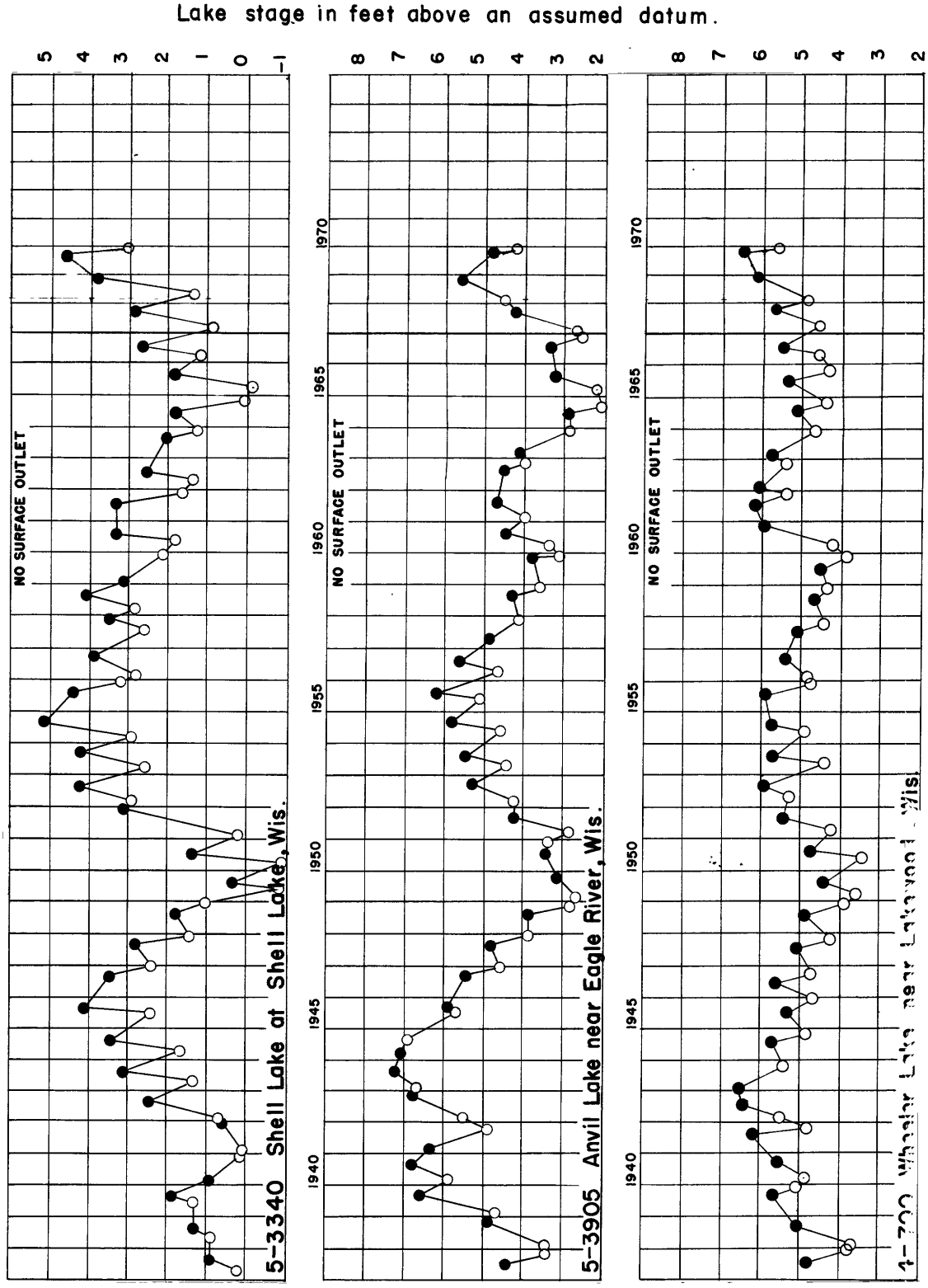

Figure 5. A comparison of extremes of stage of three northern lakes for each water year since 1937.
● Maximum stage observed. ○ Minimum stage observed. Connecting lines do not indicate actual stage between extremes.

4-0255. Bois Brule River at Brule, Wis.

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, on right bank, 1.4 miles southwest of Brule Post Office, 1.4 miles downstream from Nebagamon Creek, and 1.7 miles upstream from Little Brule River.

DRAINAGE AREA.--113 sq mi.

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

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

AVERAGE DISCHARGE.--27 years, 169 cfs (20.31 inches per year).

EXTREMES.--Current year: Maximum discharge, 903 cfs Apr. 14 (gage height, 4.09 ft); maximum gage height, 4.17 ft Jan. 2 (backwater from ice); minimum discharge, 114 cfs Aug. 27, 28 (gage height, 1.42 ft).
Period of record: Maximum discharge, 1,520 June 5, 1944 (gage height, 5.2 ft, from graph based on gage readings) from rating curve extended above 750 cfs; minimum observed, 67 cfs Mar. 13, 1943.

REMARKS.--Records good except those for winter periods, which are fair.

REVISIONS (WATER YEARS).--WSP 1207: Drainage area. WSP 1337: 1943(M), 1944, 1945-50(M).

Rating table (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Dec. 5-10, Dec. 12 to Feb. 18).

1.4	111	3.0	443
2.0	214	4.0	812

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	148	190	145	130	133	142	155	310	145	132	158	171
2	149	184	147	127	132	142	155	298	146	132	146	164
3	151	179	149	127	130	142	160	280	144	131	137	154
4	147	175	150	124	129	140	169	272	155	131	129	145
5	144	171	153	123	129	141	182	283	161	126	134	139
6	156	168	158	123	130	139	200	291	152	125	133	133
7	155	166	160	124	132	141	232	280	146	123	130	132
8	158	163	161	125	133	141	265	270	145	128	126	135
9	235	161	157	126	137	144	287	255	143	129	123	131
10	278	157	146	129	140	139	328	238	141	126	132	130
11	259	157	144	130	141	149	388	230	145	125	148	128
12	244	155	150	132	142	144	532	222	147	121	133	127
13	232	154	157	137	142	138	722	209	143	120	129	127
14	220	153	154	140	142	138	798	203	138	121	124	127
15	209	152	153	142	142	137	766	198	136	124	122	126
16	211	151	152	143	143	138	672	196	135	125	120	126
17	266	154	152	145	150	140	632	193	133	123	120	125
18	284	157	153	145	145	142	566	184	131	121	119	124
19	276	155	149	145	143	144	494	182	129	121	118	125
20	264	152	148	145	140	146	457	176	128	125	117	124
21	249	151	143	146	143	145	443	171	127	124	117	123
22	236	154	138	146	143	145	411	169	127	122	118	135
23	221	155	136	147	144	155	381	166	127	121	117	147
24	209	156	131	146	143	162	352	162	129	119	116	140
25	200	153	130	143	143	159	326	157	132	119	116	143
26	194	153	131	140	141	155	303	155	143	118	116	153
27	199	150	132	138	142	154	316	155	146	133	115	142
28	219	147	135	136	142	155	338	151	140	131	116	135
29	211	147	136	134	------	152	335	149	134	125	131	136
30	203	146	136	134	------	154	323	145	133	121	160	137
31	196	------	131	133	------	152	------	143	------	178	198	------
TOTAL	6,523	4,766	4,517	4,205	3,896	4,515	11,688	6,493	4,181	3,920	4,018	4,084
MEAN	210	159	146	136	139	146	390	209	139	126	130	136
MAX	284	190	161	147	150	162	798	310	161	178	198	171
MIN	144	146	130	123	129	137	155	143	127	118	115	123
CFSM	1.86	1.41	1.29	1.20	1.23	1.29	3.45	1.85	1.23	1.12	1.15	1.20
IN.	2.15	1.57	1.49	1.38	1.28	1.49	3.85	2.14	1.38	1.29	1.32	1.34

CAL YR 1968 TOTAL 64,183 MEAN 175 MAX 388 MIN 110 CFSM 1.55 IN 21.12
WTR YR 1969 TOTAL 62,806 MEAN 172 MAX 798 MIN 115 CFSM 1.52 IN 20.67

4-0261. Long Lake near Iron River, Wis.

LOCATION.--Lat 46°35'05", long 91°20'33", in SW 1/4 sec.35, T.48 N., R.8 W., Bayfield County, at residence of Stanley Wilcox, north end of lake, 3.6 miles northeast of Iron River.

DRAINAGE AREA.--1.28 sq mi. Area of Long Lake, 184 acres.

PERIOD OF RECORD.--October 1964 to current year (fragmentary).

GAGE.--Nonrecording gage. Altitude of gage is 1,096 ft (from topographic map).

EXTREMES.--Current year: Maximum gage height observed, 2.14 ft Apr. 19, 26, May 3, 10, 17; minimum observed, 1.49 ft Oct. 2.
Period of record: Maximum gage height observed, 2.24 ft Mar. 31, 1966; minimum observed, 1.39 ft Aug. 28, 1968.

REMARKS.--Lake has no surface outlet. Lake ice covered from Dec. 2 to Apr. 5.

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1												
2	1.49	1.68									1.66	
3								2.14				
4												
5	1.56						2.12			1.80		
6		1.65										1.60
7			1.80						2.06			
8												
9		1.70									1.62	
10								2.14				
11												
12	1.60						2.12			1.76		
13												1.60
14			1.86						2.00			
15		1.70										
16											1.60	
17								2.14				
18			1.79		2.12				1.86			
19	1.70					2.00	2.14			1.70		
20								2.02			1.66	1.58
21				2.06			2.13		1.80			
22												
23		1.76									1.60	
24								2.10				1.66
25										1.68		
26	1.70						2.14			1.70		
27												
28									1.80			
29					-----							
30		1.80			-----						1.62	
31		-----			-----		-----	2.12	-----			-----

4-0270. Bad River near Odanah, Wis.

LOCATION.--Lat 46°29'15", long 90°41'45", in SE 1/4 sec.2, T.46 N., R.3 W., Ashland County, on left bank just downstream from Elm Hoist Bridge, 5.0 miles downstream from Potato River, 8.5 miles south of Odanah, and 23 miles from mouth.

DRAINAGE AREA.--611 sq mi.

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

GAGE.--Water-stage recorder. Datum of gage is 668.30 ft above mean sea level. 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 miles downstream at different datum.

AVERAGE DISCHARGE.--29 years (1914-22, 1948-69) 607 cfs (13.49 inches per year).

EXTREMES.--Current year: Maximum discharge, 8,240 cfs Apr. 10 (gage height, 11.43 ft); maximum gage height, 11.72 ft Apr. 8 (backwater from ice); minimum discharge, 76 cfs Aug. 28 (gage height, 2.19 ft).
Period of record: Maximum discharge, 27,700 cfs Apr. 24, 1960 (gage height, 21.7 ft from floodmarks), from rating curve extended above 12,000 cfs and comparison with contracted-opening measurement of peak flow (45,600 cfs) at Odanah, drainage area approximately 970 sq mi; minimum 49 cfs Aug. 8, 1964 (gage height, 2.03 ft).
Flood of June 24, 1946, reached a stage of at least 22.2 ft (top of bridge submerged), information from Indian Service.

REMARKS.--Records good except those for winter periods, which are fair.

REVISIONS (WATER YEARS).--WSP 1207: Drainage area. WSP 1337: 1922.

Rating table (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Nov. 28 to Dec. 5, Dec. 7 to Apr. 6).

2.0	40	6.0	2,260
2.5	174	9.0	5,000
3.0	336	12.0	9,100
4.0	830		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	289	890	420	490	420	295	480	1,940	272	259	203	106
2	275	824	440	450	410	294	490	1,630	321	224	174	103
3	275	742	440	430	400	294	550	1,340	329	200	152	97
4	285	655	410	415	390	294	770	1,140	356	191	146	89
5	285	600	376	390	380	294	1,200	1,010	575	183	177	89
6	282	560	303	380	370	294	2,100	938	753	174	233	89
7	321	530	308	370	365	293	3,200	968	714	168	233	89
8	364	520	310	360	360	293	5,460	836	570	157	252	97
9	1,030	515	318	355	355	293	5,620	736	470	183	230	108
10	2,340	500	322	350	350	293	8,020	687	402	239	197	108
11	2,020	447	342	350	340	293	7,320	645	380	243	191	108
12	1,550	456	380	350	335	292	6,830	605	393	206	218	108
13	1,180	451	540	350	330	292	7,220	550	380	163	203	103
14	926	460	750	349	325	292	7,490	490	340	143	185	111
15	764	465	820	349	320	292	6,860	437	332	180	160	227
16	709	470	840	349	315	292	5,920	415	310	1,020	138	465
17	819	495	844	349	310	291	4,550	485	292	1,360	122	460
18	926	520	830	348	303	291	3,400	495	272	866	114	306
19	786	520	820	348	302	295	2,500	442	303	560	109	236
20	692	540	800	348	301	300	1,910	410	318	389	105	197
21	620	693	790	349	300	310	1,800	385	289	306	100	168
22	550	731	770	350	299	330	1,920	356	265	252	95	157
23	510	655	740	360	298	360	1,600	329	255	227	92	186
24	490	731	700	370	297	400	1,290	314	252	197	89	194
25	456	676	660	380	296	600	1,080	292	249	188	87	203
26	424	600	655	400	295	590	1,070	272	306	188	84	239
27	419	515	650	410	295	570	1,210	262	380	203	79	255
28	1,350	480	640	420	295	530	2,610	249	350	249	76	236
29	1,440	430	610	430	------	510	3,040	265	299	227	89	215
30	1,200	400	570	440	------	500	2,440	321	275	194	103	203
31	992	------	530	430	------	490	------	275	------	191	109	------
TOTAL	24,569	17,071	17,928	11,819	9,356	11,057	99,950	19,519	11,002	9,530	4,543	5,352
MEAN	793	569	578	381	334	357	3,332	630	367	307	147	178
MAX	2,340	890	844	490	420	600	8,020	1,940	753	1,360	252	465
MIN	275	400	303	348	295	291	480	249	249	143	76	89
CFSM	1.30	.93	.95	.62	.55	.58	5.45	1.03	.60	.50	.24	.29
IN.	1.50	1.04	1.09	.72	.57	.67	6.08	1.19	.67	.58	.28	.33

CAL YR 1968 TOTAL 256,699 MEAN 701 MAX 4,150 MIN 90 CFSM 1.15 IN 15.62
WTR YR 1969 TOTAL 241,696 MEAN 662 MAX 8,020 MIN 76 CFSM 1.08 IN 14.71

PEAK DISCHARGE (BASE, 3,000 CFS)

DATE	TIME	G.HT.	DISCHARGE	DATE	TIME	G.HT.	DISCHARGE
4-10	1200	11.43	8,240	4-29	0600	7.25	3,330

4-0275. White River near Ashland, Wis.

LOCATION.--Lat 46°29'50", long 90°54'15", in NE 1/4 sec.6, T.46 N., R.4 W., Ashland County, at downstream end of powerplant of Lake Superior District Power Co., 0.3 mile downstream from bridge on State Highway 112 over dam, and 4.5 miles south of Ashland city limits.

DRAINAGE AREA.--269 sq mi.

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

GAGE.--Nonrecording gage. Datum of gage is 660.15 ft above mean sea level (Lake Superior District Power Co. bench mark).

AVERAGE DISCHARGE.--21 years, 288 cfs (14.54 inches per year).

EXTREMES.--Current year: Maximum discharge, 1,960 cfs Apr. 10 (gage height, 3.80 ft); minimum observed, 141 cfs Feb. 17, 18, Mar. 8-13, 15-17 (gage height, 0.94 ft); minimum daily, 152 cfs Mar. 12.
Period of record: Maximum discharge, 6,270 cfs July 1, 1953 (gage height, 7.90 ft) from rating curve extended above 3,000 cfs; minimum, 3.1 cfs Apr. 28-30, 1949 (gage height, 0.09 ft).

REMARKS.--Records good except those for winter period, which are fair. Diurnal fluctuation caused by powerplant at gage.

Rating table (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Dec. 7-Mar. 16).

0.9	129	2.0	885
1.0	158	3.0	1,270
1.5	343	4.0	2,160

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	188	248	211	190	210	210	290	607	266	208	222	182
2	177	248	232	180	210	208	282	574	241	184	220	188
3	177	248	232	180	210	202	290	454	241	188	188	184
4	188	237	238	190	210	200	325	388	260	208	176	181
5	182	237	206	200	205	200	538	398	277	200	212	186
6	188	237	164	208	202	200	746	398	306	192	243	188
7	204	237	164	210	200	192	1,130	378	310	188	226	188
8	215	248	176	210	200	186	1,120	370	238	196	196	185
9	920	248	180	210	200	176	1,380	282	240	184	207	182
10	782	248	210	210	200	168	1,620	282	222	176	201	182
11	596	230	250	210	200	160	1,550	282	232	176	205	182
12	574	231	641	210	200	152	1,530	256	241	176	205	182
13	574	226	553	210	200	160	1,530	268	232	176	188	182
14	522	226	256	212	200	180	1,460	266	230	176	188	216
15	439	226	244	220	200	210	1,270	249	202	176	182	216
16	366	220	256	222	200	222	1,110	225	200	176	182	306
17	548	242	260	225	200	222	1,070	235	202	176	182	283
18	544	236	255	225	200	227	778	229	202	208	176	250
19	512	244	244	228	200	227	648	224	202	273	176	188
20	468	239	232	230	200	234	522	224	185	176	176	188
21	366	239	220	228	200	234	447	224	192	185	182	188
22	343	290	205	228	200	242	378	233	192	188	182	188
23	288	290	190	228	200	282	378	209	200	176	182	188
24	280	338	178	222	205	306	343	223	200	176	176	207
25	264	284	178	220	210	303	317	218	200	176	176	251
26	253	264	188	210	214	299	290	227	207	188	176	265
27	269	248	200	202	214	299	339	222	220	191	176	222
28	271	243	210	200	212	282	764	217	202	215	176	200
29	312	227	220	206	------	273	744	212	211	212	176	217
30	299	211	225	208	------	273	968	209	202	191	177	203
31	260	------	200	210	------	254	------	188	------	191	182	------
TOTAL	11,569	7,390	7,418	6,542	5,702	6,983	24,157	8,971	6,755	5,902	5,912	6,168
MEAN	373	246	239	211	204	225	805	289	225	190	191	206
MAX	920	338	641	230	214	306	1,620	607	310	273	243	306
MIN	177	211	164	180	200	152	282	188	185	176	176	181
CFSM	1.39	.92	.89	.78	.76	.84	2.99	1.08	.84	.71	.71	.76
IN.	1.60	1.02	1.03	.90	.79	.97	3.34	1.24	.93	.82	.82	.85

CAL YR 1968 TOTAL 103,884 MEAN 284 MAX 1,160 MIN 103 CFSM 1.06 IN 14.36
WTR YR 1969 TOTAL 103,469 MEAN 283 MAX 1,620 MIN 152 CFSM 1.05 IN 14.30

4-0300. Montreal River near Saxon, Wis.

LOCATION.--Lat 46°32'41", long 90°24'06", in NW 1/4 sec.23, T.48 N., R.49 W., Michigan meridian, Gogebic County, on right bank 2 miles upstream from mouth and 3.5 miles north of Saxon.

DRAINAGE AREA.--262 sq mi.

PERIOD OF RECORD.--September 1938 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 760 ft (from power company data).

AVERAGE DISCHARGE.--31 years, 327 cfs (16.95 inches per year).

EXTREMES.--Current year: Maximum discharge, 4,120 cfs Apr. 10 (gage height, 5.79 ft); minimum, 39 cfs July 14 (gage height, 1.51 ft); minimum daily discharge, 109 cfs Sept. 22, 23.
Period of record: Maximum discharge, 6,600 cfs Apr. 24, 1960 (gage height, 7.50 ft); minimum discharge, 2 cfs Sept. 21, Oct. 8, 1939, Sept. 9, 1965.

REMARKS.--Records good except those for winter periods, which are fair. Diurnal fluctuation caused by Saxon Falls powerplant 1.5 miles upstream. Flow regulated by Gile Reservoir on West Branch Montreal River (capacity, 1,290,000,000 cu ft) since April 1941.

REVISIONS (WATER YEARS).--WSP 894: 1938-39. WSP 924: 1939-40. WSP 1307: 1948 (M). WSP 1627: 1958.

Rating table (gage height, in feet, and discharge, in cubic feet per second). (Stage-discharge relation affected by ice Nov. 29, 30, Dec. 2-4, 6 to Mar. 3 and Mar. 6-13).

1.8	89	3.5	984
2.3	240	4.0	1,520
2.9	539	6.0	4,350

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	181	320	195	290	285	510	404	656	221	204	225	201
2	194	280	198	286	275	470	393	584	221	203	198	197
3	224	250	203	282	265	440	424	479	218	196	189	194
4	241	230	200	280	255	435	538	422	222	193	199	180
5	213	218	198	278	245	438	679	412	236	201	217	167
6	207	205	202	276	242	440	835	460	330	201	194	164
7	222	193	210	274	245	442	1,240	481	232	200	238	165
8	232	207	220	272	250	440	1,880	391	185	218	242	164
9	451	217	250	270	255	439	3,050	340	183	222	230	160
10	705	215	300	268	265	438	3,810	311	190	244	214	150
11	642	212	260	267	275	435	3,070	283	205	229	213	146
12	504	213	230	266	285	430	2,720	266	215	207	211	148
13	382	215	240	267	290	425	2,750	246	219	194	204	148
14	305	220	260	268	300	421	2,790	229	215	188	203	149
15	261	224	290	270	305	414	2,610	220	208	286	196	151
16	248	229	310	274	310	407	2,070	244	201	582	204	153
17	270	231	318	278	318	406	1,620	286	196	562	206	181
18	350	236	326	288	323	416	1,210	272	210	325	203	174
19	400	226	330	300	328	437	900	248	241	205	202	143
20	370	216	330	310	330	452	697	235	225	188	206	123
21	330	227	328	323	340	446	842	233	196	188	203	113
22	300	253	326	326	350	450	972	203	200	188	202	109
23	280	267	320	330	365	501	765	205	203	187	199	109
24	265	273	318	336	380	545	585	208	201	200	196	111
25	260	256	316	340	420	532	466	200	202	187	196	144
26	280	232	314	335	460	511	398	197	239	184	194	165
27	310	201	310	330	510	498	491	221	253	195	193	167
28	350	189	305	324	520	489	934	218	242	208	191	159
29	600	190	300	316	------	450	1,030	215	224	205	206	152
30	480	191	298	308	------	443	804	209	187	208	200	146
31	380	------	294	300	------	422	------	203	------	224	201	------
TOTAL	10,437	6,836	8,499	9,132	8,991	14,022	40,977	9,377	6,520	7,222	6,275	4,633
MEAN	337	228	274	295	321	452	1,366	302	217	233	206	154
MAX	705	320	330	340	520	545	3,810	656	330	582	242	201
MIN	181	189	195	266	242	406	393	197	183	184	189	109
CFSM	1.29	.87	1.05	1.12	1.23	1.73	5.21	1.15	.83	.89	.78	.59
IN.	1.48	.97	1.21	1.30	1.28	1.99	5.82	1.33	.93	1.03	.90	.66

CAL YR 1968 TOTAL 127,780 MEAN 349 MAX 1,550 MIN 114 CFSM 1.33 IN 18.14
WTR YR 1969 TOTAL 133,021 MEAN 364 MAX 3,810 MIN 109 CFSM 1.39 IN 18.88

4-0310. Black River near Bessemer, Mich.

LOCATION.--Lat 46°30'41", long 90°04'28", in NE 1/4 SE 1/4 sec.32, T.48 N., R.46 W., Gogebic County, on right bank 450 ft downstream from bridge on county highway, 500 ft downstream from Power Mill Creek, and 2.5 miles northwest of Bessemer.

DRAINAGE AREA.--200 sq mi.

PERIOD OF RECORD.--October 1954 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,150 ft (from topographic map).

AVERAGE DISCHARGE.--15 years, 234 cfs (15.89 inches per year).

EXTREMES.--Current year: Maximum discharge, 3,940 cfs Apr. 13 (gage height, 8.43 ft); minimum, 14 cfs Sept. 14 (gage height, 0.52 ft).
Period of record: Maximum discharge, 14,800 cfs Apr. 24, 1960 (gage height, 14.27 ft, from floodmark), from rating curve extended above 5,300 cfs on basis of slope-area measurement of peak flow; minimum, 12 cfs July 19, 1962, July 28, 29, 1965.

REMARKS.--Records good except those for winter months, which are fair. Prior to 1967, some ground water pumped from mines at Bessemer. Records of water temperatures for the current year are published in Part 2 of the Michigan Report.

REVISIONS.--WSP 1911: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	144	485	140	110	150	80	110	686	62	100	56	42
2	134	430	135	105	140	80	130	586	62	83	51	33
3	194	382	135	100	135	80	190	467	62	72	39	26
4	231	335	130	100	130	78	250	450	62	65	37	16
5	205	291	130	100	125	78	350	425	93	58	61	21
6	221	241	125	98	120	76	600	418	195	52	56	18
7	243	217	125	96	120	76	861	422	156	47	72	17
8	243	202	125	96	115	76	1,290	357	123	45	65	18
9	639	194	130	98	110	76	2,630	324	100	48	51	18
10	1,000	185	130	98	110	74	3,130	288	83	141	44	17
11	839	175	140	98	105	74	2,900	257	91	100	40	18
12	655	170	160	98	105	74	3,040	240	125	72	37	16
13	522	163	200	100	100	76	3,530	210	121	58	35	15
14	439	162	220	100	100	76	3,780	186	121	54	34	20
15	378	165	220	100	96	78	3,540	167	121	390	29	45
16	330	166	215	105	94	80	2,800	165	105	1,130	26	155
17	274	166	205	105	92	84	2,310	205	94	843	26	122
18	234	170	200	110	90	88	1,660	183	86	492	24	95
19	203	150	180	110	90	90	1,190	160	103	315	24	80
20	190	170	170	115	88	95	888	156	91	217	20	69
21	174	190	165	130	86	100	1,010	145	78	153	17	60
22	172	190	160	140	85	100	982	135	70	115	17	55
23	198	190	150	160	84	105	771	119	66	89	17	80
24	183	208	145	170	83	105	598	109	65	75	17	112
25	164	193	140	180	82	105	474	100	75	66	17	131
26	152	177	135	185	82	100	422	91	147	55	16	157
27	386	160	130	185	80	98	654	87	158	81	15	148
28	1,130	150	125	180	80	94	991	78	143	74	15	133
29	920	150	120	170	------	94	969	73	127	62	29	120
30	686	140	120	160	------	96	793	55	119	53	28	107
31	555	------	110	155	------	100	------	49	------	55	54	------
TOTAL	12,038	6,367	4,715	3,857	2,877	2,686	42,843	7,393	3,104	5,260	1,069	1,964
MEAN	388	212	152	124	103	86.6	1,428	238	103	170	34.5	65.5
MAX	1,130	485	220	185	150	105	3,780	686	195	1,130	72	157
MIN	134	140	110	96	80	74	110	49	62	45	15	15
CFSM	1.94	1.06	.76	.62	.51	.43	7.14	1.19	.52	.85	.17	.33
IN.	2.24	1.18	.88	.72	.53	.50	7.97	1.37	.58	.98	.20	.37

CAL YR 1968 TOTAL 106,427 MEAN 291 MAX 3,000 MIN 26 CFSM 1.45 IN 19.79
WTR YR 1969 TOTAL 94,173 MEAN 258 MAX 3,780 MIN 15 CFSM 1.29 IN 17.51

PEAK DISCHARGE (BASE, 1,500 CFS).--Apr. 13 (2400) 3,940 cfs (8.43 ft).

4-0315. Presque Isle River at Marenisco, Mich.

LOCATION.--Lat 46°22'20", long 89°41'32", in SE 1/4 NW 1/4 sec.21, T.46 N., R.43 W., Gogebic County, on left bank 0.3 mile upstream from highway bridge in Marenisco and 1.5 miles downstream from confluence of East and West Branches.

DRAINAGE AREA.--171 sq mi.

PERIOD OF RECORD.--February 1945 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,489.30 ft above mean sea level (levels by Michigan Department of Natural Resources). Prior to May 27, 1949, nonrecording gage at site 0.3 mile downstream at different datum.

AVERAGE DISCHARGE.--24 years, 175 cfs (13.90 inches per year).

EXTREMES.--Current year: Maximum discharge, 1,220 cfs Apr. 12-14 (gage height, 7.72 ft); minimum, 38 cfs Sept. 13, 14 (gage height, 3.16 ft).
Period of record: Maximum discharge, 3,520 cfs Apr. 25, 1960 (gage height, 11.25 ft); minimum observed, 13 cfs Sept. 30, 1948 (gage height, 2.25 ft, site and datum then in use).

REMARKS.--Records good except those for winter period, which are fair. Occasional regulation for lake or pond level control at several places above station.

REVISIONS (WATER YEARS).--WSP 1707: 1954. WSP 1911: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	160	369	153	160	200	120	120	482	114	173	103	59
2	150	325	150	155	190	115	125	446	107	149	95	54
3	200	231	151	155	185	115	135	408	108	133	89	49
4	220	169	150	155	180	115	150	343	112	123	85	46
5	230	186	140	155	175	115	190	248	125	115	96	44
6	240	196	130	155	170	110	260	353	174	108	102	44
7	250	199	130	155	165	110	350	418	163	99	121	43
8	370	200	140	150	165	110	541	398	146	97	104	41
9	450	199	145	150	160	110	695	364	131	104	93	42
10	469	191	145	150	155	105	967	334	124	146	85	40
11	505	185	150	150	150	105	1,100	307	133	163	81	42
12	458	183	165	150	150	105	1,170	283	161	137	81	41
13	400	177	190	155	145	105	1,210	264	169	119	81	39
14	362	174	220	155	145	105	1,220	246	162	108	76	41
15	338	172	230	155	145	105	1,190	238	149	149	70	52
16	222	167	230	155	140	105	1,110	227	140	469	66	95
17	187	173	220	155	140	105	927	266	130	575	62	88
18	222	177	210	155	135	110	738	263	121	493	60	74
19	224	171	205	150	135	110	683	245	159	397	56	65
20	218	174	200	150	130	110	620	237	156	319	52	60
21	210	179	190	150	130	115	510	224	137	190	50	54
22	202	184	185	155	125	120	497	210	122	145	48	54
23	200	187	180	165	125	125	503	153	115	111	46	68
24	196	192	175	180	125	130	483	136	117	110	44	74
25	185	184	175	210	125	135	451	137	127	112	41	85
26	180	179	170	220	120	140	425	137	236	113	41	95
27	208	167	170	230	120	140	385	133	306	128	41	91
28	355	155	170	230	120	140	438	134	269	132	40	87
29	426	155	165	220	------	135	531	117	230	123	48	92
30	420	155	160	215	------	130	526	110	203	113	49	81
31	388	------	160	210	------	120	------	109	------	119	58	------
TOTAL	8,845	5,755	5,354	5,255	4,150	3,620	18,250	7,970	4,646	5,572	2,164	1,840
MEAN	285	192	173	170	148	117	608	257	155	180	69.8	61.3
MAX	505	369	230	230	200	140	1,220	482	306	575	121	95
MIN	150	155	130	150	120	105	120	109	107	97	40	39
CFSM	1.67	1.12	1.01	.99	.87	.68	3.56	1.50	.91	1.05	.41	.36
IN.	1.92	1.25	1.16	1.14	.90	.79	3.97	1.73	1.01	1.21	.47	.40

CAL YR 1968 TOTAL 79,532 MEAN 217 MAX 764 MIN 47 CFSM 1.27 IN 17.30
WTR YR 1969 TOTAL 73,421 MEAN 201 MAX 1,220 MIN 39 CFSM 1.18 IN 15.97

4-0375. Cisco Branch Ontonagon River at Cisco Lake Outlet, Mich.

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

DRAINAGE AREA.--50.7 sq mi.

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

GAGE.--Water-stage recorder. Datum of gage is 1,672.69 ft above mean sea level. Prior to Oct. 1, 1968, non-recording gage at same site at datum 4.0 ft higher.

AVERAGE DISCHARGE.--25 years, 46.4 cfs (12.43 inches per year).

EXTREMES.--Current year: Maximum discharge, 193 cfs June 27 (gage height, 5.61 ft); minimum daily, 0.20 cfs Aug. 27-30, Sept. 2-15; minimum gage height, 3.86 ft Sept. 13, 14.
Period of record: Maximum discharge, 288 cfs May 1-4, 1951 (gage height, 6.10 ft, present datum); minimum daily, 0.20 cfs May 29 to June 17, 1948, Nov. 8, 9, 1961, Aug. 27-30, Sept. 2-15, 1969.

REMARKS.--Records fair except those below 5 cfs, which are poor. Flow regulated by Cisco Lake (usable capacity, 15,600 acre-ft).

REVISIONS.--WSP 1911: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.0	140	46	71	65	32	33	3.6	33	119	.60	.30
2	5.4	150	46	65	65	32	33	3.6	34	53	.60	.20
3	12	125	47	62	64	32	33	3.3	26	19	.40	.20
4	34	120	48	52	64	32	44	3.1	23	19	2.6	.20
5	45	120	49	49	63	32	50	27	24	19	21	.20
6	45	120	49	49	63	32	51	95	29	20	48	.20
7	45	108	49	50	53	32	61	115	42	19	62	.20
8	60	98	50	50	49	32	69	117	45	27	37	.20
9	118	98	50	51	49	32	85	124	44	43	22	.20
10	157	95	50	58	48	32	98	119	44	64	21	.20
11	155	101	50	64	48	32	101	96	45	77	21	.20
12	113	104	50	64	48	32	106	52	46	76	22	.20
13	95	103	69	63	48	32	110	28	47	75	21	.20
14	93	100	80	63	48	32	115	23	47	41	19	.20
15	72	96	82	62	48	32	117	22	47	25	7.6	.20
16	64	95	85	62	48	32	119	22	47	87	.40	15
17	64	95	85	62	48	32	110	23	46	120	.30	24
18	66	93	85	63	48	32	93	24	47	117	.30	31
19	65	78	85	63	46	32	96	24	66	113	.30	37
20	65	86	86	62	46	33	93	24	77	108	.40	36
21	65	89	85	62	37	54	72	31	77	62	.40	35
22	65	87	86	54	31	63	31	35	76	24	.30	34
23	110	86	89	51	32	63	8.4	34	46	7.5	.30	32
24	135	78	89	52	32	63	6.2	33	28	.70	.30	32
25	130	73	88	53	32	63	5.4	32	31	.60	.30	33
26	124	73	87	53	32	62	4.3	32	67	.60	.30	32
27	122	72	85	53	32	61	4.7	30	145	.40	.20	31
28	120	71	85	53	32	53	5.0	27	183	.60	.20	32
29	140	54	80	61	------	39	4.7	25	180	.60	.20	33
30	155	46	72	66	------	32	4.1	24	171	.60	.20	32
31	150	------	72	66	------	33	------	29	------	.70	.30	------
TOTAL	2,694.4	2,854	2,159	1,809	1,319	1,227	1,762.8	1,280.6	1,863	1,339.30	310.50	472.10
MEAN	86.9	95.1	69.6	58.4	47.1	39.6	58.8	41.3	62.1	43.2	10.0	15.7
MAX	157	150	89	71	65	63	119	124	183	120	62	37
MIN	5.0	46	46	49	31	32	4.1	3.1	23	.40	.20	.20

CAL YR 1968 TOTAL 22,190.00 MEAN 60.6 MAX 198 MIN 1.3
WAT YR 1969 TOTAL 19,090.70 MEAN 52.3 MAX 183 MIN .20

4-0610. Brule River near Florence, Wis.

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, on left bank 40 ft upstream from highway bridge, 1 mile upstream from Paint River, 2.5 miles north of Florence, and 5.0 miles upstream from confluence with Michigamme River.

DRAINAGE AREA.--389 sq mi.

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

GAGE.--Water-stage recorder. Altitude of gage is 1,210 ft (from topographic map). Prior to Aug. 29, 1944, nonrecording gage at same site and datum.

AVERAGE DISCHARGE.--26 years (1914-15, 1944-69), 351 cfs (12.25 inches per year).

EXTREMES.--Current year: Maximum discharge, 1,680 cfs Apr. 14, 15 (gage height, 4.06 ft); maximum gage height, 7.76 ft Dec. 19 (backwater from ice); minimum discharge, 223 cfs Aug. 28, 31 (gage height, 2.01 ft).
Period of record: Maximum discharge, 4,700 cfs July 2, 1953 (gage height, 6.57 ft); maximum gage height, 8.01 ft Jan. 8, 1960 (backwater from ice); minimum discharge, 118 cfs Dec. 2, 1963 (discharge measurement); minimum gage height, 1.79 ft July 24, 1964.

REMARKS.--Records good except those for winter periods, which are fair. Discharge includes mine pumpage (see sta 4-0605).

REVISIONS (WATER YEARS).--WSP 1387: 1914-16. WSP 1911: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	321	384	310	340	375	320	390	566	385	496	322	295
2	321	373	310	330	370	320	390	609	385	448	310	261
3	358	363	314	320	370	315	400	619	402	423	298	246
4	353	353	305	315	365	310	400	571	412	403	293	237
5	339	342	295	315	360	310	414	557	472	390	330	236
6	335	334	290	315	360	310	461	602	586	373	326	237
7	349	330	290	320	360	310	555	734	559	356	307	243
8	373	333	290	320	355	310	740	653	480	344	292	287
9	414	331	290	310	350	310	929	588	428	344	283	265
10	503	321	300	305	350	305	1,270	545	394	344	273	251
11	476	315	320	300	345	300	1,500	521	420	341	267	245
12	428	317	350	300	340	300	1,520	492	564	327	268	255
13	373	318	390	300	340	300	1,540	470	643	315	267	245
14	358	317	390	300	340	300	1,650	448	549	308	260	244
15	353	316	380	290	340	300	1,650	429	473	322	254	275
16	349	315	380	290	335	305	1,530	431	439	553	248	373
17	339	323	360	290	335	315	1,320	800	450	582	245	313
18	344	326	350	300	330	330	1,110	840	445	467	245	278
19	335	320	340	300	330	350	915	680	519	394	255	263
20	330	306	340	310	330	380	784	614	480	355	244	254
21	321	326	340	315	330	410	709	565	419	334	244	250
22	326	350	340	320	325	450	682	512	404	319	243	248
23	321	334	340	340	325	490	641	475	391	310	237	252
24	321	338	340	360	325	510	591	450	384	311	235	264
25	313	332	340	390	325	490	548	429	403	309	233	262
26	308	326	340	440	320	460	527	413	563	304	232	271
27	398	320	340	420	320	430	615	408	846	352	230	272
28	559	290	330	400	320	410	760	407	833	384	226	294
29	520	310	340	380	------	400	689	399	654	346	230	285
30	456	310	350	380	------	390	608	390	550	318	227	278
31	418	------	360	375	------	390	------	382	------	326	247	------
TOTAL	11,612	9,873	10,354	10,290	9,570	11,130	25,838	16,599	14,932	11,498	8,171	7,979
MEAN	375	329	334	332	342	359	861	535	498	371	264	266
MAX	559	384	390	440	375	510	1,650	840	846	582	330	373
MIN	308	290	290	290	320	300	390	382	384	304	226	236
CFSM	.96	.85	.86	.85	.88	.92	2.21	1.38	1.28	.95	.68	.68
IN.	1.11	.94	.99	.98	.91	1.06	2.47	1.59	1.43	1.10	.78	.76

CAL YR 1968 TOTAL 148,469 MEAN 406 MAX 1,630 MIN 200 CFSM 1.04 IN 14.19
WTR YR 1969 TOTAL 147,846 MEAN 405 MAX 1,650 MIN 226 CFSM 1.04 IN 14.13

4-0630. Menominee River near Florence, Wis.

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, on left bank 0.5 mile downstream from confluence of Brule and Michigamme Rivers, 3.5 miles northeast of Florence, and at mile 117.

DRAINAGE AREA.--1,780 sq mi.

PERIOD OF RECORD.--January 1914 to current year. Published as "at Twin Falls near Iron Mountain, Mich." 1914-57. Records published for both sites July 1950 to September 1957.

GAGE.--Water-stage recorder. Altitude of gage is 1,120 ft (from topographic map). 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-Michigan Power Co., 10.4 miles downstream.

AVERAGE DISCHARGE.--55 years, 1,782 cfs.

EXTREMES.--Current year: Maximum discharge, 6,530 cfs Apr. 16 (gage height, 7.80 ft); minimum, 202 cfs Sept. 19, 30 (gage height, 1.89 ft); minimum daily, 507 cfs Aug. 31.
Period of record: Maximum discharge, 19,500 cfs Apr. 26, 1960 (gage height, 14.15 ft); minimum daily, 154 cfs Aug. 9, 1925.

REMARKS.--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, and by Michigamme Reservoir (capacity 119,950 acre-ft) and Peavy Pond (capacity, 33,860 acre-ft) on Michigamme River, and by many smaller reservoirs above station.

REVISIONS (WATER YEARS).--WSP 1707: 1953(M).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1,290	2,470	1,540	2,220	2,600	1,650	1,570	4,060	1,370	2,270	1,160	729
2	1,710	2,060	1,870	2,190	2,350	1,670	1,820	4,060	1,560	2,320	1,040	1,190
3	1,490	1,960	1,970	2,080	2,730	1,940	2,070	3,740	1,600	1,620	950	1,170
4	1,860	2,040	2,250	2,020	2,340	2,000	2,740	3,050	1,490	1,830	1,490	1,260
5	1,990	2,030	2,000	2,090	2,380	1,780	2,780	3,710	1,480	1,410	1,100	1,370
6	2,170	1,990	2,010	2,170	2,290	1,780	2,980	3,720	1,750	1,610	1,390	668
7	2,170	2,050	1,760	2,100	2,190	1,880	2,590	3,670	1,670	1,670	1,440	721
8	2,400	2,280	1,070	2,300	1,940	1,570	2,520	3,880	1,610	1,860	1,070	952
9	2,810	1,940	1,950	2,260	2,120	1,650	2,900	3,980	1,850	1,770	876	832
10	2,790	1,380	1,820	2,230	1,990	1,690	3,910	3,960	1,790	1,530	792	978
11	2,790	1,930	1,940	2,240	2,020	1,550	4,340	3,860	1,880	1,600	1,250	894
12	2,120	2,140	1,820	2,050	2,230	1,730	4,730	3,470	1,530	1,340	1,320	897
13	2,190	2,210	2,120	2,100	2,040	1,720	5,120	2,980	1,860	1,140	1,200	652
14	2,240	1,890	1,920	2,270	2,290	1,930	5,690	2,430	2,110	1,570	1,350	768
15	2,270	2,050	1,850	2,300	1,410	1,310	6,130	2,280	1,490	1,530	1,600	1,540
16	2,240	1,770	1,970	2,140	2,130	1,400	6,110	2,610	1,900	1,970	731	1,350
17	2,340	1,460	1,960	2,320	2,090	1,730	5,080	3,650	1,850	1,620	604	1,290
18	2,200	1,920	2,040	2,140	2,130	2,040	4,680	4,220	2,020	1,480	1,450	1,140
19	2,090	1,990	2,220	2,040	2,320	1,850	4,070	4,100	2,070	1,220	1,150	1,020
20	1,480	2,250	2,270	2,070	1,940	1,810	3,360	4,140	2,340	1,220	1,150	706
21	1,650	2,420	2,250	2,010	2,160	1,990	3,240	3,960	2,040	1,590	1,370	598
22	1,680	2,240	2,180	2,010	1,760	2,100	2,790	3,420	1,950	1,470	1,310	1,190
23	1,790	1,670	2,230	2,220	1,910	2,260	2,980	2,650	1,780	1,320	796	1,470
24	1,630	1,410	2,080	2,370	2,070	3,130	3,230	2,340	1,720	1,510	806	1,240
25	1,800	1,960	1,840	1,760	2,040	2,790	3,860	2,380	1,880	1,600	1,560	1,290
26	1,690	2,010	1,980	2,110	2,140	1,980	3,720	2,390	2,470	1,080	1,650	1,000
27	1,890	2,310	2,070	2,230	1,950	1,830	4,080	2,460	3,440	769	1,520	662
28	2,980	2,330	2,000	2,270	2,530	1,870	4,230	2,520	3,240	1,450	1,400	718
29	2,630	2,230	2,120	2,310	------	1,300	4,220	2,400	3,180	1,260	1,760	1,320
30	2,460	1,620	2,280	2,470	------	1,260	4,120	1,760	2,790	1,250	613	1,240
31	2,210	------	1,900	2,390	------	1,470	------	1,520	------	1,340	507	------
TOTAL	65,050	60,010	61,280	67,480	60,090	56,660	111,660	99,370	59,710	47,219	36,405	30,855
MEAN	2,098	2,000	1,977	2,177	2,146	1,828	3,722	3,205	1,990	1,523	1,174	1,029
MAX	2,980	2,470	2,280	2,470	2,730	3,130	6,130	4,220	3,440	2,320	1,760	1,540
MIN	1,290	1,380	1,070	1,760	1,410	1,260	1,570	1,520	1,370	769	507	598

CAL YR 1968 TOTAL 769,330 MEAN 2,102 MAX 7,130 MIN 601
WTR YR 1969 TOTAL 755,789 MEAN 2,071 MAX 6,130 MIN 507

4-0637. Popple River near Fence, Wis.
(Hydrologic benchmark station)

LOCATION.--Lat 45°45'49", long 88°27'47", in NW 1/4 sec.23, T.38 N., R.16 E., Florence County, on left bank 20 ft upstream from bridge on U.S. Forest Service Road 2159, 1.8 miles downstream from Mud Creek, 2.6 miles northwest of Fence, and 11.5 miles upstream from mouth.

DRAINAGE AREA.--131 sq mi.

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

GAGE.--Water-stage recorder. Datum of gage is 1,406.16 ft above mean sea level. Prior to June 18, 1964, non-recording gage at same site and datum.

AVERAGE DISCHARGE.--6 years, 128 cfs (13.27 inches per year).

EXTREMES.--Current year: Maximum discharge, 772 cfs Apr. 16 (gage height, 3.47 ft); minimum, 30 cfs Sept. 3, 4 (gage height, 1.20 ft).
Period of record: Maximum discharge, 1,100 cfs May 10, 1965 (gage height, 4.17 ft); minimum, 15 cfs July 19, 23, 24, 1964 (gage height, 1.04 ft).

REMARKS.--Records excellent except those for winter months, which are fair. Records of chemical analysis, water temperatures, and suspended sediment loads for the water year 1969 are published in Part 2 of this report.

Rating table (gage height, in feet, and discharge, in cubic feet per second). (Shifting-control method used Aug. 16-29; stage-discharge relation affected by ice Nov. 28 to Dec. 1, Dec. 20 to Apr. 4).

1.2	30	2.5	346
1.5	64	3.0	560
1.8	121	3.5	785
2.1	203		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	131	167	96	80	102	70	90	257	91	290	72	32
2	133	150	93	80	100	70	94	246	90	240	67	32
3	150	143	93	78	98	70	107	233	93	188	61	31
4	148	138	95	78	97	68	126	223	101	148	59	31
5	140	131	96	78	96	68	170	233	126	128	67	31
6	133	123	98	76	94	67	230	253	169	114	69	33
7	131	121	97	76	92	66	271	275	181	103	64	37
8	133	117	91	76	92	66	338	275	161	93	58	48
9	145	114	82	76	90	65	403	264	138	90	54	41
10	175	110	82	76	88	64	462	240	114	90	50	37
11	181	106	84	76	86	64	511	213	112	86	48	34
12	175	103	90	76	84	64	551	191	167	77	47	33
13	158	101	126	78	92	64	596	167	250	69	48	32
14	145	99	133	78	80	63	659	150	260	64	47	35
15	135	99	131	78	80	63	726	135	240	64	43	39
16	133	99	123	78	79	62	762	133	203	70	42	43
17	133	101	112	80	78	64	762	243	158	78	39	43
18	138	101	99	82	78	65	736	301	140	75	37	40
19	131	90	95	84	77	70	672	312	158	70	36	36
20	126	95	90	84	76	76	592	316	164	64	36	35
21	121	103	88	84	76	86	524	293	145	60	35	34
22	117	103	86	86	76	94	462	268	133	55	35	33
23	114	109	86	98	76	102	407	236	135	54	34	34
24	110	110	84	100	76	107	350	203	135	55	34	35
25	106	114	82	110	76	110	301	172	148	52	34	36
26	101	112	82	110	74	107	260	150	223	50	34	41
27	133	106	82	110	73	104	268	135	338	70	33	43
28	203	105	80	110	72	100	290	128	374	97	33	44
29	226	102	80	108	------	96	290	117	370	93	33	43
30	216	100	80	106	------	92	278	106	338	82	33	42
31	191	------	80	104	------	90	------	93	------	74	32	------
TOTAL	4,512	3,371	2,916	2,684	2,348	2,417	12,288	6,561	5,455	2,943	1,414	1,108
MEAN	146	112	94.1	86.6	83.9	78.0	410	212	182	94.9	45.6	36.9
MAX	226	167	133	110	102	110	762	316	374	290	72	48
MIN	101	90	80	76	72	62	90	93	90	50	32	31
CFSM	1.11	.86	.72	.66	.64	.60	3.13	1.62	1.39	.72	.35	.28
IN.	1.28	.96	.83	.76	.67	.69	3.49	1.86	1.55	.84	.40	.31

CAL YR 1968 TOTAL 56,201 MEAN 154 MAX 650 MIN 36 CFSM 1.17 IN 15.96
WTR YR 1969 TOTAL 48,017 MEAN 132 MAX 762 MIN 31 CFSM 1.00 IN 13.63

PEAK DISCHARGE (BASE, 300 CFS)

DATE	TIME	G.HT.	DISCHARGE	DATE	TIME	G.HT.	DISCHARGE
4-16	2200	3.47	772	6-28	2200	2.58	378
5-20	0600	2.44	323				

4-0645. Pine River below Pine River Powerplant, near Florence, Wis.

LOCATION (revised).--Lat 45°50'16", long 88°13'31", in SW 1/4 sec.22, T.39 N., R.18 E., Florence County, on left bank 60 ft upstream from bridge on County Trunk N, 1.9 miles downstream from powerplant of Wisconsin-Michigan Power Co., 6.0 miles south of Florence, and 7.0 miles downstream from Popple River.

DRAINAGE AREA.--528 sq mi.

PERIOD OF RECORD.--October 1923 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,098.84 ft above mean sea level. Prior to October 1968, record obtained from Pine River powerplant 1.9 miles upstream.

AVERAGE DISCHARGE.--46 years, 425 cfs (10.93 inches per year).

EXTREMES.--Current year: Maximum discharge, 2,290 cfs Apr. 15 (gage height, 6.40 ft); minimum daily, 134 cfs Aug. 31.
Period of record: Maximum daily discharge, 4,380 cfs Apr. 9, 1929; no flow at times during 1924, 1926-27, 1930-31, 1933, 1940.

REMARKS.--Records good except those for winter months, which are fair. Flow completely regulated by Pine River powerplant 3 miles upstream.

REVISIONS.--WSP 1237: Drainage area.

Rating table (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Dec. 5 to Apr. 4).

1.8	127	3.8	773
2.2	225	5.0	1,420
2.8	403	6.3	2,220

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	499	609	310	370	500	320	410	885	360	868	330	159
2	499	590	380	360	430	280	330	905	330	720	300	168
3	488	519	400	370	410	310	400	880	410	650	330	161
4	489	516	380	400	390	320	450	845	480	608	370	158
5	512	480	350	330	380	300	540	840	619	509	320	176
6	485	460	330	390	370	280	780	920	728	488	300	155
7	471	430	310	350	370	300	950	1,020	703	463	310	156
8	488	460	310	350	370	310	1,250	960	601	420	300	232
9	519	420	320	320	330	220	1,490	890	512	330	300	183
10	608	370	330	310	350	310	1,650	825	477	400	260	230
11	646	420	350	310	350	290	1,680	715	507	380	230	160
12	621	298	400	320	350	260	1,710	711	752	380	220	148
13	602	414	460	330	350	240	1,980	646	970	330	270	151
14	522	361	500	330	350	220	2,020	590	870	370	180	177
15	522	366	500	330	350	250	2,190	544	782	340	220	180
16	478	378	520	370	320	220	2,220	531	654	470	180	222
17	470	394	520	330	340	300	2,170	915	627	722	180	298
18	480	397	390	340	310	270	2,090	1,230	565	628	210	332
19	460	391	330	340	320	300	1,880	1,180	572	579	200	172
20	470	306	310	350	320	340	1,660	1,120	619	475	191	153
21	375	366	350	360	320	350	1,520	992	608	330	183	175
22	499	448	400	380	320	400	1,310	905	571	330	186	189
23	476	406	410	450	320	460	1,190	728	528	330	180	186
24	429	406	360	490	320	490	1,070	711	496	330	141	170
25	366	448	350	500	320	500	930	631	521	340	188	185
26	500	419	340	500	320	420	825	592	814	330	181	191
27	535	414	360	540	320	460	970	547	1,410	390	164	189
28	682	337	400	500	320	400	1,070	492	1,300	485	150	195
29	773	350	410	500	------	380	1,060	388	1,210	390	178	217
30	791	360	390	500	------	360	1,010	426	974	370	171	195
31	665	------	370	520	------	330	------	380	------	360	134	------
TOTAL	16,420	12,533	11,840	12,140	9,820	10,190	38,805	23,944	20,570	14,115	7,057	5,663
MEAN	530	418	382	392	351	329	1,294	772	686	455	228	189
MAX	791	609	520	540	500	500	2,220	1,230	1,410	868	370	332
MIN	366	298	310	310	310	220	330	380	330	330	134	148
CFSM	1.00	.79	.72	.74	.66	.62	2.45	1.46	1.30	.86	.43	.36
IN.	1.16	.88	.83	.86	.69	.72	2.73	1.69	1.45	.99	.50	.40

CAL YR 1968 TOTAL 206,558 MEAN 564 MAX 2,220 MIN 155 CFSM 1.07 IN 14.55
WTR YR 1969 TOTAL 183,097 MEAN 502 MAX 2,220 MIN 134 CFSM .95 IN 12.90

4-0660. Menominee River near Pembine, Wis.

LOCATION.--Lat 45°35'24", long 87°46'34", in sec.21, T.37 N., R.28 W., Michigan meridian, Menominee County, Mich., on left bank 0.1 mile upstream from Pemene Creek, 4 miles west of Nathan, Mich., 15 miles southeast of Pembine, and at mile 65.3.

DRAINAGE AREA.--3,240 sq mi, approximately.

PERIOD OF RECORD.--October 1949 to current year. Monthly discharge only for some periods, published in WSP 1307.

GAGE.--Water-stage recorder. Altitude of gage is 7.45 ft (from river-profile map).

AVERAGE DISCHARGE.--20 years, 2,962 cfs.

EXTREMES.--Current year: Maximum discharge, 11,900 cfs Apr. 16 (gage height, 8.60 ft); maximum gage height, 12.17 ft Mar. 22 (backwater from ice); minimum discharge, 694 cfs Sept. 3 (gage height, 1.66 ft).
Period of record: Maximum discharge, 26,900 cfs May 8, 1960 (gage height, 13.90 ft); minimum, 694 cfs Sept. 3, 1969 (gage height, 1.66 ft).

REMARKS.--Records good except those for winter months, which are poor. 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.

REVISIONS (WATER YEARS).--WSP 1277: 1952.

Rating table (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Nov. 20, 21, Nov. 27 to Apr. 10).

1.8	790	5.0	4,900
2.0	970	7.0	8,500
2.5	1,520	9.0	12,800
3.5	2,710		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2,890	4,060	2,400	2,700	3,600	2,600	2,500	6,480	2,300	5,880	2,150	1,020
2	2,840	3,590	2,400	2,700	3,600	2,600	2,700	6,300	2,440	4,670	1,880	848
3	2,280	3,150	2,300	2,700	3,600	2,600	3,000	6,560	2,530	3,620	1,610	913
4	3,070	3,410	2,300	2,700	3,500	2,600	3,200	5,790	2,340	3,580	1,700	998
5	2,800	2,870	2,400	2,700	3,400	2,500	3,500	5,240	2,590	3,270	2,070	1,580
6	3,070	3,360	2,400	2,700	3,300	2,500	4,000	6,110	3,110	2,680	2,050	1,410
7	3,190	3,150	2,500	2,800	3,200	2,400	4,700	6,880	3,350	2,580	1,910	1,090
8	3,210	3,130	2,600	2,800	3,100	2,400	5,400	6,880	3,410	2,810	1,870	1,000
9	3,550	2,880	2,700	2,800	3,000	2,300	6,200	6,820	2,930	2,820	1,730	980
10	4,150	2,600	2,800	2,800	2,900	2,300	7,600	6,650	2,980	2,340	1,350	980
11	4,230	2,500	2,800	2,800	2,800	2,300	9,510	5,960	2,870	2,560	1,440	1,390
12	4,030	3,070	2,900	2,800	2,800	2,200	9,730	6,160	3,420	2,660	1,800	1,120
13	3,470	3,090	2,900	2,800	2,800	2,200	10,000	5,350	3,520	2,390	1,730	904
14	3,420	3,020	2,900	2,800	2,800	2,200	10,500	4,200	3,770	2,140	1,630	922
15	3,460	2,730	2,800	2,800	2,700	2,200	11,300	4,160	4,050	2,470	1,770	1,080
16	3,260	2,780	2,800	2,800	2,700	2,200	11,600	3,990	3,710	2,530	1,690	1,740
17	3,450	2,680	2,800	2,800	2,700	2,300	10,800	4,150	3,470	3,120	1,240	2,040
18	3,290	2,800	2,700	2,800	2,700	2,400	9,650	6,360	3,340	2,540	1,150	1,580
19	3,150	2,690	2,700	2,800	2,700	2,500	8,830	7,160	3,910	2,610	1,490	1,420
20	2,820	2,800	2,700	2,800	2,700	2,600	7,420	6,590	4,420	2,510	1,220	1,240
21	2,430	2,800	2,700	2,800	2,700	2,800	6,840	6,240	3,640	2,040	1,400	1,120
22	2,440	3,050	2,700	2,900	2,700	3,000	6,730	6,030	3,490	2,210	1,600	970
23	3,190	2,870	2,700	2,900	2,600	3,200	5,460	4,760	3,510	2,260	1,400	1,580
24	2,880	2,840	2,700	3,000	2,600	3,500	5,950	4,400	3,160	2,010	1,290	1,800
25	2,520	2,680	2,700	3,100	2,600	3,600	6,100	4,150	3,380	2,020	1,100	1,620
26	2,380	2,510	2,700	3,100	2,600	3,600	5,960	3,930	4,440	2,160	1,400	1,500
27	2,570	2,600	2,700	3,200	2,600	3,500	6,270	3,810	6,560	1,640	1,750	1,150
28	3,910	2,700	2,700	3,200	2,600	3,300	7,220	3,670	7,800	2,030	1,640	980
29	4,580	2,800	2,700	3,300	------	3,100	6,780	3,740	6,930	2,570	1,620	1,040
30	4,150	2,500	2,700	3,400	------	2,900	7,210	3,280	6,830	2,020	1,680	1,830
31	4,240	------	2,700	3,500	------	2,700	------	2,390	------	2,200	1,250	------
TOTAL	100,920	87,710	82,500	89,800	81,600	83,100	206,660	164,190	114,200	82,940	49,370	37,845
MEAN	3,255	2,924	2,661	2,897	2,914	2,681	6,889	5,296	3,807	2,675	1,593	1,262
MAX	4,580	4,060	2,900	3,500	3,600	3,600	11,600	7,160	7,800	5,880	2,150	2,040
MIN	2,280	2,500	2,300	2,700	2,600	2,200	2,500	2,390	2,300	1,640	1,100	848

CAL YR 1968 TOTAL 1,265,560 MEAN 3,458 MAX 12,100 MIN 1,250
WTR YR 1969 TOTAL 1,180,835 MEAN 3,235 MAX 11,600 MIN 848

GPO 829-131-6

4-0665. Pike River at Amberg, Wis.

LOCATION.--Lat 45°29'50", long 87°59'37", in SW 1/4 sec.15, T.35 N., R.20 E., Marinette County, on left bank 0.1 mile upstream from Chicago, Milwaukee, St. Paul, and Pacific Railroad bridge, 0.2 mile south of Amberg, and 1.2 miles downstream from confluence of North and South Branches.

DRAINAGE AREA.--253 sq mi.

PERIOD OF RECORD.--February 1914 to current year.

GAGE.--Water-stage recorder. Altitude of gage, 865 ft above mean sea level (from survey level line along railroad). See WSP 1727 for history of changes prior to Oct. 7, 1946.

AVERAGE DISCHARGE.--55 years, 217 cfs (11.65 inches per year).

EXTREMES.--Current year: Maximum discharge, 1,070 cfs June 28 (gage height, 4.69 ft); minimum, 102 cfs Aug. 27, 28, 30, 31 (gage height, 1.78 ft).
Period of record: Maximum discharge, 2,800 cfs Apr. 10, 1922 (gage height, 7.8 ft, from graph based on gage readings, site and datum then in use), from rating curve extended above 1,100 cfs; minimum observed, 26 cfs Dec. 27, 1925 (gage height, 1.30 ft, site and datum then in use).

REMARKS.--Records good except those for winter months, which are fair.

REVISIONS (WATER YEARS).--WSP 699: 1927. WSP 1207: Drainage area. WSP 1337: 1914 (M), 1916-19 (M), 1921-24 (M), 1926 (M), 1928 (M), 1929, 1930 (M), 1931, 1932-33 (M), 1935, 1936-37 (M), 1938, 1939-46 (M).

Rating tables (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Dec. 5 to Apr. 5).

Oct. 1 to Apr. 5		Apr. 5 to Sept. 30			
1.8	105	1.7	90	3.0	431
2.5	260	2.0	144	4.0	793
3.0	407	2.4	243	4.6	1,030

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	177	216	167	150	220	150	210	371	189	539	150	111
2	173	204	169	150	220	150	220	387	187	417	140	109
3	171	195	170	150	220	140	230	421	194	355	132	108
4	170	187	175	150	210	140	280	394	209	312	130	106
5	165	183	170	150	210	140	400	361	250	288	150	113
6	164	179	160	150	210	140	536	417	316	269	152	114
7	168	176	160	150	200	130	662	586	333	251	149	115
8	171	173	160	150	200	130	820	572	279	238	142	128
9	174	170	160	150	200	130	966	487	242	232	135	126
10	201	168	160	150	190	130	1,030	417	215	227	130	121
11	209	166	160	150	190	130	994	371	205	217	129	117
12	194	163	170	150	190	130	898	332	255	204	129	113
13	184	161	180	150	190	120	840	311	355	192	126	111
14	178	162	210	150	190	120	805	293	338	184	122	111
15	178	164	200	150	180	130	759	272	289	180	119	122
16	175	166	200	150	180	130	695	261	254	175	117	123
17	170	171	190	160	180	130	640	306	229	170	115	118
18	169	174	180	160	180	130	576	405	215	164	115	115
19	166	173	170	170	180	140	512	377	234	158	115	112
20	162	175	170	170	170	150	459	353	241	155	114	112
21	161	174	160	170	170	160	424	346	217	150	112	111
22	160	173	160	200	170	180	431	308	210	146	111	112
23	161	180	160	210	170	200	407	282	262	147	109	112
24	170	191	160	220	170	210	374	267	327	157	107	112
25	173	193	160	220	160	210	345	252	314	146	105	115
26	180	188	160	230	160	210	326	241	505	140	105	123
27	184	182	160	230	150	210	387	232	896	178	103	125
28	250	185	160	230	150	200	480	226	1,020	246	104	124
29	300	188	160	230	------	200	466	215	915	235	108	125
30	260	170	160	220	------	200	411	203	691	170	104	124
31	230	------	160	220	------	200	------	194	------	160	105	------
TOTAL	5,748	5,350	5,241	5,440	5,210	4,870	16,583	10,460	10,386	6,802	3,784	3,488
MEAN	185	178	169	175	186	157	553	337	346	219	122	116
MAX	300	216	210	230	220	210	1,030	586	1,020	539	152	128
MIN	160	161	160	150	150	120	210	194	187	140	103	106
CFSM	.73	.70	.67	.69	.74	.62	2.18	1.33	1.37	.87	.48	.46
IN.	.84	.79	.77	.80	.77	.72	2.44	1.54	1.53	1.00	.56	.51

CAL YR 1968 TOTAL 82,556 MEAN 226 MAX 807 MIN 106 CFSM .89 IN 12.14
WTR YR 1969 TOTAL 83,362 MEAN 228 MAX 1,030 MIN 103 CFSM .90 IN 12.25

4-0670. Menominee River below Koss, Mich.

LOCATION.--Lat 45°21'16", long 87°38'55", in sec.9, T.34 N., R.27 W., Michigan meridian, Menominee County, on left bank at powerplant of Wisconsin Service Corp., 0.5 mile upstream from Little Cedar River, 3.6 miles southeast of Koss, and at mile 24.7.

DRAINAGE AREA.--3,790 sq mi, approximately.

PERIOD OF RECORD.--July 1907 to March 1909 (published as "at Koss"), July 1913 to current year.

GAGE.--Headwater and tailwater gages and generation data entered hourly in daily log sheet by company employees. Prior to June 1913, chain gage on railroad bridge 4 miles upstream.

AVERAGE DISCHARGE.--57 years (1907-8, 1913-69), 3,120 cfs.

EXTREMES.--Current year: Maximum daily discharge, 14,600 cfs Apr. 17; minimum daily, 1,120 cfs Sept. 3.
Period of record: Maximum daily discharge 33,000 cfs May 10, 1960; minimum daily, 162 cfs Sept. 15, 1931.

REMARKS.--Records fair. Daily discharge computed on basis of average daily load and load-discharge rating of combined hydroelectric units. Flow regulated by powerplants, and by Michigamme Reservoir (capacity, 119,950 acre-ft) and Peavy Pond (capacity, 33,860 acre-ft) on Michigamme River, and by many smaller reservoirs above station.

COOPERATION.--Records of daily discharge furnished by Wisconsin Public Service Corp. since 1913.

DISCHARGE IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3,020	4,950	2,800	2,880	4,210	3,000	2,880	6,540	2,450	7,330	2,200	1,200
2	2,900	4,320	2,840	2,760	4,120	3,000	3,000	6,230	2,400	6,050	2,600	1,250
3	2,880	3,360	2,780	2,880	4,080	2,570	3,800	7,050	2,520	4,660	2,020	1,120
4	2,840	3,390	3,230	2,880	4,310	2,570	4,060	6,590	2,750	4,440	1,880	1,400
5	3,300	2,520	3,160	2,880	3,920	2,740	4,160	5,730	2,860	3,660	2,350	1,400
6	3,160	2,590	2,640	3,000	3,910	2,660	4,450	6,370	3,720	3,300	1,990	1,440
7	3,130	3,440	2,400	3,000	3,300	2,680	5,770	7,490	3,720	2,730	2,210	1,400
8	3,090	2,780	2,520	2,880	3,180	2,600	7,570	7,680	3,360	3,140	2,050	1,420
9	3,350	3,300	2,280	3,000	3,120	2,490	10,300	7,310	3,360	2,770	1,730	1,320
10	3,310	3,240	2,280	3,000	3,000	2,500	10,400	7,010	3,000	3,080	1,800	1,340
11	3,830	3,300	2,640	3,120	3,020	2,350	11,500	6,650	3,120	2,580	1,600	1,370
12	4,270	2,970	3,240	3,100	2,960	2,350	11,200	5,910	3,300	3,230	1,300	1,760
13	3,970	2,720	3,120	2,880	2,880	2,400	11,900	5,260	3,720	2,780	2,100	1,500
14	2,940	2,940	2,630	2,850	2,880	2,480	12,200	4,780	3,560	2,670	1,640	1,300
15	2,640	2,890	2,450	3,000	2,880	2,300	12,800	3,970	3,720	2,700	1,670	1,300
16	3,360	3,100	3,240	3,000	3,000	2,420	14,000	3,560	3,860	2,740	1,800	1,590
17	3,140	3,000	3,360	3,050	2,730	2,250	14,600	4,030	3,860	2,740	1,660	1,920
18	3,120	2,940	3,820	3,050	2,640	2,400	11,800	5,290	3,300	2,600	1,360	1,920
19	3,360	3,120	3,120	3,050	2,940	2,440	10,700	7,170	3,360	2,690	1,650	2,180
20	3,000	2,880	3,000	3,100	3,000	2,850	8,180	7,680	3,760	2,690	1,420	1,510
21	2,860	3,300	3,300	2,820	2,900	3,200	7,400	6,680	3,970	2,640	1,700	1,320
22	2,550	3,450	3,240	2,680	2,880	3,640	6,750	5,930	3,720	2,550	1,870	1,340
23	2,880	3,450	2,820	3,490	2,900	3,580	6,560	5,380	3,300	2,470	1,840	1,650
24	3,120	3,000	3,240	3,360	2,630	4,020	5,440	4,930	3,360	2,400	1,380	1,510
25	3,000	3,240	2,880	3,600	2,930	4,500	6,500	4,720	3,360	2,120	1,300	1,780
26	2,590	2,890	3,060	3,390	2,880	4,380	6,370	4,150	4,240	2,220	1,680	1,940
27	2,810	2,600	2,760	3,730	2,880	4,120	6,680	4,070	8,040	2,400	1,850	1,510
28	3,750	3,180	2,700	3,760	2,850	3,760	7,250	3,840	10,500	2,160	1,920	1,150
29	4,200	3,550	3,060	3,920	------	3,900	7,170	3,970	10,200	2,590	1,920	1,320
30	4,350	3,200	2,880	4,210	------	3,240	7,000	3,360	8,480	2,780	1,850	1,900
31	5,270	------	3,000	4,070	------	2,940	------	2,940	------	2,420	1,550	------
TOTAL	102,600	95,570	90,490	98,390	88,930	92,330	242,390	172,270	124,870	95,330	55,890	45,060
MEAN	3,310	3,186	2,919	3,174	3,176	2,978	8,080	5,557	4,162	3,075	1,803	1,502
MAX	5,270	4,950	3,820	4,210	4,310	4,500	14,600	7,680	10,500	7,330	2,600	2,180
MIN	2,550	2,520	2,280	2,680	2,630	2,250	2,880	2,940	2,400	2,120	1,300	1,120

CAL YR 1968 TOTAL 1,324,790 MEAN 3,620 MAX 12,600 MIN 1,340
WAT YR 1969 TOTAL 1,304,120 MEAN 3,573 MAX 14,600 MIN 1,120

4-0690. Peshtigo River at Peshtigo, Wis.

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

DRAINAGE AREA.--1,124 sq mi.

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

GAGE.--Water-stage recorder. Datum of gage is 584.64 ft above mean sea level.

AVERAGE DISCHARGE.--16 years, 873 cfs (10.55 inches per year).

EXTREMES.--Current year: Maximum discharge, 6,880 cfs June 28 (gage height, 10.37 ft); minimum, 108 cfs Sept. 12 (gage height, 1.26 ft); minimum daily, 291 cfs Sept. 2.
Period of record: Maximum discharge, 9,790 cfs May 9, 1960 (gage height, 11.59 ft), from rating curve extended above 5,000 cfs on basis of computation of peak flow through dam gates; minimum, 17 cfs Nov. 29, 1966 (gage height, 1.00 ft); minimum daily, 84 cfs Aug. 5, 1957.

REMARKS.--Records good except those for winter months, which are fair. Diurnal fluctuation caused by powerplants upstream.

Rating tables (gage height, in feet, and discharge, in cubic feet per second). (Shifting-control method used Aug. 20 to Sept. 30; stage-discharge relation affected by ice Dec. 24 to Jan. 22, Jan. 25 to Feb. 24).

Oct. 1 to Mar. 20		Mar. 21 to Sept. 30			
1.8	288	2.2	426	6.5	2,530
2.5	543	3.0	750	8.5	4,050
3.8	1,080	4.5	1,400	10.5	7,150

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	780	1,030	689	780	1,000	731	1,350	1,490	668	3,900	810	428
2	978	824	775	660	980	588	1,260	1,570	649	3,270	781	291
3	897	894	733	720	920	773	1,260	1,650	736	2,690	718	374
4	731	776	749	760	900	656	1,770	1,530	697	2,170	666	608
5	824	780	747	800	900	665	2,020	1,310	695	1,870	679	474
6	727	853	544	720	900	665	2,330	1,390	957	1,550	831	418
7	588	783	479	700	900	652	2,580	1,510	1,160	1,380	989	381
8	771	747	420	760	920	650	2,780	1,630	1,000	1,300	704	318
9	761	743	316	800	1,000	656	2,910	1,700	928	1,090	977	425
10	813	676	559	640	920	663	2,900	1,730	951	938	973	418
11	827	653	745	700	800	721	2,790	1,530	741	933	588	392
12	821	802	778	540	960	649	2,630	1,360	754	904	613	430
13	876	773	787	510	960	615	2,510	1,080	778	930	515	445
14	925	700	793	640	860	568	2,370	998	943	793	441	486
15	942	621	800	840	740	617	2,390	977	1,220	661	596	525
16	817	641	854	740	700	667	2,690	1,040	1,050	817	420	546
17	875	662	737	640	780	530	2,850	1,090	901	760	420	573
18	886	773	685	840	880	687	2,770	1,180	950	766	520	441
19	863	883	828	760	780	692	2,810	1,280	872	593	470	442
20	477	747	628	700	920	800	2,550	1,500	826	632	380	480
21	593	780	759	660	880	1,190	2,110	1,470	833	543	360	422
22	776	758	860	720	860	1,970	1,960	1,370	922	591	460	341
23	775	822	753	783	860	1,850	1,850	1,300	1,090	541	527	417
24	793	859	800	989	800	1,900	1,560	1,070	1,090	642	419	391
25	788	706	920	900	749	2,160	1,360	1,120	1,140	621	430	500
26	728	746	800	900	746	2,150	1,140	1,090	1,870	673	547	527
27	750	843	680	930	747	1,920	1,270	903	3,590	559	456	573
28	751	831	720	940	750	1,940	1,480	906	5,720	929	604	531
29	764	711	700	960	------	1,730	1,480	862	6,350	1,020	533	503
30	904	646	740	920	------	1,420	1,390	799	5,080	821	357	499
31	1,050	------	780	920	------	1,370	------	731	------	819	373	------
TOTAL	24,851	23,063	22,158	23,872	24,112	32,845	63,120	39,166	45,161	35,706	17,957	13,599
MEAN	802	769	715	770	861	1,060	2,104	1,263	1,505	1,152	579	453
MAX	1,050	1,030	920	989	1,000	2,160	2,910	1,730	6,350	3,900	989	608
MIN	477	621	316	510	700	530	1,140	731	649	541	357	291
CFSM	.71	.68	.64	.69	.77	.94	1.87	1.12	1.34	1.02	.52	.40
IN.	.82	.76	.73	.79	.80	1.09	2.09	1.30	1.49	1.18	.59	.45

CAL YR 1968 TOTAL 384,542 MEAN 1,051 MAX 4,250 MIN 180 CFSM .93 IN 12.72
WTR YR 1969 TOTAL 365,610 MEAN 1,002 MAX 6,350 MIN 291 CFSM .89 IN 12.10

4-0700. Wheeler Lake near Lakewood, Wis.

LOCATION.--Lat 45°19'07", long 88°28'58", in NW 1/4 sec.27, T.33 N., R.16 E., Oconto County, near the home of Arthur Anderken on west shore of lake 2.3 miles northeast of Lakewood.

DRAINAGE AREA.--2 sq mi, approximately. Area of Wheeler Lake, 380 acres.

PERIOD OF RECORD.--August 1936 to current year (fragmentary).

GAGE.--Nonrecording gage (chiseled square on boulder in lakebed). 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 Apr. 19, 1936, nonrecording gage was located on east shore of lake. Apr. 20, 1939, to June 13, 1960, nonrecording gage was located on southwest shore of lake.

EXTREMES.--Current year: Maximum elevation observed, 6.51 ft July 1; minimum observed, 5.68 ft Sept. 23. Period of record: Maximum elevation observed, 6.51 ft July 1, 1969; minimum observed, 3.45 ft Feb. 5, 1960.

REMARKS.--Add 90 ft to obtain elevation above datum assumed for this lake by Wisconsin Department of Natural Resources. Lake has no surface outlet. Lake was ice covered about Dec. 3 to Apr. 15.

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.07									6.51		
2												5.89
3									6.29			
4												
5		5.91						6.46	6.20			
6								6.46				
7												
8	6.00									6.49	6.15	
9												5.88
10									6.22			
11												
12		5.88				6.37					6.14	
13								6.41				
14												
15	6.02									6.46		
16							6.30					5.79
17									6.21			
18										6.38		
19		5.86									6.06	5.74
20								6.38				
21												
22	5.97									6.25		
23												5.68
24									6.19			
25					6.40							
26		5.82									5.96	
27								6.34				
28												
29	5.94				------							
30					------							
31		------			------		------		------			------

4-0710. Oconto River near Gillett, Wis.

LOCATION.--Lat 44°51'53", long 88°18'00", in NW 1/4 sec.34, T.28 N., R.18 E., Oconto County, on left bank just upstream from County Trunk BB bridge, 2 miles from Christy Brook, 2 miles south of Gillett, and at mile 29.

DRAINAGE AREA.--678 sq mi.

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

GAGE.--Water-stage recorder. Altitude of gage is 735 ft (from river-profile map). See WSP 1727 for history of changes prior to Aug. 25, 1938.

AVERAGE DISCHARGE.--58 years (1906-8, 1913-69), 573 cfs (11.48 inches per year).

EXTREMES.--Current year: Maximum discharge, 3,300 cfs June 29 (gage height, 5.72 ft); minimum, 282 cfs Aug. 28-30 (gage height, 0.87 ft).
Period of record: Maximum discharge, 8,400 cfs Apr. 10, 1922 (gage height, 11.2 ft from floodmarks), caused by failure of dam at Pulcifer 4 miles above station; minimum, 93 cfs Nov. 26, 1941 (gage height, 0.13 ft), flow retarded by anchor ice above station.

REMARKS.--Records good except those for winter months, which are fair.

REVISIONS (WATER YEARS).--WSP 384: Drainage area. WSP 1207: 1922. WSP 1307: 1907-8 (M), 1914-16 (M), 1918-21 (M), 1923-33 (M), 1937-38 (M), 1943 (M).

Rating tables (gage height, in feet, and discharge, in cubic feet per second). (Shifting-control method used July 16 to Aug. 2; stage-discharge relation affected by ice Dec. 12 to Apr. 7).

Oct. 1 to Apr. 5		Apr. 6 to Sept. 30			
1.0	330	.5	165	3.0	1,410
1.5	559	1.0	330	4.0	2,070
2.0	820	1.5	559	5.0	2,770
3.0	1,440	2.0	820	6.0	3,520

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	455	505	507	430	620	490	1,100	1,040	513	2,810	549	342
2	445	495	457	420	620	490	1,100	1,000	474	2,440	534	387
3	429	480	463	420	600	490	1,100	986	464	2,160	484	375
4	414	470	479	420	580	490	1,200	1,000	471	1,850	456	331
5	398	464	450	420	570	490	1,300	1,040	497	1,600	448	332
6	400	461	400	420	560	480	1,400	1,070	558	1,460	452	344
7	407	456	350	420	540	480	1,600	1,050	611	1,330	499	350
8	411	440	360	420	520	470	1,710	1,030	634	1,200	528	336
9	419	412	370	420	510	470	1,820	1,090	610	1,080	550	330
10	437	415	400	420	500	450	1,940	1,130	573	970	477	325
11	481	429	450	420	490	450	2,020	1,110	524	884	425	319
12	498	424	500	420	490	440	2,040	1,040	529	799	408	310
13	483	419	600	420	480	430	2,010	961	573	723	411	305
14	467	416	640	420	480	430	1,920	877	634	676	399	298
15	458	418	660	430	480	430	1,800	798	660	638	383	305
16	453	418	640	450	480	440	1,710	757	625	603	370	392
17	448	442	600	460	470	450	1,660	796	591	574	361	395
18	436	482	580	480	470	480	1,580	808	567	549	352	375
19	428	505	560	490	470	520	1,490	821	537	515	343	352
20	432	505	540	500	470	560	1,390	873	500	476	352	337
21	427	484	520	500	470	640	1,300	881	491	452	348	328
22	436	467	500	520	470	740	1,190	874	501	433	318	321
23	444	469	490	540	470	840	1,100	837	629	429	294	320
24	452	485	470	560	470	980	1,020	780	674	424	288	319
25	445	487	460	580	470	1,100	947	734	813	433	290	322
26	443	498	460	600	470	1,300	891	689	1,130	429	289	330
27	454	496	450	620	480	1,350	936	651	1,580	443	287	340
28	480	443	450	640	490	1,300	955	653	2,350	534	285	341
29	512	486	440	640	------	1,240	1,010	634	3,150	623	283	335
30	523	514	440	640	------	1,180	1,060	579	3,170	658	284	337
31	514	------	430	640	------	1,100	------	541	------	593	290	------
TOTAL	13,929	13,885	15,116	15,180	14,190	21,200	42,299	27,130	25,633	28,788	12,037	10,133
MEAN	449	463	488	490	507	684	1,410	875	854	929	388	338
MAX	523	514	660	640	620	1,350	2,040	1,130	3,170	2,810	550	395
MIN	398	412	350	420	470	430	891	541	464	424	283	298
CFSM	.66	.68	.72	.72	.75	1.01	2.08	1.29	1.26	1.37	.57	.50
IN.	.76	.76	.83	.83	.78	1.16	2.32	1.49	1.41	1.58	.66	.56

CAL YR 1968 TOTAL 233,246 MEAN 637 MAX 2,390 MIN 265 CFSM .94 IN 12.79
WTR YR 1969 TOTAL 239,520 MEAN 656 MAX 3,170 MIN 283 CFSM .97 IN 13.14

PEAK DISCHARGE (BASE, 1,500 CFS)

DATE	TIME	G.HT.	DISCHARGE	DATE	TIME	G.HT.	DISCHARGE
4-12	0700	3.97	2,050	6-29	2300	5.72	3,300

4-0727.5 Lawrence Creek near Westfield, Wis.

LOCATION.--Lat 43°53'52", long 89°34'43" in SW 1/4 sec.32, T.17 N., R.8 E., Marquette County, on left bank 0.8 mile upstream from Lawrence Lake and 4 miles northwest of Westfield, Wis.

DRAINAGE AREA.--Not computed (see remarks).

PERIOD OF RECORD.--November 1967 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 900 ft (from topographic map).

EXTREMES.--Current year: Maximum discharge, 30 cfs June 27 (gage height, 8.23 ft), minimum daily, 15 cfs, Oct. 1-5, 17-24, Dec. 2-12, July 12, 13, 22, 26, Aug. 5, 6, 9, 12-14.
Period of record: Maximum discharge, 46 cfs Sept. 8, 1968 (gage height, 8.78 ft); minimum daily, 12 cfs Jan. 23-26, 28, 31, Feb. 5, 1968.

REMARKS.--Records are fair. Flow includes large ground water inflow. No regulation or diversions.

Rating table (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Dec. 19, 24, 25, Dec. 31 to Jan. 5, Jan. 9-13, 25, Feb. 19).

7.7	13	7.9	19
7.8	16	8.0	22

DISCHARGE IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15	16	16	16	18	16	16	17	17	17	16	21
2	15	16	15	16	18	16	16	17	17	17	16	17
3	15	16	15	16	18	16	17	16	17	16	16	17
4	15	16	15	16	18	16	20	16	18	17	16	17
5	15	16	15	16	18	16	18	16	17	17	15	17
6	16	16	15	16	18	16	18	19	17	16	15	17
7	16	16	15	16	18	16	17	18	17	16	16	17
8	16	16	15	16	17	16	17	17	17	16	16	17
9	16	16	15	16	17	16	17	17	16	17	15	17
10	16	16	15	16	16	16	17	16	16	17	16	17
11	16	16	15	16	16	16	17	16	16	16	16	17
12	16	16	15	16	16	16	17	16	18	15	15	17
13	16	16	16	16	16	16	17	16	17	15	15	17
14	16	16	16	16	16	16	17	16	16	16	15	17
15	16	16	16	17	16	16	17	16	16	16	16	17
16	16	16	16	18	16	16	17	16	16	16	16	17
17	15	17	16	17	16	16	18	21	16	16	16	17
18	15	16	16	17	16	17	17	18	17	16	16	17
19	15	16	16	17	16	17	16	17	17	16	16	17
20	15	16	16	17	16	18	17	17	16	16	16	17
21	15	16	16	17	16	17	17	17	16	16	16	17
22	15	16	16	17	16	17	17	17	17	15	16	17
23	15	16	16	18	16	18	17	17	17	16	16	17
24	15	16	16	18	16	18	17	17	17	16	16	17
25	16	16	16	18	16	18	17	17	18	16	16	17
26	16	16	16	18	16	18	17	17	20	15	16	17
27	17	16	16	18	16	18	18	17	22	18	16	17
28	16	16	16	17	16	17	17	16	17	17	16	17
29	16	16	16	18	------	17	17	16	20	17	16	18
30	16	16	16	18	------	17	16	16	19	19	16	17
31	16	------	16	18	------	16	------	16	------	16	18	------
TOTAL	484	481	485	522	464	515	513	521	517	505	492	515
MEAN	15.6	16.0	15.6	16.8	16.6	16.6	17.1	16.8	17.2	16.3	15.9	17.2
MAX	17	17	16	18	18	18	20	21	22	19	18	21
MIN	15	16	15	16	16	16	16	16	16	15	15	17

CAL YR 1968 TOTAL 5,716 MEAN 15.6 MAX 30 MIN 12
WAT YR 1969 TOTAL 6,014 MEAN 16.5 MAX 22 MIN 15

4-0730.5 Grand River near Kingston, Wis.

LOCATION.--Lat 43°41'09", long 89°05'09", between secs.16, 17, T.14 N., R.12 E., Green Lake County, on left bank just upstream of town road bridge, 2.3 miles east of Kingston and 1.3 miles above and east of Grand Lake.

DRAINAGE AREA.--73.7 sq mi.

PERIOD OF RECORD.--April 1968 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 795 ft (from topographic map).

EXTREMES.--Current year: Maximum discharge, 406 cfs June 27 (gage height, 5.80 ft); minimum, 2.2 cfs Dec. 23 (gage height, 1.13 ft), result of freezeup.
Period of record: Maximum discharge, 406 cfs June 27, 1969 (gage height, 5.80 ft); minimum discharge, 2.2 cfs Dec. 23, 1968 (gage height, 1.13 ft), result of freezeup.

REMARKS.--Records good except those for winter periods and for period of no gage-height record, which are fair.

Rating tables (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Dec. 5 to Feb. 25, Mar. 7-15).

Oct. 1 to June 26				June 27 to Sept. 30			
1.3	6.2	3.0	118	1.2	3.6	3.0	115
1.5	14	4.7	277	1.3	6.2	4.0	204
1.7	24			1.5	14	5.7	394
				1.9	36		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	14	10	10	13	18	63	38	45	217	24	13
2	12	12	13	7.2	12	19	71	34	37	165	21	12
3	11	9.3	16	7.0	16	18	92	32	26	164	19	12
4	11	15	14	7.0	12	20	143	30	22	123	18	11
5	10	13	12	7.0	13	19	179	30	22	99	17	13
6	8.1	12	14	7.2	14	16	199	37	22	79	17	12
7	11	14	9.6	7.4	14	20	195	38	21	65	17	6.6
8	11	15	8.6	8.0	10	19	157	38	20	58	16	9.2
9	10	13	11	9.8	9.0	16	136	36	20	53	16	5.7
10	12	9.8	10	9.0	14	18	120	33	18	51	16	5.9
11	11	15	9.0	9.0	13	17	108	30	16	48	16	7.7
12	11	15	11	9.0	9.4	20	96	28	29	43	16	6.6
13	7.9	13	10	9.2	14	18	83	26	50	39	16	6.2
14	12	12	9.4	9.2	14	17	74	25	39	37	16	7.0
15	11	16	9.0	9.4	8.0	16	69	25	29	34	16	4.9
16	11	16	11	12	7.6	15	71	29	25	32	16	5.4
17	12	15	10	15	11	35	92	56	21	34	16	7.7
18	11	20	11	12	10	108	113	62	20	35	16	11
19	12	17	12	10	9.4	152	101	47	22	37	16	11
20	7.5	17	7.0	14	8.6	202	92	40	22	36	16	14
21	9.8	15	6.6	11	10	223	76	36	18	36	15	8.5
22	13	14	6.6	12	8.0	225	64	33	18	33	14	12
23	12	13	6.6	14	8.4	263	58	31	22	30	14	10
24	12	13	7.0	17	10	252	48	29	22	30	14	10
25	13	19	9.2	16	12	240	40	28	24	28	14	9.5
26	13	15	8.4	15	15	182	35	27	211	26	14	11
27	10	16	7.8	18	16	147	36	27	392	31	14	9.0
28	17	9.7	7.8	16	16	123	38	28	303	39	13	7.2
29	13	16	7.8	15	------	99	40	28	298	37	13	12
30	12	13	7.8	13	------	87	40	30	285	33	12	11
31	11	------	8.4	15	------	69	------	47	------	28	12	------
TOTAL	349.3	426.8	301.6	350.4	327.4	2,693	2,729	1,058	2,119	1,800	490	282.1
MEAN	11.3	14.2	9.73	11.3	11.7	86.9	91.0	34.1	70.6	58.1	15.8	9.40
MAX	17	20	16	18	16	263	199	62	392	217	24	14
MIN	7.5	9.3	6.6	7.0	7.6	15	35	25	16	26	12	4.9
CFSM	.15	.19	.13	.15	.16	1.18	1.23	.46	.96	.79	.21	.13
IN.	.18	.22	.15	.18	.17	1.36	1.38	.53	1.07	.91	.25	.14

WAT YR 1969 TOTAL 12,926.6 MEAN 35.4 MAX 392 MIN 4.9 CFSM .48 IN 6.52

PEAK DISCHARGE (BASE, 100 CFS)

DATE	TIME	G.HT.	DISCHARGE	DATE	TIME	G.HT.	DISCHARGE
3-25	0600	4.91	300	4- 7	0100	4.09	213
3-30	1000	3.37	148	4-18	1300	3.10	126
3-31	0900	2.93	112	6-27	1300	5.80	406

NOTE.--No gage-height record Apr. 25 to June 2.

4-0735. Fox River at Berlin, Wis.

LOCATION.--Lat 43°57'14", long 88°57'08", in NE 1/4 sec.16, T.17 N., R.13 E., Green Lake County, on left bank, 0.4 mile downstream from government dam, 1.0 mile south of Huron Street bridge in Berlin, 2.5 miles upstream from Barnes Creek, and at mile 89.0.

DRAINAGE AREA.--1,430 sq mi, approximately.

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

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

AVERAGE DISCHARGE.--71 years, 1,080 cfs (10.26 inches per year).

EXTREMES.--Current year: Maximum discharge, 2,910 cfs Mar. 27 (gage height, 12.16 ft); minimum, 406 cfs Sept. 28 (gage height, 7.57 ft).
Period of record: Maximum discharge, 6,900 cfs Mar. 17, 18, 1946 (gage height, 15.5 ft); minimum, 248 cfs Sept. 16, 1948 (gage height, 6.1 ft).

REMARKS.--Records good except those for winter months, which are fair. An average of about 10 to 15 cfs was diverted into the basin from the Wisconsin River at Portage Canal throughout the year.

REVISIONS.--WSP 1337: 1910.

Rating table (gage height, in feet, and discharge, in cubic feet per second). (Shifting-control method used May 22 to June 30. Stage-discharge relation affected by ice Dec. 3 to Mar. 25).

7.5	385	10.0	1,560
8.0	560	11.0	2,160
9.0	1,020	12.0	2,800

DISCHARGE IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	764	700	713	600	740	720	2,540	1,840	940	1,830	866	457
2	761	709	695	580	760	740	2,540	1,810	910	1,940	829	464
3	709	685	680	580	780	780	2,540	1,770	892	2,040	802	484
4	701	682	660	560	800	820	2,580	1,700	885	2,160	781	504
5	686	687	540	540	820	860	2,660	1,650	869	2,250	734	526
6	694	673	460	540	800	900	2,690	1,630	859	2,280	698	548
7	672	670	440	520	800	940	2,700	1,630	854	2,280	702	517
8	672	688	480	520	800	980	2,690	1,530	834	2,270	708	493
9	677	701	520	520	780	1,000	2,710	1,400	776	2,250	676	466
10	695	715	560	500	780	1,000	2,710	1,350	781	2,230	639	476
11	681	711	580	500	780	1,000	2,670	1,320	785	2,200	622	486
12	683	689	600	490	760	1,000	2,630	1,300	807	2,160	617	476
13	664	709	620	480	740	1,000	2,590	1,290	798	2,110	613	474
14	666	890	580	470	720	1,000	2,540	1,270	820	2,050	610	473
15	664	941	560	470	700	1,000	2,510	1,270	804	1,990	564	490
16	699	924	580	470	700	1,000	2,470	1,320	780	1,910	543	532
17	696	895	600	480	680	1,000	2,460	1,390	796	1,810	522	502
18	708	893	620	490	660	1,100	2,470	1,410	787	1,700	514	493
19	679	840	640	500	660	1,200	2,430	1,410	804	1,540	502	494
20	625	743	640	520	640	1,300	2,380	1,430	781	1,380	485	501
21	604	725	620	520	640	1,600	2,340	1,440	748	1,250	489	487
22	656	789	620	540	620	2,000	2,280	1,420	746	1,150	489	479
23	680	838	600	560	620	2,200	2,230	1,390	706	1,100	478	485
24	671	813	600	580	620	2,400	2,170	1,360	707	1,070	470	456
25	647	789	600	600	640	2,600	2,120	1,320	738	1,020	462	448
26	666	782	620	620	660	2,700	2,070	1,240	870	985	456	447
27	684	755	620	640	680	2,800	2,060	1,190	1,250	977	448	442
28	695	760	640	660	700	2,750	2,020	1,160	1,380	982	454	411
29	657	706	640	680	------	2,710	1,960	1,120	1,510	913	458	438
30	688	713	640	700	------	2,640	1,900	1,080	1,710	890	449	457
31	703	------	620	720	------	2,580	------	1,000	------	881	465	------
TOTAL	21,147	22,815	18,588	17,150	20,080	46,320	72,660	43,440	26,927	51,598	18,145	14,406
MEAN	682	761	600	553	717	1,494	2,422	1,401	898	1,664	585	480
MAX	764	941	713	720	820	2,800	2,710	1,840	1,710	2,280	866	548
MIN	604	670	440	470	620	720	1,900	1,000	706	881	448	411
CFSM	.48	.53	.42	.39	.50	1.04	1.69	.98	.63	1.16	.41	.34
IN.	.55	.59	.48	.45	.52	1.20	1.89	1.13	.70	1.34	.47	.37

CAL YR 1968 TOTAL 308,063 MEAN 842 MAX 1,960 MIN 440 CFSM .59 IN 8.01
WAT YR 1969 TOTAL 373,276 MEAN 1,023 MAX 2,800 MIN 411 CFSM .72 IN 9.71

NOTE.--No gage-height record Mar. 10-27.

4-0749.5 Wolf River at Langlade, Wis.

LOCATION.--Lat 45°11'24", long 88°44'00", between secs.3 and 10, T.31 N., R.14 E., Langlade County, rear left bank on upstream side of bridge handrail, on State Highway 64 at Langlade, 1.5 miles east of White Lake, 3 miles upstream from White Lake Creek, and at about mile 170 above mouth.

DRAINAGE AREA.--460 sq mi.

PERIOD OF RECORD.--March 1966 to current year.

GAGE.--Nonrecording gage. Altitude of gage is about 1,240 ft (from topographic map).

EXTREMES.--Current year: Maximum discharge observed, 1,450 cfs Apr. 14 (gage height, 9.01 ft); maximum gage height observed, 9.63 ft Dec. 30 (backwater from ice); minimum discharge observed, 166 cfs Dec. 6 (gage height, 7.27 ft), result of freezeup.
Period of record: Maximum discharge observed, 1,730 cfs Apr. 17, 1967 (gage height, 9.20 ft); maximum gage height observed, 9.98 ft Dec. 5, 1968 (backwater from ice); minimum discharge observed, 166 cfs July 25, 1966, Dec. 6, 1968.

REMARKS.--Records good except those for winter months, which are fair.

Rating tables (gage height, in feet, and discharge, in cubic feet per second). (Shifting-control method used Oct. 3 to Nov. 26, May 24 to June 25, July 7 to Aug. 26; stage-discharge relation affected by ice Nov. 27 to Dec. 1, Dec. 7-11, Dec. 16 to Apr. 3).

Oct. 1 to Apr. 3		Apr. 4 to Sept. 30	
7.2	142	7.4	216
7.4	216	7.8	416
7.8	413	8.5	930
8.3	732	9.0	1,440

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	634	543	460	510	540	390	540	574	434	966	344	260
2	634	506	459	510	530	390	540	651	410	886	339	289
3	581	476	442	510	520	380	560	719	422	851	335	279
4	594	459	430	500	510	380	588	727	422	742	334	279
5	634	453	376	490	500	380	673	719	440	658	303	270
6	568	453	166	490	480	370	735	886	489	554	289	260
7	482	453	300	480	460	370	817	921	482	482	350	260
8	442	447	370	480	450	370	939	834	440	458	324	270
9	442	447	440	480	450	370	1,060	758	434	422	303	260
10	506	442	500	480	440	370	1,260	673	410	410	294	247
11	506	430	460	480	440	370	1,370	608	394	422	284	242
12	482	430	436	470	430	370	1,400	567	446	405	308	242
13	476	430	512	470	430	370	1,420	540	527	371	274	234
14	476	424	518	480	430	370	1,450	514	514	371	274	229
15	476	419	488	490	420	370	1,400	495	495	366	270	270
16	476	424	480	520	420	380	1,340	482	476	355	260	298
17	543	413	470	540	420	380	1,280	608	452	350	251	279
18	594	402	470	560	420	390	1,190	637	428	308	251	265
19	594	392	480	600	410	400	1,120	622	422	289	247	251
20	568	381	490	620	410	430	1,060	608	410	284	242	251
21	556	488	500	640	410	480	1,020	588	394	274	229	238
22	453	464	520	660	410	540	984	574	464	256	229	234
23	419	453	520	660	410	640	921	560	495	242	234	247
24	402	436	520	660	400	880	868	514	495	289	234	256
25	397	430	520	640	400	760	817	495	482	284	229	260
26	392	453	520	620	400	660	766	476	727	279	229	270
27	536	460	520	620	400	600	783	521	1,070	377	223	274
28	512	460	520	600	390	560	766	495	1,060	458	222	260
29	568	470	520	590	------	540	658	482	1,060	388	222	251
30	562	460	520	580	------	540	608	476	1,030	360	223	260
31	562	------	520	560	------	540	------	464	------	350	231	------
TOTAL	16,067	13,398	14,447	16,990	12,330	14,340	28,933	18,788	16,224	13,507	8,385	7,785
MEAN	518	447	466	548	440	463	964	606	541	436	270	260
MAX	634	543	520	660	540	880	1,450	921	1,070	966	350	298
MIN	392	381	166	470	390	370	540	464	394	242	222	229
CFSM	1.13	.97	1.01	1.19	.96	1.01	2.10	1.32	1.18	.95	.59	.56
IN.	1.30	1.08	1.17	1.37	1.00	1.16	2.34	1.52	1.31	1.09	.68	.63

CAL YR 1968 TOTAL 206,725 MEAN 565 MAX 1,510 MIN 166 CFSM 1.23 IN 16.71
WTR YR 1969 TOTAL 181,194 MEAN 496 MAX 1,450 MIN 166 CFSM 1.08 IN 14.65

4-0752. Evergreen Creek near Langlade, Wis.

LOCATION.--Lat 45°10'11", long 88°48'12", in NW 1/4 sec.18, T.31 N., R.14 E., Langlade County, on right bank 30 ft upstream from culvert on State Highway 64, 0.1 mile downstream from Town Line Lake outlet, 2.5 miles upstream from mouth, 3.8 miles southwest of Langlade.

DRAINAGE AREA.--4.9 sq mi, approximately.

PERIOD OF RECORD.--Annual maximum and occasional low-flow measurements, water years 1959-64; no winter record, June 1964-67; October 1967 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,320 ft (from topographic map). Prior to June 16, 1964, non-recording gage at same site and datum.

EXTREMES.--Current year: Maximum discharge, 54 cfs June 27 (gage height, 11.09 ft); minimum, 8.3 cfs Dec. 9 (gage height, 9.43 ft; affected by ice).
Period of record: Maximum discharge, 78 cfs Apr. 11, 1965 (gage height, 11.62 ft); minimum recorded, 6.9 cfs Feb. 4, 1968 (gage height, 9.54 ft).

REMARKS.--Records good except those for winter months, which are fair.

Rating tables (gage height, in feet, and discharge, in cubic feet per second). (Shifting-control method used Mar. 14-25, May 27 to June 5; stage-discharge relation affected by ice Dec. 6-10, Dec. 13 to Jan. 19, Jan. 22 to Feb. 10, Feb. 12-16, 20, Mar. 7-13).

Oct. 1 to Nov. 27			Nov. 28 to Aug. 31			Sept. 1 to Sept. 30	
9.6	8	9.5	9	10.2	24	9.7	10
9.8	12	9.7	11	10.6	36	9.8	12
10.0	17	9.9	16	11.2	54	9.9	14

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	11	11	11	10	11	9.9	11	11	14	12	12
2	11	10	11	11	10	9.8	9.9	16	12	13	12	11
3	11	10	11	11	10	9.6	10	13	12	13	12	11
4	11	10	11	11	10	9.5	11	11	12	13	12	11
5	11	10	12	11	10	10	14	11	12	13	12	11
6	12	10	11	11	10	9.6	15	22	14	12	12	11
7	11	10	11	11	10	9.5	15	21	12	12	19	11
8	12	10	11	12	10	9.4	17	14	12	12	13	11
9	13	10	11	12	10	9.3	19	13	12	12	12	11
10	14	10	11	12	10	9.2	19	12	12	12	12	11
11	12	9.9	11	12	10	9.5	16	12	12	12	13	11
12	11	9.9	12	12	10	9.8	15	12	16	12	14	11
13	11	9.9	13	12	10	10	16	11	14	11	12	11
14	11	10	11	12	10	9.8	17	11	12	11	12	11
15	11	11	11	12	10	9.8	15	11	12	11	12	12
16	12	10	11	12	10	9.8	15	12	12	11	12	13
17	12	10	11	12	10	9.8	14	18	12	11	12	11
18	13	10	11	11	9.9	10	13	14	12	11	12	11
19	12	10	11	10	9.9	10	12	12	12	11	12	11
20	12	9.9	11	10	10	13	12	13	11	11	12	11
21	11	9.9	11	10	9.9	12	13	12	11	11	12	11
22	12	10	11	10	9.9	11	12	12	13	11	12	11
23	12	10	11	10	9.9	13	11	12	18	14	12	11
24	11	10	11	10	9.9	13	11	12	14	13	12	11
25	11	9.9	11	10	9.8	12	11	12	16	12	12	11
26	11	11	11	10	9.8	11	11	12	27	12	12	12
27	16	9.9	11	10	9.8	11	16	12	45	22	12	11
28	16	12	11	10	9.6	10	13	12	20	18	12	11
29	13	11	11	10	------	12	12	12	17	13	12	11
30	11	11	11	10	------	12	11	11	16	12	12	11
31	11	------	11	10	------	12	------	11	------	13	13	------
TOTAL	369	306.3	345	338	278.4	327.4	405.8	400	443	389	384	335
MEAN	11.9	10.2	11.1	10.9	9.94	10.6	13.5	12.9	14.8	12.5	12.4	11.2
MAX	16	12	13	12	10	13	19	22	45	22	19	13
MIN	11	9.9	11	10	9.6	9.2	9.9	11	11	11	12	11
CFSM	1.49	1.28	1.39	1.36	1.24	1.32	1.69	1.61	1.85	1.57	1.55	1.40
IN.	1.72	1.42	1.60	1.57	1.29	1.52	1.89	1.86	2.06	1.81	1.79	1.56

CAL YR 1968 TOTAL 4,168.5 MEAN 11.4 MAX 28 MIN 8.0 CFSM 1.42 IN 19.38
WTR YR 1969 TOTAL 4,320.9 MEAN 11.8 MAX 45 MIN 9.2 CFSM 1.48 IN 20.09

4-0770. Wolf River at Keshena Falls, Wis.

LOCATION.--Lat 44°53'28", long 88°39'18", in E 1/2 sec.22, T.28 N., R.15 E., Menominee County, on right bank 500 ft downstream from Keshena Falls, 1.7 miles upstream from Keshena, 3.1 miles downstream from West Branch Wolf River, and at mile 136.4.

DRAINAGE AREA.--812 sq mi.

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.

GAGE.--Water-stage recorder. Datum of gage is 820.0 ft above mean sea level (levels by Wisconsin Power and Light Co.). Prior to Mar. 23, 1928, nonrecording gage at bridge in Keshena 1.7 miles downstream at datum 4.03 ft lower.

AVERAGE DISCHARGE.--60 years (1907-8, 1910-69), 756 cfs (12.64 inches per year).

EXTREMES.--Current year: Maximum discharge, 3,780 cfs June 28 (gage height, 8.82 ft); minimum, 356 cfs Dec. 6 (gage height, 5.26 ft), result of freezeup.
Period of record: Maximum discharge, 4,830 cfs May 7, 1960 (gage height, 9.67 ft) from rating curve extended above 3,300 cfs; instantaneous peak caused when earth fill wall near powerplant was dynamited to relieve pressure on dam; maximum discharge after flow stabilized, 4,330 cfs May 8 (gage height, 9.36 ft) from rating curve extended above 3,300 cfs; maximum gage height, 13.83 ft Nov. 17, 1943 (backwater from ice); minimum, 91 cfs Dec. 22, 1939 (gage height, 4.67 ft), result of ice storage.

REMARKS.--Records good except those for winter months, which are fair.

REVISIONS (WATER YEARS).--WSP 664: Drainage area (site at Keshena). WSP 1337: 1914-15 (M), 1918-19 (M), 1921, 1923 (M), 1926 (M), 1928 (M), 1933.

Rating table (gage height, in feet, and discharge, in cubic feet per second). (Shifting-control method used Oct. 1 to Nov. 16, July 4 to Aug. 15; stage-discharge relation affected by ice Dec. 8 to Apr. 5).

5.0	229	7.0	1,740
5.5	488	8.0	2,800
6.0	842	9.0	4,000

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	809	811	665	740	840	600	840	1,040	800	1,860	705	567
2	813	774	704	720	820	600	880	1,130	764	1,650	667	532
3	796	723	702	720	820	600	940	1,340	766	1,590	638	501
4	785	697	698	720	800	600	1,000	1,310	778	1,510	633	485
5	763	680	636	720	780	600	1,100	1,230	807	1,450	602	516
6	753	672	403	710	770	600	1,350	1,310	906	1,230	593	513
7	739	668	443	700	760	600	1,500	1,560	945	1,040	692	498
8	668	665	560	700	740	600	1,680	1,540	875	886	716	505
9	647	668	600	700	740	600	1,810	1,430	805	868	643	505
10	727	668	640	700	740	600	2,020	1,310	757	855	602	491
11	762	660	640	700	720	600	2,180	1,210	730	826	584	480
12	732	647	640	700	720	600	2,140	1,090	809	774	597	472
13	702	647	660	700	700	600	2,110	988	983	736	595	464
14	688	642	660	700	700	600	2,140	930	986	701	565	460
15	683	649	620	700	700	600	2,110	893	910	649	539	481
16	682	655	600	700	700	600	2,070	866	865	620	534	585
17	703	698	640	700	680	600	2,010	894	839	620	522	582
18	818	731	700	700	680	620	1,900	1,080	804	609	517	534
19	859	704	680	700	680	640	1,760	1,100	759	580	520	509
20	848	628	680	700	660	740	1,630	1,110	735	564	508	492
21	821	600	700	700	660	1,100	1,560	1,080	706	550	498	483
22	752	706	720	760	660	1,000	1,500	1,020	735	546	490	479
23	667	725	760	820	640	920	1,410	978	963	564	484	485
24	628	700	780	860	640	1,200	1,330	944	1,100	637	480	478
25	608	697	780	900	630	1,000	1,280	904	1,120	597	477	487
26	602	706	780	930	620	900	1,230	866	1,670	566	472	511
27	634	627	780	940	620	860	1,370	854	3,290	667	472	516
28	748	609	780	930	620	840	1,480	902	3,330	1,000	473	500
29	829	657	780	900	------	820	1,350	901	2,470	1,020	468	493
30	845	673	760	880	------	820	1,130	859	2,150	806	462	492
31	830	------	760	850	------	820	------	822	------	685	472	------
TOTAL	22,941	20,387	20,951	23,600	19,840	22,480	46,810	33,491	34,157	27,256	17,220	15,096
MEAN	740	680	676	761	709	725	1,560	1,080	1,139	879	555	503
MAX	859	811	780	940	840	1,200	2,180	1,560	3,330	1,860	716	585
MIN	602	600	403	700	620	600	840	822	706	546	462	460
CFSM	.91	.84	.83	.94	.87	.89	1.92	1.33	1.40	1.08	.68	.62
IN.	1.05	.93	.96	1.08	.91	1.03	2.14	1.53	1.56	1.25	.79	.69

CAL YR 1968 TOTAL 314,302 MEAN 859 MAX 2,230 MIN 403 CFSM 1.06 IN 14.40
WTR YR 1969 TOTAL 304,229 MEAN 834 MAX 3,330 MIN 403 CFSM 1.03 IN 13.93

PEAK DISCHARGE (BASE, 1,500 CFS)

DATE	TIME	G.HT.	DISCHARGE	DATE	TIME	G.HT.	DISCHARGE
4-11	1700	7.48	2,230	5- 7	2000	6.84	1,600
4-28	1100	6.73	1,500	6-28	0100	8.82	3,780

4-0785. Embarrass River near Embarrass, Wis.

LOCATION.--Lat 44°43'29", long 88°44'10", in SW 1/4 sec.18, T.26 N., R.15 E., Shawano County, on left bank 10 ft downstream from bridge on county road, 1.3 miles downstream from Mill Creek, and 4 miles northwest of Embarrass.

DRAINAGE AREA.--395 sq mi.

PERIOD OF RECORD.--June 1919 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 800 ft (from survey level line in vicinity). Prior to Aug. 23, 1938, nonrecording gage at same site and datum.

AVERAGE DISCHARGE.--50 years, 285 cfs (9.80 inches per year).

EXTREMES.--Current year: Maximum discharge, 4,640 cfs June 28 (gage height, 10.05 ft); minimum, 45 cfs Dec. 6 (gage height, 2.52 ft), result of freezeup.
Period of record: Maximum discharge, 7,080 cfs Apr. 12, 1965 (gage height, 12.13 ft), affected by failure of dam near Pella, 9.2 miles above station; minimum observed, 23 cfs Aug. 3, 6, 7, 1931.

REMARKS.--Records good except those for winter months, which are fair. Slight diurnal fluctuation caused by powerplants above station.

REVISIONS (WATER YEARS).--WSP 1337: 1920-26 (M), 1928, 1929-30 (M), 1933-34, 1936-37, 1938 (M), 1940.

Rating table (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Dec. 7 to Mar. 26).

2.8	104	5.0	1,140
3.0	151	6.0	1,740
3.4	290	8.0	3,020
4.0	589	10.0	4,590

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	204	241	206	170	390	210	459	576	235	1,780	306	169
2	198	226	204	170	380	200	480	551	227	1,190	262	244
3	187	216	206	170	370	200	612	708	218	851	257	219
4	181	209	213	170	360	200	939	789	213	722	232	178
5	177	193	204	170	350	200	1,370	734	217	680	213	170
6	179	192	171	170	350	200	1,560	654	240	705	197	162
7	180	217	170	170	350	200	1,620	784	297	637	156	157
8	186	206	170	170	340	200	1,610	965	326	540	195	152
9	197	199	170	170	330	200	1,700	970	282	419	213	145
10	226	189	170	170	330	200	1,810	796	234	374	208	140
11	292	194	170	170	320	190	1,750	619	200	367	194	137
12	297	190	180	170	320	190	1,490	466	204	330	180	136
13	270	186	190	170	310	190	1,190	398	339	298	168	133
14	244	184	240	170	300	190	1,030	370	425	271	162	133
15	223	187	300	170	290	190	962	340	388	232	140	136
16	213	194	290	200	280	190	909	319	301	248	142	163
17	211	214	280	230	280	190	881	332	242	237	134	196
18	228	247	260	240	270	190	899	458	231	221	142	189
19	240	276	240	240	260	210	821	547	220	194	139	169
20	242	259	220	250	250	300	651	525	208	192	137	152
21	231	227	210	250	240	500	591	484	178	156	133	145
22	220	217	200	260	230	660	483	424	188	158	133	141
23	208	220	190	290	230	780	482	374	478	174	134	140
24	195	222	190	330	220	900	443	338	815	193	130	139
25	193	222	180	370	220	1,040	411	309	1,090	430	127	144
26	188	235	180	390	210	960	371	276	1,720	501	126	149
27	197	223	180	400	210	885	492	275	2,750	406	126	152
28	231	208	180	410	210	796	797	287	4,370	498	125	152
29	269	198	170	410	------	761	851	340	3,330	658	126	151
30	285	208	170	410	------	625	727	356	2,590	609	123	148
31	257	------	170	400	------	534	------	280	------	443	122	------
TOTAL	6,849	6,399	6,274	7,630	8,200	12,481	28,391	15,644	22,756	14,714	5,182	4,741
MEAN	221	213	202	246	293	403	946	505	759	475	167	158
MAX	297	276	300	410	390	1,040	1,810	970	4,370	1,780	306	244
MIN	177	184	170	170	210	190	371	275	178	156	122	133
CFSM	.56	.54	.51	.62	.74	1.02	2.40	1.28	1.92	1.20	.42	.40
IN.	.64	.60	.59	.72	.77	1.18	2.67	1.47	2.14	1.39	.49	.45

CAL YR 1968 TOTAL 116,720 MEAN 319 MAX 1,620 MIN 90 CFSM .81 IN 10.99
WTR YR 1969 TOTAL 139,261 MEAN 382 MAX 4,370 MIN 122 CFSM .97 IN 13.11

PEAK DISCHARGE (BASE, 1,100 CFS)

DATE	TIME	G.HT.	DISCHARGE	DATE	TIME	G.HT.	DISCHARGE
4-10	1200	6.15	1,830	6-28	0900	10.05	4,640

4-0790. Wolf River at New London, Wis.

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, on right bank 100 ft downstream from Pearl Street bridge in New London, 0.2 mile downstream from Embarrass River, and at mile 56.3.

DRAINAGE AREA.--2,240 sq mi, approximately.

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

GAGE.--Water-stage recorder. Datum of gage is 749.0 ft above mean sea level (levels by Corps of Engineers). Prior to Oct. 4, 1951, nonrecording gage.

AVERAGE DISCHARGE.--73 years, 1,709 cfs (10.36 inches per year).

EXTREMES.--Current year: Maximum discharge, 10,100 cfs July 5 (gage height, 9.7 ft); minimum, 784 cfs Aug. 31 (gage height, 1.27 ft).
Period of record: Maximum daily discharge, 15,500 cfs Apr. 13, 1922 (gage height, 11.4 ft); minimum daily, 150 cfs Mar. 1, 1900.
Maximum stage known, 11.6 ft Apr. 16, 1888, from information by Corps of Engineers.

REMARKS.--Records good except those for winter periods, which are fair.

Rating table (gage height, in feet, and discharge, in cubic feet per second). (Shifting-control method used Oct. 1-31, July 13 to Sept. 30; stage-discharge relation affected by ice Dec. 4 to Apr. 3).

1.1	793	7.0	3,710
2.5	1,240	8.0	5,080
4.0	1,800	9.0	7,630
6.0	2,920	10.0	11,200

DISCHARGE IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1,800	1,440	1,300	1,200	1,900	1,300	6,200	3,460	2,270	5,680	1,840	824
2	1,690	1,470	1,320	1,200	1,900	1,300	6,200	3,430	2,130	7,300	1,800	888
3	1,600	1,480	1,290	1,100	1,900	1,300	6,000	3,390	1,960	8,980	1,670	984
4	1,530	1,450	1,300	1,100	1,900	1,300	5,070	3,350	1,820	9,340	1,450	1,180
5	1,480	1,430	1,200	1,100	1,900	1,300	5,210	3,310	1,730	10,100	1,380	1,180
6	1,460	1,390	1,200	1,100	1,800	1,300	5,400	3,270	1,700	9,700	1,280	1,140
7	1,440	1,370	1,100	1,100	1,800	1,300	5,540	3,270	1,690	9,340	1,240	1,050
8	1,440	1,370	1,000	1,100	1,700	1,300	5,690	3,260	1,710	8,290	1,210	984
9	1,440	1,400	1,100	1,100	1,700	1,300	5,950	3,270	1,740	7,300	1,110	952
10	1,460	1,360	1,200	1,100	1,600	1,300	5,980	3,260	1,750	6,400	1,180	952
11	1,460	1,300	1,200	1,200	1,600	1,300	5,980	3,240	1,720	5,680	1,180	952
12	1,450	1,280	1,200	1,200	1,600	1,300	5,990	3,230	1,670	5,080	1,140	920
13	1,480	1,260	1,200	1,200	1,500	1,300	5,960	3,230	1,650	4,440	1,140	920
14	1,510	1,260	1,100	1,200	1,500	1,300	5,910	3,210	1,670	3,910	1,140	888
15	1,510	1,250	1,100	1,200	1,500	1,300	5,850	3,150	1,750	3,460	1,080	930
16	1,510	1,240	1,200	1,200	1,500	1,300	5,700	3,040	1,830	3,060	1,080	930
17	1,480	1,250	1,200	1,300	1,400	1,300	5,640	2,970	1,880	2,850	1,050	939
18	1,440	1,280	1,200	1,400	1,400	1,300	5,580	2,950	1,870	2,540	984	965
19	1,410	1,300	1,200	1,400	1,400	1,400	5,430	2,910	1,820	2,240	984	1,030
20	1,410	1,310	1,200	1,500	1,400	1,500	5,300	2,850	1,740	1,940	952	1,050
21	1,430	1,330	1,200	1,500	1,400	1,700	5,170	2,800	1,660	1,670	920	1,030
22	1,480	1,330	1,200	1,500	1,300	1,900	4,960	2,750	1,600	1,480	920	984
23	1,540	1,290	1,200	1,600	1,300	2,200	4,740	2,700	1,580	1,340	888	942
24	1,520	1,260	1,200	1,600	1,300	2,500	4,500	2,630	1,630	1,210	856	898
25	1,500	1,260	1,200	1,600	1,300	3,000	4,240	2,540	1,820	1,210	824	888
26	1,440	1,270	1,200	1,700	1,300	3,600	3,960	2,450	2,190	1,210	824	907
27	1,390	1,310	1,200	1,700	1,300	4,200	3,800	2,370	2,780	1,340	824	907
28	1,350	1,360	1,300	1,700	1,300	4,800	3,660	2,400	3,300	1,420	824	898
29	1,320	1,370	1,300	1,800	------	5,600	3,590	2,410	3,620	1,520	793	904
30	1,340	1,330	1,300	1,800	------	6,000	3,520	2,430	4,300	1,670	793	914
31	1,400	------	1,200	1,900	------	6,200	------	2,380	------	1,800	793	------
TOTAL	45,710	40,000	37,310	42,400	43,400	68,000	156,720	91,910	60,580	133,500	34,100	28,930
MEAN	1,475	1,333	1,204	1,368	1,550	2,194	5,224	2,965	2,019	4,306	1,100	964
MAX	1,800	1,480	1,320	1,900	1,900	6,200	6,200	3,460	4,300	10,100	1,840	1,180
MIN	1,320	1,240	1,000	1,100	1,300	1,300	3,520	2,370	1,580	1,210	793	824
CFSM	.66	.60	.54	.61	.69	.98	2.33	1.32	.90	1.92	.49	.43
IN.	.76	.66	.62	.70	.72	1.13	2.60	1.53	1.01	2.22	.57	.48

CAL YR 1968 TOTAL 692,489 MEAN 1,892 MAX 6,160 MIN 580 CFSM .84 IN 11.50
WAT YR 1969 TOTAL 782,569 MEAN 2,144 MAX 10,100 MIN 793 CFSM .96 IN 13.00

4-0800. Little Wolf River at Royalton, Wis.

LOCATION.--Lat 44°24'47", long 88°51'55", in SE 1/4 NE 1/4 sec.1, T.22 N., R.13 E., Waupaca County, or right bank 50 ft upstream from highway bridge in Royalton and 6 miles upstream from mouth.

DRAINAGE AREA.--514 sq mi.

PERIOD OF RECORD.--January 1914 to current year.

GAGE.--Water-stage recorder. Datum of gage is 774.00 ft above mean sea level. Prior to Aug. 20, 1915, nonrecording gage at highway bridge at datum 0.75 ft lower. Aug. 20, 1915, to Apr. 23, 1934, nonrecording gage at present site and datum.

AVERAGE DISCHARGE.--55 years, 397 cfs (10.49 inches per year).

EXTREMES.--Current year: Maximum discharge, 3,060 cfs June 30 (gage height, 4.59 ft); maximum gage height, 5.26 ft Mar. 24 (backwater from ice); minimum discharge, 152 cfs Dec. 19 (gage height, 1.10 ft).
Period of record: Maximum discharge, 6,950 cfs Mar. 30, 1943 (gage height, 8.00 ft), from rating curve extended above 3,500 cfs; maximum gage height, 11.95 ft Mar. 28, 1950 (backwater from ice); minimum discharge, 52 cfs Nov. 26, 1958 (gage height, 0.75 ft), result of freezeup.

REMARKS.--Records good except those for winter months, which are fair. Occasional fluctuation caused by recreation dam 6 miles upstream.

REVISIONS(WATER YEARS).--WSP 1337: 1914-16(M), 1918-19(M), 1921-25(M), 1927(M), 1928-37, 1939(M), 1940, 1945-46(M), 1948(M), 1950(M). WSP 1507: 1943. WSP 1727: Drainage area.

Rating table (gage height, in feet, and discharge, in cubic feet per second). (Stage-discharge relation affected by ice Dec. 1, 2, 4-10, 21-26, Dec. 31 to Apr. 1).

1.2	176	3.0	1,450
1.6	331	4.0	2,410
2.1	660	4.5	2,960

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	274	285	220	220	420	270	700	741	561	2,420	380	245
2	267	277	210	220	410	270	743	645	390	1,880	323	357
3	257	273	222	220	400	270	1,090	667	404	1,560	306	381
4	251	267	250	220	380	270	1,940	703	365	1,560	281	352
5	246	265	260	220	390	270	2,830	637	366	1,720	266	309
6	245	268	250	220	390	270	2,610	659	392	1,800	261	273
7	245	275	230	220	380	270	2,440	726	475	1,550	265	255
8	238	298	220	220	370	270	2,240	767	457	1,280	283	214
9	248	359	220	220	360	270	2,080	819	367	933	328	219
10	256	308	220	220	350	270	2,040	674	317	770	300	219
11	267	234	238	220	350	260	1,950	591	303	648	243	217
12	278	246	269	220	340	260	1,720	485	340	594	247	214
13	370	261	269	220	340	270	1,510	453	410	511	243	211
14	267	271	269	220	330	280	1,260	406	527	469	234	211
15	326	263	241	230	330	280	1,090	401	448	461	227	217
16	246	262	234	230	320	290	1,060	364	360	447	220	233
17	255	271	223	240	310	300	1,090	470	353	390	216	241
18	274	283	223	250	300	320	1,140	684	306	371	214	242
19	284	290	202	260	300	360	1,160	687	276	353	206	238
20	284	290	206	270	290	500	1,040	671	276	330	207	232
21	277	294	210	280	290	800	924	519	275	307	206	225
22	279	268	210	300	280	1,000	821	480	276	300	199	223
23	275	267	210	320	280	1,500	682	444	418	290	193	224
24	267	264	220	360	280	2,400	647	386	649	301	199	222
25	260	262	220	400	280	2,300	572	354	929	375	199	224
26	254	280	230	410	270	1,650	517	331	1,340	372	185	230
27	259	308	249	410	270	1,400	614	555	2,220	363	185	231
28	278	290	245	420	270	1,200	795	881	2,480	510	182	229
29	296	274	238	430	------	1,000	891	1,200	2,790	648	181	231
30	300	273	231	440	------	900	819	1,220	2,930	620	180	233
31	292	------	220	430	------	740	------	767	------	520	182	------
TOTAL	8,415	8,226	7,159	8,760	9,280	20,710	39,015	19,387	22,000	24,653	7,341	7,352
MEAN	271	274	231	283	331	668	1,301	625	733	795	237	245
MAX	370	359	269	440	420	2,400	2,830	1,220	2,930	2,420	380	381
MIN	238	208	202	220	270	260	517	331	275	290	180	211
CFSM	.53	.53	.45	.55	.64	1.30	2.53	1.22	1.43	1.55	.46	.48
IN.	.61	.60	.52	.63	.67	1.50	2.82	1.40	1.59	1.78	.53	.53

CAL YR 1968 TOTAL 137,846 MEAN 377 MAX 1,850 MIN 170 CFSM .73 IN 9.98
WAT YR 1969 TOTAL 182,298 MEAN 499 MAX 2,930 MIN 180 CFSM .97 IN 13.19

PEAK DISCHARGE (BASE, 1,600 CFS)

DATE	TIME	G.HT.	DISCHARGE	DATE	TIME	G.HT.	DISCHARGE
3-24	1700	5.31	2,750	6-30	0200	4.59	3,060
4- 5	1500	4.42	2,870				

4-0809.5 Emmons Creek near Rural, Wis.

LOCATION.--Lat 44°18'55", long 89°11'34", in NW 1/4 NE 1/4 sec.8, T.21 N., R.11 E., Waupaca County, 0.8 mile upstream from Long Lake and 1.8 miles west of Rural.

DRAINAGE AREA.--27 sq mi, approximately; the ground-water drainage area is about one-third larger than the surface-water drainage area.

PERIOD OF RECORD.--May 1968 to current year.

GAGE.--Nonrecording gage and crest-stage gage. Altitude of gage is 890 ft (by barometer).

EXTREMES.--May to September 1968: Maximum discharge during period, 52 cfs June 26 (gage height, 3.10 ft); minimum, 22 cfs June 13, 15-17, 19, 20, July 31 to Aug. 4.
Water year 1969: Maximum discharge, 142 cfs May 27 (gage height, 4.28 ft); minimum, 21 cfs Aug. 30.

REMARKS.--Records good except those for December and January, which are fair.

Rating table (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Dec. 24, 25, 28, Dec. 31 to Jan. 5, Jan. 9-14, 23-27, Feb. 4, 5, 14).

2.1	20	3.5	71
2.5	32	4.0	111
3.0	48	4.3	144

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1									25	25	22	32
2									24	25	22	24
3									23	24	22	23
4									23	24	22	23
5									23	24	24	25
6									23	24	25	24
7									23	24	26	24
8									23	24	33	30
9									23	23	28	36
10									27	23	26	31
11									24	23	26	27
12									23	23	25	25
13									22	23	25	25
14									23	25	25	24
15								25	22	23	25	24
16								31	22	23	26	24
17								24	22	36	24	25
18								24	23	28	24	26
19								34	22	25	26	28
20								27	22	24	25	27
21								26	26	24	25	27
22								25	23	24	24	25
23								25	25	25	24	26
24								24	24	25	23	26
25								24	25	24	23	25
26								28	50	24	23	25
27								29	38	24	23	25
28								32	29	23	23	25
29								27	27	23	23	25
30					------			26	26	23	23	25
31		------			------		------	25	------	22	23	------
TOTAL									755	754	758	781
MEAN									25.2	24.3	24.5	26.0
MAX									50	36	33	36
MIN									22	22	22	23
CFSM									.93	.90	.91	.96
IN.									1.04	1.04	1.04	1.08

4-0809.5 Emmons Creek near Rural, Wis.--Continued

DISCHARGE IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	25	26	25	24	24	23	26	27	28	32	25	27
2	25	25	25	24	24	23	26	27	28	33	24	24
3	25	25	26	24	24	22	29	27	28	32	24	24
4	25	25	25	24	24	22	40	27	30	40	25	24
5	25	25	25	24	24	22	33	26	29	31	25	25
6	26	26	24	24	24	22	30	30	28	30	24	24
7	25	26	24	24	23	22	30	27	28	30	25	24
8	25	25	24	24	23	22	29	26	28	29	24	23
9	26	25	24	24	23	22	30	26	28	29	24	24
10	26	25	25	24	23	22	28	26	27	29	24	24
11	26	25	24	24	23	24	28	26	27	34	24	24
12	26	25	25	24	23	24	27	25	33	30	24	24
13	26	25	25	24	23	22	26	26	29	29	24	23
14	25	25	24	24	23	22	26	25	28	29	24	26
15	25	25	24	24	23	22	28	25	27	29	24	24
16	25	25	24	29	23	22	27	25	27	31	24	26
17	25	26	25	25	23	23	28	38	28	29	24	25
18	26	25	24	25	23	26	28	28	27	29	24	24
19	26	25	24	24	23	23	26	27	27	28	23	24
20	26	25	24	24	23	28	26	26	26	28	23	24
21	28	25	24	24	23	28	25	26	26	27	24	24
22	26	25	24	24	23	28	25	25	27	27	24	25
23	26	25	24	25	23	30	25	25	29	27	24	25
24	26	25	24	25	23	30	24	25	28	27	24	24
25	26	25	24	25	23	29	25	25	28	27	24	25
26	25	26	24	25	23	28	26	25	34	27	23	25
27	29	25	24	25	23	28	32	73	58	30	23	24
28	27	25	24	25	23	28	29	46	30	27	23	24
29	26	25	24	24	------	27	28	30	40	27	22	26
30	25	25	24	25	------	28	27	29	46	29	21	25
31	25	------	24	25	------	26	------	28	------	25	23	------
TOTAL	798	755	754	759	650	768	837	897	907	911	737	734
MEAN	25.7	25.2	24.3	24.5	23.2	24.8	27.9	28.9	30.2	29.4	23.8	24.5
MAX	29	26	26	29	24	30	40	73	58	40	25	27
MIN	25	25	24	24	23	22	24	25	26	25	21	23
CFSM	.95	.93	.90	.91	.86	.92	1.03	1.07	1.12	1.09	.88	.91
IN.	1.10	1.04	1.04	1.05	.90	1.06	1.15	1.24	1.25	1.26	1.02	1.01

WAT YR 1969 TOTAL 9,507 MEAN 26.0 MAX 73 MIN 21 CFSM .96 IN 13.10

GPO 823-131-5

4-0825. Lake Winnebago at Oshkosh, Wis.

LOCATION.--Lat 44°00'41", long 88°32'01", in SW 1/4 sec.24, T.18 N., R.16 E., Winnebago County, in mouth of the Upper Fox River at Chicago and North Western Railway bridge, 0.2 mile downstream from Main Street Bridge in Oshkosh and 18 miles up the lake from Menasha Dam and outlet.

DRAINAGE AREA.--6,030 sq mi, approximately, at lake outlet at Menasha Dam.

PERIOD OF RECORD.--October 1938 to current year in reports of Geological Survey. Records from 1857 to 1938 in files of Corps of Engineers. A report on Fox River by Corps of Engineers, published as House Document No. 146, 67th Congress, 2nd session, contains semi-monthly records of inflow of Lake Winnebago for the period 1896-1917.

GAGE.--Nonrecording gage read once daily. Datum of gage is 745.05 ft above mean tide at New York City (levels by Corps of Engineers). Prior to 1882, lake levels were referred to Deuchman gage at lake outlet of Menasha Dam. Datum of Deuchman gage, which is still in existence, is 745.00 ft above mean tide at New York City.

EXTREMES.--Current year: Maximum gage height observed, 3.86 ft June 29; minimum observed, 0.97 ft Mar. 17.
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.

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 down 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.

COOPERATION.--Records furnished by Corps of Engineers.

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.11	2.62	2.39	2.36	1.84	1.13	1.81	3.14	3.28	3.64	2.98	2.68
2	3.09	2.63	2.37	2.32	1.82	1.09	1.88	3.09	3.29	3.62	2.98	2.64
3	2.94	2.62	2.35	2.32	1.77	1.04	1.95	3.19	3.23	3.62	2.93	2.61
4	3.02	2.62	2.38	2.31	1.75	1.06	2.00	3.26	3.22	2.81	2.95	2.58
5	2.98	2.63	2.09	2.27	1.74	1.06	2.19	3.27	3.21	3.73	2.95	2.57
6	3.03	2.68	2.42	2.29	1.72	1.04	2.26	3.25	3.23	3.76	2.94	2.61
7	2.95	2.62	2.38	2.30	1.69	1.03	2.33	3.31	3.22	3.82	2.99	2.58
8	2.89	2.58	2.34	2.29	1.67	1.03	2.37	3.32	3.23	3.82	2.86	2.55
9	2.89	2.57	2.29	2.30	1.63	1.00	2.49	3.31	3.13	3.72	2.88	2.58
10	2.78	2.53	2.27	2.26	1.62	1.00	2.54	3.44	3.13	3.75	2.86	2.56
11	2.82	2.55	2.26	2.25	1.59	1.01	2.58	3.24	3.16	3.60	2.84	2.56
12	2.82	2.50	2.26	2.20	1.55	1.00	2.62	3.27	3.35	3.69	2.83	2.52
13	2.79	2.50	2.19	2.18	1.53	.99	2.63	3.27	3.28	3.72	2.73	2.55
14	2.77	2.47	2.29	2.14	1.53	.99	2.64	3.29	3.23	3.63	2.73	2.48
15	2.78	2.50	2.27	2.14	1.46	.98	2.70	3.22	3.20	3.62	2.78	2.50
16	2.74	2.53	2.25	2.20	1.40	.98	2.71	3.18	3.17	3.54	2.76	2.60
17	2.74	2.44	2.25	2.18	1.40	.97	2.73	3.38	3.23	3.56	2.76	2.58
18	2.66	2.48	2.25	2.17	1.39	1.00	2.95	3.33	3.23	3.45	2.71	2.61
19	2.63	2.39	2.33	2.12	1.35	1.01	2.86	3.22	3.19	3.39	2.80	2.57
20	2.67	2.53	2.29	2.11	1.32	1.04	2.83	3.30	3.26	3.33	2.71	2.53
21	2.65	2.45	2.31	2.05	1.29	1.12	2.73	3.22	3.20	3.26	2.67	2.51
22	2.50	2.48	2.33	2.04	1.26	1.15	2.93	3.21	3.20	3.16	2.64	2.51
23	2.71	2.43	2.26	2.04	1.22	1.21	2.94	3.16	3.19	3.03	2.63	2.51
24	2.70	2.38	2.31	1.99	1.22	1.29	2.92	3.16	3.21	2.97	2.64	2.49
25	2.70	2.41	2.32	1.97	1.19	1.40	2.91	3.18	3.28	2.86	2.61	2.53
26	2.65	2.42	2.31	1.95	1.17	1.46	2.96	3.17	3.40	2.93	2.62	2.48
27	2.43	2.44	2.27	1.92	1.13	1.55	3.09	3.07	3.58	2.86	2.60	2.51
28	2.56	2.43	2.33	1.92	1.12	1.60	3.10	3.21	3.55	2.84	2.63	2.50
29	2.66	2.37	2.35	1.89		1.70	3.10	3.22	3.86	3.00	2.58	2.34
30	2.67	2.36	2.34	1.89	------	1.73	3.16	3.26	3.60	3.01	2.53	2.48
31	2.63	------	2.35	1.85	------	1.76	------	3.20	------	2.95	2.51	------

4-0845. Fox River at Rapide Croche Dam, near Wrightstown, Wis.

LOCATION.--Lat 44°19'03", long 88°11'50", in SE 1/4 sec.4, T.21 N., R.19 E., Outagamie County, at Rapide Croche Dam, 2.0 miles upstream from Wrightstown, and 18 miles upstream from mouth.

DRAINAGE AREA.--6,150 sq mi, approximately.

RECORDS AVAILABLE.--March 1896 to September 1917 (monthly discharge only), October 1917 to current year.

GAGE.--Recording headwater and tailwater gages and electric generation data taken each half hour are used to compute the discharge records.

AVERAGE DISCHARGE.--73 years, 4,156 cfs.

EXTREMES.--Current year: Maximum daily discharge during year, 16,200 cfs July 14; minimum daily, 870 cfs Sept. 24.
Period of record: Maximum daily discharge, 24,000 cfs Apr. 18, 1952; minimum daily, 138 cfs Aug. 2, 1936.

REMARKS.--Records good. Flow regulated by storage in Lake Winnebago (see p. 57). Daily discharge determined from records of flow through turbines, head, gate openings, and lockages through navigation canal. An average of about 5 to 15 cfs diverted into basin from Wisconsin River at Portage Canal throughout the year.

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

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4,940	3,430	4,120	3,010	7,080	4,780	7,170	5,430	4,850	11,000	3,740	1,310
2	4,380	3,560	3,610	3,430	5,970	4,740	7,380	5,720	4,900	10,800	3,640	1,410
3	4,810	3,390	4,110	3,390	5,690	4,930	7,890	5,580	4,690	11,600	3,400	1,560
4	4,300	3,500	4,250	3,330	6,010	4,440	8,180	5,590	5,010	12,100	3,680	1,440
5	4,660	3,520	3,060	3,470	5,970	4,650	8,730	5,700	4,760	11,700	3,750	1,810
6	4,650	3,290	3,440	3,580	5,820	4,490	7,980	5,920	4,830	10,900	3,630	1,380
7	4,520	4,030	3,800	4,200	5,850	4,570	8,860	6,050	4,740	11,300	3,710	1,440
8	4,470	4,430	3,820	4,950	5,850	4,350	9,430	6,820	4,690	13,000	3,010	1,100
9	4,530	4,390	3,950	4,850	5,820	4,370	9,860	6,580	4,290	14,600	1,940	1,410
10	4,310	4,330	3,930	4,760	5,790	3,940	10,200	6,520	3,400	16,100	2,060	1,380
11	4,460	4,280	4,100	4,630	5,700	3,390	10,600	6,490	3,590	16,100	2,330	1,460
12	4,260	4,140	4,040	4,320	5,430	3,500	10,500	6,580	3,660	15,800	2,040	1,420
13	4,190	4,070	3,560	4,460	5,460	3,590	10,400	6,640	3,330	15,900	2,230	1,510
14	4,020	4,370	3,730	4,510	5,440	3,610	10,400	6,050	3,500	16,200	2,130	1,450
15	4,050	3,850	4,390	4,270	5,620	3,270	10,700	7,100	3,400	16,100	1,630	2,040
16	3,280	3,860	4,200	4,510	5,850	3,570	11,000	7,130	3,500	15,000	1,950	2,520
17	3,490	3,790	4,020	4,590	5,640	3,730	11,100	6,890	3,680	14,600	1,920	2,570
18	4,070	3,900	3,960	5,340	5,690	3,740	11,000	6,550	3,500	14,200	1,890	1,760
19	3,600	3,720	3,850	5,400	5,720	3,570	10,800	7,020	3,640	13,300	1,790	1,260
20	3,240	3,840	3,330	5,640	5,660	3,980	11,100	7,040	3,340	12,400	1,660	1,250
21	3,300	3,990	3,930	5,560	5,470	4,230	11,500	6,940	3,420	12,600	1,560	1,340
22	3,410	4,230	4,020	5,600	5,520	4,000	10,300	6,770	3,310	13,200	1,740	1,490
23	3,020	3,790	4,080	6,220	5,500	3,880	10,500	6,640	3,000	12,900	1,610	1,320
24	3,000	3,690	3,660	5,080	5,400	3,830	10,500	6,020	3,000	11,600	1,420	870
25	3,260	4,100	4,320	4,420	5,370	4,950	8,530	5,110	3,390	7,710	1,560	1,600
26	3,300	3,480	4,280	5,930	5,300	5,680	7,370	5,810	2,190	1,810	1,850	1,300
27	3,420	3,600	4,110	6,090	5,280	6,130	4,870	5,790	10,100	2,290	1,300	1,130
28	3,220	3,640	3,990	6,020	4,780	6,600	4,670	5,410	11,000	1,850	1,810	1,190
29	3,230	3,770	3,990	6,230	------	6,660	4,550	4,810	10,200	2,380	1,380	1,420
30	3,260	3,890	4,060	6,200	------	6,780	5,520	4,650	12,000	2,910	1,760	1,030
31	3,420	------	3,560	6,110	------	6,960	------	4,880	------	3,630	1,620	------
TOTAL	120,070	115,870	121,270	150,100	158,680	140,910	271,590	190,230	142,910	345,580	69,740	44,170
MEAN	3,873	3,862	3,912	4,842	5,667	4,545	9,053	6,136	4,764	11,150	2,250	1,472
MAX	4,940	4,430	4,390	6,230	7,080	6,960	11,500	7,130	12,000	16,200	3,750	2,570
MIN	3,000	3,290	3,060	3,010	4,780	3,270	4,550	4,650	2,190	1,810	1,300	870

CAL YR 1968 TOTAL 1,464,780 MEAN 4,002 MAX 12,500 MIN 1,000
WAT YR 1969 TOTAL 1,871,120 MEAN 5,126 MAX 16,200 MIN 870

4-0852. Kewaunee River near Kewaunee, Wis.

LOCATION.--Lat 44°27'30", long 87°33'23", in SW 1/4 sec.14, T.23 N., R.24 E., Kewaunee County, on left bank just downstream from bridge on County Trunk F, about 7 miles upstream from mouth, and 2.3 miles west of Kewaunee.

DRAINAGE AREA.--129 sq mi.

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 water years 1965 and 1966.

GAGE.--Water-stage recorder and crest-stage gage. Apr. 3, 1957, to Sept. 2, 1964, crest-stage gage only. Altitude of gage is about 590 ft (from topographic map).

EXTREMES.--Current year: Maximum discharge, 1,600 cfs Mar. 24 (gage height, 12.53 ft); maximum gage height, 13.04 ft Mar. 19 (backwater from ice); minimum discharge, 10 cfs Dec. 14 (gage height, 8.14 ft), result of freezeup.
Period of record: Maximum discharge, 6,500 cfs Mar. 30, 1960 (gage height, 16.03 ft); minimum recorded, 4.5 cfs Nov. 3, 4, 1966 (gage height, 8.14 ft).

REMARKS.--Records good except those for winter periods and no gage height record, which are fair.

Rating table (gage height, in feet, and discharge, in cubic feet per second).
(Period of ice effect Dec. 5 to Mar. 18).

8.2	12	9.5	192
8.3	16	10.0	325
8.5	32	11.0	702
9.0	93	12.0	1,240

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17	19	29	14	19	22	117	69	39	160	42	34
2	16	19	28	14	18	25	197	66	40	130	38	26
3	15	18	30	14	18	29	402	63	39	110	32	21
4	14	17	31	14	18	33	560	57	44	150	29	19
5	14	18	31	14	18	40	840	53	50	260	27	21
6	15	21	28	14	18	62	438	51	48	200	25	22
7	16	23	23	14	18	60	304	55	43	150	26	21
8	16	22	20	14	18	56	254	53	38	110	24	20
9	16	21	19	14	18	54	216	53	34	94	22	18
10	19	21	18	14	18	48	204	59	30	80	21	16
11	18	21	19	14	18	45	169	58	40	70	21	16
12	16	21	21	14	18	42	128	52	70	66	21	16
13	16	21	25	14	17	41	110	48	64	60	21	15
14	16	21	22	14	17	40	96	43	50	54	20	16
15	16	22	18	14	17	40	93	41	40	50	19	19
16	16	22	18	20	16	43	93	39	34	48	19	21
17	16	29	20	17	16	66	138	52	30	300	19	24
18	15	51	20	16	16	200	301	73	30	200	18	21
19	15	48	20	16	16	960	176	74	36	100	18	19
20	15	36	19	16	16	815	115	62	38	50	18	18
21	15	30	19	17	15	850	108	50	34	31	17	17
22	16	28	20	17	15	652	105	40	27	30	16	16
23	16	28	20	21	16	940	86	39	28	29	16	16
24	18	27	18	36	16	1,160	73	40	30	29	16	16
25	16	26	17	34	17	506	65	42	28	27	16	16
26	16	30	16	29	18	270	63	43	300	25	15	16
27	16	43	16	25	19	234	110	45	1,000	34	15	16
28	21	41	15	23	20	263	142	48	450	121	14	16
29	24	35	15	22	------	204	101	46	300	86	14	16
30	21	32	15	21	------	187	80	42	200	52	14	16
31	20	------	15	20	------	114	------	38	------	44	14	------
TOTAL	516	811	645	560	484	8,101	5,884	1,594	3,234	2,950	647	564
MEAN	16.6	27.0	20.8	18.1	17.3	261	196	51.4	108	95.2	20.9	18.8
MAX	24	51	31	36	20	1,160	840	74	1,000	300	42	34
MIN	14	17	15	14	15	22	63	38	27	25	14	15
CFSM	.13	.21	.16	.14	.13	2.02	1.52	.40	.84	.74	.16	.15
IN.	.15	.23	.19	.16	.14	2.34	1.70	.46	.93	.85	.19	.16

CAL YR 1968 TOTAL 22,573 MEAN 61.7 MAX 1,170 MIN 10 CFSM .48 IN 6.51
WAT YR 1969 TOTAL 25,990 MEAN 71.2 MAX 1,160 MIN 14 CFSM .55 IN 7.49

PEAK DISCHARGE (BASE, 500 CFS)

DATE	TIME	G.HT.	DISCHARGE	DATE	TIME	G.HT.	DISCHARGE
3-21	0300	11.76	1,100	4- 5	0600	11.83	1,140
3-24	0500	12.53	1,600	6-27	Unknown	12.22	1,370

NOTE.--No gage-height record May 20 to July 20.

4-0855. Cedar Lake near Kiel, Wis.

LOCATION.--Lat 43°55'35", long 87°56'25", in SW 1/4 sec.24, T.17 N., R.21 E., Manitowoc County, at Cedar Lake Resort on narrows of Lake, 5.8 miles east of Kiel.

DRAINAGE AREA.--1.33 sq mi.

PERIOD OF RECORD.--August 1936 to September 1942; April 1945 to current year (fragmentary).

GAGE.--Nonrecording gage. Altitude of gage is 890 ft (from topographic map).

EXTREMES.--Current year: Maximum elevation observed, 96.41 ft July 5; minimum observed, 95.50 ft Dec. 18, 25, Mar. 22, 28, 31.
Period of record: Maximum elevation observed, 98.72 ft Mar. 9, 1946; minimum observed, 93.34 ft Oct. 4, Nov. 1, 1958, Jan. 17, 1959.
An elevation of 100.37 ft was observed May 20, 1929, by Wisconsin Department of Natural Resources.

REMARKS.--Gage heights have been reduced to elevations above datum assumed for this lake by Wisconsin Department of Natural Resources. Lake ice covered about Dec. 7 to Apr. 12.

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		5.62			5.52	6.00					6.25	
2		5.60										
3								6.20				
4				5.60					6.09			
5	5.78						5.60			6.41		
6												5.77
7			5.60						6.18			
8					5.52	6.00				6.35		
9		5.60									6.13	5.63
10								6.16				
11				5.60								
12	5.76						5.92			6.35		
13												5.71
14			5.60						6.10		6.05	
15				5.78	5.54	6.00						
16		5.58									6.05	
17								6.14				
18			5.55	5.50	5.78							
19	5.70						6.30			6.25		
20												5.65
21			5.60						6.14			
22					5.80	5.50						
23		5.60									5.91	
24								6.10				
25				5.50								
26	5.66						6.30			6.21		
27												5.55
28			5.60			5.50			6.22			
29					------							
30		5.56			------						5.81	
31		------	5.60		------	5.50	------	6.28	------			------

Note.--Add 90 ft to obtain elevation above datum assumed for this lake by Wisconsin Department of Natural Resources.

4-0860. Sheboygan River at Sheboygan, Wis.

LOCATION.--Lat 43°44'25", long 87°45'37", in E 1/2 sec.29, T.15 N., R.23 E., Sheboygan County, on left bank 400 ft upstream from bridge on State Highway 141, near west city limits of Sheboygan, and 4.2 miles upstream from mouth.

DRAINAGE AREA.--432 sq mi.

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.

GAGE.--Water-stage recorder. Datum of gage is 584.00 ft above mean sea level. June 1916 to June 1924, nonrecording gage at site 0.7 mile downstream at different datum. November 1950 to June 1951, nonrecording gage at site 0.3 mile downstream at datum 3.15 ft lower.

AVERAGE DISCHARGE.--27 years (1916-24, 1950-69), 228 cfs (7.17 inches per year).

EXTREMES.--Current year: Maximum discharge, 2,320 cfs June 26 (gage height, 6.97 ft); minimum, 26 cfs Sept. 16, 21 (gage height, 1.63 ft).
Period of record: Maximum discharge observed, 7,140 cfs Mar. 26, 1920 (gage height, 9.40 ft, datum then in use); minimum observed, about 1 cfs Aug. 27, 1922 (gage height, 1.48 ft, datum then in use), caused by shutdown of powerplants.

REMARKS.--Records good except those for winter periods, which are fair. Diurnal fluctuation caused by numerous powerplants above station.

Rating table (gage height, in feet, and discharge, in cubic feet per second). (Shifting-control method used Oct. 31 to Nov. 15; stage-discharge relation affected by ice Nov. 24 to Dec. 5, Dec. 7-10, 15-17, Dec. 19 to Feb. 17, Feb. 20, 21, Feb. 27 to Mar. 16).

1.6	25	2.5	143	5.0	1,000
1.8	41	3.0	241	6.0	1,620
2.0	63	3.8	473	7.0	2,340

DISCHARGE IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	46	43	70	38	46	430	597	190	157	686	124	32
2	48	44	74	37	46	470	582	151	158	535	122	31
3	45	44	76	36	46	490	796	145	145	436	120	28
4	42	42	74	35	46	480	986	197	147	475	123	32
5	37	45	70	35	47	470	1,400	191	207	964	121	43
6	38	43	45	34	47	440	1,110	197	196	830	116	47
7	39	52	50	34	48	360	907	208	174	647	103	43
8	38	61	46	34	49	300	808	194	153	483	98	37
9	43	59	42	33	50	250	693	199	132	402	95	31
10	42	49	40	33	51	210	695	229	126	348	85	30
11	45	48	51	34	50	190	630	221	112	320	83	34
12	43	49	58	35	50	180	505	193	246	290	80	32
13	36	49	71	37	50	170	429	173	372	258	76	29
14	34	51	56	38	50	160	365	153	229	236	58	28
15	37	57	48	40	51	160	411	117	176	212	64	29
16	41	63	46	41	52	180	445	129	143	207	68	28
17	38	68	47	46	60	273	609	138	125	193	67	31
18	40	71	50	47	75	687	1,120	162	118	177	66	32
19	37	75	49	48	80	831	814	176	172	167	62	30
20	41	45	48	50	84	930	606	176	147	164	56	29
21	37	71	48	52	92	984	535	159	111	153	49	27
22	43	63	49	60	104	851	496	143	106	133	47	29
23	45	60	50	80	170	849	442	137	118	136	42	29
24	50	66	46	100	217	1,230	387	136	127	136	44	35
25	45	70	43	90	299	1,270	324	155	116	151	43	33
26	45	74	41	80	345	918	287	157	1,380	129	39	32
27	47	76	40	70	380	839	324	169	2,000	136	41	34
28	46	80	39	60	400	890	345	180	1,600	144	38	33
29	50	88	40	53	------	749	330	178	1,070	155	37	32
30	50	86	41	48	------	614	278	158	911	135	39	30
31	45	------	39	47	------	580	------	140	------	129	36	------
TOTAL	1,314	1,792	1,587	1,505	3,085	17,435	18,256	5,251	10,974	9,567	2,242	970
MEAN	42.4	59.7	51.2	48.5	110	562	609	169	366	309	72.3	32.3
MAX	50	88	76	100	400	1,270	1,400	229	2,000	964	124	47
MIN	34	42	39	33	46	160	278	117	106	129	36	27
CFSM	.098	.14	.12	.11	.25	1.30	1.41	.39	.85	.72	.17	.075
IN.	.11	.15	.14	.13	.27	1.50	1.57	.45	.94	.82	.19	.08

CAL YR 1968 TOTAL 49,911 MEAN 136 MAX 1,210 MIN 30 CFSM .31 IN 4.30
WAT YR 1969 TOTAL 73,978 MEAN 203 MAX 2,000 MIN 27 CFSM .47 IN 6.37

PEAK DISCHARGE (BASE, 1,500 CFS)

DATE	TIME	G.HT.	DISCHARGE	DATE	TIME	G.HT.	DISCHARGE
4-05	0200	5.89	1,540	6-26	1800	6.97	2,320

4-0861.5 Milwaukee River at Kewaskum, Wis.

LOCATION.--Lat 43°31'02", long 88°13'24", in SE 1/4 SE 1/4 sec.9, T.12 N., R.19 E., Washington County, on right abutment of small dam in Kewaskum, 50 ft above unnamed southwest tributary and 2.6 miles above East Branch Milwaukee River.

DRAINAGE AREA.--146 sq mi.

PERIOD OF RECORD.--April 1968 to current year.

GAGE.--Nonrecording gage and crest-stage gage. Altitude of gage is 930 ft (from topographic map).

EXTREMES.--April to September 1968: Maximum discharge during period, 340 cfs Apr. 23 (gage height, 4.60 ft, from graph based on gage readings); minimum, 11 cfs Aug. 27-31 (gage height, 2.04 ft).
Water year 1969: Maximum discharge observed, 615 cfs June 26 (gage height, 6.32 ft); minimum observed, 5.0 cfs Aug. 28 (gage height, 1.82 ft).

REMARKS.--Records good except those for winter periods, discharges below 8 cfs, and above 250 cfs, which are fair.

Rating table (gage height, in feet, and discharge, in cubic feet per second). (Stage-discharge relation affected by ice Dec. 7, 8, 14-17, Dec. 19 to Mar. 4, Mar. 11, 12, 15).

1.8	4.0	2.3	27
2.0	9.5	2.8	73
2.1	13	6.1	580

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1								116	91	196	17	17
2								110	79	157	14	13
3								104	67	111	13	13
4								91	53	84	13	12
5								96	48	79	13	18
6								86	39	72	12	19
7								79	33	63	22	15
8							77	72	27	56	15	13
9							72	65	27	48	13	22
10							67	61	27	43	27	24
11							63	59	110	37	22	19
12							55	53	130	33	19	17
13							37	53	130	30	13	15
14							67	59	130	27	13	96
15							70	65	116	26	13	24
16							69	65	102	25	13	15
17							89	91	69	24	13	13
18							176	91	63	47	12	14
19							276	127	70	38	18	19
20							292	184	61	33	37	44
21							273	169	107	30	27	35
22							239	157	148	27	17	27
23							292	126	110	24	15	24
24							300	104	94	30	13	25
25							276	91	82	27	12	25
26							255	82	114	24	12	22
27							222	91	244	21	11	22
28							192	96	229	19	11	19
29							181	110	223	17	11	16
30					------		139	107	217	18	11	15
31		------			------		------	99	------	19	11	------
TOTAL								2,959	3,040	1,485	483	672
MEAN								95.5	101	47.9	15.6	22.4
MAX								184	244	196	37	96
MIN								53	27	17	11	12
CFSM								.65	.69	.33	.11	.15
IN.								.75	.77	.38	.12	.17

4-0861.5 Milwaukee River at Kewaskum, Wis.--Continued

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15	16	12	15	26	42	142	118	44	346	46	6.5
2	13	15	19	14	25	50	150	104	40	292	44	6.5
3	12	15	27	13	24	60	184	90	37	260	39	7.1
4	12	15	30	13	24	70	223	84	37	244	35	7.1
5	12	15	12	13	23	84	318	75	99	229	33	12
6	13	17	12	12	23	89	308	71	80	214	32	14
7	14	22	12	12	21	94	292	75	71	184	30	13
8	13	22	13	11	20	82	276	80	69	154	27	12
9	13	21	13	11	20	77	257	96	61	130	19	12
10	13	19	13	11	20	73	229	91	53	116	19	11
11	13	18	12	10	19	70	217	94	44	99	19	10
12	13	17	17	10	18	66	190	84	82	89	21	10
13	13	15	12	10	18	61	169	75	110	77	19	10
14	13	17	11	10	17	51	151	63	86	69	17	10
15	12	24	11	10	17	54	124	57	71	61	13	10
16	12	30	10	11	17	49	113	53	63	53	12	12
17	12	32	9.5	11	17	73	139	53	51	53	13	10
18	11	33	9.0	15	18	244	257	73	82	55	12	10
19	11	29	20	16	19	244	214	96	102	49	27	9.2
20	11	18	23	15	20	356	199	95	84	46	18	10
21	11	19	21	14	20	366	181	84	63	40	16	10
22	16	21	18	14	20	318	148	73	73	35	14	9.5
23	16	35	18	14	20	343	124	63	84	37	14	9.5
24	16	22	18	20	20	385	113	57	110	39	13	8.9
25	16	19	18	30	21	334	99	59	154	39	11	7.1
26	15	19	16	32	23	260	89	53	578	37	9.8	8.9
27	17	19	15	32	26	308	110	44	538	35	5.5	7.7
28	18	21	15	32	30	217	124	44	458	39	5.0	7.7
29	17	25	15	30	------	142	136	35	442	42	6.0	8.9
30	16	12	15	29	------	116	130	32	426	48	7.1	8.3
31	16	------	15	28	------	99	------	29	------	49	7.1	------
TOTAL	425	622	481.5	518	586	4,867	5,406	2,200	4,292	3,260	603.5	288.9
MEAN	13.7	20.7	15.5	16.7	20.9	157	180	71.0	143	105	19.5	9.63
MAX	18	35	30	32	30	385	318	118	578	346	46	14
MIN	11	12	9.0	10	17	42	89	29	37	35	5.0	6.5
CFSM	.094	.14	.11	.11	.14	1.08	1.23	.49	.98	.72	.13	.066
IN.	.11	.16	.12	.13	.15	1.24	1.38	.56	1.09	.83	.15	.07

WAT YR 1969 TOTAL 23,549.9 MEAN 64.5 MAX 578 MIN 5.0 CFSM .44 IN 6.00

4-0862. East Branch Milwaukee River near New Fane, Wis.

LOCATION.--Lat 43°33'01", long 88°11'18" in center of sec.35, T.13 N., R.19 E., Fond du Lac County, on left bank at upstream side of bridge on County Trunk Highway S, 0.4 mile southwest of New Fane, 0.5 mile downstream from recreation dam (formerly a mill dam), and 6 miles upstream from mouth.

DRAINAGE AREA.--45.7 sq mi.

PERIOD OF RECORD.--April 1968 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 940 ft (from topographic map).

EXTREMES.--April to September 1968: Maximum discharge, 100 cfs Apr. 25 (gage height, 2.65 ft); minimum, 5.4 cfs Aug. 27 (gage height, 1.24 ft).
Water year 1969: Maximum discharge, 107 cfs Mar. 29 (gage height, 2.72 ft); minimum, 5.0 cfs Sept. 28 (gage height, 1.23 ft).

REMARKS.--Records good except those for periods of ice effect, which are fair.

Rating table (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Dec. 5 to Mar. 20).

1.2	4.8	1.7	21
1.3	6.4	2.0	43
1.5	11.0	2.8	114

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1								57	35	45	8.4	7.2
2								53	32	37	7.6	8.2
3								47	28	32	7.2	7.8
4								45	24	29	7.2	9.7
5								44	20	29	7.0	20
6								38	18	30	7.8	13
7								34	16	38	9.2	10
8								32	14	45	8.4	9.7
9								29	14	43	9.2	14
10								27	26	37	9.2	15
11								23	55	32	8.0	12
12								23	62	29	7.2	9.7
13								21	60	25	6.8	8.9
14								26	56	22	6.6	8.4
15								31	47	20	6.2	8.0
16							31	36	39	18	6.6	8.0
17							47	37	33	19	7.2	8.0
18							67	36	32	31	6.6	9.7
19							45	62	32	27	6.8	16
20							69	64	28	23	14	28
21							82	56	38	19	12	20
22							82	50	41	17	8.4	15
23							90	45	33	16	7.4	12
24							100	41	31	18	6.8	11
25							100	34	29	17	6.2	11
26							99	34	41	14	6.1	9.2
27							91	38	58	12	5.9	8.4
28							83	41	57	11	8.0	8.2
29							74	41	54	10	9.4	8.2
30					------		65	40	50	8.9	6.2	8.0
31		------			------		------	36	------	8.9	6.2	------
TOTAL								1,221	1,103	762.8	229.8	342.3
MEAN								39.4	36.8	24.6	7.74	11.4
MAX								64	62	45	14	28
MIN								21	14	8.9	5.9	7.2
CFSM								.86	.81	.54	.17	.25
IN.								.99	.90	.62	.20	.28

4-0862. East Branch Milwaukee River near New Fane, Wis.--Continued

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.8	14	11	13	27	36	55	41	20	78	15	5.8
2	7.8	11	12	13	24	43	53	39	20	70	14	6.1
3	8.0	9.4	14	13	22	47	64	36	18	62	13	6.2
4	7.8	8.2	15	13	20	49	74	34	20	54	12	6.6
5	8.0	8.0	15	13	19	50	86	31	27	46	11	10
6	9.7	9.7	12	12	18	48	92	30	27	42	11	10
7	10	14	9.0	12	17	43	92	34	26	46	11	9.2
8	9.7	14	10	12	16	37	93	34	23	56	10	8.4
9	9.4	12	11	12	15	34	93	38	19	56	10	8.0
10	9.4	11	12	12	15	32	91	37	17	50	10	7.6
11	8.9	11	14	12	15	31	77	34	16	45	10	7.4
12	8.7	10	12	12	14	30	60	32	30	40	10	7.4
13	9.4	10	13	12	14	30	50	32	35	36	9.7	7.8
14	10	10	20	13	13	29	45	27	29	33	9.2	6.8
15	10	15	17	14	13	30	48	24	25	30	8.9	6.6
16	10	17	15	17	13	31	54	23	22	27	8.7	6.8
17	9.2	18	15	22	13	35	61	24	19	23	8.4	6.8
18	8.4	17	16	21	13	50	77	34	26	20	8.4	6.4
19	8.4	16	19	20	13	64	75	39	33	19	8.2	6.2
20	8.2	14	19	19	13	77	69	34	25	20	8.0	6.2
21	8.0	11	16	20	13	86	59	31	20	16	7.8	6.2
22	10	11	17	25	13	90	54	28	24	15	7.8	6.1
23	12	12	20	45	14	92	52	24	24	14	7.8	5.9
24	11	11	18	50	14	92	46	23	26	15	7.8	6.1
25	10	11	16	50	15	90	41	27	50	14	7.8	5.8
26	11	10	15	50	17	86	38	25	85	13	7.6	5.4
27	11	10	15	49	21	89	50	24	90	12	7.0	5.4
28	11	10	16	45	23	85	52	25	94	14	6.8	5.1
29	10	13	15	39	------	80	50	22	90	15	6.6	5.6
30	9.7	12	14	34	------	71	45	20	86	15	6.4	6.1
31	10	------	13	30	------	63	------	19	------	15	5.9	------
TOTAL	292.5	360.3	456.0	723	462	1,750	1,896	925	1,066	1,011	285.8	204.0
MEAN	9.44	12.0	14.7	23.3	16.5	56.5	63.2	29.8	35.5	32.6	9.22	6.80
MAX	12	18	20	50	28	92	93	41	94	78	15	10
MIN	7.8	8.0	9.0	12	13	29	38	19	16	12	5.9	5.1
CFSM	.21	.26	.32	.51	.36	1.24	1.38	.65	.78	.71	.20	.15
IN.	.24	.29	.37	.59	.38	1.42	1.54	.75	.87	.82	.23	.17

WAT YR 1969 TOTAL 9,431.6 MEAN 25.8 MAX 94 MIN 5.1 CFSM .56 IN 7.68

NOTE.--No gage height record Feb. 2 to Mar. 16.

4-0863.4 North Branch Milwaukee River near Fillmore, Wis.

LOCATION.--Lat 43°28'58", long 88°03'39", in NW 1/4 sec.25, T.12 N., R.20 E., Washington County, on right bank downstream from County Trunk "M", 1.1 miles south of Fillmore and 2.0 miles upstream from mouth.

DRAINAGE AREA.--153 sq mi.

RECORDS AVAILABLE.--April 1968 to current year.

GAGE.--Water-stage recorder. Altitude of gage 800 ft (from topographic map).

EXTREMES.--April to September 1968: Maximum discharge during period, 329 cfs Apr. 24 (gage height, 4.47 ft); minimum, 16 cfs Aug. 27, 30, 31 (gage height, 0.63 ft).
Water year 1969: Maximum discharge, 460 cfs June 27 (gage height, 5.39 ft); minimum daily, 10 cfs Sept. 3.

REMARKS.--Records good except those for winter periods, which are fair.

Rating tables (gage height, in feet, and discharge, in cubic feet per second). (Stage-discharge relation affected by ice Dec. 5 to Mar. 20).

Apr. 16, 1968 to Mar. 20, 1969				Mar. 21 to Sept. 30, 1969			
0.6	15	3.0	156	0.4	8.4	3.0	172
1.0	32	4.5	342	1.0	32	4.0	279
2.0	83			1.8	81	5.5	475

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1								105	66	146	24	18
2								93	61	109	22	19
3								85	52	81	21	19
4								83	45	60	21	17
5								90	41	66	21	22
6								84	37	101	21	21
7								72	34	141	23	20
8								66	32	131	24	20
9								61	30	92	26	23
10								54	33	67	28	28
11								49	115	52	26	28
12								48	145	44	22	25
13								47	155	39	20	24
14								54	134	35	20	22
15								66	95	32	18	21
16							149	79	67	30	20	20
17							167	88	51	30	20	21
18							171	83	48	62	19	24
19							181	156	56	74	19	32
20							214	158	50	70	36	62
21							289	139	70	54	32	60
22							289	120	90	42	26	44
23							285	98	72	36	22	40
24							323	80	65	42	20	40
25							308	66	64	42	18	40
26							271	63	129	36	18	34
27							220	74	223	32	17	31
28							170	81	223	29	17	28
29							133	82	204	26	17	27
30					------		115	79	185	25	16	25
31		------			------		------	74	------	24	16	------
TOTAL								2,577	2,672	1,850	670	855
MEAN								83.1	89.1	59.7	21.6	28.5
MAX								158	223	146	36	62
MIN								47	30	24	16	17
CFSM								.54	.58	.39	.14	.19
IN.								.63	.65	.45	.16	.21

4-0863.4 North Branch Milwaukee River near Fillmore, Wis.--Continued

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	25	32	46	36	52	160	153	93	63	381	30	12
2	24	31	48	35	49	180	154	82	65	319	30	12
3	24	30	54	35	48	190	174	75	59	260	32	10
4	23	30	56	34	48	200	211	64	59	215	26	11
5	23	30	52	33	49	200	273	60	110	191	25	17
6	23	32	40	32	47	190	293	58	112	182	25	17
7	25	40	30	32	45	180	283	63	98	170	24	16
8	26	42	28	31	42	160	256	64	89	157	24	16
9	26	41	28	30	40	140	235	75	68	140	23	17
10	26	40	30	29	41	120	217	83	55	123	24	16
11	27	37	32	28	39	110	193	84	46	103	23	15
12	26	36	35	27	37	94	165	75	118	82	22	15
13	26	34	40	27	36	88	147	62	160	61	21	15
14	26	31	45	27	35	84	133	58	143	65	20	15
15	25	38	40	27	34	82	130	53	132	59	19	16
16	25	46	35	28	34	86	129	48	111	50	19	17
17	25	61	33	29	34	96	153	47	82	46	19	17
18	26	60	31	32	35	150	236	75	100	43	19	16
19	27	52	40	33	35	220	242	105	139	42	19	15
20	27	40	56	32	36	310	221	95	133	39	18	16
21	27	40	47	30	36	347	187	84	122	36	17	16
22	29	41	45	29	37	326	156	72	110	34	16	17
23	33	40	46	32	39	320	136	61	110	32	16	17
24	34	40	45	40	42	316	118	54	108	38	15	17
25	32	38	42	56	50	319	100	58	103	40	15	17
26	32	38	37	66	76	280	86	61	309	34	15	17
27	29	37	37	68	100	260	95	58	454	32	14	17
28	34	38	38	66	120	248	105	59	450	32	13	17
29	36	48	39	64	------	204	106	53	451	33	13	17
30	33	48	38	60	------	172	102	44	434	30	13	18
31	32	------	37	56	------	176	------	40	------	28	12	------
TOTAL	856	1,191	1,250	1,184	1,316	6,008	5,189	2,063	4,593	3,097	621	471
MEAN	27.6	39.7	40.3	38.2	47.0	194	173	66.5	153	99.9	20.0	15.7
MAX	36	61	56	68	120	347	293	105	454	381	32	18
MIN	23	30	28	27	34	82	86	40	46	28	12	10
CFSM	.18	.26	.26	.25	.31	1.27	1.13	.43	1.00	.65	.13	.10
IN.	.21	.29	.30	.29	.32	1.46	1.26	.50	1.12	.75	.15	.11

WAT YR 1969 TOTAL 27,839 MEAN 76.3 MAX 454 MIN 10 CFSM .50 IN 6.77

4-0863.6 Milwaukee River at Waubeka, Wis.

LOCATION.--Lat 43°28'22", long 87°59'23", in SE 1/4 sec.28, T.12 N., R.21 E., Ozaukee County, on right bank 100 ft downstream from bridge on County Trunk Highway I, 800 ft downstream from recreation pond dam at Waubeka, and 2.4 miles downstream from North Branch Milwaukee River.

DRAINAGE AREA.--428 sq mi.

PERIOD OF RECORD.--March 1968 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 770 ft (from topographic map). Prior to Aug. 1, 1968, non-recording gage at same site and datum.

EXTREMES.--March to September 1968: Maximum discharge, 1,100 cfs Apr. 24 (gage height, 5.55 ft); minimum, 51 cfs Aug. 27, 28 (gage height, 2.17 ft).
Water year 1969: Maximum discharge, 1,660 cfs June 28 (gage height, 6.51 ft); minimum, 30 cfs Aug. 31 (gage height, 2.03 ft).

REMARKS.--Records good except those for periods of ice effect, which are fair.

Rating table (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Dec. 6-9, Dec. 12 to Feb. 28, Mar. 9-15).

Mar. 26, 1968 to Mar. 20, 1969				Mar. 21 to Sept. 30, 1969			
2.1	44	4.0	394	2.0	27	4.5	678
2.5	90	4.6	593	2.3	63	5.5	1,130
3.2	206	5.5	1,070	2.8	149	6.5	1,650
				3.5	315		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1							251	378	245	414	75	60
2							265	328	218	354	70	60
3							236	285	202	294	66	58
4							321	354	142	232	62	58
5							347	316	147	195	61	66
6							341	220	138	212	60	73
7							306	251	125	234	69	75
8							251	226	93	239	77	73
9							232	202	96	206	77	75
10							216	189	119	178	84	81
11							206	183	189	144	85	84
12							193	171	297	140	76	82
13							157	154	331	129	67	75
14							193	167	311	132	63	69
15							236	193	276	112	61	76
16							241	236	251	106	58	91
17							297	302	208	101	61	73
18							469	349	197	183	60	72
19							537	466	171	152	62	91
20							708	485	161	161	103	127
21							823	475	178	138	116	127
22							861	435	247	110	94	125
23							823	375	230	107	77	110
24							968	323	224	118	66	109
25							1,020	285	212	119	58	104
26						161	856	274	394	110	54	93
27						169	699	262	570	97	52	86
28						183	593	247	519	89	52	84
29						197	492	267	502	67	52	80
30					------	208	432	262	453	80	55	73
31		------			------	206	------	267	------	75	57	------
TOTAL							13,570	8,927	7,446	5,028	2,130	2,510
MEAN							452	288	248	162	68.7	83.7
MAX							1,020	485	570	414	116	127
MIN							157	154	93	67	52	58
CFSM							1.06	.67	.58	.38	.16	.20
IN.							1.18	.78	.65	.44	.19	.22

4-0863.6 Milwaukee River at Waubeka, Wis.--Continued

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	71	77	107	88	170	381	500	318	131	1,080	125	39
2	70	76	104	86	160	429	485	325	133	867	129	41
3	70	76	113	84	160	450	463	350	125	756	133	41
4	70	75	119	84	150	472	670	306	120	662	133	42
5	66	73	109	82	150	488	872	250	215	624	130	55
6	65	76	94	82	150	488	930	220	253	563	120	66
7	69	85	86	82	140	453	880	222	255	395	110	63
8	71	90	82	80	130	394	836	226	231	485	96	63
9	73	90	78	80	130	330	822	238	202	402	82	63
10	76	89	85	80	120	270	620	143	178	381	70	60
11	75	85	85	80	120	250	661	204	157	295	60	57
12	75	81	90	82	120	240	582	347	300	265	62	55
13	72	81	86	82	110	230	533	127	354	238	70	55
14	71	77	83	82	110	220	388	151	374	218	80	53
15	70	85	80	82	110	220	420	178	354	206	69	53
16	70	104	78	86	100	220	402	166	278	184	51	55
17	72	127	78	100	100	260	530	160	170	180	59	55
18	72	129	78	130	110	469	690	207	246	164	45	55
19	71	119	84	120	110	840	674	286	238	198	42	53
20	67	106	140	110	110	732	690	300	180	176	44	51
21	66	94	110	110	110	1,040	615	268	283	166	43	50
22	69	101	110	110	110	1,100	530	241	260	105	53	49
23	81	97	110	140	120	1,100	459	260	250	86	60	49
24	82	93	100	270	130	1,090	381	241	248	137	57	49
25	82	93	100	240	150	1,080	337	231	248	125	55	49
26	80	91	90	200	190	957	306	215	948	120	53	49
27	77	93	88	190	250	791	292	187	1,470	120	51	49
28	77	90	90	180	310	769	300	174	1,560	118	49	49
29	82	107	92	180	------	620	187	164	1,240	118	47	49
30	81	106	94	170	------	552	241	123	1,220	116	43	50
31	80	------	92	170	------	544	------	100	------	120	35	------
TOTAL	2,273	2,766	2,935	3,742	3,930	17,479	16,296	6,928	12,221	9,670	2,256	1,567
MEAN	73.3	92.2	94.7	121	140	564	543	223	407	312	72.8	52.2
MAX	82	129	140	270	310	1,100	930	350	1,560	1,080	133	66
MIN	65	73	78	80	100	220	187	100	120	86	35	39
CFSM	.17	.22	.22	.28	.33	1.32	1.27	.52	.95	.73	.17	.12
IN.	.20	.24	.26	.33	.34	1.52	1.42	.60	1.06	.84	.20	.14

WAT YR 1969 TOTAL 82,063 MEAN 225 MAX 1,560 MIN 35 CFSM .53 IN 7.13

4-0865. Cedar Creek near Cedarburg, Wis.

LOCATION.--Lat 43°19'23", long 87°58'43", on line between secs.14 and 23, T.10 N., R.21 E., Ozaukee County, on upstream side of highway bridge, 1.9 miles north of Cedarburg and 6.6 miles upstream from mouth.

DRAINAGE AREA.--121 sq mi.

PERIOD OF RECORD.--August 1930 to current year.

GAGE.--Nonrecording gage and crest-stage gage. Datum of gage is 795.33 ft above mean sea level (levels by Corps of Engineers).

AVERAGE DISCHARGE.--39 years, 61.9 cfs (6.95 inches per year).

EXTREMES.--Current year: Maximum discharge, 720 cfs June 28 (gage height, 7.69 ft); minimum observed, 7.5 cfs Sept. 2, 3 (gage height, 5.13 ft).
Period of record: Maximum discharge observed, about 3,600 cfs Mar. 30, 1960 (gage height, 12.25 ft, from graph based on gage readings, backwater from ice); minimum observed, 0.2 cfs Aug. 9-12, 1936.

REMARKS.--Records good except those for winter periods, which are fair.

REVISIONS (WATER YEARS).--WSP 1307: 1932-34(M), 1937(M), 1939(M), 1945(M), 1948-49(M). WSP 1627: Drainage area.

Rating table (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Dec. 1-11, Dec. 14 to Mar. 19).

5.1	6.0	5.6	50	7.2	492
5.2	11	5.8	89	7.7	725
5.4	25	6.8	359		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16	13	20	15	32	94	80	62	55	342	39	8.0
2	15	12	21	14	30	100	94	58	62	241	35	7.5
3	15	12	21	13	28	110	184	55	49	162	32	7.5
4	15	12	21	13	26	120	210	55	49	139	27	8.0
5	15	12	21	13	24	120	236	62	50	142	24	11
6	16	12	20	14	23	120	272	65	49	136	23	14
7	16	12	19	14	22	100	288	74	47	102	22	13
8	16	12	18	15	22	76	210	74	46	87	19	11
9	16	12	18	15	21	62	192	80	42	71	19	9.5
10	17	12	19	15	21	50	189	76	40	65	21	9.5
11	17	12	20	15	20	46	154	65	36	62	19	9.5
12	16	13	25	14	18	44	126	62	37	55	19	9.0
13	16	14	22	14	17	41	106	57	58	50	15	9.0
14	15	14	20	14	17	39	94	50	53	46	14	9.0
15	15	16	19	18	17	39	94	43	42	39	14	9.0
16	15	15	18	42	18	46	134	37	36	36	12	9.0
17	14	14	18	31	19	60	159	39	34	35	12	9.5
18	14	14	19	29	20	90	290	58	50	64	11	9.5
19	14	13	22	27	21	140	275	102	129	94	11	9.5
20	13	12	25	28	22	207	202	87	87	122	10	9.5
21	14	15	24	38	25	192	129	69	62	102	10	9.5
22	16	16	22	56	26	182	112	71	52	64	9.5	9.5
23	19	17	21	70	28	172	94	65	65	55	9.5	9.5
24	19	18	21	66	45	186	85	52	65	60	9.5	9.5
25	17	18	18	48	69	207	80	58	64	55	9.5	9.5
26	17	19	17	40	76	159	74	58	318	50	9.5	9.0
27	17	18	18	36	82	102	69	53	649	52	8.5	9.0
28	16	17	18	36	88	92	74	50	689	47	8.5	9.0
29	15	19	17	36	------	82	74	39	575	55	8.0	10
30	14	19	17	36	------	74	69	35	454	49	8.0	12
31	14	------	16	35	------	69	------	33	------	46	8.0	------
TOTAL	484	434	613	869	877	3,221	4,449	1,844	4,044	2,725	491.5	288.0
MEAN	15.6	14.5	19.8	28.0	31.3	104	148	59.5	135	87.9	16.0	9.60
MAX	19	19	25	70	88	207	290	102	689	342	39	14
MIN	13	12	16	13	17	39	69	33	34	35	8.0	7.5
CFSM	.13	.12	.16	.23	.26	.86	1.22	.49	1.12	.73	.13	.079
IN.	.15	.13	.19	.27	.27	.99	1.37	.57	1.24	.84	.15	.09

CAL YR 1968 TOTAL 13,085.5 MEAN 35.8 MAX 290 MIN 5.6 CFSM .30 IN 4.02
WAT YR 1969 TOTAL 20,344.5 MEAN 55.7 MAX 689 MIN 7.5 CFSM .46 IN 6.25

4-0870. Milwaukee River at Milwaukee, Wis.

LOCATION.--Lat 43°06'00", long 87°54'32", in NE 1/4 sec.5, T.7 N., R.22 E., Milwaukee County, on left bank near northeast limits of Milwaukee in Estabrook Park, 2,000 ft downstream from Port Washington Road Bridge and 6.6 miles upstream from mouth.

DRAINAGE AREA.--686 sq mi.

PERIOD OF RECORD.--April 1914 to current year. Published as "near Milwaukee" prior to 1936.

GAGE.--Water-stage recorder. Datum of gage is 607.23 ft above mean sea level (levels by 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 half a mile upstream at different datum.

AVERAGE DISCHARGE.--55 years, 382 cfs (7.56 inches per year).

EXTREMES.--Current year: Maximum discharge, 4,060 cfs June 26 (gage height, 5.54 ft); minimum, 6.2 cfs Apr. 30 (gage height, 1.58 ft).
Period of record: Maximum discharge, 15,100 cfs 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.

REMARKS.--Records good except those for winter periods, which are fair. Occasional regulation caused by dams above station.

REVISIONS (WATER YEARS).--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). WSP 1557: Drainage area.

Rating table (gage height, in feet, and discharge, in cubic feet per second). (Shifting-control methods used July 27 to Aug. 31. Stage-discharge relation affected by ice Nov. 28 to Dec. 10, Dec. 16 to Jan. 21, Jan. 24 to Feb. 20, Feb. 25 to Mar. 16).

1.9	55	3.0	700
2.1	120	4.0	1,750
2.5	325	5.0	3,180

DISCHARGE IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	116	118	148	120	250	540	754	349	233	2,060	255	73
2	168	114	150	130	230	600	752	485	246	1,700	246	86
3	111	108	148	130	230	640	787	486	243	1,430	222	91
4	100	108	142	130	200	640	1,050	433	309	1,150	236	105
5	98	112	134	130	170	640	1,500	417	242	1,040	214	226
6	112	181	127	135	170	620	1,560	383	341	949	203	116
7	102	139	123	140	170	540	1,490	366	398	820	190	99
8	103	120	120	145	170	460	1,360	434	384	653	177	110
9	109	131	118	150	170	380	1,360	425	323	683	195	106
10	109	126	115	140	170	320	1,210	418	294	595	159	108
11	111	125	110	135	160	280	1,020	313	275	485	207	110
12	108	356	120	130	140	270	929	315	384	495	152	112
13	106	120	133	125	120	260	791	472	478	404	132	104
14	110	114	88	130	120	260	709	287	525	373	126	102
15	113	169	103	150	120	260	721	249	522	356	132	119
16	107	248	140	250	135	270	751	355	482	339	116	99
17	119	188	135	190	140	334	1,500	326	413	463	104	94
18	103	178	130	170	140	537	1,610	618	389	916	111	92
19	98	190	200	150	145	981	1,360	185	504	544	107	89
20	95	166	140	155	150	1,300	1,090	498	517	521	88	80
21	98	128	150	170	182	1,370	975	482	393	420	78	76
22	186	155	170	266	179	1,440	846	461	523	360	79	85
23	112	141	150	674	197	1,420	733	382	481	320	74	92
24	128	128	130	500	253	1,480	632	541	480	278	79	81
25	120	125	120	340	350	1,600	533	401	575	253	97	82
26	117	123	110	290	400	1,540	487	343	2,430	398	101	79
27	114	119	140	270	450	1,270	457	313	3,150	449	97	82
28	118	170	150	260	500	1,210	446	279	3,020	493	99	73
29	114	160	130	260	------	1,040	429	257	2,920	328	99	165
30	121	140	120	280	------	785	200	221	2,390	288	88	78
31	121	------	120	270	------	652	------	245	------	270	76	------
TOTAL	3,547	4,500	4,114	6,515	5,811	23,939	28,042	11,739	23,864	19,833	4,339	3,014
MEAN	114	150	133	210	208	772	935	379	795	640	140	100
MAX	186	356	200	674	500	1,600	1,610	618	3,150	2,060	255	226
MIN	95	108	88	120	120	260	200	185	233	253	74	73
CFSM	.17	.22	.19	.31	.30	1.13	1.36	.55	1.16	.93	.20	.15
IN.	.19	.24	.22	.35	.32	1.30	1.52	.64	1.29	1.08	.24	.16

CAL YR 1968 TOTAL 93,221 MEAN 255 MAX 1,620 MIN 58 CFSM .37 IN 5.06
WAT YR 1969 TOTAL 139,257 MEAN 382 MAX 3,150 MIN 73 CFSM .56 IN 7.55

PEAK DISCHARGE (BASE, 2,000 CFS)

DATE	TIME	G.HT.	DISCHARGE	DATE	TIME	G.HT.	DISCHARGE
11-12	1600	4.89	3,000	6-26	0400	5.54	4,060
4-17	1600	4.68	2,700	7-18	0100	4.46	2,260

4-0871.2 Menomonee River at Wauwatosa, Wis.

LOCATION.--Lat 43°02'44", long 87°59'59", in NW 1/4 sec.27, T.7 N., R.21 E., Milwaukee County, near left bank on downstream side of 70th Street bridge in Wauwatosa, 800 ft downstream from Honey Creek, and 6.2 miles upstream from mouth.

DRAINAGE AREA.--123 sq mi.

PERIOD OF RECORD.--October 1961 to current year.

GAGE.--Nonrecording gage and crest-stage gage; gage read at least once daily. Datum of gage is 630.86 ft above mean sea level.

AVERAGE DISCHARGE.--8 years, 66.6 cfs (7.35 inches per year).

EXTREMES.--Current year: Maximum discharge, 3,050 cfs June 25 (gage height, 6.64 ft); minimum daily, 9.4 cfs Sept. 21.
Period of record: Maximum discharge, 6,010 cfs July 18, 1964 (gage height, 9.03 ft) from rating curve extended above 3,200 cfs on the basis of slope conveyance study; minimum daily, 2.8 cfs Jan. 18, 1964.

REMARKS.--Records fair except those for winter periods, which are poor.

Rating table (gage height, in feet, and discharge, in cubic feet per second). (Shifting-control method used June 26-30. Stage-discharge relation affected by ice Nov. 28 to Dec. 11, Dec. 14-17, Dec. 19 to Feb. 19, Feb. 28 to Mar. 15).

1.1	9.4	1.5	54	3.0	582
1.2	15	2.0	174	4.0	1,060
1.3	24	2.5	364	5.0	1,710

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24	20	40	20	70	150	70	52	115	197	52	12
2	22	18	50	18	64	142	144	47	54	153	37	12
3	37	14	46	17	58	130	136	62	51	271	30	13
4	20	15	43	16	60	118	494	44	279	252	37	18
5	19	19	40	16	64	104	432	44	68	150	34	108
6	49	117	37	16	46	92	287	70	52	106	32	39
7	21	64	34	20	30	80	184	72	49	82	37	16
8	20	30	31	23	26	70	150	32	89	62	27	15
9	19	23	28	24	25	60	323	89	52	52	55	16
10	22	20	26	24	23	52	244	68	42	44	29	18
11	20	20	24	24	20	46	150	60	36	58	25	14
12	17	20	24	23	17	40	122	52	108	51	36	13
13	15	21	30	23	16	36	113	49	62	37	24	12
14	14	22	27	24	15	34	102	49	39	33	20	12
15	19	23	25	28	15	33	168	47	33	33	20	17
16	22	28	24	180	16	37	162	46	33	37	17	14
17	16	91	23	140	20	47	1,100	74	30	260	82	12
18	30	58	22	110	40	106	735	471	62	212	84	12
19	19	36	30	94	45	115	311	171	37	156	40	11
20	15	33	70	90	52	159	171	104	32	95	32	11
21	20	32	56	94	56	141	144	156	30	76	24	9.4
22	21	25	160	106	44	108	113	120	58	62	22	12
23	20	24	60	300	64	102	99	82	51	78	20	18
24	30	20	34	200	106	122	87	64	39	45	17	12
25	22	23	27	150	187	287	74	125	914	37	15	13
26	21	22	25	120	197	162	64	115	1,180	32	14	12
27	20	22	40	96	174	136	64	66	656	193	13	12
28	24	180	34	80	160	222	66	58	389	33	13	12
29	33	100	29	70	------	117	66	49	413	99	13	141
30	19	50	25	90	------	99	56	40	681	87	14	22
31	18	------	22	76	------	78	------	36	------	64	12	------
TOTAL	688	1,189	1,186	2,312	1,710	3,225	6,421	2,664	5,744	3,147	928	658.4
MEAN	22.2	39.6	38.3	74.6	61.1	104	214	95.9	191	102	29.9	21.9
MAX	49	180	160	300	197	287	1,100	471	1,180	271	84	141
MIN	14	14	22	16	15	33	56	36	30	32	12	9.4
CFSM	.18	.32	.31	.61	.50	.85	1.74	.70	1.55	.83	.24	.18
IN.	.21	.36	.36	.70	.52	.98	1.94	.81	1.74	.95	.28	.20

CAL YR 1968 TOTAL 23,973.1 MEAN 65.5 MAX 1,100 MIN 5.0 CFSM .53 IN 7.25
WAT YR 1969 TOTAL 29,872.4 MEAN 81.8 MAX 1,180 MIN 9.4 CFSM .67 IN 9.03

GPO 823-131-6

4-0872.04 Oak Creek at South Milwaukee, Wis.

LOCATION.--Lat 42°55'30", long 87°52'12", in NW 1/4 sec.2, T.5 N., R.22 E., Milwaukee County, on left bank 25 ft downstream from 15th Avenue bridge in South Milwaukee and 2 3/4 miles upstream from mouth.

DRAINAGE AREA.--25.0 sq mi.

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

GAGE.--Water-stage recorder and crest-stage indicator. Altitude of gage is 630 ft (from topographic map).

AVERAGE DISCHARGE.--6 years, 17.9 cfs (9.72 inches per year).

EXTREMES.--Current year: Maximum discharge, 704 cfs June 30 (gage height, 7.58 ft); minimum, 1.4 cfs Sept. 20 (gage height, 2.36 ft).
Period of record: Maximum discharge, 704 cfs June 30, 1969 (gage height, 7.58 ft); minimum, 0.4 cfs Jan. 3, 1964 (gage height, 2.33 ft).

REMARKS.--Records good except those for winter periods, which are fair. Low flows may occasionally be affected by activity of gravel pit upstream.

Rating tables (gage height, in feet, and discharge, in cubic feet per second). (Stage-discharge relation affected by ice Dec. 6-8, 13-15, Dec. 21 to Jan. 14, Jan. 18-24, Jan. 27 to Feb. 6, Feb. 9-13, 16-20, Feb. 28 to Mar. 2, Mar. 11).

Oct. 1 to 0945 Jan. 24				1000 Jan. 24 to Sept. 30			
2.3	0.8	3.5	40	2.3	0.8	3.8	74
2.5	4.0	4.0	76	2.4	1.8	4.5	140
2.7	8.4	4.8	172	2.6	7.4	5.5	275
3.0	17	5.4	285	3.0	24		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.4	1.8	7.9	9.0	19	24	18	7.4	6.5	572	13	1.8
2	2.4	1.5	7.7	7.2	15	22	23	7.8	6.5	329	10	1.8
3	2.2	1.5	7.9	6.4	12	21	52	7.1	5.6	139	8.1	1.8
4	2.1	1.2	6.7	5.4	10	19	102	6.5	10	71	7.8	2.3
5	2.1	1.5	5.6	4.7	9.0	17	155	7.4	15	44	7.4	18
6	2.6	4.0	4.8	4.4	8.0	16	67	11	8.5	27	6.8	9.2
7	2.1	5.6	3.8	4.0	7.4	12	44	8.8	13	20	7.4	5.0
8	2.2	4.8	3.1	3.8	7.1	10	41	13	91	15	6.8	2.3
9	2.7	3.1	3.1	3.6	6.8	9.2	200	16	41	12	5.9	1.7
10	2.4	2.2	2.7	3.4	6.8	8.8	111	11	18	22	5.3	1.6
11	2.4	1.9	3.1	3.3	6.6	8.2	53	8.8	12	39	5.3	1.6
12	2.4	1.8	3.3	3.2	6.2	6.5	34	7.1	11	80	6.2	1.6
13	2.1	1.8	3.5	3.1	5.4	6.2	26	6.8	14	28	6.2	1.6
14	1.9	1.6	3.8	3.1	5.3	5.9	23	6.2	9.2	18	5.3	1.7
15	2.1	5.6	2.6	3.1	5.0	5.3	63	5.9	7.1	14	4.4	1.6
16	1.9	12	2.6	3.3	5.4	5.6	46	5.6	5.9	21	5.6	1.6
17	1.9	18	2.6	4.2	6.6	6.8	179	11	6.5	178	15	1.5
18	2.6	7.4	2.7	5.0	8.4	12	262	113	7.4	513	6.8	1.5
19	2.4	4.8	29	7.0	10	13	113	87	7.4	305	4.4	1.5
20	1.9	4.0	18	7.2	12	17	56	33	5.6	97	3.4	1.5
21	1.8	3.3	8.1	7.7	13	21	36	24	4.1	42	3.1	1.6
22	4.2	3.3	10	8.4	13	15	24	47	8.8	24	2.8	1.7
23	3.6	3.1	12	42	13	13	19	33	14	18	2.3	3.4
24	4.0	2.7	10	266	21	25	15	18	7.8	15	2.3	2.3
25	3.1	2.6	6.0	92	39	108	14	13	9.9	12	2.6	2.1
26	2.4	2.9	3.5	52	36	51	12	10	49	13	2.3	1.8
27	1.9	2.4	7.0	21	30	45	11	9.2	68	41	2.3	1.7
28	1.8	15	50	17	26	61	10	8.1	129	168	2.3	1.6
29	1.9	45	28	16	------	60	9.9	6.5	77	52	2.1	16
30	1.9	13	16	19	------	28	9.6	5.6	668	24	1.8	11
31	1.9	------	11	23	------	18	------	5.6	------	17	1.8	------
TOTAL	73.3	179.4	286.1	658.5	363.0	690.5	1,828.5	560.4	1,336.8	2,970	166.8	104.4
MEAN	2.36	5.98	9.23	21.2	13.0	22.3	61.0	18.1	44.6	95.8	5.38	3.48
MAX	4.2	45	50	266	39	108	262	113	668	572	15	18
MIN	1.8	1.2	2.6	3.1	5.0	5.3	9.6	5.6	4.1	12	1.8	1.5
CFSM	.094	.24	.37	.85	.52	.89	2.44	.72	1.78	3.83	.22	.14
IN.	.11	.27	.43	.98	.54	1.03	2.72	.83	1.99	4.42	.25	.16

CAL YR 1968 TOTAL 5,364.7 MEAN 14.7 MAX 483 MIN .80 CFSM .59 IN 7.98
WAT YR 1969 TOTAL 9,217.7 MEAN 25.3 MAX 668 MIN 1.2 CFSM 1.01 IN 13.72

PEAK DISCHARGE (BASE, 250 CFS)

DATE	TIME	G.HT.	DISCHARGE	DATE	TIME	G.HT.	DISCHARGE
1-24	0945	5.91	343	6-30	0900	7.58	704
4- 9	1230	5.35	252	7-18	0015	7.17	592
4-17	2300	5.98	355				

4-0872.2 Root River near Franklin, Wis.

LOCATION.--Lat 42°52'25", long 87°59'45", in SE 1/4 sec.22, T.5 N., R.21 E., Milwaukee County, on right bank 400 ft upstream from State Highway 100, 2.1 miles upstream from Root River Canal, 2.4 miles southeast of Franklin, 5.5 miles southeast of Hales Corners, and about 24 miles upstream from mouth.

DRAINAGE AREA.--49.3 sq mi.

RECORDS AVAILABLE.--October 1963 to current year.

GAGE.--Water-stage recorder. Datum of gage is 674.5 ft above mean sea level.

AVERAGE DISCHARGE.--6 years, 36.2 cfs (9.97 inches per year).

EXTREMES.--Current year: Maximum discharge, 2,650 cfs June 30 (gage height, 8.36 ft); minimum, 8.5 cfs Nov. 2, 11-14 (gage height, 1.99 ft).
Period of record: Maximum discharge, 2,650 cfs June 30, 1969 (gage height, 8.36 ft); maximum gage height, 8.43 ft Mar. 5, 1965, backwater from ice; minimum discharge, 0.8 cfs Sept. 2, 1966 (gage height, 1.62 ft).
Flood of Mar. 30, 1960, reached a stage of 9.57 ft (discharge, 5,130 cfs, from rating curve extended above 1,400 cfs on basis of contracted-opening measurement of peak-flow).

REMARKS.--Records good except those for winter period and missing gage height, which are poor.

Rating table (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Dec. 6-8, 14, Dec. 24 to Feb. 24).

1.9	6.8	5.0	212	7.0	760
2.1	16	5.5	267	7.5	1,300
2.4	38	6.0	350	8.1	2,200
3.0	85	6.5	498		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10	11	26	48	60	58	35	28	30	910	41	21
2	10	8.9	28	42	35	54	121	28	26	248	36	21
3	11	10	26	35	22	50	109	28	25	154	32	21
4	11	9.3	22	29	18	46	125	27	28	119	66	31
5	9.3	9.3	18	24	16	41	224	28	44	95	38	28
6	9.3	13	16	21	15	36	127	31	31	66	32	67
7	10	28	14	8	14	32	86	29	30	50	33	29
8	11	16	13	16	14	29	71	32	125	44	32	23
9	11	12	12	15	13	26	198	43	63	41	30	21
10	11	9.7	12	14	12	23	143	33	40	39	31	20
11	13	8.9	12	13	12	20	89	31	33	56	28	20
12	11	8.9	14	12	11	19	62	28	42	49	108	20
13	11	8.9	14	12	11	18	51	26	49	38	57	20
14	11	9.7	12	11	11	17	45	26	32	36	36	19
15	11	14	11	11	11	17	67	25	28	32	30	20
16	12	20	10	34	11	17	62	25	26	39	41	20
17	12	65	11	45	12	19	188	27	25	123	101	19
18	13	27	11	52	16	23	585	110	37	824	34	19
19	13	17	66	50	19	32	186	130	32	436	27	19
20	12	14	59	44	21	40	103	56	27	133	24	18
21	12	15	26	38	22	45	72	43	25	83	24	18
22	18	12	23	35	24	37	61	81	26	57	24	20
23	20	12	43	100	25	34	50	59	36	48	23	21
24	14	12	38	200	50	50	42	42	30	46	23	22
25	13	11	26	250	101	110	38	37	28	41	21	19
26	12	12	13	240	95	90	36	34	218	39	27	18
27	11	11	30	200	79	78	35	31	357	72	28	18
28	11	18	140	120	68	88	34	28	216	232	27	18
29	11	93	90	70	------	82	32	28	255	157	27	29
30	10	40	66	100	------	49	30	24	2,150	58	26	46
31	9.7	------	56	110	------	38	------	24	------	43	22	------
TOTAL	364.3	556.6	958	2,009	818	1,318	3,107	1,222	4,114	4,408	1,129	705
MEAN	11.8	18.6	30.9	64.8	29.2	42.5	104	39.4	137	142	36.4	23.5
MAX	20	93	140	250	101	110	585	130	2,150	910	108	67
MIN	9.3	8.9	10	11	11	17	30	24	25	32	21	18
CFSM	.24	.38	.63	1.31	.59	.86	2.11	.80	2.78	2.88	.74	.48
IN.	.27	.42	.72	1.52	.62	.99	2.34	.92	3.10	3.33	.85	.53

CAL YR 1968 TOTAL 12,048.7 MEAN 32.9 MAX 820 MIN 5.2 CFSM .67 IN 9.09
WAT YR 1969 TOTAL 20,708.9 MEAN 56.7 MAX 2,150 MIN 8.9 CFSM 1.15 IN 15.63

PEAK DISCHARGE (BASE, 350 CFS)

DATE	TIME	G.HT.	DISCHARGE	DATE	TIME	G.HT.	DISCHARGE
4-18	1000	6.93	760	6-30	1200	8.36	2,650
6-27	1000	6.16	389	7-18	1700	7.33	1,090

NOTE.--No gage-height record Feb. 27 to Mar. 27.

4-0872.33 Root River Canal near Franklin, Wis.

LOCATION.--Lat 42°48'55", long 87°59'40", in SE 1/4 sec.10, T.4 N., R.21 E., Racine County, on right bank 10 ft downstream from highway bridge 3.5 miles upstream from mouth, 5.5 miles southeast of intersection U.S. 45 and State 100 in Franklin, and 8.7 miles southeast of Hales Corners.

DRAINAGE AREA.--57.2 sq mi.

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

GAGE.--Water-stage recorder. Altitude of gage is 670 ft (from topographic map).

AVERAGE DISCHARGE.--6 years, 33.2 cfs (7.88 inches per year).

EXTREMES.--Current year: Maximum discharge, 461 cfs June 30 (gage height, 9.99 ft); minimum, 2.4 cfs Sept. 28 (gage height, 1.94 ft).
Period of record: Maximum discharge, 774 cfs Feb. 11, 1966 (gage height, 9.27 ft); minimum daily, 0.4 cfs Dec. 19, 1963, result of freezeup.

REMARKS.--Records fair for the year.

Rating table (gage height, in feet, and discharge, in cubic feet per second). (Shifting-control method used June 29 to July 5, July 18, 19; stage-discharge relation affected by ice Dec. 5 to Feb. 26, Mar. 12, 13, 29, 30).

Oct. 1 to Jan. 23				Jan. 24 to Sept. 30					
2.0	1.8	2.5	11	1.9	2.2	2.4	9.0	5.4	119
2.1	2.9	3.5	50	2.1	3.8	3.4	37	6.4	186
2.3	6.3	5.5	150	2.2	5.0	4.4	71	8.0	360
								8.3	430

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.1	2.9	33	33	50	77	59	29	16	430	25	3.6
2	4.3	2.7	25	24	40	71	165	24	15	396	18	3.6
3	4.4	2.7	18	21	34	65	147	22	14	360	14	3.8
4	4.3	2.7	16	18	28	61	177	20	14	300	12	3.6
5	4.2	2.6	14	16	23	54	326	18	17	190	13	4.2
6	4.2	3.2	11	15	20	50	254	19	14	118	13	13
7	4.2	4.8	9.0	14	18	39	158	19	14	88	12	7.7
8	4.2	4.6	7.0	13	17	33	121	20	81	67	12	4.5
9	4.2	3.5	6.4	12	16	29	297	24	112	59	14	3.9
10	4.3	3.0	5.8	12	15	28	331	21	67	72	13	3.6
11	4.2	2.7	5.4	11	14	23	203	18	47	64	11	3.4
12	4.0	2.5	5.6	11	14	21	122	16	36	76	11	3.2
13	3.7	2.6	5.4	10	13	20	93	14	34	50	9.2	3.1
14	3.4	2.7	5.2	10	12	19	76	13	26	38	7.0	3.0
15	3.6	5.0	5.0	10	12	18	81	12	24	29	7.7	3.2
16	3.8	9.3	4.8	15	12	18	80	12	18	27	7.9	3.0
17	4.0	22	4.6	25	24	26	134	12	16	64	6.6	3.1
18	4.0	15	4.5	42	40	39	355	44	16	295	5.9	3.0
19	3.9	11	20	50	46	41	277	79	16	265	6.6	3.0
20	3.6	7.7	40	44	50	45	148	54	14	165	6.3	2.9
21	3.4	6.4	23	35	52	48	103	40	12	88	5.0	2.8
22	4.0	6.0	24	36	54	42	76	43	13	62	4.5	2.6
23	4.5	5.7	40	100	68	39	62	43	19	48	4.5	2.8
24	4.5	5.2	30	200	90	50	52	35	17	43	3.9	3.2
25	4.3	4.5	22	250	140	145	46	28	16	37	3.7	2.9
26	4.0	4.2	14	220	110	128	43	24	136	29	3.6	2.8
27	3.6	4.4	30	190	96	100	40	21	148	30	3.8	2.6
28	3.4	7.7	120	150	83	106	36	18	93	29	3.9	2.5
29	3.1	55	70	40	------	100	34	17	115	23	4.2	3.2
30	3.2	45	50	60	------	86	31	16	436	18	3.8	4.5
31	3.2	------	40	70	------	64	------	15	------	17	3.6	------
TOTAL	121.8	257.3	708.7	1,757	1,191	1,685	4,127	790	1,615	3,577	269.7	112.3
MEAN	3.93	8.58	22.9	56.7	42.5	54.4	138	25.5	53.8	115	8.70	3.74
MAX	4.5	55	120	250	140	145	355	79	436	430	25	13
MIN	3.1	2.5	4.5	10	12	18	31	12	12	17	3.6	2.5
CFSM	.069	.15	.40	.99	.74	.95	2.41	.45	.94	2.01	.15	.065
IN.	.08	.17	.46	1.14	.77	1.10	2.68	.51	1.05	2.33	.18	.07

CAL YR 1968 TOTAL 7,709.9 MEAN 21.1 MAX 418 MIN 2.1 CFSM .37 IN 5.01
WAT YR 1969 TOTAL 16,211.8 MEAN 44.4 MAX 436 MIN 2.5 CFSM .78 IN 10.54

PEAK DISCHARGE (BASE, 300 CFS)

DATE	TIME	G.HT.	DISCHARGE	DATE	TIME	G.HT.	DISCHARGE
4- 5	1100	7.85	337	6-30	1600	9.99	461
4- 9	2300	8.03	366	7-18	1300	8.27	305
4-18	1100	8.06	372				

STREAMS TRIBUTARY TO LAKE MICHIGAN

4-0872.4 Root River at Racine, Wis.

LOCATION.--Lat 42°45'05", long 87°49'25", in NE 1/4 sec.6, T.3 N., R.23 E., Racine County, on left bank 30 ft downstream from State Highway 38 bridge in Racine, 350 ft downstream from Horlick Dam, and 5.2 miles upstream from mouth.

DRAINAGE AREA.--187 sq mi.

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

GAGE.--Water-stage recorder. Altitude of gage is 610 ft (from topographic map). Prior to Feb. 5, 1964, non-recording gage on bridge 30 ft upstream.

AVERAGE DISCHARGE.--6 years, 127 cfs (9.22 inches per year).

EXTREMES.--Current year: Maximum discharge, 2,150 cfs July 1 (gage height, 6.25 ft); minimum discharge, 15 cfs Oct. 7, 16-18 (gage height, 2.29 ft).
Period of record: Maximum discharge, 2,500 cfs Feb. 12, 1966 (gage height, 8.13 ft); minimum daily, 1.3 cfs Oct. 12, Dec. 31, 1963, Jan. 1, 2, 1964.

REMARKS.--Records good except those for winter periods, which are fair.

Rating table (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Dec. 6-9, 14-17, Dec. 20 to Feb. 5, 9-21, Feb. 25 to Mar. 5, Mar. 11-13).

Oct. 1 to June 30				July 1 to Sept. 30			
2.2	9.8	2.9	113	2.3	21	3.4	304
2.3	16	3.4	279	2.5	47	4.4	820
2.5	37	4.0	575	2.7	82	5.0	1,210
2.7	71	5.1	1,270	2.9	130	6.0	1,950

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18	20	129	90	210	240	174	104	51	1,900	126	27
2	18	19	100	84	180	220	360	95	57	1,890	104	27
3	17	20	93	76	150	200	486	95	53	1,430	82	28
4	16	19	85	70	130	190	529	89	50	1,000	72	28
5	16	19	77	66	120	170	706	89	57	754	93	47
6	16	17	68	62	100	159	755	98	67	569	69	58
7	15	20	58	60	79	140	670	100	55	377	63	84
8	15	37	49	56	73	118	486	83	170	284	58	53
9	17	33	40	54	72	91	605	81	347	212	60	39
10	18	23	36	52	70	81	743	87	268	198	57	39
11	16	20	37	50	68	72	743	73	165	202	61	29
12	19	19	39	50	66	66	564	66	126	219	67	31
13	18	18	37	49	58	60	356	58	126	208	122	31
14	17	18	35	48	56	58	268	53	111	150	86	31
15	15	22	33	48	56	57	291	50	85	127	60	29
16	15	30	30	70	56	51	312	50	69	104	50	29
17	15	67	29	140	58	60	459	57	62	159	58	31
18	15	109	26	210	80	95	855	111	60	663	93	28
19	17	69	58	300	100	124	1,060	320	69	802	52	27
20	19	45	120	250	110	132	811	320	64	984	41	26
21	19	36	130	220	120	156	475	202	51	719	36	27
22	19	35	70	210	121	152	291	178	51	395	33	23
23	20	32	90	520	121	124	223	230	62	226	32	31
24	32	30	170	760	146	132	171	181	71	185	31	28
25	24	27	130	660	190	342	146	132	64	169	29	29
26	22	26	100	450	250	464	132	106	235	133	29	27
27	22	25	90	310	290	413	126	93	513	127	29	22
28	20	31	150	230	280	365	118	85	581	198	32	21
29	19	91	220	170	------	413	113	71	622	264	33	26
30	19	198	170	200	------	352	104	62	1,270	256	29	37
31	19	------	120	240	------	219	------	51	------	142	27	------
TOTAL	567	1,175	2,619	5,855	3,410	5,516	13,132	3,470	5,632	15,046	1,815	993
MEAN	18.3	39.2	84.5	189	122	178	438	112	188	485	58.5	33.1
MAX	32	198	220	760	290	464	1,060	320	1,270	1,900	126	84
MIN	15	17	26	48	56	51	104	50	50	104	29	21
CFSM	.098	.21	.45	1.01	.65	.95	2.34	.60	1.01	2.59	.31	.18
IN.	.11	.23	.52	1.16	.68	1.10	2.61	.69	1.12	2.99	.36	.20

CAL YR 1968 TOTAL 32,147 MEAN 87.8 MAX 1,420 MIN 14 CFSM .47 IN 6.40
WAT YR 1969 TOTAL 59,230 MEAN 162 MAX 1,900 MIN 15 CFSM .87 IN 11.78

PEAK DISCHARGE (BASE, 500 CFS)

DATE	TIME	G.HT.	DISCHARGE	DATE	TIME	G.HT.	DISCHARGE
1-24	--	6.33	1,480e	4-19	1200	4.95	1,170
4- 6	1600	4.34	780	7- 1	1530	6.25	2,150
4-10	2300	4.34	780	7-20	1000	4.73	1,030

e Approximately.

5-3325. Namekagon River near Trego, Wis.

LOCATION.--Lat 45°56'53", long 91°53'17", in SW 1/4 sec.17, T.40 N., R.12 W., Washburn County, at powerplant of Northern States Power Co., 4 miles downstream from Potato Creek and 4.4 miles northwest of Trego.

DRAINAGE AREA.--503 sq mi.

PERIOD OF RECORD.--October 1927 to current year.

GAGE.--Headwater and tailwater read hourly. April 1914 to September 1927, nonrecording gage at railroad bridge in Trego, 5 miles upstream at different datum.

AVERAGE DISCHARGE.--42 years, 473 cfs (12.77 inches per year).

EXTREMES.--Current year: Maximum daily discharge, 1,740 cfs Apr. 12; minimum daily, 330 cfs Aug. 30.
Period of record: Maximum daily discharge, 5,200 cfs Sept. 2, 1941; minimum daily, 113 cfs Aug. 17, Sept. 7, 1930.

REMARKS.--Records good. Daily discharge computed from powerplant records on basis of ratings developed by Geological Survey.

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

REVISIONS.--WSP 1208: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	644	714	555	524	528	522	525	1,100	541	445	466	359
2	618	704	577	518	530	534	534	1,060	561	468	430	375
3	568	706	558	542	535	569	513	977	538	485	441	355
4	584	625	556	526	529	511	570	924	527	466	461	377
5	634	646	450	531	505	522	630	932	607	504	514	373
6	606	706	358	532	507	516	662	973	618	457	485	331
7	602	670	353	542	512	518	867	984	547	422	455	362
8	657	673	465	527	501	470	948	867	544	493	442	368
9	872	623	532	506	504	447	1,110	861	550	523	404	368
10	1,140	639	530	515	501	485	1,380	839	519	516	383	368
11	1,290	616	661	509	505	448	1,670	766	559	422	470	377
12	1,320	625	641	518	519	452	1,740	730	540	429	451	366
13	1,260	605	614	505	496	485	1,650	716	542	415	468	345
14	1,160	583	428	538	501	482	1,600	732	524	584	459	348
15	1,090	613	477	528	497	497	1,530	659	492	801	433	391
16	949	602	531	525	497	507	1,470	681	525	929	406	411
17	1,010	658	545	536	497	512	1,390	714	496	1,040	347	427
18	1,080	482	550	536	501	557	1,240	695	494	853	412	419
19	1,110	442	589	529	497	525	1,210	620	457	745	375	422
20	1,090	554	554	528	497	526	1,130	620	451	677	357	422
21	1,090	592	572	533	494	508	1,020	619	525	652	352	410
22	986	583	597	553	495	501	912	585	442	604	372	437
23	945	585	544	550	508	523	937	597	477	566	352	407
24	903	577	515	550	529	553	907	573	429	533	357	418
25	808	582	518	527	531	553	907	593	472	533	357	424
26	786	558	489	540	551	488	820	592	518	490	355	425
27	804	561	515	520	528	528	1,030	621	508	499	359	408
28	800	538	544	530	538	533	1,220	582	511	517	353	401
29	800	586	569	545	------	482	1,200	566	512	505	356	425
30	750	529	578	548	------	454	1,200	554	487	500	330	435
31	736	------	551	554	------	492	------	546	------	482	375	------
TOTAL	27,692	18,177	16,516	16,465	14,333	15,700	32,522	22,878	15,513	17,555	12,577	11,754
MEAN	893	606	533	531	512	506	1,084	738	517	566	406	392
MAX	1,320	714	661	554	551	569	1,740	1,100	618	1,040	514	437
MIN	568	442	353	505	494	447	513	546	429	415	330	331
CFSM	1.78	1.20	1.06	1.06	1.02	1.01	2.16	1.47	1.03	1.13	.81	.78
IN.	2.05	1.34	1.22	1.22	1.06	1.16	2.40	1.69	1.15	1.30	.93	.87

CAL YR 1968 TOTAL 222,687 MEAN 608 MAX 1,380 MIN 293 CFSM 1.21 IN 16.46
WTR YR 1969 TOTAL 221,682 MEAN 607 MAX 1,740 MIN 330 CFSM 1.21 IN 16.39

5-3335. St. Croix River near Danbury, Wis.

LOCATION.--Lat 46°04'28", long 92°14'50", in SW 1/4 sec.33, T.42 N., R.15 W., Burnett County, on left bank at downstream side of bridge on State Highway 35, 3.5 miles downstream from Namekagon River, 10 miles northeast of Danbury, and at mile 129.2.

DRAINAGE AREA.--1,588 sq mi.

PERIOD OF RECORD.--March 1914 to current year. Prior to October 1933, published as "at Swiss".

GAGE.--Water-stage recorder. Datum of gage is 882.21 ft above mean sea level. Prior to Apr. 23, 1937, non-recording gage 40 ft downstream at same datum. Apr. 23, 1937, to Jan. 5, 1939, nonrecording gage at present site and datum.

AVERAGE DISCHARGE.--55 years, 1,291 cfs (11.04 inches per year).

EXTREMES.--Current year: Maximum discharge, 6,600 cfs Apr. 14 (gage height, 5.84 ft); minimum, 592 cfs Aug. 24 (gage height, 0.32 ft); minimum daily, 714 cfs Aug. 24 (gage height, 0.52 ft).
Period of record: Maximum discharge, 10,200 cfs May 6, 1950 (gage height, 8.22 ft); minimum observed, 393 cfs Aug. 6, 13, 1934 (gage height, -0.20 ft, site then in use).

REMARKS.--Records good except those for winter period, which are fair.

REVISIONS (WATER YEARS).--WSP 1208: Drainage area. WSP 1438: 1915(M), 1919-20, 1923-24(M), 1927(M), 1931(M), 1934, 1935-37(M). WSP 1628: 1918.

Rating table (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Dec. 7 to Apr. 6).

0.5	700	2.0	1,940
0.6	760	3.0	3,010
0.8	900	4.0	4,130
1.0	1,060	6.0	6,830

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1,540	1,850	1,440	1,480	1,410	1,480	1,280	3,060	1,210	988	1,080	930
2	1,490	1,820	1,370	1,460	1,400	1,470	1,320	2,880	1,180	968	1,050	895
3	1,480	1,840	1,390	1,440	1,400	1,460	1,380	2,690	1,200	984	963	842
4	1,390	1,780	1,390	1,420	1,390	1,440	1,500	2,410	1,270	986	940	834
5	1,400	1,620	1,290	1,400	1,380	1,400	1,660	2,220	1,380	1,010	1,030	849
6	1,500	1,560	1,180	1,400	1,380	1,360	1,900	2,190	1,420	975	1,040	862
7	1,470	1,540	1,170	1,390	1,370	1,300	2,400	2,230	1,390	953	1,000	837
8	1,600	1,540	1,180	1,390	1,370	1,280	3,110	2,150	1,300	997	951	864
9	2,110	1,530	1,200	1,380	1,360	1,240	3,730	2,010	1,260	1,080	940	856
10	3,070	1,530	1,270	1,380	1,360	1,200	4,740	1,920	1,220	1,020	915	861
11	3,470	1,490	1,340	1,380	1,350	1,230	5,360	1,810	1,260	997	910	867
12	3,450	1,490	1,410	1,390	1,350	1,260	5,830	1,680	1,220	940	944	836
13	3,280	1,460	1,500	1,390	1,340	1,290	6,100	1,550	1,170	937	927	821
14	3,160	1,470	1,580	1,390	1,340	1,290	6,520	1,570	1,180	1,120	885	809
15	3,040	1,440	1,600	1,400	1,330	1,330	6,400	1,550	1,180	1,430	824	820
16	3,090	1,480	1,590	1,410	1,330	1,380	5,850	1,490	1,070	1,920	841	983
17	3,470	1,550	1,570	1,420	1,320	1,430	5,140	1,520	1,060	2,120	836	968
18	3,650	1,510	1,560	1,430	1,320	1,480	4,580	1,520	1,060	2,100	814	961
19	3,610	1,380	1,540	1,440	1,310	1,490	3,950	1,410	1,030	1,770	836	986
20	3,400	1,400	1,520	1,450	1,310	1,500	3,470	1,380	992	1,580	802	974
21	3,210	1,440	1,500	1,460	1,320	1,490	3,180	1,370	1,060	1,490	791	928
22	3,030	1,440	1,490	1,460	1,340	1,480	2,980	1,340	1,030	1,350	784	1,000
23	2,810	1,480	1,480	1,460	1,360	1,470	2,710	1,330	1,010	1,150	735	1,040
24	2,650	1,480	1,400	1,450	1,380	1,460	2,200	1,310	1,010	1,080	714	1,010
25	2,310	1,460	1,380	1,450	1,400	1,450	2,040	1,260	965	1,090	715	964
26	2,100	1,480	1,320	1,440	1,430	1,400	2,000	1,240	1,100	1,060	742	1,120
27	2,050	1,440	1,400	1,440	1,460	1,350	2,530	1,180	1,150	1,070	749	1,040
28	2,180	1,530	1,480	1,430	1,490	1,300	3,200	1,230	1,080	1,050	749	996
29	2,280	1,430	1,540	1,430	------	1,290	3,220	1,200	1,000	1,030	744	1,020
30	2,030	1,440	1,520	1,420	------	1,270	3,350	1,210	1,030	1,020	805	1,050
31	1,850	------	1,500	1,420	------	1,260	------	1,250	------	1,020	886	------
TOTAL	77,170	45,900	44,100	44,100	38,300	42,530	103,630	53,160	34,487	37,285	26,942	27,823
MEAN	2,489	1,530	1,423	1,423	1,368	1,372	3,454	1,715	1,150	1,203	869	927
MAX	3,650	1,850	1,600	1,480	1,490	1,500	6,520	3,060	1,420	2,120	1,080	1,120
MIN	1,390	1,380	1,170	1,380	1,310	1,200	1,280	1,180	965	937	714	809
CFSM	1.57	.96	.90	.90	.86	.86	2.18	1.08	.72	.76	.55	.58
IN.	1.81	1.07	1.03	1.03	.90	1.00	2.43	1.24	.81	.87	.63	.65

CAL YR 1968 TOTAL 589,269 MEAN 1,610 MAX 6,630 MIN 560 CFSM 1.01 IN 13.80
WTR YR 1969 TOTAL 575,427 MEAN 1,577 MAX 6,520 MIN 714 CFSM .99 IN 13.48

PEAK DISCHARGE (BASE, 3,000 CFS)

DATE	TIME	G.HT.	DISCHARGE	DATE	TIME	G.HT.	DISCHARGE
10-17	2400	3.63	3,700	4-30	1400	3.34	3,380
4-14	2200	5.84	6,600				

5-3340. Shell Lake at Shell Lake, Wis.

LOCATION.--Lat 45°44'46", long 91°55'00", in NE 1/4 sec.25, T.38 N., R.13 W., Washburn County, 500 ft east of Peterson Boat Factory in the village of Shell Lake, Wisconsin.

DRAINAGE AREA.--34.0 sq mi, approximately. Area of Shell Lake, 3,200 acres.

PERIOD OF RECORD.--August 1936 to current year (fragmentary).

GAGE.--Nonrecording gage. Datum of gage is 1,215.88 ft above mean sea level. Prior to Apr. 21, 1961, 2.3 miles southeast of village of Shell Lake at same datum.

EXTREMES.--Current year: Maximum gage height observed, 4.62 ft May 10; minimum observed, 3.02 ft Sept. 26.
Period of record: Maximum gage height observed, 5.13 ft July 17, 1954; minimum observed, -0.92 ft Nov. 28, 1949.

REMARKS.--Lake has no surface outlet. Lake ice covered from Nov. 29 to Apr. 20.

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.52	4.00									4.00	
2								4.53				
3												
4	3.50									4.02		
5												3.38
6			3.20									
7									4.34			
8		3.94										
9											3.90	
10						4.06		4.62				
11												
12	3.92									4.04		3.24
13									4.24			
14												
15		3.86										
16								4.53			3.78	
17					4.15							
18												
19	4.10							4.60		4.20		
20				4.06					4.14			
21							4.51			4.15		
22											3.64	
23		3.86						4.52			3.64	
24								4.44				
25	4.04									4.08	3.58	
26	4.06						4.50					3.02
27												
28									4.12			
29		3.86			-----				4.08			
30					-----			4.40			3.40	
31		-----			-----		-----		-----			-----

5-3360. St. Croix River near Grantsburg, Wis.

LOCATION.--Lat 45°55'26", long 92°38'21", near center of sec.30, T.40 N., R.18 W., Burnett County, on left bank at Norway Point, 0.5 mile downstream from Sand Creek, 10 miles north from Grantsburg, and at mile 102.4.

DRAINAGE AREA.--2,820 sq mi, approximately.

PERIOD OF RECORD.--April 1923 to current year.

GAGE.--Water-stage recorder. Datum of gage 848.98 ft above mean sea level, adjustment of 1912 (levels by Northern States Power Co.). Prior to Oct. 21, 1938, nonrecording gage at same site and datum.

AVERAGE DISCHARGE.--46 years, 2,311 cfs (11.13 inches per year).

EXTREMES.--Current year: Maximum discharge, 15,100 cfs Apr. 12 (gage height, 12.07 ft); minimum, 888 cfs Aug. 29 (gage height, 3.41 ft).
Period of record: Maximum discharge, 26,300 cfs May 7, 1950 (gage height, 15.06 ft); minimum, 510 cfs Aug. 14, 17, 1934.

REMARKS.--Records good except those for winter periods, which are fair. Diurnal fluctuation caused by power-plants above station.

REVISIONS (WATER YEARS).--WSP 1438: 1932.

Rating table (gage height, in feet, and discharge, in cubic feet per second). (Stage-discharge relation affected by ice Nov. 18-19, 22-27, Nov. 29 to Dec. 2, Dec. 6 to Apr. 7)

3.4	880	9.0	7,870
4.0	1,360	11.0	12,100
5.0	2,280	13.0	18,200
7.0	4,840		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3,330	3,340	2,390	2,280	2,260	2,400	2,270	7,250	2,040	1,770	1,540	1,330
2	3,190	3,190	2,370	2,280	2,240	2,400	2,300	6,630	1,950	1,700	1,590	1,340
3	3,060	3,160	2,350	2,270	2,220	2,390	2,350	5,890	1,930	1,720	1,530	1,370
4	2,830	3,110	2,330	2,270	2,200	2,380	2,500	5,350	1,910	1,660	1,490	1,190
5	2,690	2,880	2,320	2,270	2,200	2,370	2,700	4,750	2,080	1,620	1,440	1,270
6	2,730	2,700	2,250	2,260	2,190	2,320	3,000	4,370	2,180	1,590	1,520	1,280
7	2,660	2,680	2,200	2,260	2,190	2,280	3,500	4,290	2,130	1,580	1,530	1,290
8	2,760	2,630	2,100	2,260	2,180	2,260	5,200	4,110	2,050	1,670	1,480	1,230
9	3,530	2,610	2,060	2,250	2,180	2,250	8,200	3,820	1,990	1,710	1,400	1,330
10	5,430	2,610	2,080	2,250	2,190	2,240	11,700	3,520	1,960	1,840	1,380	1,240
11	6,930	2,610	2,120	2,260	2,190	2,240	14,200	3,190	1,920	1,750	1,370	1,270
12	7,920	2,560	2,250	2,260	2,200	2,230	15,000	2,940	1,970	1,630	1,410	1,270
13	7,770	2,540	2,350	2,270	2,210	2,230	15,000	2,740	1,890	1,540	1,410	1,300
14	6,820	2,430	2,420	2,270	2,210	2,220	14,500	2,620	1,840	1,540	1,330	1,230
15	6,080	2,420	2,450	2,280	2,220	2,220	14,300	2,700	1,850	1,790	1,300	1,260
16	5,810	2,450	2,400	2,280	2,220	2,230	13,500	2,670	1,820	2,070	1,240	1,370
17	6,310	2,390	2,380	2,290	2,220	2,250	12,100	2,580	1,700	2,680	1,230	1,500
18	7,410	2,390	2,350	2,290	2,230	2,270	10,300	2,390	1,700	2,950	1,230	1,460
19	8,620	2,390	2,330	2,300	2,230	2,290	8,860	2,390	1,650	2,710	1,210	1,440
20	9,050	2,370	2,300	2,320	2,240	2,310	7,610	2,270	1,660	2,200	1,200	1,460
21	8,490	2,380	2,300	2,340	2,240	2,310	6,490	2,230	1,590	2,020	1,170	1,470
22	7,420	2,380	2,300	2,360	2,250	2,320	5,600	2,210	1,640	1,960	1,180	1,500
23	6,420	2,390	2,300	2,360	2,260	2,320	5,030	2,170	1,640	1,750	1,160	1,630
24	5,570	2,400	2,300	2,380	2,280	2,310	4,490	2,240	1,630	1,620	1,130	1,710
25	4,950	2,400	2,300	2,400	2,300	2,300	3,900	2,140	1,660	1,680	1,070	1,550
26	4,280	2,400	2,290	2,380	2,330	2,280	3,610	2,010	1,820	1,500	1,060	1,500
27	3,930	2,400	2,290	2,360	2,360	2,250	4,220	1,950	1,940	1,640	1,120	1,540
28	3,820	2,410	2,290	2,340	2,400	2,220	5,820	2,010	1,930	1,480	1,140	1,470
29	3,900	2,400	2,290	2,320	------	2,200	6,930	1,950	1,860	1,520	1,070	1,500
30	3,840	2,400	2,290	2,300	------	2,220	7,370	1,890	1,800	1,570	1,120	1,600
31	3,620	------	2,280	2,280	------	2,250	------	1,920	------	1,660	1,280	------
TOTAL	161,170	77,420	71,030	71,290	62,640	70,760	222,550	99,190	55,730	56,120	40,230	41,900
MEAN	5,199	2,581	2,291	2,300	2,237	2,283	7,418	3,200	1,858	1,810	1,301	1,397
MAX	9,050	3,340	2,450	2,400	2,400	2,400	15,000	7,250	2,180	2,950	1,590	1,710
MIN	2,660	2,370	2,060	2,250	2,180	2,200	2,270	1,890	1,590	1,480	1,060	1,190
CFSM	1.84	.92	.81	.82	.79	.81	2.63	1.13	.66	.64	.46	.50
IN.	2.13	1.02	.94	.94	.83	.93	2.93	1.31	.73	.74	.53	.55

CAL YR 1968 TOTAL 1,055,892 MEAN 2,885 MAX 9,220 MIN 880 CFSM 1.02 IN 13.93
WTR YR 1969 TOTAL 1,030,130 MEAN 2,822 MAX 15,000 MIN 1,060 CFSM 1.00 IN 13.59

5-3385. Snake River near Pine City, Minn.

LOCATION.--Lat 45°50'30", long 92°56'00", in SE 1/4 NW 1/4 sec.26, T.39 N., R.21 W., Pine County, on left bank at site of former powerplant and dam, 0.5 mile downstream from Cross Lake and 1.5 miles northeast of Pine City.

DRAINAGE AREA.--958 sq mi.

RECORDS AVAILABLE.--June 1913 to September 1917, July 1951 to current year.

GAGE.--Water-stage recorder. Datum of gage is 919.00 ft above mean sea level, datum of 1929. June 25, 1913, to Sept. 30, 1917, nonrecording gage at site 500 ft downstream at different datum. July 1 to Oct. 28, 1951, nonrecording gage at present site and datum.

AVERAGE DISCHARGE.--22 years, 576 cfs (8.17 inches per year).

EXTREMES.--Current year: Maximum discharge, 10,200 cfs Apr. 12 (gage height, 9.08 ft); minimum, 49 cfs Sept. 22 (gage height, 2.86 ft).
Period of record: Maximum discharge, 11,500 cfs Apr. 18, 1965 (gage height, 9.56 ft); minimum, 5.5 cfs Oct. 1, 1964 (gage height, 2.57 ft).
A discharge measurement of 12,500 cfs was made May 9, 1950.

REMARKS.--Records good except those for winter periods, which are fair.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1,460	1,800	383	290	290	341	607	3,880	378	253	196	146
2	1,230	1,500	392	290	290	343	646	4,260	341	236	183	134
3	1,030	1,250	389	290	290	348	682	4,200	313	214	173	115
4	815	1,070	387	290	292	348	816	3,890	327	219	162	103
5	670	913	355	290	292	348	1,100	3,510	341	195	193	112
6	625	822	327	290	292	348	1,770	3,090	334	171	215	112
7	565	731	313	290	292	348	3,110	2,700	320	163	253	98
8	564	663	307	290	292	348	5,190	2,380	313	203	206	83
9	828	600	313	288	294	348	7,090	2,090	313	246	174	78
10	1,270	559	313	288	294	348	8,600	1,810	292	247	161	73
11	1,790	526	313	288	294	350	9,580	1,550	313	234	144	72
12	2,150	490	320	287	294	350	10,100	1,310	306	212	137	78
13	2,300	451	325	287	296	341	10,100	1,110	285	193	130	67
14	2,310	440	320	287	296	341	9,780	948	273	186	130	67
15	2,220	417	318	287	296	354	9,270	826	267	191	101	77
16	2,390	391	316	287	296	341	8,570	752	261	203	90	76
17	3,210	409	314	287	296	334	7,700	680	236	191	94	67
18	4,210	419	310	287	296	327	6,790	757	230	190	85	59
19	5,060	408	305	287	298	327	5,920	809	213	203	66	60
20	5,920	372	302	287	300	320	5,120	887	190	202	60	60
21	6,900	372	300	287	305	320	4,400	887	184	186	64	55
22	7,590	362	298	287	310	327	3,620	867	190	187	67	97
23	7,510	390	296	287	315	341	2,980	790	200	195	66	111
24	6,970	398	294	287	320	385	2,500	732	202	185	64	88
25	6,160	400	292	287	325	430	2,100	631	216	177	61	107
26	5,340	431	290	287	330	475	1,770	578	280	158	61	108
27	4,570	422	290	290	330	518	1,780	544	314	192	59	102
28	3,730	407	290	290	335	576	2,110	502	273	185	61	84
29	3,030	403	290	290	------	590	2,640	446	257	183	58	110
30	2,500	378	290	290	------	587	3,260	378	286	178	95	97
31	2,110	------	290	290	------	593	------	355	------	231	142	------
TOTAL	97,027	18,194	9,842	8,939	8,450	11,995	139,701	48,149	8,248	6,209	3,751	2,696
MEAN	3,130	606	317	288	302	387	4,657	1,553	275	200	121	89.9
MAX	7,590	1,800	392	290	335	593	10,100	4,260	378	253	253	146
MIN	564	362	290	287	290	320	607	355	184	158	58	55
CFSM	3.27	.63	.33	.30	.32	.40	4.86	1.62	.29	.21	.13	.09
IN.	3.77	.71	.38	.35	.33	.47	5.42	1.87	.32	.24	.15	.10

CAL YR 1968 TOTAL 301,960 MEAN 825 MAX 7,590 MIN 52 CFSM .86 IN 11.72
WTR YR 1969 TOTAL 363,201 MEAN 995 MAX 10,100 MIN 55 CFSM 1.04 IN 14.10

5-3405. St. Croix River at St. Croix Falls, Wis.

LOCATION.--Lat 45°24'25", long 92°38'49", in NW 1/4 sec.30, T.34 N., R.18 W., Polk County, on left bank 1,800 ft downstream from powerplant of Northern States Power Co., in St. Croix Falls, and at mile 52.2.

DRAINAGE AREA.--5,930 sq mi, approximately.

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."

GAGE.--Water-stage recorder. Datum of gage is 690.47 ft above mean sea level, adjustment of 1912. 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.

AVERAGE DISCHARGE.--67 years, 4,098 cfs (9.38 inches per year).

EXTREMES.--Current year: Maximum discharge, 41,600 cfs Apr. 13 (gage height, 19.19 ft); minimum daily, 1,500 cfs Aug. 27.
Period of record: Maximum discharge, 54,900 cfs May 8, 1950 (gage height, 25.19 ft); minimum daily, 75 cfs July 17, 1910.

REMARKS.--Records are good. Diurnal fluctuation caused by St. Croix Falls powerplant 1,800 ft upstream.

REVISIONS (WATER YEARS).--WSP 1115: 1929.

Rating table (gage height, in feet, and discharge, in cubic feet per second).

1.9	1,250	6.0	11,900
2.4	2,270	8.0	16,400
3.0	3,800	13.0	27,600
4.0	6,950	20.0	43,400

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7,240	8,420	3,740	3,670	3,320	3,460	5,520	19,000	2,820	2,460	2,620	2,020
2	6,590	7,520	4,100	4,140	3,450	3,590	5,660	18,500	3,280	2,870	2,100	2,270
3	6,110	7,090	3,900	3,800	3,420	3,810	5,600	17,300	2,930	3,020	2,740	1,860
4	5,590	6,710	3,850	3,720	3,670	3,690	6,770	15,900	3,220	2,220	2,420	2,270
5	5,390	6,260	3,510	4,030	3,370	3,680	8,340	14,400	3,200	2,570	2,950	1,720
6	4,210	5,630	1,930	3,640	3,550	3,520	13,000	12,900	2,890	2,300	2,760	1,760
7	4,580	5,010	1,680	3,380	3,640	3,560	17,000	11,900	3,240	2,140	2,190	1,760
8	4,860	5,040	2,050	3,650	3,520	3,250	23,000	11,200	3,680	2,970	2,680	2,230
9	6,160	5,020	2,190	3,570	3,180	3,500	29,500	9,930	3,520	2,890	2,230	1,750
10	10,900	4,590	2,680	3,440	3,780	3,390	33,400	9,000	2,780	1,720	2,470	1,760
11	14,600	4,760	2,830	3,330	3,020	3,270	36,400	8,180	3,260	3,340	1,680	2,000
12	16,500	4,160	3,550	3,230	3,700	3,150	38,900	7,440	2,880	2,000	2,110	2,020
13	16,500	4,220	4,140	3,320	3,050	3,230	40,500	6,950	3,040	2,680	2,180	1,740
14	15,200	4,050	4,540	3,190	3,670	3,110	40,000	5,780	3,040	2,700	1,900	1,740
15	13,600	4,060	3,890	3,400	3,300	3,260	39,200	5,740	2,310	2,160	2,560	1,740
16	12,700	3,960	4,110	3,290	3,330	3,120	37,600	5,350	2,990	3,860	1,720	2,040
17	16,000	4,140	4,110	3,540	3,090	3,380	35,100	5,320	2,420	2,430	1,680	1,750
18	23,800	3,880	4,090	3,280	3,250	3,240	31,400	5,190	2,780	3,820	1,700	2,260
19	28,300	4,530	3,950	3,490	3,300	3,480	27,600	5,060	2,130	3,680	1,720	2,100
20	29,800	3,780	3,900	3,360	3,030	3,570	24,100	5,100	2,440	3,420	1,720	1,750
21	28,800	3,710	3,810	3,200	3,630	3,570	20,700	4,720	2,140	3,060	1,700	2,040
22	26,800	3,860	3,980	3,470	3,340	3,520	17,600	4,540	2,290	2,880	1,700	2,080
23	24,100	3,900	3,890	3,170	3,400	3,530	15,100	4,270	2,820	2,780	1,660	2,320
24	21,400	4,140	3,620	3,510	3,250	5,020	13,100	3,780	2,060	2,020	1,680	2,280
25	18,800	4,130	3,860	3,360	3,310	4,180	12,100	4,090	1,960	2,620	1,900	2,440
26	16,600	4,100	3,980	3,320	3,350	4,390	8,880	3,800	3,900	1,960	1,520	2,300
27	14,400	3,960	3,940	3,590	3,520	4,530	8,820	4,030	2,880	2,590	1,500	2,060
28	12,700	3,530	3,780	3,490	3,700	4,730	14,000	3,540	3,120	2,550	1,560	1,960
29	12,300	3,630	3,660	3,220	------	4,580	17,200	3,260	2,970	2,180	1,660	1,980
30	9,650	3,410	3,820	3,740	------	5,500	18,800	2,990	2,530	2,490	1,620	2,060
31	8,310	------	3,960	3,460	------	5,500	------	3,610	------	2,310	1,700	------
TOTAL	442,490	141,200	111,040	108,000	95,140	117,310	644,890	242,770	85,520	82,630	62,330	60,060
MEAN	14,270	4,707	3,582	3,484	3,398	3,784	21,500	7,831	2,851	2,665	2,011	2,002
MAX	29,800	8,420	4,540	4,140	3,780	5,500	40,500	19,000	3,900	3,860	2,950	2,440
MIN	4,210	3,410	1,680	3,170	3,020	3,110	5,520	2,990	1,960	1,720	1,500	1,720
CFSM	2.41	.79	.60	.59	.57	.64	3.63	1.32	.48	.45	.34	.34
IN.	2.78	.89	.70	.68	.60	.74	4.05	1.52	.54	.52	.39	.38

CAL YR 1968 TOTAL 2,103,840 MEAN 5,748 MAX 29,800 MIN 1,180 CFSM .97 IN 13.20
WAT YR 1969 TOTAL 2,193,380 MEAN 6,009 MAX 40,500 MIN 1,500 CFSM 1.01 IN 13.76

5-3415. Apple River near Somerset, Wis.

LOCATION.--Lat 45°09'27", long 92°42'59", in sec.21, T.31 N., R.19 W., St. Croix County, at powerplant of Northern States Power Co., 3.5 miles downstream from Somerset.

DRAINAGE AREA.--555 sq mi.

PERIOD OF RECORD.--January 1901 to September 1914 (monthly discharge only), October 1914 to current year.

GAGE.--Headwater and tailwater gages read hourly.

AVERAGE DISCHARGE.--68 years, 306 cfs (7.49 inches per year).

EXTREMES.--Current year: Maximum daily discharge, 1,330 cfs Apr. 13; minimum daily, 120 cfs Sept. 12, 14. Period of record: Maximum daily discharge, 2,510 cfs Apr. 13, 1965; minimum daily, 7 cfs Aug. 21, 1927, Sept. 30, 1929, July 19, 1932, Aug. 2, 3, 1933.

REMARKS.--Records good except those below 100 cfs, which are fair. Records of daily discharge computed on 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.

REVISIONS (WATER YEARS).--WSP 1238: Drainage area. WSP 1388: 1929, 1933.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	370	471	372	278	307	330	455	507	262	263	222	131
2	372	359	235	242	364	345	474	454	246	235	232	123
3	307	357	536	308	244	287	539	524	244	251	227	137
4	376	358	261	307	315	300	571	447	254	234	229	138
5	373	407	313	316	301	319	583	479	256	208	233	142
6	302	423	279	256	317	307	755	434	498	250	194	136
7	550	402	170	344	320	319	523	498	522	211	211	150
8	373	415	221	306	336	311	981	469	560	240	228	173
9	347	266	231	307	293	304	1,090	462	261	276	220	151
10	373	375	234	286	296	237	1,290	413	261	297	184	130
11	361	330	255	293	279	312	1,290	469	251	254	187	149
12	329	403	261	304	354	288	1,280	407	273	237	173	120
13	360	326	307	260	244	309	1,310	371	271	266	190	133
14	439	409	336	316	277	322	1,330	358	253	205	183	120
15	850	296	178	304	314	317	1,230	270	195	258	174	126
16	950	390	206	319	358	265	999	230	257	236	161	122
17	900	324	447	309	260	300	792	292	240	262	170	141
18	850	244	339	318	321	328	784	320	202	306	169	144
19	858	276	435	333	313	336	789	216	221	362	172	158
20	775	353	350	392	293	465	631	323	201	335	167	131
21	766	378	364	212	290	476	546	302	229	263	123	164
22	769	439	399	345	329	422	631	296	174	222	150	160
23	772	274	316	313	314	301	541	269	225	244	190	178
24	773	255	433	313	318	358	504	385	214	231	148	175
25	365	221	128	239	297	394	478	275	242	246	124	173
26	358	348	284	307	323	474	350	257	180	240	144	164
27	368	317	298	327	328	474	244	313	320	237	137	174
28	575	345	280	302	308	406	384	262	207	216	138	168
29	358	348	325	310	------	421	557	286	264	241	136	161
30	363	328	343	366	------	381	446	261	248	248	145	186
31	362	------	304	296	------	425	------	214	------	210	142	------
TOTAL	16,244	10,437	9,440	9,428	8,613	10,833	22,377	11,063	8,031	7,784	5,503	4,458
MEAN	524	348	305	304	308	349	746	357	268	251	178	149
MAX	950	471	536	392	364	476	1,330	524	560	362	233	186
MIN	302	221	128	212	244	237	244	214	174	205	123	120
CFSM	.94	.63	.55	.55	.55	.63	1.34	.64	.48	.45	.32	.27
IN.	1.09	.70	.63	.63	.58	.73	1.50	.74	.54	.52	.37	.30

CAL YR 1968 TOTAL 124,992 MEAN 342 MAX 950 MIN 100 CFSM .62 IN 8.38
WTR YR 1969 TOTAL 124,211 MEAN 340 MAX 1,330 MIN 120 CFSM .61 IN 8.32

5-3445. Mississippi River at Prescott, Wis.

LOCATION.--Lat 44°44'45", long 92°48'00", in Sec.9, T.26 N., R.20 W., Pierce County, 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 sq mi, approximately.

PERIOD OF RECORD.--June 1928 to current year.

GAGE.--Water-stage recorder. Datum of gage is 600.00 ft above mean sea level, adjustment of 1912 (levels by Corps of Engineers). Prior to Aug. 2, 1932, nonrecording gage at railroad bridge 300 ft upstream at following datums: June 3, 1928, to Sept. 30, 1929, 69.27 ft higher; Oct. 1, 1929, to Sept. 30, 1930, 67.68 ft higher; Oct. 1, 1930, to Aug. 1, 1932, 69.28 ft higher. Aug. 2, 1932, to Oct. 30, 1938, water-stage recorder at present site at datum 69.28 ft higher. Auxiliary water-stage recorder 10.7 miles downstream from base gage.

AVERAGE DISCHARGE.--41 years, 15,660 cfs (4.75 inches per year).

EXTREMES.--Current year: Maximum discharge, 199,000 cfs Apr. 16 (gage height, 91.48 ft); minimum daily, 3,920 cfs Sept. 16; minimum gage height, 74.49 ft Mar. 17.
Period of record: Maximum discharge 228,000 cfs Apr. 18, 1965 (gage height, 93.11 ft); minimum daily, 1,380 cfs July 13, 1940; minimum gage height, 65.08 ft Aug. 29, 1934, present datum.

REMARKS.--Records good. Some regulation by reservoirs, navigation dams, and powerplants at low and medium stages. Flood flow not materially affected by artificial storage.

REVISIONS (WATER YEARS).--WSP 1508: 1941.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	27,600	58,800	19,200	12,300	11,400	13,600	36,800	82,500	27,600	22,500	13,100	7,140
2	24,800	54,300	20,100	12,600	11,800	14,000	39,400	80,800	26,300	20,900	13,100	6,430
3	23,600	49,700	17,800	11,200	11,300	15,500	40,200	78,500	23,800	21,400	12,800	6,120
4	23,100	45,800	18,800	11,400	11,500	15,400	42,300	76,100	23,600	21,500	12,200	6,700
5	22,000	42,700	18,500	11,700	11,200	13,800	45,400	73,600	23,700	22,000	11,800	6,300
6	21,600	39,200	13,100	12,500	11,500	11,800	50,500	71,300	23,300	21,700	11,700	5,590
7	20,300	36,200	7,800	12,100	11,700	12,900	59,200	68,700	22,800	21,800	12,200	5,800
8	18,300	33,100	7,100	12,100	11,700	12,500	67,800	66,500	23,200	22,600	12,100	5,970
9	19,900	30,200	10,800	11,900	11,300	12,800	78,700	64,000	22,700	23,800	10,500	6,400
10	22,400	28,400	10,600	11,900	11,800	10,900	94,300	62,300	21,900	23,700	9,150	7,220
11	24,400	27,200	11,900	11,700	11,200	10,600	112,000	59,900	21,100	21,800	8,540	6,730
12	28,600	26,300	16,700	11,400	12,600	11,700	133,000	57,100	20,500	20,900	8,830	5,950
13	33,200	25,000	12,100	10,700	11,800	11,800	157,000	54,900	20,700	19,700	9,110	5,780
14	35,600	24,700	12,200	10,700	11,700	11,700	177,000	52,500	20,400	19,600	7,870	5,950
15	36,000	24,000	12,500	11,100	11,800	11,700	190,000	50,200	19,500	20,100	7,620	4,440
16	36,500	23,100	11,500	11,300	12,000	11,800	197,000	48,900	17,500	21,900	7,380	3,920
17	37,000	22,300	11,100	11,400	11,200	14,800	196,000	47,300	16,700	21,900	7,260	4,380
18	38,700	22,200	13,800	11,200	11,200	15,000	190,000	44,900	16,000	20,000	7,340	5,310
19	44,200	21,300	15,400	11,500	11,300	16,000	183,000	43,200	16,200	18,700	6,920	5,650
20	45,500	21,000	14,400	12,200	10,800	17,000	173,000	42,100	15,000	16,700	6,910	6,570
21	61,600	20,400	13,200	11,700	11,500	17,500	163,000	40,700	15,200	15,700	6,590	7,140
22	68,800	20,200	13,400	11,400	11,100	19,000	150,000	39,700	15,400	15,400	6,370	6,640
23	70,700	20,500	12,000	10,500	11,200	22,000	136,000	38,800	15,800	16,100	6,320	5,680
24	72,700	20,700	11,600	10,800	11,000	24,000	124,000	38,200	15,700	16,700	6,500	6,960
25	75,300	21,700	11,300	10,400	11,600	25,000	113,000	36,900	15,000	15,300	6,320	7,810
26	76,800	21,600	11,900	10,900	11,600	28,000	103,000	35,400	16,500	14,500	6,320	7,770
27	77,100	21,600	12,200	11,800	13,000	29,100	94,600	34,300	17,400	14,300	6,640	6,800
28	75,400	20,700	12,300	11,800	14,000	31,200	87,300	33,400	19,700	13,700	6,000	6,500
29	71,600	17,900	12,500	11,500	------	31,900	84,600	32,200	21,700	13,200	5,930	5,080
30	68,500	17,600	13,200	12,300	------	32,100	83,500	30,300	23,500	12,700	5,340	6,260
31	63,700	------	13,000	11,500	------	33,600	------	28,800	------	13,200	6,750	------
TOTAL	1,365.5M	858,400	412,000	357,500	325,800	558,700	3,401.6M	1,614.0M	598,400	584,000	265,510	184,990
MEAN	44,050	28,610	13,290	11,530	11,640	18,020	113,400	52,060	19,950	18,840	8,565	6,166
MAX	77,100	58,800	20,100	12,600	14,000	33,600	197,000	82,500	27,600	23,800	13,100	7,810
MIN	18,300	17,600	7,100	10,400	10,800	10,600	36,800	28,800	15,000	12,700	5,340	3,920
CFSM	.98	.64	.30	.26	.26	.40	2.53	1.16	.45	.42	.19	.14
IN.	1.13	.71	.34	.30	.27	.46	2.82	1.34	.50	.48	.22	.15

CAL YR 1968 TOTAL 7,160,920 MEAN 19,570 MAX 77,100 MIN 4,000 CFSM .44 IN 5.94
WTR YR 1969 TOTAL 10,526,400 MEAN 28,840 MAX 197,000 MIN 3,920 CFSM .64 IN 8.74

M expressed in thousands.

5-3560. Chippewa River at Bishops Bridge, near Winter, Wis.

LOCATION.--Lat 45°50'57", long 91°04'44", in sec.23, T.39 N., R.6 W., Sawyer County, on right bank 15 ft upstream from highway bridge on County Trunk G, 3.2 miles downstream from Lake Chippewa Dam, and 3.7 miles northwest of Winter.

DRAINAGE AREA.--787 sq mi.

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

GAGE.--Water-stage recorder. Altitude of gage is 1,270 ft (from Lake Chippewa datum). See WSP 1708 or 1728 for history of changes prior to July 23, 1930.

AVERAGE DISCHARGE.--57 years, 710 cfs.

EXTREMES.--Current year: Maximum discharge, 3,190 cfs Oct. 14 (gage height, 7.64 ft); minimum, 91 cfs Apr. 7 (gage height, 3.82 ft); minimum daily, 107 cfs Apr. 19.
Period of record: Maximum discharge, 7,520 cfs Sept. 4, 5, 1914 (gage height, 11.05 ft); minimum, 14 cfs Apr. 17-20, 1925 (gage height, 3.25 ft).

REMARKS.--Records good. Flow regulated by Moose Lake and Lake Chippewa (see p. 97).

REVISIONS (WATER YEARS).--WSP 1208: Drainage area. WSP 1438: 1913(M), 1915-18(M), 1919, 1920-23(M), 1924, 1925(M), 1927(M), 1928, 1929-30(M), 1939(M).

Rating table (gage height, in feet, and discharge, in cubic feet per second).

3.8	86	6.0	1,370
4.2	196	7.0	2,430
4.6	350	8.0	3,770
5.0	560		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	635	1,180	1,310	1,230	1,140	1,570	573	149	209	162	930	198
2	638	1,300	1,310	1,230	1,140	1,540	574	149	143	166	869	156
3	636	1,300	1,310	1,220	1,130	1,510	581	146	142	164	801	156
4	634	1,510	1,300	1,220	1,130	1,480	596	147	146	202	633	161
5	569	1,820	1,300	1,220	1,130	1,460	615	148	147	235	607	160
6	470	1,300	1,290	1,220	1,120	1,420	425	150	147	259	602	156
7	469	1,300	1,290	1,210	1,120	1,380	154	148	145	207	598	156
8	474	1,050	1,290	1,210	1,120	1,340	215	148	143	210	595	154
9	630	736	1,280	1,210	1,110	1,300	268	220	143	183	595	154
10	1,530	1,510	1,280	1,200	1,310	1,250	252	375	144	157	602	153
11	2,110	1,770	1,270	1,200	1,790	1,220	203	380	146	183	599	152
12	2,090	1,770	1,270	1,200	1,920	1,170	167	237	144	207	598	152
13	2,150	1,970	1,280	1,200	1,900	826	151	135	144	209	596	152
14	2,720	2,110	1,270	1,190	1,880	289	140	136	189	217	592	153
15	3,170	2,100	1,270	1,190	1,860	335	137	137	221	246	591	158
16	3,160	2,090	1,270	1,180	1,840	322	139	137	221	434	590	157
17	3,160	2,090	1,260	1,180	1,820	415	128	170	221	427	590	152
18	3,160	2,080	1,260	1,180	1,810	624	123	199	223	425	588	153
19	3,050	1,780	1,260	1,170	1,790	1,030	107	144	222	425	587	152
20	2,210	1,350	1,260	1,170	1,770	1,210	108	142	218	425	588	153
21	1,290	1,350	1,260	1,170	1,740	1,080	128	142	219	425	586	153
22	849	1,340	1,260	1,160	1,720	921	142	142	216	427	585	159
23	720	1,340	1,250	1,170	1,700	780	140	142	192	427	586	157
24	718	1,340	1,250	1,170	1,680	677	140	141	156	427	585	154
25	606	1,330	1,250	1,160	1,660	586	140	141	150	736	447	156
26	452	1,330	1,250	1,160	1,640	571	140	142	150	940	164	154
27	456	1,330	1,240	1,150	1,620	551	156	142	168	940	164	153
28	455	1,320	1,240	1,150	1,590	560	155	143	203	934	165	153
29	454	1,320	1,240	1,150	------	566	151	143	203	933	164	155
30	516	1,320	1,240	1,140	------	566	149	174	183	932	180	153
31	905	------	1,240	1,140	------	566	------	183	------	932	204	------
TOTAL	41,086	45,436	39,350	36,750	43,180	29,115	7,097	5,232	5,298	13,196	16,583	4,685
MEAN	1,325	1,515	1,269	1,185	1,542	939	237	169	177	426	535	156
MAX	3,170	2,110	1,310	1,230	1,920	1,570	615	380	223	940	930	198
MIN	452	736	1,240	1,140	1,110	289	107	135	142	157	164	152

CAL YR 1968 TOTAL 339,905 MEAN 929 MAX 4,680 MIN 38
WTR YR 1969 TOTAL 287,008 MEAN 786 MAX 3,170 MIN 107

5-3565. Chippewa River near Bruce, Wis.

LOCATION.--Lat 45°27'08", long 91°15'39", in SE 1/4 sec.5, T.34 N., R.7 W., Rusk County, on right bank 1 mile east of Bruce and 1 mile downstream from Thornapple River.

DRAINAGE AREA.--1,630 sq mi, approximately.

PERIOD OF RECORD.--December 1913 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,059.62 ft above mean sea level. Prior to May 28, 1935, non-recording gage at railroad bridge 0.8 mile upstream at datum 2.30 ft higher. May 29, 1935, to current year, water-stage recorder at present site and datum.

AVERAGE DISCHARGE.--55 years, 1,433 cfs.

EXTREMES.--Current year: Maximum discharge, 9,810 cfs Apr. 10 (gage height, 10.83 ft); minimum, 380 cfs Aug. 30 (gage height, 1.42 ft).
Period of record: Maximum discharge, 25,800 cfs Sept. 1, 1941 (gage height, 20.46 ft, from floodmarks), from rating curve extended above 20,000 cfs; minimum, 155 cfs June 10, 1932 (gage height, 0.9 ft, site and datum then in use).

REMARKS.--Records good except those for winter period, which are fair. Flow from 48 percent of the drainage area regulated by Moose Lake and Lake Chippewa (see p. 97).

REVISIONS (WATER YEARS).--WSP 875: 1936-38. WSP 1278: Drainge area. WSP 1308: 1922, 1937(M). WSP 1508: 1914-26(M), 1927, 1928-31(M), 1932, 1933(M), 1934-36, 1938.

Rating table (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Dec. 6 - Mar. 8).

1.4	370	5.0	3,040
2.0	728	8.0	6,410
3.0	1,420	11.0	10,010

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1,810	1,920	1,880	2,170	1,930	1,660	1,700	1,170	622	609	1,410	476
2	1,540	2,120	1,860	2,160	1,920	1,640	1,800	1,170	702	558	1,340	440
3	1,450	2,140	1,890	2,160	1,910	1,620	1,900	1,110	649	515	1,230	408
4	1,410	2,090	1,850	2,150	1,900	1,610	2,100	1,020	622	532	1,160	395
5	1,330	2,430	1,830	2,150	1,880	1,600	2,400	946	655	497	1,030	479
6	1,380	2,290	1,860	2,140	1,860	1,590	3,500	967	629	564	1,070	524
7	1,460	2,030	1,840	2,140	1,840	1,580	5,200	1,020	655	545	1,160	437
8	1,480	2,000	1,820	2,130	1,820	1,570	7,000	962	629	570	1,120	413
9	2,450	1,660	1,800	2,130	1,800	1,560	8,890	924	603	590	1,060	424
10	6,260	1,570	1,880	2,120	1,800	1,550	9,700	920	577	649	1,010	385
11	7,080	2,190	2,000	2,120	1,830	1,530	8,370	1,010	609	543	1,050	403
12	5,900	2,310	2,200	2,110	1,860	1,520	6,280	1,040	695	476	1,050	437
13	4,800	2,310	2,400	2,110	1,900	1,500	4,650	892	702	498	1,000	383
14	4,390	2,520	2,450	2,100	1,980	1,200	3,580	756	669	688	1,000	408
15	4,650	2,560	2,450	2,100	2,020	940	2,890	719	649	1,200	951	424
16	5,200	2,550	2,420	2,090	2,040	890	2,510	710	655	4,330	936	453
17	6,200	2,570	2,390	2,080	2,050	910	2,200	855	636	6,110	916	502
18	9,100	2,550	2,360	2,070	2,030	1,020	1,890	977	622	3,390	879	454
19	7,200	2,550	2,330	2,060	2,000	1,260	1,560	924	609	2,140	888	384
20	5,100	2,120	2,300	2,050	1,980	1,450	1,340	848	590	1,470	875	425
21	3,800	1,930	2,280	2,040	1,920	1,620	1,250	782	515	1,140	861	399
22	2,850	1,990	2,270	2,030	1,880	1,780	1,220	737	526	1,030	875	400
23	2,320	1,990	2,260	2,020	1,840	1,800	1,160	708	564	955	828	410
24	2,060	2,050	2,240	2,010	1,800	1,850	1,070	688	526	900	873	420
25	1,890	2,020	2,220	2,000	1,780	1,880	974	622	609	954	823	425
26	1,640	1,940	2,200	1,990	1,720	1,870	944	629	900	1,180	751	425
27	1,540	2,020	2,190	1,980	1,720	1,850	1,040	642	827	1,490	511	420
28	1,790	1,940	2,190	1,970	1,680	1,800	1,410	629	735	1,670	399	410
29	1,740	1,880	2,180	1,960	------	1,720	1,440	609	688	1,590	419	405
30	1,620	1,980	2,180	1,950	------	1,680	1,240	590	655	1,420	385	400
31	1,620	------	2,170	1,940	------	1,690	------	616	------	1,430	419	------
TOTAL	103,060	64,220	66,190	64,230	52,690	47,740	91,208	26,192	19,324	40,233	28,279	12,768
MEAN	3,325	2,141	2,135	2,072	1,882	1,540	3,040	845	644	1,298	912	426
MAX	9,100	2,570	2,450	2,170	2,050	1,880	9,700	1,170	900	6,110	1,410	524
MIN	1,330	1,570	1,800	1,940	1,680	890	944	590	515	476	385	383

CAL YR 1968 TOTAL 809,478 MEAN 2,212 MAX 12,500 MIN 525
WTR YR 1969 TOTAL 616,134 MEAN 1,688 MAX 9,700 MIN 383

5-3585. Flambeau River at Babbs Island, near Winter, Wis.

LOCATION.--Lat 45°46'07", long 90°45'41", in SE 1/4 sec.17, T.38 N., R.3 W., Sawyer County, on right bank 3.6 miles upstream from Connors Creek, 11.5 miles upstream from South Fork Flambeau River, 13 miles east of Winter, and at mile 61.9.

DRAINAGE AREA.--1,000 sq mi.

PERIOD OF RECORD.--August 1929 to current year. Monthly discharge only for some periods, published in WSP 1308.

GAGE.--Water-stage recorder. Altitude of gage is 1,330 ft (from river profile map). Prior to Oct. 1, 1934, at bridge 300 ft upstream at datum 9.0 ft lower. Oct. 1, 1934, to Sept. 8, 1938, at bridge 300 ft upstream present datum. Sept. 8, 1938, to current year at present site and datum.

AVERAGE DISCHARGE.--40 years, 978 cfs.

EXTREMES.--Current year: Maximum discharge, 3,800 cfs Apr. 10 (gage height, 4.78 ft); minimum, 481 cfs Nov. 25 (gage height, 1.13 ft).
Period of record: Maximum discharge, 9,440 cfs June 25, 1946 (gage height, 9.45 ft); minimum, 86 cfs Oct. 21, 22, 1948 (gage height, 0.20 ft); minimum daily, 118 cfs Oct. 10, 1948.

REMARKS.--Records good except those for winter periods or backwater from vegetation, which are fair. Flow regulated by Rest Lake and Flambeau Flowage reservoirs (see p. 97).

REVISIONS (WATER YEARS).--WSP 855: 1935-36. WSP 1175: Drainage area. WSP 1508: 1930.

Rating table except periods of backwater from vegetation (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Nov. 26, 30 and Dec. 5 to Mar. 31).

1.2	517	2.5	1,420
1.4	628	3.0	1,850
1.6	750	4.0	2,900
2.0	1,020	5.0	4,110

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1,020	1,190	948	830	1,340	1,850	1,070	1,010	718	832	1,110	1,070
2	1,100	1,170	888	840	1,330	1,800	1,010	941	676	770	1,030	923
3	1,050	1,190	904	850	1,300	1,700	888	926	768	752	1,000	951
4	989	1,130	903	860	1,310	1,600	1,060	895	738	728	1,000	956
5	970	1,140	920	880	1,380	1,560	1,120	771	846	735	1,210	982
6	1,120	1,190	915	910	1,410	1,500	1,260	792	906	739	1,200	936
7	1,270	1,080	910	950	1,460	1,470	1,240	847	950	680	1,100	931
8	1,380	1,090	900	980	1,510	1,440	2,060	864	799	704	1,100	972
9	1,900	1,060	884	1,020	1,560	1,390	2,540	1,010	734	784	1,130	970
10	2,820	1,100	870	1,050	1,600	1,340	3,660	906	708	903	1,020	910
11	2,900	1,040	856	1,080	1,630	1,300	3,500	898	743	889	1,070	907
12	2,660	1,040	842	1,100	1,670	1,240	2,910	809	940	847	1,040	936
13	2,530	1,130	828	1,150	1,710	1,200	2,800	810	853	864	1,050	878
14	2,380	1,030	814	1,200	1,760	1,160	2,480	797	839	738	1,040	878
15	2,130	1,040	800	1,230	1,800	1,150	2,420	737	831	1,000	1,020	718
16	2,060	1,060	792	1,250	1,870	1,170	2,160	827	757	2,160	970	989
17	1,980	1,060	794	1,280	1,930	1,180	1,850	1,050	716	2,210	973	893
18	1,960	1,120	796	1,300	2,000	1,170	1,670	892	737	1,590	982	844
19	1,690	1,060	797	1,300	2,050	1,150	1,310	912	710	1,260	935	806
20	1,580	1,030	798	1,300	2,090	1,130	1,120	888	707	1,060	944	764
21	1,220	954	800	1,290	2,100	1,120	988	821	698	1,010	951	782
22	1,210	959	800	1,270	2,080	1,110	995	798	713	1,020	980	827
23	1,190	973	790	1,240	2,060	1,080	893	815	671	870	932	961
24	1,120	542	760	1,230	2,040	1,040	847	782	638	960	965	1,020
25	1,120	605	750	1,230	1,990	980	721	749	726	1,080	899	917
26	1,110	949	740	1,240	1,970	930	897	718	1,080	1,120	986	925
27	1,130	985	740	1,260	1,960	880	820	712	1,100	1,250	948	921
28	1,230	940	740	1,300	1,900	830	1,130	685	1,080	1,290	940	806
29	1,290	916	760	1,300	------	770	1,160	716	855	1,200	955	743
30	1,280	930	800	1,320	------	740	1,130	721	701	1,170	1,010	749
31	1,220	------	820	1,340	------	730	------	686	------	1,030	980	------
TOTAL	48,549	30,703	25,659	35,380	48,810	37,710	47,709	25,785	23,938	32,245	31,680	26,865
MEAN	1,566	1,023	828	1,141	1,743	1,216	1,590	832	798	1,040	1,022	896
MAX	2,900	1,190	948	1,340	2,100	1,850	3,660	1,050	1,100	2,210	1,200	1,070
MIN	970	542	740	830	1,300	730	721	685	638	680	899	718

CAL YR 1968 TOTAL 460,049 MEAN 1,257 MAX 4,900 MIN 542
WTR YR 1969 TOTAL 415,033 MEAN 1,137 MAX 3,660 MIN 542

Note.--Backwater from vegetation July 5 to Sept. 30.

5-3595. South Fork Flambeau River near Phillips, Wis.

LOCATION.--Lat 45°42'08", long 90°36'58", in NW 1/4 SW 1/4 sec.10, T.37 N., R.2 W., Price County, on left bank at downstream side of bridge on County Trunk W, 0.4 mile downstream from Big Elk River and 12 miles west of Phillips.

DRAINAGE AREA.--615 sq mi.

PERIOD OF RECORD.--August 1929 to current year. Monthly discharge only for some periods, published in WSP 1308.

GAGE.--Water-stage recorder. Altitude of gage is 1,360 ft (by barometer). Prior to Jan. 11, 1954, nonrecording gage at site 600 ft downstream at same datum. Jan. 12, 1954, to Sept. 4, 1968, nonrecording gage at present site and datum.

AVERAGE DISCHARGE.--40 years, 586 cfs (12.94 inches per year).

EXTREMES.--Current year: Maximum discharge, 4,930 cfs Apr. 12 (gage height, 11.09 ft); minimum daily, 138 cfs Sept. 10, 15.
Period of record: Maximum discharge, 10,200 cfs June 18, 1943 (gage height, 14.32 ft); minimum, 39 cfs Aug. 31, Sept. 3-5, 1933.

REMARKS.--Records good except those for winter periods, which are fair.

REVISIONS (WATER YEARS).--WSP 975: 1934. WSP 1175: Drainge area. WSP 1308: 1931-34(M), 1936-42(M), 1944-45(M), 1947-50(M).

Rating table (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Dec. 2-4, 6-12, Dec. 17 to Apr. 2).

4.8	132	8.0	1,880
5.3	288	9.0	2,780
6.0	580	11.0	4,820
7.0	1,140	13.0	7,760

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	714	522	356	465	490	420	410	1,040	520	790	591	171
2	660	519	355	450	470	410	450	1,030	527	574	550	164
3	554	510	350	430	460	405	500	1,000	493	645	505	155
4	500	496	340	420	458	400	604	975	462	631	466	149
5	500	482	334	410	455	390	746	937	494	570	511	146
6	538	467	330	400	453	390	1,010	953	563	471	602	146
7	742	456	330	390	450	390	1,500	941	595	417	618	141
8	639	449	328	390	448	390	2,000	889	601	396	537	147
9	936	444	330	390	440	390	2,900	825	550	451	457	144
10	1,450	421	330	385	436	380	3,700	762	506	476	380	138
11	1,690	371	335	385	426	380	4,850	706	506	433	353	143
12	1,640	356	350	390	420	380	4,840	654	632	415	324	144
13	1,450	343	449	390	416	380	4,060	605	677	393	300	141
14	1,150	329	480	400	414	380	3,520	567	699	378	277	139
15	992	330	520	413	412	380	3,130	520	685	422	256	138
16	917	319	534	414	410	380	2,920	505	637	929	243	164
17	816	324	520	415	408	399	2,720	661	600	1,440	228	177
18	734	329	500	416	406	400	2,460	820	574	1,620	215	187
19	660	329	480	420	400	410	1,910	906	537	1,590	205	186
20	610	249	490	425	396	420	1,570	892	464	1,360	201	178
21	560	327	510	430	398	440	1,500	773	410	1,020	195	173
22	540	354	520	445	410	470	1,400	729	385	862	187	175
23	538	360	530	465	410	500	1,300	649	354	757	182	181
24	536	368	540	480	415	520	1,250	572	319	695	173	180
25	540	370	540	490	420	550	1,150	478	428	676	149	185
26	550	366	540	500	420	560	1,050	412	964	654	148	187
27	560	360	530	500	425	560	1,050	408	1,320	729	147	186
28	610	356	520	510	425	540	1,110	401	1,740	806	146	179
29	590	350	510	510	------	490	1,100	420	1,780	794	147	181
30	550	355	490	500	------	450	1,050	437	1,270	730	147	178
31	530	------	480	490	------	420	------	480	------	647	172	------
TOTAL	23,996	11,611	13,751	13,518	11,991	13,374	57,760	21,947	20,292	22,771	9,612	4,903
MEAN	774	387	444	436	428	431	1,925	708	676	735	310	163
MAX	1,690	522	540	510	490	560	4,850	1,040	1,780	1,620	618	187
MIN	500	249	328	385	396	380	410	401	319	378	146	138
CFSM	1.26	.63	.72	.71	.70	.70	3.13	1.15	1.10	1.19	.50	.27
IN.	1.45	.70	.83	.82	.73	.81	3.49	1.33	1.23	1.38	.58	.30

CAL YR 1968 TOTAL 282,092 MEAN 771 MAX 4,350 MIN 126 CFSM 1.25 IN 17.06
WTR YR 1969 TOTAL 225,526 MEAN 618 MAX 4,850 MIN 138 CFSM 1.00 IN 13.64

GPO 823-131-7

5-3605. Flambeau River near Bruce, Wis.

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, on right bank 2.5 miles downstream from Thornapple powerplant, 6 miles upstream from mouth, and 7 miles southwest of Bruce.

DRAINAGE AREA.--1,897 sq mi.

PERIOD OF RECORD.--August 1951 to current year.

GAGE.--Water-stage recorder. Altitude of gage, 1,060 ft (by river survey, WSP 417).

AVERAGE DISCHARGE.--18 years, 1,801 cfs.

EXTREMES.--Current year: Maximum discharge, 10,200 cfs Apr. 11 (gage height, 8.06 ft); minimum, 274 cfs Sept. 2 (gage height, 2.43 ft).
Period of record: Maximum discharge, 17,400 cfs May 1, 1954 (gage height, 10.90 ft); minimum, about 100 cfs Aug. 7, 9, 1957 (gage height, 2.06 ft).

REMARKS.--Records good except those for winter periods, which are fair. Flow regulated by several powerplants above station and by Rest Lake and Flambeau Flowage reservoirs (see p. 97).

Rating table (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Nov. 23-25, 27-30, Dec. 5, 6, 10, 11, 13, 14, Dec. 16 to Mar. 22, Mar. 27 to Apr. 8).

2.9	725	5.0	3,480
3.1	905	7.0	7,610
3.4	1,210	9.0	12,600
4.0	1,930		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2,010	1,880	1,450	1,510	2,030	2,680	1,640	2,500	1,350	2,100	1,820	1,650
2	1,880	1,990	1,690	1,510	2,040	2,620	1,660	2,350	1,650	1,850	1,660	1,160
3	2,120	1,900	1,460	1,500	2,050	2,560	1,680	2,100	1,230	1,580	1,680	828
4	2,270	2,130	1,480	1,500	2,060	2,500	1,780	2,020	1,220	1,420	1,690	1,270
5	2,120	1,990	1,440	1,490	2,090	2,440	2,000	2,100	1,310	1,650	1,500	1,270
6	1,630	1,900	1,310	1,480	2,120	2,380	2,700	2,110	1,450	1,560	1,980	1,130
7	1,850	1,840	908	1,500	2,200	2,310	3,600	2,000	1,670	1,440	2,250	1,100
8	2,310	1,780	1,220	1,520	2,250	2,250	5,000	1,880	1,700	1,060	1,550	1,140
9	3,820	1,720	1,340	1,540	2,320	2,180	5,290	1,980	1,700	1,270	1,560	1,020
10	4,710	1,870	1,440	1,560	2,410	2,120	7,920	2,030	1,350	1,340	1,810	1,080
11	4,640	1,770	1,500	1,580	2,410	2,050	9,810	2,270	1,400	1,680	1,710	1,180
12	5,030	1,680	1,560	1,600	2,420	1,990	8,940	1,730	1,530	1,380	1,370	1,000
13	5,890	1,480	1,600	1,620	2,420	1,920	8,110	1,280	1,640	1,460	1,310	1,130
14	5,320	1,520	1,630	1,640	2,420	1,860	7,600	1,460	1,840	1,570	1,390	1,060
15	4,050	1,540	1,670	1,650	2,420	1,790	6,940	1,450	1,740	1,390	1,460	1,170
16	3,400	1,480	1,660	1,660	2,450	1,720	5,690	1,450	1,760	3,060	1,480	1,090
17	3,730	1,800	1,650	1,670	2,480	1,660	4,840	1,490	1,620	3,630	1,310	995
18	4,020	1,810	1,630	1,680	2,500	1,620	5,200	2,320	1,450	3,440	1,230	1,150
19	2,500	1,470	1,610	1,690	2,510	1,640	4,180	2,300	1,440	2,380	1,240	1,130
20	2,810	1,550	1,600	1,700	2,520	1,680	3,960	1,890	1,450	3,000	1,340	1,130
21	2,200	1,640	1,590	1,760	2,550	1,710	3,100	1,960	1,310	2,190	1,280	962
22	2,180	1,410	1,570	1,820	2,600	1,780	2,610	1,760	1,330	2,170	1,290	1,010
23	1,890	1,200	1,550	1,880	2,680	1,980	2,420	1,410	989	1,910	1,180	1,060
24	1,840	1,220	1,530	1,900	2,700	2,100	2,390	1,580	1,260	1,750	1,250	1,110
25	1,460	1,230	1,450	1,920	2,710	2,140	2,200	1,620	1,350	1,670	1,270	1,330
26	1,330	1,220	1,300	1,960	2,720	2,110	2,150	1,410	2,150	1,970	1,210	1,190
27	1,460	1,240	1,320	2,000	2,740	2,050	2,200	1,110	2,210	2,040	1,230	1,220
28	1,400	1,260	1,480	2,020	2,700	1,900	2,380	1,220	2,720	2,070	1,140	1,270
29	1,450	1,280	1,560	2,040	------	1,800	2,540	1,100	3,410	2,090	1,120	1,120
30	1,810	1,350	1,540	2,020	------	1,720	2,600	1,130	2,870	1,980	1,100	966
31	2,090	------	1,520	2,010	------	1,680	------	1,300	------	2,120	1,360	------
TOTAL	85,220	48,150	46,258	52,930	67,520	62,940	123,130	54,310	50,099	60,220	44,770	33,921
MEAN	2,749	1,605	1,492	1,707	2,411	2,030	4,104	1,752	1,670	1,943	1,444	1,131
MAX	5,890	2,130	1,690	2,040	2,740	2,680	9,810	2,500	3,410	3,630	2,250	1,650
MIN	1,330	1,200	908	1,480	2,030	1,620	1,640	1,100	989	1,060	1,100	828

CAL YR 1968 TOTAL 897,293 MEAN 2,452 MAX 11,500 MIN 538
WTR YR 1969 TOTAL 729,468 MEAN 1,999 MAX 9,810 MIN 828

5-3620. Jump River at Sheldon, Wis.

LOCATION.--Lat 45°18'29", long 90°57'23", in sec.26, T.33 N., R.5 W., Rusk County, on right bank just downstream from highway bridge in Sheldon, 1,500 ft upstream from Shoulder Creek and 11 miles upstream from mouth.

DRAINAGE AREA.--574 sq mi.

PERIOD OF RECORD.--July 1915 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,092.75 ft above mean sea level. 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.

AVERAGE DISCHARGE.--54 years, 509 cfs (12.04 inches per year).

EXTREMES.--Current year: Maximum discharge, 9,330 cfs Apr. 8 (gage height, 10.91 ft, from outside floodmark); minimum, 32 cfs Aug. 31, Sept. 1 (gage height, 3.37 ft).
Period of record: Maximum discharge observed, 46,000 cfs Aug. 31, 1941 (gage height, 18.8 ft from floodmark), from rating curve extended above 13,000 cfs on basis of contracted-opening measurement of peak flow; minimum observed, 11 cfs Dec. 18, 1943 (gage height, 3.99 ft).

REMARKS.--Records good except those for winter period, which are fair.

REVISIONS (WATER YEARS).--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).

Rating table (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Dec. 2 to Apr. 7).

3.3	22	6.5	1,540
3.6	68	8.0	3,290
4.0	155	10.0	6,810
4.6	342	12.0	12,600
5.5	756		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	256	353	198	216	318	207	900	482	204	941	132	32
2	228	317	231	204	318	206	820	491	201	635	128	34
3	210	282	202	200	314	203	780	594	219	560	112	34
4	189	259	180	190	312	200	1,100	567	216	486	99	34
5	178	246	172	188	310	197	2,000	494	207	384	97	34
6	186	237	176	182	310	194	3,300	494	225	317	101	37
7	225	228	190	180	306	190	5,600	768	234	266	101	37
8	289	213	220	178	304	186	8,940	804	246	240	97	40
9	592	210	222	176	300	182	8,880	645	219	250	97	40
10	1,730	207	220	174	298	178	8,610	521	180	282	95	37
11	1,880	198	224	174	290	174	6,660	464	172	253	90	37
12	1,490	192	238	176	285	176	4,520	412	207	198	77	36
13	1,120	180	250	178	280	178	3,090	369	400	158	73	36
14	870	173	270	180	275	180	2,280	324	537	162	70	36
15	728	170	290	182	270	188	1,800	286	416	160	63	40
16	609	177	310	186	265	200	1,630	256	324	167	57	59
17	520	183	308	190	260	220	1,420	614	256	167	54	59
18	444	189	308	198	255	245	1,180	1,500	207	165	50	55
19	392	195	290	200	250	270	934	1,290	175	165	47	54
20	335	201	280	210	245	308	768	928	155	163	47	50
21	306	207	278	220	240	360	630	739	135	163	44	47
22	286	213	270	230	235	440	565	599	132	167	44	43
23	272	219	280	242	230	520	502	486	138	175	44	55
24	253	216	282	260	225	700	440	404	168	180	43	68
25	234	210	282	270	220	920	338	338	279	189	37	77
26	222	204	280	286	215	1,150	342	286	1,220	195	37	77
27	225	198	278	300	210	1,350	331	259	3,400	204	39	77
28	338	189	266	310	208	1,320	495	275	3,720	175	37	73
29	448	180	244	312	------	1,180	620	269	2,620	140	36	68
30	436	175	230	312	------	1,050	537	250	1,610	130	34	64
31	384	------	216	316	------	980	------	222	------	128	32	------
TOTAL	15,875	6,421	7,685	6,820	7,548	14,052	70,012	16,430	18,422	7,965	2,114	1,470
MEAN	512	214	248	220	270	453	2,334	530	614	257	68.2	49.0
MAX	1,880	353	310	316	318	1,350	8,940	1,500	3,720	941	132	77
MIN	178	170	172	174	208	174	331	222	132	128	32	32
CFSM	.89	.37	.43	.38	.47	.79	4.07	.92	1.07	.45	.12	.09
IN.	1.03	.42	.50	.44	.49	.91	4.54	1.06	1.19	.52	.14	.10

CAL YR 1968 TOTAL 291,830 MEAN 797 MAX 11,800 MIN 33 CFSM 1.39 IN 18.91
WTR YR 1969 TOTAL 174,814 MEAN 479 MAX 8,940 MIN 32 CFSM .83 IN 11.33

PEAK DISCHARGE (BASE, 3,500 CFS)

DATE	TIME	G.HT.	DISCHARGE	DATE	TIME	G.HT.	DISCHARGE
4- 8	--	10.91	9,330	6-28	0200	8.43	3,950

5-3655. Chippewa River at Chippewa Falls, Wis.

LOCATION.--Lat 44°55'37", long 91°24'33", in lot 1, Sec.12, T.28 N., R.9 W., Chippewa County, on right bank at Chippewa Falls, 1 mile downstream from Duncan Creek.

DRAINAGE AREA.--5,600 sq mi, approximately.

PERIOD OF RECORD.--June 1888 to current year. Monthly discharge only for some periods, published in WSP 1308.

GAGE.--Water-stage recorder. Datum of gage is 798.46 ft above mean sea level. Prior to January 1914 nonrecording gage, and January 1914 to June 19, 1932, water-stage recorder at site 1 mile upstream at different datum. June 19, 1932, to current year water-stage recorder at present site and datum.

AVERAGE DISCHARGE.--81 years, 5,080 cfs.

EXTREMES.--Current year: Maximum discharge, 39,000 cfs Apr. 11 (gage height, 15.30 ft); minimum daily, 230 cfs Sept. 13.
Period of record: Maximum discharge, 102,000 cfs Sept. 1, 1941 (gage height, 24.8 ft); minimum, 22 cfs Apr. 2, 1934 (gage height, 0.63 ft); minimum daily, 40 cfs Feb. 4, 1917. Maximum stage known, 26.94 ft Sept. 10, 1884, site and datum in use to June 1932.

REMARKS.--Records good. Considerable regulation by Moose Lake, Lake Chippewa, Rest Lake, Flambeau Flowage, and Lake Wissota reservoirs (see p. 97).

REVISIONS (WATER YEARS).--WSP 785: 1934(M). WSP 1508: 1897, 1905, 1918(M), 1924(M).

Rating table (gage height, in feet, and discharge, in cubic feet per second).

1.0	173	5.0	4,440
1.5	325	8.0	11,200
2.0	583	12.0	24,500
3.0	1,440	16.0	42,400

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6,080	5,220	3,600	3,940	5,600	6,580	8,670	5,750	2,090	7,540	3,500	444
2	4,920	4,840	4,980	4,620	5,840	5,880	8,140	6,330	4,140	5,350	3,040	3,220
3	3,970	4,650	5,120	4,690	6,070	6,720	6,550	5,920	3,660	3,860	3,110	2,850
4	5,240	6,120	6,100	3,900	5,960	7,610	7,790	5,360	2,530	1,580	3,500	2,700
5	4,310	6,960	5,630	3,670	5,540	7,400	8,900	5,480	3,380	3,440	3,820	3,530
6	2,990	4,980	5,700	5,020	5,650	6,520	9,510	5,040	2,190	1,590	4,670	316
7	5,170	5,120	557	4,840	7,520	7,160	10,300	5,430	1,570	4,120	4,600	345
8	5,320	5,400	761	4,280	5,900	7,780	28,000	6,300	2,720	3,630	4,140	1,330
9	8,410	4,630	1,820	4,730	5,550	6,560	37,700	5,530	3,790	4,700	3,490	2,020
10	15,000	4,210	4,250	4,690	6,060	6,580	37,500	3,650	2,780	2,240	1,790	2,250
11	22,700	4,620	3,120	5,000	6,550	7,300	38,000	4,570	3,120	3,570	4,400	710
12	16,500	4,650	6,240	3,870	6,170	6,670	32,700	5,570	3,000	1,840	3,850	2,900
13	16,100	5,380	6,950	5,510	6,430	6,450	23,000	5,300	5,120	296	2,640	230
14	14,300	4,770	2,320	4,810	6,520	6,240	18,900	3,130	2,490	6,710	1,840	539
15	12,100	5,230	2,290	4,840	6,610	5,240	16,600	3,890	2,160	5,080	4,770	3,300
16	10,100	4,860	6,190	4,270	5,840	4,570	14,100	2,600	3,540	9,040	934	2,110
17	13,000	5,220	5,170	4,340	6,840	5,120	12,500	2,840	3,300	9,880	575	814
18	13,100	5,800	5,130	3,930	7,950	6,630	10,800	5,510	4,410	9,830	3,910	1,200
19	13,300	6,000	5,160	3,570	7,940	5,890	9,810	6,400	2,560	6,640	3,490	1,960
20	11,500	5,200	4,640	4,510	7,920	6,470	8,740	7,000	3,020	5,510	2,570	1,730
21	9,930	4,540	3,830	4,440	6,920	7,500	8,260	5,440	1,360	5,290	2,070	261
22	8,580	4,890	4,180	4,440	6,760	6,130	8,190	4,310	1,220	5,310	1,690	2,210
23	7,550	3,670	4,720	4,710	6,480	7,130	4,590	4,730	2,870	3,960	760	2,330
24	5,370	4,370	4,510	5,590	5,810	8,350	4,570	2,290	3,170	4,030	1,060	2,710
25	5,730	5,490	2,610	4,770	8,090	8,610	5,060	2,070	3,920	3,250	4,420	2,080
26	3,660	4,730	5,250	6,170	7,110	8,670	4,590	4,660	5,490	1,660	2,140	2,440
27	3,090	4,920	4,850	6,180	7,290	8,700	4,970	4,450	10,800	2,870	3,590	601
28	5,990	3,660	3,920	6,680	7,020	8,750	5,270	3,760	13,100	5,240	1,350	719
29	5,580	4,720	3,270	7,950	------	8,920	5,640	2,820	11,500	5,050	2,700	2,490
30	5,480	4,340	4,520	4,630	------	9,370	7,450	798	6,260	4,200	377	2,860
31	5,600	------	4,560	5,910	------	9,020	------	888	------	5,060	410	------
TOTAL	270,670	149,390	131,948	150,500	183,940	221,020	407,000	137,816	121,260	142,366	85,246	53,199
MEAN	8,731	4,980	4,256	4,855	6,569	7,130	13,570	4,446	4,042	4,592	2,750	1,773
MAX	22,700	6,960	6,950	7,950	8,090	9,370	38,000	7,000	13,100	9,880	4,790	3,530
MIN	2,990	3,660	557	3,570	5,540	4,570	4,570	798	1,220	296	377	230

CAL YR 1968 TOTAL 2,666,608 MEAN 7,286 MAX 40,800 MIN 557
WTR YR 1969 TOTAL 2,054,355 MEAN 5,628 MAX 38,000 MIN 230

5-3674.25 Red Cedar River near Cameron, Wis.

LOCATION.--Lat 45°24'05", long 91°46'38", in center sec.30, T.34 N., R.11 W., Barron County, on downstream side of bridge on U.S. Highway 8, 1.2 miles west of Cameron and 3.5 miles east of junction with State Highway 25 in Barron.

DRAINAGE AREA.--450 sq mi.

PERIOD OF RECORD.--April 1966 to current year.

GAGE.--Nonrecording gage. Datum of gage is 1,063.70 ft above mean sea level.

EXTREMES.--Current year: Maximum discharge observed, 1,490 cfs Oct. 11 (gage height, 7.68 ft); maximum gage height observed, 8.13 ft Dec. 20 (backwater from ice); minimum daily discharge, 110 cfs Aug. 24, 25, 30. Period of record: Maximum discharge, 4,650 cfs Mar. 30, 1967 (gage height, 10.00, from floodmarks); minimum observed, 110 cfs Aug. 30, 1969 (gage height, 5.21 ft).

REMARKS.--Records fair. Flow regulated by Birch Lake, Red Cedar Lake, Long Lake, and Bear Lake reservoirs (see p. 97).

REVISIONS (WATER YEARS).--WRD WIS.1967: 1966.

Rating table (gage height, in feet, and discharge, in cubic feet per second). (Shifting-control method used Oct. 1 to Dec. 3, June 30 to Sept. 30, stage-discharge relation affected by ice Dec. 5 to Dec. 13, Dec. 15 to Mar. 2).

4.7	100	6.5	860
5.5	412	7.5	1,580

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB*	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1,120	706	425	430	460	640	580	425	232	264	185	152
2	971	610	462	430	460	500	562	433	216	272	178	148
3	948	483	483	430	465	416	553	420	220	256	170	156
4	932	483	496	430	470	500	593	420	244	244	170	166
5	880	473	500	430	465	292	692	412	240	236	170	256
6	807	284	500	430	460	370	798	408	240	236	212	292
7	725	312	500	430	455	462	965	404	232	228	284	260
8	875	399	495	430	450	492	1,060	408	256	216	292	256
9	734	389	495	430	450	514	954	383	248	248	328	224
10	1,410	378	500	430	450	549	807	383	264	244	300	220
11	1,490	366	510	440	440	566	420	391	284	236	292	216
12	1,000	366	540	440	440	646	353	378	276	236	216	204
13	905	362	560	440	440	624	433	378	272	232	170	174
14	850	362	540	440	440	651	458	353	268	324	178	152
15	803	366	462	440	440	900	268	332	264	308	197	156
16	794	775	470	440	440	697	276	264	256	308	228	131
17	870	553	480	440	440	674	224	328	252	320	256	134
18	977	475	490	440	445	633	174	320	252	374	256	141
19	1,080	789	490	440	450	628	228	320	244	471	236	155
20	1,100	633	480	440	450	624	276	328	236	458	228	181
21	1,080	437	470	440	455	619	316	345	236	446	212	166
22	1,030	416	465	440	460	606	320	332	248	441	165	166
23	1,010	399	460	445	475	619	332	324	252	471	114	200
24	983	399	460	450	490	619	341	308	256	450	110	228
25	954	412	450	450	500	606	332	308	248	378	110	224
26	921	437	445	455	520	584	387	236	236	370	114	197
27	910	437	440	455	540	566	412	288	284	416	117	170
28	860	425	430	455	570	597	408	272	276	429	124	166
29	836	412	430	455	------	734	433	224	268	374	124	166
30	836	509	430	455	------	725	433	224	260	272	110	181
31	885	------	430	455	------	725	------	216	------	204	178	------
TOTAL	29,576	13,847	14,788	13,655	13,020	18,378	14,388	10,565	7,560	9,962	6,004	5,639
MEAN	954	462	477	440	465	593	480	341	252	321	194	188
MAX	1,490	789	560	455	570	900	1,060	433	284	471	328	292
MIN	725	284	425	430	440	292	174	216	216	204	110	131

CAL YR 1968 TOTAL 194,941 MEAN 533 MAX 2,230 MIN 135
WTR YR 1969 TOTAL 157,382 MEAN 431 MAX 1,490 MIN 110

5-3680. Hay River at Wheeler, Wis.

LOCATION.--Lat 45°02'52", long 91°54'39", in SW 1/4 sec.25, T.30 N., R.13 W., Dunn County, on right bank 25 ft downstream from highway bridge in Wheeler, 1.8 miles upstream from Otter Creek, and 2.4 miles dowrstream from South Fork Hay River.

DRAINAGE AREA.--426 sq mi.

PERIOD OF RECORD.--October 1950 to current year.

GAGE.--Water-stage recorder. Datum of gage is 893.66 ft above mean sea level. Prior to Mar. 25, 1951, non-recording gage.

AVERAGE DISCHARGE.--19 years, 274 cfs (8.73 inches per year).

EXTREMES.--Current year: Maximum discharge, 3,260 cfs Apr. 8 (gage height, 9.44 ft); minimum, 161 cfs Aug. 30 (gage height, 2.42 ft).
Period of record: Maximum discharge, 13,600 cfs Mar. 31, 1967 (gage height, 15.04 ft), from rating curve extended above 9,000 cfs; minimum, 55 cfs Mar. 13, 1954 (gage height, 2.32 ft), result of freezeup.
Maximum stage known since 1915, 16.6 ft in April 1934, from floodmarks.

REMARKS.--Records good except those for winter periods, which are fair.

REVISIONS.--WSP 1338: Drainage area.

Rating table (gage height, in feet, and discharge, in cubic feet per second). (Shifting-control method used Oct. 1-14, May 3-30, June 1-10. Stage-discharge relation affected by ice Nov. 18, 19, 22-26, Dec. 7-9, Dec. 13 to Mar. 17).

2.4	158	6.0	1,200
3.0	275	8.0	2,090
4.0	538	10.0	3,760

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	316	331	238	240	198	216	348	349	234	211	216	184
2	295	321	243	240	200	218	334	363	232	215	203	174
3	271	312	237	230	204	216	383	339	227	217	196	171
4	254	307	222	230	208	212	689	308	225	213	193	171
5	242	306	218	230	208	210	1,290	298	223	211	190	173
6	256	308	208	220	206	210	1,870	320	218	207	193	173
7	264	295	220	215	204	210	2,490	313	214	204	210	171
8	249	273	220	210	202	208	3,080	292	209	220	198	168
9	421	265	230	210	200	208	2,700	282	204	273	189	167
10	1,400	259	225	208	202	208	1,760	271	200	242	186	167
11	1,500	255	216	210	204	209	1,210	260	212	222	183	166
12	932	249	214	212	206	210	894	251	227	212	181	166
13	667	245	240	214	206	210	763	246	212	207	179	165
14	539	242	220	212	206	212	673	239	207	227	178	165
15	492	242	200	210	206	214	623	236	204	409	175	165
16	550	241	190	208	202	220	593	236	201	334	173	166
17	839	246	185	206	200	230	554	274	200	323	173	167
18	952	245	190	204	202	239	512	259	198	261	173	165
19	702	240	200	204	206	254	478	244	197	236	171	165
20	592	241	210	206	212	297	450	247	194	222	172	165
21	518	237	220	204	216	318	436	240	193	212	173	164
22	467	240	230	198	220	308	412	240	204	207	174	170
23	436	240	230	192	220	347	391	237	228	205	172	194
24	426	240	230	188	219	474	371	235	219	202	169	184
25	401	240	240	184	218	568	358	232	229	201	167	182
26	384	240	250	186	218	524	350	233	345	199	167	183
27	378	241	250	188	220	495	448	236	286	221	165	179
28	370	235	245	192	214	465	473	235	239	222	165	174
29	362	239	240	198	------	394	404	233	225	207	163	178
30	349	234	240	200	------	356	363	229	221	200	164	181
31	337	------	240	196	------	341	------	228	------	217	181	------
TOTAL	16,161	7,809	6,941	6,445	5,827	9,001	25,700	8,205	6,627	7,159	5,592	5,163
MEAN	521	260	224	208	208	290	857	265	221	231	180	172
MAX	1,500	331	250	240	220	568	3,080	363	345	409	216	194
MIN	242	234	185	184	198	208	334	228	193	199	163	164
CFSM	1.22	.61	.53	.49	.49	.68	2.01	.62	.52	.54	.42	.40
IN.	1.41	.68	.61	.56	.51	.79	2.24	.72	.58	.62	.49	.45

CAL YR 1968 TOTAL 120,146 MEAN 328 MAX 2,230 MIN 110 CFSM .77 IN 10.49
WTR YR 1969 TOTAL 110,630 MEAN 303 MAX 3,080 MIN 163 CFSM .71 IN 9.66

PEAK DISCHARGE (BASE, 1,000 CFS)

DATE	TIME	G.HT.	DISCHARGE	DATE	TIME	G.HT.	DISCHARGE
10-10	2200	7.05	1,720	4- 8	0300	9.44	3,260

5-3690. Red Cedar River at Menomonie, Wis.

LOCATION.--Lat 44°53'02", long 91°55'57", in NW 1/4 sec.26, T.28 N., R.13 W., Dunn County, 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.--1,760 sq mi, approximately.

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

GAGE.--Water-stage recorder. Datum of gage is 780 ft above mean sea level (Northern States Power Co. bench mark). Prior to Sept. 3, 1908, nonrecording gage at site 1 mile 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. Oct. 1, 1923, to current year water-stage recorder at present site and datum.

AVERAGE DISCHARGE.--57 years, 1,210 cfs.

EXTREMES.--Current year: Maximum discharge, 9,340 cfs Apr. 8 (gage height, 5.98 ft); minimum, 145 cfs Dec. 11 (gage height, 0.85 ft); minimum daily, 456 cfs June 5.
Period of record: Maximum discharge, 40,000 cfs Apr. 4, 1934 (gage height, 16.0 ft, from floodmarks), from rating curve extended above 27,000 on basis of computed flow over Cedar Falls Dam 6 miles upstream; minimum, 21 cfs Dec. 9, 1928 (gage height, 0.65 ft).

REMARKS.--Records good except those for winter periods, which are fair. Flow regulated by powerplants at Menomonie and Cedar Falls and by Birch Lake, Cedar Lake, Long Lake, and Bear Lake reservoirs (see p. 97).

REVISIONS.--WSP 805: Drainage area.

Rating table (gage height, in feet, and discharge, in cubic feet per second).

1.5	447	3.0	2,620
1.7	601	4.0	4,440
2.0	965	5.0	6,580
2.5	1,730	6.0	9,400

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2,710	2,140	1,290	1,180	1,400	1,350	2,050	1,830	1,630	1,160	1,000	629
2	2,580	1,780	1,510	1,150	1,340	1,370	2,150	1,830	2,060	1,220	721	742
3	2,470	1,850	1,220	1,250	1,370	1,160	2,190	1,550	1,130	1,180	836	638
4	2,320	1,760	1,310	1,240	1,380	1,260	2,360	1,600	457	939	878	711
5	2,470	1,620	1,360	1,110	1,470	1,450	2,890	1,580	456	1,180	806	897
6	2,340	1,720	928	1,370	1,610	1,310	4,100	1,670	1,040	967	814	771
7	1,990	1,620	652	1,230	1,440	1,240	5,400	1,620	1,100	1,270	905	869
8	1,860	1,580	903	1,270	1,380	1,280	6,930	1,540	957	1,490	967	969
9	2,440	1,520	1,130	1,210	1,400	1,060	7,340	1,620	1,280	1,080	902	692
10	2,980	1,610	1,100	1,180	1,270	1,370	6,890	1,420	814	1,200	780	760
11	4,000	1,460	1,380	1,190	1,320	1,620	5,570	1,460	1,430	1,120	936	887
12	4,260	1,850	1,600	1,110	1,340	1,220	4,370	1,410	1,360	924	951	740
13	3,790	1,310	1,580	1,370	1,300	1,740	3,550	1,340	1,070	830	673	680
14	3,300	1,250	1,190	1,200	1,310	1,970	3,210	1,450	1,060	1,940	905	699
15	3,020	1,150	810	1,280	1,320	1,690	2,830	1,400	1,080	2,010	591	851
16	2,910	608	1,110	1,300	1,250	1,840	2,410	1,200	1,070	3,040	731	770
17	3,090	741	1,180	1,360	1,340	1,830	2,390	1,560	1,190	1,280	606	668
18	3,240	1,490	1,130	1,330	1,340	1,740	1,980	1,370	1,210	588	748	759
19	3,500	1,700	1,550	1,240	1,230	1,760	824	1,330	1,120	1,240	784	681
20	3,430	1,990	1,290	1,400	1,230	2,190	835	1,520	1,030	1,470	735	850
21	3,290	1,600	1,340	1,290	1,260	2,270	1,200	1,330	961	1,470	682	531
22	3,130	1,520	1,430	1,360	1,210	2,010	1,180	1,400	1,100	1,330	510	1,010
23	2,920	1,410	1,100	1,480	1,130	2,070	1,710	1,270	1,230	1,450	542	889
24	2,780	1,450	1,020	1,130	1,410	2,310	1,510	1,260	1,050	1,150	613	838
25	2,580	1,600	1,050	1,300	1,330	2,440	1,630	1,160	1,730	990	752	1,010
26	2,250	1,510	1,340	1,260	1,330	2,270	1,460	1,260	1,470	1,080	609	921
27	2,410	1,460	1,340	1,530	1,260	2,570	1,840	1,310	1,780	1,190	545	771
28	2,510	1,280	1,180	1,260	1,370	2,440	2,010	1,210	1,020	1,330	648	782
29	2,240	1,390	1,230	1,380	------	2,420	1,860	1,180	1,040	1,180	527	992
30	2,180	1,230	1,440	1,380	------	2,180	1,590	1,060	1,240	976	499	845
31	1,990	------	1,180	1,250	------	2,050	------	1,240	------	1,050	734	------
TOTAL	86,980	45,199	37,873	39,590	37,340	55,480	86,259	43,980	35,165	39,324	22,930	23,852
MEAN	2,806	1,507	1,222	1,277	1,334	1,790	2,875	1,419	1,172	1,269	740	795
MAX	4,260	2,140	1,600	1,530	1,610	2,570	7,340	1,830	2,060	3,040	1,000	1,010
MIN	1,860	608	652	1,110	1,130	1,060	824	1,060	456	588	499	531

CAL YR 1968' TOTAL 657,055 MEAN 1,795 MAX 7,660 MIN 566
WTR YR 1969 TOTAL 553,972 MEAN 1,518 MAX 7,340 MIN 456

5-3695. Chippewa River at Durand, Wis.

LOCATION.--Lat 44°37'40", long 91°58'10", in SW 1/4 sec.21, T.25 N., R.13 W., in Pepin County, on left bank 75 ft downstream from bridge on U.S. Highway 10, and 9.5 miles downstream from Red Cedar River.

DRAINAGE AREA.--9,010 sq mi, approximately.

PERIOD OF RECORD.--July 1928 to current year.

GAGE.--Water-stage recorder. Datum of gage is 694.59 ft above mean sea level. Prior to Dec. 9, 1930, non-recording gage at bridge 400 ft downstream at same datum.

AVERAGE DISCHARGE.--41 years, 7,359 cfs.

EXTREMES.--Current year: Maximum discharge, 53,600 cfs Apr. 10 (gage height, 12.46 ft); minimum daily, 2,690 cfs Sept. 1.
Period of record: Maximum discharge, 123,000 cfs Apr. 2, 1967 (gage height, 16.93 ft); minimum observed, 1,020 cfs Nov. 24, 1950 (gage height, 0.12 ft).
Maximum stage known, 18.4 ft Sept. 12, 1884.

REMARKS.--Records good except those for winter period, which are fair. Flow regulated by powerplants, Moose Lake, Lake Chippewa, Rest Lake, Flambeau Flowage, and Lake Wissota on Chippewa and Flambeau Rivers, and by Birch, Cedar, Bear, and Long Lakes on upper Red Cedar River (see p. 97).

REVISIONS (WATER YEARS).--WSP 785: 1930, 1934(M). WSP 875: 1930 (monthly and yearly runoff). WSP 925: 1938. WSP 1508: 1929(M), 1932.

Rating table (gage height, in feet, and discharge in cubic feet per second). (Stage-discharge relation affected by ice Dec. 13 to Mar. 19). (Shifting-control method used Aug. 14 to Sept. 20).

0.4	2,670	5.0	13,600
1.0	3,480	8.0	25,000
2.0	5,350	10.0	34,300
3.0	7,820	13.0	59,000

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10,400	9,080	6,970	6,800	9,800	10,800	13,900	11,300	4,260	11,700	7,390	2,690
2	9,950	8,730	6,100	7,200	9,600	10,700	13,900	10,800	5,300	11,300	6,030	2,710
3	8,270	7,960	6,800	7,400	9,500	10,700	12,800	10,900	6,420	8,600	5,270	3,770
4	7,530	8,120	7,040	7,500	9,300	10,600	13,100	10,600	5,380	7,100	5,160	4,360
5	8,920	9,110	7,400	7,400	9,200	10,400	15,000	11,000	4,500	5,700	5,680	3,910
6	7,760	9,570	7,300	7,200	9,100	10,400	19,500	10,700	4,850	5,830	5,570	4,710
7	6,940	7,980	7,460	7,300	9,000	10,500	24,600	9,910	4,510	4,950	6,800	2,900
8	7,970	8,110	3,900	7,370	8,900	10,600	29,100	9,870	4,020	7,360	6,340	2,800
9	9,260	8,010	3,850	7,450	8,800	10,700	40,000	10,800	4,770	6,930	6,340	2,900
10	15,500	7,420	4,840	7,700	8,850	10,800	52,800	9,760	5,210	7,060	5,980	3,240
11	20,700	7,190	5,940	7,900	8,800	10,700	51,200	7,260	5,290	5,750	4,530	3,690
12	27,000	7,160	6,290	8,100	8,780	10,600	48,200	7,930	5,950	5,450	6,200	3,100
13	23,700	7,560	6,500	8,200	8,800	10,500	41,600	8,560	5,770	4,400	5,890	3,700
14	21,500	7,730	6,000	8,200	8,900	10,400	30,400	8,280	6,720	4,300	4,790	2,700
15	19,800	7,200	3,900	8,100	9,100	10,500	25,000	6,920	5,130	10,400	4,530	2,700
16	16,000	6,910	4,600	7,900	9,400	11,100	22,300	6,680	5,060	10,800	5,310	3,970
17	16,100	6,590	6,600	7,500	9,800	12,000	18,900	6,190	5,860	12,900	3,260	3,700
18	18,000	7,240	8,000	7,100	10,500	12,700	16,700	6,430	5,750	11,700	2,850	3,000
19	18,500	8,770	8,600	6,900	10,800	12,000	13,800	9,290	6,450	11,700	5,070	2,980
20	18,700	8,910	8,300	6,800	10,900	10,300	13,600	10,400	4,740	8,460	4,830	3,100
21	15,800	8,210	7,800	6,900	11,000	11,700	12,600	9,770	4,980	9,040	4,340	3,200
22	14,800	7,170	7,300	7,100	11,000	12,000	12,400	9,000	4,110	7,850	3,740	2,830
23	13,000	7,070	7,000	7,400	11,100	11,500	11,400	7,310	4,140	7,850	3,170	3,820
24	11,400	6,220	6,600	8,000	11,100	13,400	8,260	7,610	5,750	6,450	2,780	3,870
25	10,100	6,980	6,000	8,500	11,100	15,000	7,610	5,010	6,270	6,610	2,950	4,630
26	9,950	8,060	5,600	8,900	11,000	15,500	8,220	5,210	7,490	5,500	4,960	3,970
27	7,590	7,830	6,400	9,400	11,000	16,200	8,860	6,850	11,300	4,650	4,020	3,970
28	7,770	7,270	6,800	10,000	10,800	15,800	9,200	6,980	16,600	5,760	4,420	3,070
29	9,430	6,490	6,600	10,300	------	15,200	9,240	6,470	18,800	7,440	3,530	3,090
30	9,050	6,900	6,200	10,200	------	15,000	9,390	5,840	16,300	7,390	3,290	3,920
31	9,340	------	6,500	10,000	------	14,100	------	4,340	------	6,400	2,750	------
TOTAL	410,730	231,550	199,190	246,720	275,930	372,400	613,580	257,970	201,680	237,330	147,770	102,900
MEAN	13,250	7,718	6,425	7,959	9,855	12,010	20,450	8,322	6,723	7,656	4,767	3,430
MAX	27,000	9,570	8,600	10,300	11,100	16,200	52,800	11,300	18,800	12,900	7,390	4,710
MIN	6,940	6,220	3,850	6,800	8,780	10,300	7,610	4,340	4,020	4,300	2,750	2,690

CAL YR 1968 TOTAL 3,811,850 MEAN 10,410 MAX 47,300 MIN 2,100
WTR YR 1969 TOTAL 3,297,750 MEAN 9,035 MAX 52,800 MIN 2,690

5-3700. Eau Galle River at Spring Valley, Wis.

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, on right bank, 766 ft downstream from low-flow outlet of flood-control dam at Spring Valley, 1,500 ft upstream from Mines Creek.

DRAINAGE AREA.--64.8 sq mi.

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

GAGE.--Water-stage recorder and V-notch sharp-crested weir. Datum of gage is mean sea level (levels by Corps of Engineers). Prior to July 31, 1957, nonrecording gage at site 850 ft downstream at datum of 912.45 ft above mean sea level. Aug. 1, 1957, to June 6, 1966, nonrecording gage at downstream site at datum of 910.45 ft mean sea level. June 7, 1966, to Oct. 31, 1968, nonrecording gage at downstream site at datum of 909.45 ft above mean sea level.

AVERAGE DISCHARGE.--24 years (1944-68), 25.9 cfs (5.43 inches per year) prior to reservoir operation.

EXTREMES.--Current year: Maximum discharge, 1,430 cfs Apr. 6 (gage height, 917.02 ft); minimum daily, 0.8 cfs Dec. 8, flow shut off at flood-control dam upstream.
Period of record: Maximum discharge, 7,000 cfs Apr. 15, 1954 (gage height, 12.50 ft, datum then in use); minimum daily, 0.10 cfs Sept. 12-19, 1968, flow shut off at flood-control dam upstream; minimum observed prior to dam construction period, 5.8 cfs Sept. 25, 27, 28, 30, 1949.
Maximum stage known since at least 1894, 19.98 ft Sept. 18, 1942, with datum at 909.45 ft above mean sea level, from flood marks (discharge, 33,000 cfs estimated by Corps of Engineers on basis of slope-area measurement by Geological Survey of peak discharge of 39,000 cfs at Elmwood, drainage area, 91.9 sq mi).

REMARKS.--Records poor October 1 to March 24 and fair thereafter.

REVISIONS (WATER YEARS).--1967 Water Resources Data for Wisconsin: 1966.

DISCHARGE IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	79	7.1	6.9	5.0	5.8	5.4	20	19	12	10	26	11
2	61	7.3	6.9	5.0	5.8	5.3	18	20	11	11	1.1	9.8
3	38	7.3	4.6	5.0	5.8	5.5	33	17	10	10	1.0	9.3
4	28	7.5	1.0	5.0	5.8	5.9	391	15	11	11	1.0	10
5	23	7.5	1.0	5.0	5.8	5.7	712	21	11	11	1.0	10
6	6.8	7.3	.90	5.1	5.8	5.8	802	31	11	10	1.0	9.7
7	4.9	7.3	.90	5.1	5.8	5.8	688	25	11	9.5	1.0	9.1
8	10	7.5	.80	5.1	5.8	5.9	373	21	11	16	1.0	8.7
9	139	7.5	1.0	5.1	5.8	5.9	189	18	10	19	1.0	8.5
10	282	7.3	1.0	5.1	5.8	5.9	91	15	11	14	1.0	111
11	183	7.2	3.5	5.1	5.8	5.7	59	15	14	12	1.0	46
12	75	7.2	8.7	5.1	5.8	5.3	41	14	14	11	1.0	1.1
13	41	7.3	4.9	5.1	5.8	5.3	32	14	12	10	1.0	1.0
14	38	7.2	4.8	5.0	5.8	5.3	31	14	11	14	1.4	1.0
15	5.4	7.1	4.9	5.1	5.8	5.3	29	14	10	15	4.0	1.0
16	34	7.5	4.9	5.2	5.8	5.3	28	14	10	15	6.8	.90
17	103	7.5	5.0	5.2	5.9	5.4	25	15	11	12	7.9	.90
18	77	7.3	5.0	5.2	5.9	5.6	24	14	10	11	8.2	.90
19	55	7.2	5.0	5.1	5.9	5.6	24	14	10	11	8.2	.90
20	38	7.1	5.0	5.1	5.9	6.3	24	14	9.4	8.7	8.2	.90
21	30	7.2	5.0	5.1	5.9	5.9	26	13	9.8	6.4	8.2	.90
22	27	7.7	5.1	5.1	5.9	5.8	20	13	12	11	8.5	1.0
23	11	7.7	5.0	5.1	5.9	6.1	18	13	14	10	8.6	1.0
24	8.5	7.7	5.0	5.1	5.7	15	18	13	12	8.9	8.6	1.0
25	7.8	7.3	5.0	5.1	5.6	136	18	13	15	10	8.9	1.1
26	6.8	6.6	4.9	5.3	5.4	119	18	12	16	9.4	8.9	3.6
27	7.3	6.6	4.8	5.6	5.4	100	26	13	13	11	9.0	6.6
28	8.5	6.8	4.8	5.9	5.4	74	24	12	12	10	9.1	7.8
29	6.8	6.6	4.8	5.8	------	44	19	11	12	8.7	9.0	10
30	7.3	6.8	4.8	5.8	------	33	17	11	12	56	8.9	9.5
31	8.5	------	4.9	5.8	------	26	------	11	------	71	14	------
TOTAL	1,450.6	217.2	130.80	161.4	161.6	677.0	3,838	479	348.2	453.6	184.5	294.20
MEAN	46.8	7.24	4.22	5.21	5.77	21.8	128	15.5	11.6	14.6	5.95	9.81
MAX	282	7.7	8.7	5.9	5.9	136	802	31	16	71	26	111
MIN	4.9	6.6	.80	5.0	5.4	5.3	17	11	9.4	6.4	1.0	.90
CFSM	.72	.11	.065	.080	.089	.34	1.98	.24	.18	.23	.092	.15
IN.	.83	.12	.08	.09	.09	.39	2.20	.27	.20	.26	.11	.17

CAL YR 1968 TOTAL 8,459.80 MEAN 23.1 MAX 742 MIN .10 CFSM .36 IN 4.86
WAT YR 1969 TOTAL 8,396.10 MEAN 23.0 MAX 802 MIN .80 CFSM .35 IN 4.82

Reservoirs in Chippewa River Basin

The nine reservoirs listed below are used to stabilize the flow of the Chippewa, Flambeau, and Red Cedar Rivers for power utilization, and are also used for recreational purposes. The first four are operated by the Chippewa-Flambeau Improvement Co. The remaining five are operated by the Northern States Power Co., which also furnishes the gage heights and capacity tables for all the above reservoirs. Month-end contents are computed by the 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.

5-3554. Moose Lake on West Fork Chippewa River, lat 46°02'00", long 91°04'32", in NE 1/4 sec.14, T.41 N., R.6 W., Sawyer County, 15.0 miles north of Winter, Wis., completed in 1893, has a usable capacity of 400,000,000 cu ft. Drainage area, 225 sq mi. Datum of gage is at mean seal level (Northern States Power Co. bench mark).

5-3556. Lake Chippewa on Chippewa River, lat 45°53'20", long 91°04'40", in SE 1/4 sec.2, T.39 N., R.6 W., Sawyer County, 3.2 miles upstream from Geological Survey river-gaging station, 5.5 miles northwest of Winter, Wis., completed in 1923, has a usable capacity of 10,000,000,000 cu ft. Drainage area, 775 sq mi. Datum of gage is at mean sea level (Northern States Power Co. bench mark).

5-3573. Rest Lake on Manitowish River, lat 46°08'20", long 89°53'05", in NW 1/4 sec.9, T.42 N., R.5 E., Vilas County, 6.2 miles east of Manitowish, Wis., used as a reservoir since 1887, has a capacity of 660,000,000 cu ft between gage heights 105.00 ft and 108.50 ft. This reservoir includes nine lakes controlled by the same dam. Drainage area, 243 sq mi. Altitude of gage is 1,600 ft (by U.S. Geological Survey topographic map).

5-3574. Flambeau Flowage on North Fork Flambeau River, lat 46°04'13", long 90°13'23", in SE 1/4 sec.34, T.42 N., R.2 E., Iron County, 0.5 mile upstream from discontinued Geological Survey river-gaging station, 10.2 miles southwest of Mercer, Wis., completed in 1926, has a usable capacity of 5,895,000,000 cu ft. Drainage area, 666 sq mi. Datum of gage is at mean sea level (Northern States Power Co. bench mark).

5-3642. Lake Wissota on Chippewa River, lat 44°56'18", long 91°20'27", in NW 1/4 sec.3, T.28 N., R.8 W., Chippewa County, 2.0 miles east of Chippewa Falls, Wis., city limits, completed in 1917, has a usable capacity of 3,547,000,000 cu ft. Drainage area, 5,548 sq mi. Datum of gage is at mean sea level (Northern States Power Co. bench mark).

5-3671. Birch Lake on Red Cedar River, lat 45°39'35", long 91°33'27", in W 1/2 sec.25, T.37 N., R.10 W., Washburn County, at Birchwood, Wis., used as a reservoir since 1882, has a usable capacity of 908,000,000 cu ft. Drainage area, 68 sq mi. Altitude of gage is 1,090 ft (from nearby bench marks). Discontinued.

5-3672. Red Cedar Lake on Red Cedar River, lat 45°35'22", long 91°36'07", on line between secs.21 and 22, T.36 N., R.10 W., Barron County, at south edge of Mikana, Wis., used as a reservoir since 1882, has a usable capacity of 577,000,000 cu ft. Drainage area, 161 sq mi. Altitude of gage is 1,080 ft (Northern States Power Co.).

5-3673. Long Lake on Brill River, lat 45°40'05", long 91°40'50", in SW 1/4 sec.24, T.37 N., R.11 W., Washburn County, 1 mile east of Nobleton, Wis., used as a reservoir since 1883, has a usable capacity of 637,000,000 cu ft. Drainage area, 82 sq mi. Altitude of gage is 1,210 ft (from nearby bench marks). Discontinued.

5-3674. Bear Lake on Bear Creek, lat 45°36'37", long 91°46'25", in NE 1/4 sec.18, T.36 N., R.11 W., Barron County, at Haugen, Wis., used as a reservoir since 1880, has a capacity of 413,000,000 cu ft between gage heights 87.0 ft and 91.8 ft. Drainage area, 60 sq mi. Altitude of gage is 1,140 ft (from nearby bench marks).

Month-end contents, in millions of cubic feet, water year October 1968 to September 1969

Date	Moose Lake	Lake Chippewa	Rest Lake	Flambeau Flowage	Lake Wissota	Birch Lake	Red Cedar Lake	Long Lake	Bear Lake
Sept. 30	386	9,820	867	5,748	3,991	841	740	547	213
Oct. 31	185	10,000	535	5,900	3,948	648	553	529	205
Nov. 30	20	8,138	350	5,786	3,916	711	640	476	198
Dec. 31	50	6,680	350	5,824	3,927	727	577	476	198
Jan. 31	40	5,160	350	5,104	3,898	727	603	441	198
Feb. 28	40	2,520	350	2,586	2,248	663	553	406	198
Mar. 31	30	610	350	552	613	398	152	200	55
Apr. 30	414	6,950	700	4,440	3,887	-	602	424	205
May 31	407	8,501	991	5,160	3,822	-	577	441	190
June 30	400	9,280	1,029	5,412	3,991	-	589	459	198
July 31	400	9,604	991	5,596	3,951	-	589	424	190
Aug. 31	400	8,501	936	4,223	3,812	-	627	-	190
Sept. 30	400	8,567	833	3,250	3,959	-	652	-	182

5-3785. Mississippi River at Winona, Minn.

LOCATION.--Lat 44°03'20", long 91°38'15", in sec.23, T.107 N., R.7 W., Winona County, on right bank at Winona pumping station in Winona, 9.5 miles upstream from Trempealeau River and at mile 725.7 upstream from the Ohio River.

DRAINAGE AREA.--59,200 sq mi, 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 mean sea level, 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 miles upstream at tailwater of navigation dam 5A.

AVERAGE DISCHARGE.--41 years, 25,340 cfs (5.81 inches per year).

EXTREMES.--Current year: Maximum discharge, 218,000 cfs Apr. 19 (gage height, 19.44 ft); minimum daily, 8,600 cfs Aug. 21.
Period of record: Maximum discharge, 268,000 cfs Apr. 19, 1965 (gage height, 20.77 ft, from floodmark); minimum, 2,250 cfs Dec. 29, 1933 (gage height, -1.18 ft); minimum gage height, -3.38 ft Aug. 31, 1934.

REMARKS.--Records good. Some regulation by reservoirs, navigation dams, and powerplants at low and medium stages. Flood flow not materially affected by artificial storage.

COOPERATION.--Gage-height record at dam 5A furnished by Corps of Engineers.

REVISIONS (WATER YEARS).--WSP 700: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECCND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	48,900	81,000	27,000	20,000	24,000	25,000	54,900	111,000	42,000	41,000	22,900	11,000
2	47,800	79,000	26,900	20,000	24,000	26,000	55,800	108,000	39,000	39,000	23,000	11,500
3	45,400	76,000	27,900	21,000	24,000	30,000	56,800	106,000	36,000	37,000	21,700	11,000
4	41,800	74,000	28,000	21,000	24,000	28,000	59,300	104,000	34,000	35,000	21,500	10,000
5	37,700	70,000	27,500	21,000	24,000	28,000	64,500	101,000	36,000	37,000	21,600	10,000
6	33,000	68,000	25,600	23,000	25,000	29,000	69,900	99,300	34,000	32,000	21,100	10,000
7	35,000	66,000	20,000	23,000	25,000	29,000	75,100	96,900	32,000	30,000	19,000	10,000
8	34,000	62,000	14,000	23,000	25,000	29,000	79,600	94,000	31,000	31,000	20,700	10,000
9	36,000	57,000	14,000	23,000	25,000	28,000	86,700	90,200	30,000	37,000	21,100	10,000
10	40,000	52,000	17,000	23,000	25,000	28,000	95,600	86,300	28,000	35,000	17,500	10,500
11	45,000	48,000	21,000	23,000	26,000	26,000	113,000	82,500	28,400	30,600	13,600	12,100
12	50,000	45,000	24,000	23,000	26,000	26,000	134,000	79,400	30,600	30,200	18,300	11,100
13	52,000	43,000	23,000	22,000	26,000	26,000	152,000	75,800	32,600	31,000	15,900	11,100
14	56,000	42,000	19,000	22,000	26,000	26,000	168,000	72,400	29,400	26,300	14,900	11,200
15	58,000	42,000	17,000	22,000	26,000	27,000	184,000	70,000	29,300	25,400	15,600	10,600
16	60,000	40,000	19,000	23,000	25,000	27,000	198,000	68,000	28,500	34,200	14,800	11,800
17	61,000	39,000	24,000	23,000	25,000	26,000	207,000	67,600	26,100	38,900	14,500	10,100
18	62,000	40,000	28,000	23,000	25,000	26,800	216,000	64,800	24,500	40,400	13,300	10,700
19	63,000	37,000	29,000	23,000	25,000	26,400	218,000	61,500	24,500	33,100	13,400	9,680
20	66,000	32,000	29,000	23,000	25,000	28,900	212,000	61,000	24,600	32,900	11,400	9,100
21	69,000	31,100	28,000	23,000	25,000	32,800	206,000	60,100	24,900	33,300	8,600	9,150
22	72,000	31,800	27,000	23,000	26,000	33,800	198,000	59,200	24,400	22,700	8,800	9,290
23	75,000	31,900	27,000	23,000	27,000	36,700	187,000	57,800	23,700	25,700	9,200	9,890
24	78,000	30,700	26,000	23,000	27,000	39,000	176,000	55,500	21,700	26,500	9,600	11,100
25	81,000	28,800	21,000	22,000	26,000	44,900	164,000	54,600	23,100	27,200	9,600	11,500
26	83,000	29,200	21,000	20,000	25,000	49,000	153,000	52,400	25,300	26,800	9,800	12,000
27	85,000	30,600	22,000	21,000	25,000	50,800	143,000	50,300	27,200	26,700	10,500	11,400
28	87,000	31,300	22,000	22,000	25,000	53,900	134,000	50,000	33,500	24,400	10,500	11,400
29	88,000	30,700	23,000	23,000	------	54,600	125,000	50,000	39,200	19,600	10,000	12,000
30	86,000	28,500	23,000	24,000	------	54,900	117,000	48,400	42,300	20,800	10,000	11,900
31	83,000	------	22,000	24,000	------	55,400	------	44,400	------	21,200	11,000	------
TOTAL	1,859.6M	1,397.6M	722,900	693,000	706,000	1,051.9M	4,103.2M	2,282.4M	905,800	951,900	463,400	321,110
MEAN	59,990	46,590	23,320	22,350	25,210	33,930	136,800	73,630	30,190	30,710	14,950	10,700
MAX	88,000	81,000	29,000	24,000	27,000	55,400	218,000	111,000	42,300	41,000	23,000	12,100
MIN	33,000	28,500	14,000	20,000	24,000	25,000	54,900	44,400	21,700	19,600	8,600	9,100
CFSM	1.01	.79	.39	.38	.43	.57	2.31	1.24	.51	.52	.25	.18
IN.	1.17	.88	.45	.44	.44	.66	2.58	1.43	.57	.60	.29	.20

CAL YR 1968 TOTAL 11,921,300 MEAN 32,570 MAX 88,000 MIN 8,500 CFSM .55 IN 7.49
WTR YR 1969 TOTAL 15,458,810 MEAN 42,350 MAX 218,000 MIN 8,600 CFSM .72 IN 9.71

M expressed in thousands.

5-3794. Trempealeau River at Arcadia, Wis.

LOCATION.--Lat 44°15'15", long 91°30'25", in SW 1/4 sec.32, T.21 N., R.9 W., Trempealeau County, near right bank on downstream side of bridge on State Highways 93 and 95 in Arcadia, half a mile downstream from Turton Creek.

DRAINAGE AREA.--552 sq mi.

RECORDS AVAILABLE.--July 1960 to current year.

GAGE.--Nonrecording gage and crest-stage gage. Datum of gage is 719.61 ft above mean sea level.

AVERAGE DISCHARGE.--9 years, 336 cfs (8.27 inches per year).

EXTREMES.--Current year: Maximum discharge, 2,920 cfs Apr. 6 (gage height, 5.17 ft); minimum discharge observed, 194 cfs Sept. 6 (gage height, 0.91 ft); minimum gage height observed, 0.79 ft Dec. 7.
Period of record: Maximum discharge, 9,740 cfs Apr. 6, 1965 (gage height, 7.15 ft, from graph based on gage readings) from rating curve extended above 7,000 cfs; maximum gage height observed, 8.04 ft Mar. 2, 1965 (backwater from ice); minimum discharge observed, 110 cfs Aug. 8, 9, 19, 1964.

REMARKS.--Records good except those for winter periods, which are fair.

Rating table (gage height, in feet, and discharge in cubic feet per second).
(Shifting-control method used Oct. 1 to Dec. 6, Mar. 3-23, June 5-26;
stage-discharge relation affected by ice Dec. 7 to Mar. 2).

Oct. 1 to Mar. 23		Mar. 24 to Sept. 30			
0.4	198	0.9	190	4.0	1,580
2.4	876	2.0	586	4.8	2,350
3.0	1,100	3.0	990	5.2	2,970

DISCHARGE IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	346	296	274	230	300	290	459	414	327	665	351	218
2	336	290	280	230	290	300	492	442	323	459	323	211
3	322	290	287	230	280	306	782	541	319	474	313	218
4	316	280	287	230	270	306	1,680	456	319	941	309	218
5	319	293	274	230	260	306	2,410	407	319	1,110	295	225
6	342	306	268	240	260	303	2,770	586	316	810	288	211
7	356	312	260	240	260	300	2,000	645	319	638	281	218
8	346	309	260	240	260	293	1,540	526	316	571	267	214
9	571	300	270	240	250	284	1,140	449	309	541	257	211
10	802	296	280	230	250	296	1,020	421	302	499	257	211
11	558	290	290	230	250	277	762	393	302	456	239	211
12	468	287	310	230	240	274	665	372	365	435	239	211
13	387	284	340	230	230	280	601	365	533	410	232	211
14	366	284	450	250	230	277	559	351	424	456	222	222
15	363	284	360	280	230	268	537	337	369	810	218	232
16	353	287	330	300	220	274	548	330	337	511	218	267
17	373	300	310	300	220	280	559	463	337	818	218	274
18	434	306	300	290	220	312	571	522	340	743	229	246
19	404	306	280	290	220	356	537	456	334	693	235	239
20	370	293	270	300	215	736	484	435	316	456	232	239
21	353	287	260	310	220	1,030	463	418	309	421	232	229
22	346	287	250	320	220	962	439	393	309	393	232	232
23	332	290	250	330	220	1,030	421	379	340	393	232	288
24	332	287	250	330	225	1,230	407	357	375	386	232	278
25	325	284	240	320	235	1,140	400	372	428	379	232	264
26	322	287	240	310	245	884	393	358	790	365	229	260
27	325	293	230	320	260	723	424	375	1,560	365	218	246
28	346	293	230	330	280	630	484	375	847	421	211	235
29	346	280	230	330	------	515	463	365	766	383	208	239
30	322	274	230	320	------	470	421	344	759	344	204	253
31	312	------	230	310	------	442	------	330	------	358	197	------
TOTAL	11,793	8,755	8,620	8,570	6,860	15,374	24,431	12,977	13,309	16,704	7,650	7,031
MEAN	380	292	278	276	245	496	814	419	444	539	247	234
MAX	802	312	450	330	300	1,230	2,770	645	1,560	1,110	351	288
MIN	312	274	230	230	215	268	393	330	302	344	197	211
CFSM	.69	.53	.50	.50	.44	.90	1.47	.76	.80	.98	.45	.42
IN.	.79	.59	.58	.58	.46	1.04	1.65	.87	.90	1.13	.52	.47

CAL YR 1968 TOTAL 139,553 MEAN 381 MAX 3,920 MIN 115 CFSM .69 IN 9.40
WAT YR 1969 TOTAL 142,074 MEAN 389 MAX 2,770 MIN 197 CFSM .70 IN 9.57

5-3795. Trempealeau River at Dodge, Wis.

LOCATION.--Lat 44°07'55", long 91°33'14", in SE 1/4 sec.10, T.19 N., R.10 W., on Trempealeau County line, near left bank on downstream side of highway bridge in Dodge, 9 miles upstream from mouth.

DRAINAGE AREA.--643 sq mi.

PERIOD OF RECORD.--December 1913 to September 1919, April 1934 to current year.

GAGE.--Nonrecording gage and crest-stage gage. Datum of gage is 661.42 ft above mean sea level. Prior to Oct. 1, 1966, datum 2.00 ft higher.

AVERAGE DISCHARGE.--40 years (1914-19, 1934-69), 386 cfs (8.15 inches per year).

EXTREMES.--Current year: Maximum discharge, 2,200 cfs Apr. 7 (gage height, 7.63 ft); minimum daily, 250 cfs Dec. 25 to Jan. 5.
Period of record: Maximum discharge, 17,400 cfs Apr. 4, 1956 (gage height, 10.35 ft); minimum daily, 98 cfs Jan. 10, 1938.

REMARKS.--Records good except those for winter periods, which are fair.

COOPERATION.--Gage-height record collected in cooperation with Corps of Engineers.

REVISIONS (WATER YEARS).--WSP 1238: Drainage area. WSP 1388: 1919(M). WSP 1438: 1914, 1915-18(M), 1934-44 (M), 1946-49(M).

Rating table (gage height, in feet, and discharge, in cubic feet per second). (Shifting-control method used Sept. 21-30; stage-discharge relation affected by ice Dec. 7 to Mar. 20).

Oct. 1 to Apr. 8				Apr. 9 to Sept. 30			
1.4	242	6.0	1,460	1.9	257	6.0	1,460
2.8	455	7.4	2,070	2.5	360	7.0	1,875
4.0	760			4.0	760		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	350	370	350	250	330	400	585	450	317	911	420	277
2	346	363	353	250	320	410	592	455	322	967	395	282
3	343	358	358	250	310	410	751	477	320	904	364	277
4	342	355	363	250	300	420	929	562	317	855	354	277
5	335	356	362	250	290	420	1,340	477	315	995	374	275
6	360	367	362	260	290	410	1,610	435	312	1,230	336	282
7	379	372	340	260	290	400	2,040	553	308	953	333	278
8	392	377	330	260	290	390	1,980	435	319	811	329	275
9	605	372	320	260	290	370	1,840	565	315	817	324	267
10	960	365	320	260	290	360	1,540	477	305	610	313	269
11	790	358	330	260	290	350	1,200	440	302	550	308	266
12	470	353	340	270	280	350	988	416	322	495	310	266
13	475	351	360	280	280	340	730	389	395	460	305	265
14	428	350	420	300	280	340	592	387	537	450	308	263
15	410	351	380	320	270	340	634	376	445	700	307	267
16	412	350	330	340	270	340	619	368	374	790	303	275
17	399	362	290	350	260	340	631	472	342	537	290	272
18	500	365	274	350	260	350	649	568	374	634	288	266
19	496	368	270	350	260	370	616	571	360	844	302	282
20	439	362	260	350	270	450	595	527	333	613	302	277
21	410	350	260	360	280	869	502	455	326	485	300	271
22	392	353	260	370	300	1,250	502	437	317	450	295	265
23	389	355	260	375	320	1,230	483	427	322	418	293	273
24	384	348	260	380	345	1,280	458	389	317	411	285	308
25	384	351	250	375	375	1,360	440	372	344	407	277	310
26	372	358	250	370	380	1,380	423	362	550	425	280	296
27	373	375	250	370	390	1,200	423	350	904	400	280	290
28	387	367	250	370	400	1,300	483	360	1,250	393	277	283
29	397	365	250	360	------	811	527	348	1,090	445	275	290
30	389	353	250	350	------	652	497	340	1,000	407	273	295
31	379	------	250	340	------	587	------	327	------	376	271	------
TOTAL	13,487	10,800	9,502	9,740	8,510	19,479	25,199	13,567	13,354	19,743	9,671	8,339
MEAN	435	360	307	314	304	628	840	438	445	637	312	278
MAX	960	377	420	380	400	1,380	2,040	571	1,250	1,230	420	310
MIN	335	348	250	250	260	340	423	327	302	376	271	263
CFSM	.68	.56	.48	.49	.47	.98	1.31	.68	.69	.99	.49	.43
IN.	.78	.62	.55	.56	.49	1.13	1.46	.78	.77	1.14	.56	.48

CAL YR 1968 TOTAL 152,556 MEAN 417 MAX 3,080 MIN 120 CFSM .65 IN 8.83
WAT YR 1969 TOTAL 161,391 MEAN 442 MAX 2,040 MIN 250 CFSM .69 IN 9.34

5-3810. Black River at Neillsville, Wis.

LOCATION.--Lat 44°33'35", long 90°36'54", in sec.15, T.24 N., R.2 W., Clark County, on right bank at downstream side of bridge on U.S. Highway 10 in Neillsville, 1 mile downstream from O'Neill Creek and 2.6 miles upstream from Cunningham Creek.

DRAINAGE AREA.--756 sq mi.

PERIOD OF RECORD.--April 1905 to March 1909, October 1913 to current year. Monthly discharge only for some periods, published in WSP 1308.

GAGE.--Water-stage recorder. Datum of gage is 962.77 ft above mean sea level (levels by U.S. Weather Bureau). Prior to Oct. 24, 1934, nonrecording gage.

AVERAGE DISCHARGE.--59 years (1905-8, 1913-69), 573 cfs (10.29 inches per year).

EXTREMES.--Current year: Maximum discharge, 13,300 cfs Apr. 7 (gage height, 13.28 ft); minimum, 26 cfs Aug. 30. Period of record: Maximum discharge, 48,800 cfs Sept. 10, 1938 (gage height, 23.8 ft); minimum, 0.6 cfs Aug. 15, 1936 (gage height, 1.84 ft.

REMARKS.--Records good except those for winter periods, which are fair.

REVISIONS (WATER YEARS).--WSP 805: Drainage area. 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.

Rating table (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation was affected by ice Nov. 29, 30, Dec. 6 to Apr. 4).

2.5	27	3.5	226	6.0	1,520
2.7	50	4.0	401	8.0	3,520
3.0	101	5.0	870	10	6,760
				13	12,600

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	157	318	167	180	280	220	900	760	245	1,620	142	31
2	143	272	183	180	250	220	860	2,010	197	898	110	30
3	131	241	179	180	230	220	2,000	3,170	173	594	91	30
4	123	217	176	180	220	220	6,400	2,130	161	636	80	30
5	118	203	140	180	210	220	8,880	1,310	154	566	74	32
6	137	201	140	190	200	220	11,200	1,750	153	339	182	31
7	153	197	140	190	200	210	12,300	2,560	150	255	659	30
8	169	197	140	190	200	210	11,000	1,990	143	254	346	30
9	281	191	140	180	200	210	9,010	1,350	143	271	287	32
10	1,020	182	140	180	200	200	7,130	960	137	260	227	32
11	1,340	172	145	180	190	190	5,130	709	135	273	173	34
12	1,050	163	150	180	180	180	3,410	550	181	223	126	34
13	734	154	600	180	180	180	2,320	448	292	184	98	32
14	531	146	640	180	180	180	1,650	365	440	176	83	33
15	417	141	650	210	170	190	1,260	299	488	162	77	43
16	350	137	560	220	170	200	1,040	271	345	147	69	55
17	302	147	440	230	180	220	968	500	260	142	60	46
18	263	161	320	240	180	300	889	1,060	208	130	54	56
19	229	189	240	240	180	450	727	1,190	174	151	49	53
20	200	186	200	250	180	600	594	966	149	151	45	48
21	186	151	180	260	180	800	554	747	132	120	42	46
22	174	171	200	300	190	1,400	597	568	136	99	39	43
23	163	176	210	320	190	2,700	524	436	471	87	36	53
24	155	186	210	330	200	3,700	441	351	493	77	34	45
25	145	203	210	330	200	3,300	370	292	1,250	71	32	50
26	139	233	200	320	210	2,900	321	245	4,920	64	31	49
27	165	223	200	320	210	2,400	418	234	10,200	142	30	52
28	274	160	190	340	220	2,000	669	708	7,180	238	30	50
29	397	155	190	350	------	1,600	1,150	1,160	5,030	168	29	51
30	440	160	180	340	------	1,300	1,000	681	3,010	208	28	52
31	382	------	180	310	------	1,100	------	348	------	188	31	------
TOTAL	10,468	5,633	7,640	7,460	5,580	28,040	93,712	30,118	37,150	8,894	3,394	1,233
MEAN	338	188	246	241	199	905	3,124	972	1,238	287	109	41.1
MAX	1,340	318	650	350	280	3,700	12,300	3,170	10,200	1,620	659	56
MIN	118	137	140	180	170	180	321	234	132	64	28	30
CFSM	.45	.25	.33	.32	.26	1.20	4.13	1.29	1.64	.38	.14	.054
IN.	.52	.28	.38	.37	.27	1.38	4.61	1.48	1.83	.44	.17	.06

CAL YR 1968 TOTAL 276,262 MEAN 755 MAX 10,900 MIN 8.5 CFSM 1.00 IN 13.59
WAT YR 1969 TOTAL 239,322 MEAN 656 MAX 12,300 MIN 28 CFSM .87 IN 11.78

PEAK DISCHARGE (BASE, 5,000 CFS)

DATE	TIME	G.HT.	DISCHARGE	DATE	TIME	G.HT.	DISCHARGE
3-23	2300	12.14	5,250	6-27	0500	13.20	13,100
4- 7	0300	13.28	13,300				

5-3820. Black River near Galesville, Wis.

LOCATION.--Lat 44°03'42", long 91°17'30", in SE 1/4 sec.2, T.18 N., R.8 W., La Crosse County, on left bank 30 ft downstream from bridge on U.S. Highway 53, 4.5 miles southeast of Galesville, and 5 miles downstream from Fleming Creek.

DRAINAGE AREA.--2,120 sq mi, approximately.

PERIOD OF RECORD.--December 1931 to current year.

GAGE.--Water-stage recorder. Datum of gage is 658.43 ft above mean sea level, unadjusted. Prior to Apr. 2, 1941, nonrecording gage on bridge 30 ft upstream at same datum.

AVERAGE DISCHARGE.--37 years (1932-69), 1,645 cfs (10.54 inches per year).

EXTREMES.--Current year: Maximum discharge, 21,200 cfs Apr. 7 (gage height, 12.62 ft); minimum, 360 cfs Sept. 12, 13, 21 (gage height, 1.08 ft).
Period of record: Maximum discharge, 65,500 cfs Apr. 1, 1967 (gage height, 14.63 ft); minimum observed, 180 cfs Dec. 20, 1932.

REMARKS.--Records good except those for winter periods, which are fair. Flow partly regulated by Hatfield Dam powerplant where drainage area is 1,290 sq mi and storage capacity is 272 million cubic feet. Water diverted periodically from the basin into the Lemonweir River basin for cranberry culture.

REVISIONS (WATER YEARS).--WSP 1438: 1932-34, 1935-36(M).

Rating table (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Dec. 6-13, Dec. 17 to Mar. 22).

Oct. 1 to Apr. 6				Apr. 7 to Sept. 30			
1.2	580	9.0	9,700	1.1	370	9.0	9,600
2.0	1,040	10.0	12,000	2.0	860	11.0	14,300
4.0	3,010	12.0	19,500	4.0	2,860	12.6	21,100
7.0	6,630			6.0	5,150		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	942	1,100	942	760	1,950	1,000	4,730	3,220	1,760	12,800	916	490
2	1,130	1,080	690	740	1,900	1,040	4,040	2,850	1,410	10,800	1,020	480
3	949	1,080	735	740	1,900	1,000	3,640	2,830	1,290	7,350	794	455
4	850	1,080	1,060	740	1,900	960	3,970	4,670	1,240	4,390	658	460
5	862	1,050	1,100	740	1,850	1,150	5,930	5,620	1,440	3,660	658	515
6	868	1,060	1,050	740	1,800	1,200	11,700	4,900	1,110	4,370	729	490
7	914	1,080	1,000	740	1,700	1,300	19,300	3,710	1,000	4,120	630	460
8	786	1,060	860	800	1,600	1,300	20,900	4,650	867	3,470	669	420
9	1,070	942	820	860	1,500	1,300	19,100	5,050	735	3,120	867	425
10	1,300	826	840	880	1,500	1,300	16,500	4,200	735	2,790	842	420
11	1,540	844	880	860	1,450	1,300	13,600	2,930	836	2,560	669	395
12	2,240	850	980	840	1,400	1,300	11,300	2,320	874	2,380	575	370
13	2,830	935	1,100	780	1,300	1,300	8,920	2,160	909	1,880	663	390
14	2,300	868	900	780	1,250	1,300	5,680	1,900	1,020	1,540	652	410
15	1,970	856	775	800	1,200	1,250	4,080	1,750	1,090	1,580	592	430
16	1,640	832	826	860	1,150	1,250	3,380	1,590	818	2,000	570	435
17	1,510	856	970	880	1,100	1,250	3,380	1,600	1,110	1,810	526	425
18	1,450	850	1,100	900	1,050	1,300	3,510	1,810	1,170	1,660	470	395
19	1,370	856	1,160	900	1,000	1,600	3,980	3,040	1,180	1,410	490	430
20	1,290	862	1,180	900	960	1,900	3,150	2,970	1,090	1,180	526	390
21	1,210	921	1,180	920	940	2,300	2,790	3,060	902	1,020	480	380
22	1,170	1,000	1,160	940	920	2,800	2,650	2,770	824	930	430	385
23	1,130	1,030	940	960	920	4,590	2,490	2,150	794	867	450	400
24	1,120	921	760	1,040	900	5,760	2,350	1,940	800	836	450	430
25	1,100	685	760	1,200	880	7,310	2,240	1,630	1,210	895	425	425
26	963	730	760	1,300	940	10,100	2,120	1,490	1,930	836	425	430
27	838	977	760	1,500	940	11,600	1,900	1,370	4,270	782	460	405
28	804	998	780	1,800	960	9,650	1,860	1,840	6,150	725	410	415
29	921	832	780	1,900	------	8,280	2,200	2,610	14,200	764	395	415
30	956	755	760	1,950	------	7,230	2,600	2,490	15,800	962	415	425
31	1,060	------	760	2,000	------	5,760	------	2,660	------	902	440	------
TOTAL	39,083	27,816	28,368	31,750	36,860	100,680	193,990	87,780	68,564	84,389	18,296	12,795
MEAN	1,261	927	915	1,024	1,316	3,248	6,466	2,832	2,285	2,722	590	427
MAX	2,830	1,100	1,180	2,000	1,950	11,600	20,900	5,620	15,800	12,800	1,020	515
MIN	786	685	690	740	880	960	1,860	1,370	735	725	395	370
CFSM	.59	.44	.43	.48	.62	1.53	3.05	1.34	1.08	1.28	.28	.20
IN.	.69	.49	.50	.56	.65	1.77	3.40	1.54	1.20	1.48	.32	.22

CAL YR 1968 TOTAL 722,483 MEAN 1,974 MAX 20,800 MIN 230 CFSM .93 IN 12.68
WAT YR 1969 TOTAL 730,371 MEAN 2,001 MAX 20,900 MIN 370 CFSM .94 IN 12.82

PEAK DISCHARGE (BASE, 12,500 CFS)

DATE	TIME	G.HT.	DISCHARGE	DATE	TIME	G.HT.	DISCHARGE
4- 7	2400	12.62	21,200	6-29	1900	12.01	18,300

5-3830. La Crosse River near West Salem, Wis.

LOCATION.--Lat 43°54'05", long 91°07'08", in SE 1/4 sec.32, T.17 N., R.6 W., La Crosse County, on left bank 30 ft upstream from old highway bridge, 1.8 miles west of West Salem, 0.1 mile downstream from Gill Coulee, and 0.2 mile upstream from U.S. 16 highway bridge.

DRAINAGE AREA.--398 sq mi.

PERIOD OF RECORD.--December 1913 to current year.

GAGE.--Water-stage recorder. Datum of gage is 668.0 ft above mean sea level, adjustment of 1912. Prior to Oct. 19, 1938, nonrecording gage at site 30 ft downstream at same datum.

AVERAGE DISCHARGE.--55 years (1914-69), 288 cfs (9.83 inches per year).

EXTREMES.--Current year: Maximum discharge, 1,750 cfs June 27 (gage height, 8.84 ft); minimum, 46 cfs Dec. 6 (gage height, 2.79 ft) result of freezeup.
Period of record: Maximum discharge, 8,200 cfs Aug. 6, 1935 (gage height, 12.2 ft), from rating curve extended above 3,000 cfs; minimum, 30 cfs Sept. 5, 1948 (gage height, 0.45 ft).

REMARKS.--Records good except winter periods, which are fair. Occasional fluctuation caused by powerplant upstream.

COOPERATION.--Water-stage recorder inspected by employee of Corps of Engineers.

REVISIONS (WATER YEARS).--WSP 1238: Drainage area. WSP 1508: 1916-30(M), 1932(M), 1933, 1934(M), 1935, 1936-38(M).

Rating table (gage height, in feet, and discharge, in cubic feet per second). (Stage-discharge relation affected by ice Dec. 7-9, Dec. 25 to Feb. 24, Mar. 7-9, 11-13, 15).

3.5	136	6.0	759
4.0	233	8.0	1,420

DISCHARGE IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	282	277	252	220	280	290	361	407	208	608	298	244
2	290	274	279	220	270	292	366	400	226	676	274	386
3	274	272	302	220	260	272	377	402	251	474	292	415
4	272	272	282	220	260	269	705	394	293	383	234	353
5	272	272	238	210	250	275	594	365	289	382	199	334
6	282	272	167	210	240	269	849	356	220	373	290	356
7	270	272	260	200	240	260	1,110	348	204	354	292	350
8	267	274	300	200	230	260	627	349	207	342	293	337
9	304	274	280	200	230	260	592	330	260	343	296	336
10	347	274	197	200	230	269	457	313	288	483	298	336
11	419	274	202	200	220	270	369	306	290	533	299	330
12	427	274	235	200	220	270	368	302	298	293	298	325
13	380	274	290	210	220	270	383	301	296	290	296	321
14	342	274	272	220	220	277	371	266	344	373	206	279
15	324	274	265	230	210	280	374	249	332	670	297	283
16	314	277	206	250	210	277	375	258	309	385	298	283
17	300	274	197	250	210	282	377	217	299	155	210	281
18	280	247	199	250	210	302	360	268	298	246	215	279
19	304	245	204	250	210	325	355	326	294	309	214	232
20	290	282	202	250	220	469	360	333	291	307	215	201
21	284	284	197	250	220	548	359	334	280	304	215	200
22	274	282	231	250	230	564	349	347	208	300	214	200
23	274	280	279	260	240	793	329	313	249	297	213	201
24	267	277	294	270	250	924	306	300	290	295	212	201
25	274	277	290	280	269	887	314	299	361	300	211	202
26	274	247	270	310	290	678	316	293	604	302	210	203
27	274	206	240	350	292	545	316	251	985	299	210	204
28	274	219	150	330	277	495	339	229	1,180	297	210	206
29	282	235	240	320	------	363	389	262	1,310	297	209	210
30	287	245	180	300	------	381	396	245	732	297	207	208
31	282	------	210	290	------	367	------	209	------	301	222	------
TOTAL	9,286	7,980	7,410	7,620	6,708	12,283	13,143	9,572	11,696	11,268	6,767	8,296
MEAN	300	266	239	246	240	396	438	309	390	363	218	277
MAX	427	284	302	350	292	924	1,110	407	1,310	676	298	415
MIN	267	206	150	200	210	260	306	209	204	155	199	200
CFSM	.75	.67	.60	.62	.60	1.00	1.10	.78	.98	.91	.55	.70
IN.	.87	.75	.69	.71	.63	1.15	1.23	.89	1.09	1.05	.63	.78

CAL YR 1968 TOTAL 107,357 MEAN 293 MAX 1,500 MIN 130 CFSM .74 IN 10.03
WAT YR 1969 TOTAL 112,029 MEAN 307 MAX 1,310 MIN 150 CFSM .77 IN 10.47

5-3895. Mississippi River at McGregor, Iowa

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, on right bank in city park at east end of Main Street in McGregor, 2.6 miles upstream from Wisconsin River, 4.3 miles downstream from Yellow River, and at mile 633.4 from Ohio River.

DRAINAGE AREA.--67,500 sq mi, approximately.

PERIOD OF RECORD.--August 1936 to current year.

GAGE.--Water-stage recorder. Datum of gage is 605.30 ft above mean sea level, adjustment of 1912. 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 miles upstream in tailwater of Dam 9, at datum 5.30 ft lower.

AVERAGE DISCHARGE.--33 years, 32,710 cfs (6.58 inches per year, 23,700,000 acre-ft per year).

EXTREMES.--Current year: Maximum daily discharge, 215,000 cfs Apr. 22; maximum gage height, 21.58 ft Apr. 22; minimum daily discharge, 10,800 cfs Aug. 25; minimum gage height, 6.01 ft Sept. 24.
Period of record: Maximum daily discharge, 276,000 cfs Apr. 24, 1965; maximum gage height, 25.38 ft Apr. 24, 1965; minimum daily discharge, 6,200 cfs Dec. 9, 1936; minimum gage height, -0.86 ft Aug. 18, 1936. Maximum stage since at least 1828, that of Apr. 24, 1965.

REMARKS.--Records good except those for winter periods, which are fair. Stage-discharge relation affected by backwater from Wisconsin River and Dam 10. Flow regulated by reservoirs and navigation dams.

COOPERATION.--Gage-height record at Dam 9 collected in cooperation with Corps of Engineers.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	52,600	90,900	32,700	24,000	25,000	27,000	75,000	142,000	51,000	69,600	21,700	24,800
2	52,600	91,300	32,400	24,000	25,000	27,000	75,700	135,000	49,300	71,700	22,600	23,400
3	50,400	90,700	32,000	24,000	25,000	28,000	76,000	128,000	45,200	70,700	24,100	18,000
4	47,000	89,100	32,000	23,000	26,000	28,000	75,900	122,000	39,200	67,400	28,100	17,400
5	43,100	86,000	32,000	22,000	27,000	28,000	76,500	118,000	34,000	63,800	30,500	16,900
6	38,600	82,600	30,000	22,000	27,000	29,000	79,600	116,000	31,100	58,700	28,100	17,600
7	37,000	78,600	25,000	22,000	27,000	30,000	83,800	114,000	33,100	55,100	28,300	17,300
8	36,800	74,800	24,000	22,000	28,000	31,000	87,700	112,000	36,600	50,000	27,600	15,600
9	39,200	70,700	21,000	23,000	28,000	32,000	94,000	110,000	36,200	44,300	27,000	14,000
10	41,400	65,000	18,000	24,000	28,000	32,000	101,000	107,000	34,100	40,300	23,400	13,500
11	39,800	60,000	16,000	24,000	28,000	31,000	106,000	105,000	32,200	40,500	20,500	14,100
12	41,500	53,200	17,000	24,000	28,000	30,000	113,000	102,000	33,100	40,500	21,000	15,600
13	44,800	48,500	22,000	25,000	28,000	29,000	120,000	99,100	35,400	39,600	19,200	15,700
14	48,200	44,800	24,000	24,000	28,000	28,000	132,000	95,800	35,600	38,800	16,800	15,900
15	53,100	43,600	19,000	24,500	29,000	28,000	146,000	91,500	35,700	38,000	14,900	15,300
16	54,400	41,900	18,500	24,500	29,000	28,000	162,000	88,200	34,900	36,500	15,800	14,300
17	56,500	40,700	20,000	25,000	28,500	29,000	176,000	85,600	32,500	34,300	16,600	14,500
18	61,100	40,800	23,000	25,000	28,000	30,000	187,000	82,600	31,000	33,600	17,100	14,800
19	64,400	40,200	26,000	25,000	27,000	31,000	197,000	79,800	29,900	48,000	17,400	15,300
20	64,500	39,000	29,000	25,000	26,000	36,000	205,000	77,300	29,100	49,800	17,500	14,100
21	65,000	37,600	31,000	25,000	26,000	40,000	213,000	74,700	28,600	46,600	16,500	13,400
22	67,700	37,000	32,000	26,000	27,000	42,000	215,000	73,100	28,300	38,700	15,000	13,100
23	67,100	34,400	32,000	25,500	28,000	47,000	212,000	70,900	29,500	36,900	13,200	12,300
24	70,200	32,700	31,000	25,500	28,000	54,000	206,000	68,900	29,100	32,600	11,400	13,700
25	73,700	33,700	30,000	26,000	27,000	61,300	198,000	66,500	28,400	29,000	10,800	15,200
26	77,300	33,200	27,000	26,000	27,000	62,300	189,000	60,900	29,200	30,300	11,500	15,500
27	81,600	33,600	22,000	25,000	27,000	63,200	180,000	59,400	39,300	34,500	12,800	15,100
28	84,700	33,700	24,000	24,000	27,000	67,600	171,000	57,000	46,900	34,900	13,300	15,700
29	86,400	33,500	24,000	23,500	------	68,100	160,000	53,100	53,000	30,400	15,300	15,900
30	88,000	33,100	24,000	23,000	------	71,300	151,000	50,400	61,400	24,200	18,000	16,500
31	89,800	------	25,000	24,000	------	74,800	------	50,500	------	21,300	21,000	------
TOTAL	1,818.5M	1,614.9M	795,600	749,500	762,500	1,243.6M	4,264.2M	2,796.3M	1,092.9M	1,356.6M	597,000	474,500
MEAN	58,660	53,830	25,660	24,180	27,230	40,120	142,100	90,200	36,430	43,760	19,260	15,820
MAX	89,800	91,300	32,700	26,000	29,000	74,800	215,000	142,000	61,400	71,700	30,500	24,800
MIN	36,800	32,700	16,000	22,000	25,000	27,000	75,000	50,400	28,300	21,300	10,800	12,300
CFSM	.87	.80	.38	.36	.40	.59	2.11	1.34	.54	.65	.29	.23
IN.	1.00	.89	.44	.41	.42	.69	2.35	1.54	.60	.75	.33	.26

CAL YR 1968 TOTAL 13,873,300 MEAN 37,910 MAX 96,000 MIN 10,300 CFSM .56 IN 7.64
WTR YR 1969 TOTAL 17,566,100 MEAN 48,130 MAX 215,000 MIN 10,800 CFSM .71 IN 9.68

GPO 873-131-8

5-3901.8 Wisconsin River at Conover, Wis.

LOCATION.--Lat 46°02'52", long 89°15'57", in NE 1/4 sec. 8, T.41 N., R.10 E., Vilas County, on left bank 60 ft upstream from highway bridge on County Trunk K, 0.5 mile downstream from Pioneer Creek, and 0.6 mile southwest of Conover.

DRAINAGE AREA.--176 sq mi.

PERIOD OF RECORD.--October 1966 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,640 ft (from topographic map). Prior to Oct. 19, 1966, nonrecording gage at same site and datum.

EXTREMES.--Current year: Maximum discharge, 411 cfs July 17 (gage height, 4.93 ft); maximum gage height, 5.27 ft Dec. 6 (backwater from ice); minimum discharge, 97 cfs Aug. 28 (gage height, 2.40 ft).
Period of record: Maximum discharge, 520 cfs Apr. 2, 1967; maximum gage height, 5.27 ft Dec. 6, 1968 (backwater from ice); minimum discharge, 97 cfs Aug. 28, 1968 (gage height, 2.40 ft).

REMARKS.--Records good except for winter months, which are fair. Flow regulated by Lac Vieux Desert and Twin Lakes Reservoirs (see p. 140).

Rating table (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Nov. 18 to April 5).

2.4	97	3.8	209
2.8	125	4.4	294
3.2	157	4.9	420

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	150	229	210	240	230	150	130	176	132	163	137	108
2	150	222	210	240	230	150	130	183	135	147	131	105
3	154	214	209	240	220	150	130	179	136	140	125	105
4	158	208	209	240	220	150	140	171	139	135	122	104
5	159	202	210	240	220	150	158	164	150	132	133	105
6	162	200	210	240	220	150	166	179	162	129	137	105
7	166	199	210	230	210	140	178	194	155	125	131	104
8	171	197	230	230	210	140	221	179	143	123	125	106
9	196	194	260	230	210	140	273	170	136	127	121	107
10	225	193	270	230	200	140	363	163	131	144	118	106
11	218	192	270	230	200	140	379	157	137	143	116	106
12	200	190	270	230	200	140	379	153	160	132	114	107
13	185	188	270	230	200	140	368	151	167	126	112	112
14	176	189	270	230	190	140	374	146	162	124	110	112
15	174	192	260	230	190	140	356	142	157	143	109	125
16	172	196	260	230	190	140	326	147	153	358	108	140
17	169	201	260	230	180	130	296	212	151	408	107	141
18	174	206	260	230	180	130	260	205	148	368	104	136
19	177	204	260	230	180	130	227	180	159	265	103	135
20	174	211	260	240	170	130	205	171	153	205	103	136
21	170	224	250	240	170	130	195	164	144	182	102	135
22	170	225	250	250	170	130	192	157	140	168	101	136
23	185	223	250	260	160	130	186	153	142	160	100	159
24	198	225	250	260	160	130	176	149	140	153	99	162
25	201	222	250	260	160	130	168	143	146	156	98	161
26	201	222	250	260	160	130	163	140	177	147	98	166
27	209	213	250	250	160	130	181	136	215	152	99	162
28	240	215	250	240	150	130	208	135	209	157	98	159
29	266	210	240	240	------	130	198	131	190	147	102	157
30	253	210	240	230	------	130	184	130	176	139	104	158
31	237	------	240	230	------	130	------	129	------	138	108	------
TOTAL	5,840	6,216	7,588	7,390	5,340	4,250	6,910	4,989	4,645	5,336	3,475	3,860
MEAN	188	207	245	238	191	137	230	161	155	172	112	129
MAX	266	229	270	260	230	150	379	212	215	408	137	166
MIN	150	188	209	230	150	130	130	129	131	123	98	104
CFSM	1.07	1.18	1.39	1.35	1.08	.78	1.31	.91	.88	.98	.64	.73
IN.	1.23	1.31	1.60	1.56	1.13	.90	1.46	1.05	.98	1.13	.73	.82

CAL YR 1968 TOTAL 61,786 MEAN 169 MAX 344 MIN 103 CFSM .96 IN 13.06
WTR YR 1969 TOTAL 65,839 MEAN 180 MAX 408 MIN 98 CFSM 1.02 IN 13.91

5-3905. Anvil Lake near Eagle River, Wis.

LOCATION.--Lat 45°57'10", long 89°03'11", in sec.13, T.40 N., R.11 E., Vilas County, near the home of Violet Waggoner on north side of lake, 11 miles northeast of Eagle River.

DRAINAGE AREA.--3 sq mi, approximately. Area of Anvil Lake, 380 acres.

PERIOD OF RECORD.--August 1936 to current year (fragmentary).

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 mile south at same datum.

EXTREMES.--Current year: Maximum elevation observed, 4.85 ft June 28, July 19; minimum observed, 4.22 ft Sept. 21, 28.
Period of record: Maximum elevation observed, 7.20 ft May 3, 7, 17, 21, 24, 28, June 20, 24, 1943; minimum observed, 2.10 ft July 31, 1964.

REMARKS.--Add 90 ft to obtain elevation above datum assumed for this lake by Wisconsin Department of Natural Resources. Lake has no surface outlet. Lake was ice covered about Nov. 17 to Apr. 21.

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1												
2											4.82	
3												
4												
5										4.79		
6									4.75			4.39
7		4.26										
8												
9											4.83	
10						4.52						
11												
12		4.26	4.33							4.77		4.32
13								4.80	4.79			
14		4.24										
15										4.71		4.32
16											4.60	
17									4.71			
18	4.36				4.57						4.61	
19										4.85		
20												
21				4.55				4.81				4.22
22									4.73			
23	4.32										4.55	
24												
25												
26										4.81		
27												
28	4.34								4.85			4.22
29					------							
30					------			4.73			4.46	
31		------			------		------		------			------

5-3910. Wisconsin River at Rainbow Lake, near Lake Tomahawk, Wis.

LOCATION.--Lat 45°49'58", long 89°32'51", in S 1/2 SW 1/4 sec.30, T.39 N., R.8 E., Oneida County, on right bank 400 ft upstream from Gilmore Creek, 0.3 mile downstream from Rainbow Lake, and 2.5 miles northeast of Lake Tomahawk. Records include flow of Gilmore Creek.

DRAINAGE AREA.--750 sq mi, approximately, includes that of Gilmore Creek.

PERIOD OF RECORD.--July 1936 to current year. Prior to October 1955, published as "at Rainbow Reservoir, near Lake Tomahawk."

GAGE.--Water-stage recorder. Datum of gage is 1,570.05 ft above mean sea level (Public Service Commission of Wisconsin bench mark).

AVERAGE DISCHARGE.--33 years, 697 cfs.

EXTREMES.--Current year: Maximum discharge, 1,900 cfs June 27 (gage height, 4.93 ft); minimum daily, 161 cfs Apr. 16, 17, 1969.
Period of record: Maximum discharge, 3,570 cfs Sept. 5, 1941 (gage height, 7.59 ft); minimum, 17 cfs Oct. 10-12, 1940; minimum daily, 35 cfs Apr. 6, 1955.

REMARKS.--Records good. Flow regulated by Rainbow Lake and 12 smaller reservoirs above station (see p. 140).

REVISIONS (WATER YEARS).--WSP 895: 1937 (M), WSP 1508: 1944.

Rating table (gage height, in feet, and discharge, in cubic feet per second).

.7	155	2.6	710
1.0	212	3.2	965
1.5	340	3.9	1,300
2.0	490	4.7	1,745

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	715	833	878	1,060	1,080	1,080	673	539	625	856	763	792
2	671	747	880	1,050	1,080	1,050	614	456	569	403	797	778
3	600	714	887	1,030	1,080	1,040	601	353	552	499	849	757
4	572	804	892	1,030	1,070	1,020	525	347	617	691	810	759
5	622	875	931	1,030	1,080	1,020	483	365	616	737	800	759
6	653	875	963	1,030	1,130	1,040	409	378	677	738	806	765
7	624	872	962	1,050	1,120	1,030	366	397	654	661	822	760
8	622	871	965	1,090	1,120	994	267	434	727	690	811	744
9	762	868	971	1,090	1,120	981	208	554	796	719	804	708
10	896	865	986	1,140	1,120	986	212	554	670	717	823	619
11	939	862	994	1,170	1,130	974	214	552	694	715	798	595
12	1,170	810	996	1,170	1,170	939	216	589	933	741	841	583
13	1,260	760	1,000	1,170	1,190	930	221	617	1,020	798	814	569
14	1,030	769	1,010	1,160	1,230	912	191	632	907	819	814	545
15	880	866	1,010	1,150	1,220	891	164	691	782	841	804	502
16	762	915	1,010	1,150	1,210	873	161	727	774	1,400	797	405
17	870	921	1,000	1,150	1,210	888	161	1,010	763	961	793	346
18	1,130	902	997	1,150	1,200	925	208	970	783	778	784	506
19	1,020	852	993	1,150	1,190	955	277	725	906	900	798	622
20	878	832	996	1,150	1,170	960	308	1,100	854	1,160	805	623
21	772	881	997	1,140	1,190	954	280	1,310	808	1,060	798	598
22	664	906	999	1,110	1,230	964	258	1,190	745	862	790	593
23	630	906	1,050	1,070	1,220	825	309	1,060	670	805	783	456
24	681	903	1,150	1,080	1,210	649	384	837	642	740	775	439
25	744	842	1,150	1,080	1,200	529	406	796	688	685	763	603
26	767	805	1,140	1,070	1,190	731	363	802	871	741	745	674
27	726	804	1,130	1,080	1,150	819	245	775	1,630	683	737	637
28	614	797	1,130	1,070	1,100	823	183	747	1,710	625	779	653
29	645	842	1,130	1,080	------	870	248	570	1,580	651	796	630
30	803	882	1,100	1,080	------	832	436	471	1,500	750	804	581
31	878	------	1,070	1,090	------	777	------	568	------	796	803	------
TOTAL	24,600	25,381	31,367	34,120	32,410	28,261	9,591	21,116	25,763	24,222	24,806	18,601
MEAN	794	846	1,012	1,101	1,158	912	320	681	859	781	800	620
MAX	1,260	921	1,150	1,170	1,230	1,080	673	1,310	1,710	1,400	904	792
MIN	572	714	878	1,030	1,070	529	161	347	552	403	737	346

CAL YR 1968 TOTAL 292,601 MEAN 799 MAX 2,290 MIN 187
WTR YR 1969 TOTAL 300,238 MEAN 823 MAX 1,710 MIN 161

5-3930. Tomahawk River at Bradley, Wis.

LOCATION.--Lat 45°32'21", long 89°44'47", in NW 1/4 NW 1/4 sec.9, T.35 N., R.6 E., Lincoln County, at dam at outlet of Lake Nokomis, 0.5 mile northeast of Bradley, 4.0 miles upstream from Jersey powerplant, and 4.7 miles upstream from mouth.

DRAINAGE AREA.--545 sq mi.

PERIOD OF RECORD.--January 1930 to current year. Prior to October 1951, published as "at Tomahawk".

GAGE.--Nonrecording gage and concrete dam, supplemented by frequent readings of tainter-gage openings. Datum of gage is 1,448.24 ft above mean sea level. Prior to October 1951, powerplant records at site 4.0 miles downstream.

AVERAGE DISCHARGE.--39 years, 532 cfs.

EXTREMES.--Current year: Maximum discharge, 1,300 cfs June 27-29; minimum, 39 cfs Apr. 5.
Period of record: Maximum discharge, 2,690 cfs Oct. 2, 1959; no flow at times in 1931, 1934, 1940, 1957.

REMARKS.--Records good except those below 250 cfs, which are poor. Flow completely regulated by four reservoirs operated by Wisconsin Valley Improvement Company (see p. 140).

COOPERATION.--Record of lake elevations and gate openings furnished by Wisconsin Valley Improvement Company.

REVISIONS (WATER YEARS).--WSP 875: 1932, 1935, 1938. WSP 1278: 1952.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	615	708	931	821	960	937	445	187	300	607	734	877
2	708	708	885	819	957	927	440	212	372	398	733	873
3	801	707	857	845	956	917	431	158	414	465	781	866
4	776	707	857	864	949	889	284	125	415	562	809	861
5	790	678	885	863	1,000	869	102	126	432	531	807	854
6	753	660	930	892	1,040	886	40	236	443	515	807	850
7	673	721	948	909	997	889	41	248	443	544	806	845
8	601	755	944	908	967	882	42	271	443	591	804	839
9	634	786	943	907	962	873	45	304	443	609	772	797
10	711	803	943	906	957	845	47	304	471	609	764	757
11	696	801	882	904	953	824	49	303	459	608	792	745
12	672	800	787	900	950	818	50	303	353	607	872	742
13	718	798	799	1,040	945	815	52	303	342	653	869	750
14	743	828	826	1,170	940	813	53	303	325	666	882	754
15	744	906	825	1,160	936	810	55	339	246	749	889	713
16	825	942	853	1,160	934	808	57	412	341	745	885	569
17	872	910	899	1,010	931	836	59	518	479	482	869	681
18	841	922	870	1,080	926	869	60	399	542	439	859	708
19	824	936	802	1,080	924	891	61	267	529	440	870	706
20	824	934	818	1,070	918	834	62	334	574	513	861	695
21	677	888	889	1,030	912	862	63	395	606	555	851	692
22	750	770	914	1,010	912	842	63	328	572	555	873	687
23	884	717	840	1,000	910	537	63	269	412	555	892	622
24	883	749	809	1,000	903	399	63	227	327	555	899	631
25	827	815	677	999	900	397	64	216	374	598	896	640
26	790	842	704	998	896	394	64	325	674	695	891	639
27	783	841	768	1,030	890	450	64	390	1,140	654	877	637
28	614	840	817	902	923	479	65	390	1,300	609	873	633
29	511	899	819	795	------	468	65	335	1,220	659	849	630
30	512	932	821	851	------	458	116	301	749	717	877	629
31	635	------	822	931	------	451	------	300	------	734	882	------
TOTAL	22,687	24,303	26,364	29,854	26,348	23,019	3,165	9,128	15,740	18,219	26,115	21,922
MEAN	732	810	850	963	941	743	106	294	525	588	842	731
MAX	884	942	948	1,170	1,040	937	445	518	1,300	749	892	877
MIN	511	660	677	795	890	394	40	125	246	398	733	569

CAL YR 1968 TOTAL 241,682 MEAN 660 MAX 2,490 MIN 17
WAT YR 1969 TOTAL 246,864 MEAN 676 MAX 1,300 MIN 40

5-3935. Spirit River at Spirit Falls, Wis.

LOCATION.--Lat 45°26'58", long 89°58'47", in NW 1/4 sec.10, T.34 N., R.4 E., Lincoln County, near center of span on downstream side of bridge 0.2 mile south of Spirit Falls, 0.6 mile upstream from Squaw Creek, and 2.0 miles downstream from Richie Creek.

DRAINAGE AREA.--82 sq mi, approximately.

PERIOD OF RECORD.--April 1942 to current year.

GAGE.--Nonrecording gage and crest-stage gage. Altitude of gage is 1,450 ft (from dam and reservoir data).

AVERAGE DISCHARGE.--27 years, 82.4 cfs (13.65 inches per year).

EXTREMES.--Current year: Maximum discharge, 1,770 cfs Apr. 10 (gage height, 6.54 ft); maximum gage height 8.95 ft Apr. 7 (backwater from ice); minimum discharge observed, 3.4 cfs Sept. 14.
Period of record: Maximum discharge, 4,180 cfs Sept. 18, 1942 (gage height, 10.00 ft), from rating curve extended above 2,500 cfs; minimum observed, 1.0 cfs Aug. 11, 1964 (gage height, 0.85 ft).

REMARKS.--Records good except those for winter months, which are fair.

REVISIONS (WATER YEARS).--WSP 1208: Drainage area. WSP 1308: 1943 (M), 1948-50 (M).

Rating table (gage height, in feet, and discharge, in cubic feet per second).
(Shifting-control method used Aug. 13 to Sept. 30; stage-discharge relation affected by ice Nov. 15, 20, Nov. 24 to Apr. 9).

1.0	2	2.0	52	4.0	455
1.2	6	2.5	114	5.0	828
1.4	12	3.0	202	6.0	1,370
1.6	21	3.5	321	7.0	2,140

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	36	48	35	34	60	36	100	94	37	118	20	4.0
2	34	48	34	33	60	36	96	131	36	90	16	3.8
3	28	47	34	33	60	36	110	147	28	100	14	3.7
4	30	42	34	33	59	36	170	117	30	74	11	3.8
5	26	40	34	33	58	36	270	100	43	62	14	3.3
6	32	39	34	32	56	36	450	173	69	50	16	3.8
7	48	37	34	32	54	35	800	292	75	43	16	3.8
8	42	35	34	32	53	35	1,500	177	44	34	14	3.8
9	59	34	34	32	52	35	1,330	134	40	68	11	3.8
10	259	33	34	32	51	35	1,530	117	26	51	9.6	3.7
11	213	31	35	31	50	35	990	99	23	37	9.0	3.7
12	135	26	37	31	48	35	731	88	36	28	9.0	3.6
13	120	25	60	31	47	35	597	75	135	24	8.1	3.6
14	99	22	150	31	45	35	552	67	86	20	7.5	3.4
15	90	22	110	32	44	35	431	55	55	27	7.2	4.0
16	79	23	74	32	43	37	403	77	50	24	6.6	4.6
17	70	30	60	34	42	38	350	458	31	22	5.4	4.4
18	62	33	52	39	41	45	261	434	28	18	5.2	4.0
19	56	33	46	45	40	80	196	249	30	16	4.2	3.8
20	53	35	43	47	40	78	154	162	23	15	4.0	3.8
21	47	28	41	47	39	150	134	131	26	13	3.8	3.8
22	38	39	40	45	38	180	118	106	24	12	4.0	3.7
23	41	40	39	80	38	190	103	88	37	9.6	4.0	4.4
24	36	46	38	74	37	200	91	76	50	9.9	4.0	6.0
25	34	43	38	70	36	200	82	65	73	14	4.0	6.0
26	33	50	37	68	36	200	79	55	287	11	4.0	6.6
27	34	43	37	66	36	190	81	54	705	16	3.8	6.6
28	73	39	36	64	36	180	148	67	649	24	3.8	5.8
29	80	36	36	63	------	160	139	54	304	19	3.8	5.6
30	65	35	35	62	------	140	111	44	164	14	3.8	5.6
31	54	------	35	62	------	120	------	41	------	14	3.8	------
TOTAL	2,106	1,082	1,420	1,390	1,299	2,720	12,107	4,027	3,244	1,076.5	259.6	131.0
MEAN	67.9	36.1	45.8	44.5	46.4	87.7	404	130	108	34.7	8.08	4.37
MAX	259	50	150	80	60	200	1,530	458	705	118	20	6.6
MIN	26	22	34	31	36	35	79	41	23	9.6	3.8	3.4
CFSM	.83	.44	.56	.54	.57	1.07	4.92	1.58	1.32	.42	.10	.05
IN.	.96	.49	.64	.63	.59	1.23	5.49	1.83	1.47	.49	.11	.06

CAL YR 1968 TOTAL 46,990.0 MEAN 128 MAX 1,520 MIN 5.4 CFSM 1.57 IN 21.31
WTR YR 1969 TOTAL 30,843.1 MEAN 84.5 MAX 1,530 MIN 3.4 CFSM 1.03 IN 13.99

5-3945. Prairie River near Merrill, Wis.

LOCATION.--Lat 45°14'09", long 89°38'59", on line between secs.20 and 29, T.32 N., R.7 E., Lincoln County, on left bank 40 ft upstream from County Highway C bridge, 1.5 miles upstream from Meadow Creek, 4.5 miles northeast of Merrill, and 8.0 miles upstream from mouth.

DRAINAGE AREA.--181 sq mi.

PERIOD OF RECORD.--January 1914 to September 1931, August 1939 to current year. Monthly discharge only for some periods, published in WSP 1308.

GAGE.--Water-stage recorder. Altitude of gage is 1,300 ft (from topographic map). Prior to Oct. 9, 1968, nonrecording gage 40 ft downstream at same datum.

AVERAGE DISCHARGE.--47 years (1914-31, 1939-69), 181 cfs (13.58 inches per year).

EXTREMES.--Current year: Maximum discharge, 1,620 cfs Apr. 10 (gage height, 5.76 ft); minimum 49 cfs July 21 (gage height, 1.90 ft).
Period of record: Maximum discharge, 5,800 cfs Aug. 31, 1941 (gage height, 9.45 ft, from floodmarks), from rating curve extended above 2,200 cfs; minimum observed 34 cfs Oct. 26, 1947 (gage height, 1.39 ft).

REMARKS.--Records good except those for winter months, which are fair.

REVISIONS (WATER YEARS).--WSP 1308: 1915-17 (M), 1919-21 (M), 1923-31 (M), 1942-43 (M), 1945 (M), 1948-50 (M). WSP 1558: Drainage area.

Rating table (gage height, in feet, and discharge, in cubic feet per second). (Shifting-control method used May 21 to Sept. 30, stage-discharge relation affected by ice Dec. 6-9, Dec. 12 to Mar. 21).

1.9	49	3.5	470
2.2	100	4.0	660
2.5	162	5.0	1,140
3.0	302	6.0	1,810

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	160	187	129	120	160	119	177	280	144	351	115	86
2	160	176	127	120	158	117	165	310	136	262	110	83
3	160	166	128	120	155	115	176	350	136	230	104	81
4	148	160	131	120	152	112	235	370	137	205	99	83
5	140	155	126	120	150	110	381	300	141	188	105	85
6	148	153	125	120	148	110	617	335	171	170	109	85
7	158	151	122	120	142	107	848	413	182	160	131	84
8	164	147	120	120	140	105	1,130	367	164	155	113	86
9	182	143	120	120	138	104	1,320	301	145	145	102	87
10	262	142	118	120	135	103	1,580	259	132	142	100	86
11	265	137	117	120	132	102	1,410	232	132	136	100	83
12	230	133	120	120	130	101	1,100	209	175	132	101	82
13	200	132	130	120	128	100	939	193	294	128	96	82
14	181	128	150	120	128	100	839	181	264	128	93	88
15	170	128	160	120	127	100	766	171	206	124	90	93
16	162	129	140	120	126	100	695	171	173	122	89	102
17	173	130	130	120	125	101	611	340	156	119	88	93
18	233	132	120	120	124	104	521	427	146	92	88	88
19	216	131	120	120	123	107	431	347	141	76	87	86
20	195	126	120	120	122	118	348	294	138	68	85	84
21	176	127	118	120	121	139	327	251	128	50	83	84
22	164	128	117	130	121	175	318	216	139	89	84	84
23	159	132	116	140	120	199	294	195	193	99	84	93
24	152	139	116	150	120	238	278	179	261	104	82	91
25	146	140	117	160	120	235	270	163	274	105	82	92
26	141	139	117	170	120	221	260	151	482	102	84	97
27	160	135	119	170	120	251	250	203	881	196	82	97
28	251	140	120	170	120	242	350	261	865	186	82	95
29	276	127	120	170	------	220	300	223	698	155	83	94
30	237	133	120	160	------	209	260	182	510	129	81	96
31	204	------	120	160	------	194	------	155	------	119	85	------
TOTAL	5,773	4,226	3,853	4,100	3,705	4,458	17,196	8,029	7,744	4,467	2,917	2,650
MEAN	186	141	124	132	132	144	573	259	258	144	94.1	88.3
MAX	276	187	160	170	160	251	1,580	427	881	351	131	102
MIN	140	126	116	120	120	100	165	151	128	50	81	81
CFSM	1.03	.78	.69	.73	.73	.79	3.17	1.43	1.43	.80	.52	.49
IN.	1.19	.87	.79	.84	.76	.92	3.53	1.65	1.59	.92	.60	.54

CAL YR 1968 TOTAL 82,851 MEAN 226 MAX 1,050 MIN 68 CFSM 1.25 IN 17.02
WTR YR 1969 TOTAL 69,118 MEAN 189 MAX 1,580 MIN 50 CFSM 1.05 IN 14.20

-5-3950. Wisconsin River at Merrill, Wis.

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

DRAINAGE AREA.--2,780 sq mi, approximately.

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

GAGE.--Water-stage recorder. Datum of gage is 1,228.85 ft above mean sea level. Prior to Sept. 11, 1914, non-recording gage at same site and datum.

AVERAGE DISCHARGE.--66 years (1903-68), 2,686 cfs.

EXTREMES.--Current year: Maximum discharge, 15,000 cfs Apr. 10 (gage height, 10.62 ft); minimum, 1,190 cfs July 26, Aug. 8 (gage height, 4.21 ft).
Period of record: Maximum discharge, 49,400 cfs Aug. 31, 1941 (gage height, 18.26 ft) from rating curve extended above 20,000 cfs; minimum, about 90 cfs Sept. 26, 1908 (gage height, 2.45 ft).

REMARKS.--Records excellent except those for winter months, which are fair. Flow regulated by 20 reservoirs (see p. 140) and 9 powerplants above station.

REVISIONS (WATER YEARS).--WSP 805: Drainage area. WSP 1308: 1904-7, 1909-11, 1913. WSP 1508: 1908, 1915-16 (M), 1917, 1920-21 (M), 1925 (M), 1930, 1935-36.

Rating table (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Dec. 7 - Apr. 1).

4.5	1,510	8.0	7,630
5.0	2,130	9.0	9,900
6.0	3,690	10.0	12,900
7.0	5,630	11.0	16,200

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2,420	2,510	2,760	3,000	3,300	3,000	2,700	2,370	2,180	5,200	2,240	1,930
2	2,730	2,780	2,740	3,000	3,300	2,900	2,880	3,580	2,190	4,050	2,320	1,980
3	2,690	2,540	2,660	3,000	3,200	2,800	2,650	4,180	2,110	3,070	2,280	2,070
4	2,780	2,450	2,510	3,000	3,200	2,700	3,390	3,360	2,050	2,560	2,050	2,050
5	2,390	2,870	2,700	3,000	3,100	2,600	4,710	2,860	2,190	2,510	2,370	1,880
6	2,570	2,620	2,700	3,000	3,100	2,600	5,720	2,970	2,470	2,310	2,160	2,050
7	2,280	2,610	2,700	3,000	3,000	2,500	7,420	3,990	2,100	2,380	2,200	2,030
8	2,800	2,760	2,700	3,000	3,000	2,500	9,150	4,110	2,100	2,460	2,410	2,090
9	2,320	2,440	2,700	3,000	3,000	2,500	11,800	3,060	2,000	2,540	2,320	1,870
10	3,600	2,680	2,800	3,000	2,900	2,400	14,100	2,760	2,010	2,560	2,180	1,810
11	3,720	3,000	2,700	3,000	2,900	2,400	11,100	2,940	2,260	2,190	2,260	1,690
12	3,750	2,970	2,900	3,000	2,900	2,400	8,840	2,460	2,880	2,260	2,150	1,590
13	3,640	2,530	2,900	3,000	2,800	2,400	7,480	2,220	3,490	2,220	2,110	1,700
14	3,330	2,540	2,900	3,000	2,800	2,500	6,630	2,380	3,450	2,180	2,060	1,730
15	3,720	2,720	2,800	3,000	2,800	2,400	6,250	2,530	3,080	2,340	2,230	1,900
16	3,640	2,910	2,800	3,000	2,800	2,400	6,130	2,320	2,410	2,500	2,160	1,630
17	3,270	2,880	2,700	3,000	2,800	2,500	5,040	3,840	2,310	2,530	2,190	1,500
18	3,410	2,570	2,700	3,100	2,800	2,500	4,780	5,250	2,520	2,070	2,020	1,730
19	3,200	2,850	2,600	3,100	2,900	2,500	3,290	4,190	2,340	1,960	2,020	1,710
20	3,590	2,940	2,600	3,100	2,900	2,700	3,310	3,500	2,310	2,010	2,030	1,510
21	3,110	2,620	2,700	3,200	2,900	2,700	3,190	3,840	2,250	2,000	2,060	1,600
22	2,720	2,640	2,700	3,200	3,000	2,800	3,260	3,450	2,340	1,920	2,050	1,610
23	2,380	2,910	2,800	3,200	3,000	2,800	2,660	3,100	3,510	2,280	2,050	1,900
24	2,730	2,700	2,800	3,300	3,000	2,800	2,460	3,030	2,720	2,130	1,970	1,530
25	2,860	2,580	2,800	3,300	3,000	2,700	1,980	2,640	2,930	2,300	2,050	1,580
26	2,540	2,960	2,800	3,400	3,000	2,700	2,110	2,020	5,330	1,700	2,050	1,590
27	2,670	2,830	2,800	3,400	3,000	2,700	2,630	4,320	9,320	2,740	2,040	1,650
28	3,350	2,690	2,900	3,400	3,000	2,700	2,890	4,010	10,500	2,190	2,060	1,520
29	3,110	2,690	2,900	3,400	------	2,800	2,880	3,400	7,930	2,110	1,800	1,580
30	2,410	2,650	2,900	3,400	------	2,700	2,650	2,250	6,690	2,350	2,080	1,660
31	2,770	------	3,000	3,400	------	2,600	------	2,280	------	2,340	2,050	------
TOTAL	92,500	81,440	85,670	96,900	83,400	81,200	154,080	99,210	101,970	75,960	66,020	52,670
MEAN	2,984	2,715	2,764	3,126	2,979	2,619	5,136	3,200	3,399	2,450	2,130	1,756
MAX	3,750	3,000	3,000	3,400	3,300	3,000	14,100	5,250	10,500	5,200	2,410	2,090
MIN	2,280	2,440	2,510	3,000	2,800	2,400	1,980	2,020	2,000	1,700	1,800	1,500

CAL YR 1968 TOTAL 1,236,190 MEAN 3,378 MAX 15,100 MIN 1,460
WTR YR 1969 TOTAL 1,071,020 MEAN 2,934 MAX 14,100 MIN 1,500

5-3975. Eau Claire River at Kelly, Wis.

LOCATION.--Lat 44°55'06", long 89°33'00", on line between secs. 9 and 10, T. 28 N., R. 8 E., Marathon County, on line between secs.9 and 10, T.28 N., R.8 E., Marathon County, on right bank 50 ft downstream from County Highway SS bridge, 0.7 mile northeast of Kelly, 1.3 miles upstream from Big Sandy Creek, 4.5 miles upstream from mouth, and 5 miles southeast of Wausau.

DRAINAGE AREA.--326 sq mi.

PERIOD OF RECORD.--January 1914 to November 1926, August 1939 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,177.88 ft above mean sea level. Prior to Sept. 17, 1953, non-recording gage at same site at datum 1.00 ft higher.

AVERAGE DISCHARGE.--42 years, 247 cfs (10.29 inches per year).

EXTREMES.--Current year: Maximum discharge, 3,610 cfs June 27 (gage height, 7.17 ft); minimum, 70 cfs Aug. 30, Sept. 13 (gage height, 1.12 ft).
Period of record: Maximum discharge, 8,300 cfs Aug. 21, 1926 (gage height, 8.4 ft from graph based on gage readings), from rating curve extended above 6,000 cfs; minimum observed, 8 cfs July 17, 1944 (gage height, 0.17 ft), probably result of temporary regulation.

REMARKS.--Records good except those for winter months, which are fair.

REVISIONS (WATER YEARS).--WSP 1508: 1915, 1916-17 (M), 1919-26 (M), 1940 (M), 1945 (M), 1950 (M).

Rating tables (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Nov. 22 to Mar. 31).

Oct. 1 to Mar. 31		Apr. 1 to Sept. 30			
1.3	101	1.1	67	3.0	800
1.6	174	1.3	101	4.0	1,320
2.0	325	1.6	174	5.0	2,040
2.5	560	2.0	325	6.0	2,900
3.0	800	2.5	560	7.0	3,840

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	166	224	128	120	290	132	389	300	147	600	135	84
2	157	206	130	120	280	130	340	536	142	426	130	82
3	152	190	130	120	270	130	430	750	140	405	119	79
4	146	177	134	118	250	130	755	638	140	338	111	76
5	141	166	140	117	240	128	1,220	484	142	311	109	80
6	144	160	143	115	240	125	2,030	798	200	247	113	80
7	149	160	150	114	230	123	2,300	1,050	182	206	179	80
8	149	157	147	112	220	123	2,620	669	165	182	208	79
9	157	157	147	110	210	123	2,710	484	140	173	157	79
10	206	146	147	110	200	120	2,260	389	128	166	131	80
11	235	141	145	110	200	120	1,980	326	124	154	117	79
12	224	136	143	110	190	120	1,420	284	161	143	108	77
13	200	132	150	110	190	120	975	252	261	131	101	76
14	184	132	350	110	180	120	766	227	249	125	97	76
15	174	129	300	110	175	130	658	206	198	124	95	86
16	168	129	240	110	170	140	601	194	168	120	91	120
17	168	146	210	130	165	150	566	407	155	115	87	107
18	166	163	180	140	160	190	508	617	147	109	87	95
19	177	154	160	160	155	290	434	480	136	104	86	87
20	166	120	150	180	150	430	371	452	126	100	84	82
21	157	124	145	190	150	600	358	389	119	97	83	81
22	152	130	140	190	145	720	353	304	130	95	82	81
23	146	140	135	260	144	760	326	256	883	148	80	82
24	141	140	130	340	140	760	288	227	689	153	78	80
25	136	140	130	350	140	760	252	206	569	119	78	84
26	134	138	130	340	140	740	230	185	1,350	111	77	87
27	152	120	130	340	138	700	300	330	2,960	244	76	89
28	224	105	130	330	135	660	420	438	2,180	323	76	85
29	299	120	125	320	------	580	416	279	1,790	233	75	85
30	278	122	124	310	------	500	348	200	1,160	175	74	84
31	250	------	124	300	------	440	------	165	------	147	80	------
TOTAL	5,498	4,404	4,867	5,696	5,297	10,294	26,624	12,522	15,081	6,124	3,204	2,522
MEAN	177	147	157	184	189	332	887	404	503	198	103	84.1
MAX	299	224	350	350	290	760	2,710	1,050	2,960	600	208	120
MIN	134	105	124	110	135	120	230	165	119	95	74	76
CFSM	.54	.45	.48	.56	.58	1.02	2.72	1.24	1.54	.61	.32	.26
IN.	.63	.50	.56	.65	.60	1.17	3.04	1.43	1.72	.70	.37	.29

CAL YR 1968 TOTAL 100,165 MEAN 274 MAX 1,630 MIN 45 CFSM .84 IN 11.43
WTR YR 1969 TOTAL 102,133 MEAN 280 MAX 2,960 MIN 74 CFSM .86 IN 11.65

PEAK DISCHARGE (BASE, 1,500 CFS)

DATE	TIME	G.HT.	DISCHARGE	DATE	TIME	G.HT.	DISCHARGE
4-8	2200	6.24	2,830	6-27	1000	7.17	3,610
5-6	2300	4.24	1,520				

5-3980. Wisconsin River at Rothschild, Wis.

LOCATION.--Lat 44°53'09", long 89°38'05", in sec.26, T.28 N., R.7 E., Marathon County, on left bank at Rothschild, 0.5 mile downstream from Rothschild Dam, 2 miles downstream from Eau Claire River, 5 miles upstream from Black Creek, and 1.7 miles north of bridge on U.S. Highway 51 in Wausau.

DRAINAGE AREA.--4,000 sq mi, approximately.

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

GAGE.--Water-stage recorder. Datum of gage is 1,135.86 ft above mean sea level. Auxiliary water-stage recorder in Mosinee pond 8 miles downstream. Prior to July 23, 1964, nonrecording auxiliary gage at same site and datum, read hourly.

AVERAGE DISCHARGE.--25 years, 3,330 cfs.

EXTREMES.--Current year: Maximum discharge, 29,600 cfs June 27 (gage height, 14.16 ft); minimum daily, 1,470 cfs Sept. 21.
Period of record: Maximum discharge, 49,200 cfs Apr. 12, 1965, Mar. 31, 1967 (gage height, 18.46 ft); minimum daily, 680 cfs Oct. 17, 1948.
Flood of Sept. 1, 1941, reached a stage of 22.3 ft from tailwater data at Rothschild Dam (discharge 75,000 cfs from rating curve extended above 45,000 cfs by logarithmic plotting).

REMARKS.--Records good except those for winter months, or discharge below 1,500 cfs, which are fair. Flow regulated by 20 reservoirs (see p. 140) and 12 powerplants above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3,440	3,510	2,860	3,100	3,600	3,200	4,000	3,740	2,830	7,960	2,940	1,910
2	3,270	3,410	3,350	3,400	3,500	3,100	4,200	5,970	3,170	6,420	2,760	1,970
3	3,410	3,430	3,680	3,300	3,400	3,100	4,600	8,930	2,800	5,440	2,120	2,350
4	3,340	3,240	3,340	3,400	3,400	3,000	7,620	6,420	2,600	3,870	2,810	2,390
5	3,100	3,310	2,700	3,400	3,300	2,900	11,500	5,140	2,710	4,300	2,700	2,460
6	2,620	3,370	3,000	3,300	3,200	2,800	18,200	5,770	3,140	3,200	2,630	1,960
7	3,120	3,260	2,800	3,300	3,100	3,000	21,200	8,810	3,240	3,280	3,170	1,760
8	3,220	3,410	2,600	3,300	3,100	2,700	23,900	7,080	2,470	3,270	3,330	2,440
9	3,390	3,180	2,900	3,300	3,100	2,800	24,900	5,360	2,870	3,390	3,290	2,360
10	4,670	2,970	3,240	3,300	3,100	3,000	26,800	4,820	2,610	3,410	2,310	2,010
11	5,040	3,310	3,590	3,200	3,100	2,900	21,900	4,230	2,730	3,410	2,850	1,920
12	4,630	3,530	3,570	3,100	3,100	2,800	14,900	3,920	3,210	2,600	2,800	1,810
13	4,460	3,530	3,400	3,200	3,100	2,900	11,500	3,570	5,500	2,400	2,530	1,690
14	4,120	3,500	3,500	3,300	2,800	3,000	10,100	3,080	4,750	2,500	2,460	1,630
15	4,200	3,300	3,500	3,300	3,000	2,600	8,650	3,200	4,070	2,850	2,640	2,350
16	4,550	3,190	3,400	3,400	3,200	2,600	8,120	3,330	3,580	3,190	2,090	2,520
17	4,150	3,460	3,400	3,300	3,200	2,700	7,770	5,270	3,020	2,860	2,050	1,960
18	4,900	3,210	3,400	3,300	3,200	2,900	5,940	7,940	3,170	2,900	2,510	1,850
19	4,010	3,290	3,500	3,300	3,200	3,200	4,970	6,390	3,150	2,170	2,200	2,020
20	4,200	3,520	3,500	3,300	3,300	3,600	4,910	5,190	2,990	1,850	2,260	1,590
21	3,720	3,540	3,500	3,300	3,200	4,000	4,630	5,300	2,540	2,550	2,240	1,470
22	3,490	3,510	3,400	3,300	3,200	4,700	4,870	4,680	2,820	2,260	2,300	1,960
23	3,310	3,500	3,300	3,300	3,200	5,400	4,030	4,280	7,650	2,800	1,800	2,260
24	2,910	3,480	3,100	3,300	3,300	6,900	3,410	4,010	7,260	2,740	1,890	1,940
25	3,000	3,270	3,000	3,400	3,300	6,200	3,380	3,560	6,170	2,890	2,340	2,000
26	3,340	3,420	3,300	3,500	3,300	5,400	2,830	2,910	12,400	2,120	2,200	2,030
27	3,110	3,570	3,400	3,600	3,200	5,900	3,800	7,250	24,400	3,390	2,230	1,690
28	4,670	3,530	3,300	3,600	3,200	5,200	5,270	11,600	23,700	3,580	2,270	1,530
29	4,460	3,510	3,100	3,600	------	4,800	5,160	6,060	15,400	3,030	2,270	1,980
30	3,700	3,320	3,500	3,500	------	5,000	4,390	3,630	10,700	2,940	2,180	2,000
31	3,510	------	3,300	3,500	------	4,100	------	3,220	------	2,950	1,970	------
TOTAL	117,060	101,580	101,430	103,700	89,900	116,400	287,450	164,660	177,650	102,520	76,140	59,810
MEAN	3,776	3,386	3,272	3,345	3,211	3,755	9,582	5,312	5,922	3,307	2,456	1,994
MAX	5,040	3,570	3,680	3,600	3,600	6,900	26,800	11,600	24,400	7,960	3,330	2,520
MIN	2,620	2,970	2,600	3,100	2,800	2,600	2,830	2,910	2,470	1,850	1,800	1,470

CAL YR 1968 TOTAL 1,672,120 MEAN 4,569 MAX 24,500 MIN 1,320
WTR YR 1969 TOTAL 1,498,300 MEAN 4,105 MAX 26,800 MIN 1,470

5-3995. Big Eau Pleine River near Stratford, Wis.

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, on left bank 15 ft upstream from bridge on State Highway 97, 1 mile north of Stratford, and 1.4 miles downstream from small tributary.

DRAINAGE AREA.--224 sq mi.

PERIOD OF RECORD.--July 1914 to December 1925, April 1937 to current year. Monthly discharge only for some periods, published in WSP 1308.

GAGE.--Water-stage recorder. Datum of gage is 1,154.24 ft above mean sea level. July 24, 1914, to Dec. 31, 1925, nonrecording gage at site 0.5 mile upstream at different datum. Apr. 30, 1937, to Sept. 15, 1938, nonrecording gage at present site and datum.

AVERAGE DISCHARGE.--43 years (1914-25, 1937-69), 170 cfs (9.76 inches per year).

EXTREMES.--Current year: Maximum discharge, 9,340 cfs June 27 (gage height, 15.93 ft); minimum, 2.9 cfs Aug. 30 (gage height, 2.37 ft).
Period of record: Maximum discharge, 41,000 cfs Sept. 9, 1938 (gage height, 24.5 ft, from floodmarks), from rating curve extended above 24,000 cfs; no flow Aug. 17, 1947, Jan. 22 to Feb. 5, 1961.
Flood of June 5, 1914, reached a stage of 20.7 ft, from floodmarks (discharge, 40,000 cfs), former site and datum.

REMARKS.--Records good except those for winter months, which are fair.

REVISIONS (WATER YEARS).--WSP 1308: 1917, 1920-22, 1926, 1946, 1948, 1950. WSP 1508: 1915-25 (M), 1937, 1946 (M), 1948 (M).

Rating tables (gage height, in feet, and discharge, in cubic feet per second). (Shifting-control method used Oct. 14-26, Sept. 23-30; rate of change in stage used as a factor May 2, 7, 27, 28, June 25-28; stage-discharge relation affected by ice Nov. 23 to Apr. 8).

Oct. 1 to Apr. 10				Apr. 11 to Sept. 30			
2.8	18	6.0	673	2.3	1.5	5.0	410
3.0	36	8.0	1,500	2.6	12	6.0	690
3.5	93	10.0	2,690	3.0	38	8.0	1,500
4.0	169	12.0	4,400	3.5	88	10.0	2,690
5.0	391	14.0	6,540	4.0	175	12.0	4,400
						14.0	6,540

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	28	54	25	24	108	41	105	157	74	202	16	3.9
2	25	46	24	23	100	41	100	1,640	62	118	13	3.7
3	22	40	24	23	94	41	200	922	50	89	11	3.5
4	20	36	23	22	90	42	700	680	42	72	9.5	3.4
5	19	33	22	22	86	42	3,500	500	39	61	9.8	4.4
6	27	33	22	21	80	42	4,000	1,700	36	48	35	5.2
7	36	33	21	21	76	41	3,500	864	33	40	343	4.8
8	43	33	20	21	72	40	3,000	361	29	38	254	4.2
9	118	32	19	21	70	39	2,470	193	25	44	78	4.3
10	462	31	19	20	66	38	1,510	134	22	48	45	3.9
11	253	28	21	20	64	37	737	101	21	41	32	3.9
12	150	26	26	20	60	37	420	80	63	32	23	3.7
13	103	24	420	20	58	37	282	64	211	26	18	3.6
14	80	23	350	20	54	37	206	53	142	23	15	3.6
15	67	22	190	20	53	37	175	45	79	22	12	4.6
16	60	19	110	21	52	39	171	40	54	24	10	9.4
17	52	27	70	26	50	45	183	366	43	34	8.6	7.4
18	44	39	58	52	48	52	151	353	35	26	7.8	5.3
19	39	46	50	54	47	70	104	173	30	21	6.9	4.4
20	34	53	43	54	46	150	81	146	25	17	6.4	4.0
21	30	31	38	56	45	300	138	123	22	14	5.8	3.9
22	29	28	35	56	44	600	169	87	38	10	5.4	7.3
23	27	30	32	64	43	1,100	99	65	687	11	5.1	4.7
24	25	32	30	130	43	1,400	73	52	415	11	4.7	4.4
25	23	35	29	145	42	1,000	60	44	1,580	8.5	4.2	5.1
26	21	36	28	140	42	500	55	38	3,120	7.6	4.0	5.9
27	37	33	27	140	41	320	350	1,450	6,070	31	3.6	6.4
28	95	30	26	135	41	200	426	961	1,370	51	3.4	5.8
29	112	27	25	130	------	150	431	425	713	28	3.2	5.7
30	81	26	25	120	------	130	236	222	433	25	3.1	5.6
31	64	------	24	112	------	110	------	107	------	25	3.8	------
TOTAL	2,226	986	1,876	1,753	1,715	6,758	23,632	12,146	15,563	1,248.1	1,000.3	146.0
MEAN	71.8	32.9	60.5	56.5	61.3	218	788	392	519	40.3	32.3	4.87
MAX	462	54	420	145	108	1,400	4,000	1,700	6,070	202	343	9.4
MIN	19	19	19	20	41	37	55	38	21	7.6	3.1	3.4
CFSM	.32	.15	.27	.25	.27	.97	3.52	1.75	2.32	.18	.14	.02
IN.	.37	.16	.31	.29	.28	1.12	3.92	2.02	2.58	.21	.17	.02

CAL YR 1968 TOTAL 89,154.20 MEAN 244 MAX 8,840 MIN .50 CFSM 1.09 IN 14.80
WTR YR 1969 TOTAL 69,049.4 MEAN 189 MAX 6,070 MIN 3.1 CFSM .84 IN 11.46

PEAK DISCHARGE (BASE, 2,500 CFS)

DATE	TIME	G.HT.	DISCHARGE	DATE	TIME	G.HT.	DISCHARGE
4-5	--	--	About 4,000	6-27	0330	15.93	9,340

5-4006. Little Plover River near Arnott, Wis.

LOCATION.--Lat 44°28'05", long 89°29'20", in NE 1/4 sec.24, T.23 N., R.8 E., Portage County, 150 ft below bridge on town road 2.2 miles northwest of Arnott and 3.5 miles upstream from mouth.

DRAINAGE AREA.--1.5 sq mi, approximately, of which a portion is noncontributing.

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

GAGE.--Water-stage recorder and Parshall flume. Datum of gage is 1,087.37 ft above mean sea level (levels by Wisconsin Department of Natural Resources). Prior to April 1960 nonrecording gage at same site at datum 0.26 ft higher.

AVERAGE DISCHARGE.--10 years, 3.27 cfs.

EXTREMES.--Current year: Maximum discharge, 53 cfs May 27 (gage height, 2.85 ft); minimum, 1.6 cfs Mar. 11 (gage height, 0.64 ft).
Period of record: Maximum discharge, 66 cfs Sept. 13, 1962 (gage height, 3.43 ft); minimum, 0.8 cfs for many days in July, August, and September 1959.

REMARKS.--Records good.

Rating table (gage height, in feet, and discharge, in cubic feet per second).
(Shifting-control method used Oct. 1 to Nov. 21, Jan. 13 to Mar. 19).

0.5	1.4	1.6	8.4
0.7	2.3	1.9	16
1.0	4.0	2.2	26
1.3	6.0		

DISCHARGE IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.9	2.8	2.7	2.5	2.5	2.0	3.1	4.7	5.0	6.0	3.8	4.6
2	2.9	2.7	2.8	2.5	2.4	2.0	3.5	4.9	4.8	6.2	3.7	3.6
3	2.8	2.7	2.8	2.5	2.3	1.9	6.0	4.4	4.7	6.0	3.7	3.5
4	2.7	2.7	2.9	2.5	2.3	2.0	24	4.2	4.4	12	3.7	3.6
5	2.8	2.6	2.7	2.5	2.3	1.9	14	4.3	4.4	9.2	3.7	5.5
6	3.0	3.0	2.6	2.6	2.3	1.9	10	5.2	4.7	6.5	3.8	4.1
7	2.8	3.0	2.6	2.5	2.3	1.9	8.1	4.9	4.1	6.1	3.7	3.8
8	2.8	2.8	2.5	2.5	2.3	1.9	6.8	4.6	4.0	5.8	3.6	3.8
9	3.3	2.8	2.6	2.6	2.3	1.8	7.0	4.3	4.0	5.6	3.5	3.6
10	3.1	2.7	2.7	2.5	2.3	1.8	6.3	4.1	4.0	5.4	3.5	3.5
11	3.0	2.7	2.8	2.4	2.3	1.7	5.2	4.0	4.2	5.7	3.5	3.6
12	2.9	2.7	3.0	2.4	2.1	1.7	4.8	3.9	4.9	5.3	3.4	3.5
13	2.9	2.7	2.8	2.4	2.0	1.7	4.4	3.9	4.4	5.1	3.3	3.5
14	2.7	2.7	2.6	2.4	2.0	1.7	4.5	3.8	4.7	5.1	3.3	3.7
15	2.1	2.7	2.6	2.4	2.1	1.7	4.2	3.7	4.3	4.9	3.3	3.8
16	3.0	2.7	2.6	3.0	2.1	1.8	4.4	3.8	4.1	4.8	3.4	4.2
17	3.1	2.7	2.5	2.7	2.1	1.9	5.3	6.5	4.0	4.7	3.3	3.7
18	2.8	2.9	2.5	2.5	2.1	2.1	6.0	5.0	4.0	4.6	3.3	3.6
19	2.8	2.7	2.6	2.4	2.0	2.3	4.6	4.0	3.9	4.4	3.3	3.6
20	2.7	2.6	2.7	2.5	2.0	3.5	4.6	4.2	3.8	4.4	3.3	3.6
21	2.7	2.7	2.5	2.4	2.0	3.2	4.5	4.0	3.8	4.3	3.2	3.6
22	2.9	2.6	2.8	2.6	2.1	3.2	4.2	4.0	5.0	4.3	3.1	4.0
23	2.8	2.7	2.7	3.6	2.1	4.7	3.9	4.1	10	4.3	3.1	3.8
24	2.7	2.6	2.5	3.4	2.1	4.9	3.9	4.0	5.3	4.1	3.1	3.6
25	2.7	2.6	2.5	2.9	2.0	4.5	4.1	3.7	6.2	4.0	3.1	3.7
26	2.7	2.8	2.5	2.7	2.0	3.9	4.2	4.2	8.1	4.0	3.1	3.8
27	3.0	2.7	2.5	2.7	2.0	3.7	5.2	18	17	4.4	3.0	3.6
28	2.8	2.7	2.6	2.7	2.0	3.7	5.5	8.6	7.0	4.1	3.0	3.6
29	2.6	2.7	2.5	2.6	------	3.2	4.6	6.3	9.7	3.9	3.0	3.8
30	2.5	2.7	2.5	2.7	------	2.9	4.4	5.2	7.9	3.9	2.9	3.7
31	2.6	------	2.5	2.6	------	2.9	------	5.4	------	4.0	3.8	------
TOTAL	87.1	81.7	81.7	81.2	60.4	80.0	181.3	155.9	166.4	163.1	104.5	113.6
MEAN	2.81	2.72	2.64	2.62	2.16	2.58	6.04	5.03	5.55	5.26	3.37	3.79
MAX	3.3	3.0	3.0	3.6	2.5	4.9	24	18	17	12	3.8	5.5
MIN	2.1	2.6	2.5	2.4	2.0	1.7	3.1	3.7	3.8	3.9	2.9	3.5

CAL YR 1968 TOTAL 1,167.2 MEAN 3.19 MAX 18 MIN 1.8
WAT YR 1969 TOTAL 1,356.9 MEAN 3.72 MAX 24 MIN 1.7

5-4006.5 Little Plover River at Plover, Wis.

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

DRAINAGE AREA.--15 sq mi, approximately, of which a large portion is noncontributing.

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

GAGE.--Water-stage recorder and Parshall flume. Datum of gage is 1,068.34 ft above mean sea level (levels by Wisconsin Department of Natural Resources). Prior to May 1960 nonrecording gage at same site at datum 0.88 ft lower.

AVERAGE DISCHARGE.--10 years, 9.66 cfs.

EXTREMES.--Current year: Maximum discharge, 63 cfs May 27 (gage height, 2.78 ft); minimum, 4.4 cfs Dec. 19 (gage height, 0.59 ft) result of freezeup.
Period of record: Maximum discharge, 79 cfs Feb. 9, 1966 (gage height, 2.95 ft); minimum, 2.4 cfs May 23, 1965 (gage height, 0.41 ft), result of temporary dam at flume entrance; minimum daily, 4.3 cfs Aug. 19, 20, 1959.

REMARKS.--Records good.

Rating table (gage height, in feet, and discharge in cubic feet per second).

0.7	5.7	2.0	29
1.0	10	2.5	44
1.5	19		

DISCHARGE IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.2	8.8	8.5	7.5	8.1	7.2	9.2	13	15	17	11	12
2	9.2	8.6	8.5	7.5	7.9	7.2	10	14	14	17	11	9.6
3	9.1	8.5	8.6	7.5	7.5	7.0	13	13	14	17	11	9.2
4	9.1	8.5	8.6	7.5	7.5	7.1	28	12	14	25	11	9.2
5	9.1	8.5	8.2	7.5	7.5	6.9	32	12	14	23	11	13
6	9.4	8.5	8.1	7.5	7.5	6.8	21	14	14	18	11	11
7	9.2	9.4	8.2	7.5	7.7	6.8	18	13	13	18	11	10
8	9.2	8.6	7.9	7.5	7.8	6.8	18	13	13	17	10	9.8
9	9.7	8.8	8.2	7.2	7.5	6.8	18	13	13	17	10	9.7
10	9.7	8.6	8.4	6.9	7.7	6.6	17	12	12	16	10	9.6
11	9.4	8.5	8.5	6.9	7.7	6.6	15	12	13	16	9.8	9.7
12	9.2	8.4	9.0	6.9	7.2	6.5	15	12	14	16	9.4	9.7
13	9.2	8.5	9.0	6.8	7.1	6.4	15	12	14	15	9.2	10
14	9.1	8.5	8.2	6.9	6.9	6.4	14	11	13	15	9.2	9.6
15	8.4	8.5	8.1	6.9	7.4	6.5	14	11	13	14	9.1	9.6
16	8.4	8.5	8.4	7.4	7.5	6.6	14	11	12	14	9.0	10
17	10	8.6	8.1	7.9	7.4	7.0	15	14	12	14	8.8	9.7
18	9.1	8.8	8.2	8.2	7.4	7.6	15	13	13	13	8.8	9.2
19	9.1	8.6	7.5	7.9	7.4	8.4	14	13	12	13	8.8	9.1
20	9.0	8.5	8.8	7.8	7.2	11	14	12	12	13	8.6	9.1
21	9.0	8.5	8.2	8.4	7.2	10	13	11	12	12	8.5	9.1
22	9.0	8.6	8.5	8.6	7.4	10	13	11	14	12	8.4	9.1
23	9.0	8.6	8.4	9.8	7.4	11	12	11	17	12	8.4	9.6
24	8.8	8.6	7.7	9.8	7.4	11	12	11	15	12	8.2	9.1
25	8.8	8.5	7.7	8.8	7.2	11	12	11	15	12	8.2	9.4
26	8.6	8.8	7.8	8.5	7.2	10	12	11	18	12	8.2	9.4
27	9.6	8.8	7.9	8.5	7.2	10	14	36	30	13	8.1	9.1
28	9.4	8.6	7.5	8.6	7.2	10	14	24	18	12	8.1	9.0
29	9.1	8.5	7.8	8.5	------	9.2	13	17	21	12	8.1	9.4
30	9.0	8.5	7.8	8.4	------	9.1	13	16	20	11	7.9	9.4
31	8.6	------	7.5	7.8	------	9.4	------	15	------	11	9.0	------
TOTAL	282.7	258.2	253.8	243.4	208.1	252.9	457.2	424	444	459	288.8	291.4
MEAN	9.12	8.61	8.19	7.85	7.43	8.16	15.2	13.7	14.8	14.8	9.32	9.71
MAX	10	9.4	9.0	9.8	8.1	11	32	36	30	25	11	13
MIN	8.4	8.4	7.5	6.8	6.9	6.4	9.2	11	12	11	7.9	9.0

CAL YR 1968 TOTAL 3,392.2 MEAN 9.27 MAX 27 MIN 6.3
WAT YR 1969 TOTAL 3,863.5 MEAN 10.6 MAX 36 MIN 6.4

5-4008. Wisconsin River at Wisconsin Rapids, Wis.

LOCATION.--Lat 44°22'05", long 89°51'30", in SW 1/4 sec.24, T.22 N., R.5 E., Wood County, at Centralia powerplant of Nekoosa-Edwards Paper, Inc., 1.6 miles downstream from Chicago and Northwestern Railway bridge in Wisconsin Rapids.

DRAINAGE AREA.--5,400 sq mi, approximately.

PERIOD OF RECORD.--May 1914 to March 1950 (published as "near Nekoosa"), October 1957 to current year.

GAGE.--Water-stage recorders on headwater and tailwater. Elevation of powerplant pond is 980 ft and datum of powerplant gages is 887.83 ft above mean sea level (levels by Wisconsin Valley Improvement Co.). May 1914 to March 1950, at site 7.0 miles downstream at different datum.

AVERAGE DISCHARGE.--47 years (1914-49, 1957-69), 4,904 cfs.

EXTREMES.--Current year: Maximum discharge, 42,400 cfs June 28; minimum daily, 964 cfs Sept. 1.
Period of record: Maximum discharge, 70,400 cfs Sept. 12, 1938 (gage height, 19.10 ft), from rating curve extended above 58,000 cfs; minimum, 26 cfs Sept. 7, 1942; minimum daily, 165 cfs Aug. 12, 1934.

REMARKS.--Records good. Discharge computed from powerplant records on basis of load-discharge rating of hydroelectric units as developed by Geological Survey and tainter-gate ratings and spillway ratings based on theoretical formulas and discharge measurements. Flow regulated by 21 reservoirs (see p. 140) and many powerplants above station. Water diverted periodically from pond of Wisconsin Rapids powerplant 2.6 miles upstream into Cranberry Creek, a tributary of Yellow River, for cranberry culture. Probably most of the water diverted is lost by evaporation and transpiration. These diversions in cubic feet per second, for water year October 1968 to September 1969, were as follows:

Dec. 2	92	Dec. 11	100	Aug. 17	100	Aug. 26	100	Sept. 4	100
Dec. 3	100	Dec. 12	100	Aug. 18	100	Aug. 27	100	Sept. 5	21
Dec. 4	100	Dec. 13	13	Aug. 19	100	Aug. 28	100	Sept. 23	92
Dec. 5	100	Aug. 11	96	Aug. 20	100	Aug. 29	100	Sept. 24	100
Dec. 6	100	Aug. 12	100	Aug. 21	100	Aug. 30	100	Sept. 25	100
Dec. 7	38	Aug. 13	100	Aug. 22	100	Aug. 31	100	Sept. 26	100
Dec. 8	34	Aug. 14	100	Aug. 23	100	Sept. 1	100	Sept. 27	100
Dec. 9	96	Aug. 15	100	Aug. 24	100	Sept. 2	100	Sept. 28	100
Dec. 10	100	Aug. 16	100	Aug. 25	100	Sept. 3	100	Sept. 29	100
								Sept. 30	100

REVISIONS (WATER YEARS).--WSP 1308 1915(M).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4,400	3,980	4,260	4,090	6,870	4,790	6,290	7,220	5,630	12,100	4,110	964
2	4,020	4,360	3,910	4,170	5,670	4,650	5,500	8,820	4,840	10,700	4,320	3,170
3	3,880	4,090	4,060	4,300	5,260	4,730	5,650	14,600	4,520	9,600	2,440	3,290
4	3,840	3,790	3,820	4,160	5,470	4,670	13,400	12,000	4,380	11,600	3,370	3,460
5	3,760	4,010	3,790	2,830	5,870	4,610	21,400	7,350	4,070	10,700	3,410	3,630
6	3,510	4,300	3,000	4,110	6,050	4,340	25,500	12,800	3,970	7,460	3,540	3,410
7	3,640	4,240	3,770	4,300	6,170	4,580	29,700	13,400	3,940	6,470	3,440	2,830
8	3,820	4,070	3,650	4,450	6,130	4,480	34,100	13,600	3,500	5,320	3,590	2,870
9	4,500	4,110	3,790	4,430	5,980	4,190	33,900	8,110	3,680	5,240	3,830	2,950
10	4,970	3,700	3,920	4,530	5,340	4,320	34,600	5,610	3,740	5,580	3,630	3,470
11	4,960	3,930	3,900	4,920	4,880	4,080	30,200	5,630	3,860	5,110	3,430	3,040
12	5,100	3,960	3,770	4,600	4,760	4,560	22,700	5,680	4,200	4,920	3,500	2,830
13	5,020	3,940	4,140	4,680	4,860	4,190	15,100	5,680	3,920	4,300	3,130	2,580
14	5,500	4,000	4,250	4,460	4,930	4,150	12,900	5,190	3,980	4,210	2,570	2,430
15	5,260	4,050	4,350	4,770	4,980	4,070	13,700	4,810	4,080	3,100	3,180	2,670
16	4,660	3,870	4,410	4,670	4,770	3,700	13,900	4,680	4,620	3,110	3,110	3,470
17	4,380	3,870	4,800	4,720	4,960	3,930	13,700	9,470	4,480	2,910	3,430	3,140
18	5,630	3,900	4,730	4,740	4,890	4,150	8,590	8,070	4,260	3,590	3,110	2,730
19	5,320	4,040	4,830	5,200	4,740	4,780	6,090	6,690	4,260	3,410	3,120	2,570
20	4,290	4,120	4,680	4,720	4,770	5,480	6,080	7,000	3,880	2,960	3,060	2,740
21	4,270	4,150	4,730	5,570	4,780	5,930	6,590	7,430	3,830	3,390	3,090	2,360
22	4,270	4,330	4,930	5,490	4,830	10,400	6,740	6,140	3,630	3,460	3,040	2,900
23	4,500	4,150	4,860	6,030	4,830	13,800	4,920	5,260	7,710	3,250	2,520	2,780
24	4,500	1,690	2,790	5,320	4,800	14,700	4,840	5,430	9,470	3,190	2,440	2,540
25	3,940	4,040	2,020	4,800	4,760	14,300	5,020	5,310	9,610	3,270	2,670	2,700
26	3,640	4,330	3,980	5,140	4,530	13,100	5,620	5,450	21,100	3,270	2,560	2,580
27	4,160	4,630	4,400	6,320	4,220	11,700	5,580	16,200	32,000	3,690	2,890	2,440
28	4,720	4,570	4,740	6,380	4,500	11,900	6,580	17,900	40,500	4,360	3,030	2,030
29	4,860	4,500	4,220	6,610	------	9,300	7,090	13,400	36,900	4,440	3,540	2,650
30	4,250	4,080	4,100	6,580	------	7,420	7,140	6,380	27,200	4,180	3,200	2,490
31	3,990	------	4,200	7,040	------	8,370	------	6,670	------	4,220	1,110	------
TOTAL	137,560	120,800	126,800	154,130	144,600	209,370	413,120	261,980	275,760	163,110	97,250	83,714
MEAN	4,437	4,027	4,090	4,972	5,164	6,754	13,770	8,451	9,192	5,262	3,137	2,790
MAX	5,630	4,630	4,930	7,040	6,870	14,700	34,600	17,900	40,500	12,100	4,320	3,630
MIN	3,510	1,690	2,020	2,830	4,220	3,700	4,840	4,680	3,500	2,910	1,110	964

CAL YR 1968 TOTAL 2,290,660 MEAN 6,259 MAX 34,700 MIN 1,290
WAT YR 1969 TOTAL 2,188,194 MEAN 5,995 MAX 40,500 MIN 964

5-4010.2 Tenmile Creek Ditch 5 near Bancroft, Wis.

LOCATION.--Lat 44°18'08", long 89°32'59", in NE 1/4 sec.16, T.21 N., R.8 E., Portage County, at bridge on country road, 1 1/4 miles west of U.S. Highway 51 and 1 3/4 miles southwest of Bancroft.

DRAINAGE AREA.--8.8 sq mi, approximately.

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

GAGE.--Water-stage recorder and 90° V-notch sharp-crested weir in one bay of dam and broad-crested weir in other bay. Datum of gage is 1,063.57 ft above mean sea level (levels by Wisconsin Works Progress Administration).

AVERAGE DISCHARGE.--5 years, 7.55 cfs.

EXTREMES.--Current year: Maximum discharge, 202 cfs May 27 (gage height, 4.53 ft); minimum daily, 4.1 cfs Aug. 30; minimum gage height, -0.46 ft.
Period of record: Maximum discharge, 202 cfs May 27, 1969 (gage height, 4.53 ft); minimum, 2.1 cfs Jan. 18, 1967 (gage height, 0.81 ft); minimum daily, 2.2 cfs Aug. 11, 13, 14, 17-19, 1964.

REMARKS.--Records good October through December and fair thereafter. There is approximately 2 miles of dredged drainage ditching above this gage. Sprinkler irrigation from ground-water wells is quite extensive in the basin. Records of water temperatures for the period of October 1968 to September 1969 are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.8	7.0	6.0	4.7	5.8	5.0	9.4	10	16	15	6.3	7.4
2	8.7	6.8	6.0	4.7	5.3	4.9	11	10	15	14	6.1	5.9
3	8.5	6.8	6.0	4.7	5.4	4.9	22	10	14	14	6.0	5.5
4	8.5	6.8	6.0	4.7	5.6	4.9	65	10	16	19	5.8	5.5
5	8.3	6.6	5.8	4.7	5.6	4.9	63	10	15	18	5.8	7.6
6	8.6	6.8	5.4	4.7	5.6	5.0	26	11	14	15	5.6	6.4
7	8.5	7.1	5.3	4.7	5.4	4.9	22	10	13	14	5.6	6.1
8	8.3	7.0	5.2	4.7	5.4	4.9	20	10	12	13	5.3	5.9
9	8.6	6.8	5.2	4.7	5.5	4.8	20	10	12	12	5.3	5.7
10	9.0	6.7	5.2	4.7	5.5	4.8	18	9.8	12	12	5.3	5.7
11	8.5	6.5	5.3	4.7	5.4	4.6	16	9.6	12	13	4.5	5.5
12	8.2	6.4	5.4	4.7	5.3	4.6	15	9.1	15	12	5.9	5.3
13	8.1	6.4	5.3	4.8	5.2	4.6	14	9.0	13	11	5.5	5.1
14	8.0	6.3	5.1	4.9	5.2	4.6	14	8.8	12	10	5.1	5.7
15	8.0	6.4	4.9	5.0	5.3	4.6	13	8.8	11	10	5.3	5.9
16	7.6	6.3	5.0	5.2	5.3	4.6	13	8.4	11	9.5	5.1	6.5
17	7.5	6.4	4.9	5.2	5.3	4.9	16	11	11	9.2	5.1	6.1
18	7.4	6.3	4.9	5.2	5.2	5.9	15	10	10	8.8	5.1	5.9
19	7.4	6.1	4.8	5.1	5.1	7.0	13	10	10	8.6	4.9	5.7
20	7.4	6.0	5.1	5.2	5.0	10	12	9.6	9.5	8.4	4.9	5.7
21	7.3	6.0	4.9	5.4	5.0	10	12	9.1	9.0	8.2	4.9	5.5
22	7.3	6.0	5.3	5.6	5.0	10	11	9.0	9.5	8.0	4.7	5.5
23	7.2	6.0	5.1	8.1	5.0	13	11	8.8	11	7.8	4.7	5.7
24	7.0	6.0	4.9	8.6	4.9	14	11	8.6	10	7.6	4.7	5.7
25	7.0	6.0	4.6	7.6	4.9	14	10	8.4	11	7.4	4.7	6.0
26	6.8	6.2	4.9	6.8	4.9	13	10	8.3	15	7.2	4.5	5.8
27	7.5	6.2	5.0	6.6	4.9	12	12	116	27	7.4	4.4	5.6
28	7.7	6.2	4.9	6.8	4.9	12	11	46	17	7.4	4.3	5.4
29	7.4	6.0	4.9	6.8	------	11	11	23	22	7.0	4.3	5.4
30	7.2	6.0	4.8	6.6	------	11	10	19	19	6.6	4.1	5.5
31	7.1	------	4.7	6.3	------	9.7	------	17	------	6.4	5.2	------
TOTAL	243.4	192.1	160.8	172.2	146.9	234.1	526.4	468.3	404.0	327.5	159.0	175.2
MEAN	7.85	6.40	5.19	5.55	5.25	7.55	17.5	15.1	13.5	10.6	5.13	5.84
MAX	9.0	7.1	6.0	8.6	5.8	14	65	116	27	19	6.3	7.6
MIN	6.8	6.0	4.6	4.7	4.9	4.6	9.4	8.3	9.0	6.4	4.1	5.1

CAL YR 1968 TOTAL 2,861.9 MEAN 7.80 MAX 9 MIN 4.6
WAT YR 1969 TOTAL 3,209.9 MEAN 8.79 MAX 116 MIN 4.1

5-4010.5 Tenmile Creek near Nekoosa, Wis.

LOCATION.--Lat 44°15'44", long 89°48'38", in NE 1/4 sec.32, T.21 N., R.6 E., Wood County, on left bank upstream from bridge on State Highway 13, 5.8 miles southeast of Nekoosa.

DRAINAGE AREA.--64 sq mi, approximately.

PERIOD OF RECORD.--Occasional low-flow measurements, water years 1962-63. October 1963 to current year.

GAGE.--Water-stage recorder. Datum of gage is 967.39 ft above mean sea level. Prior to May 13, 1964, non-recording gage at present site and datum.

AVERAGE DISCHARGE.--6 years, 56.3 cfs.

EXTREMES.--Current year: Maximum discharge, 326 cfs Apr. 4 (gage height, 6.07 ft); minimum daily, 30 cfs Jan. 4-14.
Period of record: Maximum discharge, 326 cfs Apr. 4, 1969 (gage height, 6.07 ft); minimum, 9.5 cfs Dec. 16, 1964.

REMARKS.--Records good except those for winter periods, which are fair. Approximately 40 miles of drainage ditches and 22 check dams are used to control the water table in the basin. Sprinkler irrigation from ground-water sources is developing rapidly in the area.

Rating table (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice, Dec. 15-18, Jan. 25 to Feb. 9, Feb. 11-19, Mar. 7-14).

4.0	28	5.0	129
4.5	68	6.0	310

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	72	62	54	31	40	46	103	104	135	141	62	49
2	70	60	54	31	40	46	107	111	125	128	61	46
3	68	60	55	31	40	47	130	107	118	122	59	43
4	66	60	55	30	40	47	168	101	116	131	58	41
5	66	60	50	30	40	48	267	100	116	157	57	42
6	67	61	43	30	40	48	271	102	109	146	56	43
7	67	63	49	30	40	46	229	107	104	132	55	41
8	66	63	45	30	40	44	211	101	100	122	54	40
9	67	62	45	30	40	43	195	99	95	116	53	39
10	70	61	47	30	40	41	186	96	91	111	52	38
11	69	60	49	30	40	40	170	92	90	112	51	38
12	67	59	54	30	39	40	156	89	102	110	49	37
13	65	59	57	30	38	41	147	87	106	101	48	36
14	65	58	46	30	40	42	139	85	99	97	47	37
15	64	59	45	31	40	44	134	82	93	94	46	38
16	63	57	44	34	40	46	131	81	88	90	46	38
17	64	58	43	32	38	50	138	94	90	87	45	38
18	67	57	43	31	39	57	152	102	87	83	44	37
19	66	56	44	32	40	68	142	96	84	80	43	35
20	64	54	41	33	41	83	130	91	81	77	42	35
21	63	55	44	34	43	97	123	86	78	74	42	34
22	63	55	45	36	43	104	117	83	79	72	41	34
23	62	55	42	42	44	120	112	81	89	71	40	34
24	61	54	38	48	44	147	108	79	89	69	39	34
25	60	54	36	46	45	159	105	77	89	67	39	35
26	60	55	35	44	46	149	103	75	102	65	38	36
27	63	56	35	43	46	144	115	101	132	71	37	35
28	66	56	35	43	46	145	117	228	144	74	36	33
29	65	55	34	43	------	133	112	207	138	70	34	36
30	64	54	34	42	------	116	106	169	153	67	33	36
31	63	------	32	41	------	113	------	147	------	65	39	------
TOTAL	2,023	1,738	1,373	1,078	1,152	2,394	4,424	3,260	3,122	3,002	1,446	1,138
MEAN	65.3	57.9	44.3	34.8	41.1	77.2	147	105	104	96.8	46.6	37.9
MAX	72	63	57	48	46	159	271	228	153	157	62	49
MIN	60	54	32	30	38	40	103	75	78	65	33	33

CAL YR 1968 TOTAL 22,345 MEAN 61.1 MAX 241 MIN 17
WAT YR 1969 TOTAL 26,150 MEAN 71.6 MAX 271 MIN 30

5-4011. Fourteenmile Creek near New Rome, Wis.

LOCATION.--Lat 44°12'15", long 89°48'29", in S 1/2 sec.17, T.20 N., R.6 E., Adams County, 50 feet above twin culverts on State Highway 13, and 2.7 miles southeast of New Rome.

DRAINAGE AREA.--77 sq mi, approximately.

PERIOD OF RECORD.--Annual maximum and occasional low-flow measurements, water years 1961-64. March 1964 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Altitude of gage is 980 ft (from topographic map). Prior to Mar. 2, 1964, crest-stage gage only at datum 7.03 ft lower, and Mar. 2, 1964, to Aug. 27, 1964, nonrecording gage and crest-stage gage.

AVERAGE DISCHARGE.--5 years, 46.8 cfs.

EXTREMES.--Current year: Maximum discharge, 261 cfs Apr. 6 (gage height, 5.34 ft); minimum, 1.0 cfs Feb. 28 (gage height, 1.80 ft), result of regulation; minimum daily, 6.0 cfs Aug. 19.
Period of record: Maximum discharge, 275 cfs Mar. 24, 1966; minimum, 0.65 cfs Jan. 25, 26, 27, 1968 (gage height, 1.45 ft).

REMARKS.--Records good. Some regulation caused by manipulation of gates at recreation dam above station.

Rating table (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice, Dec. 22 to Jan. 7).

2.0	5.6	4.0	172
2.1	10	5.2	253
2.3	23		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	54	80	46	33	29	35	53	80	68	105	17	40
2	54	70	45	33	29	36	53	82	62	103	14	30
3	48	76	44	33	29	36	53	80	54	100	12	25
4	47	78	44	33	29	36	65	78	57	113	15	24
5	48	76	44	32	29	36	223	75	56	122	21	21
6	48	75	43	32	29	36	251	78	53	108	20	14
7	48	72	41	32	29	42	228	79	51	100	33	12
8	49	66	42	31	29	45	200	77	46	88	25	12
9	51	61	42	29	29	45	178	74	43	80	22	18
10	51	62	42	29	29	42	158	72	39	73	20	21
11	50	61	43	29	29	38	138	71	40	76	21	23
12	55	56	36	29	29	36	122	68	58	72	22	23
13	51	56	32	29	29	36	112	65	55	60	20	21
14	50	56	32	29	29	36	101	64	47	52	14	22
15	45	54	32	29	29	36	91	63	42	44	14	16
16	44	54	32	29	29	36	90	64	40	38	11	14
17	46	54	30	29	29	37	90	66	46	34	9.6	17
18	47	54	31	29	31	38	101	71	42	32	7.8	17
19	46	52	31	29	31	41	105	72	37	26	6.0	19
20	46	52	32	29	32	54	93	72	36	26	8.2	20
21	44	50	33	29	32	66	86	69	37	25	9.6	20
22	43	50	33	29	31	67	80	69	42	26	10	20
23	45	50	33	29	31	64	74	69	49	36	16	21
24	45	49	34	29	31	61	71	67	48	27	19	21
25	44	49	34	29	32	59	68	66	51	22	21	21
26	43	48	34	29	34	54	65	68	55	15	20	21
27	41	48	33	29	36	54	70	22	78	28	19	21
28	104	48	33	29	32	54	82	31	85	39	19	21
29	152	47	33	29	------	54	82	70	92	35	19	21
30	118	46	34	29	------	54	79	77	101	31	17	22
31	102	------	33	29	------	53	------	72	------	25	26	------
TOTAL	1,759	1,750	1,131	926	845	1,417	3,262	2,131	1,610	1,761	537.2	618
MEAN	56.7	58.3	36.5	29.9	30.2	45.7	109	68.7	53.7	56.8	17.3	20.6
MAX	152	80	46	33	36	67	251	82	101	122	33	40
MIN	41	46	30	29	29	35	53	22	36	15	6.0	12

CAL YR 1968 TOTAL 16,324.7 MEAN 44.6 MAX 240 MIN .65
WAT YR 1969 TOTAL 17,747.2 MEAN 48.6 MAX 251 MIN 6.0

GPO 823-131-9

5-4015.35 Big Roche a Cri Creek near Adams, Wis.

LOCATION.--Lat 44°05'52", long 89°46'30", in SW 1/4 sec.22, T.19 N., R.6 E., Adams County, at culverts on Brown Deer Avenue, 0.5 mile upstream from Dry Creek, and 10 miles north of Adams.

DRAINAGE AREA.--54 sq mi, approximately.

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

GAGE.--Water-stage recorder. Prior to May 15, 1964, nonrecording gage at same site at datum 1.71 ft higher.

AVERAGE DISCHARGE.--6 years, 56.0 cfs.

EXTREMES.--Current year: Maximum discharge, 168 cfs Apr. 6 (gage height, 4.37 ft); minimum, 30 cfs Mar. 12 (gage height, 1.60 ft).
Period of record: Maximum discharge, 178 cfs Mar. 25, 1966 (gage height, 4.59 ft); minimum, 24 cfs Dec. 31, 1964 (gage height, 1.36 ft), result of freezeup.

REMARKS.--Records good except those for winter periods, which are fair. There is some irrigation from ground-water sources in the upper portion of basin.

Rating table (gage height, in feet, and discharge, in cubic feet per second). (Shifting-control method used Oct. 1 to Dec. 30, Sept. 6-30; stage-discharge relation affected by ice Dec. 16, 17, Dec. 25-29, Dec. 31 to Jan. 14, Jan. 24 to Feb. 10, Mar. 10, 13, 14).

1.7	36	3.0	99
2.1	56	4.5	174

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	65	57	51	44	52	49	86	89	65	100	57	67
2	64	56	52	45	50	49	82	92	63	89	56	55
3	63	54	52	45	50	50	94	89	64	100	54	46
4	62	55	52	46	50	49	117	85	64	111	53	45
5	61	55	51	47	50	49	148	83	64	137	52	48
6	64	57	39	48	50	50	166	85	62	144	51	47
7	64	59	49	49	50	49	161	92	62	128	54	44
8	63	57	48	49	52	47	151	89	60	109	51	42
9	64	56	45	49	52	47	141	84	58	101	49	42
10	68	55	48	49	52	45	134	83	57	96	49	41
11	65	54	49	50	53	43	125	80	57	92	50	40
12	62	54	51	50	50	45	115	78	72	86	50	40
13	61	54	53	52	47	45	109	76	73	81	47	39
14	60	53	44	51	53	45	103	75	64	78	46	40
15	60	53	44	51	53	46	100	73	61	77	45	44
16	59	54	44	52	52	47	99	72	59	75	44	41
17	61	55	44	52	52	49	105	85	60	72	43	41
18	71	54	44	50	52	57	118	97	58	70	43	40
19	64	53	45	51	51	65	120	90	58	67	43	39
20	61	52	46	54	49	74	110	85	56	66	42	39
21	60	52	46	52	51	83	102	80	55	64	41	39
22	59	53	48	54	50	81	97	77	56	62	40	39
23	58	52	48	62	50	90	93	75	70	64	40	40
24	59	52	44	60	51	105	90	73	66	68	40	40
25	57	51	45	56	51	114	88	72	63	63	39	41
26	57	53	46	56	50	107	87	69	76	60	38	42
27	61	54	46	56	50	100	95	70	104	64	38	40
28	66	52	45	56	50	99	101	71	110	80	38	39
29	62	52	45	54	------	94	97	68	106	67	37	43
30	59	51	44	52	------	85	91	64	108	65	37	46
31	57	------	44	52	------	85	------	63	------	60	40	------
TOTAL	1,917	1,619	1,452	1,594	1,423	2,043	3,325	2,464	2,051	2,596	1,407	1,289
MEAN	61.8	54.0	46.8	51.4	50.8	65.9	111	79.5	68.4	83.7	45.4	43.0
MAX	71	59	53	62	53	114	166	97	110	144	57	67
MIN	57	51	39	44	47	43	82	63	55	60	37	39

CAL YR 1968 TOTAL 21,026 MEAN 57.4 MAX 148 MIN 31
WAT YR 1969 TOTAL 23,180 MEAN 63.5 MAX 166 MIN 37

PEAK DISCHARGE (BASE, 110 CFS)

DATE	TIME	G.HT.	DISCHARGE	DATE	TIME	G.HT.	DISCHARGE
3-25	0300	3.38	114	6-27	2100	3.32	115
4- 6	1000	4.37	168	7- 6	0900	3.92	145

5-4020. Yellow River at Babcock, Wis.

LOCATION.--Lat 44°18'05", long 90°07'15", in NW 1/4 sec.14, T.21 N., R.3 E., Wood County, on right bank at downstream side of state highway bridge at Babcock, 1.9 miles upstream from Hemlock Creek.

DRAINAGE AREA.--223 sq mi.

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

GAGE.--Water-stage recorder. Datum of gage is 954.75 ft above mean sea level. Prior to Oct. 28, 1948, nonrecording gage at same site and datum.

AVERAGE DISCHARGE.--25 years, 133 cfs (8.10 inches per year).

EXTREMES.--Current year: Maximum discharge, 6,260 cfs June 28 (gage height, 14.57 ft); minimum, 7.9 cfs Sept. 21, 22 (gage height, 1.61 ft).
Period of record: Maximum discharge, 11,600 cfs Apr. 2, 1952 (gage height, 17.38 ft); minimum observer, 1.0 cfs Oct. 1, 1948 (gage height, 1.22 ft).

REMARKS.--Records good except those for winter periods and period of no gage-height record, which are fair. There is a large recreation dam about 5 miles upstream.

REVISIONS(WATER YEARS).--WSP 1308: 1944(M), 1946-47(M), 1949(M).

Rating table (gage height, in feet, and discharge, in cubic feet per second). (Shifting-control method used July 9-28; stage-discharge relation affected by ice Dec. 5-9, Dec. 14 to Mar. 18, Mar. 22-24, Mar. 27 to Apr. 3).

Oct. 1 to Mar. 31				Apr. 1 to Sept. 30			
2.0	21	8.2	1,010	1.6	7.6	8.0	1,060
2.2	36	10.0	1,880	1.7	11	10.0	1,880
6.2	552	12.0	3,360	2.0	29	13.0	4,260
7.2	738	12.4	3,720	3.0	144	13.7	5,000
				7.0	838		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	38	66	40	33	78	86	500	228	71	760	51	19
2	30	59	40	32	74	86	600	223	64	1,200	36	14
3	34	66	58	31	72	85	1,400	675	50	900	28	12
4	31	77	52	31	70	84	2,500	827	42	1,300	23	12
5	29	31	40	30	68	82	4,000	591	36	614	20	14
6	32	35	32	29	68	80	5,000	349	31	250	18	14
7	36	41	29	28	67	76	3,300	364	27	200	18	14
8	34	42	28	27	68	72	1,980	571	25	170	19	13
9	40	43	27	26	69	70	1,300	405	24	140	37	12
10	123	42	27	26	70	68	1,160	251	25	160	35	10
11	249	40	26	27	70	68	789	186	30	147	31	9.3
12	229	39	25	28	70	66	619	143	56	107	28	8.6
13	150	43	33	29	68	64	367	103	77	51	23	8.6
14	104	43	100	31	68	62	277	72	100	47	19	9.3
15	85	41	150	34	70	62	186	77	120	49	17	9.3
16	78	40	120	45	74	70	160	80	90	42	15	9.0
17	69	40	90	52	82	100	166	92	62	37	14	9.0
18	62	41	70	53	84	180	344	144	46	31	14	9.0
19	32	44	60	54	82	98	378	223	34	26	14	8.6
20	33	43	70	56	80	121	260	192	27	23	14	8.3
21	35	42	60	60	78	288	194	150	25	21	12	8.3
22	34	41	50	66	80	700	164	142	24	16	11	8.3
23	34	40	56	72	82	1,300	116	90	36	12	11	9.3
24	31	40	48	76	86	2,800	101	84	100	12	12	12
25	31	39	40	80	88	3,660	65	76	300	12	11	9.6
26	28	43	34	84	88	2,830	85	66	700	12	10	8.6
27	36	48	32	90	88	1,700	96	118	1,400	14	10	9.0
28	84	47	33	94	87	1,300	160	704	3,000	30	9.6	9.3
29	33	44	35	94	------	1,000	287	493	1,400	118	9.3	10
30	51	42	34	90	------	700	226	153	1,000	119	10	9.3
31	67	------	33	82	------	560	------	88	------	74	14	------
TOTAL	1,982	1,342	1,572	1,590	2,129	18,518	26,780	7,960	9,022	6,694	593.9	316.7
MEAN	63.9	44.7	50.7	51.3	76.0	597	893	257	301	216	19.2	10.6
MAX	249	77	150	94	88	3,660	5,000	827	3,000	1,300	51	19
MIN	28	31	25	26	67	62	65	66	24	12	9.3	8.3
CFSM	.29	.20	.23	.23	.34	2.68	4.00	1.15	1.35	.97	.086	.048
IN.	.33	.22	.26	.27	.36	3.09	4.47	1.33	1.51	1.12	.10	.05

CAL YR 1968 TOTAL 62,392.9 MEAN 170 MAX 6,770 MIN 6.6 CFSM .76 IN 10.41
WAT YR 1969 TOTAL 78,499.6 MEAN 215 MAX 5,000 MIN 8.3 CFSM .96 IN 13.10

PEAK DISCHARGE (BASE, 1,200 CFS)

DATE	TIME	G.HT.	DISCHARGE	DATE	TIME	G.HT.	DISCHARGE
3-25	1300	12.36	3,680	6-28	Unknown	12.92	4,190
4- 6	Unknown	14.57	6,260				

NOTE.--No gage-height record June 3 to July 8.

5-4035. Lemonweir River at New Lisbon, Wis.

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

DRAINAGE AREA.--500 sq mi, approximately.

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

GAGE.--Nonrecording gage read twice daily. Datum of gage is 867.05 ft above mean sea level. Prior to May 5, 1948, nonrecording gage at site 100 ft downstream at same datum.

AVERAGE DISCHARGE.--25 years, 346 cfs (9.40 inches per year).

EXTREMES.--Current year: Maximum discharge observed, 2,930 cfs July 1 (gage height, 10.59 ft); minimum observed, 80 cfs Aug. 31 (gage height, 1.12 ft).
Period of record: Maximum discharge, 6,880 cfs May 8, 1960 (gage height, 12.94 ft, from graph based on gage readings); minimum observed, 36 cfs Aug. 15, 1944 (gage height, -0.06 ft).

REMARKS.--Records good except those for winter period, 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.

REVISIONS (WATER YEARS).--WSP 1308: 1944(M), 1949-50(M). WSP 1728: Drainage area.

Rating table (gage height, in feet, and discharge, in cubic feet per second). (Shifting-control method used June 30 to July 3, Aug. 3 to Sept. 30. Stage-discharge relation affected by ice Dec. 8 to Mar. 17).

Oct. 1 to Mar. 25				Mar. 26 to Sept. 30			
2.1	162	6.0	810	1.2	80	7.0	1,035
3.0	259	8.0	1,450	2.0	130	9.0	1,860
4.0	402	10.0	2,600	3.0	230	11.0	3,570
				5.0	546		

DISCHARGE IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	534	350	285	170	340	340	1,160	517	191	2,890	261	141
2	475	343	281	170	320	330	1,080	546	177	2,570	238	188
3	441	326	282	170	300	320	1,120	575	166	2,090	206	168
4	405	319	289	170	300	320	1,410	624	156	1,700	175	145
5	387	312	288	170	290	310	2,160	612	158	1,460	153	132
6	355	315	273	170	280	300	2,820	571	167	1,190	144	123
7	334	345	221	170	280	300	2,890	562	162	1,040	140	116
8	295	319	210	170	280	290	2,640	582	151	852	132	110
9	334	328	210	170	280	280	2,340	636	151	755	127	104
10	412	337	220	170	280	280	2,050	598	154	720	122	103
11	486	336	220	170	270	280	1,800	517	148	728	117	107
12	588	331	230	170	270	260	1,640	432	180	672	115	103
13	702	382	230	170	270	260	1,480	372	261	560	113	98
14	754	343	220	170	260	260	1,290	368	324	460	109	101
15	738	319	220	180	260	250	1,080	351	389	378	105	99
16	669	298	210	210	260	250	912	314	394	348	101	109
17	598	304	210	230	260	260	795	324	324	333	100	114
18	562	340	210	230	260	340	896	399	282	312	100	108
19	532	334	210	230	260	498	930	445	244	286	97	101
20	490	371	220	230	260	702	935	506	204	223	96	102
21	455	340	220	250	280	877	918	514	197	177	96	97
22	414	328	230	300	290	1,050	795	466	195	155	93	100
23	382	321	240	340	310	1,400	640	437	204	154	90	98
24	366	314	230	380	330	1,990	503	378	217	223	88	95
25	334	312	220	400	340	2,380	412	330	255	269	87	93
26	314	308	210	410	340	2,310	370	294	309	280	85	94
27	307	308	190	420	340	2,130	418	297	514	259	82	94
28	305	308	180	420	350	1,960	469	280	725	245	82	96
29	311	303	170	400	------	1,660	471	248	1,260	230	85	109
30	325	293	170	380	------	1,470	492	218	2,400	223	82	124
31	337	------	170	360	------	1,250	------	198	------	250	85	------
TOTAL	13,941	9,787	6,969	7,750	8,160	24,907	36,916	13,511	10,659	22,032	3,706	3,372
MEAN	450	326	225	250	291	803	1,231	436	355	711	120	112
MAX	754	382	289	420	350	2,380	2,890	636	2,400	2,890	261	188
MIN	295	293	170	170	260	250	370	198	148	154	82	93
CFSM	.90	.65	.45	.50	.58	1.61	2.46	.87	.71	1.42	.24	.22
IN.	1.04	.73	.52	.58	.61	1.85	2.75	1.01	.79	1.64	.28	.25

CAL YR 1968 TOTAL 151,652 MEAN 414 MAX 3,180 MIN 75 CFSM .83 IN 11.28
WAT YR 1969 TOTAL 161,710 MEAN 443 MAX 2,890 MIN 82 CFSM .89 IN 12.03

5-4040. Wisconsin River near Wisconsin Dells, Wis.

LOCATION.--Lat 43°36'22", long 89°45'25", in NW 1/4 sec.14, T.13 N., R.6 E., Sauk County, on right bank 0.5 mile downstream from Dell Creek and 3.0 miles downstream from Wisconsin Dells.

DRAINAGE AREA.--7,830 sq mi, approximately.

PERIOD OF RECORD.--October 1934 to current year.

GAGE.--Water-stage recorder. Datum of gage is 801.48 ft above mean sea level (levels by Corps of Engineers). Prior to Oct. 1, 1963, water-stage recorder at same site at datum 5.00 ft higher.

AVERAGE DISCHARGE.--35 years, 6,674 cfs.

EXTREMES.--Current year: Maximum discharge, 46,300 cfs June 30 (gage height, 17.91 ft); minimum daily, 2,730 cfs Aug. 30.
Period of record: Maximum discharge, 72,200 cfs Sept. 14, 1938 (gage height, 23.83 ft, present datum); minimum daily, 1,060 cfs Aug. 19, 1936.

REMARKS.--Records good except those for winter periods, which are fair. Flow regulated by 23 reservoirs above station (see p. 140). In 1938, when the maximum of record occurred, there were 21 reservoirs above station, the two large reservoirs, Petenwell and Castle Rock not yet in existence. Diurnal fluctuation caused by powerplant of Wisconsin Power & Light Co. at Wisconsin Dells, which shuts down frequently to 1,000 KWH, about 660 cfs, from powerplant records.

REVISIONS (WATER YEARS).--WSP 1728: 1936(m).

Rating table (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Dec. 3-15, Dec. 21 to Mar. 10).

5.0	2,590	14.0	27,850
8.0	9,060	17.7	45,150
10.0	14,350		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6,790	5,460	5,010	5,800	8,000	6,800	17,500	8,840	8,840	39,000	5,270	3,410
2	6,280	5,110	5,380	5,800	8,000	6,800	15,500	9,130	8,770	24,900	4,830	3,170
3	5,950	5,270	5,600	5,800	7,600	7,000	12,300	10,600	8,680	18,200	4,350	3,250
4	5,670	5,190	5,400	5,800	7,600	7,000	11,600	12,700	8,700	16,700	4,370	3,550
5	5,360	5,320	5,400	6,000	8,000	6,800	16,100	13,200	8,720	18,500	4,450	3,990
6	5,270	5,300	4,500	5,200	8,200	6,800	18,400	11,800	8,750	19,000	4,490	4,250
7	5,030	5,950	5,000	5,800	8,200	6,600	23,700	14,400	8,750	13,700	4,730	4,290
8	4,990	5,860	5,400	5,800	8,200	6,600	32,400	16,100	8,820	10,500	4,470	3,890
9	5,530	6,060	5,800	5,800	8,400	6,600	36,200	16,200	8,800	11,400	4,590	3,830
10	5,610	5,950	6,200	5,800	8,400	6,600	36,500	12,400	8,050	11,400	4,410	3,570
11	6,350	5,970	6,200	5,800	8,200	6,720	35,900	10,200	7,550	9,800	4,550	3,810
12	6,420	5,930	6,000	5,600	8,200	6,670	26,800	9,350	7,530	9,580	4,290	3,630
13	6,080	6,040	5,400	5,600	8,000	6,490	16,600	9,160	8,390	9,380	4,110	3,670
14	6,060	5,610	3,700	5,400	8,000	6,810	12,400	9,110	8,100	9,180	4,010	2,990
15	6,700	6,110	3,700	5,000	7,800	6,790	13,700	8,750	7,390	8,150	3,590	2,930
16	6,860	6,080	5,360	5,200	7,600	6,790	17,200	8,460	6,880	8,010	3,970	3,070
17	6,970	6,130	5,110	5,200	7,600	6,880	18,500	8,920	6,260	7,410	3,570	3,030
18	7,300	5,740	5,210	5,000	7,600	6,930	18,700	9,930	5,720	7,070	3,770	3,070
19	7,890	5,760	5,050	5,000	7,600	6,740	12,800	8,940	5,340	6,470	3,890	3,070
20	7,990	5,670	5,570	5,400	7,600	7,500	10,000	8,600	5,480	5,170	3,550	2,870
21	7,300	5,670	5,800	6,000	7,600	8,840	9,730	9,180	4,930	4,650	3,510	2,810
22	7,090	5,480	6,000	6,400	7,800	9,400	10,100	9,130	4,050	4,470	3,610	2,810
23	7,270	5,030	6,200	6,600	7,800	9,500	9,450	8,580	4,950	4,550	3,510	2,850
24	6,790	4,370	6,000	6,800	7,600	10,200	9,180	8,920	6,310	4,590	3,050	3,190
25	5,930	4,490	5,400	7,000	7,600	14,600	9,060	8,990	7,250	4,570	3,170	3,110
26	5,530	5,170	4,800	7,200	7,400	16,200	8,890	9,040	10,800	4,450	3,210	3,210
27	5,400	5,090	5,400	7,400	7,200	16,700	9,010	9,110	22,200	4,530	3,150	3,010
28	5,270	5,030	5,600	7,800	6,800	17,200	8,890	10,600	29,900	5,480	3,050	2,870
29	5,420	4,990	5,800	8,000	------	18,000	9,080	12,200	38,400	5,440	3,030	2,910
30	5,190	5,420	6,200	8,000	------	18,400	8,960	12,100	44,700	5,650	2,730	2,850
31	5,340	------	6,000	8,000	------	18,100	------	9,330	------	5,550	3,250	------
TOTAL	191,630	165,250	168,190	190,000	218,600	293,060	495,150	323,970	329,010	317,450	120,530	98,960
MEAN	6,182	5,508	5,425	6,129	7,807	9,454	16,510	10,450	10,970	10,240	3,888	3,299
MAX	7,990	6,130	6,200	8,000	8,400	18,400	36,500	16,200	44,700	39,000	5,270	4,290
MIN	4,990	4,370	3,700	5,000	6,800	6,490	8,890	8,460	4,050	4,450	2,730	2,810

CAL YR 1968 TOTAL 2,954,530 MEAN 8,072 MAX 39,000 MIN 2,000
WAT YR 1969 TOTAL 2,911,800 MEAN 7,978 MAX 44,700 MIN 2,730

5-4045. Devils Lake near Baraboo, Wis.

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, in Devils Lake State Park, 3.5 miles south of Baraboo.

DRAINAGE AREA.--5.64 sq mi. Area of Devils Lake, 361 acres.

PERIOD OF RECORD.--June 1922 to August 1930, June to August 1932, June 1934 to current year (fragmentary).

GAGE.--Nonrecording gage. Elevation of lake from reference mark read about twice a week except in winter. Datum of gage is 956.39 ft above mean sea level, unadjusted.

EXTREMES.--Current year: Maximum gage height observed, 9.94 ft July 18; minimum observed, 6.09 ft Dec. 11. Period of record: Maximum gage height observed, 10.6 ft June 1, 1927; minimum observed, 1.49 ft Feb. 8, 1965.

REMARKS.--Lake has no surface outlet. Lake was ice covered Dec. 13 to Apr. 12. Add 955.00 ft to obtain elevation above mean sea level.

COOPERATION.--Observer services furnished by Ralph T. Tuttle, custodian, Devils Lake State Park.

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1												8.77
2								9.17				
3						6.83						
4							8.01		8.59	9.79	9.37	
5		6.77	6.17					9.18				
6												8.66
7							8.19			9.71	9.31	
8												
9							8.41					
10	7.20						8.55	9.21		9.65		8.55
11			6.09				8.59					
12									8.69			
13		6.50	6.38					9.14			9.24	
14						6.85	8.67					
15										9.57		
16												
17	7.09			6.65			8.79	9.00	8.84			8.36
18						7.10		9.01		9.94	9.15	
19							8.95					
20		6.41							8.94			
21	6.97					7.22		8.95				
22										9.84		
23							9.05		9.19		9.03	8.24
24												
25									9.44			
26						7.75		8.87		9.66	8.91	
27					6.83							
28					6.82		9.15		9.75	9.59		
29					------	7.95						
30		6.25			------			8.74	9.85			8.01
31	6.85	------			------		------		------	9.51		------

5-4050. Baraboo River near Baraboo, Wis.

LOCATION.--Lat 43°28'51", long 89°38'09", in NW 1/4 sec.35, T.12 N., R.7 E., Sauk County, on left bank 50 ft downstream from highway bridge, 0.3 mile downstream from Rowley Creek and 5.3 miles east of Baraboo.

DRAINAGE AREA.--600 sq mi.

PERIOD OF RECORD.--December 1913 to March 1922. September 1942 to current year.

GAGE.--Water-stage recorder. Datum of gage is 788.21 ft above mean sea level. Dec. 18, 1913, to Mar. 31, 1922, nonrecording gage at bridge 2.3 miles upstream at datum 7.6 ft higher. Sept. 24, 1942, to June 10, 1963, nonrecording gage at present site and datum.

AVERAGE DISCHARGE.--34 years (1914-21, 1942-current year), 363 cfs (8.21 inches per year).

EXTREMES.--Current year: Maximum discharge, 1,890 cfs Mar. 26, 27 (gage height, 13.50 ft); minimum, 23 cfs Dec. 20 (gage height, 5.90 ft).
Period of record: Maximum discharge observed, 7,900 cfs Mar. 26, 1917 (gage height, 17.5 ft, estimated, site and datum then in use), from rating curve extended above 6,000 cfs; minimum observed, 9 cfs Feb. 17, 1944 (gage height, 5.08 ft); minimum daily, 26 cfs Oct. 6, 1950.
Flood of Aug. 6, 1935, reached a stage of 15.8 ft, from floodmarks, site and datum in use in 1922 (discharge, 5,100 cfs).

REMARKS.--Records good except those for winter periods, which are fair. Diurnal regulation from four powerplants at Baraboo.

REVISIONS(WATER YEARS).--WSP 455: 1915. WSP 505: 1917(M). WSP 975: Drainage area. WSP 1438: 1914-15(M), 1916-17, 1918-20(M), 1944(M), 1949(M). WSP 1728: Drainage area. WSP 1914: 1948, 1950, 1956.

Rating table (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Dec. 7-9, 14-18, Dec. 24 to Feb. 21).

6.4	107	13.5	1,890
9.0	675		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	188	176	192	140	220	246	480	320	194	1,590	303	122
2	182	172	188	130	210	250	462	296	188	1,220	228	142
3	180	170	180	130	200	244	612	275	182	920	206	174
4	168	172	188	130	190	240	985	263	188	543	192	190
5	164	164	196	130	180	240	1,510	256	192	366	170	196
6	164	174	186	130	180	230	1,470	261	188	301	164	184
7	166	182	160	130	180	230	1,430	298	186	269	164	174
8	162	196	150	130	180	220	1,570	322	188	242	160	172
9	182	200	140	120	170	220	1,640	330	186	236	158	168
10	192	204	144	120	170	210	1,510	311	180	236	158	150
11	196	196	158	120	170	210	1,160	271	172	250	156	140
12	218	180	134	120	170	200	808	244	186	259	154	142
13	232	176	152	120	170	190	562	230	220	224	140	134
14	224	172	140	130	160	180	443	222	232	204	148	122
15	192	184	130	150	160	180	404	212	269	192	140	132
16	192	198	120	170	160	190	393	214	238	188	126	128
17	188	222	120	180	150	250	521	210	192	234	132	140
18	198	236	130	180	150	400	985	286	184	380	142	144
19	188	236	130	180	150	672	942	401	176	347	134	142
20	182	228	140	180	150	1,160	778	443	180	263	132	136
21	180	222	144	190	150	1,580	670	376	186	210	132	130
22	180	214	142	200	160	1,520	503	311	184	192	128	132
23	172	204	158	220	164	1,530	414	280	180	186	113	132
24	176	200	160	220	168	1,700	370	256	184	174	128	132
25	172	194	160	220	188	1,850	334	236	196	216	124	132
26	176	194	150	210	204	1,890	305	224	485	222	120	134
27	180	198	150	220	230	1,880	322	214	1,520	305	128	134
28	174	194	150	240	238	1,520	351	210	1,730	364	126	132
29	170	192	140	260	------	1,570	362	204	1,650	399	113	144
30	180	194	140	250	------	1,170	357	200	1,760	436	118	142
31	172	------	140	240	------	735	------	196	------	425	113	------
TOTAL	5,690	5,844	4,712	5,290	4,972	22,907	22,653	8,372	11,996	11,593	4,650	4,376
MEAN	184	195	152	171	178	739	755	270	400	374	150	146
MAX	232	236	196	260	238	1,890	1,640	443	1,760	1,590	303	196
MIN	162	164	120	120	150	180	305	196	172	174	113	122
CFSM	.31	.33	.25	.29	.30	1.23	1.26	.45	.67	.62	.25	.24
IN.	.35	.36	.29	.33	.31	1.42	1.40	.52	.74	.72	.29	.27

CAL YR 1968 TOTAL 98,807 MEAN 270 MAX 2,180 MIN 74 CFSM .45 IN 6.13
WAT YR 1969 TOTAL 113,055 MEAN 310 MAX 1,890 MIN 113 CFSM .52 IN 7.01

5-4060.5 Fish Lake near Sauk City, Wis.

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, on south side of lake near Ganser's Tavern and Dance Hall, 0.4 mile southwest of Crystal Lake, and 3.1 miles east of Sauk City, Wis. Prior to Apr. 24, 1969, at site on west side of lake.

DRAINAGE AREA.--3.79 sq mi. Area of Fish Lake, 252 acres.

PERIOD OF RECORD.--November 1966 to September 1969 (fragmentary).

GAGE.--Nonrecording gage in lake bed. Altitude of gage is 853 ft (from topographic map).

EXTREMES.--November 1966 to September 1968: Maximum gage height observed, 4.37 ft Apr. 10, 1967; minimum observed, 3.50 ft Nov. 18, 1966.
Water year 1969: Maximum gage height observed, 4.85 ft July 10; minimum, 3.50 ft Oct. 28.

REMARKS.--Lake has no surface outlet. Lake ice covered December to March.

GAGE HEIGHT, IN FEET, NOVEMBER 1966 TO SEPTEMBER 1968

Date	Gage Height	Date	Gage Height	Date	Gage Height	Date	Gage Height
Nov. 18, 1966	3.50	Mar. 9, 1967	3.97	Oct. 10, 1967	3.79	May 8, 1968	3.99
Dec. 23, 1966	3.55	Apr. 10, 1967	4.37	Nov. 13, 1967	4.00	June 25, 1968	3.96
Jan. 24, 1967	3.60	Aug. 8, 1967	4.04	Apr. 17, 1968	3.97	July 23, 1968	3.94
Mar. 1, 1967	3.98	Aug. 31, 1967	3.80	Apr. 18, 1968	3.98	Aug. 19, 1968	3.58
						Sept.25, 1968	3.77

ELEVATION, IN FEET, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1							3.84	4.00				
2											4.58	
3												
4										4.55		
5									3.91			4.11
6												
7												
8								4.02			4.53	
9												
10										4.85		
11												
12				3.75				3.95		4.47		4.01
13												
14									3.97			
15												
16											4.37	
17												
18										4.69		
19												3.93
20									3.91			
21									3.93			
22											4.32	
23												3.85
24							3.97	4.02				
25										4.69		3.81
26									4.26			
27					3.69						4.22	
28	3.50							3.89				
29				3.69								
30					------						4.17	
31		------			------		------		------			------

5-4065. Black Earth Creek at Black Earth, Wis.

LOCATION.--Lat 43°08'03", long 89°43'56", in SW 1/4 sec.25, T.8 N., R.6 E., Dane County, on right bank, 0.8 mile east of Black Earth and 2.1 miles upstream from Vermont Creek.

DRAINAGE AREA.--46.4 sq mi (includes 3.6 sq mi without surface drainage).

PERIOD OF RECORD.--February 1954 to current year.

GAGE.--Water-stage recorder. Datum of gage is 812.95 ft above mean sea level.

AVERAGE DISCHARGE.--15 years, 28.7 cfs (8.40 inches per year).

EXTREMES.--Current year: Maximum discharge, 457 cfs June 27 (gage height, 4.61 ft); minimum, 12 cfs Dec. 31 (gage height, 1.65 ft), result of freezeup.
Period of record: Maximum discharge, 1,750 cfs July 3, 1954 (gage height, 6.58 ft); minimum, 4.8 cfs Nov. 29, 1958 (gage height, 1.39 ft), result of freezeup.

REMARKS.--Records good.

Rating table (gage height, in feet, and discharge, in cubic feet per second).
(Shifting-control method used Oct. 1-31, June 26, 27; stage-discharge relation affected by ice Nov. 24-28, Dec. 7-10, Dec. 21 to Mar. 4).

1.7	17	3.0	160
2.1	49	3.5	242
2.5	92	4.0	342

DISCHARGE IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	27	24	20	19	22	44	29	29	27	62	33	24
2	25	24	21	20	20	43	32	28	27	56	32	25
3	24	22	21	20	19	43	33	28	29	52	32	26
4	24	22	21	18	19	42	53	27	32	57	32	26
5	24	22	21	19	18	42	52	28	30	51	32	26
6	24	26	20	19	18	39	40	30	29	47	31	27
7	23	27	19	18	18	34	37	30	29	46	31	27
8	22	25	18	20	19	31	37	33	33	44	31	26
9	22	22	18	18	19	29	41	33	29	44	33	25
10	22	22	18	19	20	27	38	30	29	42	33	25
11	21	23	19	19	18	25	35	29	29	41	32	25
12	21	22	20	19	18	25	32	28	90	40	30	25
13	21	22	20	19	18	25	32	29	54	40	28	23
14	21	24	20	19	18	24	31	29	43	39	28	24
15	21	28	20	19	19	24	32	28	38	39	28	23
16	21	27	20	21	19	27	32	28	35	38	26	25
17	23	32	20	22	19	46	51	29	35	48	26	26
18	23	29	21	21	19	52	54	28	36	46	26	25
19	24	28	32	20	20	44	40	28	33	40	28	25
20	23	27	28	20	22	45	37	31	30	38	28	23
21	23	26	24	20	28	39	36	33	28	36	27	23
22	23	26	22	20	38	34	36	35	29	35	27	23
23	23	26	20	50	35	34	34	33	29	36	27	26
24	24	25	19	40	33	43	34	30	26	35	27	27
25	22	25	19	32	33	43	33	30	39	35	27	27
26	22	25	20	28	36	37	30	28	191	37	27	27
27	22	24	20	26	45	35	33	28	286	38	26	25
28	23	22	19	26	45	36	32	27	78	36	26	25
29	23	21	18	25	------	32	30	27	98	35	25	28
30	22	20	18	25	------	30	30	26	83	34	26	26
31	23	------	18	24	------	29	------	28	------	34	24	------
TOTAL	706	738	634	705	675	1,103	1,096	908	1,604	1,301	889	758
MEAN	22.8	24.6	20.5	22.7	24.1	35.6	36.5	29.3	53.5	42.0	28.7	25.3
MAX	27	32	32	50	45	52	54	35	286	62	33	28
MIN	21	20	18	18	18	24	29	26	26	34	24	23
CFSM	.49	.53	.44	.49	.52	.77	.79	.63	1.15	.91	.62	.55
IN.	.57	.59	.51	.57	.54	.88	.88	.73	1.29	1.04	.71	.61

CAL YR 1968 TOTAL 8,472 MEAN 23.1 MAX 115 MIN 15 CFSM .50 IN 6.79
WAT YR 1969 TOTAL 11,117 MEAN 30.5 MAX 286 MIN 18 CFSM .66 IN 8.91

PEAK DISCHARGE (BASE, 200 CFS).--June 27 (1000) 457 cfs (4.61 ft).

5-4066.4 Otter Creek near Highland, Wis.

LOCATION.--Lat 43°01'40", long 90°16'40", in NE 1/4 sec.5, T.6 N., R.2 E., Iowa County, on right bank 150 ft upstream from bridge on town road, 0.4 mile upstream from unnamed tributary, 2.2 miles upstream from Flint Creek and 5.3 miles southeast of Highland.

DRAINAGE AREA.--About 11.7 sq mi.

PERIOD OF RECORD.--May 1968 to June 10, 1969 (discontinued).

GAGE.--Water-stage recorder. Altitude of gage is 840 ft (from topographic map).

EXTREMES.--May to September 1968: Maximum discharge during period, 137 cfs June 18 (gage height, 3.66 ft); minimum, 2.5 cfs June 5 (gage height, 1.88 ft).
October to June 1969: Maximum discharge during period, 148 cfs Mar. 17 (gage height, 3.72 ft); minimum daily, 1.9 cfs Feb. 14.

REMARKS.--Records good except those for winter periods and fragmentary gage height record, which are fair.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1								3.3	2.6	6.8	3.4	4.9
2								3.1	2.6	5.4	3.4	3.6
3								3.0	2.6	4.9	3.4	3.6
4								3.0	2.5	4.7	3.6	4.0
5								3.0	2.5	6.0	4.7	5.1
6								2.9	2.6	4.4	3.9	4.0
7								2.8	2.6	22	4.4	3.9
8								3.0	2.6	6.5	14	5.4
9								2.8	3.2	5.6	6.5	12
10								2.8	3.7	4.9	4.2	5.5
11								2.7	3.1	4.7	4.0	4.5
12								2.7	2.8	4.4	3.9	3.6
13								2.6	2.6	4.2	3.7	3.6
14								3.2	2.8	4.0	3.7	3.5
15								2.9	2.6	4.0	3.9	3.5
16								2.9	2.6	4.0	3.9	3.6
17								2.8	2.6	5.6	3.6	4.3
18								2.9	20	4.4	3.6	8.9
19								2.9	3.6	4.0	3.6	7.1
20								2.9	3.4	3.9	3.7	6.2
21								2.8	21	3.9	3.2	5.5
22								2.8	4.4	3.9	3.1	5.5
23								2.8	4.2	24	3.1	5.5
24								2.6	4.2	7.0	3.1	6.2
25								2.8	13	5.6	2.9	5.2
26								3.6	31	4.4	2.9	3.8
27								3.2	12	4.0	2.9	4.5
28								3.1	9.4	3.7	3.1	4.3
29								2.9	7.0	3.6	3.1	4.0
30					------			2.8	6.8	3.6	3.1	3.8
31		------			------		------	2.6	------	3.7	3.6	------
TOTAL								90.2	186.6	181.8	123.2	149.1
MEAN								2.91	6.22	5.86	3.97	4.97
MAX								3.6	31	24	14	12
MIN								2.6	2.5	3.6	2.9	3.5
CFSM								.25	.53	.50	.34	.42
IN.								.29	.59	.58	.39	.47

NOTE.--Fragmentary or no gage-height record Oct. 31 to Dec. 10, 1968.

5-4066.4 Otter Creek near Highland, Wis.--Continued

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.8	3.7	3.5	3.3	4.1	5.5	8.0	6.5	8.0			
2	3.8	3.7	3.5	3.3	3.9	6.5	9.9	6.0	8.0			
3	3.8	3.7	3.5	3.3	3.8	8.0	8.6	6.0	7.7			
4	3.8	3.7	3.5	3.3	3.7	8.3	12	6.0	8.6			
5	3.8	3.5	3.5	3.3	3.6	8.6	11	5.7	7.4			
6	4.3	3.6	2.9	3.3	3.5	8.0	9.2	8.0	7.1			
7	4.0	3.7	2.8	3.5	3.5	6.8	8.6	6.8	8.6			
8	4.0	4.2	2.8	3.6	3.5	5.8	8.3	6.5	8.9			
9	4.8	3.9	2.7	3.6	3.3	5.4	8.3	6.5	7.1			
10	4.5	3.7	3.2	3.5	3.5	4.9	7.4	6.2	6.8			
11	4.0	3.6	3.3	3.4	3.4	4.6	7.4	6.0				
12	3.8	3.6	3.5	3.2	3.3	4.3	7.1	5.7				
13	3.8	3.6	3.3	3.1	3.3	4.0	6.5	5.5				
14	3.8	3.6	3.2	3.1	3.2	3.9	7.1	5.2				
15	3.8	5.4	3.1	3.2	3.2	4.0	7.1	5.2				
16	3.8	4.8	3.0	6.2	3.2	5.4	7.7	5.2				
17	3.8	4.5	3.0	4.3	3.2	30	10	6.5				
18	3.6	5.0	3.1	3.8	3.6	35	9.5	6.0				
19	3.8	4.0	13	3.5	3.6	19	8.6	5.7				
20	3.6	3.8	5.0	3.3	3.5	17	8.3	6.0				
21	3.6	3.7	3.5	3.6	3.6	12	8.0	7.1				
22	3.6	3.7	3.1	4.3	3.8	11	7.7	7.4				
23	3.8	3.6	3.0	39	3.8	11	7.4	6.5				
24	5.5	3.6	3.0	13	4.0	14	7.1	6.2				
25	4.0	3.5	3.0	7.4	4.5	12	6.8	6.2				
26	3.8	3.5	3.1	6.4	4.8	9.9	7.1	6.0				
27	4.0	3.5	3.3	5.6	5.0	9.2	8.0	5.7				
28	3.8	3.5	3.4	5.2	5.2	9.5	7.1	6.0				
29	3.6	3.5	3.5	4.9	------	8.0	6.5	7.4				
30	3.8	3.5	3.4	4.6	------	7.7	6.5	7.4				
31	3.8	------	3.3	4.3	------	7.1	------	8.0	------			------
TOTAL	121.7	114.9	111.0	169.4	104.6	306.4	242.8	195.1				
MEAN	3.93	3.83	3.58	5.46	3.74	9.88	8.09	6.29				
MAX	5.5	5.4	13	39	5.2	35	12	8.0				
MIN	3.6	3.5	2.7	3.1	3.2	3.9	6.5	5.2				
CFSM	.034	.033	.031	.047	.032	.084	.069	.054				
IN.	.04	.04	.04	.05	.03	.10	.08	.06				

5-4070. Wisconsin River at Muscoda, Wis.

LOCATION.--Lat 43°11'54", long 90°26'26", in NW 1/4 sec.1, T.8 N., R.1 W., Grant County, on left bank at bridge on State Highway 80, 0.5 mile upstream from Eagle Mill Creek and 1.0 mile north of Muscoda.

DRAINAGE AREA.--10,300 sq mi, approximately.

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.

GAGE.--Water-stage recorder. Datum of gage is 667.05 ft above mean sea level. Prior to Nov. 22, 1929, non-recording gage on bridge 200 ft upstream at same datum. Nov. 22, 1929, to Mar. 15, 1930, nonrecording gage at present site and datum.

AVERAGE DISCHARGE.--56 years (1913-69), 8,490 cfs.

EXTREMES.--Current year: Maximum discharge, 45,700 cfs July 3 (gage height, 8.67 ft); minimum, 3,780 cfs Aug. 26 (gage height, 0.86 ft); minimum daily, 4,140 cfs Aug. 26.
Period of record: Maximum discharge, 80,800 cfs Sept. 16, 1938 (gage height, 11.48 ft); minimum daily, 2,000 cfs Feb. 11, 1918.

REMARKS.--Records good except those for winter periods, which are fair. Flow regulated by 23 reservoirs and many powerplants above station (see p. 140). In 1938 when the maximum of record occurred, there were 21 reservoirs above station, the two large reservoirs, Petenwell and Castle Rock not yet in existence. An average of about 5 to 15 cfs diverted out of basin through Portage canal to Fox River throughout the year.

REVISIONS (WATER YEARS).--WSP 785: 1921(m). WSP 875: 1921. WSP 1308: 1915(M), 1917-18(M), 1920-21(M), 1924(M).

Rating Table (gage height, in feet, and discharge, in cubic feet per second). (Shifting-control method used July 10 to Sept. 16; stage-discharge relation affected by ice Dec. 6-11, Dec. 15 to Mar. 21).

0.80	4,140	8.00	39,100
2.60	9,470	8.60	46,000
5.70	23,200		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10,300	7,090	7,400	7,800	11,000	9,600	20,700	11,400	12,600	35,100	7,590	4,160
2	8,570	7,180	7,910	7,600	11,000	9,400	20,600	11,200	12,200	41,100	7,480	5,030
3	8,490	7,460	7,400	8,000	10,500	9,200	19,600	11,400	10,300	44,800	6,860	5,200
4	7,900	7,350	7,490	8,000	10,000	9,200	17,700	11,900	9,990	39,300	5,970	4,730
5	7,850	7,370	7,590	8,000	10,000	9,200	16,000	12,400	10,600	29,000	6,250	4,990
6	7,670	7,550	7,000	7,600	10,500	9,200	16,800	13,600	10,300	22,000	5,750	5,210
7	7,310	7,940	6,000	6,500	11,000	9,200	19,400	14,700	10,500	20,600	6,410	5,780
8	7,390	7,620	5,000	7,000	11,000	9,200	20,700	14,300	10,700	19,900	5,730	5,750
9	7,210	8,000	6,000	7,800	11,000	9,200	23,100	15,800	10,300	16,000	6,440	5,760
10	7,210	7,800	7,000	8,000	11,000	9,000	27,100	16,800	10,100	14,400	6,680	5,790
11	7,050	8,200	8,000	7,800	11,000	9,000	33,300	16,700	10,100	13,900	5,510	5,220
12	7,800	7,800	8,640	7,800	11,000	9,200	37,500	13,700	10,100	13,100	5,970	5,280
13	8,550	8,000	8,620	7,600	11,000	9,400	38,200	12,800	10,300	12,300	5,930	5,370
14	7,950	8,200	8,150	7,600	11,000	9,200	34,700	12,300	9,890	11,000	5,370	5,240
15	8,330	8,200	6,000	7,600	11,000	9,000	22,600	10,800	10,100	10,600	5,730	5,200
16	7,830	8,200	5,400	7,400	11,000	9,000	16,700	10,400	9,230	10,400	5,870	5,120
17	9,010	8,400	5,200	7,400	10,000	9,200	17,700	10,800	9,040	10,200	5,530	4,740
18	8,120	8,200	6,400	7,200	10,000	10,000	20,600	11,200	8,720	10,200	4,720	4,630
19	8,640	8,400	7,000	7,000	9,800	11,000	21,500	11,100	7,930	9,650	5,150	4,960
20	8,940	8,000	6,800	7,200	9,600	11,000	20,100	11,300	8,150	8,770	5,900	5,070
21	9,700	7,600	6,600	7,400	9,800	12,000	15,800	11,800	6,740	8,750	4,800	5,040
22	9,530	7,800	7,000	7,800	10,000	13,800	14,300	11,000	6,820	6,470	4,430	4,230
23	9,050	7,800	8,000	8,400	10,000	13,800	13,800	10,800	7,540	6,560	4,430	4,720
24	9,320	7,400	7,600	9,000	10,000	14,600	12,900	10,700	6,390	6,490	5,130	4,690
25	9,220	7,600	7,200	8,800	10,000	15,900	12,100	10,400	7,750	7,010	5,240	4,610
26	7,930	7,000	6,800	9,200	10,000	15,800	12,000	11,000	9,790	6,720	4,140	4,660
27	7,960	6,800	7,000	9,600	10,000	18,400	11,800	11,400	14,000	6,830	5,160	4,900
28	7,540	7,000	7,000	10,000	10,000	19,800	11,500	11,700	16,500	6,840	4,600	5,150
29	7,770	6,600	6,800	10,500	------	20,200	11,700	12,000	22,400	6,950	4,370	4,880
30	7,320	7,000	7,400	11,000	------	20,200	11,400	12,000	29,100	7,670	5,200	5,220
31	7,660	------	7,600	11,000	------	20,300	------	12,300	------	7,050	4,300	------
TOTAL	255,120	229,560	218,000	253,600	292,200	373,200	591,900	379,700	328,180	469,660	172,640	151,330
MEAN	8,230	7,652	7,032	8,181	10,440	12,040	19,730	12,250	10,940	15,150	5,569	5,044
MAX	10,300	8,400	8,640	11,000	11,000	20,300	38,200	16,800	29,100	44,800	7,590	5,790
MIN	7,050	6,600	5,000	6,500	9,600	9,000	11,400	10,400	6,390	6,470	4,140	4,160

CAL YR 1968 TOTAL 3,554,030 MEAN 9,710 MAX 41,600 MIN 3,400
WAT YR 1969 TOTAL 3,715,090 MEAN 10,180 MAX 44,800 MIN 4,140

5-4080. Kickapoo River at La Farge, Wis.

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, on left bank 10 ft upstream from bridge on State Highway 82, in La Farge, 0.3 mile upstream from Otter Creek, and 1.3 miles downstream from powerplant.

DRAINAGE AREA.--266 sq mi.

PERIOD OF RECORD.--October 1938 to current year.

GAGE.--Water-stage recorder. Datum of gage is 782.00 ft above mean sea level, adjustment of 1912. Prior to Dec. 4, 1939, nonrecording gage on highway bridge at same datum.

AVERAGE DISCHARGE.--31 years, 167 cfs (8.53 inches per year).

EXTREMES.--Current year: Maximum discharge, 1,760 cfs Apr. 5 (gage height, 8.86 ft); minimum, 27 cfs May 14, June 10 (gage height, 0.91 ft).
Period of record: Maximum discharge, 9,910 cfs Feb. 9, 1966 (gage height, 13.67 ft); minimum, 1.8 cfs Mar. 24, 1951; minimum daily, 36 cfs Nov. 3, 1939.

REMARKS.--Records good except those for winter months, which are fair. Considerable diurnal fluctuation caused by operation of powerplant 1.3 miles upstream.

REVISIONS (WATER YEARS).--WSP 1388: 1951(M), 1954(M). WSP 1438: 1944-45(M), 1946, 1948, 1950 (M).

Rating table (gage height, in feet, and discharge, in cubic feet per second).
(Period of ice effect, Dec. 7 to Mar. 19).

1.5	66	6.0	880
2.5	195	8.0	1,480
4.0	450		

DISCHARGE IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	129	121	88	110	120	150	228	170	115	248	122	441
2	125	118	120	100	120	150	225	180	121	194	99	174
3	125	106	98	110	120	160	306	163	113	185	108	136
4	120	116	118	100	120	160	1,020	150	113	175	115	133
5	121	113	100	100	110	160	1,410	159	116	164	103	166
6	147	105	74	110	110	160	641	161	112	152	103	157
7	153	128	94	110	110	160	442	198	107	153	135	129
8	128	126	110	110	110	150	379	153	120	140	105	125
9	180	135	96	110	110	130	352	160	111	157	111	115
10	254	76	96	110	110	120	312	145	98	147	108	111
11	154	125	110	110	110	110	255	152	111	143	107	118
12	139	107	96	110	110	100	228	139	180	128	96	113
13	140	129	110	110	100	130	214	236	216	117	102	108
14	142	89	110	110	100	120	203	122	122	145	103	112
15	143	111	100	110	100	120	201	126	118	126	100	147
16	142	120	96	110	100	130	208	124	120	140	92	126
17	138	120	110	130	100	150	274	182	113	122	99	120
18	136	132	90	130	100	200	377	220	116	132	98	122
19	133	123	110	120	110	320	242	149	126	120	104	118
20	131	126	110	120	110	596	218	153	111	121	99	126
21	153	95	110	130	110	574	212	145	92	115	94	111
22	112	116	110	140	120	466	203	131	118	111	91	118
23	125	111	110	140	120	802	168	132	108	113	83	117
24	120	121	92	150	130	1,090	181	128	117	115	94	122
25	121	117	88	140	130	638	160	116	121	116	95	117
26	122	99	92	130	140	380	168	126	227	146	88	120
27	128	124	100	130	140	325	222	129	684	180	76	125
28	136	104	110	120	150	297	222	131	257	214	109	113
29	145	112	100	120	------	240	188	118	446	140	86	128
30	113	112	110	120	------	201	152	104	448	131	99	159
31	116	------	100	120	------	257	------	108	------	124	107	------
TOTAL	4,271	3,437	3,158	3,670	3,220	8,746	9,611	4,610	5,077	4,514	3,131	4,127
MEAN	138	115	102	118	115	282	320	149	169	146	101	138
MAX	254	135	120	150	150	1,090	1,410	236	684	248	135	441
MIN	112	76	74	100	100	100	152	104	92	111	76	108
CFSM	.52	.43	.38	.44	.43	1.06	1.20	.56	.64	.55	.38	.52
IN.	.60	.48	.44	.51	.45	1.22	1.34	.64	.71	.63	.44	.58

CAL YR 1968 TOTAL 58,362 MEAN 159 MAX 1,740 MIN 42 CFSM .60 IN 8.16
WAT YR 1969 TOTAL 57,572 MEAN 158 MAX 1,410 MIN 74 CFSM .59 IN 8.05

PEAK DISCHARGE (BASE, 1,700 CFS)

DATE	TIME	G.HT.	DISCHARGE
4-5	0845	8.86	1,760

5-4085. Knapp Creek near Bloomingdale, Wis.

LOCATION.--Lat 43°40'05", long 90°46'53", in NW 1/4 sec.30, T.14 N., R.3 W., Vernon County, on right bank, 0.4 mile upstream from confluence with West Fork Kickapoo River, 1.7 miles north of Bloomingdale, and 4.1 miles east of Westby.

DRAINAGE AREA.--8.47 sq mi.

PERIOD OF RECORD.--October 1954 to September 1969 (discontinued).

GAGE.--Water-stage recorder. Altitude of gage is 960 ft (from topographic map).

AVERAGE DISCHARGE.--15 years, 4.96 cfs (7.95 inches per year).

EXTREMES.--Current year: Maximum discharge, 160 cfs Apr. 3 (gage height, 2.67 ft); minimum, 1.0 cfs Mar. 12 (gage height, 0.70 ft).
Period of record: Maximum discharge, 3,710 cfs Aug. 26, 1959 (gage height, 8.76 ft) from rating curve extended above 400 cfs on basis of slope-area measurement of peak flow; minimum discharge, 0.4 cfs Nov. 28, 1966 (gage height, 0.66 ft) result of freezeup.
Flood in July 1954 reached a stage of about 10.5 ft from floodmarks.

REMARKS.--Records good except those for winter periods, which are fair. Two detention reservoirs completed during water year 1956 about three miles upstream control flood discharge from 3.88 sq mi of drainage area.

Rating table (gage height, in feet, and discharge, in cubic feet per second). (Shifting-control method used, Apr. 13-16, 22-26, Apr. 29 to Sept. 30; stage-discharge relation affected by ice Dec. 5 to Mar. 4, Mar. 12-14).

0.8	1.6	1.2	11	2.0	71
0.9	2.8	1.4	20	2.4	120
1.0	4.8	1.6	33		

DISCHARGE IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.0	2.4	2.6	2.3	2.4	2.5	4.8	4.7	2.1	3.6	1.9	11
2	2.3	2.2	2.7	2.3	2.4	2.5	8.7	5.4	2.1	3.0	1.8	2.7
3	2.2	2.2	2.8	2.2	2.3	2.6	52	4.4	2.0	2.9	1.8	2.3
4	2.2	2.2	2.8	2.2	2.2	2.6	71	4.1	2.1	2.8	1.7	13
5	2.2	2.1	2.6	2.2	2.2	2.6	35	3.7	2.0	2.7	1.7	4.3
6	3.0	2.7	2.3	2.2	2.1	2.5	18	4.9	2.0	2.3	1.7	3.1
7	2.4	2.6	2.2	2.2	2.1	2.5	14	4.1	2.1	2.2	2.7	2.6
8	2.4	2.6	2.2	2.2	2.0	2.5	11	4.0	2.0	2.6	1.9	2.4
9	22	2.6	2.1	2.1	2.0	2.5	13	3.7	1.8	2.6	1.9	2.2
10	7.5	2.4	2.3	2.1	2.0	2.3	8.0	3.4	1.7	2.3	1.7	2.2
11	4.6	2.2	2.5	2.1	2.0	2.3	5.8	3.4	2.3	2.1	1.7	2.2
12	3.8	2.2	2.5	2.1	2.0	2.3	5.0	3.1	5.2	1.9	1.7	2.2
13	3.6	2.2	2.3	2.1	2.0	2.3	5.0	2.9	2.9	1.9	1.6	2.4
14	3.4	2.2	2.1	2.1	2.0	2.4	4.7	2.8	2.7	3.0	1.6	3.6
15	3.2	2.3	1.9	2.1	2.0	2.5	5.1	2.8	2.3	2.6	1.6	3.2
16	2.8	2.3	1.8	2.1	2.0	2.6	5.3	2.7	2.2	2.2	1.7	3.2
17	3.4	2.6	1.9	2.4	2.0	3.4	11	6.1	2.4	2.5	1.6	3.3
18	2.8	2.6	2.2	2.6	2.0	6.5	8.8	3.7	3.0	2.6	1.7	3.6
19	2.7	2.3	2.5	2.7	2.1	18	5.7	3.3	2.4	2.1	1.7	3.9
20	2.6	2.2	2.4	2.7	2.3	47	5.0	3.5	2.1	1.9	1.7	2.3
21	2.6	2.2	2.3	2.8	2.6	22	5.3	3.2	2.2	1.8	1.6	2.6
22	2.6	2.2	2.2	2.9	2.8	31	4.6	3.1	2.3	1.7	1.6	2.8
23	2.4	2.3	2.2	3.5	2.9	78	4.1	2.9	2.3	1.8	1.6	3.0
24	2.4	2.2	2.1	3.4	3.0	43	4.0	2.8	2.3	1.7	1.6	2.9
25	2.3	2.3	2.0	3.1	2.9	18	3.9	2.6	4.1	2.5	1.9	2.6
26	2.3	2.7	2.1	2.9	2.7	11	4.2	2.4	7.4	5.4	1.7	2.8
27	3.0	2.7	2.2	2.7	2.6	7.7	9.5	2.3	11	4.0	1.6	3.1
28	2.7	2.4	2.2	2.6	2.5	6.6	4.9	2.2	3.2	2.9	1.6	2.7
29	2.4	2.3	2.3	2.6	------	6.0	4.5	1.9	17	2.2	1.6	3.7
30	2.3	2.2	2.3	2.5	------	6.0	4.2	1.9	5.5	2.0	1.6	3.4
31	2.2	------	2.3	2.5	------	6.3	------	2.0	------	2.0	22	------
TOTAL	109.3	70.6	70.9	76.5	64.1	350.0	346.1	104.0	104.7	77.8	73.8	105.3
MEAN	3.53	2.35	2.29	2.47	2.29	11.3	11.5	3.35	3.49	2.51	2.38	3.51
MAX	22	2.7	2.8	3.5	3.0	78	71	6.1	17	5.4	22	13
MIN	2.2	2.1	1.8	2.1	2.0	2.3	3.9	1.9	1.7	1.7	1.6	2.2
CFSM	.42	.28	.27	.29	.27	1.33	1.36	.40	.41	.30	.28	.41
IN.	.48	.31	.31	.34	.28	1.54	1.52	.46	.46	.34	.32	.46

CAL YR 1968 TOTAL 2,246.9 MEAN 6.14 MAX 224 MIN 1.0 CFSM .72 IN 9.87
WAT YR 1969 TOTAL 1,553.1 MEAN 4.26 MAX 78 MIN 1.6 CFSM .50 IN 6.82

PEAK DISCHARGE (BASE, 200 CFS).--No peak above the base.

5-4098.3 North Fork Nederlo Creek near Gays Mills, Wis.

LOCATION.--Lat 43°21'47", long 90°54'34", in NE 1/4 sec.12, T.10 N., R.5 W., Crawford County, on right bank 160 ft upstream from town road bridge, 4.5 miles northwest of Gays Mills, and 0.3 mile above the confluence with South Fork Nederlo Creek.

DRAINAGE AREA.--2.4 sq mi.

PERIOD OF RECORD.--October 1967 to current year.

GAGE.--Water-stage recorder with concrete control. Altitude of gage is 800 ft (from topographic map).

EXTREMES.--Water year 1968: Maximum discharge, 541 cfs June 23 (gage height, 14.60 ft) from rating curve extended above 3 cfs on basis of contracted-opening measurement made at 14.60 ft, computation of flow through culvert made at gage height 13.80 ft and slope-area measurement made at gage height 13.10 ft; minimum, 0.51 cfs May 5 (gage height, 10.93 ft).
Water year 1969: Maximum discharge, 78 cfs June 26 (gage height, 13.10 ft) from rating curve extended as explained above; minimum, 0.44 cfs Dec. 18 (gage height, 10.69 ft).

REMARKS.--1968 records poor, 1969 records fair.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.66	.62	.58	.60	1.3	.67	.75	.59	.67	.96	.60	.77
2	.66	.58	.62	.62	.71	.67	.71	.59	.67	.92	.60	.70
3	.66	.58	.62	.58	.65	.71	.67	.63	.63	.88	.60	.66
4	.66	.58	.62	.58	.60	.67	.79	.59	.63	.84	.60	.70
5	.66	.58	.66	.60	.60	.67	.71	.55	.63	.82	.63	.70
6	.66	.58	.66	.58	.60	.67	.71	.55	.63	.78	.66	.66
7	.78	.58	.99	.60	.60	.67	.75	.55	.67	.82	.66	.66
8	.78	.58	.90	.60	.60	.95	.75	.59	.67	.86	.63	2.6
9	.74	.58	.86	.60	.60	1.1	.71	.55	.71	1.2	.63	.95
10	.70	.58	.82	.62	.60	.75	.71	.55	.75	.73	.63	.84
11	.66	.62	.82	.62	.60	.67	.67	.55	.75	.77	.63	.80
12	.66	.58	.82	.62	.60	.67	.71	.55	.71	.84	.63	.80
13	.70	.58	.78	.62	.60	.67	.71	.55	.71	.84	.63	.80
14	.66	.58	.74	.62	.60	.67	.83	.59	1.1	.84	.63	.80
15	.66	.58	.74	.62	.60	.67	.75	.55	.75	.84	.66	.77
16	.66	.58	.74	.62	.60	.67	.75	.55	.71	2.4	.66	.80
17	.66	.58	.78	.62	.60	.67	.75	.55	.71	1.4	.63	.80
18	.62	.58	.78	.62	.60	.99	.71	.55	2.8	1.1	.66	.91
19	.62	.58	.78	.62	.60	.71	.71	.55	.88	.91	.66	.91
20	.62	.58	.74	.66	.60	.71	1.1	.55	.77	.88	.66	.88
21	.62	.58	.70	.70	.60	.67	.75	.59	1.5	.80	.63	.88
22	.62	.54	.74	.70	.60	.67	.71	.55	.73	.77	.63	.84
23	.66	.54	.74	.62	.60	.67	.79	.55	17	2.8	.63	.91
24	.86	.54	.70	.58	.63	.67	.75	.55	3.6	.77	.63	.88
25	.78	.54	.66	.58	.63	.67	.71	.59	8.0	.73	.63	.88
26	.74	.58	.60	.58	.63	.67	.67	.71	5.3	.66	.63	.88
27	.70	.58	.62	.58	.63	.67	.63	.79	2.0	.66	.63	.84
28	.66	.58	.58	.62	.67	.67	.63	.79	1.5	.66	.63	.84
29	.62	.58	.66	6.5	.67	.67	.63	.75	1.2	.63	.63	.84
30	.66	.58	.58	.75	------	.67	.63	.67	1.0	.60	.63	.88
31	.58	------	.60	.67	------	.67	------	.67	------	.63	.66	------
TOTAL	20.98	17.32	22.23	25.10	18.52	22.00	21.85	18.49	58.38	29.34	19.65	26.18
MEAN	.68	.58	.72	.81	.64	.71	.73	.60	1.95	.95	.63	.87
MAX	.86	.62	.99	6.5	1.3	1.1	1.1	.79	17	2.8	.66	2.6
MIN	.58	.54	.58	.58	.60	.67	.63	.55	.63	.60	.60	.66
CFSM	.30	.25	.32	.36	.28	.31	.32	.26	.86	.42	.28	.38
IN.	.34	.28	.36	.41	.30	.36	.36	.30	.95	.48	.32	.43

WAT YR 1968 TOTAL 300.04 MEAN .82 MAX 17 MIN .54 CFSM .36 IN 4.90

5-4098.3 North Fork Nederlo Creek near Gays Mills, Wis.--Continued

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.88	.66	.63	.60	.60	.63	.73	.70	.66	.91	.66	.70
2	.86	.63	.63	.60	.60	.63	.73	.70	.66	.80	.66	.66
3	.86	.63	.63	.60	.60	.63	.73	.66	.66	.77	.66	.60
4	.84	.63	.63	.60	.60	.66	1.8	.66	.66	.77	.66	.66
5	.82	.66	.63	.60	.60	.66	.91	.66	.63	.70	.63	.66
6	.82	.66	.60	.60	.60	.66	.84	.77	.63	.70	.63	.63
7	.80	.66	.60	.60	.60	.66	.80	.70	.73	.73	.80	.63
8	.80	.66	.60	.60	.60	.66	.77	.70	.73	.73	.63	.63
9	1.0	.66	.60	.60	.60	.63	.80	.66	.73	.70	.70	.60
10	.77	.66	.60	.60	.60	.63	.73	.66	.73	.70	.66	.60
11	.73	.66	.63	.60	.60	.63	.73	.66	.80	.66	.63	.60
12	.70	.66	.66	.60	.60	.63	.70	.63	.95	.66	.63	.60
13	.70	.66	.63	.60	.66	.63	.70	.63	.73	.70	.63	.60
14	.70	.66	.63	.60	.63	.63	.70	.63	.70	.70	.63	.84
15	.70	.66	.66	.63	.60	.63	.73	.63	.66	.70	.63	.70
16	.66	.66	.60	.77	.60	.66	.77	.63	.66	.70	.63	.66
17	.77	.66	.60	.66	.60	.73	.91	.95	.66	1.2	.63	.63
18	.70	.66	.60	.63	.60	.88	.80	.73	.70	.80	.63	.63
19	.66	.66	.63	.63	.60	.95	.77	.70	.66	.73	.63	.66
20	.66	.66	.60	.63	.60	.99	.73	.70	.63	.70	.63	.63
21	.66	.66	.60	.63	.60	.91	.70	.70	.63	.70	.60	.63
22	.66	.66	.63	.66	.60	.99	.70	.70	.66	.70	.60	.63
23	.70	.66	.60	.84	.60	.91	.70	.66	.66	.80	.63	.66
24	.66	.63	.60	.70	.60	.99	.66	.80	.66	.73	.63	.63
25	.66	.63	.60	.60	.60	.91	.66	.77	.95	.70	.63	.63
26	.66	.63	.60	.60	.63	.88	.73	.70	4.3	.73	.63	.63
27	.70	.63	.63	.60	.63	.80	.73	.66	1.3	.70	.63	.63
28	.70	.63	.63	.60	.63	.80	.70	.66	.95	.70	.63	.63
29	.66	.63	.60	.60	------	.77	.70	.63	2.5	.66	.63	.77
30	.66	.63	.60	.60	------	.75	.66	.63	1.0	.66	.60	.70
31	.66	------	.56	.60	------	.75	------	.66	------	.66	.77	------
TOTAL	22.81	19.50	19.04	19.38	16.98	23.27	23.32	21.33	27.58	22.80	19.97	19.46
MEAN	.74	.65	.61	.63	.61	.75	.78	.69	.92	.74	.64	.65
MAX	1.0	.66	.66	.84	.66	.99	1.8	.95	4.3	1.2	.80	.84
MIN	.66	.63	.56	.60	.60	.63	.66	.63	.63	.66	.60	.60
CFSM	.32	.29	.27	.28	.27	.33	.34	.30	.40	.32	.28	.29
IN.	.37	.32	.31	.32	.28	.38	.38	.35	.45	.37	.33	.32

CAL YR 1968 TOTAL 300.86 MEAN .82 MAX 17 MIN .55 CFSM .36 IN 4.91
WAT YR 1969 TOTAL 255.44 MEAN .70 MAX 4.3 MIN .56 CFSM .31 IN 4.17

5-4098.9 Nederlo Creek near Gays Mills, Wis.

LOCATION.--Lat 43°21'43", long 90°52'44", in NW 1/4 sec.8, T.10 N., R.4 W., Crawford County, on right bank just upstream from bridge on private road, 3.4 miles north of Gays Mills and 1.2 miles above the mouth.

DRAINAGE AREA.--9.8 sq mi.

PERIOD OF RECORD.--October 1967 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 740 ft (from topographic map).

EXTREMES.--Water year 1968: Maximum discharge, 2,600 cfs June 23 (gage height, 17.06 ft) from rating curve extended above 20 cfs on basis of slope-area measurement of peak flow at site 1.2 miles upstream, computation of flow through culvert at gage height 14.80 ft, and slope-area measurement made at gage height 13.36 ft; minimum, 1.7 cfs Feb. 16 (gage height, 10.78 ft), result of freezeup.
Water year 1969: Maximum discharge, 239 cfs June 26 (gage height, 13.36 ft) from rating curve extended as explained above; minimum, 2.3 cfs Dec. 23 (gage height, 10.84 ft), result of freezeup.

REMARKS.--Records fair.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.0	3.4	3.0	2.8	11	2.6	2.9	3.3	3.0	4.9	3.6	4.4
2	3.0	3.3	3.0	2.8	4.0	2.6	2.9	3.3	2.9	4.5	3.6	3.5
3	3.0	3.2	3.0	2.8	3.3	2.6	3.8	3.5	2.7	4.3	3.6	3.3
4	3.0	3.0	3.0	2.8	3.2	2.7	3.8	3.3	2.7	4.1	3.6	3.3
5	3.0	3.0	3.0	2.8	3.1	2.9	3.2	3.3	2.7	4.0	3.8	3.3
6	3.0	2.9	3.2	2.8	3.1	2.9	3.2	3.3	2.7	3.8	3.8	3.2
7	4.0	2.9	4.2	2.8	3.1	3.0	3.6	3.3	2.7	4.1	3.8	3.2
8	5.0	2.9	3.4	2.8	3.1	5.4	3.5	3.6	2.7	4.0	3.6	10
9	3.5	2.9	3.3	2.8	3.1	6.7	3.2	3.5	2.9	5.3	3.5	5.4
10	3.0	2.9	3.3	2.8	3.0	3.5	3.2	3.5	3.3	3.8	3.3	3.5
11	3.5	2.9	3.2	2.8	2.8	2.9	3.2	3.5	3.3	3.8	3.3	3.3
12	3.0	2.8	3.2	2.8	2.7	2.7	3.2	3.3	3.0	3.8	3.3	3.2
13	3.0	2.8	3.0	2.8	2.6	2.7	3.3	3.2	2.9	3.8	3.3	3.2
14	3.0	2.8	3.0	2.8	2.6	2.7	4.4	4.1	9.5	3.6	3.3	3.2
15	3.0	2.8	2.9	2.8	2.6	2.9	3.5	3.5	3.2	3.6	3.5	3.2
16	3.0	2.8	3.0	2.8	2.6	2.9	3.3	3.5	3.2	15	3.5	3.3
17	3.0	2.9	3.3	2.8	2.6	3.0	3.2	3.3	3.0	9.7	3.3	3.3
18	3.0	2.9	3.3	2.9	2.5	6.3	3.2	3.2	31	5.0	3.2	4.4
19	3.0	2.9	3.0	2.9	2.5	4.1	3.0	3.2	3.6	4.3	3.3	4.1
20	3.0	3.0	3.4	3.3	2.5	3.0	7.2	3.0	3.0	4.1	3.3	3.8
21	3.0	3.0	3.3	3.9	2.4	2.9	4.1	3.0	14	4.0	3.2	3.6
22	3.0	3.0	3.1	3.4	2.3	2.7	3.8	2.9	3.3	4.0	3.2	3.8
23	3.5	3.0	3.0	2.9	2.3	2.7	5.3	2.9	67	37	3.2	4.1
24	5.0	3.0	3.0	2.9	2.4	2.7	4.5	2.9	15	5.3	3.2	3.8
25	4.0	3.2	3.1	2.9	2.4	2.7	4.0	2.9	32	4.9	3.2	3.6
26	3.5	3.0	3.1	2.9	2.4	2.7	3.8	3.3	21	4.5	3.2	3.5
27	3.3	2.8	2.9	2.9	2.4	3.0	3.6	3.2	8.2	4.3	3.2	3.5
28	3.2	2.9	2.8	2.9	2.5	3.0	3.6	3.0	6.7	4.1	3.2	3.5
29	3.1	2.9	2.8	90	2.5	2.9	3.6	3.0	6.0	4.0	3.2	3.5
30	4.0	3.0	2.8	3.8	------	2.7	3.5	3.0	5.6	4.0	3.2	3.5
31	3.7	------	2.8	3.5	------	3.2	------	2.9	------	3.8	3.3	------
TOTAL	103.3	88.8	96.4	178.7	87.6	99.3	110.6	100.7	272.8	179.4	104.8	114.5
MEAN	3.33	2.96	3.11	5.76	3.02	3.20	3.69	3.25	9.09	5.79	3.38	3.82
MAX	5.0	3.4	4.2	90	11	6.7	7.2	4.1	67	37	3.8	10
MIN	3.0	2.8	2.8	2.8	2.3	2.6	2.9	2.9	2.7	3.6	3.2	3.2
CFSM	.35	.31	.32	.60	.31	.33	.38	.34	.95	.60	.35	.40
IN.	.40	.34	.37	.69	.34	.38	.43	.39	1.06	.69	.41	.44

WAT YR 1968 TOTAL 1,536.9 MEAN 4.20 MAX 90 MIN 2.3 CFSM .44 IN 5.95

GPO 823-131-10

5-4098.9 Nederlo Creek near Gays Mills, Wis.--Continued

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.5	3.2	2.9	3.2	3.2	3.3	4.7	4.0	4.6	4.8	3.9	4.0
2	3.5	3.0	2.9	3.2	3.2	3.5	4.9	4.2	4.6	4.8	3.8	3.8
3	3.3	3.0	2.7	3.2	3.0	3.6	5.3	4.0	4.6	4.7	3.8	3.8
4	3.3	3.0	2.7	3.2	3.0	3.6	15	4.0	4.4	4.6	3.8	3.9
5	3.3	3.0	2.7	3.2	3.0	3.6	6.2	4.0	4.3	4.4	3.8	3.9
6	3.5	3.2	2.7	3.2	3.0	3.6	5.3	4.7	4.3	4.3	3.8	3.8
7	3.5	3.2	2.7	3.2	3.0	3.6	5.1	4.2	4.9	4.2	4.3	3.7
8	3.6	3.2	2.7	3.2	3.0	3.6	4.9	4.2	4.6	4.3	3.8	3.7
9	5.3	3.2	2.7	3.2	3.0	3.8	4.7	4.2	4.3	4.1	4.0	3.7
10	3.8	3.2	2.7	3.2	3.0	3.8	4.5	4.2	4.3	4.2	3.8	3.6
11	3.6	3.2	2.7	3.2	3.0	3.8	4.3	4.0	4.8	4.0	3.7	3.6
12	3.6	3.2	3.0	3.2	3.0	3.8	4.2	4.0	6.1	4.0	3.7	3.6
13	3.6	3.2	3.0	3.2	3.0	3.8	4.2	4.0	4.8	4.0	3.7	3.6
14	3.6	3.3	2.9	3.3	3.0	3.6	4.3	3.8	4.7	4.0	3.7	4.8
15	3.6	3.6	2.9	3.5	3.0	3.6	4.5	3.8	4.9	4.0	3.7	3.9
16	3.6	3.6	2.9	4.2	3.0	4.0	4.5	3.8	4.6	4.0	3.7	3.8
17	4.3	3.6	2.9	3.8	3.0	4.9	5.9	5.8	4.6	4.2	3.7	3.7
18	3.6	3.6	2.9	3.6	3.0	7.2	4.5	4.2	4.7	4.1	3.7	3.8
19	3.6	3.5	3.0	3.6	3.0	9.5	4.2	3.8	4.6	4.0	3.7	3.8
20	3.6	3.3	2.9	3.6	3.0	10	4.2	3.6	4.4	4.0	3.7	3.8
21	3.5	3.3	2.9	3.6	3.2	7.5	4.2	3.8	4.3	3.9	3.6	3.8
22	3.5	3.3	3.0	3.8	3.3	8.3	4.2	3.8	4.4	3.9	3.6	3.8
23	3.5	3.3	2.7	4.8	3.3	8.5	4.2	4.7	4.3	4.4	3.6	3.8
24	3.5	3.3	2.7	4.2	3.3	9.6	4.2	5.1	4.3	4.0	3.6	3.8
25	3.5	3.2	2.7	3.8	3.3	6.8	4.0	4.8	8.6	4.0	3.6	3.8
26	3.5	3.2	2.7	3.6	3.3	5.8	4.2	4.6	31	4.0	3.6	3.8
27	3.5	3.0	2.9	3.5	3.3	5.6	4.5	4.4	9.7	4.0	3.6	3.8
28	3.3	3.0	3.2	3.5	3.3	5.6	4.2	4.4	4.8	4.0	3.7	3.8
29	3.2	2.9	3.2	4.2	------	4.9	4.0	4.4	20	3.9	3.7	4.1
30	3.2	2.9	3.2	4.2	------	4.7	4.0	4.3	5.3	3.9	3.7	3.9
31	3.2	------	3.2	3.6	------	4.5	------	4.4	------	3.9	4.8	------
TOTAL	110.7	96.7	88.9	110.0	86.7	162.0	147.1	131.2	189.8	128.6	116.9	114.7
MEAN	3.57	3.22	2.87	3.55	3.10	5.23	4.90	4.23	6.33	4.15	3.77	3.82
MAX	5.3	3.6	3.2	4.8	3.3	10	15	5.8	31	4.8	4.8	4.8
MIN	3.2	2.9	2.7	3.2	3.0	3.3	4.0	3.6	4.3	3.9	3.6	3.6
CFSM	.37	.34	.30	.37	.32	.54	.51	.44	.66	.43	.39	.40
IN.	.43	.37	.34	.43	.34	.63	.57	.51	.73	.50	.45	.44

CAL YR 1968 TOTAL 1,544.7 MEAN 4.22 MAX 90 MIN 2.3 CFSM .44 IN 5.98
WAT YR 1969 TOTAL 1,483.3 MEAN 4.06 MAX 31 MIN 2.7 CFSM .42 IN 5.74

5-4100. Kickapoo River at Gays Mills, Wis.

LOCATION.--Lat 43°19'10", long 90°51'08", in NE 1/4 sec.28, T.10 N., R.4 W., Crawford County, on upstream side of State Highway 171 bridge 300 ft downstream from dam in Gays Mills and 3.3 miles downstream from Taintor Creek.

DRAINAGE AREA.--616 sq mi.

PERIOD OF RECORD.--December 1913 to September 1934. Monthly discharge only July to September 1934, published in WSP 1308. April 1964 to current year.

GAGE.--Nonrecording gage. Datum of gage is 685.75 ft above mean sea level.

AVERAGE DISCHARGE.--25 years (1914-34, 1964-69), 417 cfs (9.19 inches per year).

EXTREMES.--Current year: Maximum discharge, 1,650 cfs Apr. 7 (gage height, 11.10 ft); minimum observed, 217 cfs Dec. 6, 7 (gage height, 3.70 ft).
Period of record: Maximum discharge, 10,600 cfs Feb. 10, 1966 (gage height, 16.00 ft); minimum observed, 48 cfs July 27, 1931 (gage height, 0.51 ft).
Flood in 1913 reached a stage of 15.2 ft, from floodmark (backwater from ice probable).
Flood in 1961 reached a stage of 16.37 ft, from floodmark.

REMARKS.--Records good except those for winter periods, which are fair. Occasional regulation caused by dam 300 ft upstream.

REVISIONS (WATER YEARS).--WSP 1438: 1915-16(M), 1917, 1918-19(M), 1920-23, 1924-26(M), 1927-30, 1931(M), 1932, 1933-34(M).

Rating table (gage height, in feet, and discharge, in cubic feet per second). (Shifting-control method used Oct. 1-6; stage discharge relation affected by ice Dec. 15 to Mar. 16).

3.7	217	9.0	1,080
5.0	367	11	1,600
7.0	690		

DISCHARGE IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	327	292	268	250	300	280	465	402	330	780	296	333
2	335	288	268	260	290	280	515	384	303	558	274	478
3	335	281	268	260	280	280	515	399	317	486	274	340
4	335	266	268	260	280	290	890	406	320	430	290	279
5	330	266	268	260	280	300	1,230	409	320	399	274	290
6	330	277	231	270	270	300	1,370	409	327	388	268	314
7	340	288	231	260	280	300	1,550	426	320	360	296	296
8	340	302	231	260	280	300	1,180	416	308	346	290	270
9	353	279	238	260	270	290	840	392	314	360	279	262
10	453	279	262	260	270	280	735	395	302	360	270	257
11	426	274	284	260	260	280	618	374	290	350	268	252
12	360	284	284	260	260	280	545	384	353	350	269	252
13	337	284	281	270	270	280	512	353	416	333	259	246
14	327	277	288	260	270	280	491	353	402	320	257	266
15	327	266	280	260	270	280	471	324	340	320	257	279
16	324	266	280	260	280	290	426	333	308	327	248	281
17	327	270	270	260	280	308	518	343	320	353	248	268
18	324	277	260	270	280	373	640	480	308	353	246	262
19	308	288	260	280	260	486	708	430	320	327	252	262
20	300	277	250	280	260	814	604	374	320	308	248	268
21	308	288	230	300	260	1,040	499	367	314	296	247	262
22	304	266	220	300	260	1,050	483	356	290	296	246	252
23	300	266	220	310	260	1,100	465	350	295	296	241	255
24	290	268	220	320	260	1,240	430	353	308	302	241	252
25	296	268	220	320	270	1,380	430	353	320	302	238	262
26	290	270	220	330	280	1,430	409	337	435	312	238	262
27	288	270	220	320	280	1,100	430	333	1,020	324	238	262
28	288	274	230	320	280	744	453	330	972	374	238	252
29	302	268	230	310	------	620	460	317	804	308	231	274
30	295	268	240	300	------	529	430	314	970	300	231	292
31	292	------	240	300	------	478	------	317	------	314	242	------
TOTAL	10,091	8,287	7,760	8,690	7,640	17,282	19,312	11,513	12,266	11,232	7,994	8,380
MEAN	326	276	250	280	273	557	644	371	409	362	258	279
MAX	453	302	288	330	300	1,430	1,550	480	1,020	780	296	478
MIN	288	266	220	250	260	280	409	314	290	296	231	246
CFSM	.53	.45	.41	.45	.44	.90	1.05	.60	.66	.59	.42	.45
IN.	.61	.50	.47	.52	.46	1.04	1.17	.70	.74	.68	.48	.51

CAL YR 1968 TOTAL 136,350 MEAN 373 MAX 2,340 MIN 175 CFSM .61 IN 8.23
WAT YR 1969 TOTAL 130,447 MEAN 357 MAX 1,550 MIN 220 CFSM .58 IN 7.88

5-4105. Kickapoo River at Steuben, Wis.

LOCATION.--Lat 43°11'27", long 90°52'28", in NW 1/4 sec.8, T.8 N., R.4 W., Crawford County, on right bank 0.8 mile upstream from Duffy Creek, 1.0 mile northwest of Steuben and 14 miles upstream from mouth.

DRAINAGE AREA.--690 sq mi.

PERIOD OF RECORD.--May 1933 to current year.

GAGE.--Water-stage recorder. Datum of gage is 657.82 ft above mean sea level, adjustment of 1912. Prior to Oct. 20, 1938, nonrecording gage at site 1 mile upstream at datum 1.3 ft higher.

AVERAGE DISCHARGE.--36 years, 452 cfs (8.90 inches per year).

EXTREMES.--Current year: Maximum discharge, 1,740 cfs Apr. 9 (gage height, 8.82 ft); minimum daily, 260 cfs Dec. 24-26.
Period of record: Maximum discharge, 10,800 cfs Mar. 28, 1961 (gage height, 12.33 ft); minimum observed, 161 cfs Aug. 9, 1936 (gage height, 0.76 ft, site and datum then in use).

REMARKS.--Records good except those for winter period, which are fair.

REVISIONS (WATER YEARS).--WSP 855: Drainage area. WSP 1438: 1933-38.

Rating table (gage height, in feet, and discharge, in cubic feet per second).
(stage-discharge relation affected by ice Dec. 8 to Mar. 20).

2.80	251	8.00	1,260
6.00	755	8.70	1,590

DISCHARGE IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	400	349	341	300	360	310	552	464	347	1,000	359	327
2	392	343	342	300	350	310	570	446	347	725	350	438
3	387	340	338	310	350	320	601	470	351	566	340	502
4	372	333	349	310	340	320	757	463	355	522	328	341
5	362	333	343	310	340	330	1,110	444	353	490	326	337
6	371	340	331	310	330	340	1,220	441	349	466	324	384
7	386	350	312	310	330	340	1,330	475	348	440	333	350
8	397	355	300	320	330	340	1,530	478	359	430	344	330
9	414	356	290	320	330	330	1,550	462	354	423	353	312
10	474	347	300	320	320	330	1,070	439	339	417	327	306
11	530	350	320	320	320	320	801	429	336	428	320	298
12	491	330	330	320	320	310	691	407	376	408	315	296
13	416	335	340	320	310	310	620	412	439	387	310	297
14	408	334	340	320	310	310	587	406	474	381	304	300
15	405	355	330	320	300	310	560	379	424	385	302	323
16	402	346	320	330	300	320	547	376	358	388	301	321
17	399	351	310	340	300	340	581	401	363	399	300	322
18	399	361	310	350	300	380	654	458	358	520	294	307
19	390	362	310	350	300	540	742	499	364	422	295	302
20	380	358	300	350	300	760	664	457	361	392	296	303
21	370	353	290	350	300	1,020	581	421	349	375	294	299
22	366	353	280	350	300	1,120	550	424	335	363	289	301
23	373	344	270	360	300	1,150	529	410	336	362	284	296
24	358	349	260	380	300	1,220	505	397	350	377	281	301
25	356	344	260	400	300	1,310	469	410	355	367	277	300
26	352	346	260	410	300	1,400	480	388	468	399	281	302
27	353	349	270	400	300	1,540	481	382	978	408	281	300
28	356	347	270	390	310	1,360	513	376	1,020	437	278	297
29	367	349	280	380	------	900	531	378	992	435	274	306
30	366	336	290	370	------	711	495	361	1,050	412	282	325
31	362	------	300	360	------	611	------	348	------	371	277	------
TOTAL	12,154	10,398	9,486	10,580	8,850	19,512	21,871	13,101	13,588	13,895	9,519	9,723
MEAN	392	347	306	341	316	629	729	423	453	448	307	324
MAX	530	362	349	410	360	1,540	1,550	499	1,050	1,000	359	502
MIN	352	330	260	300	300	310	469	348	335	362	274	296
CFSM	.57	.50	.44	.49	.46	.91	1.06	.61	.66	.65	.44	.47
IN.	.66	.56	.51	.57	.48	1.05	1.18	.71	.73	.75	.51	.52

CAL YR 1968 TOTAL 153,163 MEAN 418 MAX 2,280 MIN 210 CFSM .61 IN 8.26
WAT YR 1969 TOTAL 152,677 MEAN 418 MAX 1,550 MIN 260 CFSM .61 IN 8.23

PEAK DISCHARGE (BASE, 1,900 CFS).--No peak above base.

Reservoirs in Wisconsin River Basin

The 24 reservoirs listed below are used to stabilize the flow of the Wisconsin and Tomahawk Rivers for power utilization and are also used for recreational purposes. The first 21 reservoirs are owned and operated by the Wisconsin Valley Improvement Co., which furnished 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 these 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.

5-3901. Lac Vieux Desert on Wisconsin River, lat 46°07'18", long 89°09'07", in SE 1/4 NE 1/4 sec.17, T.42 N., R.11 E., Vilas County, 4.8 miles northwest of Phelps, Wis., used as a reservoir since 1908, has a usable capacity of 652,000,000 cu ft. Drainage area, 28 sq mi. Datum of gage is 1,679.53 ft above mean sea level, datum of 1929.

5-3901.5. 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 miles southwest of Phelps, Wis., used as a reservoir since 1908, has a usable capacity of 313,000,000 cu ft. Drainage area, 26 sq mi. Altitude of gage is 1,640 ft (from river-profile map).

5-3902. 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 miles southwest of Conover, Wis., used as a reservoir since 1908, has a usable capacity of 130,000,000 cu ft. Drainage area, 14 sq mi. Datum of gage is 1,637.85 ft above mean sea level (levels by Wisconsin Valley Improvement Co.).

5-3902.5 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 miles southeast of town of Eagle River, Wis., used as a reservoir since 1908, has a usable capacity of 93,000,000 cu ft. Drainage area, 25 sq mi. Datum of gage is 1,646.30 ft above mean sea level (levels by Wisconsin Valley Improvement Co.).

5-3903. 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 miles southeast of town of Eagle River, Wis., used as a reservoir since 1908, has a usable capacity of 121,000,000 cu ft. Drainage area, 14 sq mi. Datum of gage is 1,638.27 ft above mean sea level (levels by Wisconsin Valley Improvement Co.).

5-3903.5 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 miles southeast of town of Eagle River, Wis., used as a reservoir since 1908, has a usable capacity of 779,000,000 cu ft (revised). This reservoir includes 18 lakes controlled by the same dam. Drainage area, 129 sq mi. Altitude of gage is 1,620 ft (from river-profile map).

5-3904. 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 miles southeast of Phelps, Wis., used as a reservoir since 1908, has a usable capacity of 400,000,000 cu ft. Drainage area, 35 sq mi. Datum of gage is 1,695.14 ft above mean sea level (levels by Wisconsin Valley Improvement Co.).

5-3906. Deerskin Lake on Deerskin Creek, lat 45°59'07", long 89°09'40", in SE 1/4 sec.31, T.41 N., R.11 E., Vilas County, 6.3 miles northeast of town of Eagle River, Wis., used as a reservoir since 1908, has a usable capacity of 22,000,000 cu ft. Drainage area, 5 sq mi. Datum of gage is 1,640.16 ft above mean sea level (levels by Wisconsin Valley Improvement Co.).

5-3906.5. 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 miles southwest of town of Eagle River, Wis., used as a reservoir since 1908, has a usable capacity of 471,000,000 cu ft. Drainage area, 59 sq mi. Datum of gage is 1,591.94 ft above mean sea level (levels by Wisconsin Valley Improvement Co.).

5-3907. 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 miles west of town of Eagle River, Wis., used as a reservoir since 1908, has a usable capacity of 79,000,000 cu ft. Drainage area, 19 sq mi. Datum of gage is 1,611.54 ft above mean sea level (levels by Wisconsin Valley Improvement Co.).

5-3907.5. 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 miles south of Sayner, Wis., used as a reservoir since 1908, has a usable capacity of 202,000,000 cu ft. Drainage area, 69 sq mi. Datum of gage is 1,588.32 ft above mean sea level (levels by Public Service Commission of Wisconsin).

5-3908. 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 miles northeast of town of Lake Tomahawk, Wis., used as a reservoir since 1935, has a usable capacity of 338,000,000 cu ft. Drainage area, 78 sq mi. Datum of gage is 1,582.00 ft above mean sea level (levels by Wisconsin Valley Improvement Co.).

5-3909. 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 miles northeast of town of Lake Tomahawk, Wis., used as a reservoir since 1935, has a usable capacity of 2,181,000,000 cu ft. Drainage area, 740 sq mi. Datum of gage is 1,570.00 ft above mean sea level (levels by Wisconsin Valley Improvement Co.).

5-3911. 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 miles northwest of town of Pelican Lake, Wis., used as a reservoir since 1909, has a usable capacity of 305,000,000 cu ft. Drainage area, 22 sq mi. Datum of gage is 1,589.98 ft above mean sea level (levels by Wisconsin Valley Improvement Co.).

Reservoirs in Wisconsin River Basin--Continued

5-3913. North Pelican Lakes (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 mile below Twin Lakes Creek and 8.0 miles east of Rhinelander, Wis., city limits, used as a reservoir since 1908, has a usable capacity of 218,000,000 cu ft. Drainage area, 71 sq mi. Datum of gage is 1,569.10 ft above mean sea level (levels by Wisconsin Valley Improvement Co.).

5-3921. 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 mile west of Minocqua, Wis., used as a reservoir since 1910, has a usable capacity of 628,000,000 cu ft. Drainage area, 89 sq mi. Datum of gage is 1,584.56 ft above mean sea level (levels by Wisconsin Valley Improvement Co.).

5-3922. 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 miles west of Minocqua, Wis., used as a reservoir since 1908, has a usable capacity of 182,000,000 cu ft. Drainage area, 17 sq mi. Datum of gage is 1,560.93 ft above mean sea level (levels by Wisconsin Valley Improvement Co.).

5-3923. 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 miles southwest of Hazelhurst, Wis., used as a reservoir since 1927, has a usable capacity of 3,302,000,000 cu ft. Drainage area, 327 sq mi. Datum of gage is 1,505.87 ft above mean sea level (levels by Wisconsin Valley Improvement Co.).

5-3925. 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 mile east of Bradley, Wis., used as a reservoir since 1912, has a usable capacity of 1,808,000,000 cu ft. Drainage area, 545 sq mi. Datum of gage is 1,448.24 ft above mean sea level, datum of 1929.

5-3936. 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 miles south of Tomahawk, Wis., used as a reservoir since 1923, has a usable capacity of 756,000,000 cu ft. Drainage area, 174 sq mi. Datum of gage is 1,420.53 ft above mean sea level, datum of 1929.

5-3996. 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 miles northeast of Dancy, Wis., used as a reservoir since 1937, has a usable capacity of 4,457,000,000 cu ft. Drainage area, 365 sq mi. Datum of gage is 1,115.00 ft above mean sea level (levels by Wisconsin Valley Improvement Co.).

5-4002.95. 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 1/2 miles downstream from Little Eau Pleine River and 10 1/2 miles northwest of Stevens Point, has a usable capacity of 2,117,000,000 cu ft. Drainage area, 4,890 sq mi. Datum of gage is at mean sea level (power company levels).

5-4014. 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 1/4 miles upstream from Roche a Cri Creek, 2.4 miles west of Strongs Prairie, Wis., and 3.5 miles northeast of Necedah, Wis., used as a reservoir since 1950, has a total capacity of 19,880,000,000 cu ft. Drainage area, 5,869 sq mi. Datum of gage is 790.2 ft above mean sea level (levels by Wisconsin River Power Co.).

5-4032. 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 1/2 miles upstream from Duck Creek, and 2 miles south of Germantown, Wis., and 7 miles northeast of Mauston, Wis., used as a reservoir since 1950, has a total capacity of 7,630,000,000 cu ft. Drainage area, 6,860 sq mi. Datum of gage is 790.2 ft above mean sea level (levels by Wisconsin River Power Co.).

Month-end contents, in millions of cubic feet, water year October 1968 to September 1969

	Lac Vieux Desert	Twin Lakes	Buckatabon Lake	Sevenmile Lake	Lower Ninemile Lake	Burnt Rollways Reservoir	Long Lake	Deerskin Lake
Sept. 30.....	367	271	118	85	122	752	264	19
Oct. 31.....	333	275	118	84	121	759	270	17
Nov. 30.....	224	197	83	74	92	651	185	8
Dec. 31.....	146	81	39	34	37	478	83	6
Jan. 31.....	116	0	24	0	0	237	25	5
Feb. 28.....	44	0	20	0	0	29	17	4
Mar. 31.....	38	0	39	1	1	242	17	7
Apr. 30.....	235	130	102	69	89	766	167	10
May 31.....	250	192	118	87	120	752	205	15
June 30.....	335	247	118	85	124	766	233	16
July 31.....	354	273	118	87	124	766	236	16
Aug. 31.....	292	240	120	83	112	685	195	14
Sept.30.....	286	185	96	77	109	566	154	10

Reservoirs in Wisconsin River Basin--Continued

Month-end contents, in millions of cubic feet, water year October 1968 to September 1969

	Sugar Camp Reservoir	Little St. Germain Lake	Big St. Germain Lake	Pickerel Lake	Rainbow Lake	Pelican Lake	North Pelican Lakes	Minocqua Lake
Sept. 30.....	451	75	175	226	2,139	238	154	517
Oct. 31.....	459	75	180	273	2,105	228	146	496
Nov. 30.....	435	65	149	244	2,016	190	82	400
Dec. 31.....	411	39	119	245	2,047	114	34	271
Jan. 31.....	289	11	69	216	1,780	41	55	139
Feb. 28.....	127	2	13	179	1,003	0	40	2
Mar. 31.....	49	16	26	128	279	51	52	2
Apr. 30.....	419	60	165	276	1,643	193	153	243
May 31.....	411	78	163	272	2,143	228	139	429
June 30.....	411	75	159	278	2,075	237	139	568
July 31.....	407	75	156	273	2,121	219	125	499
Aug. 31.....	387	72	157	274	1,013	158	113	478
Sept. 30.....	315	64	146	273	698	139	114	526

	Squirrel Lake	Willow Reservoir	Lake Nokomis	Spirit Lake Flowage	Big Eau Pleine Reservoir	Lake Dubay	Petenwell Flowage	Castle Rock Flowage
Sept. 30.....	161	3,282	1,772	747	4,402	4,407	18,724	6,364
Oct. 31.....	148	3,164	1,705	715	4,342	4,450	18,620	6,547
Nov. 30.....	107	2,576	1,567	556	4,123	4,317	18,656	6,635
Dec. 31.....	50	2,024	1,487	505	3,542	4,390	18,602	6,678
Jan. 31.....	23	1,250	1,239	375	2,430	4,443	18,620	6,459
Feb. 28.....	23	575	827	146	710	4,265	17,141	4,850
Mar. 31.....	53	435	276	1	1,790	3,260	16,444	5,028
Apr. 30.....	150	2,298	1,609	736	4,377	4,903	19,520	7,554
May 31.....	172	3,087	1,769	726	4,392	4,855	19,808	7,615
June 30.....	161	3,235	1,748	714	4,321	4,278	18,800	6,851
July 31.....	168	3,255	1,752	635	4,124	4,461	18,710	6,479
Aug. 31.....	159	2,034	1,361	402	3,387	4,365	18,424	6,779
Sept. 30.....	165	1,195	869	271	2,072	4,271	18,575	6,606

5-4135. Grant River at Burton, Wis.

LOCATION.--Lat 42°43'13", long 90°49'09", in NW 1/4 sec.23, T.3 N., R.4 W., Grant County, on right bank at downstream side of highway bridge at Burton, 5.9 miles northwest of Potosi and 9.5 miles upstream from mouth.

DRAINAGE AREA.--267 sq mi.

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.

GAGE.--Water-stage recorder. Datum of gage is 606.89 ft above mean sea level, adjustment of 1912. Oct. 17, 1934, to Sept. 30, 1947, nonrecording gage at site 6 miles upstream at datum 33.18 ft higher. Mar. 18, 1947, to July 27, 1949, nonrecording gage at present site and datum.

AVERAGE DISCHARGE.--35 years, 158 cfs (8.04 inches per year).

EXTREMES.--Current year: Maximum discharge, 1,430 cfs Mar. 18 (gage height, 15.81 ft); minimum daily, 48 cfs Dec. 5-7, backwater from ice.
Period of record: Maximum discharge, 25,000 cfs July 16, 1950 (gage height, 24.82 ft), from rating curve extended above 18,000 cfs on basis of slope-area measurement of peak flow; minimu, 21 cfs Mar. 4, 1954, result of freezeup.

REMARKS.--Records good except those for winter period, which are fair.

COOPERATION.--Three discharge measurements furnished by Corps of Engineers.

REVISIONS (WATER YEARS).--WSP 1308: 1935-37(M), 1941(M), 1945-46(M), 1949(M). WSP 1728: 1942(M).

DISCHARGE IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	75	71	68	62	130	150	141	136	111	333	128	93
2	75	71	69	58	120	210	145	133	109	283	125	94
3	73	70	68	56	110	300	141	130	108	257	122	92
4	71	71	58	56	110	380	238	126	123	244	121	93
5	71	71	48	56	100	400	284	123	130	226	119	101
6	72	71	48	58	98	300	190	144	111	207	119	99
7	74	73	48	60	96	200	172	170	122	211	118	93
8	74	73	52	60	94	150	165	147	229	216	116	91
9	79	72	54	60	92	120	165	145	148	233	115	90
10	99	71	58	58	92	110	160	138	127	217	116	90
11	85	71	62	58	90	100	145	138	134	258	113	90
12	79	70	66	60	90	98	137	132	216	195	111	90
13	77	70	62	62	90	94	133	129	216	178	109	89
14	77	70	58	66	88	92	134	127	163	177	108	90
15	76	74	56	68	86	92	157	123	149	174	106	97
16	75	80	56	72	86	135	150	124	141	171	109	94
17	74	77	58	96	86	602	231	129	135	224	108	91
18	74	76	64	140	86	851	432	140	134	196	106	89
19	74	74	330	120	86	626	270	129	128	212	104	89
20	74	72	230	92	86	500	232	131	122	171	100	89
21	74	70	130	82	86	296	212	128	116	162	99	89
22	74	71	100	80	86	219	194	164	116	159	97	88
23	74	71	86	98	86	220	178	143	123	162	95	90
24	73	71	76	600	90	264	168	130	121	172	95	90
25	74	70	70	370	96	301	156	128	125	150	94	89
26	74	65	68	290	130	220	152	130	240	153	94	91
27	74	69	68	250	130	188	168	127	901	153	93	99
28	74	69	68	220	120	180	156	122	288	153	93	95
29	73	69	68	190	------	163	146	115	540	141	92	91
30	72	68	66	170	------	143	139	109	672	134	91	93
31	72	------	66	150	------	140	------	107	------	131	90	------
TOTAL	2,336	2,141	2,479	3,918	2,740	7,844	5,491	4,097	6,098	6,053	3,306	2,759
MEAN	75.4	71.4	80.0	126	97.9	253	183	132	203	195	107	92.0
MAX	99	80	330	600	130	851	432	170	901	333	128	101
MIN	71	65	48	56	86	92	133	107	108	131	90	88
CFSM	.28	.27	.30	.47	.37	.95	.69	.49	.76	.73	.40	.34
IN.	.33	.30	.35	.55	.38	1.09	.77	.57	.85	.84	.46	.38

CAL YR 1968 TOTAL 34,497 MEAN 94.3 MAX 720 MIN 35 CFSM .35 IN 4.81
WAT YR 1969 TOTAL 49,262 MEAN 135 MAX 901 MIN 48 CFSM .51 IN 6.86

PEAK DISCHARGE (BASE, 2,400 CFS).--No peak above base.

5-4140. Platte River near Rockville, Wis.

LOCATION.--Lat 42°43'52", long 90°38'25", in SW 1/4 sec.17, T.3 N., R.2 W., Grant County, on right bank just downstream from bridge on County Trunk Highway B, 2.2 miles east of Rockville, 0.8 mile upstream from Blakely Branch, 4.5 miles northeast of Potosi, and 15.2 miles upstream from mouth.

DRAINAGE AREA.--139 sq mi.

PERIOD OF RECORD.--October 1934 to current year. Monthly discharge only for October and November 1934, published in WSP 1308.

GAGE.--Water-stage recorder. Datum of gage is 642.95 ft above mean sea level, adjustment of 1912. Prior to Oct. 1, 1941, nonrecording gage at site 1.3 miles upstream at datum 12.55 ft higher. Oct. 1, 1941, to June 29, 1949, nonrecording gage at present site and datum.

AVERAGE DISCHARGE.--35 years, 93.8 cfs (9.17 inches per year).

EXTREMES.--Current year: Maximum discharge, 4,980 cfs June 29 (gage height, 10.70 ft); minimum, 32 cfs Dec. 24 (gage height, 3.17 ft) result of freezeup.
Period of record: Maximum discharge, 43,500 cfs July 16, 1950 (gage height, 17.26 ft), from rating curve extended above 7,000 cfs on basis of slope-area measurement of peak flow; no flow Nov. 24, 1950.

REMARKS.--Records good except those for winter periods and July 1 to Sept. 30, which are fair.

COOPERATION.--Five discharge measurements furnished by Corps of Engineers.

REVISIONS (WATER YEARS).--WSP 1438: 1935-36, 1937(M), 1939(M), 1941-43, 1946(M).

DISCHARGE IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	53	54	52	49	64	107	108	95	80	406	88	79
2	52	54	53	48	62	130	107	95	79	331	88	80
3	51	54	53	48	61	172	104	94	79	277	88	80
4	50	55	48	48	69	199	164	90	87	259	87	84
5	51	51	44	48	62	208	187	89	112	222	87	88
6	53	51	42	49	60	165	142	102	84	209	87	84
7	55	53	41	52	58	135	130	116	93	199	87	82
8	55	53	40	54	58	99	125	102	206	194	85	79
9	63	52	41	54	56	80	130	100	118	199	85	78
10	66	52	41	52	56	73	120	95	106	197	85	78
11	60	51	44	50	54	65	108	91	116	192	84	79
12	58	51	51	47	54	62	104	89	314	155	83	78
13	65	50	52	45	54	61	100	87	184	148	72	78
14	55	51	42	46	54	57	102	86	146	129	65	79
15	55	55	40	48	54	55	112	84	134	101	67	82
16	55	57	41	54	54	75	107	82	121	112	74	80
17	55	56	41	98	54	336	160	84	116	230	76	78
18	55	55	42	86	54	540	231	89	116	173	76	76
19	54	53	172	74	54	372	182	85	112	148	76	77
20	54	53	84	68	54	293	156	85	108	133	77	77
21	52	52	54	64	56	191	146	84	102	125	77	76
22	53	53	47	62	56	156	129	97	106	108	76	77
23	53	53	44	210	58	150	120	88	108	113	76	78
24	52	52	44	330	62	170	113	84	110	112	77	77
25	53	51	45	110	71	177	107	85	259	106	78	79
26	53	53	46	96	82	150	107	84	498	103	79	79
27	54	54	48	86	85	146	116	79	1,860	108	79	85
28	55	54	52	78	88	127	106	81	414	105	80	80
29	54	54	52	74	------	116	100	79	1,240	97	79	80
30	54	54	50	70	------	107	97	77	826	92	78	77
31	54	------	50	68	------	106	------	77	------	90	77	------
TOTAL	1,702	1,591	1,596	2,366	1,704	4,880	3,820	2,755	8,034	5,173	2,473	2,384
MEAN	54.9	53.0	51.5	76.3	60.9	157	127	88.9	268	167	79.8	79.5
MAX	66	57	172	330	88	540	231	116	1,860	406	88	88
MIN	50	50	40	45	54	55	97	77	79	90	65	76
CFSM	.40	.38	.37	.55	.44	1.13	.91	.64	1.93	1.20	.57	.57
IN.	.46	.43	.43	.63	.46	1.31	1.02	.74	2.15	1.38	.66	.64

CAL YR 1968 TOTAL 23,244 MEAN 63.5 MAX 400 MIN 28 CFSM .46 IN 6.22
WAT YR 1969 TOTAL 38,478 MEAN 105 MAX 1,860 MIN 40 CFSM .76 IN 10.30

PEAK DISCHARGE (BASE, 2,100 CFS)

DATE	TIME	G.HT.	DISCHARGE	DATE	TIME	G.HT.	DISCHARGE
6-27	0100	10.60	4,770	6-29	2130	10.70	4,980

NOTE.--Partially obstructed intake July 1 to Sept. 30.

5-4150. Galena River at Buncombe, Wis.

LOCATION.--Lat 42°30'49", long 90°22'40", in SW 1/4 sec.33, T.1 N., R.1 E., LaFayette County, on left bank at Buncombe, 0.6 mile upstream from Coon Branch, 1.5 miles upstream from Scrabble Branch, 2 miles upstream from Wisconsin-Illinois State line, and 3.5 miles southeast of Hazel Green.

DRAINAGE AREA.--128 sq mi.

PERIOD OF RECORD.--September 1939 to current year.

GAGE.--Water-stage recorder. Datum of gage is 682.77 ft above mean sea level, adjustment of 1912 (Corps of Engineers bench mark). Prior to Dec. 1, 1939, nonrecording gage at same site and datum.

AVERAGE DISCHARGE.--30 years, 74.1 cfs (7.86 inches per year).

EXTREMES.--Current year: Maximum discharge, 29,700 cfs June 29 (gage height, 19.57 ft), from rating curve extended above 8,100 cfs on the basis of slope-area measurements at gage heights 15.68 and 19.57 ft; minimum, 20 cfs Dec. 6, result of freezeup.
Period of record: Maximum discharge, 29,700 cfs June 29, 1969 (gage height, 19.57 ft); minimum, 0.8 cfs Mar. 3, 1954.
Flood in February 1937 reached a stage of about 17.1 ft, from information by local resident (discharge, 18,000 cfs, from rating curve extended above 8,100 cfs on basis of slope-area measurements at gage heights 15.68 ft and 19.57 ft).

REMARKS.--Records good except those for winter periods, which are fair.

REVISIONS (WATER YEARS).--WSP 1438: 1942(P), 1943(M), 1944(P), 1945(M).

Rating table (gage height, in feet, and discharge, in cubic feet per second). (Stage-discharge relation affected by ice Dec. 5-10, 14-19, Dec. 21 to Feb. 24).

Oct. 1 to June 29				June 30 to Sept. 30			
2.7	30	6.0	803	4.3	45	6.0	468
3.2	68	8.0	1,660	4.6	87	7.0	903
3.7	130	11.4	3,440	5.1	187	8.6	1,710
4.5	296						

DISCHARGE IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	66	44	40	36	110	303	73	62	54	381	76	53
2	62	42	41	34	96	438	70	62	46	281	74	57
3	58	42	42	33	86	466	60	60	44	299	73	61
4	55	43	40	33	78	388	284	56	77	230	70	64
5	55	42	38	34	74	324	212	57	70	187	71	64
6	59	44	37	35	70	244	112	62	49	169	68	64
7	58	47	33	36	66	196	99	63	97	202	70	58
8	54	45	32	37	64	116	97	64	227	192	65	56
9	57	43	32	37	62	86	105	64	81	192	65	55
10	59	43	34	36	58	76	88	65	69	157	67	52
11	54	43	39	35	58	67	83	57	68	180	64	55
12	53	40	44	35	56	65	76	56	321	136	63	53
13	54	41	38	35	60	66	73	54	158	124	61	52
14	54	42	34	36	54	60	78	51	96	118	61	52
15	53	45	32	39	54	58	90	51	80	113	58	58
16	52	46	31	45	52	73	82	48	72	113	60	57
17	49	51	31	140	50	288	149	55	70	130	58	53
18	47	47	33	130	48	234	185	55	85	130	58	52
19	47	44	660	80	47	154	123	53	68	115	58	53
20	48	42	109	68	47	123	105	54	66	104	56	51
21	48	42	64	60	47	91	95	51	58	99	56	50
22	56	42	50	56	50	77	89	63	59	96	55	55
23	53	42	40	500	76	76	79	52	63	93	60	51
24	51	42	36	260	98	88	76	52	58	96	57	52
25	49	41	36	210	221	86	75	49	87	89	57	53
26	47	42	37	240	295	79	72	49	1,610	151	53	56
27	48	40	39	190	195	71	84	51	1,330	101	55	60
28	47	39	68	150	240	76	74	44	270	104	61	57
29	45	40	56	140	------	64	70	43	3,400	85	56	52
30	44	38	48	130	------	61	63	41	1,660	82	56	55
31	44	------	40	120	------	58	------	42	------	79	55	------
TOTAL	1,626	1,284	1,934	3,050	2,512	4,652	3,021	1,686	10,493	4,628	1,917	1,661
MEAN	52.5	42.8	62.4	98.4	89.7	150	101	54.4	350	149	61.8	55.4
MAX	66	51	660	500	295	466	284	65	3,400	381	76	64
MIN	44	38	31	33	47	58	60	41	44	79	53	50
CFSM	.41	.33	.49	.77	.70	1.17	.79	.43	2.73	1.16	.48	.43
IN.	.47	.37	.56	.89	.73	1.35	.88	.49	3.05	1.35	.56	.48

CAL YR 1968 TOTAL 19,496 MEAN 53.3 MAX 746 MIN 21 CFSM .42 IN 5.67
WAT YR 1969 TOTAL 38,464 MEAN 105 MAX 3,400 MIN 31 CFSM .82 IN 11.18

PEAK DISCHARGE (BASE, 3,000 CFS)

DATE	TIME	G.HT.	DISCHARGE	DATE	TIME	G.HT.	DISCHARGE
6-26	0730	11.97	3,980	6-29	a	19.57	29,700
6-27	0445	11.97	3,980				

a About 2300.

5-4155. East Fork Galena River at Council Hill, Ill.

LOCATION.--Lat 42°28'06", long 90°20'20", in NW 1/4 sec.31, T.29 N., R.2 E., Jo Daviess County, on left bank at Council Hill, 3.2 miles upstream from mouth and 5.9 miles northeast of Galena. Records include flow of unnamed creek which enters just below gage.

DRAINAGE AREA.--20.1 sq mi, includes that of unnamed creek.

PERIOD OF RECORD.--September 1939 to current year (discontinued).

GAGE.--Water-stage recorder. Datum of gage is 686.59 ft above mean sea level, adjustment of 1912 (Corps of Engineers benchmark). Prior to Dec. 1, 1939, nonrecording gage at same site and datum.

AVERAGE DISCHARGE.--30 years, 12.4 cfs (8.38 inches per year).

EXTREMES.--Current year: Maximum discharge, 1300 cfs July 26 (gage height, 6.98 ft); minimum daily, 1.5 cfs Sept. 24.
Period of record: Maximum discharge, 16,600 cfs Apr. 29, 1947 (gage height, 15.3 ft, from floodmarks), from rating curve extended above 1,500 cfs on basis of slope-area measurements of peak flows at gage heights 9.33 and 15.3 ft and contracted-opening measurements at gage heights 9.85 and 15.3 ft; minimum, 0.3 cfs June 22, 1940.

REMARKS.--Records good except those for winter periods or those below 5 cfs, which are fair.

REVISIONS (WATER YEAR).--WSP 1208: 1942-43, 1945. WSP 1308: 1941(M).

Rating table (gage height, in feet, and discharge, in cubic feet per second). (Shifting-control method used Sept. 25-30; stage-discharge relation affected by ice Dec. 4-10, 14-17, Dec. 30 to Jan. 15, Jan. 20 to Feb. 21).

2.4	0.2	2.8	18
2.5	2.0	3.2	61
2.6	5.0	4.8	316

DISCHARGE IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.4	6.2	5.6	4.6	6.2	50	22	10	4.7	24	14	3.5
2	6.8	6.2	4.7	4.5	4.7	54	15	9.8	4.4	20	12	3.5
3	7.4	6.2	5.0	4.2	4.1	42	9.8	9.2	5.6	18	12	3.5
4	8.0	4.7	5.0	4.1	4.2	22	65	8.6	12	16	10	4.4
5	8.6	5.0	4.5	4.0	4.7	21	29	8.6	13	13	12	4.4
6	9.2	6.2	4.3	4.0	4.5	19	20	11	11	12	11	3.8
7	6.8	8.6	4.0	4.1	4.3	14	16	9.2	72	23	9.8	4.4
8	7.4	8.0	4.0	4.1	4.0	11	16	9.8	84	36	8.0	3.8
9	8.0	8.0	3.9	4.2	3.8	8.6	18	9.8	29	26	6.2	3.8
10	8.0	6.8	4.4	4.3	3.8	6.2	13	11	22	22	5.0	3.8
11	7.4	5.0	6.8	4.3	3.8	6.8	12	8.0	22	21	4.4	3.5
12	7.4	4.7	8.6	4.4	3.7	6.8	11	5.6	38	16	5.0	3.8
13	7.4	5.6	7.4	4.5	3.7	5.6	9.8	6.2	23	14	5.6	3.8
14	5.6	5.6	4.5	4.6	3.7	6.2	11	6.8	19	12	5.0	4.1
15	7.4	6.8	3.4	4.7	3.7	6.2	14	8.0	14	14	5.0	4.7
16	7.4	7.4	3.1	32	3.7	13	14	9.8	9.8	14	5.6	3.8
17	7.4	8.0	3.1	49	3.7	18	65	14	9.2	25	6.2	4.1
18	6.8	5.6	51	22	4.3	15	37	12	9.2	48	4.4	4.1
19	6.8	5.6	124	13	4.8	13	25	5.6	9.2	13	5.0	3.8
20	5.6	6.2	9.8	8.0	5.2	17	24	6.8	9.2	11	4.7	3.8
21	5.6	6.2	7.4	8.2	5.4	11	22	7.4	8.0	8.6	4.7	3.5
22	9.8	6.2	8.6	23	9.4	9.8	15	9.2	9.2	9.8	4.7	2.3
23	6.8	6.2	5.6	300	24	9.8	12	8.0	11	9.8	4.7	1.6
24	7.4	6.2	3.8	50	28	14	11	8.0	9.8	14	4.7	1.5
25	6.2	4.7	2.9	29	63	14	12	9.8	27	15	4.4	2.3
26	6.2	5.0	2.9	14	36	11	14	7.4	60	144	4.4	2.6
27	6.2	6.2	14	12	38	10	13	8.0	144	32	4.4	2.6
28	4.7	6.8	42	11	36	12	10	6.2	24	22	4.4	2.0
29	5.0	4.7	12	10	------	9.2	9.8	5.0	40	20	4.4	2.0
30	6.2	5.0	6.0	9.0	------	8.0	9.2	4.4	57	20	4.4	2.0
31	6.2	------	5.0	7.6	------	5.0	------	3.2	------	20	3.5	------
TOTAL	217.1	183.6	377.3	662.4	324.4	469.2	574.6	256.4	810.3	713.2	193.6	100.8
MEAN	7.00	6.12	12.2	21.4	11.6	15.1	19.2	8.27	27.0	23.0	6.44	3.36
MAX	9.8	8.6	124	300	63	54	65	14	144	144	14	4.7
MIN	4.7	4.7	2.9	4.0	3.7	5.0	9.2	3.2	4.4	8.6	3.5	1.5
CFSM	.35	.30	.61	1.06	.58	.75	.96	.41	1.34	1.14	.32	.17
IN.	.40	.34	.70	1.23	.60	.87	1.06	.47	1.50	1.32	.37	.19

CAL YR 1968 TOTAL 3,066.0 MEAN 8.38 MAX 124 MIN 2.3 CFSM .42 IN 5.67
WAT YR 1969 TOTAL 4,888.9 MEAN 13.4 MAX 300 MIN 1.5 CFSM .67 IN 9.05

PEAK DISCHARGE (BASE, 700 CFS)

DATE	TIME	G.HT.	DISCHARGE	DATE	TIME	G.HT.	DISCHARGE
12-19	0030	5.85	708	6-27	0100	6.12	834
1-23	-	-	760	7-26	1400	6.98	1,300

5-4230. West Branch Rock River near Waupun, Wis.

LOCATION.--Lat 43°40'04", long 88°39'08", in SE 1/4 sec.24, T.14 N., R.15 E., Fond du Lac County, on right bank 700 ft downstream from bridge on U.S. Highway 151, 4.1 miles upstream from South Branch Rock River, and 4.5 miles northeast of Waupun.

DRAINAGE AREA.--41.4 sq mi.

PERIOD OF RECORD.--January 1949 to current year.

GAGE.--Water-stage recorder. Datum of gage is 870.53 ft above mean sea level.

AVERAGE DISCHARGE.--20 years, 19.7 cfs (6.46 inches per year).

EXTREMES.--Current year: Maximum discharge, 349 cfs June 26 (gage height, 4.73 ft); minimum, 0.29 cfs Dec. 29, 30 (gage height, 1.73 ft).
Period of record: Maximum discharge, 949 cfs Mar. 27, 1950 (gage height, 6.56 ft); no flow Dec. 5, 1949, Feb. 6-13, 1959, Dec. 20-22, 1963, and many days in 1964-65.

REMARKS.--Records fair.

Rating table (gage height, in feet, and discharge, in cubic feet per second). (Shifting-control method used Feb. 24-27, Mar. 13-16; stage-discharge relation affected by ice Nov. 28, 29, Dec. 5, Dec. 10-16, 20-28, Dec. 31 to Jan. 13, Jan. 15 to Feb. 23, Feb. 28 to Mar. 12, Mar. 17-21).

1.6	.07	2.1	8.0	3.8	161
1.7	.38	2.2	12	4.5	290
1.8	1.1	2.4	26	4.7	340
1.9	3.0	3.4	117		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.5	2.8	2.2	.40	.54	6.8	38	36	10	167	8.8	1.6
2	3.2	2.6	2.2	.39	.50	7.2	53	33	11	134	7.5	1.6
3	2.8	2.4	2.2	.38	.46	7.8	88	30	10	110	6.6	1.6
4	2.6	3.0	2.2	.38	.44	8.6	138	27	16	93	6.4	1.6
5	2.6	2.6	2.0	.38	.42	9.4	166	25	14	85	6.1	6.1
6	2.6	3.2	1.1	.38	.41	9.6	148	23	11	74	6.1	6.9
7	2.6	3.7	1.0	.37	.41	9.4	127	22	11	63	6.1	5.1
8	2.8	3.9	.87	.36	.40	8.6	110	21	9.6	52	5.8	3.9
9	2.8	3.7	.80	.35	.40	8.2	102	21	7.7	44	5.6	3.5
10	2.8	3.7	.76	.33	.40	7.8	93	20	6.9	38	5.8	3.2
11	2.8	3.5	.72	.31	.40	7.4	78	18	6.4	32	5.6	3.0
12	2.6	3.2	.68	.32	.40	7.0	66	20	8.8	28	4.8	2.8
13	2.6	3.2	.65	.40	.39	6.9	58	29	11	23	4.4	2.6
14	2.8	3.2	.63	1.3	.39	6.6	51	31	9.6	20	3.9	2.6
15	2.2	3.7	.61	2.0	.39	6.4	50	30	8.4	18	3.7	2.4
16	2.0	3.9	.60	2.1	.42	7.5	52	25	7.7	16	3.5	2.6
17	1.5	4.2	.59	2.3	.70	35	95	21	7.5	16	3.5	2.6
18	1.3	4.2	.59	1.5	1.2	80	119	30	8.4	18	3.5	2.2
19	1.3	4.8	1.8	.90	1.4	125	88	32	9.2	16	3.2	2.4
20	1.3	3.5	2.0	.50	1.3	130	71	28	7.5	13	3.0	2.0
21	1.3	2.8	1.5	.43	1.3	135	61	25	6.4	11	3.0	2.2
22	2.4	2.8	1.0	.50	1.5	100	52	22	6.6	10	2.8	2.2
23	3.2	2.8	.80	.58	2.2	112	44	20	7.2	10	2.6	2.4
24	3.0	2.8	.68	2.5	3.9	112	38	18	7.2	23	2.6	2.4
25	2.8	2.8	.58	2.1	6.1	96	34	16	32	14	2.4	2.4
26	2.2	2.6	.50	1.5	6.9	75	33	13	215	16	2.4	2.4
27	2.8	2.6	.44	.90	6.4	68	60	13	328	19	2.2	2.2
28	3.0	2.6	.38	.58	6.2	66	55	13	312	25	2.0	1.8
29	3.0	2.5	.32	.60	------	48	48	11	237	18	2.0	2.8
30	3.0	2.4	.45	.82	------	50	41	9.2	198	12	1.8	2.2
31	3.0	------	.42	.64	------	45	------	8.8	------	10	1.6	------
TOTAL	78.4	95.7	31.27	26.50	45.87	1,402.2	2,257	691.0	1,541.1	1,228	129.3	83.3
MEAN	2.53	3.19	1.01	.85	1.64	45.2	75.2	22.3	51.4	39.6	4.17	2.78
MAX	3.5	4.8	2.2	2.5	6.9	135	166	36	328	167	8.8	6.9
MIN	1.3	2.4	.32	.31	.39	6.4	33	8.8	6.4	10	1.6	1.6
CFSM	.061	.077	.024	.021	.040	1.09	1.82	.54	1.24	.96	.10	.067
IN.	.07	.09	.03	.02	.04	1.26	2.03	.62	1.38	1.10	.12	.07

CAL YR 1968 TOTAL 3,023.07 MEAN 8.26 MAX 74 MIN .32 CFSM .200 IN 2.73
WAT YR 1969 TOTAL 7,609.64 MEAN 20.8 MAX 328 MIN .31 CFSM .50 IN 6.84

PEAK DISCHARGE (BASE, 250 CFS).--June 26 (2400) 349 cfs (4.73 ft).

5-4235. South Branch Rock River at Waupun, Wis.

LOCATION.--Lat 43°38'31", long 88°43'13", in NW 1/4 sec.33, T.14 N., R.15 E., Fond du Lac County, on left bank 100 ft upstream from U.S. Highway 151 at Waupun and 2.8 miles upstream from mouth.

DRAINAGE AREA.--62.8 sq mi.

RECORDS AVAILABLE.--October 1948 to September 1969 (discontinued). Monthly discharge only for October 1948, published in WSP 1308.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 863.46 ft above mean sea level.

AVERAGE DISCHARGE.--21 years, 23.8 cfs (5.15 inches per year).

EXTREMES.--Current year: Maximum discharge, 510 cfs June 27 (gage height, 5.99 ft); minimum, 0.60 cfs Sept. 27 (gage height, 1.50 ft).
Period of record: Maximum discharge, 1,500 cfs Apr. 3, 1959 (gage height, 7.97 ft), from rating curve extended above 650 cfs; no flow at times in 1949, 1953-54, 1958-59, 1963-64.

REMARKS.--Records fair except those for winter periods or those below 2.0 cfs, which are poor.

Rating table (gage height, in feet, and discharge, in cubic feet per second). (Shifting-control method used Oct. 15-23; stage-discharge relation affected by ice Nov. 26-28, Dec. 1-9, Dec. 14 to Jan. 6, Jan. 8-18, Jan. 20 to Feb. 15, Feb. 19-23, Mar. 3-14).

1.4	0.30	1.7	3.2	2.1	26
1.5	0.80	1.8	5.8	3.0	107
1.6	1.7	1.9	10	5.0	322
				6.0	522

DISCHARGE IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.2	3.0	1.3	.80	.76	10	52	45	16	181	18	1.1
2	3.1	1.5	2.0	.80	.72	10	70	42	19	137	16	1.5
3	3.0	1.4	2.2	.80	.70	11	113	39	18	127	16	2.2
4	1.7	1.3	2.3	.80	.70	12	190	37	24	105	15	2.4
5	2.5	2.2	1.7	.80	.70	13	212	35	20	91	14	9.6
6	1.7	4.3	1.5	.80	.70	14	161	35	20	73	14	6.3
7	2.0	3.5	1.3	.89	.70	15	125	35	20	64	13	3.8
8	3.2	3.1	1.2	.82	.70	14	103	34	16	54	12	2.7
9	5.3	2.7	1.0	.80	.70	13	103	34	15	49	10	2.7
10	3.2	1.7	1.2	.80	.70	13	91	31	12	47	9.6	2.4
11	2.5	1.6	1.3	.82	.70	12	76	29	10	41	9.1	2.0
12	2.4	1.7	1.4	.88	.70	12	64	27	20	38	8.6	1.9
13	1.9	2.2	1.3	.95	.70	12	57	28	22	35	8.2	1.4
14	2.2	2.5	1.1	1.4	.70	11	56	30	23	32	7.7	1.8
15	2.0	5.5	1.0	1.8	.70	10	57	21	23	30	7.2	1.7
16	2.2	3.5	.90	2.2	.70	13	61	20	19	27	5.5	2.0
17	2.2	3.1	.80	1.5	1.6	42	121	26	16	32	5.3	2.0
18	2.7	3.0	.80	1.1	2.2	142	158	28	20	104	5.3	2.5
19	2.4	3.8	3.0	.80	3.6	194	104	30	25	49	5.3	2.7
20	2.4	2.7	2.0	.76	4.0	246	75	29	22	37	5.3	1.6
21	3.1	2.5	1.5	.74	3.4	191	64	27	19	31	4.8	.89
22	4.0	2.4	1.3	.74	3.6	168	56	24	19	27	4.4	1.5
23	3.2	2.5	1.1	2.0	3.8	176	50	23	20	24	4.2	1.6
24	3.2	1.7	1.0	2.5	4.0	176	45	20	20	24	4.2	1.4
25	2.2	1.5	.90	2.0	4.8	153	42	19	44	23	4.0	1.4
26	2.4	1.5	.80	1.5	5.8	119	45	17	323	22	3.7	1.3
27	4.0	1.5	1.1	1.0	6.7	106	66	18	483	20	3.3	.75
28	2.2	1.5	1.0	1.1	8.6	96	59	17	363	23	2.8	.60
29	2.2	1.5	.80	1.3	------	64	56	14	284	23	2.4	3.0
30	2.5	1.5	.74	1.3	------	64	49	10	235	21	1.5	1.9
31	2.5	------	.70	1.0	------	54	------	13	------	20	1.3	------
TOTAL	83.3	72.4	40.24	35.50	63.38	2,186	2,581	837	2,190	1,611	241.7	68.64
MEAN	2.69	2.41	1.30	1.15	2.26	70.5	86.0	27.0	73.0	52.0	7.80	2.29
MAX	5.3	5.5	3.0	2.5	8.6	246	212	45	483	181	18	9.6
MIN	1.7	1.3	.70	.74	.70	10	42	10	10	20	1.3	.60
CFSM	.043	.038	.021	.018	.036	1.12	1.37	.43	1.16	.83	.12	.037
IN.	.05	.04	.02	.02	.04	1.29	1.53	.50	1.30	.95	.14	.04

CAL YR 1968 TOTAL 3,900.94 MEAN 10.7 MAX 148 MIN .70 CFSM .17 IN 2.31
WAT YR 1969 TOTAL 10,010.16 MEAN 27.4 MAX 483 MIN .60 CFSM .44 IN 5.93

PEAK DISCHARGE (BASE, 400 CFS).--June 27 (1300) 510 cfs (5.99 ft).

5-4240. East Branch Rock River near Mayville, Wis.

LOCATION.--Lat 43°31'46", long 88°34'00", in NE 1/4 sec.10, T.12 N., R.16 E., Dodge County, on left bank 500 ft downstream from Kekoskee dam, 0.5 mile upstream from Gill Creek, and 2.0 miles northwest of railroad bridge in Mayville.

DRAINAGE AREA.--179 sq mi.

RECORDS AVAILABLE.--May 1949 to current year.

GAGE.--Water-stage recorder. Datum of gage is 857.20 ft above mean sea level.

AVERAGE DISCHARGE.--20 years, 85.3 cfs (6.47 inches per year).

EXTREMES.--Current year: Maximum discharge, 1,470 cfs June 26 (gage height, 7.80 ft); minimum, 4.2 cfs Aug. 31 (gage height, 2.26 ft).
Period of record: Maximum discharge, 3,400 cfs Apr. 3, 1959; maximum gage height, 11.02 ft Apr. 3, 1959 (backwater from ice); minimum discharge, 0.1 cfs June 6, 1949, Aug. 22, 23, 1962.

REMARKS.--Records good except those for winter periods, which are fair. Minor regulation by recreation dams.

Rating table (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Dec. 5-12, Dec. 14 to Feb. 16, Mar. 3-11).

2.3	4.2	4.5	290
2.5	12	5.5	555
2.9	48	7.1	1,130
3.5	123		

DISCHARGE IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18	23	24	12	34	118	232	143	67	639	155	6.4
2	17	21	27	12	32	131	213	101	64	587	131	7.0
3	16	19	32	12	30	140	245	40	61	571	86	7.2
4	15	19	35	11	28	145	312	18	68	583	88	7.6
5	15	19	31	11	26	150	403	28	74	535	93	28
6	18	23	27	11	24	150	331	35	81	341	90	17
7	16	24	23	11	23	150	327	40	83	360	85	14
8	14	24	20	10	22	155	336	50	82	236	77	12
9	12	24	17	10	22	160	349	56	78	240	56	11
10	11	25	15	11	21	155	325	57	69	232	39	10
11	12	26	15	12	21	150	294	57	63	200	27	9.1
12	12	26	15	14	20	148	246	56	84	140	20	9.2
13	12	25	16	16	20	130	227	54	103	119	18	9.2
14	12	24	14	17	21	121	229	55	94	148	30	8.4
15	12	45	12	17	22	113	212	54	89	96	37	7.0
16	10	65	12	18	23	108	160	50	87	55	35	6.7
17	11	67	15	20	25	159	226	53	82	17	32	8.4
18	10	63	20	21	25	230	286	61	96	369	33	8.2
19	11	58	23	21	26	264	234	78	115	132	33	9.1
20	11	46	23	21	27	398	211	84	112	153	31	8.2
21	12	51	21	22	27	439	164	88	101	129	29	7.3
22	16	49	20	26	31	510	195	92	93	103	26	8.2
23	13	38	18	60	37	604	175	87	113	134	23	7.0
24	17	34	16	80	42	558	150	80	121	134	18	6.7
25	18	33	14	90	58	447	152	82	137	99	13	7.2
26	18	27	12	70	74	413	152	78	1,130	111	11	6.9
27	18	24	12	56	87	366	171	78	978	177	9.7	6.7
28	19	25	12	46	100	347	175	81	594	361	9.2	6.2
29	20	26	13	44	------	230	171	75	683	116	8.7	9.2
30	21	24	14	42	------	223	157	66	712	149	7.7	7.9
31	24	------	13	38	------	232	------	65	------	146	5.7	------
TOTAL	461	997	581	862	948	7,644	7,060	2,042	6,314	7,412	1,357.0	277.0
MEAN	14.9	33.2	18.7	27.8	33.9	247	235	65.9	210	239	43.8	9.23
MAX	24	67	35	90	100	604	403	143	1,130	639	155	28
MIN	10	19	12	10	20	108	150	18	61	17	5.7	6.2
CFSM	.083	.19	.10	.16	.19	1.38	1.31	.37	1.17	1.34	.24	.052
IN.	.10	.21	.12	.18	.20	1.59	1.47	.42	1.31	1.54	.28	.06

CAL YR 1968 TOTAL 20,125.1 MEAN 55.0 MAX 454 MIN 5.4 CFSM .31 IN 4.18
WAT YR 1969 TOTAL 35,955.0 MEAN 98.5 MAX 1,130 MIN 5.7 CFSM .55 IN 7.47

PEAK DISCHARGE (BASE, 600 CFS)

DATE	TIME	G.HT.	DISCHARGE	DATE	TIME	G.HT.	DISCHARGE
3-23	1400	5.71	623	7- 4	1600	6.18	785
6-26	1700	7.80	1,470	7- 5	1200	5.79	651
6-28	2200	6.13	768	7-27	2400	5.74	634

5-4255. Rock River at Watertown, Wis.

LOCATION.--Lat 43°11'17", long 88°43'34", in SW 1/4 sec.4, T.8 N., R.15 E., Jefferson County, on left bank at Watertown, 700 ft downstream from Milwaukee Street Bridge and 1.1 miles downstream from Silver Creek.

DRAINAGE AREA.--971 sq mi.

PERIOD OF RECORD.--June 1931 to current year.

GAGE.--Water-stage recorder. Datum of gage is 792.58 ft above mean sea level. Prior to Sept. 26, 1933, non-recording gage at site 700 ft upstream at different datum.

AVERAGE DISCHARGE.--38 years, 419 cfs (5.86 inches per year).

EXTREMES.--Current year: Maximum discharge, 1,740 cfs Apr. 13 (gage height, 3.88 ft); minimum, 17 cfs Sept. 5 (gage height, 0.79 ft).
Period of record: Maximum discharge, 5,030 cfs Apr. 4, 1959 (gage height, 6.32 ft); minimum daily, 0.9 cfs Oct. 15, 1939, Sept. 9, 1944.

REMARKS.--Records good except those for winter periods, which are fair. Slight intermittent regulation caused by a small feed mill 0.2 mile upstream; considerable diurnal regulation caused by powerplant 1.6 miles upstream.

REVISIONS (WATER YEARS).--WSP 760: Drainage area. WSP 1438: 1933, 1935(M), 1937(M), 1938-39, 1945(M).

Rating table (gage height, in feet, and discharge, in cubic feet per second).
(Shifting-control method used Apr. 15 to May 6; stage-discharge relation affected by ice Nov. 27 to Dec. 2, Dec. 7-21, Dec. 24 to Feb. 22, Mar. 8-18).

0.9	26	2.0	276
1.1	46	2.4	476
1.3	78	3.0	936
1.5	124	4.0	1,860

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	171	64	190	170	310	607	1,220	504	669	1,350	809	54
2	163	76	210	160	280	770	1,240	504	677	1,340	794	49
3	140	129	220	160	250	856	1,280	600	669	1,340	770	46
4	135	129	229	160	230	896	1,320	708	684	1,340	747	38
5	129	124	213	150	210	912	1,460	825	731	1,330	716	45
6	119	127	163	150	200	928	1,560	856	708	1,330	677	80
7	109	129	160	150	190	904	1,600	912	700	1,320	630	82
8	102	129	150	140	180	820	1,630	912	700	1,310	592	97
9	97	132	140	140	170	740	1,670	912	684	1,300	576	97
10	80	127	130	140	170	660	1,700	872	661	1,290	497	93
11	78	119	120	140	160	580	1,720	755	638	1,270	342	80
12	74	112	120	140	160	540	1,730	532	723	1,250	249	71
13	74	112	120	150	160	500	1,740	346	723	1,220	189	64
14	71	106	120	150	150	460	1,680	245	700	1,180	154	60
15	71	114	120	170	150	430	1,620	207	677	1,130	129	57
16	71	132	110	190	150	430	1,530	174	653	1,060	116	49
17	80	151	120	190	150	450	1,460	180	630	1,080	112	30
18	80	171	120	180	150	500	1,460	229	645	1,140	107	34
19	84	177	210	170	150	584	1,330	294	622	1,010	99	47
20	82	198	270	170	160	786	1,280	351	546	856	91	44
21	78	201	320	170	160	953	1,130	414	439	755	88	42
22	84	249	426	180	170	978	1,120	525	355	684	97	37
23	93	256	445	240	183	1,000	1,050	592	294	708	88	33
24	95	213	450	330	195	1,040	1,030	592	259	716	80	33
25	99	195	450	600	229	1,080	970	584	262	731	74	37
26	99	192	380	700	274	1,080	944	576	708	770	71	35
27	88	190	300	700	351	1,070	880	584	1,240	856	71	33
28	78	190	250	580	445	1,080	841	592	1,250	944	64	33
29	82	190	220	520	------	1,110	731	599	1,310	912	59	53
30	78	180	190	420	------	1,140	638	607	1,350	864	53	46
31	74	------	180	350	------	1,170	------	614	------	825	54	------
TOTAL	2,958	4,614	6,846	7,960	5,737	25,054	39,564	17,197	20,907	33,211	9,195	1,599
MEAN	95.4	154	221	257	205	808	1,319	555	697	1,071	297	53.3
MAX	171	256	450	700	445	1,170	1,740	912	1,350	1,350	809	97
MIN	71	64	110	140	150	430	638	174	259	684	53	30
CFSM	.098	.16	.23	.26	.21	.83	1.36	.57	.72	1.10	.31	.055
IN.	.11	.18	.26	.30	.22	.96	1.52	.66	.80	1.27	.35	.06

CAL YR 1968 TOTAL 103,327 MEAN 282 MAX 1,300 MIN 64 CFSM .29 IN 3.96
WAT YR 1969 TOTAL 174,842 MEAN 479 MAX 1,740 MIN 30 CFSM .49 IN 6.70

PEAK DISCHARGE (BASE, 1,100 CFS)

DATE	TIME	G.HT.	DISCHARGE	DATE	TIME	G.HT.	DISCHARGE
4-13	0200	3.88	1,740	7-17	2200	3.38	1,260
7- 2	2400	3.51	1,380				

5-4260. Crawfish River at Milford, Wis.

LOCATION.--Lat 43°06'00", long 88°50'58", in SW 1/4 sec.4, T.7 N., R.14 E., Jefferson County, near left bank on upstream side of highway bridge in Milford, 1.4 miles downstream from Rock Creek and 9.8 miles upstream from mouth.

DRAINAGE AREA.--732 sq mi.

PERIOD OF RECORD.--June 1931 to current year.

GAGE.--Water-stage recorder. Datum of gage is 779.40 ft above mean sea level. Prior to July 28, 1966, non-recording gage at present site and datum.

AVERAGE DISCHARGE.--38 years, 331 cfs (6.14 inches per year).

EXTREMES.--Current year: Maximum discharge, 1,810 cfs Mar. 24 (gage height, 5.65 ft); minimum, 17 cfs Sept. 29 (gage height, 1.49 ft).
Period of record: Maximum discharge, 6,140 cfs Apr. 6, 1959 (gage height, 11.15 ft); minimum observed, 0.2 cfs Sept. 15, 1958 (gage height, 1.11 ft).

REMARKS.--Records good except for winter periods, which are fair. Some diurnal fluctuation at low flow possible, due to small dams upstream.

Rating table (gage height, in feet, and discharge, in cubic feet per second). (Shifting-control method used Mar. 30 to Apr. 15, July 2-14; stage-discharge relation affected by ice Dec. 5 to Mar. 17, Mar. 30, 31).

1.6	30	3.0	520
1.8	63	5.0	1,450
2.0	114	5.6	1,780

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	90	57	109	96	210	320	1,060	418	201	1,370	343	65
2	111	91	117	90	190	400	1,040	405	199	1,450	321	53
3	146	80	124	86	180	500	967	435	230	1,480	290	50
4	120	74	123	82	170	600	996	408	234	1,480	262	43
5	90	81	120	80	160	700	1,090	363	278	1,470	228	47
6	101	103	110	78	150	780	1,100	339	305	1,430	197	62
7	91	102	100	76	140	860	1,120	335	310	1,350	167	72
8	71	85	90	74	130	900	1,120	356	349	1,260	185	75
9	69	81	86	72	120	920	1,070	382	327	1,190	173	69
10	94	85	82	70	120	920	1,080	377	297	1,120	164	55
11	78	97	78	70	110	900	1,040	355	282	1,040	142	54
12	94	88	76	70	110	860	991	331	344	963	137	46
13	83	71	70	72	100	820	941	312	352	883	125	44
14	78	82	66	80	100	780	881	292	349	821	157	35
15	57	108	64	90	100	720	818	261	337	739	150	38
16	57	96	64	92	100	700	774	240	310	703	137	61
17	53	104	68	92	100	760	834	272	292	733	117	62
18	66	135	76	94	110	831	937	269	279	831	109	54
19	99	171	100	100	110	900	875	249	289	776	109	44
20	100	98	150	110	110	978	800	267	287	754	93	37
21	66	129	190	110	120	1,100	839	273	242	710	88	36
22	77	131	220	120	120	1,230	839	288	221	658	80	30
23	92	134	230	140	130	1,470	780	281	219	609	74	55
24	116	139	220	250	140	1,730	683	256	196	571	68	52
25	91	131	210	320	160	1,740	599	271	173	509	67	32
26	72	133	180	330	190	1,640	548	251	382	470	68	40
27	62	119	160	310	230	1,520	495	214	612	452	71	47
28	109	143	130	290	260	1,470	508	207	857	449	61	40
29	74	131	120	270	------	1,390	474	221	1,070	406	58	31
30	58	103	110	250	------	1,200	452	194	1,250	387	44	52
31	57	------	100	230	------	1,100	------	169	------	361	47	------
TOTAL	2,622	3,182	3,743	4,294	3,970	30,739	25,751	9,291	11,073	27,425	4,382	1,481
MEAN	84.6	106	121	139	142	992	858	300	369	885	140	49.4
MAX	146	171	230	330	260	1,740	1,120	435	1,250	1,480	343	75
MIN	53	57	64	70	100	320	452	169	173	361	44	30
CFSM	.12	.14	.17	.19	.19	1.36	1.17	.41	.50	1.21	.19	.068
IN.	.13	.16	.19	.22	.20	1.56	1.31	.47	.56	1.39	.22	.08

CAL YR 1968 TOTAL 82,203 MEAN 225 MAX 1,280 MIN 53 CFSM .31 IN 4.18
WAT YR 1969 TOTAL 127,903 MEAN 350 MAX 1,740 MIN 30 CFSM .48 IN 6.50

PEAK DISCHARGE (BASE, 1,250 CFS)

DATE	TIME	G.HT.	DISCHARGE	DATE	TIME	G.HT.	DISCHARGE
3-24	1800	5.65	1,810	7- 4	0700	4.97	1,490

5-4280. Lake Mendota at Madison, Wis.

LOCATION.--Lat 43°05'42", long 89°22'12", in SE 1/4 sec.12, T.7 N., R.9 E., Dane County, attached to left wall of lock of dam at outlet, in Madison.

DRAINAGE AREA.--254 sq mi. Area of Lake Mendota, 15.2 sq mi.

PERIOD OF RECORD.--December 1902 to May 1903, January 1916 to current year (incomplete).

GAGE.--Nonrecording gage read almost daily during periods of open water. Datum of gage is 847.65 ft above mean sea level, or 2.05 ft above city of Madison datum.

EXTREMES.--Current year: Maximum gage height observed, 2.74 ft June 30; minimum observed, 1.85 ft Feb. 28. Period of record: Maximum gage height observed, 4.19 ft Apr. 5, 1959; minimum observed, 0.20 ft Feb. 24 to Mar. 10, 1920.

REMARKS.--Lake level regulated by concrete dam with two 12-foot tainter gates and 20-foot lock at outlet.

COOPERATION.--Gage-height record furnished by city engineer of Madison.

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.34							2.09	2.08	2.72	2.66	1.96
2	2.34		2.30					2.05	2.13	2.70	2.66	1.92
3	2.36							2.05	2.13	2.71	2.64	1.90
4	2.32							2.06	2.10	2.64	2.63	1.88
5	2.32							2.05	2.16	2.64	2.60	1.86
6	2.28			2.16				2.06	2.12	2.66	2.59	1.90
7	2.28				2.08	1.96		2.10	2.14	2.62	2.60	1.90
8	2.28							2.10	2.20	2.58	2.60	1.90
9	2.28							2.10	2.17	2.55	2.60	1.88
10	2.28		2.15					2.08	2.18	2.55	2.60	1.86
11	2.26							2.10	2.17	2.56	2.60	1.84
12	2.25							2.03	2.15	2.56	2.57	1.82
13	2.22					1.87		2.00	2.24	2.54	2.52	1.80
14	2.22				2.00			1.98	2.23	2.54	2.50	1.80
15	2.22							1.98	2.27	2.53	2.48	1.80
16	2.22			2.16			2.03	1.98	2.19	2.53	2.48	1.80
17	2.22						2.09	2.00	2.19		2.46	1.80
18	2.22						2.20	2.04	2.18	2.59	2.42	1.78
19	2.22		2.17				2.19	2.04	2.20	2.60	2.39	1.76
20	2.22						2.15	2.06	2.18	2.60	2.34	1.74
21	2.20					2.10	2.16	2.04	2.16	2.58	2.30	1.74
22	2.22	2.23					2.22	2.08	2.13	2.56	2.26	1.74
23	2.20			2.16			2.16	2.08	2.13	2.54	2.22	1.72
24	2.20						2.12	2.08	2.12	2.61	2.22	1.72
25							2.11	2.08	2.10	2.61	2.18	1.70
26							2.10	2.06	2.44	2.59	2.18	1.68
27							2.09	2.08	2.65	2.64	2.10	1.66
28					1.85		2.12	2.09	2.66	2.69	2.06	1.66
29					------		2.11	2.08	2.68	2.66	2.04	1.66
30				2.16	------		2.10	2.06	2.74	2.68	2.00	1.70
31		------			------	1.96	------	2.04	------	2.68	1.96	------

GPO 823-131-11

5-4290. Lake Monona at Madison, Wis.

LOCATION.--Lat 43°03'48", long 89°23'49", in SW 1/4 sec.23, T.7 N., R.9 E., Dane County, at end of concrete storm sewer in Brittingham Park, in Madison.

DRAINAGE AREA.--273 sq mi. Area of Lake Monona, 5.3 sq mi.

PERIOD OF RECORD.--September 1915 to current year (fragmentary) in reports of the Geological Survey. For 1856 to March 1917 in reports of Wisconsin Railroad Commission, Volume 19.

GAGE.--Reference point by which the stage is read almost daily during periods of open water. Datum of gage is 843.61 ft above mean sea level, or 1.99 ft below city of Madison datum.

EXTREMES.--Current year: Maximum gage height observed, 2.94 ft July 2; minimum observed, 0.24 ft Dec. 9.
Period of record: Maximum gage height observed, 3.66 ft July 28, 1929; minimum observed, -0.39 ft Jan. 20, 1965.

REMARKS.--Lake level regulated by concrete dam with four 12-foot stop-log sections and 12-foot lock at outlet of Lake Waubesa.

COOPERATION.--Gage-height record furnished by city engineer of Madison.

REVISION.--WSP 1338: Lake area.

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		.58									2.34	
2								1.76	1.54	2.94		1.88
3			.30	.80		.93						
4		.53										
5									1.84			1.72
6				.90				1.76			2.13	
7	1.24					1.02	1.60			2.78	2.11	
8		.48								2.80	2.05	1.52
9			.24							2.85		
10				.95		1.02				2.73		1.36
11	1.13									2.67	2.13	
12								1.68				1.27
13				.97								
14	1.08					.98				2.52		
15		.39										1.22
16			.28					1.66	1.81	2.43		
17						.98				2.54		
18	1.03									2.56	2.08	
19								1.49				1.15
20			.52	1.11							2.08	
21	.88					1.15				2.50		
22					.98		1.61				2.06	1.12
23			.57					1.49	1.75			
24					.94					2.38		
25	.78						1.63			2.34	2.06	
26								1.42				1.02
27									2.50			
28	.66				.92		1.70			2.40		
29		.28			------			1.43			1.99	
30			.75		------				2.90	2.42		
31		------			------		------		------	2.37		------

5-4295. Yahara River near McFarland, Wis.

LOCATION.--Lat 43°00'32", long 89°18'18", in SW 1/4 sec.3, T.6 N., R.10 E., Dane County, on left bank just upstream from bridge on U.S. Highway 51, at dam at outlet of Lake Waubesa and 1.0 mile southwest of McFarland.

DRAINAGE AREA.--351 sq mi.

PERIOD OF RECORD.--September 1930 to current year.

GAGE.--Water-stage recorder. Datum of gage is 840.40 ft above mean sea level (levels by Wisconsin Department of Natural Resources). Prior to Dec. 23, 1934, nonrecording gage at same site and datum.

AVERAGE DISCHARGE.--39 years, 148 cfs (5.73 inches per year).

EXTREMES.--Current year: Maximum discharge, 327 cfs July 4 (gage height, 5.86 ft); minimum, 18 cfs Sept. 27 (gage height, 2.99 ft).
Period of record: Maximum discharge, 867 cfs 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 cfs Oct. 18, 1964.

REMARKS.--Records fair. Flow regulated by dams at outlets of Lake Mendota and Lake Waubesa. The Madison Metropolitan Sewerage District diverted an average of 27.86 million gallons per day of effluent into the Badfish Creek basin during 1969. Prior to 1958 the effluent was discharged into the Yahara River above McFarland.

REVISIONS.--WSP 805: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	113	87	70	120	230	190	297	172	113	316	193	134
2	115	89	73	120	220	190	302	168	115	322	188	132
3	119	85	73	120	220	195	305	175	117	325	184	126
4	119	89	89	110	220	197	322	177	144	325	175	123
5	111	87	85	110	220	204	336	170	216	327	168	117
6	109	85	62	110	220	207	327	172	231	313	161	107
7	109	91	68	110	220	209	311	175	238	302	159	123
8	103	89	70	110	210	209	305	177	259	291	155	151
9	103	87	68	110	210	209	291	179	259	294	166	136
10	101	87	68	110	210	209	277	170	246	285	170	130
11	93	85	68	110	210	209	259	161	234	269	166	128
12	85	83	66	110	210	209	184	161	246	254	157	91
13	85	75	70	110	200	209	184	177	248	238	149	62
14	77	73	71	110	200	212	166	190	238	204	149	64
15	70	79	71	110	200	212	138	190	231	204	151	62
16	66	79	73	120	200	214	155	181	228	193	151	52
17	73	89	77	120	200	219	177	181	224	209	149	50
18	93	87	77	130	200	231	193	186	219	221	155	46
19	95	93	88	130	200	238	193	186	219	221	155	42
20	99	85	110	130	200	248	188	190	212	219	151	37
21	101	79	94	140	200	261	184	190	202	207	151	34
22	103	77	92	140	190	264	175	175	200	197	151	32
23	101	73	92	170	190	267	164	144	195	193	149	28
24	101	75	92	200	190	283	164	132	193	190	149	24
25	99	75	92	220	190	299	168	115	195	184	149	19
26	99	73	96	220	190	305	170	115	193	177	149	22
27	101	73	100	230	190	305	179	113	267	184	149	22
28	105	73	130	230	190	311	184	111	283	190	144	25
29	99	79	130	230	------	313	181	95	283	188	140	37
30	91	70	130	230	------	308	180	99	299	202	138	40
31	87	------	130	230	------	299	------	101	------	197	134	------
TOTAL	3,025	2,451	2,675	4,550	5,730	7,435	6,659	4,928	6,547	7,441	4,855	2,196
MEAN	97.6	81.7	86.3	147	205	240	222	159	218	240	157	73.2
MAX	119	93	130	230	230	313	336	190	299	327	193	151
MIN	66	70	62	110	190	190	138	95	113	177	134	19
CFSM	.28	.23	.25	.42	.58	.68	.63	.45	.62	.68	.45	.21
IN.	.32	.26	.28	.48	.61	.79	.71	.52	.69	.79	.51	.23

CAL YR 1968 TOTAL 39,266 MEAN 107 MAX 311 MIN 9.0 CFSM .30 IN 4.16
WAT YR 1969 TOTAL 58,492 MEAN 160 MAX 336 MIN 19 CFSM .46 IN 6.20

5-4305. Rock River at Afton, Wis.

LOCATION.--Lat 42°36'33", long 89°04'14", in NE 1/4 sec.28, T.2 N., R.12 E., Rock County, on right bank in Afton, 0.3 mile downstream from highway bridge and 1.1 miles upstream from Bass Creek.

DRAINAGE AREA.--3,300 sq mi, approximately.

PERIOD OF RECORD.--January 1914 to current year. Monthly discharge only for January 1914, published in WSP 1308.

GAGE.--Water-stage recorder. Datum of gage is 742.36 ft above mean sea level. Prior to Aug. 21, 1932, a non-recording gage, and Aug. 21, 1932, to Sept. 30, 1933, water-stage recorder, at same site at datum 1 ft higher.

AVERAGE DISCHARGE.--55 years, 1,701 cfs (7.00 inches per year).

EXTREMES.--Current year: Maximum discharge, 4,740 cfs Apr. 18 (gage height, 7.43 ft); minimum, 305 cfs Sept. 12 (gage height, 2.17 ft).
Period of record: Maximum discharge, 13,000 cfs 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 cfs Sept. 9, 1964; minimum daily, 42 cfs Aug. 25, 26, 1934; minimum gage height, 0.09 ft Aug. 26, 1934.

REMARKS.--Records good except those for winter periods, which are fair. Diurnal fluctuation caused by power-plants above station. Record of water temperature for water year 1969 is published in Part 2 of this report.

REVISIONS (WATER YEARS).--WSP 805: Drainage area. WSP 1238: 1916(M), 1919(M), 1933, 1937-38, 1943.

Rating table (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Nov. 29 to Dec. 1, Dec. 6-10, 15-22, Jan. 1-21, 29-31, Feb. 3 to Mar. 3).

2.2	340	5.0	2,170
4.0	1,450	7.4	4,700

DISCHARGE IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1,040	644	960	1,600	2,080	1,300	3,740	2,740	1,460	3,640	2,440	516
2	978	752	1,060	1,500	1,990	1,500	3,770	2,450	1,510	3,640	2,360	540
3	926	680	1,390	1,300	1,900	1,800	3,720	2,410	1,740	3,770	2,270	500
4	902	752	1,370	1,200	1,800	1,930	3,820	2,350	1,810	3,890	2,190	480
5	908	818	1,190	1,100	1,700	2,130	4,180	2,250	1,930	3,960	2,050	700
6	914	848	1,100	1,000	1,600	2,470	4,130	2,170	1,980	4,110	1,860	860
7	914	866	1,000	980	1,500	2,790	4,170	2,160	2,110	4,100	1,650	840
8	952	902	940	960	1,400	2,850	4,240	2,150	2,370	4,010	1,650	760
9	920	836	900	960	1,300	2,790	4,390	2,110	2,310	3,920	1,700	720
10	896	818	860	960	1,200	2,800	4,370	2,080	2,210	3,860	1,720	680
11	830	842	830	940	1,200	2,770	4,500	2,040	2,140	3,780	1,700	600
12	848	830	872	920	1,100	2,670	4,440	2,000	2,160	3,680	1,700	520
13	764	836	1,050	900	1,100	2,690	4,340	1,950	2,260	3,640	1,670	442
14	878	794	926	900	1,050	2,550	4,300	1,890	2,220	3,490	1,500	545
15	878	818	840	880	1,050	2,470	4,080	1,650	2,150	3,330	946	504
16	764	884	760	880	1,050	2,400	3,910	1,520	2,050	3,150	836	459
17	782	902	800	880	1,050	2,450	4,010	1,530	1,960	3,280	591	686
18	740	884	820	880	1,050	2,710	4,640	1,700	2,010	3,890	674	591
19	698	854	840	900	1,050	2,710	4,350	1,580	1,960	3,900	776	539
20	704	884	960	920	1,000	2,820	3,910	1,480	2,000	3,810	824	504
21	758	830	1,100	940	980	2,910	3,820	1,630	1,930	3,760	710	493
22	806	806	1,150	1,190	960	3,100	3,850	1,720	1,850	3,620	642	516
23	836	848	1,200	1,670	1,000	3,280	3,910	1,670	1,740	3,480	614	454
24	890	866	1,590	2,200	1,050	3,610	3,700	1,630	1,620	3,340	670	499
25	908	872	1,640	2,800	1,100	3,820	3,480	1,650	1,600	3,140	868	521
26	842	872	1,620	2,940	1,100	3,850	3,330	1,730	1,780	3,010	818	476
27	788	896	1,740	2,600	1,100	3,900	3,240	1,580	2,030	2,950	788	351
28	680	914	1,790	2,310	1,200	3,920	3,140	1,480	2,230	2,850	668	459
29	788	920	1,880	2,100	------	3,940	3,100	1,490	2,590	2,700	626	603
30	746	920	1,860	2,000	------	3,870	2,920	1,520	3,260	2,670	510	710
31	728	------	1,740	1,900	------	3,820	------	1,510	------	2,550	459	------
TOTAL	26,006	25,188	36,778	43,210	35,660	88,620	117,500	57,820	60,970	108,920	38,430	17,068
MEAN	839	840	1,186	1,394	1,274	2,859	3,917	1,865	2,032	3,514	1,240	569
MAX	1,040	920	1,880	2,940	2,080	3,940	4,640	2,740	3,260	4,110	2,440	860
MIN	680	644	760	880	960	1,300	2,920	1,480	1,460	2,550	459	351
CFSM	.25	.25	.36	.42	.39	.87	1.19	.57	.62	1.06	.38	.17
IN.	.29	.28	.41	.49	.40	1.00	1.32	.65	.69	1.23	.43	.19

CAL YR 1968 TOTAL 450,641 MEAN 1,231 MAX 4,960 MIN 597 CFSM .37 IN 5.08
WAT YR 1969 TOTAL 656,170 MEAN 1,798 MAX 4,640 MIN 351 CFSM .54 IN 7.40

5-4315. Turtle Creek near Clinton, Wis.

LOCATION.--Lat 42°35'47", long 88°51'50", in SE 1/4 sec.29, T.2 N., R.14 E., Rock County, on left bank 15 ft downstream from highway bridge, 2.7 miles north of Clinton, 11 miles northeast of Beloit, and 16 miles upstream from mouth.

DRAINAGE AREA.--186 sq mi.

PERIOD OF RECORD.--September 1939 to current year.

GAGE.--Water-stage recorder. Datum of gage is 817.00 ft above mean sea level (levels by Corps of Engineers).

AVERAGE DISCHARGE.--30 years, 102 cfs (7.45 inches per year).

EXTREMES.--Current year: Maximum discharge, 1,070 cfs Jan. 24 (gage height, 7.60 ft); minimum, 42 cfs Sept. 21 (gage height, 2.42 ft).
Period of record: Maximum discharge, 6,560 cfs Feb. 24, 1949 (gage height, 10.22 ft); minimum, 8 cfs Dec. 29, 1956 (gage height, 2.04 ft), result of freezeup.
Maximum stage known, 12.09 ft in February 1938, from floodmarks (discharge, 10,700 cfs, from rating curve extended above 5,500 cfs by logarithmic plotting).

REMARKS.--Records good except those for winter periods, which are fair. Some seasonal regulation caused by dams used to maintain levels of Turtle and Delavan Lakes.

REVISIONS (WATER YEARS).--WSP 955: 1940. WSP 1308: 1950(M).

Rating table (gage height, in feet, and discharge, in cubic feet per second).
(Period affected by ice, Dec. 8-10, Dec. 14 to Feb. 27, Mar. 11-15).

2.4	38	4.5	590
2.8	100	5.5	1,000
3.5	263		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	87	59	68	76	100	223	128	87	101	281	84	45
2	80	57	67	68	92	208	218	83	89	186	74	46
3	75	57	69	64	88	192	182	76	92	180	71	46
4	70	56	77	62	82	170	241	74	88	177	70	48
5	69	56	114	60	78	154	362	74	147	167	68	80
6	70	56	120	58	74	145	236	79	129	164	66	78
7	70	58	83	56	72	125	204	78	132	160	67	70
8	66	60	70	54	70	111	185	81	283	154	66	76
9	59	60	70	54	66	109	280	82	335	153	66	72
10	59	60	70	54	64	97	231	77	229	136	69	68
11	53	58	77	52	62	96	185	77	198	117	78	67
12	48	57	83	50	60	92	157	73	201	109	68	70
13	50	56	81	50	60	88	142	72	165	127	61	63
14	50	56	78	50	58	86	131	70	150	92	58	63
15	49	57	74	50	56	86	140	67	134	82	57	62
16	49	67	70	52	56	86	135	67	122	76	56	56
17	49	89	68	66	54	98	157	74	106	126	60	47
18	52	95	66	130	54	117	224	208	103	467	61	44
19	54	87	110	120	54	117	171	186	97	323	56	43
20	55	81	150	100	54	130	142	153	93	350	52	44
21	56	78	120	94	54	131	127	141	87	387	51	42
22	57	71	90	90	56	114	122	157	94	336	50	43
23	60	66	82	250	62	109	118	154	105	254	51	46
24	63	64	74	1,000	72	126	116	139	100	219	49	47
25	72	62	70	600	130	157	110	128	105	180	48	45
26	72	61	68	300	250	149	106	121	172	161	48	44
27	68	59	66	220	210	143	112	108	185	199	48	45
28	68	59	140	180	245	149	110	95	149	203	48	43
29	65	92	120	150	------	151	100	81	140	192	47	46
30	63	71	100	130	------	155	91	78	402	159	45	47
31	60	------	86	110	------	155	------	83	------	111	45	------
TOTAL	1,918	1,965	2,681	4,450	2,433	4,059	4,963	3,123	4,533	6,028	1,838	1,636
MEAN	61.9	65.5	86.5	144	86.9	131	165	101	151	194	59.3	54.5
MAX	87	95	150	1,000	250	223	362	208	402	467	84	80
MIN	48	56	66	50	54	86	91	67	87	76	45	42
CFSM	.33	.35	.47	.77	.47	.70	.89	.54	.81	1.04	.32	.29
IN.	.39	.39	.54	.89	.49	.81	.99	.62	.91	1.21	.37	.33

CAL YR 1968 TOTAL 26,290 MEAN 71.8 MAX 236 MIN 37 CFSM .39 IN 5.26
WAT YR 1969 TOTAL 39,627 MEAN 109 MAX 1,000 MIN 42 CFSM .59 IN 7.93

PEAK DISCHARGE (BASE, 1,200 CFS).--No peak above base.

5-4325. Pecatonica River at Darlington, Wis.

LOCATION.--Lat 42°40'40", long 90°07'07", in NE 1/4 sec.3, T.2 N., R.3 E., on right bank in Darlington, 0.3 mile downstream from Vinegar Branch, and 3.6 miles upstream from Otter Creek.

DRAINAGE AREA.--274 sq mi.

PERIOD OF RECORD.--September 1939 to current year.

GRAPH.--Water-stage recorder. Datum of gage is 802.42 ft above mean sea level.

AVERAGE DISCHARGE.--30 years, 179 cfs (8.87 inches per year).

EXTREMES.--Current year: Maximum discharge, 16,000 cfs June 30 (gage height, 19.16 ft); minimum, 24 cfs Dec. 6 (gage height, 1.07 ft), (result of freezeup).
Period of record: Maximum discharge, 22,000 cfs July 16, 1950 (gage height, 20.71 ft), from rating curve extended above 11,000 cfs or basis of slope-area determination of peak flow; minimum, 17 cfs Nov. 29, 1966 (gage height, 2.09 ft), result of freezeup; minimum gage height, 1.07 ft Dec. 6, 1969, result of freezeup.
Flood of Feb. 21, 1937, reached a stage of 17.6 ft from floodmarks.

REMARKS.--Records good except those for winter periods, which are fair.

Rating table (gage height, in feet, and discharge, in cubic feet per second). (Shifting-control method used Oct. 5 to Nov. 16, July 10-17; stage-discharge relation affected by ice Dec. 7-10, Dec. 14-18, Dec. 22 to Mar. 4).

Oct. 1 to Nov. 16		Nov. 17 to Mar. 2		Mar. 3 to Sept. 30			
2.5	51	1.6	55	2.0	92	13.0	2,550
2.7	70	3.0	202	6.0	580	14.0	3,500
2.9	96	6.0	666	9.0	1,070	15.0	4,900
		9.0	1,370	11.0	1,620	16.4	7,750

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	67	74	78	70	170	280	181	154	106	1,85[illegible]	203	122
2	67	72	79	68	150	420	188	149	108	994	195	125
3	63	72	81	68	140	520	205	145	104	736	187	125
4	58	74	80	66	130	600	334	141	129	624	184	125
5	58	77	62	66	120	620	469	136	198	556	180	152
6	65	80	60	66	110	541	294	137	131	474	177	147
7	69	90	58	66	110	425	250	182	132	467	176	133
8	67	88	58	66	100	304	237	167	457	456	175	123
9	70	79	58	68	100	236	253	159	281	475	171	120
10	80	72	62	68	98	205	234	148	184	413	177	118
11	76	71	68	68	96	157	205	140	171	425	170	118
12	71	69	81	70	94	158	187	131	669	367	163	117
13	70	69	71	70	92	163	179	125	609	324	159	116
14	70	68	64	70	92	144	195	122	314	301	156	117
15	70	74	62	74	90	131	205	117	257	292	151	126
16	70	83	60	82	90	170	217	114	223	326	151	123
17	68	103	60	140	90	485	435	116	201	408	153	119
18	72	98	62	220	90	996	368	124	227	573	150	115
19	70	95	954	120	90	729	264	122	196	357	149	113
20	74	88	572	96	90	531	249	122	178	314	143	114
21	78	87	228	90	90	404	230	121	160	291	142	112
22	83	85	140	90	92	292	220	160	156	274	136	111
23	87	84	110	500	96	280	200	149	162	270	135	114
24	81	83	78	1,300	120	302	190	127	158	280	132	113
25	83	80	76	620	170	337	180	137	191	253	132	113
26	77	80	74	390	280	276	180	128	2,140	243	129	118
27	74	80	78	310	260	236	210	120	2,800	292	128	127
28	77	78	100	270	250	236	190	115	2,190	262	129	119
29	74	79	88	240	------	223	170	108	2,620	232	128	119
30	71	74	80	220	------	185	159	103	7,740	217	125	142
31	72	------	76	190	------	177	------	101	------	209	122	------
TOTAL	2,232	2,406	3,858	5,902	3,500	10,763	7,078	4,120	23,192	13,555	4,808	3,656
MEAN	72.0	80.2	124	190	125	347	236	133	773	437	155	122
MAX	87	103	954	1,300	280	996	469	182	7,740	1,850	203	152
MIN	58	68	58	66	90	131	159	101	104	209	122	111
CFSM	.26	.29	.45	.69	.46	1.27	.86	.49	2.82	1.59	.57	.45
IN.	.30	.33	.52	.80	.48	1.46	.96	.56	3.15	1.84	.65	.50

CAL YR 1968 TOTAL 41,720 MEAN 114 MAX 1,270 MIN 43 CFSM .42 IN 5.46
WAT YR 1969 TOTAL 85,070 MEAN 233 MAX 7,740 MIN 58 CFSM .85 IN 11.55

PEAK DISCHARGE (BASE, 2,000 CFS).--June 30 (0100) 16,000 cfs (19.16 ft).

5-4330. East Branch Pecatonica River near Blanchardville, Wis.

LOCATION.--Lat 42°47'10", long 89°51'40", in SE 1/4 sec.26, T.4 N., R.5 E., La Fayette County, on left bank at downstream side of bridge on State Highway 78, 1.8 miles south of Blanchardville and 4.5 miles upstream from Sawmill Creek.

DRAINAGE AREA.--221 sq mi.

PERIOD OF RECORD.--September 1939 to current year.

GAGE.--Water-stage recorder. Datum of gage is 796.8 ft above mean sea level, unadjusted. Prior to Dec. 20, 1939, nonrecording gage at bridge 50 ft upstream at same datum. Auxiliary nonrecording gage 2.7 miles upstream at same datum read every six hours or more often when stages exceed 10 ft.

AVERAGE DISCHARGE.--30 years, 137 cfs (8.42 inches per year).

EXTREMES.--Current year: Maximum discharge, 2,260 cfs June 26 (gage height, 13.04 ft); minimum, 65 cfs Dec. 6 (gage height, 2.91 ft).
Period of record: Maximum discharge, 11,700 cfs Feb. 28, 1948 (gage height, 15.74 ft); minimum, 18 cfs Nov. 29, 1966.

REMARKS.--Records good except those for winter periods, which are fair.

Rating table (gage height, in feet, and discharge, in cubic feet per second). (Shifting-control method used June 29, July 1-12; stage-discharge relation affected by ice Dec. 7-12, Dec. 14-18, Dec. 21 to Feb. 28).

3.0	71	11.0	990
6.0	320	12.0	1,470
10.0	760		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	120	97	87	82	150	200	156	150	126	519	152	109
2	119	94	89	80	140	234	167	147	119	370	148	110
3	115	92	90	78	140	289	168	143	115	306	144	110
4	110	92	90	78	130	279	241	139	123	300	142	110
5	109	92	88	78	130	261	353	136	137	284	141	119
6	115	97	85	82	120	226	226	139	116	247	139	118
7	116	108	76	84	120	190	203	171	124	244	138	111
8	111	102	72	86	120	165	196	152	252	233	135	108
9	110	97	72	88	120	150	216	151	152	242	134	107
10	114	95	74	86	110	144	201	141	128	228	144	106
11	108	94	86	84	110	130	179	138	125	232	133	106
12	106	92	94	84	110	129	168	133	323	210	130	106
13	104	90	93	82	100	132	163	128	334	200	128	104
14	104	92	82	82	100	125	163	126	184	196	127	105
15	104	96	78	86	100	120	172	122	164	192	124	108
16	103	100	76	96	100	127	168	120	152	186	124	105
17	102	108	78	160	100	191	231	122	147	297	124	104
18	105	104	80	150	100	395	403	133	166	302	123	102
19	101	100	370	120	100	292	234	127	147	217	123	101
20	100	94	358	120	100	270	205	126	138	192	120	103
21	97	94	160	110	100	266	196	123	130	181	118	102
22	102	94	130	110	100	202	185	164	129	176	116	102
23	100	93	110	200	110	197	176	140	132	173	115	103
24	105	92	92	700	130	220	167	128	130	176	114	101
25	116	90	90	420	140	271	163	126	140	173	113	103
26	103	91	90	300	200	212	161	122	1,430	217	113	105
27	102	91	96	250	180	188	192	119	1,870	228	112	104
28	104	89	110	220	180	195	177	116	918	180	112	101
29	100	89	100	190	------	191	163	112	502	167	111	111
30	97	87	92	170	------	159	155	109	1,290	163	110	127
31	96	------	86	160	------	154	------	112	------	157	108	------
TOTAL	3,298	2,846	3,374	4,716	3,440	6,304	5,948	4,115	9,943	7,188	3,915	3,211
MEAN	106	94.9	109	152	123	203	198	133	331	232	126	107
MAX	120	108	370	700	200	395	403	171	1,870	519	152	127
MIN	96	87	72	78	100	120	155	109	115	157	108	101
CFSM	.48	.43	.49	.69	.56	.92	.90	.60	1.50	1.05	.57	.48
IN.	.56	.48	.57	.79	.58	1.06	1.00	.69	1.67	1.21	.66	.54

CAL YR 1968 TOTAL 36,774 MEAN 100 MAX 427 MIN 50 CFSM .45 IN 6.19
WAT YR 1969 TOTAL 58,298 MEAN 160 MAX 1,870 MIN 72 CFSM .72 IN 9.81

PEAK DISCHARGE (BASE, 1,300 CFS).--June 26 (2300) 2,260 cfs (13.04 ft).

5-4345. Pecatonica River at Martintown, Wis.

LOCATION.--Lat 42°30'34", long 89°47'58", in SE 1/4 sec.32, T.1 N., R.6 E., Green County, on right bank about 400 ft downstream from highway bridge in Martintown, 0.3 mile upstream from Wisconsin-Illinois State line and 8.8 miles downstream from Skinner Creek.

DRAINAGE AREA.--1,040 sq mi, approximately.

RECORDS AVAILABLE.--October 1939 to current year.

GAGE.--Water-stage recorder. Datum of gage is 757.9 ft above mean sea level. Prior to Jan. 6, 1940, non-recording gage at same site and datum. Auxiliary nonrecording gage 1 1/4 miles downstream read several times daily during high water.

AVERAGE DISCHARGE.--30 years, 682 cfs (8.91 inches per year).

EXTREMES.--Current year: Maximum discharge, 15,100 cfs July 1, 1969 (gage height, 21.46 ft); minimun, 245 cfs Dec. 6 (gage height, 3.08 ft).
Period of record: Maximum discharge, 15,100 cfs July 1, 1969 (gage height, 21.46 ft); no flow for part of Dec. 14, 1939.

REMARKS.--Records good except those for winter periods, which are fair.

REVISIONS (WATER YEARS).--WSP 1308: 1949-50(M).

Rating table (gage height, in feet, and discharge, in cubic feet per second). (Shifting-control method used Oct. 1-10, June 14, June 26, 27, July 8-17; stage-discharge relation affected by ice Dec. 7 to Mar. 10; stage-discharge relation affected by slope June 28 to July 7).

3.2	265	14.0	4,030
4.0	410	17.0	6,480
5.0	655	18.0	9,530
10.0	2,155	21.0	15,840
13.0	3,320		

DISCHARGE IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	550	397	358	460	720	1,700	720	710	466	14,600	781	451
2	524	394	358	380	640	1,800	775	678	486	12,300	752	452
3	499	388	366	360	580	2,000	764	651	473	8,800	726	459
4	475	381	374	350	540	2,300	941	633	473	7,000	703	459
5	454	378	365	350	520	2,100	1,510	608	538	5,380	690	469
6	458	380	286	340	490	1,800	1,650	591	595	4,150	677	497
7	466	397	280	350	480	1,500	1,370	580	562	3,280	663	511
8	467	415	270	350	470	1,200	1,130	630	1,030	2,610	650	485
9	456	415	270	350	470	1,000	1,110	659	1,380	2,090	641	460
10	449	400	290	350	460	900	1,090	626	1,130	1,820	635	448
11	461	390	310	350	460	820	999	592	807	1,590	640	444
12	456	383	310	350	450	705	888	563	846	1,550	627	441
13	440	377	300	360	430	662	814	536	1,420	1,390	605	441
14	429	379	300	370	430	653	779	513	1,630	1,230	586	441
15	426	382	280	380	430	612	812	498	1,250	1,160	576	442
16	425	394	280	420	430	603	849	484	939	1,090	567	452
17	426	431	280	480	430	812	958	481	818	1,080	567	450
18	424	445	280	680	430	1,390	1,360	511	796	1,250	561	440
19	416	434	1,000	800	430	1,870	1,540	531	788	1,510	549	431
20	405	406	1,600	780	440	1,940	1,350	525	749	1,310	532	428
21	399	386	1,600	720	450	1,730	1,130	512	684	1,120	517	424
22	415	379	1,000	660	490	1,430	1,010	534	630	1,040	506	426
23	433	385	640	1,000	540	1,140	929	583	610	982	500	423
24	424	382	460	1,500	580	1,060	863	596	609	952	492	427
25	423	375	430	1,500	660	1,150	812	553	624	940	485	422
26	428	371	430	1,500	1,400	1,190	776	531	1,530	932	482	430
27	422	367	500	1,500	1,500	1,070	786	516	2,290	1,090	478	446
28	414	366	900	1,500	1,600	955	821	492	2,680	1,060	472	453
29	416	368	840	1,300	------	912	822	468	3,880	953	468	451
30	410	363	620	1,000	------	859	758	446	8,500	865	466	455
31	402	------	520	780	------	765	------	437	------	810	458	------
TOTAL	13,692	11,708	16,097	21,570	16,950	38,628	30,116	17,268	39,213	85,934	18,052	13,458
MEAN	442	390	519	696	605	1,246	1,004	557	1,307	2,772	582	449
MAX	550	445	1,600	1,500	1,600	2,300	1,650	710	8,500	14,600	781	511
MIN	399	363	270	340	430	603	720	437	466	810	458	422
CFSM	.43	.38	.50	.67	.58	1.20	.97	.54	1.26	2.67	.56	.43
IN.	.49	.42	.58	.77	.61	1.38	1.08	.62	1.40	3.07	.65	.48

CAL YR 1968 TOTAL 168,828 MEAN 461 MAX 1,800 MIN 245 CFSM .44 IN 6.04
WAT YR 1969 TOTAL 322,686 MEAN 884 MAX 14,600 MIN 270 CFSM .85 IN 11.54

PEAK DISCHARGE (BASE, 4,000 CFS).--July 1 (1030) 15,100 cfs (21.46 ft).

5-4365. Sugar River near Brodhead, Wis.

LOCATION.--Lat 42°36'42", long 89°23'53", in SW 1/4 sec.26, T.2 N., R.9 E., Green County, on left bank at downstream side of highway bridge, 1.9 miles upstream from Sylvester Creek, and 1.2 miles southwest of Brodhead.

DRAINAGE AREA.--527 sq mi.

PERIOD OF RECORD.--January 1914 to current year. Monthly discharge only for January and February 1914, published in WSP 1308.

GAGE.--Water-stage recorder. Datum of gage is 768.14 ft above mean sea level. Prior to Oct. 17, 1938, nonrecording gage at same site and datum.

AVERAGE DISCHARGE.--55 years, 335 cfs (8.63 inches per year).

EXTREMES.--Current year: Maximum discharge, 2,980 cfs June 30 (gage height, 7.21 ft); minimum, 179 cfs Aug. 29, 30 (gage height, 0.51 ft).
Period of record: Maximum discharge, 14,800 cfs Sept. 13, 1915 (gage height, 11.4 ft, from floodmarks), from rating curve extended above 7,500 cfs; minimum, 35 cfs Sept. 19, 1959 (gage height, -0.16 ft).

REMARKS.--Records good except those for winter periods, which are fair.

REVISIONS (WATER YEARS).--WSP 1238: 1914-16, 1918, 1922, 1927, 1933. WSP 1338: Drainage area. WSP 1508: 1916-17(M), 1919(M), 1920, 1921(M), 1927-28(M), 1930(M), 1931, 1936(M), 1943(M).

Rating table (gage height, in feet, and discharge, in cubic feet per second). (Stage-discharge relation affected by ice Dec. 7-9, Dec. 15 to Feb. 12, Feb. 20, Mar. 3-8).

Oct. 1 to Jan. 31				Feb. 1 to Sept. 30			
0.7	197	3.0	944	0.6	197	6.0	2,090
1.5	390	4.5	1,615	1.6	438	6.8	2,630
				3.0	912		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	280	232	244	230	450	908	351	334	267	2,610	329	219
2	272	230	243	220	410	919	358	325	286	2,000	315	220
3	262	226	247	220	380	900	379	316	285	1,220	305	224
4	253	225	253	220	360	860	471	308	284	787	302	223
5	246	223	251	210	340	780	778	306	305	644	294	231
6	247	228	223	210	330	720	898	305	315	576	287	262
7	251	240	210	210	310	640	801	307	311	521	284	211
8	250	263	210	210	300	560	586	306	522	488	278	228
9	247	252	210	210	300	477	526	306	655	472	272	222
10	250	260	217	210	280	405	562	326	622	457	271	219
11	247	245	224	210	270	360	501	314	448	432	275	219
12	227	239	235	210	270	336	449	303	369	422	271	220
13	245	233	250	210	260	325	392	294	435	397	265	218
14	239	232	223	210	260	313	383	289	521	372	260	218
15	233	226	210	210	260	301	382	283	421	355	258	220
16	233	240	210	220	258	303	403	278	333	346	257	221
17	231	283	210	250	258	374	471	282	314	359	254	218
18	228	300	200	310	254	672	703	316	308	543	257	215
19	231	303	300	380	254	883	768	311	315	588	246	215
20	221	271	500	430	250	908	765	310	304	520	245	213
21	227	253	640	360	238	804	534	301	289	351	244	213
22	259	246	500	340	238	686	435	314	282	352	241	213
23	266	246	360	700	254	568	396	344	276	343	240	217
24	267	242	300	1,600	290	532	363	338	276	345	236	215
25	255	237	260	1,300	408	584	342	312	282	336	236	213
26	234	234	240	1,000	659	597	338	289	495	370	246	217
27	250	234	220	800	782	512	367	285	904	582	232	221
28	247	239	300	640	858	476	374	278	1,310	692	230	217
29	257	244	350	560	------	461	369	269	1,720	437	219	223
30	248	248	280	520	------	433	358	259	2,520	375	208	234
31	233	------	250	470	------	377	------	257	------	342	220	------
TOTAL	7,636	7,374	8,570	13,080	9,781	17,974	14,803	9,365	15,974	18,634	8,077	6,619
MEAN	246	246	276	422	349	580	493	302	532	601	261	221
MAX	280	303	640	1,600	858	919	898	344	2,520	2,610	329	262
MIN	221	223	200	210	238	301	338	257	267	336	208	211
CFSM	.47	.47	.52	.80	.66	1.10	.94	.57	1.01	1.14	.50	.42
IN.	.54	.52	.60	.92	.69	1.27	1.04	.66	1.13	1.32	.57	.47

CAL YR 1968 TOTAL 102,813 MEAN 281 MAX 1,240 MIN 165 CFSM .53 IN 7.26
WAT YR 1969 TOTAL 137,887 MEAN 378 MAX 2,610 MIN 200 CFSM .72 IN 9.73

PEAK DISCHARGE (BASE, 1,300 CFS)

DATE	TIME	G.HT.	DISCHARGE	DATE	TIME	G.HT.	DISCHARGE
1-24	0300	5.30	1,780	6-30	1300	7.21	2,980

5-4375. Rock River at Rockton, Ill.

LOCATION.--Lat 42°27'05", long 89°04'20", in SE 1/4 NW 1/4 sec.24, T.46 N., R.1 E., Winnebago County, on left bank at upstream side of bridge on State Highway 2 in Rockton, 0.8 mile downstream from Pecatonica River.

DRAINAGE AREA.--6,290 sq mi, approximately.

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" 1903-09; as "at Rockford" 1914-19. Monthly discharge only for some periods, published in WSP 1308.

GAGE.--Water-stage recorder. Datum of gage is 707.94 ft above mean sea level (levels by Corps of Engineers). Prior to Oct. 1, 1906, nonrecording gage at same site at datum 1 ft higher. Oct. 1, 1906, to Mar. 31, 1909, nonrecording gage at same site at datum about 2 ft higher. July 30, 1914, to Apr. 30, 1919, nonrecording gage at site at Rockford about 21 miles downstream, at different datum.

AVERAGE DISCHARGE.--37 years (1903-5, 1914-19, 1939-69), 3,672 cfs (7.93 inches per year), discharge for site at Rockford adjusted for difference in drainage area.

EXTREMES.--Current year: Maximum discharge, about 15,000 cfs Jan. 24; maximum gage height, 10.59 ft July 9, from floodmark (backwater from debris jam); minimum daily, 1,340 cfs Dec. 15.
Period of record: Maximum discharge, 32,500 cfs Mar. 30, 1916 (gage height, 13.06 ft, site and datum then in use); minimum daily, 501 cfs Sept. 14, 1958.
Flood in February 1937 reached a stage of 14.6 ft (backwater from ice), from painted floodmark.

REMARKS.--Records good except those for winter periods and period of no gage height record, which are poor. Low flow regulated by powerplants above station.

REVISIONS (WATER YEARS).--WSP 325: 1903-9. WSP 895: 1904(M). WSP 1508: 1915, 1916-17(M).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3,050	1,800	2,370	3,000	6,300	5,200	6,230	4,790	3,080	7,620	5,000	1,540
2	2,870	1,830	2,450	2,200	5,400	5,400	6,320	4,500	2,950	8,250	4,600	1,610
3	2,670	1,830	2,730	2,100	4,750	5,600	6,340	4,180	3,280	8,800	4,300	1,750
4	2,550	1,860	2,840	2,000	4,250	5,900	6,520	4,140	3,480	9,000	4,100	1,610
5	2,380	1,890	2,680	2,000	4,000	6,200	7,800	3,980	3,790	9,300	4,000	1,840
6	2,410	1,910	2,150	2,000	3,700	6,500	8,320	3,800	3,820	9,700	3,500	2,080
7	2,290	2,040	2,150	1,900	3,500	6,700	8,460	3,790	3,900	11,000	3,650	2,150
8	2,340	1,980	2,150	1,900	3,300	6,900	8,540	3,790	5,700	13,000	3,480	2,160
9	2,260	2,070	2,020	1,800	3,100	6,900	8,650	3,750	7,130	14,500	3,050	1,950
10	2,280	1,910	2,190	1,800	3,000	6,800	8,200	3,690	7,700	13,400	3,250	2,110
11	2,090	1,950	2,340	1,700	2,800	6,500	7,920	3,700	7,600	12,500	3,000	1,730
12	2,040	2,030	1,960	1,650	2,700	5,740	7,660	3,600	7,200	11,500	3,480	1,660
13	2,050	1,880	2,240	1,720	2,600	5,240	7,300	3,520	6,600	10,000	3,100	1,360
14	1,960	1,950	1,780	1,640	2,600	4,850	7,040	3,700	6,100	8,800	3,000	1,470
15	2,180	2,010	1,340	1,600	2,600	4,590	6,830	3,600	5,800	7,900	3,100	1,720
16	1,920	2,070	1,880	1,700	2,600	4,470	6,490	3,400	5,400	7,000	2,800	1,480
17	1,850	2,240	1,870	2,300	2,500	4,510	6,620	3,200	4,980	6,400	2,700	1,780
18	1,870	2,320	2,080	3,350	2,500	5,030	7,450	3,500	4,900	6,100	2,400	1,640
19	1,770	2,230	2,520	3,850	2,500	5,500	7,660	3,800	4,630	5,800	2,210	1,580
20	1,820	2,280	3,100	3,600	2,500	6,060	7,370	4,000	4,570	5,900	2,290	1,550
21	1,780	2,150	3,500	3,200	2,550	6,520	7,220	3,790	4,480	6,000	2,130	1,570
22	1,950	2,110	3,700	3,900	2,650	6,890	7,050	3,600	4,330	5,900	2,000	1,540
23	2,000	2,040	4,000	9,000	2,660	7,000	6,900	3,350	4,270	5,800	1,970	1,640
24	2,280	2,170	3,600	15,000	2,800	7,110	6,540	3,450	4,080	5,300	1,720	1,540
25	2,370	2,030	3,200	11,000	3,050	7,210	5,960	3,400	3,930	5,200	2,030	1,500
26	2,280	2,150	3,000	8,500	3,750	7,210	5,580	3,150	4,270	5,000	2,210	1,580
27	2,100	2,200	2,800	6,000	4,500	7,130	5,310	3,430	5,000	5,300	1,890	1,410
28	1,990	2,140	3,900	5,500	5,000	7,110	5,150	3,180	5,490	5,600	2,070	1,430
29	1,940	2,360	5,340	7,400	------	6,980	5,050	3,130	5,840	5,300	1,760	1,570
30	1,990	2,490	5,240	8,010	------	6,710	5,000	3,160	6,480	5,600	1,720	1,790
31	1,910	------	4,350	7,300	------	6,440	------	2,880	------	5,300	1,510	------
TOTAL	67,240	61,920	87,470	128,620	94,160	190,900	207,480	112,950	150,780	246,770	88,020	50,340
MEAN	2,169	2,064	2,822	4,149	3,363	6,158	6,916	3,644	5,026	7,960	2,839	1,678
MAX	3,050	2,490	5,340	15,000	6,300	7,210	8,650	4,790	7,700	14,500	5,000	2,160
MIN	1,770	1,800	1,340	1,600	2,500	4,470	5,000	2,880	2,950	5,000	1,510	1,360
CFSM	.34	.33	.45	.66	.53	.98	1.10	.58	.80	1.27	.45	.27
IN.	.40	.37	.52	.76	.56	1.13	1.23	.67	.89	1.46	.52	.30

CAL YR 1968 TOTAL 991,580 MEAN 2,709 MAX 7,970 MIN 1,340 CFSM .43 IN 5.86
WTR YR 1969 TOTAL 1,486,650 MEAN 4,073 MAX 15,000 MIN 1,340 CFSM .65 IN 8.79

5-5278. Des Plaines River at Russell, Ill.

LOCATION.--Lat 42°29'22", long 87°55'32", in SE 1/4 sec.3, T.46 N., R.11 E., Lake County, at center on downstream side of bridge on Russell Road, 0.3 mile west of Russell, and at mile 109.14.

DRAINAGE AREA.--124 sq mi.

PERIOD OF RECORD.--Occasional low-flow measurements, water years 1961-63, and annual maximum stages, water years 1962-66, June 1967 to current year.

GAGE.--Water-stage recorder. Datum of gage is 662.00 ft above mean sea level. Oct. 17, 1961, to June 29, 1967, crest-stage gage at left downstream side of bridge at datum 4.29 ft higher.

EXTREMES.--Current year: Maximum discharge, 273 cfs Apr. 20 (gage height, 6.69 ft); maximum gage height, 7.64 ft July 4; minimum discharge, 0.87 cfs Sept. 21, 22.
Period of record: Maximum discharge, 498 cfs June 10, 1967 (gage height, 8.35 ft); maximum gage height, 8.65 ft, present datum, Mar. 22, 1962; minimum discharge, 0.50 cfs Sept. 25, 1967.
Maximum stage since 1938, 9.69 ft, present datum, in April 1960, from floodmark.

REMARKS.--Records good except those for winter periods, which are poor.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.5	3.0	82	54	130	169	190	68	49	218	49	1.5
2	6.2	2.4	76	41	117	180	189	64	72	232	38	1.4
3	5.8	2.2	70	35	106	183	189	53	64	243	30	1.4
4	4.9	2.2	63	28	120	189	200	46	52	247	23	1.8
5	4.1	2.2	54	25	107	186	231	40	68	232	19	3.4
6	3.8	2.5	41	22	96	176	247	42	76	220	16	4.5
7	3.8	3.5	30	21	92	167	257	38	69	200	14	4.9
8	3.8	4.1	23	20	82	150	253	40	159	187	13	5.9
9	3.5	4.3	18	19	74	130	248	44	218	170	11	5.2
10	3.5	4.1	16	18	71	110	243	46	224	150	10	4.1
11	3.3	3.8	17	17	67	90	240	43	224	140	9.3	3.2
12	3.0	3.3	20	17	61	82	236	36	219	130	9.2	2.5
13	3.0	3.3	24	17	58	72	227	29	210	115	8.5	2.3
14	2.8	3.3	20	16	56	67	213	25	196	98	7.6	1.9
15	2.8	6.0	15	16	53	62	203	21	180	84	6.7	1.6
16	2.5	12	13	18	52	65	190	18	162	66	5.8	1.4
17	2.4	25	11	23	51	73	193	17	138	60	6.4	1.2
18	2.4	35	12	32	52	89	239	60	111	95	5.4	1.1
19	2.2	31	18	47	53	106	268	114	84	102	4.8	1.1
20	2.1	21	30	58	57	117	270	131	60	103	4.3	1.0
21	2.1	18	37	68	62	122	252	136	43	96	3.7	.94
22	2.4	16	42	81	68	122	231	106	34	90	3.5	.98
23	5.8	13	50	150	79	119	208	103	34	84	3.2	1.2
24	4.5	12	40	200	90	120	186	98	41	78	2.5	1.2
25	3.6	11	33	160	109	152	167	91	43	75	2.7	1.3
26	3.5	10	28	130	121	179	151	78	42	73	2.5	1.1
27	3.3	9.4	35	110	139	198	130	60	47	100	2.4	1.8
28	4.1	12	95	94	150	210	110	46	49	121	2.2	1.2
29	3.6	47	115	120	------	213	94	40	46	103	2.1	1.2
30	4.6	79	92	160	------	210	80	30	186	90	1.9	1.1
31	3.5	------	70	150	------	201	------	24	------	67	1.7	------
TOTAL	113.4	401.6	1,290	1,967	2,373	4,309	6,135	1,787	3,200	4,069	319.4	63.42
MEAN	3.66	13.4	41.6	63.5	84.8	139	205	57.6	107	131	10.3	2.11
MAX	6.5	79	115	200	150	213	270	136	224	247	49	5.9
MIN	2.1	2.2	11	16	51	62	80	17	34	60	1.7	.94
CFSM	.03	.11	.34	.51	.68	1.12	1.65	.46	.86	1.06	.08	.02
IN.	.03	.12	.39	.59	.71	1.29	1.84	.54	.96	1.22	.10	.02

CAL YR 1968 TOTAL 10,380.30 MEAN 28.4 MAX 270 MIN .90 CFSM .23 IN 3.11
WTR YR 1969 TOTAL 26,027.82 MEAN 71.3 MAX 270 MIN .94 CFSM .58 IN 7.81

5-5438.3 Fox River at Waukesha, Wis.

LOCATION.--Lat 43°00'17", long 88°14'37", in SW 1/4 sec.3, T.6 N., R.19 E., Waukesha County, on left bank 20 ft downstream from Prairie Street bridge in Waukesha, 1.0 mile downstream from dam and 3.2 miles downstream from Pewaukee River.

DRAINAGE AREA.--127 sq mi.

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

GAGE.--Water-stage recorder. Datum of gage is 793.04 ft above mean sea level (levels by city of Waukesha).

AVERAGE DISCHARGE.--6 years, 63.4 cfs (6.78 inches per year).

EXTREMES.--Current year: Maximum discharge, 1,220 cfs June 29 (gage height, 5.79 ft); minimum, 4.0 cfs Nov. 16 (gage height, 1.62 ft).
Period of record: Maximum discharge, 1,240 cfs Mar. 6, 1965 (gage height, 5.79 ft); minimum, 3.0 cfs Jan. 1, 1964 (gage height, 1.52 ft).

REMARKS.--Records good except those for winter periods, which are fair. Regulation from mill dam one mile upstream.

Rating table (gage height, in feet, and discharge, in cubic feet per second). (Stage-discharge relation affected by ice Dec. 22 to Jan. 22, Jan. 28 to Mar. 20).

1.6	5.0	2.3	60	3.8	350
1.7	9.0	2.8	132	4.3	530
1.9	20	3.3	226	4.5	613

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	44	22	44	28	50	140	115	83	64	488	122	19
2	26	12	77	26	46	140	123	79	62	573	100	24
3	29	47	62	24	43	140	150	78	57	495	94	21
4	19	16	55	23	41	140	173	72	66	384	76	22
5	19	9.4	52	21	38	130	231	75	65	292	67	38
6	39	15	28	21	37	120	245	61	66	234	61	28
7	27	21	27	20	35	110	231	68	70	205	59	27
8	39	28	28	20	34	96	214	93	73	182	53	27
9	34	29	52	19	32	80	226	105	82	164	51	25
10	23	26	33	18	31	68	245	103	75	149	46	23
11	20	26	6.1	18	30	58	224	103	66	135	45	21
12	16	54	23	17	30	50	195	102	80	122	47	20
13	35	33	36	17	29	48	175	94	71	117	51	19
14	21	27	26	17	28	44	140	85	90	82	58	18
15	19	23	29	17	28	40	148	79	85	84	51	18
16	25	11	26	22	29	44	161	73	75	66	45	19
17	30	46	24	30	31	44	248	72	68	149	40	18
18	24	82	23	29	32	50	389	118	67	174	38	18
19	15	53	63	29	33	100	441	159	62	188	38	17
20	42	41	71	30	35	130	335	150	57	193	37	16
21	15	39	58	32	36	166	232	132	54	167	35	16
22	23	26	52	40	37	160	194	137	62	127	38	16
23	29	11	40	116	38	152	159	130	62	94	36	17
24	31	27	31	138	40	158	136	116	61	84	33	16
25	21	27	27	132	58	196	124	100	77	95	32	17
26	24	27	26	180	130	176	119	86	164	47	31	17
27	21	40	40	129	120	167	111	80	207	92	28	16
28	23	61	58	90	130	166	102	78	210	125	26	15
29	33	47	40	72	------	158	79	65	351	175	25	40
30	28	25	34	62	------	141	87	62	372	185	24	24
31	24	------	30	56	------	124	------	65	------	152	22	------
TOTAL	818	951.4	1,221.1	1,493	1,281	3,536	5,752	2,903	3,021	5,819	1,509	632
MEAN	26.4	31.7	39.4	48.2	45.8	114	192	93.6	101	188	48.7	21.1
MAX	44	82	77	180	130	196	441	159	372	573	122	40
MIN	15	9.4	6.1	17	28	40	79	61	54	47	22	15
CFSM	.21	.25	.31	.38	.36	.90	1.51	.74	.80	1.48	.38	.17
IN.	.24	.28	.36	.44	.38	1.04	1.68	.85	.88	1.70	.44	.19

CAL YR 1968 TOTAL 19,192.9 MEAN 52.4 MAX 414 MIN 6.1 CFSM .41 IN 5.62
WAT YR 1969 TOTAL 28,936.5 MEAN 79.3 MAX 573 MIN 6.1 CFSM .62 IN 8.48

5-5450. North Lake near Elkhorn, Wis.

LOCATION.--Lat 42°44'38", long 88°37'45", in SE 1/4 sec.5, T.3 N., R.16 E., Walworth County, attached to post in lake near end of road at south end of lake, 6.5 miles northwest of Elkhorn.

DRAINAGE AREA.--1 sq mi, approximately. Area of North Lake, 350 acres, approximately, at high stage.

PERIOD OF RECORD.--May 1937 to current year (fragmentary). Published as Holden Lake prior to October 1958.

GAGE.--Nonrecording gage read about once weekly or more often except during winter. Altitude of gage is 900 ft (from topographic map).

EXTREMES.--Current year: Maximum gage height observed, 7.68 ft July 8; minimum observed, 6.92 ft Nov. 9.
Period of record: Maximum gage height observed, 12.45 ft Mar. 25, 1939; lake dry for parts of period July to December 1958.

REMARKS.--Lake has no surface outlet. Lake ice covered Nov. 30 through Mar. 21.

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1												
2		6.94					7.55				7.50	
3						7.44			7.37			
4												
5	7.16									7.50		
6												7.50
7			7.13					7.40	7.42			
8										7.68		
9		6.92									7.49	
10												
11												
12	7.12									7.50		
13			7.04									7.49
14			7.13						7.42			
15												
16		7.02									7.43	
17												
18												7.40
19	7.00									7.52		
20											7.60	7.45
21			7.16						7.40			
22												
23		6.97									7.49	
24												
25												
26	6.99									7.52		
27												7.40
28			7.14						7.50			
29	7.01				------							
30		7.13			------						7.48	
31		------			------		------	7.35	------			------

5-5455.5 Rockland Lake near Burlington, Wis.

LOCATION.--Lat 42°40'34", long 88°14'57", in NE 1/4, SE 1/4 sec.33, T.3 N., R.19 E., Racine County, about 3/4 mile east of Burlington at Camp MacLean.

DRAINAGE AREA.--0.99 sq mi. Area of Rockland Lake, 45 acres.

PERIOD OF RECORD.--January 1967 to current year.

GAGE.--Nonrecording gage. Altitude of gage is 758 ft (from topographic map).

EXTREMES.--Current year: Maximum gage height observed, 5.58 ft July 30; minimum observed, 4.60 ft Nov. 7.
Period of record: Maximum gage height observed, 5.58 ft July 30, 1969; minimum gage height, 4.51 ft Jan. 12, 1967.

REMARKS.--Lake ice covered Dec. 14 through Apr. 6.

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		4.64						5.10		5.21		
2	4.74											
3	4.74											
4							5.08		4.96			
5						5.10						5.12
6			4.70						5.04			
7		4.60						5.08			5.50	
8								5.07		5.12		
9										5.21		
10				5.02			5.16					
11									5.04			
12	4.68		4.73			5.04						5.08
13		4.61										
14				5.02				5.04		5.31		
15												
16											5.39	
17			4.73				5.14					
18												5.01
19	4.68					5.03						
20		4.65									5.30	
21									5.04			
22								5.08				
23				5.11			5.14					
24	4.67		4.85	5.12								
25		4.68								5.50		
26					5.26	5.05						5.01
27												
28					5.17				5.00			
29	4.64				------						5.16	
30				5.09	------			5.06		5.58		4.97
31		------	4.99		------		------		------			------

5-5465. Fox River at Wilmot, Wis.

LOCATION.--Lat 42°30'40", long 88°10'45", in SW 1/4 sec.30, T.1 N., R.20 E., Kenosha County, on right bank 100 ft downstream from bridge on County Trunk C, 300 ft upstream from Wilmot Dam, 1 mile north of Wisconsin-Illinois State line, and 6 miles upstream from Fox chain of lakes.

DRAINAGE AREA.--868 sq mi.

PERIOD OF RECORD.--October 1939 to current year.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 735.22 ft above mean sea level. Prior to Sept. 1, 1965, nonrecording gage and concrete control.

AVERAGE DISCHARGE.--30 years, 453 cfs (7.09 inches per year).

EXTREMES.--Current year: Maximum discharge, 2,260 cfs July 3 (gage height, 6.80 ft); minimum daily, 105 cfs Sept. 4.
Period of record: Maximum discharge, 7,520 cfs 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 cfs Sept. 9, 1958.

REMARKS.--Records good except those for winter periods, which are fair. Three 6-foot 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.

REVISIONS (WATER YEARS).--WSP 1308: 1943(M), 1945(M).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	266	292	429	330	600	950	834	669	385	1,930	828	107
2	257	266	423	380	560	950	919	619	394	2,160	769	110
3	266	252	411	400	540	1,000	1,060	590	399	2,140	701	110
4	266	214	405	320	540	1,080	1,070	561	352	1,960	625	105
5	237	205	405	300	520	1,080	1,320	516	397	1,870	567	120
6	223	214	257	280	500	1,060	1,430	501	429	1,760	512	323
7	223	247	260	270	480	982	1,350	491	429	1,620	480	296
8	214	271	260	270	470	927	1,270	486	675	1,490	405	272
9	210	266	260	270	460	865	1,310	486	904	1,380	384	258
10	214	252	260	260	440	813	1,480	491	889	1,360	423	234
11	219	247	266	260	420	669	1,490	480	798	1,380	407	206
12	219	247	292	260	400	669	1,400	436	715	1,310	543	193
13	210	242	297	260	390	522	1,300	409	682	1,220	393	184
14	205	242	179	260	380	480	1,220	389	625	1,090	403	176
15	197	271	180	270	360	491	1,170	380	572	920	387	168
16	188	330	200	280	350	480	1,160	361	512	840	384	168
17	188	381	220	300	340	480	1,180	356	377	880	369	172
18	192	405	250	320	340	572	1,430	516	394	1,360	353	168
19	188	399	270	340	350	662	1,620	774	394	1,750	340	160
20	197	364	340	350	360	722	1,550	825	388	1,820	331	152
21	192	341	380	360	380	820	1,430	774	371	1,660	313	148
22	201	330	390	370	400	806	1,320	774	356	1,460	287	144
23	214	313	360	450	440	762	1,240	803	385	1,260	283	156
24	237	308	300	700	552	834	1,150	746	414	1,100	201	176
25	247	292	290	720	774	1,060	1,040	688	412	1,010	160	172
26	237	276	300	500	802	1,090	958	645	529	997	160	156
27	219	271	320	740	806	1,040	927	561	813	1,010	152	160
28	223	287	400	700	889	982	872	528	943	1,080	148	156
29	233	387	450	660	------	1,030	834	496	943	1,080	140	160
30	214	442	430	640	------	973	722	450	1,360	1,020	125	180
31	205	------	400	600	------	872	------	374	------	919	107	------
TOTAL	6,801	8,854	9,884	12,420	13,843	25,723	36,056	17,175	17,236	42,836	11,680	5,290
MEAN	219	295	319	401	494	830	1,202	554	575	1,382	377	176
MAX	266	442	450	740	889	1,090	1,620	825	1,360	2,160	828	323
MIN	188	205	179	260	340	480	722	356	352	840	107	105
CFSM	.25	.34	.37	.46	.57	.96	1.38	.64	.66	1.59	.43	.20
IN.	.29	.38	.42	.53	.59	1.10	1.55	.74	.74	1.84	.50	.23

CAL YR 1968 TOTAL 140,755 MEAN 385 MAX 1,980 MIN 115 CFSM .44 IN 6.03
WAT YR 1969 TOTAL 207,798 MEAN 569 MAX 2,160 MIN 105 CFSM .66 IN 8.91

As the number of streams on which streamflow information is likely to be desired far exceeds the number of stream-gaging stations feasible to operate at one time, the Geological Survey collects limited streamflow data at sites other than stream-gaging stations. When limited streamflow data are collected on a systematic basis over a period of years for use in hydrologic analyses, the site at which the data are collected is called a partial-record station. Data collected at these partial-record stations are usable in low-flow or flood-flow analyses, depending on the type of data collected. In addition, discharge measurements are made at other sites not included in the partial-record program. These measurements are generally made in times of drought or flood to give better areal coverage to those events. Those measurements and others collected for some special reason are called measurements at miscellaneous sites.

Records collected at partial-record stations are presented in two tables. The first is a table of discharge measurements at low-flow partial-record stations and the second is a table of annual maximum stage and discharge at crest-stage stations. Discharge measurements made at miscellaneous sites for both low flow and high flow are given in a third table.

Low-flow partial-record stations

Measurements of streamflow in the area covered by this report made at low-flow partial-record stations are given in the following table. Most of these measurements were made during periods of base flow when streamflow is primarily from ground-water storage. These measurements, when correlated with the simultaneous discharge of a nearby stream where continuous records are available, will give a picture of the low-flow potentiality of the stream. The column headed "Period of record" shows the water years in which measurements were made at the same, or practically the same, site. Measurements have been made at numerous other stations throughout the State since 1961. These measurements are published in preceding Water Resources Data for Wisconsin publications.

Discharge measurements made at low-flow partial-record stations during water year 1969

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Measurements	
					Date	Discharge (cfs)
		Streams tributary to Lake Superior				
4-0243.5	Black River near Chaffey, Wis.	S 1/2 sec. 19, T. 46 N., R. 14 W., at bridge on State Highway 35, 4.0 miles southeast of Patzau.	49.5	1964 1967 1969	8-20-69	1.03
4-0250	Amnicon River near Poplar, Wis.	On common boundary of secs. 29 and 32, T. 48 N., R. 12 W., at bridge on U.S. Highway 2, 4.5 miles northwest of Poplar.	112	1964 1967 1969	8-20-69	7.59
4-0251	Middle River near Poplar, Wis.	SE 1/4 sec. 12, T. 48 N., R. 12 W., at bridge on State Highway 13, 4.6 miles north of Poplar.	51.6	1964 1967 1969	8-20-69	1.75
4-0260.3	Reefer Creek near Port Wing, Wis.	NW 1/4 sec. 4, T. 49 N., R. 9 W., at bridge on State Highway 13, 5.8 miles southwest of Port Wing.	12.1	1964 1967 1969	8-20-69	2.00
4-0261.2	Flag River at Port Wing, Wis.	Center of sec. 28, T. 50 N., R. 8 W., at bridge on State Highway 13, just northeast of Port Wing.	32.0	1964 1967 1969	8-20-69	30.1
4-0261.9	Sand River near Red Cliff, Wis.	NE 1/4 sec. 14, T. 51 N., R. 5 W., at bridge on State Highway 13, 8.5 miles northwest of Red Cliff.	28.2	1964 1967 1969	8-20-69	4.77
*4-0263	Sioux River near Washburn, Wis.	NE 1/4 sec. 35, T. 49 N., R. 5 W., at twin concrete box culvert on County Trunk C, 2 1/4 miles west of Washburn.	14.9	1962-64 [b]1964-66 [c]1967-69	10- 3-68 11- 6-68 5-20-69 6-18-69 7-24-69 8-20-69	8.53 11.8 10.6 9.68 7.76 7.43
4-0263.5	North Fish Creek near Ashland, Wis.	SW 1/4 sec. 2, T. 47 N., R. 5 W., at bridge on U.S. Highway 2, 3.0 miles west of Ashland.	74.3	1967 1969	8-20-69	79.7
*4-0264	Spillerberg Creek near Cayuga, Wis.	NW 1/4 sec. 21, T. 43 N., R. 2 W., at concrete culvert pipe on State Highway 13, 4 1/4 miles southeast of Cayuga.	[a]6.18	1961-67 1969	8-20-69	.49
4-0265	Bad River at Mellen, Wis.	NW 1/4 sec. 6, T. 44 N., R. 2 W., at State Highway 13 at Mellen.	101	1969	8-20-69	10.1
4-0265.5	Tyler Forks River near Upson, Wis.	SE 1/4 sec. 28, T. 45 N., R. 1 W., at culvert on State Highway 77, 4.3 miles southwest of Upson.	41.3	1967 1969	8-20-69	11.0

* Also a crest-stage station.
a Approximately.
b Operated as a seasonal continuous-record gaging station.
c Operated as a seasonal continuous-record gaging station without records being published.

Discharge measurements made at low-flow partial-record stations during water year 1969

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Measurements	
					Date	Discharge (cfs)
		Streams tributary to Lake Superior--Continued				
4-0266	Marengo River near Marengo, Wis.	NW 1/4 sec. 36, T. 46 N., R. 4 W., at bridge on State Highway 13, 0.2 mile north of Marengo.	a101	1967 1969	8-19-69	33.4
4-0266.5	Trout Brook near Highbridge, Wis.	SW 1/4 sec. 8, T. 45 N., R. 3 W., at culvert on State Highway 13, 1.9 miles west of Highbridge.	7.91	1967 1969	9-18-69	2.12
4-0269	Potato River near Gurney, Wis.	SW 1/4 sec. 16, T. 46 N., R. 1 W., at bridge on State Highway 169, 0.7 mile south of Gurney.	a92.7	1967 1969	8-19-69	10.8
*4-0272	Pearl Creek at Grandview, Wis.	NE 1/4 sec. 22, T. 45 N., R. 6 W., at box culvert on U.S. Highway 63, 0.8 mile east of Grandview.	10.5	1961-69	8-19-69	7.88
4-0279	Laymans Creek near Hurley, Wis.	NE 1/4 sec. 6, T. 44 N., R. 3 E., at bridge on U.S. Highway 51, 8.0 miles southeast of Montreal.	a17.8	1967 1969	8-19-69	1.23
*4-0297	Boomer Creek near Saxon, Wis.	N 1/2 sec. 3, T. 46 N., R. 1 E., at concrete culvert pipe on U.S. Highway 2, 3 miles east of Saxon.	6.73	1961-64 1966-69	8-22-67 8-19-69	.39 .13
4-0598	Brule Creek at Alvin, Wis.	NW 1/4 sec. 34, T. 41 N., R. 13 E., at bridge on Forest Service Road 2458, 1.6 miles northwest of Alvin.	37	1969	8-13-69 8-27-69	24.7 19.0
		Streams tributary to Lake Michigan				
*4-0599	Allen Creek tributary near Alvin, Wis.	North boundary sec. 7, T. 40 N., R. 14 E., at culvert on State Highway 70, 2.2 miles southeast of Alvin.	a1.9	1963-67 1969	8-13-69 8-27-69	2.24 2.10
4-0609.9	Montagne Creek near Florence, Wis.	SW 1/4 sec. 11, T. 40 N., R. 17 E., at corrugated culvert on country road, 4.8 miles northwest of Florence.	14.4	1969	8-13-69 8-26-69	6.33 4.84
4-0636	Pine River near Three Lakes, Wis.	NW 1/4 sec. 30, T. 39 N., R. 13 E., at bridge on U.S. Forest Service Road 2182, 12.4 miles northeast of Three Lakes.	16.2	1966 1969	8-12-69 8-27-69	1.15 .97
4-0636.9	South Branch Popple River near Fence, Wis.	NE 1/4 sec. 25, T. 39 N., R. 15 E., at bridge on U.S. Forest Service Road 2159, 6.5 miles west of Fence.	10.2	1969	8-13-69 8-26-69	6.47 4.77
*4-0638	Woods Creek near Fence, Wis.	SE 1/4 sec. 29, T. 39 N., R. 17 E., at box culvert on State Highway 101, 6 miles north of Fence.	42.3	1961 1963-67 1969	8-13-69 8-26-69	17.8 12.7
4-0659.7	South Branch Pemebonwon River near Pembine, Wis.	On common boundary of secs. 19 and 30, T. 37 N., R. 20 E., at bridge on County Trunk O, 2.8 miles northwest of Pembine.	26.6	1969	10- 4-68 8-13-69 8-27-69	10.6 4.53 3.74
4-0662.5	South Branch Pike River near Dunbar, Wis.	SE 1/4 sec. 36, T. 36 N., R. 18 E., at culvert on town road signed "Old County A," 6.9 miles south of Dunbar.	72.4	1969	10- 3-68 8-13-69 8-27-69	52.2 25.9 21.0
*4-0663	Cole Creek near Dunbar, Wis.	South boundary sec. 34, T. 37 N., R. 19 E., at culvert on U.S. Highway 8, 3.6 miles southeast of Dunbar.	a3.2	1961 1963-67 1969	10- 3-68 8-13-69 8-27-69	1.64 .51 .56
4-0677	North Branch Peshtigo River near Argonne, Wis.	SW 1/4 sec. 24, T. 37 N., R. 13 E., at bridge on U.S. Forest Road 2387, 2.9 miles northeast of Argonne.	32.4	1969	8-12-69 8-27-69	9.78 5.93

GPO 823-131-12

* Also a crest-stage station
a Approximately.

Discharge measurements made at low-flow partial-record stations during water year 1969

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Measurements	
					Date	Discharge (cfs)
		Streams tributary to Lake Michigan--Continued				
4-0677.5	Camp Eight Creek near Cavour, Wis.	NE 1/4 sec. 36, T. 37 N., R. 14 E., at culvert on County Trunk G, 2.3 miles west of Cavour.	15.0	1969	8-12-69 8-26-69	3.49 2.32
*4-0678	Armstrong Creek near Armstrong Creek, Wis.	W 1/2 sec. 27, T. 37 N., R. 16 E., at bridge on U.S. Highway 8, 1 3/4 miles northwest of Armstrong Creek.	23.1	1963-67 1969	8-13-69 8-26-69	7.87 4.70
4-0679	Rat River near Wabeno, Wis.	SE 1/4 sec. 28, T. 35 N., R. 16 E., at bridge on U.S. Forest Service Road 2134, 8.0 miles northeast of Wabeno.	82.6	1969	10- 3-68 8-13-69 8-27-69	106 67.9 33.6
4-0679.9	Eagle Creek near Athelstene, Wis.	On common boundary of secs. 24 and 25, T. 34 N., R. 18 E., at bridge on County Trunk C, 4.5 miles southwest of Athelstene.	38.6	1969	10- 3-68 8-13-69 8-27-69	26.8 12.4 13.2
4-0681	North Fork Thunder River near Lakewood, Wis.	NE 1/4 sec. 23, T. 33 N., R. 17 E., at culvert on U.S. Forest Service Road 2101, 9.7 miles northeast of Lakewood.	20.0	1969	10- 3-68 8-13-69 8-27-69	11.1 10.3 8.39
4-0692.9	Middle Inlet Creek near Middle Inlet, Wis.	On common boundary of secs. 30 and 31, T. 33 N., R. 21 E., at bridge on County Trunk X, 2.7 miles east of Middle Inlet.	56.9	1969	10- 4-68 8-14-69 8-26-69	38.1 33.4 26.7
4-0693,5	South Branch Beaver Creek near Beaver, Wis.	In center of sec. 28, T. 31 N., R. 20 E., at bridge on U.S. Highway 141, 0.5 miles south of Beaver.	53.9	1969	10- 4-68 8-14-69 8-26-69	23.4 19.3 18.6
4-0693.9	Little Peshtigo River near Coleman, Wis.	SW 1/4 sec. 18, T. 30 N., R. 21 E., at bridge on County Trunk B, 1.9 miles east of Coleman.	49.9	1969	10- 4-68 8-14-69 8-26-69	10.8 13.2 6.67
4-0694.8	Trout Creek near Peshtigo, Wis.	On common boundary of secs. 23 and 24, T. 30 N., R. 22 E., at bridge, 1.5 miles west of Peshtigo.	24.3	1969	8-14-69 8-26-69	3.12 .79
4-0701	North Branch Oconto River near Mountain, Wis.	On common boundary of secs. 23 and 26, T. 31 N., R. 16 E., at bridge on U.S. Forest Service Road 2106, 3.2 miles north of Mountain.	178	1969	10- 2-68 8-12-69 8-28-69	138 135 103
4-0703	Waupee River near Mountain, Wis.	SW 1/4 sec. 30, T. 31 N., R. 17 E., at bridge on State Highway 32, 4.2 miles southeast of Mountain.	47.9	1969	10- 2-68 8-12-69 8-28-69	23.9 26.1 18
4-0706	Hills Pond Creek near Langlade, Wis.	SE 1/4 sec. 4, T. 31 N., R. 15 E., at bridge on State Highway 64, 5.5 miles east of Langlade.	9.15	1969	10- 2-68 8-12-69 8-28-69	11.5 12.2 10.9
4-0708	Pecore Creek near Hayes, Wis.	NE 1/4 sec. 8, T. 29 N., R. 17 E., at culvert on country road, 1.2 miles northwest of Hayes.	30.4	1969	10- 3-68 8-13-69 8-27-69	19.2 18.0 12.2
4-0717.3	Kelly Brook near Lena, Wis.	On common boundary of secs. 22 and 23, T. 29 N., R. 20 E., at bridge on U.S. Highway 141, 1.5 miles north of Lena.	79.6	1969	8-14-69 8-26-69	6.98 5.30
*4-0718	Pensaukee River near Pulaski, Wis.	NE 1/4 sec. 1, T. 26 N., R. 18 E., at bridge on State Highway 32, 6.1 miles north of Pulaski.	41.8	1961 1963-67 1969	10- 3-68 8-27-69	2.12 .42
4-0720	Suamico River at Suamico, Wis.	NW 1/4 sec. 22, T. 25 N., R. 20 E., at highway bridge, 0.6 miles west of Suamico, 3.5 miles upstream from mouth.	57.0	1969	10- 3-68 8-12-69 8-26-69	4.22 3.38 2.53

* Also a crest-stage station.

Discharge measurements made at low-flow partial-record stations during water year 1969

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Measurements	
					Date	Discharge (cfs)
		Streams tributary to Lake Michigan--Continued				
4-0720.5	Duck Creek near Oneida, Wis.	SE 1/4 sec. 17, T. 23 N., R. 19 E., at bridge on country road, 2.9 miles southwest of Oneida.	92.2	1969	10- 3-68 8-12-69 8-26-69	1.25 .42 .11
4-0739	Eightmile Creek at Fish, Wis.	SW 1/4 sec. 11, T. 17 N., R. 15 E., at bridge on County Trunk FF at Fish.	22.8	1969	10- 2-68 8-14-69 8-26-69	- .03 .01 est.
4-0760	West Branch Wolf River at Neopit, Wis.	NE 1/4 sec. 20, T. 29 N., R. 14 E., in Neopit.	108	1969	8-13-69 8-27-69	115 106
4-0764	Little West Branch near Neopit, Wis.	NW 1/4 sec. 11, T. 29 N., R. 14 E., at culvert on County Trunk M, 3.8 miles northeast of Neopit.	21.1	1969	10- 3-68 8-13-69 8-27-69	11.8 18.0 8.75
4-0780.5	Shioc River near Nicholas, Wis.	SW 1/4 sec. 7, T. 24 N., R. 19 E., at bridge on State Highway 156, 0.8 mile west of Nicholas.	92.0	1969	10- 2-68 8-13-69 8-27-69	12.0 7.36 .84
4-0780.55	Black Creek at Black Creek, Wis.	NE 1/4 sec. 8, T. 23 N., R. 17 E., at bridge on State Highway 47, 0.3 mile north of Black Creek.	55.9	1969	10- 2-68 8-26-69	1.68 .64
4-0780.8	Bear Creek at Stephensville, Wis.	NE 1/4 sec. 20, T. 22 N., R. 16 E., at bridge on State Highway 76, at Stephensville.	59.4	1969	10- 2-68 8-13-69 8-26-69	2.75 1.52 .94
4-0784	North Branch Embarrass River at Bowler, Wis.	NW 1/4 sec. 6, T. 27 N., R. 13 E., at bridge on County Trunk D, 0.8 mile south of Bowler.	39.5	1962-64 1966-69	8-11-69 8-27-69	25.3 23.1
4-0784.9	Mill Creek near Pella, Wis.	NW 1/4 sec. 12, T. 26 N., R. 14 E., at bridge on country road, 2.8 miles east of Pella.	23.1	1969	10- 3-68 8-11-69 8-28-69	17.3 11.6 7.70
4-0786	North Branch Pigeon River near Marion, Wis.	NE 1/4 sec. 5, T. 25 N., R. 13 E., at farm bridge, 2.8 miles west of Marion.	10.8	1969	8-14-69 8-28-69	3.64 2.78
4-0788	Bear Creek near Sugar Bush, Wis.	SE 1/4 sec. 5, T. 23 N., R. 15 E., at bridge on country road, 1.9 miles northeast of Sugar Bush.	26.3	1969	10- 4-68 8-11-69 8-28-69	.55 .59 .15
*4-0797	Spaulding Creek near Big Falls, Wis.	On common boundary secs. 14 and 15, T. 25 N., R. 12 E., at concrete culvert on County Trunk E, 1.5 miles north of Big Falls.	a4.9	1962-64 b1964-66 c1967-69	10-30-68 12- 3-68 1- 7-69 2-11-69 3-18-69 8-29-69	3.99 3.67 3.00 3.96 3.92 1.59
*4-0810	Waupaca River near Waupaca, Wis.	On north line of sec. 1, T. 21 N., R. 12 E., on right bank 10 ft downstream from highway bridge, 4 miles upstream from Weyauwega Lake dam, 4 1/2 miles southeast of Waupaca.	272	1916-63≠ b1964-66 c1967-69	11- 4-68	202
4-0814	Alder Creek near Fremont, Wis.	On common boundary of secs. 20 and 29, T. 20 N., R. 14 E., at bridge on County Trunk H, 5.1 miles south of Freemont.	14.1	1969	10- 4-68 8-14-69 8-28-69	.82 .38 .19
4-0818	Daggets Creek near Butte des Morts, Wis.	SW 1/4 sec. 20, T. 19 N., R. 16 E., at bridge on country road, 1.5 miles east of Butte des Morts.	10.3	1969	8-26-69	.004

* Also a crest-stage station.
≠ Operated as a continuous-record gaging station.
a Approximately.
b Operated as a seasonal continuous-record gaging station.
c Operated as a seasonal continuous-record gaging station without records being published.

Discharge measurements made at low-flow partial-record stations during water year 1969

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Measurements	
					Date	Discharge (cfs)
		Streams tributary to Lake Michigan--Continued				
*4-0850.3	Apple Creek near Kaukauna, Wis.	West boundary sec. 2, T. 21 N., R. 18 E., at bridge on State Highway 55, 3 miles north of Kaukauna.	14.6	1963-67 1969	10- 4-68 8-12-69 8-26-69	0 0 0
4-0850.7	Ashwaubenon Creek near De Pere, Wis.	On common boundary of land grants 28 and 29, T. 23 N., R. 20 E., at culverts on County Trunk G, 0.5 mile west of De Pere.	25.2	1969	10- 4-68 8-13-69 8-26-69	.19 .11 .02
4-0851.1	East River near De Pere, Wis.	SE 1/4 sec. 3, T. 22 N., R. 20 E., at bridge on State Highway 32, 2.5 miles south of De Pere.	58.4	1969	10- 4-68 8-13-69 8-26-69	.60 2.17 .54
4-0851.7	Hibbard Creek at Jacksonport, Wis.	SE 1/4 sec. 14, T. 29 N., R. 27 E., at culvert on State Highway 57, 0.8 mile northeast of Jacksonport.	22.5	1969	10- 3-68 8-13-69 8-27-69	2.82 7.93 3.62
4-0851.8	Stoney Creek near Algoma, Wis.	NW 1/4 sec. 5, T. 25 N., R. 26 E., at bridge on County Trunk U, 5.5 miles northeast of Algoma.	24.8	1969	10- 3-68 8-13-69 8-27-69	1.72 2.37 .94
4-0851.9	Silver Creek near Algoma, Wis.	NE 1/4 sec. 19, T. 25 N., R. 25 E., at bridge on County Trunk D, 3.5 miles northwest of Algoma.	58.0	1969	10- 3-68 8-14-69 8-27-69	.32 .33 .005
4-0852.8	East Twin River at Mishicot, Wis.	NW 1/4 sec. 4, T. 20 N., R. 24 E., at bridge on State Highway 147, at Mishicot.	109	1969	10- 2-68 8-13-69 8-27-69	15.3 12.9 10.2
4-0853.3	West Twin River near Francis Creek, Wis.	SW 1/4 sec. 7, T. 20 N., R. 24 E., at bridge on County Trunk Q, 2.3 miles northeast of Francis.	146	1969	10- 3-68 8-13-69 8-27-69	15.4 18.6 16.1
4-0853.9	South Branch Manitowoc River near Chilton, Wis.	NW 1/4 sec. 17, T. 18 N., R. 20 E., at bridge on country road, 1.1 miles northeast of Chilton.	75.2	1969	10- 2-68 8-12-69 8-28-69	3.16 11.0 2.28
*4-0854	Killsnake River near Chilton, Wis.	E 1/2 sec. 6, T. 18 N., R. 20 E., at bridge on country road, 2.4 miles northeast of Chilton.	29.5	1963-67 1969	10- 2-68 8-12-69 8-28-69	1.16 2.51 1.65
4-0854.1	Mud Creek near Reedsville, Wis.	SW 1/4 sec. 2, T. 19 N., R. 21 E., at bridge on country road, 1.0 mile south of Reedsville.	38.7	1969	10- 2-68 8-12-69 8-28-69	.86 1.89 .78
4-0854.2	Branch River near Cato, Wis.	SE 1/4 sec. 22, T. 20 N., R. 22 E., at bridge on country road, 3.3 miles north of Cato.	80.7	1969	10- 2-68 8-13-69 8-27-69	4.57 7.94 4.79
4-0854.6	Pigeon River near Millersville, Wis.	SW 1/4 sec. 6, T. 15 N., R. 23 E., at bridge on country road, 2.1 miles southeast of Millersville.	66.1	1969	10- 2-68 8-12-69 8-28-69	3.27 1.98 1.00
4-0858	Onion River near Waldo, Wis.	On common boundary of secs. 10 and 11, T. 14 N., R. 21 E., at bridge on County Trunk AC, 1.4 miles northwest of Waldo.	18.2	1969	10- 2-68 8-12-69 8-28-69	9.29 8.80 7.59
4-0861	Milwaukee River at Campbellsport, Wis.	SE 1/4 sec. 7, T. 13 N., R. 19 E., at bridge on private road, 0.7 mile northeast of Campbellsport.	50.1	1962-67 1969	10- 3-68	1.60
4-0863	North Branch Milwaukee River near Cascade, Wis.	SW 1/4 sec. 8, T. 13 N., R. 21 E., at bridge on County Trunk A, 4.1 miles south of Cascade.	37.1	1962-67 1969	10- 3-68	11.4
4-0870.2	Menomonee River at Menomonee Falls, Wis.	SE 1/4 sec. 33, T. 9 N., R. 20 E., at culvert on County Trunk Q, 1.2 miles northwest of Menomonee Falls.	32.0	1962-67 1969	10- 2-68	4.66
*4-0870.5	Little Menomonee River near Freistadt, Wis.	On common boundary secs. 29 and 32, T. 9 N., R. 21 E., at bridge on Donges Bay Road, 2 miles south of Freistadt.	7.96	1961-67 1969	10- 2-68	2.40

* Also a crest-stage station.

Discharge measurements made at low-flow partial-record stations during water year 1969

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Measurements	
					Date	Discharge (cfs)
		St. Croix River Basin				
5-3315.9	Lower Ox Creek near Gordon, Wis.	SE 1/4 sec. 16, T. 44 N., R. 11 W., at bridge on country road, 4.6 miles northeast of Gordon.	99.4	1969	8-21-69	15.5
5-3317	Moose River near Solon Springs, Wis.	On common boundary of secs. 14 and 23, T. 44 N., R. 13 W., at bridge on County Trunk M, 7.8 miles southwest of Solon Springs.	49.9	1964 1967 1969	8-20-69	1.11
5-3319	Chippanazie Creek at Stanberry, Wis.	NW 1/4 sec. 33, T. 41 N., R. 10 W., at culvert on U.S. Highway 63, 0.8 mile southwest of Stanberry.	a33.8	1964 1967 1969	8-21-69	7.79
5-3319.5	Bean Brook near Spring Brook, Wis.	NE 1/4 sec. 1, T. 39 N., R. 11 W., at culvert on County Trunk M, 3.5 miles southeast of Spring Brook.	a38.1	1964 1967 1969	8-21-69	30.6
5-3321	Potato Creek at Trego, Wis.	SW 1/4 sec. 2, T. 39 N., R. 12 W., at culvert on U.S. Highways 53 and 63, 0.9 mile south of Trego.	25.7	1962-64 1966-67 1969	8-19-69	15.7
5-3327	Stuntz Brook near Minong, Wis.	SW 1/4 sec. 23, T. 41 N., R. 13 W., at culvert on County Trunk F, 8.8 miles southwest of Minong.	18.2	1964 1967 1969	8-21-69	2.50
5-3330.6	Ounce River near Gordon, Wis.	SW 1/2 sec. 30, T. 43 N., R. 10 W., at bridge on country road, 7.8 miles southeast of Gordon.	a41.7	1964 1967 1969	8-21-69	12.4
5-3330.8	Frog Creek near Minong, Wis.	NW 1/4 sec. 20, T. 42 N., R. 11 W., at bridge on country road, 2.4 miles northeast of Minong.	a31.7	1964 1967 1969	8-21-69	3.07
5-3335.1	Chases Brook near Danbury, Wis.	NE 1/4 sec. 32, T. 42 N., R. 15 W., at bridge on country road, 7.0 miles northeast of Danbury.	a38.0	1964 1967 1969	8-20-69	2.62
5-3345	Yellow River at Webster, Wis.	On common boundary of secs. 4 and 5, T. 39 N., R. 16 W., at bridge on State Highway 35, 1.3 miles north of Webster.	228	1914≠ 1964 1967 1969	8-20-69	124
5-3353	Clam River near Frederic, Wis.	NW 1/4 sec. 6, T. 36 N., R. 15 W., at bridge on County Trunk W, 9.9 miles east of Frederic.	38.4	1962-64 1966-67 1969	8-19-69	1.09
*5-3353.8	Bashaw Brook near Shell Lake, Wis.	SW 1/4 sec. 8, T. 38 N., R. 14 W., at twin box culvert on country road, 10.5 miles northwest of Shell Lake.	d24.9	1962-64 b1964-66 c1967-69	10- 1-68 10-29-68 5-19-69 6-13-69 8-20-69	11.95 11.2 7.69 7.96 6.20
5-3389	Wood River near Siren, Wis.	On common boundary of secs. 27 and 28, T. 38 N., R. 17 W., at bridge on country road, 4.8 miles southwest of Siren.	26.8	1964 1967 1969	8-20-69	.52
5-3389.5	North Fork Wood River near Grantsburg, Wis.	E 1/2 sec. 8, T. 38 N., R. 18 W., at bridge on country road, 3.5 miles northeast of Grantsburg.	67.3	1964 1967 1969	8-19-69	6.33
*5-3403	Trade River near Frederic, Wis.	SW 1/4 sec. 4, T. 36 N., R. 17 W., at box culvert on State Highways 35 and 48, 2.5 miles southwest of Frederic.	6.34	1961-67 1969	8-19-69	1.42
5-3404	Wolf Creek near St. Croix Falls, Wis.	SE 1/4 sec. 33, T. 36 N., R. 19 W., at bridge on County Trunk G, 11.0 miles northwest of St. Croix Falls.	29.3	1964 1967 1969	8-19-69	3.97

* Also a crest-stage station.
≠ Operated as a continuous-record gaging station.
a Approximately.
b Operated as a seasonal continuous-record gaging station.
c Operated as a seasonal continuous-record gaging station without records being published.
d Revised.

Discharge measurements made at low-flow partial-record stations during water year 1969

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Measurements	
					Date	Discharge (cfs)
		St. Croix River Basin--Continued				
5-3414.5	Horse Creek near Star Prairie, Wis.	SW 1/4 sec. 15, T. 32 N., R. 18 W., at culvert on County Trunk X, 5.3 miles northwest of Star Prairie.	32.6	1963-64 1966-67 1969	8-20-69	9.32
5-3416.9	Willow River near New Richmond, Wis.	SE 1/4 sec. 25, T. 31 N., R. 17 W., at bridge on State Highway 64, 6.2 miles east of New Richmond.	85.1	1962-64 1966-67 1969	8-19-69	9.80
5-3418.5	Kinnickinnic River near Hammond, Wis.	South boundary sec. 2, T. 28 N., R. 18 W., at culvert on County Trunk N, 4.5 miles southeast of Hammond.	47.8	1964 1966-69	8-21-69	8.95
		Trimbelle Creek Basin				
5-3463	Trimbelle Creek near Ellsworth, Wis.	South boundary sec. 17, T. 26 N., R. 18 W., at bridge on U.S. Highway 10, 5.0 miles west of Ellsworth.	42.8	1964 1966-69	8-21-69	10.0
*5-3466	Little Trimbelle Creek near Bay City, Wis.	S 1/2 sec. 21, T. 25 N., R. 18 W., at bridge on County Trunk K, 7 miles northwest of Bay City.	19.9	1961 1963-69	8-21-69	2.12
		Isabelle Creek Basin				
5-3553	Isabelle Creek near Bay City, Wis.	SE 1/4 sec. 28, T. 25 N., R. 17 W., at bridge on County Trunk EE, 2.5 miles north of Bay City.	31.2	1964 1966-67 1969	8-20-69	6.64
		Chippewa River Basin				
5-3553.7	Moose River near Clam Lake, Wis.	SW 1/4 sec. 34, T. 42 N., R. 4 W., at bridge on County Trunk GG, 6.1 miles southeast of Clam Lake.	23.9	1969	8-19-69	.78
5-3554.2	Hay Creek near Hayward, Wis.	SW 1/4 sec. 31, T. 41 N., R. 6 W., at culvert on country road, 15.0 miles east of Hayward.	a14.9	1967 1969	8-21-69	8.65
5-3555.3	East Fork Chippewa River near Glidden, Wis.	On common boundary of secs. 12 and 13, T. 42 N., R. 2 W., at bridge on State Highway 13, 0.7 mile southeast of Glidden.	a94.6	1967 1969	8-20-69	22.1
5-3573.5	Lost Creek near Powell, Wis.	SE 1/4 sec. 27, T. 42 N., R. 4 E., at bridge on State Highway 47, 1.0 mile west of Powell.	14.5	1967 1969	8-19-69	5.93
5-3583	Pine Creek near Oxbow, Wis.	SE 1/4 sec. 36, T. 40 N., R. 3 W., at bridge on County Trunk EE, 3.0 miles northeast of Oxbow.	a37.4	1967 1969	8-19-69	16.8
5-3591	Springstead Creek near Park Falls, Wis.	SE 1/4 sec. 16, T. 40 N., R. 3 E., at bridge on Forest Road No. 147, 16 miles east of Park Falls.	a21.4	1967 1969	8-20-69	5.98
5-3593.5	Elk River near Phillips, Wis.	On common boundary of secs. 33 and 34, T. 38 N., R. 2 E., at bridge on County Trunk H, 8.9 miles northeast of Phillips.	a42.1	1967 1969	8-20-69	7.50
*5-3596	Price Creek near Phillips, Wis.	SW 1/4 sec. 31, T. 38 N., R. 2 W., at culvert on County Trunk W, 13 miles west of Phillips.	14.7	1961-64 b1964-66 c1967-69	5-22-69 6-20-69 8-18-69	13.7 6.90 2.35

* Also a crest-stage station.
a Approximately.
b Operated as a seasonal continuous-record gaging station.
c Operated as a seasonal continuous-record gaging station without records being published.

Discharge measurements made at low-flow partial-record stations during water year 1969

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Measurements	
					Date	Discharge (cfs)
		Chippewa River Basin--Continued				
5-3694	Bear Creek near Durand, Wis.	SE 1/4 sec. 15, T. 25 N., R. 13 W., at bridge on State Highway 85, 1.6 miles northeast of Durand.	48.2	1964 1966-69	8-20-69	16.1
*5-3709	Spring Creek near Durand, Wis.	S 1/2 sec. 9, T. 24 N., R. 13 W., at bridge on country road, 4 miles south of Durand.	6.49	1962-69	8-14-69 8-20-69	2.31 3.03
5-3710	Plum Creek at Plum City, Wis.	NW 1/4 sec. 22, T. 25 N., R. 15 W., at bridge on U.S. Highway 10 in Plum City.	31.5	1964 1966-69	8-20-69	4.25
		Buffalo River Basin				
5-3720	Buffalo River at Tell, Wis.	NW 1/4 sec. 16, T. 16 N., R. 12 W., at bridge on County Trunk F, 1 mile northeast of Tell.	406	1932-51≠ 1964 1967-69	8-20-69	204
		Waumandee Creek Basin				
5-3781	Little Waumandee Creek near Cream, Wis.	SE 1/4 sec. 19, T. 21 N., R. 11 W., at bridge on State Highway 88, 2.8 miles south of Cream.	46.0	1964 1966-69	8-19-69	23.6
*5-3782	Eagle Creek near Fountain City, Wis.	SW 1/4 sec. 33, T. 20 N., R. 11 W., at bridge on County Trunk G, 2 1/2 miles north of Fountain City.	26.8	1961 1963-69	8-19-69	12.5
		Trempealeau River Basin				
5-3792	Trempealeau River at Taylor, Wis.	East boundary sec. 5, T. 21 N., R. 6 W., at bridge on County Trunk P, 0.4 mile north of Taylor.	110	1964 1966-69	8-20-69	49.8
5-3793	Elk Creek at Elk Creek, Wis.	SW 1/4 sec. 31, T. 23 N., R. 8 W., at bridge on State Highway 93, in Elk Creek.	90.1	1964 1966-69	8-19-69	38.7
		Black River Basin				
*5-3809	Poplar River near Owen, Wis.	NW 1/4 sec. 25, T. 28 N., R. 2 W., at bridge on County Trunk N, 4 1/4 miles south of Owen.	159	1962-64 b1964-66 c1967-69	10-22-68 11- 8-68 7- 6-69 8- 7-69	21.2 29.6 31.8 31.8
5-3811.5	East Fork Black River near Pittsville, Wis.	SW 1/4 sec. 19, T. 23 N., R. 2 E., at bridge on State Highway 73, 9.1 miles west of Pittsville.	37.2	1962-64 1966-69	8-27-69	0
5-3813.5	Levis Creek near Black River Falls, Wis.	SE 1/4 sec. 12, T. 21 N., R. 4 W., at bridge on State Highway 54, 2.2 miles northeast of Black River Falls.	39.7	1964 1966-69	8-18-69 8-20-69	13.0 13.7
5-3814.5	Big Creek near Cataract, Wis.	SW 1/4 sec. 7, T. 19 N., R. 4 W., at bridge on country road, 4.6 miles northwest of Cataract.	64.0	1964 1966-69	8-20-69	46.5
5-3818	Fleming Creek at Stevenstown, Wis.	NW 1/4 sec. 13, T. 18 N., R. 7 W., at bridge on County Trunk T in Stevenstown.	28.5	1966-69	8-20-69	9.18

* Also a crest-stage station.
≠ Operated as a continuous-record gaging station.
b Operated as a seasonal continuous-record gaging station.
c Operated as a seasonal continuous-record gaging station without records being published.

Discharge measurements made at low-flow partial-record stations during water year 1969

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Measurements	
					Date	Discharge (cfs)
		Black River Basin--Continued				
5-3821	South Fork Beaver Creek at Ettrick, Wis.	W 1/2 sec. 31, T. 20 N., R. 7 W., at bridge on County Trunk D in Ettrick.	33.1	1964 1966-69	8-20-69	7.99
*5-3822	French Creek near Ettrick, Wis.	NE 1/4 sec. 27, T. 20 N., R. 8 W., at bridge on County Trunk D and T, 2 1/2 miles west of Ettrick.	14.3	1961 1963-69	8-20-69	6.58
		La Crosse River Basin				
5-3822.8	Silver Creek near Sparta, Wis.	NW 1/4 sec. 24, T. 17 N., R. 3 W., at bridge on U.S. Highway 16, 6.5 miles east of Sparta.	14.7	1964 1966-69	8-19-69	8.13
*5-3825	Little La Crosse River near Leon, Wis.	NE 1/4 sec. 3, T. 16 N., R. 4 W., 30 ft upstream from country road bridge, 1.5 miles northwest of Leon.	77.1	1934-61≠ 1963-69	8-19-69	35.9
		Mormon Creek Basin				
*5-3863	Mormon Creek near La Crosse, Wis.	NE 1/4 sec. 19, T. 15 N., R. 6 W., at bridge on country road, 6 miles southeast of La Crosse.	25.5	1961 1963-69	8-19-69	10.9
*5-3871	North Fork Bad Axe River near Genoa, Wis.	SW 1/4 sec. 36, T. 13 N., R. 7 W., at bridge on State Highway 56, 4.1 miles southeast of Genoa.	d68.8	1961 1963-64 b1964-66 c1967-69	11- 4-68 5-15-69 8-12-69 8-20-69	28.4 33.7 44.6 28.1
		Rush Creek Basin				
5-3883.7	Rush Creek near Ferryville, Wis.	NW 1/4 sec. 32, T. 11 N., R. 6 W., at bridge on country road, 2.5 miles northwest of Ferryville.	44.8	1963 1966-69	8-20-69	15.9
		Copper Creek Basin				
5-3883.8	Copper Creek near Mt. Sterling, Wis.	NW 1/4 sec. 29, T. 10 N., R. 5 W., at bridge on country road, 4.2 miles west of Mt. Sterling.	14.1	1963 1966-69	8-20-69	5.90
		Wisconsin River Basin				
*5-3901.4	Muskrat Creek at Conover, Wis.	SW 1/4 sec. 4, T. 41 N., R. 10 E., at corrugated culvert, on U.S. Highway 45, 0.1 mile north of Conover.	9.95	1969	10- 3-68 8-13-69 8-27-69	7.49 4.65 4.28
5-3904.5	Deerskin River near Eagle River, Wis.	SE 1/4 sec. 25, T. 41 N., R. 11 E., at corrugated culvert on forest road, 9.8 miles northeast of Eagle River.	32.5	1969	10- 3-68 8-13-69 8-27-69	20.6 19.4 16.9
5-3912	Monico Creek at Monico, Wis.	NW 1/4 sec. 29, T. 36 N., R. 11 E., at culvert on U.S. Highway 45, 0.3 mile northeast of Monico.	19.8	1969	8-12-69 8-27-69	.28 .17
5-3912.5	Gudegast Creek near Rhinelander, Wis.	SE 1/4 sec. 9, T. 37 N., R. 10 E., at culvert on Sec. 9 Road, 9.5 miles northeast of Rhinelander.	11.3	1969	8-14-69 8-28-69	6.77 2.40
5-3919	Noisy Creek near Rhinelander, Wis.	SW 1/4 sec. 36, T. 36 N., R. 8 E., at culvert on State Highway 17, 5.9 miles south of Rhinelander.	36.8	1969	10- 2-68 8-12-69 8-27-69	33.4 9.35 6.29

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b Operated as a seasonal continuous-record gaging station.
c Operated as a seasonal continuous-record gaging station without records being published.
d Revised.

Discharge measurements made at low-flow partial-record stations during water year 1969

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Measurements	
					Date	Discharge (cfs)
		Wisconsin River Basin--Continued				
*5-3921.5	Mishonogon Creek near Woodruff, Wis.	NE 1/4 sec. 32, T. 40 N., R. 6 E., at twin culvert on State Highway 47, 3 miles northwest of Woodruff.	11.7	1961 1963-67 1969	8-19-69	19.0
5-3922.9	Willow River near Hazelhurst, Wis.	SE 1/4 sec. 19, T. 38 N., R. 4 E., at culvert on country road, 14.9 miles west of Hazelhurst.	7.97	1969	8-20-69	3.09
5-3923.2	Rocky Run Creek near Goodnow, Wis.	SE 1/4 sec. 17, T. 37 N., R. 6 E., on country road, 4.3 miles west of Goodnow.	20.3	1969	8-19-69	18.7
*5-3923.5	Bearskin Creek near Harshaw, Wis.	SW 1/4 sec. 36, T. 37 N., R. 6 E., at culvert on County Trunk K, 2 1/8 miles southwest of Harshaw.	d27.8	1963-64 b1964-66 c1967-69	10- 1-68 11- 4-68 12-10-68 7-10-69 8-15-69	44 42.6 45.5 43.8 33.6
5-3924.5	Little Rice River near Bradley, Wis.	NE 1/4 sec. 23, T. 36 N., R. 5 E., at culvert on Kelly Fire Lane, 5.4 miles northwest of Bradley.	25.9	1969	8-19-69	1.87
5-3932	Big Somo River near Tripoli, Wis.	NW 1/4 sec. 10, T. 35 N., R. 4 E., at bridge on County Trunk T, 1.8 miles southeast of Tripoli.	a44.1	1967 1969	8-20-69	2.08
5-3936.3	Little Pine Creek near Tomahawk, Wis.	On common boundary of secs. 31 and 32, T. 34 N., R. 7 E., at culverts on County Trunk V, 6.5 miles southeast of Tomahawk.	21.1	1967 1969	8-19-69	3.61
5-4034	Bear Creek near Camp Douglas, Wis.	East boundary sec. 1, T. 17 N., R. 1 E., at bridge on country road, 4.5 miles northwest of Camp Douglas.	33.1	1964 1966-67 1969	8-20-69	8.38
*5-4035.2	Webster Creek at New Lisbon, Wis.	NE 1/4 sec. 19, T. 16 N., R. 3 E., at bridge on State Highway 80, 1.2 miles south of New Lisbon.	11.6	1961 1963-67 1969	8-20-69	2.77
*5-4035.5	One Mile Creek near Mauston, Wis.	SE 1/4 sec. 24, T. 15 N., R. 3 E., at bridge on State Highway 58, 2.4 miles south of Mauston.	30.4	1961 1963-69	8-20-69	7.68
*5-4037	Dell Creek near Lake Delton, Wis.	NW 1/4 sec. 2, T. 12 N., R. 5 E., at bridge on country road, 6 miles southwest of Lake Delton.	44.9	1957-65≠ 1966-67 1969	8-20-69	18.6
5-4041	Baraboo River near Union Center, Wis.	SW 1/4 sec. 9, T. 14 N., R. 2 E., at bridge on State Highways 80 and 82, 1.4 miles north of Union Center.	73.2	1964 1966-69	8-20-69	15.8
*5-4042	Narrows Creek at Loganville, Wis.	SE 1/4 sec. 8, T. 11 N., R. 4 E., at bridge on State Highway 23 and 154, and 1/4 mile north of Loganville.	40.0	1961 1963 b1964-66 c1967-69	11- 9-68 5- 6-69 8-20-69	7.22 17.2 6.49
5-4062	Honey Creek near Plain, Wis.	East boundary sec. 13, T. 9 N., R. 4 E., at bridge on country road, 5 miles east of Plain.	56.3	1963 1966-69	8- 7-69 8-20-69	11.8 10.6
5-4063	Honey Creek near Sauk City, Wis.	NE 1/4 sec. 17, T. 9 N., R. 6 E., at bridge on State Highway 60, 4.3 miles west of Sauk City.	150	1963 1966-69	8-20-69	38.4
5-4064	East Branch Blue Mounds Creek near Black Earth, Wis.	SW 1/4 sec. 5, T. 7 N., R. 6 E., at bridge on County Trunk F, 4.2 miles southwest of Black Earth.	30.8	1962-67	8- 7-69	27.7

* Also a crest-stage station.
≠ Operated as a continuous-record gaging station.
a Approximately.
b Operated as a seasonal continuous-record gaging station.
c Operated as a seasonal continuous-record gaging station without records being published.

Discharge measurements made at low-flow partial-record stations during water year 1969

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Measurements	
					Date	Discharge (cfs)
		Wisconsin River Basin--Continued				
5-4066	Mill Creek near Spring Green, Wis.	SW 1/4 sec. 21, T. 8 N., R. 4 E., at bridge on country road, 2.3 miles southeast of Spring Green.	96.3	1963 1966-69	8-19-69	57.8
5-4066.5	Otter Creek near Clyde, Wis.	NE 1/4 sec. 2, T. 7 N., R. 2 E., at bridge on County Trunk I, 0.5 mile south of Clyde.	95.4	1963 1966-69	8-19-69	42.7
5-4067	Bear Creek near Lone Rock, Wis.	NW 1/4 sec. 35, T. 9 N., R. 2 E., at bridge on County Trunk JJ, 2.5 miles northeast of Lone Rock.	65.3	1963 1966-69	8-19-69	26.8
5-4067.5	Pine River near Buck Creek, Wis.	NW 1/4 sec. 27, T. 11 N., R. 1 E., at bridge on State Highway 80, 1.0 mile south of Buck Creek	126	1963 1966-69	8-19-69	65.1
5-4068.2	Pine River near Richland Center, Wis.	SE 1/4 sec. 27, T. 10 N., R. 1 E., at bridge on County Trunk O, 2.5 miles southeast of Richland Center.	198	1963 1966-69	8-19-69	95.5
5-4068.5	Ash Creek near Richland Center, Wis.	NE 1/4 sec. 2, T. 9 N., R. 1 E., at bridge on County Trunk TB, 4 miles southeast of Richland Center.	18.4	1966-69	8-19-69	4.69
5-4068.9	Willow Creek near Richland Center, Wis.	SW 1/4 sec. 6, T. 9 N., R. 2 E., 100 ft above bridge on U.S. Highway 14, 6 miles southeast of Richland Center.	79.3	1966-69	8-19-69	42.4
5-4070.5	Fennimore Creek near Blue River, Wis.	South boundary sec. 31, T. 8 N., R. 1 W., at bridge on County Trunk M, 5 miles south of Blue River.	77.2	1963 1966-69	8-15-69 8-21-69	28.0 31.7
5-4070.8	Knapps Creek near Westport, Wis.	South boundary sec. 32, T. 9 N., R. 2 W., at bridge on State Highway 60, 0.7 mile west of Westport.	85.0	1966-69	8-21-69	34.8
*5-4071	Richland Creek near Plugtown, Wis.	NW 1/4 sec. 9, T. 8 N., R. 3 W., at bridge on U.S. Highway 61, 2 miles south of Plugtown.	19.1	1961 1963-69	8-21-69	7.45
*5-4072	Crooked Creek near Boscobel, Wis.	SE 1/4 sec. 2, T. 7 N., R. 3 W., at bridge on U.S. Highway 61, 1.6 miles south of Boscobel.	13.1	1961 1963-69	8-21-69	5.99
*5-4074	Morris Creek tributary near Norwalk, Wis.	NW 1/4 sec. 21, T. 16 N., R. 2 W., at bridge on County Trunk T, 2 miles north of Norwalk.	4.67	1961 1963-69	8-19-69	.95
5-4087	West Fork Kickapoo River near Viroqua, Wis.	NW 1/4 sec. 32, T. 13 N., R. 3 W., at bridge on State Highway 82, 6.3 miles east of Viroqua.	63.6	1963 1964 1966-69	8-19-69	22.1
*5-4088	Bishops Branch near Viroqua, Wis.	N 1/2 sec. 2, T. 12 N., R. 4 W., at bridge on State Highways 56 and 82, 3 miles east of Viroqua.	7.08	1961 1963-69	8-19-69	3.41
5-4098	Tainter Creek near Gays Mills, Wis.	SW 1/4 sec. 4, T. 10 N., R. 4 W., at bridge on County Trunk B, 3.5 miles north of Gays Mills.	38.3	1963 1966-69	8-21-69	16.0
5-4106	Pine Creek near Steuben, Wis.	NE 1/4 sec. 18, T. 8 N., R. 4 W., at bridge on country road, 2.5 miles west of Steuben.	26.5	1963 1966-69	8-20-69	8.16
5-4110	Gran Grae Creek near Wauzeka, Wis.	NE 1/4 sec. 32, T. 7 N., R. 5 W., at bridge on State Highway 60, 6.0 miles southwest of Wauzeka.	17.1	1963 1966-69	8-20-69	5.43

* Also a crest-stage station.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Discharge measurements made at low-flow partial-record stations during water year 1969

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Measurements	
					Date	Discharge (cfs)
		Sandy Creek Basin				
5-4115.1	Sandy Creek near Bagley, Wis.	NW 1/4 sec. 27, T. 5 N., R. 6 W., at bridge on County Trunk A, 2.1 miles southeast of Bagley.	18.9	1963 1966-69	8-20-69 9-16-69	3.53 3.53
		Grant River Basin				
5-4131	Little Grant River near Lancaster, Wis.	SW 1/4 sec. 36, T. 5 N., R. 4 W., at bridge on County Trunk A, 4.8 miles west of Lancaster.	46.6	1963 1966-69	8-18-69 9-17-69	16.0 17.6
*5-4134	Pigeon Creek near Lancaster, Wis.	SW 1/4 sec. 15, T. 4 N., R. 3 W., at culvert on country road, 2 miles south of Lancaster.	d6.81	1961 1963-64 b1964-66 c1967-69	10-28-68 6- 7-69 8-19-69 9-18-69	1.96 4.18 2.69 3.16
5-4134.5	Rattlesnake Creek near Cassville, Wis.	SE 1/4 sec. 35, T. 4 N., R. 5 W., at bridge on State Highway 81, 5.0 miles northeast of Cassville.	44.7	1963 1966-69	8-19-69 9-16-69	9.90 10.4
5-4136	Boice Creek near Potosi, Wis.	SW 1/4 sec. 17, T. 3 N., R. 3 W., 600 ft below bridge on County Trunk U, 4.0 miles northwest of Potosi.	26.2	1966-69	8-19-69 9-17-69	16.0 10.1
		Platte River Basin				
5-4141.5	Little Platte River near Platteville, Wis.	SE 1/4 sec. 4, T. 3 N., R. 1 W., at bridge on State Highway 81, 1.9 miles northwest of Platteville.	54.0	1963 1966-69	8-20-69 9-17-69	25.7 17.7
*5-4142	Bear Branch near Platteville, Wis.	NW 1/4 sec. 4, T. 3 N., R. 1 W., at box culvert on State Highway 81, 2.3 miles northwest of Platteville.	2.80	1961 1963-69	8-20-69	1.93
5-4142.5	Blockhouse Creek near Dickeyville, Wis.	SW 1/4 sec. 11, T. 2 N., R. 2 W., at bridge on U.S. Highway 151, 2.5 miles north of Dickeyville.	36.3	1963 1966-69	8-19-69 9-18-69	18.6 15.8
		Sinsinawa River Basin				
5-4148	Sinsinawa River near Hazel Green, Wis.	NW 1/4 sec. 27, T. 1 N., R. 1 W., at bridge on State Highway 11, 2.5 miles west of Hazel Green.	24.8	1963 1966-69	8-19-69	10.4
		Galena River Basin				
*5-4149	Pats Creek near Elk Grove, Wis.	SW 1/4 sec. 4, T. 2 N., R. 1 E., at bridge on State Highway 81, 3/4 mile southeast of Elk Grove and 7 miles southeast of Platteville.	8.49	1961-69	8-20-69 9-17-69	5.03 3.05
		Rock River Basin				
*5-4278	Token Creek near Madison, Wis.	SW 1/4 sec. 4, T. 8 N., R. 10 E., at culvert on U.S. Highway 51, 8 miles north of State Capitol in Madison.	d24.2	1961-64 b1964-66 c1967-69	11-13-68 5- 5-69 6- 2-69	14.8 21.7 21.0
5-4306	Bass Creek near Janesville, Wis.	NE 1/4 sec. 24, T. 2 N., R. 11 E., at bridge on country road, 6.7 miles southwest of Janesville.	d58.1	1962-69	10-21-68	18.2

* Also a crest-stage station.
≠ Operated as a continuous-record gaging station.
b Operated as a seasonal continuous-record gaging station.
c Operated as a seasonal continuous-record gaging station without records being published.
d Revised.

Discharge measurements made at low-flow partial-record stations during water year 1969

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Measurements	
					Date	Discharge (cfs)
		Rock River Basin--Continued				
*5-4314	Little Turtle Creek at Allens Grove, Wis.	NE 1/4 sec. 6, T. 1 N., R. 15 E., at bridge on country road, 0.2 mile south of Allens Grove.	42.0	1961-69	10-17-68	8.82
5-4321	Pecatonica River near Mineral Point, Wis.	NE 1/4 sec. 21, T. 4 N., R. 2 E., at bridge on U.S. Highway 151, 5 0 miles southwest of Mineral Point.	68.8	1963 1966-69	8-15-69 9-16-69	18.1 27.1
*5-4323	Rock Branch near Mineral Point, Wis.	SE 1/4 sec. 8, T. 4 N., R. 3 E., at box culvert on State Highway 23, 2.5 miles south of Mineral Point.	5.04	1961 1963-69	8-20-69 9-16-69	2.03 1.94
5-4325.5	Ames Branch near Darlington, Wis.	SW 1/4 sec. 12, T. 2 N., R. 3 E., at bridge on County Trunk K, 2.2 miles southeast of Darlington.	44.3	1963 1966-69	8-19-69 9-17-69	22.2 18.3
5-4326.5	Spafford Creek at South Wayne, Wis.	SW 1/4 sec. 10, T. 1 N., R. 5 E., at bridge on State Highway 11, 0.6 miles west of South Wayne.	47.8	1963 1966-69	8-19-69	22.7
5-4328	Dodge Branch at Hollandale, Wis.	NE 1/4 sec. 30, T. 5 N., R. 5 E., at bridge on State Highway 191, in Hollandale.	66.1	1963 1966-69	8-19-69 9-16-69	43.0 30.4
*5-4335	Yellowstone River near Blanchardville, Wis.	NE 1/4 sec. 34, T. 4 N., R. 4 E., 0.6 mile upstream from bridge on County Trunk H, 7 miles west of Blanchardville.	29.1	1954-65≠ 1966-69	8-19-69	18.5
5-4337	Whiteside Creek near Argyle, Wis.	SW 1/4 sec. 3, T. 2 N., R. 5 E., at bridge on State Highway 78, 2.4 miles southwest of Argyle.	19.9	1963 1966-69	8-19-69 9-18-69	12.2 10.6
5-4343	Jordon Creek near Browntown, Wis.	South boundary sec. 28, T. 2 N., R. 6 E., at bridge on County Trunk M, 2.3 miles north of Browntown.	14.4	1963 1966-69	8-19-69 9-19-69	7.25 6.31
5-4359.5	Sugar River near Verona, Wis.	SE 1/4 sec. 33, T. 6 N., R. 8 E., at bridge on State Highway 69, 2.9 miles south of Verona.	84.1	1962-69	9-16-69	20.3
5-4362.5	Allen Creek near Albany, Wis.	NE 1/4 sec. 16, T. 3 N., R. 9 E., at bridge on County Trunk E, 1.9 miles north of Albany.	77.2	1962-69	9-17-69	21.6
5-4363	Little Sugar River near New Glarus, Wis.	SE 1/4 sec. 30, T. 4 N., R. 8 E., at bridge on country road, 2.9 miles southeast of New Glarus.	39.5	1962-69	9-17-69	17.7
5-4364	Little Sugar River near Monticello, Wis.	NE 1/4 sec. 22, T. 3 N., R. 8 E., at bridge on country road, 3.1 miles east of Monticello.	d116	1962-69	9-17-69	48.8
5-4366	Sylvester Creek near Brodhead, Wis.	SW 1/4 sec. 34, T. 2 N., R. 9 E., at bridge on country road, 3.2 miles southwest of Brodhead.	44.9	1962-69	10-18-68 9-11-69	18.7 15.3
5-4367	Taylor Creek near Brodhead, Wis.	NW 1/4 sec. 31, T. 2 N., R. 10 E., at bridge on country road, 2.6 miles south of Brodhead.	d26.5	1962-69	10-18-68 9-17-69	7.98 5.04
		Illinois River Basin				
*5-5453	White River near Burlington, Wis.	NW 1/4 sec. 1, T. 2 N., R. 18 E., at bridge on State Highway 36, 2 1/4 miles southwest of Burlington.	d97.5	1962-64 b1964-66 c1967-69	10- 3-68 11- 6-68 5-20-69 6-18-69 7-24-69 8-20-69	8.53 11.8 10.6 9.68 7.76 7.43

* Also a crest-stage station
≠ Operated as a continuous-record gaging station.
b Operated as a seasonal continuous-record gaging station.
c Operated as a seasonal continuous-record gaging station without records being published.
d Revised.

Crest-stage partial-record stations

The following table contains annual maximum discharges for crest-stage stations. A crest-stage gage is a device which will register the peak stage occurring between inspections of the gage. A stage-discharge relation for each gage is developed from discharge measurements made by indirect measurements of peak flow or by current meter. The date of the maximum discharge is not always certain but is usually determined by comparison with nearby continuous-record stations, weather records, or local inquiry. Only the maximum discharge for each water year is given. Information on some lower floods may have been obtained but is not published herein. The years given in the period of record represent water years for which the annual maximum has been determined.

Annual maximum discharge at crest-stage partial-record stations

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Annual maximum		
					Date	Gage height (feet)	Discharge (cfs)
		Streams tributary to Lake Superior					
4-0244	Stony Brook near Superior, Wis.	SE 1/4 sec.4, T.47 N., R.14 W., at box culvert on State Highway 35, 12 1/2 miles south of toll bridge on U.S. Highways 2 and 35 at St. Louis River in Superior.	2.20	1959-69	10- 9-68	12.40	85
4-0252	Pearson Creek near Maple, Wis.	Common boundary of secs.11 and 14, T.48 N., R.11 W., at box culvert on State Highway 13, 4 miles north of Maple.	4.01	1957-69	4- 8-69	12.98	280
4-0262	Sand River tributary near Red Cliff, Wis.	NE 1/4 sec.14, T.51 N., R.5 W., at box culvert on State Highway 13, 8 miles northwest of Red Cliff.	1.14	1959-69	4-12-69	10.46	65
*4-0263	Sioux River near Washburn, Wis.	NE 1/4 sec.35, T.49 N., R.5 W., on County Trunk C, 2 1/2 miles west of Washburn.	14.9	1959-65 1966≠ 1967-69	10- 9-68	11.94	435
*4-0264	Spillerberg Creek near Cayuga, Wis.	NW 1/4 sec.21, T.43 N., R.2 W., at concrete culvert pipe on State Highway 13, 4 1/4 miles southeast of Cayuga.	6.18	1958-69	4-12-69	12.14	85
4-0267	Trout Brook tributary near Marengo, Wis.	NE 1/4 sec.7, T.45 N., R.3 W., at box culvert on State Highway 13, 2.6 miles southeast of Marengo.	.77	1960-69	9-15-69	10.1	55
*4-0272	Pearl Creek at Grandview, Wis.	NE 1/4 sec.22, T.45 N., R.6 W., at box culvert on U.S. Highway 63, 0.8 mile east of Grandview.	10.5	1960-69	4-12-69	11.63	170
*4-0297	Boomer Creek near Saxon, Wis.	N 1/2 sec.3, T.46 N., R.1 E., at concrete culvert pipe on U.S. Highway 2, 3 miles east of Saxon.	6.73	1958-69	4- 9-69	15.22	270
		Streams tributary to Lake Michigan					
*4-0599	Allen Creek tributary near Alvin, Wis.	North boundary sec.7, T.40 N., R.14 E., at culvert on State Highway 70, 2.2 miles southeast of Alvin.	a1.9	1960-69	7-15-69	10.50	9
*4-0638	Woods Creek near Fence, Wis.	SE 1/4 sec.29, T.39 N., R.17 E., at box culvert on State Highway 101, 6 miles north of Fence.	41.4	1958-69	4-10-69	10.68	130
*4-0663	Cole Creek near Dunbar, Wis.	South boundary sec.34, T.37 N., R.19 E., at culvert on U.S. Highway 8, 3.6 miles southeast of Dunbar.	a3.2	1960-69	4-10-69	10.6	24
4-0667	McCall Creek at Wausaukee, Wis.	NW 1/4 sec.1, T.33 N., R.20 E., at culvert on U.S. Highway 141, 1 mile south of Wausaukee.	1.48	1959-69	6-26-69	12.32	39
4-0675	Menominee River near McAllister, Wis.	Sec.17, T.33 N., R.23 E., 300 ft above highway bridge on County Trunk JJ, 2.9 miles east of McAllister.	a4,020	1945-61≠ 1962-69	4-17-69	15.11	16,500
*4-0678	Armstrong Creek near Armstrong Creek, Wis.	W 1/2 sec.27, T.37 N., R.16 E., at bridge on U.S. Highway 8, 1 3/4 miles northwest of Armstrong Creek.	23.1	1958-69	4-15-69	10.03	90

* Also a low-flow partial-record station.
≠ Operated as a continuous-record gaging station.
a Approximately.

Annual maximum discharge at crest-stage partial-record stations

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Annual maximum		
					Date	Gage height (feet)	Discharge (cfs)
		Streams tributary to Lake Michigan--Continued					
4-0717	North Branch Little River near Coleman, Wis.	On common boundary of secs. 2 and 3, T.29 N., R.20 E., at bridge on U.S. Highway 141, 3 3/4 miles south of Coleman.	23.3	1958-69	6-26-69	13.15	310
*4-0718	Pensaukee River near Pulaski, Wis.	NE 1/4 sec.1, T.26 N., R.18 E., at bridge on State Highway 32 and 6.1 miles north of Pulaski.	41.8	1961-69	6-26-69	15.05	1,020
*4-0734	Bird Creek at Wautoma, Wis.	S 1/2 sec.34, T.19 N., R.10 E., at concrete culvert on State Highway 21, 1/4 mile west of Wautoma.	3.59	1959-69	6-26-69	12.36	120
*4-0747	Hunting River near Elcho, Wis.	N 1/2 sec.24, T.34 N., R.10 E., at twin culverts on U.S. Highway 45 and State Highway 47, 1 1/2 miles south of Elcho.	a9.0	1958-69	6-26-69	11.88	77
*4-0797	Spaulding Creek near Big Falls, Wis.	On common boundary of secs. 14 and 15, T.25 N., R.12 E., at culvert on County Trunk E, 1.5 miles north of Big Falls.	a4.9	1959-65 1966≠ 1967-69	4-10-69	10.80	40
*4-0810	Waupaca River near Waupaca, Wis.	On north line of sec.1, T.21 N., R.12 E., on right bank 10 ft downstream from highway bridge, 4 miles upstream from Weyauwega Lake dam, 4 1/2 miles southeast of Waupaca.	272	1916-63≠ 1964-65 1966≠ 1967-69	4- 5-69	9.01	770
4-0810.1	Waupaca River tributary near Waupaca, Wis.	NW 1/4 sec.1, T.21 N., R.12 E., at culvert on U.S. Highway 10, 5 miles southeast of Waupaca.	a1.0	1960-69	6-26-69	13.43	72
4-0819	Sawyer Creek at Oshkosh, Wis.	SW 1/4 sec.15, T.18 N., R.16 E., at bridge on U.S. Highway 41, 1 mile southwest of Algoma Street Fox River bridge in Oshkosh.	15.3	1961-69	4- 4-69	14.13	950
4-0834	East Branch Fond du Lac River tributary near Eden, Wis.	NE 1/4 sec.14, T.14 N., R.17 E., at culvert on U.S. Highway 41, 3 miles west of Eden.	1.19	1961-69	4- 3-69	10.81	35
*4-0850.3	Apple Creek near Kaukauna, Wis.	On west boundary sec.2, T.21 N., R.18 E., at bridge on State Highway 55, 3 miles north of Kaukauna.	14.6	1960-69	6-26-69	13.71	530
4-0851	East River tributary at Greenleaf, Wis.	NE 1/4 sec.8, T.21 N., R.20 E., at railroad box culvert, 1/2 mile south of Greenleaf.	8.0	1958-69	6-26-69	15.06	730
4-0853	Neshota River tributary near Denmark, Wis.	NE 1/4 sec.7, T.22 N., R.22 E., at box culvert on U.S. Highway 141, 3 3/4 miles northwest of Denmark.	3.08	1959-69	6-26-69	15.11	520
*4-0854	Killsnake River near Chilton, Wis.	E 1/2 sec.6, T.18 N., R.20 E., at bridge on country road, 2.4 miles northeast of Chilton.	29.5	1961-69	6-26-69	12.49	900
*4-0857	Sheboygan River tributary near Plymouth, Wis.	On common boundary of secs.2 and 11, T.15 N., R.21 E., at concrete culvert on County Trunk J, 3 1/2 miles northeast of Plymouth.	5.51	1959-69	1969	b	<60
4-0864	Milwaukee River tributary near Fredonia, Wis.	SE 1/4 sec.1, T.11 N., R.21 E., at culvert on country road, 2.3 miles southeast of Fredonia.	.84	1962-69	6-26-69	12.5	95
*4-0870.5	Little Menomonee River near Freistadt, Wis.	On common boundary of secs.29 and 32, T.9 N., R.21 E., at bridge on Donges Bay Road, 2 miles south of Freistadt.	7.96	1958-69	6-26-69	11.89	215

* Also a low-flow partial-record station.
≠ Operated as a continuous-record gaging station.
a Approximately.
b Peak did not reach bottom of the gage.

Annual maximum discharge at crest-stage partial-record stations

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Annual maximum		
					Date	Gage height (feet)	Discharge (cfs)
Streams tributary to Lake Michigan--Continued							
4-0871	Honey Creek at Milwaukee, Wis.	SE 1/4 sec.15, T.6 N., R.21 E., 400 ft upstream from bridge on S. 68th Street, and 6 miles southwest from mouth of Milwaukee River in Milwaukee.	3.34	1959-69	6-29-69	20.00	290
*4-0872	Oak Creek near South Milwaukee, Wis.	On common boundary of secs.21 and 22, T.5 N., R.22 E., at bridge on West Nicholson Road, 3 miles southwest of South Milwaukee.	13.9	1958-69	6-29-69	16.94	630
4-0872.3	West Branch Root River Canal tributary near North Cape, Wis.	SE 1/4 sec.33, T.4 N., R.21 E., at culvert on County Trunk U, 3 miles southeast of North Cape.	3.92	1962-69	6-29-69	11.91	107
*4-0872.5	Pike Creek near Kenosha, Wis.	W 1/2 sec.27, T.2 N., R.22 E., at box culvert on State Highway 43, 3 miles northwest of Kenosha.	7.25	1960-69	6-29-69	15.30	85
St. Croix River Basin							
*5-3331	Little Frog Creek near Minong, Wis.	NW 1/4 sec.29, T.42 N., R.11 W., at culvert on country road, 2 1/2 miles east of Minong.	13.0	1961-69	10-16-68	12.84	108
5-3341	Sawyer Creek near Shell Lake, Wis.	SE 1/4 sec.13, T.38 N., R.13 W., at box culvert on U.S. Highway 63, 2 miles north of Shell Lake.	1.04	1960-69	4- 5-69	11.32	45
*5-3353.8	Bashaw Brook near Shell Lake, Wis.	SW 1/4 sec.8, T.38 N., R.14 W., at twin box culvert on country road, 10.5 miles northwest of Shell Lake.	24.9	1959-65 1966≠ 1967-69	4- 7-69	12.82	115
*5-3403	Trade River near Frederic, Wis.	SW 1/4 sec.4, T.36 N., R.17 W., at box culvert on State Highways 35 and 48, 2.5 miles southwest of Frederic.	6.34	1958-69	4- 9-69	11.04	85
5-3417	Willow River tributary near New Richmond, Wis.	NW 1/4 sec.17, T.30 N., R.17 W., at twin box culvert on County Trunk GG, 3.6 miles southeast of New Richmond.	1.40	1959-69	4- 7-69	11.12	15
5-3419	Kinnickinnic River tributary at River Falls, Wis.	NE 1/4 sec.14, T.27 N., R.19 W., at bridge on County Trunk FF, 1.6 miles southwest of River Falls.	7.26	1959-69	1969	b	<40
Trimbelle Creek Basin							
*5-3466	Little Trimbelle Creek near Bay City, Wis.	S 1/2 sec.21, T.25 N., R.18 W., at bridge on County Trunk K, 7 miles northwest of Bay City.	19.9	1961-69	7- 8-69	10.71	425
Chippewa River Basin							
*5-3562	Kenyon Creek near Radisson, Wis.	NW 1/4 sec.22, T.38 N., R.6 W., at bridge on State Highway 27, 5 miles east of Raddison.	a7.5	1960-69	4- 7-69	11.19	130
5-3592	South Fork Flambeau River tributary near Park Falls, Wis.	SW 1/4 sec.15, T.40 N., R.1 E., at culvert on State Highway 182, 5.1 miles east of Park Falls.	.86	1960-69	7-15-69	10.47	30

* Also a low-flow partial-record station.
≠ Operated as a continuous-record gaging station.
a Approximately.
b Peak did not reach bottom of the gage.

Annual maximum discharge at crest-stage partial-record stations

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Annual maximum		
					Date	Gage height (feet)	Discharge (cfs)
		Chippewa River Basin--Continued					
*5-3596	Price Creek near Phillips, Wis.	SW 1/4 sec.31, T.38 N., R.2 W., at culvert on County Trunk W, 13 miles west of Phillips.	14.7	1958-65 1966≠ 1967-69	4-10-69	11.91	125
5-3602	Flambeau River tributary at Ladysmith, Wis.	SW 1/4 sec.27, T.35 N., R.6 W., at culvert on State Highway 27, 1 mile north of Ladysmith.	a0.8	1960-69	4-10-69	10.56	8
*5-3614	Hay Creek near Prentice, Wis.	SE 1/4 sec.4, T.35 N., R.1 E., at culvert on U.S. Highway 8, 3.5 miles west of Prentice.	21.9	1961-69	4-10-69	13.48	800
*5-3640	Yellow River at Cadott, Wis.	NE 1/4 sec.31, T.29 N., R.6 W., at bridge on State Highway 27, in Cadott.	351	1943-61≠ 1962-69	4-10-69	11.42	5,900
5-3641	Seth Creek near Cadott, Wis.	SW 1/4 sec.17, T.29 N., R.6 W., at culvert on State Highway 27, 3.1 miles north of Cadott.	3.04	1962-69	6-25-69	13.57	305
5-3645	Duncan Creek at Bloomer, Wis.	Sec.8, T.30 N., R.9 W., 1/4 mile below Bloomer Dam at Bloomer.	49.2	1945-51≠ 1958-69	4- 7-69	5.93	640
*5-3657	Goggle-eye Creek near Thorp, Wis.	West boundary sec.19, T.29 N., R.3 W., at culvert on State Highway 73, 1.3 miles north of Thorp.	6.70	1958-69	4- 7-69	14.34	710
*5-3665	Eau Claire River near Fall Creek, Wis.	NW 1/4 sec.19, T.27 N., R.7 W., 500 ft east of County Trunk K, 3 1/4 miles north of Fall Creek.	758	1943-55≠ 1958-69	4- 7-69	12.76	10,900
5-3670.3	Willow Creek near Eau Claire, Wis.	On common boundary of secs.14 and 15, T.26 N., R.9 W., at box culvert on State Highway 93, 4 miles south of Eau Claire.	4.38	1958-69	10- 9-68	10.62	88
*5-3674.8	East Branch Pine Creek tributary near Dallas, Wis.	SW 1/4 sec.1, T.32 N., R.12 W., at culvert on County Trunk O, 1 1/2 miles north of Dallas.	3.85	1960-69	10- 9-68	11.67	84
5-3675	Red Cedar River near Colfax, Wis.	SW 1/4 sec.22, T.30 N., R.11 W., 3.2 miles below Trout Creek and 4.7 miles north of Colfax.	a1,100	1914-61≠ 1962-69	4- 8-69	5.50	4,600
5-3677	Lightning Creek at Almena, Wis.	NW 1/4 sec.19, T.34 N., R.13 W., at bridge on County Trunk P, in Almena.	19.8	1958-69	4- 7-69	11.10	490
5-3698	Eau Galle River tributary near Hersey, Wis.	SW 1/4 sec.5, T.28 N., R.15 W., at box culvert on Interstate Highway 94, 2 miles southwest of Hersey.	.65	1960-69	4- 7-69	10.74	68
5-3706	Arkansaw Creek tributary near Arkansaw, Wis.	SW 1/4 sec.14, T.25 N., R.14 W., at box culvert on U.S. Highway 10, 1 1/4 miles northwest of Arkansaw.	2.56	1959-69	6- 9-69	11.98	165
*5-3709	Spring Creek near Durand, Wis.	S 1/2 sec.9, T.24 N., R.13 W., at bridge on country road, 4 miles south of Chippewa River bridge in Durand.	6.49	1962-69	5-16-69	10.68	50
		By Golly Creek Basin					
5-3713	By Golly Creek near Nelson, Wis.	SW 1/4 sec.28, T.23 N., R.13 W., at culvert on County Trunk D, 3 miles northeast of Nelson.	.28	1962-69	4- 7-69	10.0	10

* Also a low-flow partial-record station.
≠ Operated as a continuous-record gaging station.
a Approximately.

Annual maximum discharge at crest-stage partial-record stations

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Annual maximum		
					Date	Gage height (feet)	Discharge (cfs)
		Buffalo River Basin					
5-3718	Buffalo River tributary near Osseo, Wis.	S 1/2 sec.3, T.24 N., R.6 W., at culvert on U.S. Highway 10, 6 1/2 miles east of Osseo.	1.44	1960-69	7-14-69	11.05	84
		Waumandee Creek Basin					
*5-3782	Eagle Creek near Fountain City, Wis.	SW 1/4 sec.33, T.20 N., R.11 W., at bridge on County Trunk G, 2 1/2 miles north of Fountain City.	26.8	1961-69	6-26-69	11.00	230
		Black River Basin					
5-3808	Black River tributary near Whittlesey, Wis.	SW 1/4 sec.35, T.32 N., R.1 E., at bridge on State Highway 13, 1.1 miles south of Whittlesey.	2.12	1960-69	4- 7-69	11.40	107
*5-3809	Poplar River near Owen, Wis.	NW 1/4 sec.25, T.28 N., R.2 W., at bridge on County Trunk N, 4 1/4 miles south of Owen.	157	1958-65 1966≠ 1967-69	4- 7-69	16.60	5,700
*5-3809.7	Cawley Creek near Neillsville, Wis.	SW 1/4 sec.25, T.25 N., R.2 W., at bridge on State Highway 73, 3.7 miles north of Neillsville.	38.6	1961-69	6-26-69	18.21	4,850
*5-3822	French Creek near Ettrick, Wis.	NE 1/4 sec.27, T.20 N., R.8 W., at bridge on County Trunk D and T, 2 1/2 miles west of Ettrick.	14.3	1960-69	1969	b	<200
		La Crosse River Basin					
5-3823	Beaver Creek tributary near Sparta, Wis.	NW 1/4 sec.11, T.17 N., R.4 W., at box culvert on State Highways 27 and 71, 1.9 miles north of Sparta.	1.72	1959-69	6-26-69	12.17	140
*5-3825	Little La Crosse River near Leon, Wis.	NE 1/4 sec.3, T.16 N., R.4 W., 4 miles upstream from mouth and 1.5 miles northwest of Leon.	77.1	1934-61≠ 1962-69	6-26-69	5.92	960
		Mormon Creek Basin					
*5-3863	Mormon Creek near La Crosse, Wis.	NE 1/4 sec.19, T.15 N., R.6 W., at bridge on country road, 6 miles southeast of La Crosse.	25.5	1961-69	6-26-69	14.18	1,810
		Bad Axe River Basin					
*5-3871	North Fork Bad Axe River near Genoa, Wis.	SW 1/4 sec.36, T.13 N., R.7 W., at bridge on State Highway 56, 4.1 miles southeast of Genoa.	68.8	1959-65 1966≠ 1967-69	6-26-69	12.08	600
		Du Charme Creek Basin					
5-3884.6	Du Charme Creek at Eastman, Wis.	NE 1/4 sec.13, T.8 N., R.6 W., at culvert on County Trunk D in Eastman.	.30	1961-69	6-26-69	11.26	88

* Also a low-flow partial-record station.
≠ Operated as a continuous-record gaging station.
b Peak did not reach bottom of the gage.

GPO 823-131-13

Annual maximum discharge at crest-stage partial-record stations

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Annual maximum		
					Date	Gage height (feet)	Discharge (cfs)
		Wisconsin River Basin					
*5-3921.5	Mishonagon Creek near Woodruff, Wis.	NE 1/4 sec.32, T.40 N., R.6 E., at twin culvert on State Highway 47, 3 miles northwest of Woodruff.	11.9	1958-69	7-15-69	10.84	93
*5-3923.5	Bearskin Creek near Harshaw, Wis.	SW 1/4 sec.36, T.37 N., R.6 E., at culvert on County Trunk K, 2 1/8 miles southwest of Harshaw.	27.8	1958-65 1966≠ 1967-69	6-27-69	9.43	62
*5-3940	New Wood River near Merrill, Wis.	E 1/2 sec.15, T.32 N., R.5 E., at bridge on County Trunk E, 9.5 miles northwest of Merrill.	a83.1	1953-61≠ 1962-69	4-10-69	5.65	1,745
*5-3942	Devil Creek near Merrill, Wis.	N 1/2 sec.30, T.31 N., R.6 E., at culvert on County Trunk F, 5.8 miles southwest of Merrill.	10.1	1961-69	6-26-69	13.21	280
5-3951	Trappe River tributary near Merrill, Wis.	SW 1/4 sec.28, T.31 N., R.8 E., at culvert on County Trunk P, 9 1/2 miles southeast of Merrill.	a2.2	1959-69	6-26-69	13.60	188
5-3961	Pet Brook tributary near Edgar, Wis.	SE 1/4 sec.31, T.29 N., R.5 E., at culvert on State Highway 29, 1.5 miles northeast of Edgar.	6.69	1962-69	5-27-69	20.20	2,250
5-3976	Big Sandy Creek near Wausau, Wis.	SE 1/4 sec.31, T.30 N., R.9 E., at bridge on State Highway 52, 10 miles northeast of Wausau.	a9.9	1959-69	6-27-69	12.99	720
5-3992	Randall Creek tributary near Abbotsford, Wis.	South boundary of sec.36, T.29 N., R.2 E., at concrete culvert, on State Highway 29, 5.8 miles east of Abbotsford.	.56	1959-69	6-26-69	12.62	190
5-4018	Yellow River tributary near Pittsville, Wis.	On common boundary of secs.11 and 14, T.23 N., R.3 E., at bridge on County Trunk C, 2 miles north of Pittsville.	7.27	1959-69	4- 4-69	13.00	580
*5-4035.2	Webster Creek at New Lisbon, Wis.	NE 1/4 sec.19, T.16 N., R.3 E., at bridge on State Highway 80, 1.2 miles south of New Lisbon.	11.5	1961-69	4- 4-69	13.04	175
*5-4035.5	One Mile Creek near Mauston, Wis.	SE 1/4 sec.24, T.15 N., R.3 E., at bridge on State Highway 58, 2.4 miles south of Mauston.	30.4	1958-69	4- 4-69	13.59	320
5-4036.1	Wisconsin River tributary at Wisconsin Dells, Wis.	NE 1/4 sec.3, T.13 N., R.6 E., at culvert on State Highway 13, 0.8 mile north of Wisconsin Dells.	1.16	1962-69	1969	b	<10
*5-4037	Dell Creek near Lake Delton, Wis.	NW 1/4 sec.2, T.12 N., R.5 E., at bridge on town road, 1/4 mile north of State Highway 23, and 5 miles southwest of Lake Delton.	44.9	1957-65≠ 1966-69	6-27-69	5.95	252
*5-4042	Narrows Creek at Loganville, Wis.	SE 1/4 sec.8, T.11 N., R.4 E., at bridge on State Highways 23 and 154, and 1/4 mile north of Loganville.	40.0	1958-65 1966≠ 1967-69	6-27-69	15.24	3,050
*5-4056	Rowan Creek at Poynette, Wis.	S 1/2 sec.35, T.11 N., R.9 E., at bridge on U.S. Highway 51, in Poynette.	10.1	1961-69	6-25-69	12.92	315
5-4068	Rocky Branch near Richland Center, Wis.	E 1/2 sec.29, T.10 N., R.1 E., at culvert on State Highway 80, 1 1/2 miles south of Richland Center.	1.71	1960-69	7-17-69	13.45	227
*5-4071	Richland Creek near Plugtown, Wis.	NW 1/4 sec.9, T.8 N., R.3 W., at bridge on U.S. Highway 61, 2 miles south of Plugtown.	19.2	1958-69	6-26-69	13.13	325

* Also a low-flow partial-record station.
≠ Operated as a continuous-record gaging station.
a Approximately.
b Peak did not reach bottom of the gage.

Annual maximum discharge at crest-stage partial-record stations

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Annual maximum		
					Date	Gage height (feet)	Discharge (cfs)
		Wisconsin River Basin--Continued					
*5-4072	Crooked Creek near Boscobel, Wis.	SE 1/4 sec.2, T.7 N., R.3 W., at bridge on U.S. Highway 61, 1.6 miles south of Boscobel.	13.1	1959-69	1-29-68 6-26-69	c11.5 10.3	c285 100
*5-4074	Morris Creek tributary near Norwalk, Wis.	NW 1/4 sec.21, T.16 N., R.2 W., at bridge on County Trunk T, 2 miles north of Norwalk.	4.67	1960-69	6-26-69	11.68	450
*5-4088	Bishops Branch near Viroqua, Wis.	N 1/2 sec.2, T.12 N., R.4 W., at bridge on State Highways 56 and 82, 3 miles east of Viroqua.	7.08	1959-69	4- 4-69	11.12	350
		Grant River Basin					
*5-4134	Pigeon Creek near Lancaster, Wis.	SW 1/4 sec.15, T.4 N., R.3 W., at culvert on country road, 2 miles south of Lancaster.	6.81	1960-65 1966≠ 1967-69	6-26-69	11.89	320
		Platte River Basin					
*5-4142	Bear Branch near Platteville, Wis.	NW 1/4 sec.4, T.3 N., R.1 W., at box culvert on State Highway 81, 2.3 miles northwest of Platteville.	2.80	1958-69	6-29-69	15.45	595
		Galena River Basin					
*5-4149	Pats Creek near Elk Grove, Wis.	SW 1/4 sec.4, T.2 N., R.1 E., at bridge on State Highway 81, 7 miles southeast of Platteville.	8.49	1960-69	6-29-69	17.32	7,040
		Rock River Basin					
*5-4233	South Branch Rock River tributary near Waupun, Wis.	S 1/2 sec.22, T.14 N., R.14 E., at concrete culvert on country road, 4 1/2 miles northwest of Waupun.	11.9	1959-69	6-26-69	10.88	118
*5-4238	East Branch Rock River tributary near Slinger, Wis.	S 1/2 sec.26, T.11 N., R.18 E., at culvert on U.S. Highway 41, 4 miles northwest of Slinger.	3.04	1960-69	6-26-69	11.89	167
5-4243	Rock River tributary near Watertown, Wis.	NE 1/4 sec.18, T.8 N., R.16 E., at concrete culvert on old U.S. Highway 16, 5 miles east of Watertown.	4.58	1959-69	6-26-69	13.04	140
*5-4257	Robbins Creek near Columbus, Wis.	SE 1/4 sec.11, T.10 N., R.12 E., at culvert on U.S. Highway 16, in Columbus.	8.54	1960-69	6-26-69	12.34	75
5-4261	Scuppernong Creek near Wales, Wis.	NE 1/4 sec.6, T.6 N., R.18 E., at culvert on U.S. Highway 18, 1.8 miles northwest of Wales.	8.28	1962-69	6-29-69	10.8	165
*5-4272	Allen Creek near Fort Atkinson, Wis.	NE 1/4 sec.17, T.5 N., R.14 E., at box culvert on State Highway 26, 2.5 miles southwest of Fort Atkinson.	10.2	1958-69	7-17-69	11.21	168
5-4272.5	Koshkonong Creek at Sun Prairie, Wis.	SW 1/4 sec.33, T.9 N., R.11 E., at culvert on U.S. Highway 151 in Sun Prairie.	.46	1961-69	6-25-69	10.92	17

* Also a low-flow partial-record station.
≠ Operated as a continuous-record gaging station.
c Revised.

Annual maximum discharge at crest-stage partial-record stations

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Annual maximum		
					Date	Gage height (feet)	Discharge (cfs)
		Rock River Basin--Continued					
*5-4278	Token Creek near Madison, Wis.	SW 1/4 sec.4, T.8 N., R.10 E., at culvert on U.S. Highway 51, 8 miles northeast of State Capitol in Madison.	24.2	1961-65 1966≠ 1967-69	3-18-69	11.85	230
*5-4314	Little Turtle Creek at Allens Grove, Wis.	NE 1/4 sec.6, T.1 N., R.15 E., at bridge on country road, 0.2 mile south of Allens Grove.	41.8	1962-69	1-23-69	15.01	1,870
*5-4323	Rock Branch near Mineral Point, Wis.	SE 1/4 sec.8, T.4 N., R.3 E., at box culvert on State Highway 23, 2 1/2 miles south of Mineral Point.	4.83	1959-69	6-29-69	12.92	400
*5-4335	Yellowstone River near Blanchardville, Wis.	NE 1/4 sec.34, T.4 N., R.4 E., 0.6 mile upstream from bridge on County Trunk F, and 7 miles west-southwest of Blanchardville.	28.5	1954-65≠ 1966-69	6-26-69	9.97	1,985
5-4342	Skinner Creek tributary near Monroe, Wis.	S 1/2 sec.14, T.2 N., R.7 E., at culvert on State Highway 69, 2.4 miles north of Monroe.	.48	1959-69	6-29-69	11.38	38
5-4359	Sugar River tributary near Pine Bluff, Wis.	SE 1/4 sec.27, T.7 N., R.7 E., at culvert on County Trunk J, 1.1 miles southeast of Pine Bluff.	7.46	1961-69	3-18-69	11.99	110
*5-4362	Gill Creek near Brooklyn, Wis.(d)	NW 1/4 sec.16, T.4 N., R.9 E., at culvert on State Highway 92, 4.3 miles west of Brooklyn.	3.34	1961-69	7-26-69	12.99	92
*5-4372	East Fork Raccoon Creek tributary near Beloit, Wis.	On common boundary of secs. 30 and 31, T.1 N., R.12 E., at culvert on State Highway 81, 2.9 miles west of Beloit.	4.67	1958-69	6-29-69	10.94	29
		Illinois River Basin					
*5-5443	Mukwonago River tributary near Mukwonago, Wis.	S 1/2 sec.36, T.5 N., R.18 E., at culvert on State Highway 83, 1 1/2 miles southeast of Mukwonago.	1.32	1960-69	6-29-69	11.43	66
5-5451	Sugar Creek at Elkhorn, Wis.	SW 1/4 sec.29, T.3 N., R.17 E., at culvert on State Highway 11, 2 miles northeast of Elkhorn.	6.68	1962-69	7-18-69	11.52	125
5-5452	White River tributary near Burlington, Wis.	On common boundary of secs. 27 and 34, T.3 N., R.18 E., at box culvert on State Highway 11, 4.5 miles west of Burlington.	2.42	1958-69	7-18-69	12.62	167
*5-5453	White River near Burlington, Wis.	NW 1/4 sec.1, T.2 N., R.18 E., at bridge on State Highway 36, 2 1/4 miles southwest of Burlington.	97.5	1958-65 1966≠ 1967-69	7-18-69	13.59	1,960
*5-5481.5	North Branch Nippersink Creek tributary near Genoa City, Wis.	E 1/2 sec.32, T.1 N., R.18 E., at bridge on County Trunk B, 3 miles west of Genoa City.	13.8	1962-69	7-18-69	11.53	187

* Also a low-flow partial-record station.
≠ Operated as a continuous-record gaging station.
d Published as Sugar River Tributary No. 2 prior to 1969.

Measurements at Miscellaneous Sites

Measurements of streamflow at points other than gaging stations or partial-record stations are given in the following table. Those that are measurements of base flow are designated by an asterisk (*); indirect measurements of peak flow by a dagger (≠).

Discharge measurements made at miscellaneous sites during water year 1969

Stream	Tributary to	Location	Drainage area (sq mi)	Measured previously (water years)	Measurements	
					Date	Discharge (cfs)
Streams tributary to Lake Superior						
Bad River	Lake Superior	SE 1/4 NW 1/4 sec.25, T.48 N., R.3 W., Ashland County, at bridge on U.S. Highway 2, at Odanah, Wis.	a970	1966 1967	4-11-69	11,500
Montreal River	Do	SE 1/4 sec.24, T.46 N., R.2 E., Iron County, at main highway bridge between Hurley, Wis., and Ironwood, Mich.	63.0	1918-22≠ 1924-25≠ 1949-54≠	4-10-69	≠1,230
Streams tributary to Lake Michigan						
Portage Canal	Fox River	NW 1/4 sec.8, T.12 N., R.9 E., Columbia County, at bridge on U.S. Highway 51, at Portage, Wis.	-	1965 1966	4-30-69	15.7
Grand River	Do	NW 1/4 SE 1/4 sec.9, T.14 N., R.13 E., Green Lake County, at bridge on County Trunk A, 1.9 miles southeast of Markesan, Wis.	-	-	8-18-69	*8.22
Lake Emily Outlet	Grand River	NW 1/4 NW 1/4 sec.26, T.14 N., R.12 E., Green Lake County, at bridge on County Trunk S, 2.1 miles south of Manchester, Wis.	-	-	8-18-69	*6.59
Crystal River	Waupaca River	NE 1/4 SE 1/4 sec.10, T.21 N., R.11 E., Waupaca County, at bridge on country road, 0.7 mile southeast of Rural, Wis.	-	1968	8-28-69	*36.1
Lake Fifteen Creek	Milwaukee River	SW 1/4 NW 1/4 sec.21, T.13 N., R.19 E., Fond du Lac County, at mouth, 2.7 miles southeast of Campbellsport, Wis.	-	-	10-17-68	*b2.23
West Branch Milwaukee River	Do	NW 1/4 NW 1/4 sec.4, T.12 N., R.19 E., Washington County, at bridge on U.S. Highway 45, 1.6 miles north of Kewaskum, Wis.	58.0	-	10-17-68	*b5.69
Milwaukee River Tributary	Do	SE 1/4 SE 1/4 sec.9, T.12 N., R.19 E., Washington County, at bridge on U.S. Highway 45, 0.3 miles south of Kewaskum, Wis.	11.2	-	10-16-68	*b0.64
Watercress Creek	Do	NW 1/4 SE 1/4 sec.12, T.14 N., R.19 E., Fond du Lac County, at bridge on country road, 3.2 miles north of Dundee, Wis.	8.46	-	10-17-68	*b5.52
Crooked Lake Outlet	East Branch Milwaukee River	NW 1/4 NW 1/4 sec.13, T.13 N., R.19 E., Fond du Lac County, at bridge on country road, 2.9 miles north of New Fane, Wis.	12.4	-	10-16-68	*b0.20
Silver Lake Outlet	Milwaukee River	NW 1/4 NW 1/4 sec.27, T.11 N., R.19 E., Washington County, at bridge on country road, 2.4 miles southwest of West Bend, Wis.	1.63	-	9-12-68	*b0.71
Do	Do	SW 1/4 SW 1/4 sec.22, T.11 N., R.19 E., Washington County, downstream from Little Silver Lake, 2.2 miles southwest of West Bend, Wis.	1.96	-	9-13-68	*b1.00
Engman Creek	Silver Creek	NW 1/4 sec.14, T.11 N., R.19 E., Washington County, at bridge on Silver Brook Driver, 0.6 mile northwest of West Bend, Wis.	1.72	-	10-16-68	*b0.64

≠ Operated as a continuous-record gaging station.
a Approximately.
b Measurement made by Department of Natural Resources.

Measurements at Miscellaneous Sites

Stream	Tributary to	Location	Drainage area (sq mi)	Measured previously (water years)	Measurements	
					Date	Discharge (cfs)
Streams tributary to Lake Michigan--Continued						
Quas Creek	Milwaukee River	NW 1/4 NE 1/4 sec.19, T.11 N., R.20 E., Washington County, at bridge on County Trunk I, 1.8 miles southeast of West Bend, Wis.	8.43	-	9-13-68 10-16-68	*b0.65 *b0.96
Proschinger Creek	Do	NE 1/4 SW 1/4 sec.15, T.11 N., R.20 E., Washington County, at bridge on County Trunk I, 2.8 miles southwest of Newburg, Wis.	3.73	-	9-13-68	*b0.24
Chambers Creek	North Branch Milwaukee River	SE 1/4 SE 1/4 sec.36, T.14 N., R.20 E., Sheboygan County, at bridge on County Trunk W, 2.5 miles southwest of Cascade, Wis.	3.55	-	10-17-68	*b0.53
Melius Creek	Do	NE 1/4 SW 1/4 sec.1, T.13 N., R.20 E., Sheboygan County, at bridge on State Highway 28, 1.9 miles north of Batavia, Wis.	4.19	-	10-17-68	*b2.43
Batavia Creek	Do	NE 1/4 NW 1/4 sec.19, T.13 N., R.21 E., Sheboygan County, at bridge on County Trunk SS, 0.9 mile southeast of Batavia, Wis.	6.76	-	10-17-68	*b0.84
Mink Creek	Do	NE 1/4 NW 1/4 sec.36, T.13 N., R.20 E., Sheboygan County, at bridge on State Highway 144, 2.4 miles south of Batavia, Wis.	19.0	-	10-17-68	*b4.42
Silver Creek	Do	NW 1/4 NW 1/4 sec.31, T.13 N., R.21 E., Sheboygan County, at bridge on country road, 2.5 miles southeast of Batavia, Wis.	18.8	-	10-17-68	*b0.98
Wallace Creek	Do	SE 1/4 SE 1/4 sec.15, T.12 N., R.20 E., Washington County, at bridge on County Trunk H, 1.3 miles west of Fillmore, Wis.	15.5	-	10-16-68	*b2.34
North Branch Milwaukee River	Milwaukee River	NW 1/4 sec.30, T.12 N., R.21 E., Ozaukee County, 0.5 mile upstream from mouth, 1.8 miles southeast of Fillmore, Wis.	155	-	10-16-68	*b23.3
Cedar Lake Outlet	Do	SW 1/4 NE 1/4 sec.32, T.11 N., R.19 E., Washington County, at bridge on County Trunk NN, 4.4 miles southwest of West Bend, Wis.	10.3	-	9-12-68	*b0.89
Cedar Creek	Do	SE 1/4 SW 1/4 sec.3, T.10 N., R.19 E., Washington County, at bridge on country road, 2.9 miles northeast of Slinger, Wis.	13.9	-	9-12-68	*b0.38
Cedar Creek Tributary	Cedar Creek	SW 1/4 SE 1/4 sec.14, T.10 N., R.19 E., Washington County, at bridge on country road, 2.1 miles west of Jackson, Wis.	1.32	-	10-15-69	*b1.67
Hasmer Lake Outlet	Do	SE 1/4 SW 1/4 sec.18, T.10 N., R.20 E., Washington County, at bridge on State Highway 60, 0.4 mile west of Jackson, Wis.	1.52	-	9-13-68	*b0.1
Cedar Creek Tributary	Do	NW 1/4 NW 1/4 sec.5, T.9 N., R.20 E., Washington County, at bridge on country road, 2.4 miles northwest of Rockfield, Wis.	8.92	-	10-15-68	*b3.06

b Measurement made by Department of Natural Resources.
e Estimated.

Measurements at Miscellaneous Sites

Stream	Tributary to	Location	Drainage area (sq mi)	Measured previously (water years)	Measurements	
					Date	Discharge (cfs)
Streams tributary to Lake Michigan--Continued						
Cedar Creek Tributary	Cedar Creek	SW 1/4 SW 1/4 sec.29, T.10 N., R.20 E., Washington County, at bridge on country road, 2.0 miles south of Jackson, Wis.	18.6	-	10-15-68	*b4.89
Cedar Creek	Milwaukee River	NE 1/4 NE 1/4 sec.20, T.10 N., R.20 E., Washington County, at bridge on State Highway 60, 1.2 miles east of Jackson, Wis.	54.4	-	9-16-68 9-17-68	*7.80 *7.29
Cedar Creek Tributary	Cedar Creek	SW 1/4 SE 1/4 sec.13, T.10 N., R.20 E., Washington County, at bridge on State Highway 60, 4.9 miles east of Jackson, Wis.	6.32	-	9-12-68	*b1.92
Cedar Creek	Milwaukee River	SW 1/4 NW 1/4 sec.12, T.10 N., R.20 E., Washington County, at bridge on County Trunk M, 4.7 miles northeast of Jackson, Wis.	84.8	-	9-17-68	*8.67
Cedar Creek Tributary	Cedar Creek	NE 1/4 NW 1/4 sec.12, T.10 N., R.20 E., Washington County, at bridge on country road, 5.0 miles northeast of Jackson, Wis.	13.7	-	9-13-68	*b0.60
Cedar Creek	Milwaukee River	NE 1/4 SE 1/4 sec.8, T.10 N., R.21 E., Ozaukee County, at bridge on State Highway 143, 3.6 miles northwest of Cedarburg, Wis.	-	-	9-17-68	*9.92
Pigeon Creek	Do	SE 1/4 NE 1/4 sec.22, T.9 N., R.21 E., Ozaukee County, at bridge on State Highway 57, at Mequon, Wis.	11.5	-	10-15-68	*b0.42
Chippewa River Basin						
Eau Claire River	Chippewa River	NW 1/4 sec.8, T.26 N., R.6 W., Eau Claire County, at bridge on State Highway 27, 0.3 mile downstream of dam at outlet of Lake Eau Claire, and 5.4 miles north of Augusta, Wis.	-	-	4- 8-69	≠7,960
Chippewa River	Mississippi River	NE 1/4 sec.25, T.27 N., R.10 W., Eau Claire County, at bridge on State Highways 37 and 85 at Eau Claire, 1.2 miles upstream from Lowes Creek and 2.8 miles downstream from Eau Claire River, Wis.	a6,630	1902-09≠ 1944-54≠ 1966 1967	4- 9-69	≠43,300
Red Cedar River	Chippewa River	SE 1/4 SE 1/4 sec.8, T.33 N., R.11 W., Barron County, at bridge on County Trunk OO, 5.2 miles northwest of Chetek, Wis.	-	-	4- 8-69	≠3,520
Wisconsin River Basin						
Wisconsin River	Mississippi River	NE 1/4 NW 1/4 sec.7, T.12 N., R.9 E., Columbia County, at bridge on State Highway 33, 0.7 mile west of Portage, Wis.	-	1916 1939 1960	4- 9-69	≠37,300
Kickapoo River	Wisconsin River	SE 1/4 SW 1/4 sec.2, T.14 N., R.2 W., Vernon County, at bridge on farm road, about 200 ft south of village limits and 0.5 mile downstream from Brush Creek, Wis.	151	1938-39≠	8-26-69 9-29-69	*34.0 *55.4

≠ Operated as a continuous-record gaging station.
a Approximately.
b Measurement made by Department of Natural Resources.

Measurements at Miscellaneous Sites

Stream	Tributary to	Location	Drainage area (sq mi)	Measured previously (water years)	Measurements	
					Date	Discharge (cfs)
Galena River Basin						
Madden Branch Tributary	Madden Branch	SW 1/4 SW 1/4 sec.12, T.2 N., R.1 E., Lafayette County, at bridge on County Trunk I, 5.7 miles south of Belmont, Wis.	6.49	-	6-29-69	≠6,260
Do	Do	NW 1/4 NW 1/4 sec.24, T.2 N., R.1 E., Lafayette County, at bridge on County Trunk I, 4.6 miles north of Lead Mine, Wis.	4.51	-	6-29-69	≠6,220
Rock River Basin						
West Branch Rock River	Mississippi River	SW 1/4 SW 1/4 sec.35, T.14 N., R.15 E., Dodge County, at bridge on State Highway 49, 2.3 miles east of Waupun, Wis.	-	1967	5-12-69	47.4
Wood Branch Tributary	Wood Branch	SW 1/4 SW 1/4 sec.26, T.3 N., R.2 E., Lafayette County, at bridge on County Trunk O, 4.5 miles southwest of Calamine, Wis.	1.97	-	6-30-69	≠3,100
Otter Creek	Pecatonica River	NE 1/4 SW 1/4 sec.6, T.2 N., R.4 E., Lafayette County, at State Highway 81, 2.7 miles east of Darlington, Wis.	49.2	-	6-29-69	≠19,200
North Fork Ames Branch	Ames Branch	SW 1/4 SE 1/4 sec.14, T.2 N., R.2 E., Lafayette County, at bridge on County Trunk U, 4.8 miles north of Schullsburg, Wis.	5.27	-	6-30-69	≠7,160
Ames Branch	Pecatonica River	NW 1/4 NW 1/4 sec.22, T.2 N., R.3 E., Lafayette County, at bridge on State Highway 23, 3.1 miles southwest of Darlington, Wis.	33.7	-	6-29-69	≠28,700
Ames Branch Tributary	Ames Branch	SW 1/4 NW 1/4 sec.15, T.2 N., R.3 E., Lafayette County, at bridge on State Highway 23, 2.3 miles south of Darlington, Wis.	5.83	-	6-29-69	≠11,700
Pecatonica River	Rock River	SE 1/4 sec.34, T.2 N., R.4 E., Lafeyette County, at bridge on State Highway 78, 2.0 miles northeast of Gratiot, Wis.	-	-	6-30-69	≠4,420
Do	Do	NW 1/4 SE 1/4 sec.1, T.1 N., R.4 E., Lafayette County, at railroad bridge, 3.0 miles east of Gratiot, Wis.	a450	-	6-30-69	≠20,700
Illinois River Basin						
Spring Lake Outlet	Fox River Tributary	SE 1/4 SW 1/4 sec.34, T.6 N., R.18 E., Waukesha County, at bridge on County Trunk X, 1.7 miles south of Genesee, Wis.	-	1966	9- 9-69	*0.63
Do	Do	NE 1/4 NE 1/4 sec.34, T.6 N., R.18 E., Waukesha County, at bridge on State Highway 83, 0.9 mile southeast of Genesee, Wis.	-	-	9- 9-69	*2.73

a Approximately.

Series of base-flow discharge measurements were made in various areas of the State during the 1969 water year. These measurements were made as part of a comprehensive program now being carried on in cooperation with the University Extension, the University of Wisconsin Geological and Natural History Survey, to investigate the water resources of all major river basins within the State of Wisconsin or as part of a program in cooperation with the Wisconsin Department of Natural Resources, the object of which is to obtain information on the variability of base flow within small basins of about 100 square miles.

The measurements for each study are listed in order proceeding downstream, and each tributary is inserted in the order in which it enters the main stream. The data collected in these series of measurements were used in determining the base-flow yields of various parts of the basins. Drainage areas shown were determined from the most recent U.S. Geological Survey maps of the area. Water temperature and specific conductance measurements were obtained at the time the discharge measurements were made and are available upon request to the district office.

STREAMS TRIBUTARY TO LAKE MICHIGAN

Menominee, Peshtigo, and Oconto River basins low-flow investigations

A series of base-flow discharge measurements was made in the Menominee, Peshtigo, and Oconto River basins during the period August 12-15. Weather records indicate that no more than a trace of precipitation occurred during the five days prior to August 12. On August 7 about 0.6 inch of rain fell in the lower parts of the basins, but based on recorded streamflow data in the region the measurements are considered to represent medium-range base flow.

Stream	Location	Drainage area (sq mi)	Measured Discharge		
			Date	Cfs	Cfsm
Discharge measurements of Menominee River tributaries in Wisconsin					
*Brule Creek	NW 1/4 sec.34, T.41 N., R.13 E., at U.S. Forest Road 2458, 1.6 miles northwest of Alvin.	37	✓8-13-69	24.7	0.668
*Allen Creek Tributary	North boundary sec.7, T.40 N., R.14 E., at State Highway 70.	1.9	✓8-13-69	2.24	1.18
*Montagne Creek	SW 1/4 sec.11, T.40 N., R.17 E., at country road, 4.8 miles northwest of Florence.	14.4	✓8-13-69	6.33	.440
*Pine River	NW 1/4 sec.30, T.39 N., R.13 E., at U.S. Forest Road 2182, 12.4 miles northeast of Three Lakes.	16.2	✓8-12-69	1.15	.071
Stevens Creek	SE 1/4 SW 1/4 sec.19, T.40 N., R.15 E., at end of trail, 1.6 miles west of Tipler.	18.8	✓8-15-69	6.89	.366
*South Branch Popple River	NE 1/4 sec.25, T.39 N., R.15 E., at U.S. Forest Road 2159, 6.5 miles west of Fence.	10.2	✓8-13-69	6.47	.634
Lamon Tangue Creek	NE 1/4 SE 1/4 sec.4, T.38 N., R.17 E., at country road, 0.5 mile upstream from mouth, 4.8 miles northeast of Fence.	24	8-15-69	13.6	.567
*Woods Creek	SE 1/4 sec.29, T.39 N., R.17 E., at State Highway 101, 6 miles north of Fence.	42.3	✓8-13-69	17.8	.421
Little Popple River	SW 1/4 NW 1/4 sec.3, T.38 N., R.19 E., at country road, 2.1 miles northwest of Aurora.	32.4	8-14-69	15.8	.488
North Branch Pemebonwon River	NE 1/4 SE 1/4 sec.22, T.37 N., R.21 E., at country road, 6.8 miles northeast of Pembine.	80.8	8-14-69	13.5	.167
*South Branch Pemebonwon River	On common boundary of secs.19 and 30, T.37 N., R.20 E., at County Trunk O, 2.8 miles northwest of Pembine.	26.6	✓8-13-69	4.53	.170
Do	SE 1/4 SW 1/4 sec.25, T.37 N., R.20 E., at country road, 1.5 miles west of Smith Lake, and 2.2 miles east of Pembine.	48.1	8-14-69	15.3	.318
Miscauno Creek	NE 1/4 SE 1/4 sec.22, T.36 N., R.21 E., at country road, 1.0 mile upstream from mouth, and 7.9 miles southeast of Pembine.	21.0	8-12-69	9.06	.431
*South Branch Pike River	SE 1/4 sec.36, T.36 N., R.18 E., at town road, 6.9 miles south of Dunbar.	72.4	✓8-13-69	25.9	.358
North Branch Pike River	SW 1/4 NW 1/4 sec.33, T.37 N., R.18 E., at U.S. Highway 8, 4.9 miles east of Goodman.	37.2	8-13-69	29.5	.793
Do	NW 1/4 SW 1/4 sec.36, T.37 N., R.18 E., at country road, 1.5 miles southwest of Dunbar.	62.0	8-13-69	48.4	.781
*Cole Creek	South boundary sec.34, T.37 N., R.19 E., at U.S. Highway 8, 3.6 miles southeast of Dunbar.	3.2	✓8-13-69	.51	.159
North Branch Pike River	NW 1/4 NE 1/4 sec.29, T.36 N., R.20 E., at country road, 4.8 miles north of Amberg.	115	8-14-69	74.3	.646
Pike River	SE 1/4 NE 1/4 sec.4, T.34 N., R.21 E., at country road, 1.6 miles upstream from mouth, and 6.5 miles northeast of Wausaukee.	285	8-12-69	136	.477
Wausaukee River	NW 1/4 SE 1/4 sec.31, T.34 N., R.21 E., at country road, 1.4 miles east of Wausaukee.	53.8	8-12-69	26.2	.487

* Also a low-flow partial-record station.
✓ Other discharge measurements available.

STREAMS TRIBUTARY TO LAKE MICHIGAN

Menominee, Peshtigo, and Oconto River basins low-flow investigations--Continued

Stream	Location	Drainage area (sq mi)	Measured Discharge		
			Date	Cfs	Cfsm
Discharge measurements of Peshtigo River and tributaries					
South Branch Peshtigo River	NE 1/4 NE 1/4 sec.35, T.37 N., R.13 E., at County Trunk G, 2.7 miles east of Argonne.	28.1	8-13-69	17.3	0.616
*North Branch Peshtigo River	SW 1/4 sec.24, T.37 N., R.13 E., at U.S. Forest Road 2387, 2.9 miles northeast of Argonne.	32.4	≠8-12-69	9.78	.302
*Camp Eight Creek	NE 1/4 sec.36, T.37 N., R.14 E., at County Trunk G, 2.3 miles west of Cavour.	15.0	≠8-12-69	3.49	.233
Peshtigo River	NW 1/4 NE 1/4 sec.33, T.36 N., R.16 E., at U.S. Forest Road 2134, 0.4 mile upstream from Armstrong Creek.	199	8-13-69	87.0	.437
*Armstrong Creek	W 1/2 sec.27, T.37 N., R.16 E., at U.S. Highway 8; 1 3/4 miles northwest of Armstrong Creek.	23.1	≠8-13-69	7.87	.341
Peshtigo River	NW 1/4 SE 1/4 sec.13, T.35 N., R.16 E., at U.S. Forest Road 2136, 8.6 miles east of Blackwell.	-	8-13-69	125	-
Do	SW 1/4 SE 1/4 sec.35, T.35 N., R.17 E., at country road, 11.4 miles south of Goodman.	299	8-14-69	139	.465
Rat River	NE 1/4 NE 1/4 sec.7, T.35 N., R.15 E., at country road, 2.1 miles southeast of Laona.	38.7	8-13-69	37.3	.964
*Do	SE 1/4 sec.28, T.35 N., R.16 E., at U.S. Forest Road 2134, 8.0 miles northeast of Wabeno.	82.6	≠8-13-69	67.9	.822
Do	SW 1/4 SE 1/4 sec.10, T.34 N., R.17 E., at country road, 1.2 miles upstream from mouth.	102	8-14-69	79.6	.780
Otter Creek	SE 1/4 NW 1/4 sec.22, T.34 N., R.17 E., at country road, 1.2 miles upstream from mouth.	29.8	8-14-69	23.7	.795
*Eagle Creek	On common boundary of secs.24 and 25, T.34 N., R.18 E., at County Trunk C, 4.5 miles southwest of Athelstene.	38.6	≠8-13-69	12.4	.321
*North Fork Thunder River	NE 1/4 sec.23, T.33 N., R.17 E., at U.S. Forest Road 2101, 9.7 miles northeast of Lakewood.	20.0	≠8-13-69	10.3	.515
Thunder River	SW 1/4 NE 1/4 sec.4, T.32 N., R.18 E., at country road, 13.1 miles east of Lakewood.	54.7	8-14-69	31.2	.570
Upper Inlet	NW 1/4 NW 1/4 sec.36, T.33 N., R.21 E., at County Trunk X, 0.4 mile downstream from Lake Julia.	7.51	8-14-69	1.44	.192
Middle Inlet	SE 1/4 SW 1/4 sec.26, T.33 N., R.20 E., at country road, 0.9 mile east of Middle Inlet.	31.1	8-14-69	25.7	.826
*Middle Inlet Creek	On common boundary of secs.30 and 31, T.33 N., R.21 E., at County Trunk X, 2.7 miles east of Middle Inlet.	56.9	≠8-14-69	33.4	.587
*South Branch Beaver Creek	In center of sec.28, T.31 N., R.20 E., at U.S. Highway 141, 0.5 mile south of Beaver.	53.9	≠8-14-69	19.3	.358
North Branch Beaver Creek	NE 1/4 SE 1/4 sec.21, T.31 N., R.20 E., at U.S. Highway 141, 0.7 mile northeast of Beaver.	24.0	8-14-69	11.8	.492
Little Peshtigo River	NW 1/4 SW 1/4 sec.21, T.30 N., R.20 E., at country road, 0.1 mile upstream from Jones Creek.	31.2	8-15-69	10.4	.333
Jones Creek	NW 1/4 SW 1/4 sec.21, T.30 N., R.20 E., at country road, 0.1 mile upstream from mouth, and 2.5 miles southwest of Coleman.	5.68	8-15-69	0.23	.040
*Little Peshtigo River	SW 1/4 sec.18, T.30 N., R.21 E., at County Trunk B, 1.9 miles east of Coleman.	49.9	≠8-14-69	13.2	.264
Do	NW 1/4 NE 1/4 sec.33, T.31 N., R.21 E., at County Trunk W, 3.8 miles northwest of Harmony.	78.2	8-12-69	16.0	.205
*Trout Creek	On common boundary of secs.23 and 24, T.30 N., R.22 E., at bridge, 1.5 miles west of Peshtigo.	24.3	≠8-14-69	3.12	.128

* Also a low-flow partial-record station.
≠ Other discharge measurements available.

STREAMS TRIBUTARY TO LAKE MICHIGAN

Menominee, Peshtigo, and Oconto River basins low-flow investigations--Continued

Stream	Location	Drainage area (sq mi)	Measured Discharge		
			Date	Cfs	Cfsm
	Discharge measurements of Oconto River tributaries				
North Branch Oconto River	NE 1/4 SW 1/4 sec.25, T.34 N., R.15 E., at end of road, between two wooden footbridges on Mack property, 2.9 miles east of Carter.	58.8	8-13-69	34.6	0.588
Do	NW 1/4 SE 1/4 sec.14, T.33 N., R.16 E., at country road, 0.15 mile upstream from County Trunk F, and 4.2 miles northeast of Lakewood.	101	8-13-69	81.3	.805
McCaslin Brook	NW 1/4 NE 1/4 sec.32, T.33 N., R.16 E., at country road, 0.3 mile north of Lakewood.	52.1	8-13-69	28.0	.537
*North Branch Oconto River	On common boundary of secs.23 and 26, T.31 N., R.16 E., at U.S. Forest Road 2106, 3.2 miles north of Mountain.	178	≠8-12-69	135	.758
*Waupee River	SW 1/4 sec.30, T.31 N., R.17 E., at State Highway 32, 4.2 miles southeast of Mountain.	47.9	≠8-12-69	26.1	.545
South Branch Oconto River	SW 1/4 SW 1/4 sec.6, T.31 N., R.15 E., at State Highway 64, 2.7 miles east of Langlade.	24.4	8-13-69	19.4	.795
Dalton Creek	SE 1/4 SW 1/4 sec.1, T.31 N., R.14 E., at State Highway 64, 2.0 miles east of Langlade.	8.53	8-13-69	7.67	.899
*Hills Pond Creek	SE 1/4 sec.4, T.31 N., R.15 E., at State Highway 64, 5.5 miles east of Langlade.	9.15	≠8-12-69	12.2	1.33
Second South Branch Oconto River	NE 1/4 NW 1/4 sec.26, T.31 N., R.15 E., at County Trunk W, 6.4 miles southwest of Mountain.	20.4	8-13-69	23.9	1.17
First South Branch Oconto River	SE 1/4 SE 1/4 sec.32, T.32 N., R.16 E., at State Highway 64, 2.6 miles northwest of Mountain	18.4	8-13-69	16.2	.880
South Branch Oconto River	SW 1/4 SW 1/4 sec.23, T.30 N., R.16 E., at country road, 4.9 miles west of Breed.	139	8-13-69	131	.942
Do	SW 1/4 SW 1/4 sec.33, T.30 N., R.17 E., at country road, 2.2 miles northwest of Hayes.	161	8-13-69	150	.932
*Pecore Creek	NE 1/4 sec.8, T.29 N., R.17 E., at country road, 1.2 miles northwest of Hayes.	30.4	≠8-13-69	18.0	.592
Peshtigo Brook	SW 1/4 SW 1/4 sec.29, T.30 N., R.18 E., at country road, 3.3 miles northeast of Suring.	85.5	8-13-69	19.9	.233
Linzy Creek	NE 1/4 SE 1/4 sec.8, T.28 N., R.17 E., at County Trunk HH, 4.4 miles northwest of Underhill.	38.2	8-14-69	24.3	.636
Christie Brook	NW 1/4 NE 1/4 sec.26, T.28 N., R.18 E., at country road, 1.0 mile upstream from mouth, and 1.7 miles southeast of Gillett.	13.6	8-14-69	3.50	.257
*Kelly Brook	On common boundary of secs.22 and 23, T.29 N., R.20 E., at U.S. Highway 141, 1.5 miles north of Lena.	79.6	≠8-14-69	6.98	.088
Little River	SE 1/4 NE 1/4 sec.11, T.29 N., R.20 E., at country road, 3.8 miles north of Lena.	22.2	8-14-69	2.41	.108
Do	SE 1/4 NE 1/4 sec.24, T.28 N., R.20 E., at State Highway 22, 2.8 miles northeast of Stiles.	193	8-12-69	13.6	.070

* Also a low-flow partial-record station.
≠ Other discharge measurements available.

STREAMS TRIBUTARY TO LAKE MICHIGAN

Green Bay area low-flow investigations

A series of base-flow discharge measurements was made in the Wolf and Fox River basins during the periods August 11-14 and 26-29. Weather records indicate that negligible amounts of precipitation occurred during the period from August 7 to 29. Therefore, based on the weather records and recorded streamflow data in the region, the measurements are considered to represent high-range base flow during the period August 11-14 and low-range base flow during the period August 26-29.

Stream	Location	Drainage area (sq mi)	Measured Discharge		
			Date	Cfs	Cfsm
Discharge measurements of streams tributary to Lake Michigan					
Tibbet Creek	NW 1/4 NE 1/4 sec.19, T.26 N., R.21 E., at country road, 0.6 miles east of Little Suamico.	10.4	8-13-69	0.02	0.002
			8-27-69	0	0
Little Suamico River	SE 1/4 NW 1/4 sec.34, T.26 N., R.19 E., at country road, 3.2 miles east of Pulaski.	9.75	8-13-69	.399	.041
			8-27-69	.405	.042
Little Suamico River Tributary	SE 1/4 SW 1/4 sec.27, T.26 N., R.19 E., 60 ft upstream from mouth, 3.2 miles east of Pulaski.	9.38	8-13-69	.173	.018
			8-27-69	.195	.021
Do	SE 1/4 NW 1/4 sec.34, T.26 N., R.19 E., 200 ft upstream from mouth, 3.2 miles east of Pulaski.	5.78	8-13-69	.184	.032
			8-27-69	.189	.033
Little Suamico River	NE 1/4 NE 1/4 sec.24, T.26 N., R.19 E., on country road, 3.0 miles west of Sobieski.	34.8	8-13-69	1.67	.048
			8-27-69	1.27	.036
Do	SE 1/4 SE 1/4 sec.21, T.26 N., R.20 E., on country road, 0.7 mile south of Sobieski.	41.1	8-13-69	2.14	.052
			8-28-69	1.35	.033
Do	SE 1/4 SE 1/4 sec.24, T.26 N., R.20 E., 0.25 mile upstream from County Trunk J, 0.3 mile south of Little Suamico.	54.8	8-13-69	1.46	.027
			8-28-69	.662	.012
Suamico River	SE 1/4 NW 1/4 sec.22, T.25 N., R.19 E., at country road, 0.9 mile northeast of Kunesh.	10.5	8-12-69	.216	.021
			8-28-69	.121	.012
Suamico River Tributary	Center of sec.22, T.25 N., R.19 E., at country road, 0.7 mile northeast of Kunesh.	12.0	8-12-69	0	0
			8-28-69	0	0
Do	SE 1/4 NW 1/4 sec.15, T.25 N., R.19 E., at country road, 1.7 miles north of Kunesh.	10.8	8-12-69	.742	.069
			8-28-69	.159	.015
Do	SE 1/4 SW 1/4 sec.12, T.25 N., R.19 E., at bridge on County Trunk B, 1.3 miles west of Flintville.	5.61	8-12-69	.701	.125
			8-28-69	.546	.097
*Suamico River	NW 1/4 sec.22, T.25 N., R.20 E., at bridge on County Trunk B, 1/2 mile west of Suamico, 7 1/2 miles north of Green Bay, and 3 miles upstream from mouth.	57.0	8-12-69	3.38	.059
			8-26-69	2.53	.044
Suamico River Tributary	SE 1/4 SE 1/4 sec.15, T.25 N., R.20 E., at County Trunk B, at Suamico.	7.82	8-13-69	.245	.031
			8-28-69	.039	.005
Duck Creek	SE 1/4 NE 1/4 sec.8, T.22 N., R.18 E., at County Trunk C, 8.0 miles southeast of Black Creek.	32.0	8-12-69	0	0
Duck Creek Tributary	SE 1/4 NE 1/4 sec.20, T.22 N., R.18 E., at County Trunk C, 4.2 miles east of Mackville.	7.81	8-12-69	0	0
Duck Creek	NW 1/4 NE 1/4 sec.11, T.22 N., R.18 E., at county road, 1.1 miles north of Freedom.	47.3	8-12-69	0	0
Duck Creek Tributary	SE 1/4 SE 1/4 sec.19, T.23 N., R.19 E., at County Trunk EE, 4.6 miles southwest of Oneida.	16.8	8-12-69	0	0
*Duck Creek	NW 1/4 SE 1/4 sec.17, T.23 N., R.19 E., at country road, 2.9 miles southwest of Oneida.	92.2	8-12-69	.422	.005
			8-26-69	.113	.001
Do	SW 1/4 SW 1/4 sec.19, T.24 N., R.20 E., at country road, 2.2 miles southwest of Howard.	105	8-11-69	.941	.009
			8-27-69	0	0
Trout Creek	NE 1/4 SE 1/4 sec.24, T.24 N., R.19 E., at country road, 2.2 miles southwest of Howard.	18.4	8-11-69	.434	.024
			8-27-69	.236	.013
Beaver Dam Creek	SE 1/4 SW 1/4 sec.15, T.24 N., R.20 E., at country road, 1.3 miles east of Howard.	6.55	8-12-69	.706	.108
			8-27-69	.544	.083
Duck Creek Tributary	SW 1/4 SE 1/4 sec.9, T.24 N., R.20 E., at bridge on County Trunk AA, 1.3 miles north of Howard.	11.4	8-12-69	.467	.041
			8-27-69	.135	.012

* Also a low-flow partial-record station.

STREAMS TRIBUTARY TO LAKE MICHIGAN

Green Bay area low-flow investigations--Continued

Stream	Location	Drainage area (sq mi)	Measured Discharge		
			Date	Cfs	Cfsm
Discharge measurements of Wolf River and tributaries					
*Little West Branch	NE 1/4 NW 1/4 sec.11, T.29 N., R.14 E., at County Trunk M, 3.8 miles northeast of Neopit.	21.1	≠8-13-69	18.0	0.853
			8-27-69	8.75	.415
Wolf River Tributary	NW 1/4 NW 1/4 sec.25, T.28 N., R.15 E., at town road, at Keshena.	6.45	8-12-69	5.11	.792
			8-28-69	3.24	.502
Red River	NE 1/4 SE 1/4 sec.21, T.27 N., R.15 E., at country road, 1.1 miles northeast of Thornton.	197	≠8-12-69	111	.563
			8-28-69	112	.568
Pickerel Creek	NE 1/4 NE 1/4 sec.20, T.27 N., R.17 E., at town road, at Cecil.	17.4	8-12-69	1.68	.096
			8-28-69	.890	.051
Shawano Lake Tributary	NE 1/4 NW 1/4 sec.25, T.27 N., R.16 E., at country road, 2.6 miles southwest of Cecil.	2.81	8-12-69	.137	.049
			8-28-69	.014	.005
Wolf River Tributary	SE 1/4 NW 1/4 sec.16, T.26 N., R.16 E., at State Highway 187, 4.5 miles southeast of Shawano.	13.2	8-12-69	.683	.052
			8-27-69	.419	.032
Do	NE 1/4 NW 1/4 sec.6, T.25 N., R.16 E., at County Trunk CC, 4.4 miles southeast of Belle Plaine.	16.0	8/12/69	2.91	.182
			8/27/69	1.72	.108
Do	SE 1/4 SE 1/4 sec.29, T.25 N., R.16 E., at State Highways 187 and 156, 2.3 miles north of Leeman.	7.18	8-12-69	.140	.019
			8-27-69	.352	.005
Slab City Creek	NE 1/4 NE 1/4 sec.30, T.26 N., R.17 E., at country road, 2.7 miles southwest of Bonduel.	6.52	8-13-69	.633	.097
			8-28-69	.765	.117
West Branch Shioc River	SE 1/4 SW 1/4 sec.30, T.26 N., R.17 E., at country road, 3.7 miles southwest of Bonduel.	16.5	8-13-69	4.95	.300
			8-28-69	1.96	.119
East Branch Shioc River	NW 1/4 NW 1/4 sec.18, T.25 N., R.17 E., at country road, 2.2 miles north of Navarino.	15.8	≠8-13-69	.466	.029
			8-29-69	0	0
Mink Creek	SW 1/4 NW 1/4 sec.19, T.25 N., R.17 E., at country road, 1.1 miles north of Navarino.	8.25	8-13-69	.064	.008
			8-29-69	0	0
Herman Creek	SW 1/4 SW 1/4 sec.5, T.24 N., R.17 E., at country road, 0.7 mile north of Nichols.	24.2	8-13-69	2.35	.097
			8-29-69	0	0
*Wolf River	NE 1/4 SW 1/4 sec.7, T.24 N., R.17 E., at State Highway 156, 0.8 mile west of Nichols.	92.0	≠8-13-69	7.36	.080
			8-27-69	.840	.009
Toad Creek	SE 1/4 SE 1/4 sec.19, T.24 N., R.17 E., at County Trunk G, 2.3 miles south of Nichols.	14.6	8-13-69	0	0
Black Creek	NE 1/4 NW 1/4 sec.3, T.24 N., R.18 E., at country road, 5.1 miles north of Seymour.	15.6	8-13-69	0	0
Do	SE 1/4 SW 1/4 sec.29, T.24 N., R.18 E., at County Trunk G, 0.8 mile west of Seymour.	24.1	8-13-69	.155	.006
			8-29-69	.089	.004
*Do	SE 1/4 NE 1/4 sec.8, T.23 N., R.17 E., at State Highway 47, 0.3 mile north of Black Creek.	55.9	≠8-26-69	.640	.011
Do	NW 1/4 NW 1/4 sec.8, T.23 N., R.17 E., at country road, 1.1 miles northwest of Black Creek.	59.8	8-13-69	2.71	.045
Shioc River	NE 1/4 SW 1/4 sec.2, T.23 N., R.16 E., at County Trunk P, 4.2 miles northeast of Shiocton.	186	8-13-69	7.89	.042
			8-28-69	1.81	.010
Wolf River	NE 1/4 NE 1/4 sec.29, T.23 N., R.16 E., at State Highway 54, at Shiocton.	1460	8-12-69	888	.608
			8-27-69	638	.437
Wolf River Tributary	NE 1/4 SE 1/4 sec.29, T.23 N., R.16 E., at State Highway 76, 0.5 mile south of Shiocton.	19.0	8-12-69	.09	.005
			8-27-69	e.002	

* Also a low-flow partial-record station.
≠ Other discharge measurements available.
e Estimated.

STREAMS TRIBUTARY TO LAKE MICHIGAN

Green Bay area low-flow investigations--Continued

Stream	Location	Drainage area (sq mi)	Measured Discharge		
			Date	Cfs	Cfsm
	Discharge measurements of Wolf River and tributaries--Continued				
Bear Creek	NW 1/4 NE 1/4 sec.30, T.22 N., R.17 E., at country road, 3.6 miles northwest of Mackville.	13.9	8-14-69	0	0
Bear Creek Tributary	SE 1/4 SE 1/4 sec.17, T.22 N., R.17 E., at country road, 3.0 miles northwest of Mackville.	4.98	8-14-69	0	0
Do	NW 1/4 SW 1/4 sec.20, T.22 N., R.17 E., at country road, 3.3 miles northwest of Mackville.	22.9	8-14-69	0	0
Bear Creek	SW 1/4 NW 1/4 sec.23, T.22 N., R.16 E., at country road, 2.3 miles east of Stephensville.	43.8	8-13-69 8-28-69	.755 .389	.017 .009
Bear Creek Tributary	SW 1/4 SW 1/4 sec.14, T.22 N., R.16 E., at country road, 2.3 miles east of Stephensville.	10.0	8-13-69	0	0
*Bear Creek	NW 1/4 NE 1/4 sec.20, T.22 N., R.16 E., at State Highway 76, at Stephensville.	59.4	≠8-13-69 8-26-69	1.52 .940	.026 .016
Black Otter Creek	NW 1/4 SE 1/4 sec.35, T.22 N., R.15 E., at U.S. Highway 45, at Hortonville.	15.8	8-12-69 8-27-69	1.25 .476	.079 .030
Embarrass River	SW 1/4 SW 1/4 sec.13, T.26 N., R.13 E., at country road, 0.9 mile east of Caroline.	265	≠8-11-69 8-27-69	124 84.6	.468 .319
*North Branch Embarrass River	NW 1/4 NW 1/4 sec.6, T.27 N., R.13 E., at County Trunk D, 0.6 mile south of Bowler.	39.5	≠8-11-69 8-27-69	25.3 23.1	.640 .585
Do	SE 1/4 NW 1/4 sec.23, T.27 N., R.13 E., at County Trunk G, 1.2 miles southeast of Tilleda.	72.3	≠8-11-69 8-27-69	39.7 28.9	.549 .400
*Mill Creek	SE 1/4 NW 1/4 sec.12, T.26 N., R.14 E., at country road, 2.8 miles east of Pella.	23.1	≠8-11-69 8-28-69	11.6 7.70	.502 .333
Embarrass River Tributary	NW 1/4 NW 1/4 sec.4, T.25 N., R.15 E., at County Trunk Y, 1.3 miles northeast of Embarrass.	4.67	8-11-69 8-27-69	.143 .110	.031 .024
Do	NW 1/4 SE 1/4 sec.7, T.25 N., R.15 E., at country road, 1.0 mile southwest of Embarrass.	3.50	8-12-69 8-28-69	.312 e.005	.089 .001
*North Branch Pigeon River	SW 1/4 NE 1/4 sec.5, T.25 N., R.13 E., at farm 0.1 mile north of County Trunk SS, 2.8 miles west of Marion.	10.8	8-14-69 8-28-69	3.64 2.78	.337 .257
Pigeon River	SE 1/4 SE 1/4 sec.23, T.25 N., R.14 E., at footbridge, 0.1 mile downstream from Main Street bridge at Clintonville.	109	8-11-69 8-28-69	36.3 16.4	.333 .150
Embarrass River	SE 1/4 SW 1/4 sec.20, T.25 N., R.15 E., at country road, 3.0 miles east of Clintonville.	548	8-12-69 8-28-69	246 159	.449 .290
Bear Creek	NW 1/4 NW 1/4 sec.24, T.24 N., R.14 E., at U.S. Highway 45, 1.6 miles northwest of Bear Creek.	10.6	8-11-69 8-28-69	.246 .179	.023 .017
*Do	SE 1/4 SW 1/4 sec.4, T.23 N., R.15 E., at County Trunk W, 2.4 miles east of Sugar Bush.	26.3	≠8-11-69 8-28-69	.590 .150	.022 .006
Maple Creek	NW 1/4 SE 1/4 sec.18, T.23 N., R.15 E., at County Trunk D, 1.3 miles southeast of Sugar Bush.	21.8	8-12-69 8-28-69	1.04 .418	.048 .019
Embarrass River	NW 1/4 SW 1/4 sec.7, T.22 N., R.15 E., at County Trunk S, at northeast edge of New London.	676	8-12-69 8-28-69	296 159	.438 .235
*Spaulding Creek	SE 1/4 SE 1/4 sec.15, T.25 N., R.12 E., at County Trunk E, 1.5 miles north of Big Falls.	4.9	≠8-29-69	1.59	.324
*Alder Creek	SE 1/4 SE 1/4 sec.20, T.20 N., R.14 E., at County Trunk H, 5.1 miles south of Fremont.	14.1	≠8-14-69 8-28-69	.380 .190	.027 .013

* Also a low-flow partial-record station.
≠ Other discharge measurements available.
e Estimated.

STREAMS TRIBUTARY TO LAKE MICHIGAN

Green Bay area low-flow investigations--Continued

Stream	Location	Drainage area (sq mi)	Measured Discharge		
			Date	Cfs	Cfsm
	Discharge measurements of Fox River and tributaries				
*Daggetts Creek	SW 1/4 SW 1/4 sec.20, T.19 N., R.16 E., at country road, 1.5 miles east of Butte des Morts.	10.3	8-26-69	0.004	-
Fox River Tributary	NW 1/4 SW 1/4 sec.28, T.20 N., R.17 E., at State Highway 114, at Neenah.	18.1	8-12-69	3.17	0.175
			8-28-69	3.09	.171
Mud Creek	NW 1/4 NW 1/4 sec.3, T.20 N., R.17 E., at County Trunk BB, 2.6 miles southwest of downtown Appleton.	14.1	8-12-69	0	0
Mud Creek Tributary	NE 1/4 NE 1/4 sec.4, T.20 N., R.17 E., at U.S. Highway 41, 2.9 miles southwest of downtown Appleton.	10.7	8-12-69	.04	.004
			8-28-69	e.01	.001
Fox River Tributary	N 1/2 sec.24, T.21 N., R.18 E., at County Trunk Z, 0.8 mile west of Kaukauna.	11.8	8-12-69	0	0
Kankapot Creek	N 1/2 sec.22, T.21 N., R.18 E., at County Trunk Z, at east city limits of Kaukauna.	18.5	8-12-69	e.002	.001
Plum Creek	NW 1/4 SW 1/4 sec.11, T.21 N., R.19 E., at County Trunk D, 1.6 miles south of Wrightstown.	20.4	8-12-69	.76	.037
			8-27-69	.226	.011
*Apple Creek	West boundary of sec.2, T.21 N., R.18 E., at bridge on State Highway 55, 3 1/2 miles northeast of Kaukauna.	14.6	8-12-69	0	0
			8-26-69	0	0
Do	NE 1/4 SW 1/4 sec.26, T.22 N., R.19 E., at country road, 1.5 miles north of Wrightstown.	47.2	8-12-69	.09	.002
			8-27-69	0	0
*Ashwaubenon Creek	Common boundary of land grant 28 and 29, T.22 N., R.20 E., at culvert on County Trunk G, 0.5 mile west of DePere.	25.2	8-13-69	.11	.004
			8-26-69	.023	.001
Dutchman Creek	Common boundary of land grant 23 and 24, T.23 N., R.20 E., at bridge on County Trunk GG, 2.4 miles northwest of DePere.	26.5	8-13-69	.084	.003
			8-28-69	0	0
Do	E 1/2 land grant 24, T.23 N., R.20 E., at County Trunk HH, 1.9 miles north of DePere.	31.8	8-13-69	.300	.009
			8-28-69	.197	.006
East River	NE 1/4 SW 1/4 sec.6, T.21 N., R.20 E., at country road, 1.5 miles west of Greenleaf.	20.2	8-13-69	.888	.044
			8-28-69	.164	.008
East River Tributary	NW 1/4 SW 1/4 sec.6, T.21 N., R.20 E., at country road, 1.7 miles west of Greenleaf.	3.30	8-13-69	0	0
Do	NE 1/4 SE 1/4 sec.6, T.21 N., R.20 E., at country road, 1 mile northwest of Greenleaf.	11.6	8-13-69	.497	.043
			8-28-69	.170	.015
East River	NW 1/4 NW 1/4 sec.32, T.22 N., R.20 E., at country road, 1.7 miles northwest of Greenleaf.	37.5	8-13-69	1.25	.033
			8-28-69	.372	.010
Do	NE 1/4 NE 1/4 sec.20, T.22 N., R.20 E., at County Trunk ZZ, 4.0 miles north of Greenleaf.	51.1	8-13-69	1.74	.034
			8-28-69	.268	.005
*Do	NE 1/4 SE 1/4 sec.3, T.22 N., R.20 E., at State Highway 32, 2.5 miles south of DePere.	58.4	8-13-69	2.17	.037
			8-26-69	.526	.009
Do	Land grant 33, T.23 N., R.20 E., at County Trunk G, 1.7 miles southeast of DePere.	65.1	8-13-69	2.19	.034
			8-28-69	.405	.006
Bower Creek	Land grant 22, T.23 N., R.21 E., at bridge on County Trunk GV, 2.9 miles east of DePere.	34.3	8-13-69	.016	0
			8-28-69	-	-
Baird Creek	SE 1/4 sec.32, T.24 N., R.21 E., at County Trunk CC, near east city limits of Green Bay.	23.8	8-13-69	.391	.016
			8-28-69	.084	.004

* Also a low-flow partial-record station.
e Estimated.

STREAMS TRIBUTARY TO LAKE MICHIGAN

Lake Michigan basin, from Green Bay to Kenosha, low-flow investigations

A series of base-flow measurements was made of streams emptying into Lake Michigan and draining the area between the cities of Green Bay and Kenosha. These measurements were made during the period October 1-5. Weather records indicate that no precipitation occurred during the seven days prior to October 1. During the period October 1-5 up to 0.46 inch of rain fell in the southern part of the study area, but based on recorded streamflow data in the region, all measurements were considered to represent medium-range base flow.

Stream	Location	Drainage area (sq mi)	Measured Discharge		
			Date	Cfs	Cfsm
Discharge measurements of streams tributary to Lake Michigan					
Lake Michigan Tributary	NW 1/4 SE 1/4 sec.1, T.24 N., R.21 E., at County Trunk A, 4.9 miles west of Champion.	11.7	10-4-68	0.04	0.003
Do	SW 1/4 SW 1/4 sec.13, T.25 N., R.22 E., at State Highway 57, 1.2 miles southwest of Dyckesville.	5.51	10-4-68	.04	.007
Red River	NE 1/4 NE 1/4 sec.8, T.25 N., R.23 E., at County Trunk A, 2.0 miles northeast of Dyckesville.	14.2	10-3-68	.06	.004
Red River	NW 1/4 SW 1/4 sec.5, T.25 N., R.23 E., at State Highway 57, 1.9 miles northeast of Dyckesville. Site is 0.3 mile upstream from mouth.	15.0	10-3-68	.08	.005
Renard Creek	SE 1/4 SE 1/4 sec.16, T.26 N., R.23 E., at country road, 4.2 miles southwest of Brussels.	5.79	10-3-68	.52	.090
Renard Creek Tributary	NE 1/4 SE 1/4 sec.21, T.26 N., R.23 E., at country road, 4.4 miles southwest of Brussels.	.41	10-3-68	.33	.805
Renard Creek	SW 1/4 NW 1/4 sec.21, T.26 N., R.23 E., at mouth, 5.1 miles southwest of Brussels.	7.50	10-3-68	.57	.076
Sugar Creek	SW 1/4 NW 1/4 sec.25, T.27 N., R.23 E., at County Trunk N, 4.0 miles northwest of Brussels.	13.4	10-3-68	.42	.031
Keyes Creek	SW 1/4 SE 1/4 sec.10, T.27 N., R.24 E., at County Trunk C, 1.4 miles south of Little Sturgeon.	14.8	10-1-68	.52	.035
Fish Creek	NE 1/4 NE 1/4 sec.32, T.31 N., R.27 E., at State Highway 42, 0.4 mile east of Fish Creek.	-	10-2-68	0	0
Heins Creek	NW 1/4 NW 1/4 sec.24, T.30 N., R.27 E., at County Trunk EE, 2.2 miles west of Baileys Harbor.	7.80	10-2-68	.87	.112
Do	NW 1/4 SW 1/4 sec.6, T.29 N., R.28 E., at State Highway 57, 3.2 miles northeast of Jackson-port.	17.3	10-2-68	e.07	.004
Hibbard Creek	SW 1/4 NE 1/4 sec.10, T.29 N., R.27 E., at country road, 1.8 miles northwest of Jacksonport.	16.2	10-2-68	1.94	.120
*Do	SE 1/4 sec.14, T.29 N., R.27 E., at State Highway 57, 0.8 mile northeast of Jackson-port.	22.5	✓10-3-68	2.82	.125
Logan Creek	NW 1/4 SE 1/4 sec.28, T.29 N., R.27 E., at State Highway 57, 2.2 miles southwest of Jacksonport.	13.6	10-2-68	.80	.059
Whitefish Bay Creek	NW 1/4 NW 1/4 sec.10, T.28 N., R.27 E., at Clark Lake Road, 4.1 miles south of Jackson-port.	17.8	10-2-68	.62	.035
Maple Creek	NE 1/4 NW 1/4 sec.19, T.28 N., R.27 E., at country road, 1.0 mile south of Valmy.	-	10-2-68	0	0
Shivering Sands Creek	SW 1/4 NE 1/4 sec.32, T.28 N., R.27 E., at County Trunk T, 3.5 miles southeast of Valmy.	12.6	10-2-68	1.10	.087
Lilly Bay Creek	NW 1/4 NE 1/4 sec.1, T.27 N., R.26 E., at County Trunk T, 4.6 miles east of Sturgeon Bay.	18.0	10-2-68	.20	.011
Do	NE 1/4 NW 1/4 sec.6, T.27 N., R.27 E., at County Trunk T, 4.0 miles south of Valmy.	19.1	10-2-68	.42	.022
Woodard Creek	NW 1/4 SE 1/4 sec.16, T.26 N., R.26 E., at country road, 6.9 miles east of Maplewood.	2.46	10-3-68	e.03	.012
Schuyler Creek	NW 1/4 SW 1/4 sec.21, T.26 N., R.26 E., at country road, 6.4 miles east of Forestville.	3.25	10-3-68	.09	.028
Bear Creek	NW 1/4 NW 1/4 sec.28, T.26 N., R.26 E., at County Trunk U, 6.2 miles east of Forestville.	4.37	10-3-68	.96	.220

* Also a low-flow partial-record station.
✓ Other discharge measurements available.
e Estimated.

STREAMS TRIBUTARY TO LAKE MICHIGAN

Lake Michigan basin, from Green Bay to Kenosha, low-flow investigations--Continued

Stream	Location	Drainage area (sq mi)	Measured Discharge		
			Date	Cfs	Cfsm
Discharge measurements of streams tributary to Lake Michigan--Continued					
Stony Creek	SW 1/4 NW 1/4 sec.14, T.26 N., R.25 E., at country road, 2.4 miles southeast of Maplewood.	13.4	10-3-68	0.20	0.015
*Do	NW 1/4 sec.5, T.25 N., R.26 E., at County Trunk U, 5.5 miles northeast of Algoma.	24.8	10-3-68	1.72	.069
Ahnapee River	NW 1/4 NW 1/4 sec.12, T.26 N., R.24 E., at County Trunk H, 2.1 miles northeast of Kolberg.	21.6	10-3-68	4.16	.193
Do	NW 1/4 NE 1/4 sec.32, T.26 N., R.25 E., at County Trunk J, 0.3 mile west of Forestville.	32.3	10-3-68	5.70	.176
*Silver Creek	NE 1/4 sec.19, T.25 N., R.25 E., at County Trunk D, 3.5 miles northwest of Algoma.	58.0	10-3-68	.32	.006
Kewaunee River Tributary	SW 1/4 SE 1/4 sec.5, T.24 N., R.23 E., at country road, 2.9 miles northwest of Luxemburg.	10.1	10-3-68	.04	.004
School Creek	SW 1/4 NW 1/4 sec.15, T.24 N., R.23 E., at County Trunk A, 1.2 miles north of Luxemburg.	25.7	10-3-68	.14	.005
Scarboro Creek	SW 1/4 SW 1/4 sec.35, T.24 N., R.23 E., at country road, 2.7 miles southeast of Luxemburg.	16.6	10-3-68	1.21	.073
East Twin River	NW 1/4 NE 1/4 sec.24, T.23 N., R.23 E., at County Trunk F, 1.7 miles east of Ellisville.	8.55	10-4-68	.33	.039
Do	NE 1/4 NW 1/4 sec.21, T.22 N., R.24 E., at County Trunk G, 3.3 miles northeast of Tisch Mills.	46.4	10-4-68	6.25	.135
East Twin River Tributary	NE 1/4 SW 1/4 sec.24, T.22 N., R.23 E., at State Highway 163, 2.8 miles southeast of Stangelville.	6.31	10-4-68	.24	.038
Jambo Creek	NW 1/4 SW 1/4 sec.26, T.21 N., R.23 E., at country road, 2.5 miles northwest of Mishicot.	19.4	10-2-68	.46	.024
*East Twin River	NW 1/4 sec.4, T.20 N., R.24 E., at State Highway 147, at Mishicot.	109	10-2-68	15.3	.140
Neshota River	SE 1/4 SE 1/4 sec.22, T.22 N., R.22 E., at country road, 1.4 miles northeast of Denmark.	34.5	10-4-68	c2.50	.072
Buck Creek	SW 1/4 SW 1/4 sec.29, T.22 N., R.23 E., at country road, 2.4 miles northeast of Cooperstown.	19.9	10-4-68	.30	.015
Devils River	NE 1/4 NE 1/4 sec.9, T.21 N., R.22 E., at County Trunk T, 2.7 miles south of Denmark.	30.7	10-2-68	1.17	.038
*West Twin River	SW 1/4 sec.7, T.20 N., R.24 E., at County Trunk Q, 2.3 miles northeast of Francis Creek.	146	10-3-68	15.4	.105
Do	SW 1/4 NE 1/4 sec.29, T.20 N., R.24 E., at County Trunk B, 2.9 miles northeast of Rockwood.	161	10-3-68	16.7	.104
*South Branch Manitowoc River	NW 1/4 sec.17, T.18 N., R.20 E., at country road, 1.1 miles northeast of Chilton.	75.2	10-2-68	3.16	.042
Do	NE 1/4 NE 1/4 sec.14, T.18 N., R.20 E., at country road, 5.4 miles southwest of Collins.	112	10-5-68	5.28	.047
*Killsnake River	E 1/2 sec.6, T.18 N., R.20 E., at country road, 2.4 miles northeast of Chilton.	29.5	✓10-2-68	1.16	.039
*Mud Creek	SW 1/4 sec.2, T.19 N., R.21 E., at country road, 1.0 mile south of Reedsville.	38.7	10-2-68	.85	.022
Manitowoc River	NW 1/4 NW 1/4 sec.19, T.19 N., R.23 E., at country road, 3.3 miles northeast of Clark Mills.	411	10-2-68	24.3	.059
*Branch River	SE 1/4 sec.22, T.20 N., R.22 E., at country road, 3.3 miles north of Cato.	80.7	10-2-68	4.57	.057

* Also a low-flow partial-record station.
✓ Other discharge measurements available.
c Includes 1.18 cfs of SDP effluent entering just upstream from right bank.

GPO 823-131-14

STREAMS TRIBUTARY TO LAKE MICHIGAN

Lake Michigan basin, from Green Bay to Kenosha, low-flow investigations--Continued

Stream	Location	Drainage area (sq mi)	Measured Discharge		
			Date	Cfs	Cfsm
Discharge measurements of streams tributary to Lake Michigan--Continued					
Silver Creek	SE 1/4 SE 1/4 sec.1, T.18 N., R.23 E., at country road, 2.6 miles southwest of Manitowoc.	20.9	10-3-68	0.11	0.005
Point Creek	NW 1/4 NE 1/4 sec.11, T.17 N., R.23 E., at County Trunk LS, 2.3 miles southeast of Newton.	19.0	10-3-68	.76	.040
Pigeon River	SE 1/4 SW 1/4 sec.35, T.17 N., R.22 E., at country road, 3.9 miles north of Howards Grove.	19.1	10-2-68	.72	.038
Meeme River	NW 1/4 SE 1/4 sec.25, T.17 N., R.22 E., at country road, 3.1 miles west of Cleveland.	19.3	10-3-68	1.74	.090
*Pigeon River	SW 1/4 sec.6, T.15 N., R.23 E., at country road, 2.1 miles southeast of Millersville.	66.1	10-2-68	3.27	.050
Sheboygan River	SE 1/4 SE 1/4 sec.13, T.16 N., R.20 E., at County Trunk J, 1.7 miles northwest of Elkhart.	117	10-4-68	0	0
Do	SE 1/4 SE 1/4 sec.12, T.16 N., R.21 E., at County Trunk MM, 5.5 miles northwest of Howards Grove.	167	10-4-68	7.75	.046
Mullett River	SE 1/4 SW 1/4 sec.1, T.15 N., R.20 E., at County Trunk A, 0.4 mile southwest of Glenbeulah.	55.3	10-4-68	.80	.014
Do	SE 1/4 SE 1/4 sec.21, T.15 N., R.21 E., at State Highway 67, at Plymouth.	82.7	10-3-68	8,72	.105
*Onion River	On common boundary of secs.10 and 11, T.14 N., R.21 E., at County Trunk AC, 1.4 miles northwest of Waldo.	18.2	10-2-68	9.29	.510
Do	SW 1/4 SE 1/4 sec.36, T.15 N., R.22 E., at County Trunk EE, 0.25 mile upstream from mouth.	-	10-4-68	9.28	-
Black River	SE 1/4 SE 1/4 sec.32, T.14 N., R.23 E., at County Trunk KK, 2.1 miles northeast of Oostburg.	-	10-4-68	.24	-
Discharge measurements of Milwaukee River and tributaries					
Milwaukee River Tributary	NW 1/4 SW 1/4 sec.29, T.14 N., R.19 E., at U.S. Highway 45, at Waucousta.	12.1	10-3-68	.52	.043
*Milwaukee River	SE 1/4 sec.7, T.13 N., R.19 E., at private road, 0.7 mile northeast of Campbellsport.	50.1	✓10-3-68	1.60	.032
Lake Fifteen Creek	SE 1/4 NW 1/4 sec.15, T.13 N., R.19 E., at County Trunk DD, 3.7 miles east of Campbellsport.	6.08	10-3-68	b1.48	.243
Butzke Lake Outlet	SE 1/4 NE 1/4 sec.16, T.13 N., R.19 E., 900 feet downstream from lake.	4.59	10-3-68	b.17	.037
West Branch Milwaukee River	SW 1/4 NW 1/4 sec.15, T.13 N., R.18 E., at State Highway 67, 2.7 miles west of Campbellsport.	27.5	10-3-68	2.83	.103
East Branch Milwaukee River	NW 1/4 SW 1/4 sec.25, T.14 N., R.19 E., at County Trunk F, at Dundee.	16.9	10-2-68 10-3-68	4.26 b5.14	.252 .304
Crooked Lake Outlet	SE 1/4 SW 1/4 sec.6, T.13 N., R.20 E., at County Trunk SS, 2.3 miles northwest of Beechwood.	9.27	10-2-68	b.19	.020
Milwaukee River	NE 1/4 NW 1/4 sec.23, T.12 N., R.19 E., at County Trunk H, 2.4 miles southeast of Kewaskum.	205	10-2-68	26.3	.128
Silver Creek	NW 1/4 NW 1/4 sec.22, T.11 N., R.19 E., at outlet of Lucas Lake.	2.48	10-2-68	b1.23	.496

* Also a low-flow partial-record station.
✓ Other discharge measurements available.
b Measurement made by Wisconsin Department of Natural Resources.

STREAMS TRIBUTARY TO LAKE MICHIGAN

Lake Michigan basin, from Green Bay to Kenosha, low-flow investigations--Continued

Stream	Location	Drainage area (sq mi)	Measured Discharge		
			Date	Cfs	Cfsm
Discharge measurements of Milwaukee River and tributaries--Continued					
Milwaukee River	NE 1/4 NE 1/4 sec.13, T.11 N., R.19 E., at dam 1.1 miles northeast of West Bend.	228	10-3-68	29.0	0.127
Proschinger Creek	SW 1/4 NW 1/4 sec.23, T.11 N., R.20 E., at country road, 2.6 miles southwest of Newburg.	1.85	10-2-68	b.23	.124
Milwaukee River	SW 1/4 NE 1/4 sec.12, T.11 N., R.20 E., at County Trunk MY, at Newburg.	255	10-3-68	50.9	.200
North Branch Milwaukee River	SW 1/4 NW 1/4 sec.32, T.14 N., R.21 E., at country road, 1.3 miles southwest of Cascade.	27	10-3-68	6.74	.250
Lake Ellen Outlet	NE 1/4 NE 1/4 sec.31, T.14 N., R.21 E., at outlet of Lake Ellen.	2.11	10-2-68	bl.09	.517
*North Branch Milwaukee River	SW 1/4 sec.8, T.13 N., R.21 E., at County Trunk A, 4.1 miles south of Cascade.	r43.2	≠10-3-68	11.4	.264
Stony Creek	NE 1/4 NE 1/4 sec.9, T.12 N., R.20 E., at County Trunk DD, 0.2 mile southwest of Boltonville.	15.2	10-2-68	bl.46	.096
Milwaukee River	NE 1/4 SE 1/4 sec.35, T.11 N., R.21 E., 50 feet upstream from sewage plant at Saukville.	457	10-3-68	72.4	.158
Cedar Lake Outlet	SW 1/4 NE 1/4 sec.32, T.11 N., R.19 E., at County Trunk NN, 4.4 miles southwest of West Bend.	10.3	≠10-2-68	1.29	.125
Cedar Creek	SE 1/4 SW 1/4 sec.3, T.10 N., R.19 E., at country road, 2.9 miles northeast of Slinger.	13.9	≠10-2-68	.82	.059
Hasmer Lake Outlet	SE 1/4 SW 1/4 sec.18, T.10 N., R.20 E., at State Highway 60, 0.4 mile west of Jackson.	1.52	≠10-2-68	.56	.369
Cedar Creek	NE 1/4 NE 1/4 sec.20, T.10 N., R.20 E., at State Highway 60, 1.2 miles east of Jackson.	54.4	≠10-2-68	9.33	.172
Cedar Creek Tributary	SE 1/4 SE 1/4 sec.7, T.10 N., R.20 E., at country road, 1.1 miles north of Jackson.	3.41	10-2-68	.26	.076
Cedar Creek	SW 1/4 NW 1/4 sec.12, T.10 N., R.20 E., at County Trunk M, 4.7 miles northeast of Jackson.	84.8	≠10-2-68	11.5	.136
Cedar Creek Tributary	SW 1/4 NW 1/4 sec.19, T.11 N., R.21 E., at County Trunk Y, 1.6 miles south of Newburg.	2.70	10-3-68	b.37	.137
Milwaukee River	SW 1/4 SW 1/4 sec.31, T.10 N., R.22 E., at County Trunk C, 2.6 miles southeast of Cedarburg.	603	10-3-68	82.2	.136
Do	NE 1/4 NW 1/4 sec.12, T.8 N., R.21 E., at Brown Deer Road, at Brown Deer.	648	10-3-68	95.1	.147
Lincoln Creek	SE 1/4 NW 1/4 sec.31, T.8 N., R.22 E., at Villard Ave., 5.1 miles northwest of City Hall at Milwaukee.	21.9	10-3-68	9.93	.453
*Menomonee River	SE 1/4 Sec.33, T.9 N., R.20 E., at County Trunk Q, 1.2 miles northwest of Menomonee Falls.	32.0	≠10-2-68	4.66	.146
*Little Menomonee River	On common boundary secs.29 and 32, T.9 N., R.21 E., at Donges Bay Road, 2 miles south of Freistadt.	7.96	≠10-2-68	2.40	.302
East Branch Root River Canal	NW 1/4 SE 1/4 sec.14, T.3 N., R.21 E., at County Trunk C, 4.2 miles northwest of Sturtevant.	-	10-3-68	.17	-
Pike River	NE 1/4 NE 1/4 sec.30, T.2 N., R.23 E., at mouth.	-	10-1-68	2.99	-

* Also a low-flow partial-record station.
≠ Other discharge measurements available.
b Measurement made by Wisconsin Department of Natural Resources.
r Revised.

STREAMS TRIBUTARY TO MISSISSIPPI RIVER

St. Croix River basin low-flow investigation

A series of base-flow discharge measurements was made in the St. Croix River basin and some tributaries to the Mississippi River during the period August 19-21 and one measurement made on August 25. Weather records indicate that no more than a few hundredths of an inch of precipitation occurred during the seven days prior to August 19. Therefore, based on the weather records and recorded streamflow data in the region, the discharge measurements are considered to represent medium-range base flow.

Stream	Location	Drainage area (sq mi)	Measured Discharge		
			Date	Cfs	Cfsm
Discharge measurements of St. Croix River and tributaries					
*Lower Ox Creek	NE 1/4 SE 1/4 sec.16, T.44 N., R.11 W., at country road, 4.6 miles northeast of Gordon.	99.4	8-21-69	15.5	0.156
Eau Claire River	SE 1/4 NE 1/4 sec.9, T.43 N., R.11 W., at country road, 3.3 miles southeast of Gordon.	124	8-19-69	76.4	.616
*Moose River	NW 1/4 NE 1/4 sec.23, T.44 N., R.13 W., at County Trunk M, 7.8 miles southwest of Solon Springs.	49.9	≠8-20-69	1.11	.022
St. Croix River	NW 1/4 NW 1/4 sec.35, T.44 N., R.13 W., at forest road, 8.0 miles west of Gordon.	383	8-20-69	163	.426
Castle Creek	SE 1/4 NW 1/4 sec.7, T.43 N., R.5 W., at forest road, 7.7 miles southeast of Clam Lake.	11.7	8-20-69	2.38	.203
Namekagon River	SE 1/4 NW 1/4 sec.8, T.43 N., R.6 W., at forest road, 7.0 miles east of Cable.	52.6	8-21-69	19	.361
Do	SW 1/4 SW 1/4 sec.24, T.43 N., R.8 W., at U.S. Highway 63, 1.9 miles southwest of Cable.	132	8-20-69	64.4	.488
Big Brook	NW 1/4 NE 1/4 sec.26, T.43 N., R.8 W., at Township road, 2.3 miles southwest of Cable.	18.1	8-20-69	16.0	.884
Namekagon River	SE 1/4 SW 1/4 sec.20, T.42 N., R.8 W., at country road, 2.3 miles southwest of Seeley.	177	8-20-69	134	.757
*Chippanazie Creek	NW 1/4 NW 1/4 sec.33, T.41 N., R.10 W., at U.S. Highway 63, 0.8 mile southwest of Stanberry.	33.8	≠8-21-69	7.79	.230
Namekagon River	NE 1/4 NE 1/4 sec.32, T.41 N., R.10 W., at country road, 0.9 mile southwest of Stanberry.	304	8-25-69	153	.503
Hay Creek	NW 1/4 NE 1/4 sec.14, T.40 N., R.11 W., at country road, 0.8 mile north of Spring Brook.	13.3	8-21-69	3.40	.256
*Bean Brook	NE 1/4 NE 1/4 sec.1, T.39 N., R.11 W., at County Trunk M, 3.5 miles southeast of Spring Brook.	38.1	≠8-21-69	30.6	.803
*Potato Creek	NW 1/4 SW 1/4 sec.2, T.39 N., R.12 W., at U.S. Highways 53 and 63, 0.9 mile south of Trego.	25.7	≠8-19-69	15.7	.611
*Stuntz Brook	SE 1/4 SW 1/4 sec.23, T.41 N., R.13 W., at County Trunk F, 8.8 miles southwest of Minong.	18.2	≠8-21-69	2.50	.137
Webb Creek	SW 1/4 SW 1/4 sec.2, T.41 N., R.14 W., at country road, 0.4 mile upstream from mouth and 4.0 miles northeast of Webb Lake.	21.4	8-19-69	11.4	.533
Totagatic River	SE 1/4 NE 1/4 sec.6, T.42 N., R.10 W., at forest road, 6.8 miles southeast of Wascott.	82.1	8-20-69	1.59	.019
*Ounce River	SE 1/4 SE 1/4 sec.25, T.43 N., R.11 W., at forest road, 7.8 miles southeast of Gordon.	41.7	≠8-21-69	12.4	.297
*Frog Creek	NW 1/4 NW 1/4 sec.20, T.42 N., R.11 W., at country road, 2.4 miles northeast of Minong.	31.7	≠8-21-69	3.07	.097
Totagatic River	SE 1/4 SE 1/4 sec.2, T.42 N., R.12 W., at country road, 3.2 miles north of Minong.	219	8-20-69	35.6	.162
Do	NE 1/4 NE 1/4 sec.5, T.41 N., R.13 W., at country road, 7.2 miles northeast of Webb Lake.	339	8-19-69	121	.357
Namekagon River	NE 1/4 NE 1/4 sec.33, T.42 N., R.14 W., at forest road, 5.2 miles north of Webb Lake.	a1030	9-21-69	721	.700
*Chases Brook	SW 1/4 NE 1/4 sec.32, T.42 N., R.15 W., at forest road, 7.0 miles northeast of Danbury.	38.0	≠8-20-69	2.62	.069
Yellow River	NW 1/4 SW 1/4 sec.33, T.39 N., R.12 W., at State Highway 70, 1.2 miles east of Spooner.	34.6	8-19-69	25.3	.731
Beaver Brook	SE 1/4 SE 1/4 sec.22, T.38 N., R.12 W., at County Trunk B, 3.1 miles northwest of Sarona.	a9.3	8-19-69	.405	.044

* Also a low-flow partial-record station.
≠ Other discharge measurements available.
a Approximately.

STREAMS TRIBUTARY TO MISSISSIPPI RIVER

St. Croix River basin low-flow investigation--Continued

Stream	Location	Drainage area (sq mi)	Measured Discharge		
			Date	Cfs	Cfsm
Discharge measurements of St. Croix River and tributaries--Continued					
Beaver Brook	SW 1/4 NW 1/4 sec.15, T.38 N., R.12 W., at country road, 4.0 miles southeast of Spooner.	14.1	8-19-69	1.59	0.113
Yellow River	NW 1/4 NW 1/4 sec.10, T.38 N., R.13 W., at country road, 4.1 miles northwest of Shell Lake.	116	8-19-69	72.7	.627
Do	NE 1/4 SW 1/4 sec.23, T.39 N., R.15 W., at forest road, 2.8 miles north of Hertel.	198	8-19-69	117	.591
Do	SW 1/4 NE 1/4 sec.17, T.39 N., R.15 W., at country road, 6.0 miles east of Webster.	221	8-20-69	116	.525
*Do	SE 1/4 NE 1/4 sec.5, T.39 N., R.16 W., at State Highway 35, 1.3 miles north of Webster.	238	≠8-20-69	124	.521
Loon Creek	SE 1/4 SE 1/4 sec.30, T.41 N., R.15 W., at forest road, 4.3 miles east of Danbury.	32.4	8-19-69	19.3	.596
*Clam River	NE 1/4 NE 1/4 sec.6, T.36 N., R.15 W., at County Trunk W, 10.2 miles east of Frederic.	38.4	≠8-19-69	1.09	.028
Do	SW 1/4 SW 1/4 sec.24, T.38 N., R.16 W., at County Trunk B, 4.3 miles southeast of Siren.	96.7	8-20-69	40.0	.414
South Fork Clam River	SE 1/4 SE 1/4 sec.15, T.37 N., R.14 W., at County Trunk J, 5.1 miles southwest of Shell Lake.	a7.6	8-21-69	3.15	.414
North Fork Clam River	NE 1/4 SE 1/4 sec.4, T.37 N., R.14 W., at County Trunk H, 7.4 miles northwest of Barronett.	40.5	8-21-69	13.8	.341
*Bashaw Brook	SW 1/4 SW 1/4 sec.8, T.38 N., R.14 W., at country road, 10.5 miles northwest of Shell Lake.	24.9	≠8-20-69	6.08	.244
Sand Creek	SE 1/4 SW 1/4 sec.6, T.37 N., R.14 W., at country road, 6.8 miles south of Hertel.	35.9	8-21-69	15.2	.423
North Fork Clam River	NE 1/4 SW 1/4 sec.19, T.38 N., R.15 W., at country road, 5.2 miles southeast of Siren.	166	8-20-69	80.1	.482
*Wood River	SE 1/4 NE 1/4 sec.28, T.38 N., R.17 W., at country road, 4.8 miles southwest of Siren.	26.8	≠8-20-69	.52	.019
Do	NE 1/4 NW 1/4 sec.21, T.38 N., R.18 W., at State Highway 70, 1.2 miles west of Alpha.	79.8	8-20-69	22.5	.282
*North Fork Wood River	NW 1/4 SE 1/4 sec.8, T.38 N., R.18 W., at country road, 3.5 miles northeast of Grantsburg.	68.3	≠8-19-69	6.33	.093
Wood River	NW 1/4 SE 1/4 sec.19, T.38 N., R.19 W., at country road, 1.7 miles upstream from mouth, 4.1 miles west of Grantsburg.	179	8-20-69	50.9	.284
*Trade River	SW 1/4 SW 1/4 sec.4, T.36 N., R.17 W., at State Highways 35 and 48, 2.5 miles southwest of Frederic.	6.34	≠8-19-69	1.42	.224
Do	NE 1/4 SE 1/4 sec.35, T.37 N., R.19 W., at State Highway 87, at Trade River.	72.3	8-19-69	17.2	.238
Do	NE 1/4 NW 1/4 sec.19, T.36 N., R.19 W., at country road, 5.9 miles southwest of Trade River.	129	8-20-69	38.2	.296
Cowan Creek	NE 1/4 NW 1/4 sec.19, T.36 N., R.19 W., at country road, 5.9 miles southwest of Trade River.	17.8	8-20-69	6.33	.356
*Wolf Creek	SE 1/4 SE 1/4 sec.33, T.36 N., R.19 W., at County Trunk G, 11.0 miles northwest of St. Croix Falls.	29.3	≠8-19-69	3.97	.135
Big Rock Creek	NW 1/4 SE 1/4 sec.7, T.34 N., R.18 W., at State Highway 87, 2.4 miles north of St. Croix Falls.	12.6	8-20-69	.50	.040
Apple River	NW 1/4 SW 1/4 sec.11, T.34 N., R.16 W., at County Highway E, 3.9 miles northwest of Range.	90.6	8-19-69	14.8	.163
Fox Creek	NE 1/4 SE 1/4 sec.33, T.35 N., R.16 W., at road, 5.2 miles northeast of Balsam Lake.	52.6	8-19-69	16.4	.312

* Also a low-flow partial-record station.
≠ Other discharge measurements available.
a Approximately.

STREAMS TRIBUTARY TO MISSISSIPPI RIVER

St. Croix River basin low-flow investigation--Continued

Stream	Location	Drainage area (sq mi)	Measured Discharge		
			Date	Cfs	Cfsm
Discharge measurements of St. Croix River and tributaries--Continued					
Beaver Brook	SE 1/4 NE 1/4 sec.13, T.33 N., R.16 W., at County Trunk JJ, 2.6 miles southwest of Joel.	58.6	8-19-69	5.50	0.094
Do	SE 1/4 NW 1/4 sec.27, T.33 N., R.16 W., at county road, 1.4 miles northeast of Amery.	64.9	8-19-69	10.2	.157
Balsam Branch	NW 1/4 SE 1/4 sec.10, T.33 N., R.17 W., at County Trunk C, 4.2 miles northeast of Wanderoos.	43.9	8-19-69	16.6	.378
Friday Creek	NW 1/4 NE 1/4 sec.24, T.33 N., R.17 W., at County Trunk C, 2.5 miles northeast of Deronda.	a8.8	8-19-69	1.04	.118
Sucker Brook	NE 1/4 NE 1/4 sec.3, T.32 N., R.17 W., at County Trunk K, 1.4 miles southwest of Deronda.	67.3	8-19-69	17.9	.266
Apple River	SW 1/4 NW 1/4 sec.29, T.32 N., R.17 W., at country road, 2.7 miles north of Star Prairie.	411	8-20-69	130	.316
*Horse Creek	SW 1/4 SW 1/4 sec.15, T.32 N., R.18 W., at County Trunk X, 5.3 miles northwest of Star Prairie.	32.6	≠8-20-69	9.39	.288
*Willow River	SW 1/4 SE 1/4 sec.25, T.31 N., R.17 W., at State Highway 64, 6.2 miles east of New Richmond.	85.1	≠8-19-69	9.80	.115
South Fork Willow River	NE 1/4 NE 1/4 sec.31, T.31 N., R.16 W., at U.S. Highway 63, 1.7 miles northwest of Cylon.	32.2	8-19-69	2.61	.081
Willow River	SW 1/4 SW 1/4 sec.19, T.30 N., R.18 W., at country road, 0.7 mile west of Boardman.	218	≠8-19-69	19.6	.090
Tenmile Creek	NW 1/4 NW 1/4 sec.29, T.30 N., R.18 W., at country road, 0.2 mile southeast of Boardman.	17.9	8-19-69	5.20	.290
*Kinnickinnic River	SE 1/4 SW 1/4 sec.2, T.28 N., R.18 W., at County Trunk N, 5.5 miles southwest of Hammond.	47.8	≠8-21-69	8.95	.187
Kinnickinnic River Tributary	SE 1/4 SW 1/4 sec.12, T.28 N., R.18 W., at country road, 5.3 miles southwest of Hammond.	13.5	8-20-69	.74	.055
Kinnickinnic River	NE 1/4 NE 1/4 sec.36, T.28 N., R.19 W., at State Highway 35, 1.2 miles north of River Falls.	112	8-20-69	32.4	.289
South Fork Kinnickinnic River	NE 1/4 SW 1/4 sec.1, T.27 N., R.19 W., at State Highway 29, at River Falls.	17.1	8-20-69	5.81	.340
Big River	SE 1/4 SW 1/4 sec.22, T.26 N., R.19 W., at County Trunk Q, 4.6 miles west of Trimbelle.	17.3	8-20-69	2.61	.151
*Trimbelle Creek	SW 1/4 SE 1/4 sec.17, T.26 N., R.18 W., at U.S. Highway 10, at Trimbelle, 5.0 miles west of Ellsworth.	42.8	≠8-21-69	10.0	.234
Spring Creek	SE 1/4 SW 1/4 sec.21, T.26 N., R.18 W., at County Trunk O, 4.3 miles west of Ellsworth.	a7.8	8-20-69	.21	.027
Trimbelle River	NE 1/4 SW 1/4 sec.17, T.25 N., R.18 W., at country road, 1.8 miles east of Diamond Bluff.	65.6	8-20-69	19.9	.303
*Little Trimbelle Creek	SE 1/4 SW 1/4 sec.21, T.25 N., R.18 W., at County Trunk K, 6.7 miles northwest of Bay City.	19.9	≠8-21-69	2.12	.106
*Isabelle Creek	NW 1/4 SE 1/4 sec.28, T.25 N., R.17 W., at County Trunk EE, 2.4 miles north of Bay City.	31.2	≠8-20-69	6.64	.213
Rush River	NE 1/4 SW 1/4 sec.35, T.28 N., R.17 W., at County Trunk Y, 2.8 miles north of Martell.	46.3	8-19-69	1.50	.032
Lost Creek	SE 1/4 SW 1/4 sec.28, T.26 N., R.16 W., at country road, 4.8 miles south of El Paso.	24.8	8-19-69	6.50	.262
Rush River	SE 1/4 NW 1/4 sec.33, T.26 N., R.16 W., at country road, 5.3 miles south of El Paso.	123	8-19-69	56.1	.456
Do	NE 1/4 NW 1/4 sec.16, T.24 N., R.16 W., at State Highway 35, 1.1 miles northwest of Maiden Rock.	176	≠8-20-69	71.8	.408
Bogus Creek	SW 1/4 NW 1/4 sec.21, T.23 N., R.15 W., at State Highway 35, 2.8 miles southeast of Stockholm.	10.7	8-20-69	2.30	.215

* Also a low-flow partial-record station.
≠ Other discharge measurements available.
a Approximately.

STREAMS TRIBUTARY TO MISSISSIPPI RIVER

Central Wisconsin low-flow investigation

Two series of base-flow discharge measurements were made in the water-poor area in central Wisconsin during the periods October 23-25 and August 26-29. Weather records indicate that no more than a few hundredths of an inch of precipitation fell in the study area during the five-day period prior to the October series of measurements and that a negligible amount of rain fell during the ten-day period prior to the August measurements. Therefore, based on the weather records and recorded streamflow data in the region, the discharge measurements made during October are considered to represent high-range base flow and the measurements made in August are considered to represent low-range base flow.

Stream	Location	Drainage area (sq mi)	Measured Discharge		
			Date	Cfs	Cfsm
Discharge measurements of Chippewa River tributaries					
South Fork Eau Claire River	NE 1/4 NE 1/4 sec.14, T.28 N., R.3 W., at County Trunk N, 6.0 miles southwest of Withee.	26.8	10-24-68	4.05	0.151
			8-27-69	.61	.023
*Do	SW 1/4 sec.23, T.27 N., R.3 W., at bridge on County Trunk MM, 6.2 miles northwest of Greenwood.	77.1	⁄10-24-68	13.5	.175
			8-27-69	1.77	.023
Discharge measurements of Black River and tributaries					
Black River	SE 1/4 SE 1/4 sec.21, T.31 N., R.1 E., at bridge on town road, 0.9 mile northwest of center of Medford.	42.3	10-23-68	20.5	.485
			8-26-69	3.07	.072
*Little Black River	SW 1/4 sec.1, T.30 N., R.1 E., at bridge on State Highway 13, 2.1 miles south of Medford.	a58	⁄10-23-68	9.08	.156
			8-26-69	.59	.010
Black River	SW 1/4 SE 1/4 sec.25, T.31 N., R.1 W., at bridge on State Highway 64, 4.6 miles west of Medford.	131	10-23-68	34.2	.261
			8-26-69	6.06	.046
Do	NE 1/4 NW 1/4 sec.1, T.30 N., R.2 W., at bridge on State Highway 64, 8.3 miles northeast of Lublin.	195	10-23-68	61.5	.315
			8-26-69	12.2	.062
*Pine Creek	SW 1/4 SW 1/4 sec.19, T.30 N., R.1 W., at bridge on County Trunk DD, 11.8 miles southwest of Medford.	34.3	⁄10-24-68	4.62	.135
			8-26-69	.76	.022
McKenzie Creek	SE 1/4 SE 1/4 sec.29, T.30 N., R.2 W., at bridge on country road, 0.4 mile upstream from mouth and 4.6 miles southeast of Lublin.	23.8	10-24-68	7.00	.294
			8-26-69	.46	.019
Black River	NE 1/4 NW 1/4 sec.17, T.29 N., R.2 W., at bridge on country road, 4.2 miles northwest of Withee.	302	10-24-68	92.5	.306
			8-27-69	15.1	.050
South Fork Poplar River	NE 1/4 NE 1/4 sec.16, T.28 N., R.1 W., at bridge on country road, 4.0 miles southeast of Owen.	58.1	10-24-68	6.62	.114
			8-27-69	.94	.016
North Fork Poplar River	NE 1/4 NE 1/4 sec.5, T.28 N., R.1 W., at bridge on State Highway 29, 2.1 miles east of Owen.	55.6	10-24-68	6.31	.113
			8-27-69	.62	.011
*Poplar River	NE 1/4 NW 1/4 sec.25, T.28 N., R.2 W., at bridge on County Trunk N, 4 1/4 miles south of Owen.	159	⁄8-27-69	3.56	.022
Black River	NW 1/4 NE 1/4 sec.3, T.26 N., R.2 W., at bridge on County Trunk G, at Greenwood.	524	10-25-68	128	.244
			8-28-69	21.6	.041
Nelson Creek	NE 1/4 SW 1/4 sec.28, T.27 N., R.1 W., at bridge on country road, 4.7 miles northeast of Greenwood.	28.1	10-25-68	2.39	.085
			8-28-69	.51	.018
Rock Creek	SE 1/4 SE 1/4 sec.3, T.26 N., R.2 W., at bridge on State Highway 73, 0.5 mile south of Greenwood.	78.4	10-25-68	7.38	.094
			8-28-69	1.74	.022
*Cawley Creek	SW 1/4 sec.25, T.25 N., R.2 W., at bridge on State Highway 73, 3.7 miles north of Neillsville.	38.6	⁄10-25-68	4.48	.116
			8-28-69	1.64	.042
North Branch O'Neill Creek	NE 1/4 SW 1/4 sec.7, T.24 N., R.1 W., at bridge on country road, 2.4 miles northeast of Neillsville.	34.5	10-25-68	3.23	.063
			8-28-69	.32	.009
South Branch O'Neill Creek	NE 1/4 NE 1/4 sec.18, T.24 N., R.1 W., at bridge on country road, 3.0 miles east of Neillsville.	22.8	10-25-68	2.54	.111
			8-28-69	.75	.033
Cunningham Creek	NE 1/4 SE 1/4 sec.5, T.23 N., R.1 W., at country road, 5.7 miles southeast of Neillsville.	38.9	10-24-68	3.98	.102
			8-28-69	.84	.022
Do	SW 1/4 NW 1/4 sec.26, T.24 N., R.2 W., at bridge on State Highways 73 and 95, 2.0 miles south of Neillsville.	64.2	10-25-68	6.29	.098
			8-28-69	.73	.011

* Also a low-flow partial-record station.
⁄ Other discharge measurements available.
a Approximately.

STREAMS TRIBUTARY TO MISSISSIPPI RIVER

Central Wisconsin low-flow investigation--Continued

Stream	Location	Drainage area (sq mi)	Measured Discharge		
			Date	Cfs	Cfsm
Discharge measurements of Black River and tributaries--Continued					
Wedges Creek	NW 1/4 NW 1/4 sec.26, T.25 N., R.3 W., at bridge on country road, 3.3 miles southwest of Globe and 7.5 miles northwest of Neillsville.	40.7	10-25-68 8-28-69	7.89 2.43	0.184 .060
Fivemile Creek	SW 1/4 NW 1/4 sec.35, T.24 N., R.3 W., at bridge on country road, 6.8 miles southwest of Neillsville.	37.1	10-25-68 8-28-69	11.0 1.77	.296 .048
Wedges Creek	NE 1/4 SW 1/4 sec.35, T.24 N., R.3 W., at bridge on country road, 6.5 miles southwest of Neillsville.	114	10-25-68 8-28-69	28.8 7.20	.253 .063
*East Fork Black River	SE 1/4 SW 1/4 sec.19, T.23 N., R.2 E., at bridge on State Highway 73, 9.1 miles west of Pittsville.	37.2	≠10-23-68 8-27-69	4.71 0	.127 0
Rocky Run	NE 1/4 NW 1/4 sec.11, T.22 N., R.2 E., at bridge on County Trunk V, 5.6 miles southwest of Pittsville.	40.2	10-23-68 8-27-69	3.01 e0.1	.075
Hay Creek	SW 1/4 SW 1/4 sec.20, T.22 N., R.2 E., at bridge on country road, 1.7 miles northeast of City Point.	30.7	10-24-68 8-27-69	4.89 0	.159 0
East Fork Black River	SW 1/4 SW 1/4 sec.22, T.22 N., R.1 E., at bridge on country road, 2.9 miles northwest of City Point.	160	10-24-68 8-27-69	40.0 2.57	.250 .016
Do	NE 1/4 NE 1/4 sec.9, T.22 N., R.1 W., at bridge on country road, 9.4 miles northwest of City Point.	201	10-24-68 8-27-69	56.2 4.61	.280 .023
*Rock Creek	SW 1/4 sec.26, T.23 N., R.2 W., at bridge on country road, 8.4 miles south of Neillsville.	a25	≠10-24-68 8-28-69	2.77 0	.111 0
Discharge measurements of Wisconsin River tributaries					
*Devil Creek	NE 1/4 NW 1/4 sec.30, T.31 N., R.6 E., at culvert on County Trunk F, 5.8 miles southwest of Merrill.	10.1	≠8-26-69	0.79	0.078
*Wood Creek	SE 1/4 sec.17, T.32 N., R.3 E., at twin culvers on country road, 6.0 miles southeast of Rib Lake.	30.8	≠10-23-68 8-26-69	11.5 4.48	.373 .145
Rib River	NE 1/4 NW 1/4 sec.33, T.32 N., R.3 E., at bridge on County Trunk M, 5.4 miles northwest of Goodrich.	70.3	10-23-68 8-26-69	27.7 9.41	.394 .134
Do	NE 1/4 NW 1/4 sec.25, T.31 N., R.3 E., at bridge on State Highway 64, 1.0 mile east of Goodrich.	128	10-23-68 8-26-69	46.5 15.2	.363 .119
Do	NW 1/4 NE 1/4 sec.14, T.30 N., R.4 E., at bridge on County Trunk F, 5.3 miles west of Hamburg.	156	10-24-68 8-27-69	45.2 18.4	.289 .118
Do	NW 1/4 NE 1/4 sec.31, T.30 N., R.5 E., at bridge on County Trunk A, 5.9 miles east of Athens.	191	10-24-68 8-26-69	55.0 19.1	.288 .100
Black Creek	NW 1/4 SW 1/4 sec.22, T.30 N., R.3 E., at bridge on County Trunk M, 3.9 miles northwest of Athens.	25.2	10-23-68 8-26-69	2.98 .50	.118 .020
Do	NW 1/4 NE 1/4 sec.4, T.29 N., R.4 E., at point nearest country road, 2.2 miles east of Athens.	62.6	10-24-68	7.01	.112
Rib River	NE 1/4 SW 1/4 sec.6, T.28 N., R.6 E., at bridge on State Highway 107, at Marathon.	366	10-24-68 8-27-69	96.4 27.5	.263 .075
Little Rib River	NE 1/4 NE 1/4 sec.10, T.29 N., R.6 E., at bridge on County Trunk O, 7.4 miles southeast of Hamburg.	50.5	10-24-68 8-27-69	14.8 4.06	.293 .080
Do	SW 1/4 SE 1/4 sec.29, T.29 N., R.7 E., at bridge on country road, 3.5 miles west of downtown Wausau.	a76	10-24-68 8-27-69	31.2 12.7	.410 .167
West Branch Big Eau Pleine River	NW 1/4 NW 1/4 sec.27, T.29 N., R.2 E., at bridge on country road, 3.4 miles northeast of Abbotsford.	36.9	10-24-68 8-27-69	2.12 .33	.057 .009
Big Eau Pleine River	NE 1/4 NW 1/4 sec.10, T.28 N., R.2 E., at bridge on country road, 3.4 miles southeast of Abbotsford.	72.7	10-24-68 8-27-69	6.12 .54	.084 .007
*Randall Creek	SE 1/4 SW 1/4 sec.18, T.28 N., R.3 E., at bridge on County Trunk N, 6.2 miles east of Colby.	a32	≠10-24-68 8-27-69	2.37 .22	.074 .007

* Also a low-flow partial-record station.
≠ Other discharge measurements available.
a Approximately.
e Estimated.

STREAMS TRIBUTARY TO MISSISSIPPI RIVER

Central Wisconsin low-flow investigation--Continued

Stream	Location	Drainage area (sq mi)	Measured Discharge		
			Date	Cfs	Cfsm
Discharge measurements of Wisconsin River tributaries--Continued					
Dill Creek	NW 1/4 SW 1/4 sec.36, T.28 N., R.2 E., at bridge on County Trunk F, 4.9 miles east of Unity.	47.0	10-24-68	4.3	0.091
			8-27-69	.70	.015
Big Eau Pleine River	Center sec.4, T.27 N., R.3 E., at bridge on County Trunk E, 4.9 miles northwest of Stratford.	173	10-24-68	19.6	.113
			8-27-69	2.54	.015
Fenwood Creek	SW 1/4 SE 1/4 sec.24, T.27 N., R.4 E., at bridge on State Highway 153, 4.7 miles northeast of Rozellville.	36.9	10-24-68	5.7	.154
			8-27-69	.12	.003
Freeman Creek	NW 1/4 NW 1/4 sec.36, T.27 N., R.5 E., at bridge on country road, 1.0 mile southeast of Halder.	26.5	10-23-68	7.81	.295
			8-28-69	1.60	.060
Little Eau Pleine River	NE 1/4 NW 1/4 sec.3, T.26 N., R.2 E., at bridge on County Trunk F, 2.5 miles northeast of Spencer.	28.9	10-23-68	1.58	.055
			8-26-69	.04	.001
Do	NE 1/4 NE 1/4 sec.17, T.26 N., R.3 E., at bridge on County Trunk E, 5.1 miles north of Marshfield.	58.0	10-23-68	3.52	.061
			8-26-69	.10	.002
Do	SW 1/4 NW 1/4 sec.24, T.26 N., R.3 E., at bridge on State Highway 97, 5.2 miles northeast of Marshfield.	73.1	✓10-23-68	5.19	.071
			8-26-69	.230	.003
Little Eau Pleine River	NW 1/4 SW 1/4 sec.27, T.26 N., R.4 E., at bridge on County Trunk M, 2.6 miles south of Rozellville.	114	10-23-68	10.6	.093
			8-26-69	.99	.009
Do	NW 1/4 SW 1/4 sec.30, T.26 N., R.5 E., at bridge on country road, 5.8 miles north of Auburndale.	142	10-23-68	15.5	.109
			8-26-69	.67	.005
Do	SW 1/4 SW 1/4 sec.24, T.26 N., R.5 E., at bridge on County Trunk S, 7.7 miles north of Milladore.	197	10-23-68	30.9	.157
			8-26-69	3.45	.018
Mill Creek	SW 1/4 SW 1/4 sec.24, T.25 N., R.3 E., at bridge on County Trunk T, 1.2 miles south of Hewitt.	-	8-27-69	3.20	-
Do	NW 1/4 NW 1/4 sec.3, T.24 N., R.4 E., at bridge on State Highway 186, 2.3 miles southwest of Auburndale.	20.2	10-23-68	4.66	.231
			8-27-69	5.06	.250
Do	NE 1/4 NW 1/4 sec.9, T.24 N., R.5 E., at bridge on County Trunk F, at Sherry.	42.1	10-23-68	5.20	.124
			8-27-69	3.75	.089
*Do	NE 1/4 NE 1/4 sec.20, T.24 N., R.6 E., at bridge on State Highway 34, 3.3 miles southwest of Junction City.	a69	✓10-23-68	6.59	.096
			8-27-69	2.81	.041
Mill Creek Ditch	NW 1/4 NW 1/4 sec.27, T.24 N., R.7 E., at culvert beside County Trunk M, 4.7 miles northwest of downtown Stevens Point.	1.50	10-25-68	1.57	1.05
			8-29-69	.47	.313
Mill Creek	NW 1/4 SW 1/4 sec.34, T.24 N., R.7 E., at bridge on County Trunk C, 4.5 miles west of downtown Stevens Point.	107	✓10-23-68	21.9	.205
			8-27-69	4.75	.044
*Moccasin Creek	SE 1/4 NW 1/4 sec.34, T.22 N., R.5 E., at bridge on State Highway 54, 1.9 miles north of Nekoosa.	a23	✓10-25-68	4.42	.192
			8-29-69	4.86	.211
Yellow River	NE 1/4 NE 1/4 sec.35, T.26 N., R.1 E., at bridge on country road, 4.5 miles southwest of Spencer.	27.9	10-24-68	1.73	.062
			8-28-69	.06	.002
Do	NW 1/4 NE 1/4 sec.27, T.25 N., R.2 E., at bridge on County Trunk B, 4.7 miles southwest of downtown Marshfield.	62.8	10-24-68	5.18	.082
			8-28-69	.30	.005
*South Branch Yellow River	SE 1/4 NW 1/4 sec.27, T.25 N., R.2 E., at bridge on County Trunk B, 4.9 miles southwest of downtown Marshfield.	36.1	✓10-24-68	1.99	.055
			8-28-69	.66	.018
Yellow River	NW 1/4 NW 1/4 sec.28, T.24 N., R.3 E., at bridge on County Trunk N, 6.1 miles west of Arpin.	128	10-24-68	9.03	.070
			8-28-69	1.95	.015
Rocky Creek	NE 1/4 NW 1/4 sec.16, T.23 N., R.3 E., at bridge on country road, 3.2 miles northwest of Pittsville.	21.9	10-24-68	1.86	.085
			8-28-69	0	0
Yellow River	NE 1/4 NW 1/4 sec.34, T.23 N., R.3 E., at bridge on County Trunk E, at Pittsville.	186	10-24-68	15.8	.085
			8-28-69	1.49	.008
*Hemlock Creek	SE 1/4 SE 1/4 sec.22, T.23 N., R.4 E., at bridge on State Highways 13 and 73, 6.1 miles east of Pittsville.	47.3	✓10-24-68	2.45	.052
			8-28-69	.05	.001
Do	NE 1/4 SE 1/4 sec.5, T.22 N., R.4 E., at bridge on country road, 4.1 miles northeast of Dexterville.	74.9	10-24-68	4.72	.063
			8-28-69	.16	.002

* Also a low-flow partial-record station.
✓ Other discharge measurements available.
a Approximately.

STREAMS TRIBUTARY TO MISSISSIPPI RIVER

Grant, Platte, Galena, Pecatonica, and Sugar River basins low-flow investigations

A series of base-flow discharge measurements was made in the Grant, Platte, Galena, Pecatonica, and Sugar River basins and a few small tributaries to the Mississippi River during the period September 16-18. Weather records indicate that during the nine days preceding the low-flow investigation, a total of about 0.30 inch of precipitation fell on September 14 and 15. Based on recorded streamflow data in the area, this amount of rain was not considered to have an appreciable effect on the streams which were flowing in a high range of base flow during the low-flow investigation.

Stream	Location	Drainage area (sq mi)	Measured Discharge		
			Date	Cfs	Cfsm
Discharge measurements of Grant River and tributaries					
*Sandy Creek	SE 1/4 NW 1/4 sec.27, T.5 N., R.6 W., at County Trunk A, 2.1 miles southeast of Bagley.	18.9	≠9-16-69	3.55	0.188
Grant River	SW 1/4 SE 1/4 sec.31, T.5 N., R.3 W., at County Trunk A, 3.3 miles west of Lancaster.	49.9	9-17-69	18.9	.379
*Little Grant River	NW 1/4 SW 1/4 sec.36, T.5 N., R.4 W., at County Trunk A, 4.8 miles west of Lancaster.	46.6	≠9-17-69	17.6	.378
Blake Fork	SW 1/4 NW 1/4 sec.10, T.4 N., R.4 W., at country road, 3.8 miles northeast of Beetown.	39.1	9-17-69	8.22	.210
*Pigeon Creek	SW 1/4 SW 1/4 sec.15, T.4 N., R.3 W., at country road, 2.3 miles south of Lancaster.	6.81	≠9-18-69	3.26	.479
Do	SW 1/4 SW 1/4 sec.26, T.4 N., R.4 W., at country road, 3.6 miles east of Beetown.	20.6	9-17-69	6.38	.310
Grant River	NE 1/4 SE 1/4 sec.5, T.3 N., R.4 W., at County Trunk U, 2.5 miles southeast of Beetown.	190	9-16-69	63.9	.336
*Rattlesnake Creek	SE 1/4 SE 1/4 sec.35, T.4 N., R.5 W., at State Highway 81, 5.5 miles northeast of Cassville.	44.7	≠9-16-69	10.4	.233
*Boice Creek	SW 1/4 SW 1/4 sec.17, T.3 N., R.3 W., 600 ft downstream from County Trunk U, 3.6 miles northwest of Potosi.	26.2	≠9-17-69	10.0	.382
Discharge measurements of Platte River and tributaries					
Platte River	NE 1/4 SE 1/4 sec.13, T.5 N., R.2 W., at County Trunk E, 4.1 miles southeast of Stitzer.	26.7	9-18-69	11.5	.431
Crow Branch	NW 1/4 NW 1/4 sec.19, T.5 N., R.1 W., at country road, 4.4 miles southeast of Stitzer.	a8.5	9-18-69	2.93	.345
Leggett Creek	SW 1/4 SW 1/4 sec.13, T.5 N., R.2 W., at County Trunk E, 3.5 miles southeast of Stitzer.	18.4	9-18-69	4.36	.237
Platte River Tributary	NW 1/4 SE 1/4 sec.33, T.5 N., R.2 W., 0.1 mile downstream from bridge, 5.1 miles east of Lancaster.	10.2	9-18-69	2.61	.256
Bacon Branch	NE 1/4 SW 1/4 sec.2, T.4 N., R.2 W., at country road, 4.7 miles northeast of Ellenboro.	a7.4	9-18-69	1.49	.201
Platte River	NW 1/4 NW 1/4 sec.10, T.4 N., R.2 W., at County Trunk A, 5.5 miles east of Lancaster.	86.7	9-18-69	38.8	.448
Austin Branch	NW 1/4 SE 1/4 sec.17, T.4 W. R.2 W., at mouth, 3.7 miles northwest of Ellenboro.	a5.5	9-18-69	3.40	.618
McPherson Branch	SE 1/4 SE 1/4 sec.29, T.4 N., R.2 W., at country road, 0.8 mile west of Ellenboro.	a5.1	9-18-69	2.62	.514
*Little Platte River	SW 1/4 SE 1/4 sec.4, T.3 N., R.1 W., at State Highway 81, 1.9 miles northwest of Platteville.	54.0	≠9-17-69	17.7	.328
Young Branch	NW 1/4 SE 1/4 sec.6, T.3 N., R.1 W., at country road, 3.3 miles northwest of Platteville.	a2.3	9-17-69	.35	.152
Little Platte River	NE 1/4 SE 1/4 sec.11, T.2 N., R.2 W., at country road, 2.5 miles northeast of Dickeyville.	96.7	9-18-69	40.1	.415

* Also a low-flow partial-record station.
≠ Other discharge measurements available.
a Approximately.

STREAMS TRIBUTARY TO MISSISSIPPI RIVER

Grant, Platte, Galena, Pecatonica, and Sugar River basins low-flow investigations--Continued

Stream	Location	Drainage area (sq mi)	Measured Discharge		
			Date	Cfs	Cfsm
Discharge measurements of Platte River and tributaries--Continued					
*Blockhouse Creek	NE 1/4 SW 1/4 sec.11, T.2 N., R.2 W., at U.S. Highway 151, 2.2 miles north of Dickeyville.	36.3	≠9-18-69	15.8	0.435
Menominee River	NE 1/4 NW 1/4 sec.34, T.1 N., R.2 W., at country road, 2.7 miles west of Sinsinawa.	13.7	9-18-69	2.60	.190
Discharge measurements of Galena River and tributaries					
Galena River	SW 1/4 SE 1/4 sec.17, T.2 N., R.1 E., at country road, 1.6 miles upstream from Pats Creek and 3.0 miles northeast of Cuba City.	15.1	9-17-69	7.78	.515
*Pats Creek	SE 1/4 SW 1/4 sec.4, T.2 N., R.1 E., at State Highway 81, 0.7 mile southeast of Elk Grove.	8.49	≠9-17-69	3.07	.362
Galena River	SE 1/4 NE 1/4 sec.21, T.2 N., R.1 E., at County Tunk H, 3.6 miles northeast of Cuba City.	32.8	9-17-69	15.3	.466
Madden Branch	NW 1/4 SE 1/4 sec.22, T.2 N., R.1 E., at country road, 4.2 miles northeast of Cuba City.	21.7	9-17-69	8.36	.385
Galena River	SW 1/4 SE 1/4 sec.15, T.1 N., R.1 E., at country road, 2.0 miles southeast of Benton.	72.1	9-18-69	28.5	.395
Shullsburg Branch	NE 1/4 SE 1/4 sec.12, T.1 N., R.1 E., at country road, 1.9 miles east of Lead Mine.	21.9	9-17-69	7.66	.350
Do	NE 1/4 NE 1/4 sec.14, T.1 N., R.1 E., at State Highway 11, 1.0 mile southeast of Lead Mine.	31.2	≠9-18-69	23.1	.740
Discharge measurements of Pecatonica River and tributaries					
*Pecatonica River	NW 1/4 NE 1/4 sec.21, T.4 N., R.2 E., at U.S. Highway 151, 5.0 miles southwest of Mineral Point.	68.8	≠9-16-69	27.8	.404
Mineral Point Branch	NE 1/4 NE 1/4 sec.10, T.4 N., R.2 E., at country road, 3.1 miles southwest of Mineral Point.	31.5	9-16-69	12.7	.403
East Pecatonica River	NW 1/4 NW 1/4 sec.5, T.4 N., R.2 E., at country road, 3.5 miles southeast of Mifflin.	39.4	9-16-69	13.6	.345
*Rock Branch	NE 1/4 SE 1/4 sec.8, T.4 N., R.3 E., at State Highway 23, 2.3 miles southeast of Mineral Point.	4.83	≠9-16-69	1.96	.406
Bonner Branch	SW 1/4 SW 1/4 sec.8, T.3 N., R.3 E., at County Trunk C, 0.4 mile west of Calamine.	34.5	9-17-69	17.6	.510
Pecatonica River	SW 1/4 SW 1/4 sec.8, T.3 N., R.3 E., at County Trunk G, 0.3 mile west of Calamine.	230	9-17-69	93.1	.405
Otter Creek	NE 1/4 SW 1/4 sec.6, T.2 N., R.4 E., at State Highway 81, 2.7 miles east of Darlington.	49.2	≠9-17-69	19.8	.402
*Ames Branch	SW 1/4 SW 1/4 sec.12, T.2 N., R.3 E., at County Trunk K, 2.2 miles southeast of Darlington.	44.3	≠9-17-69	18.2	.411
Wolf Creek	NW 1/4 NE 1/4 sec.9, T.1 N., R.4 E., at State Highway 11, at Gratiot.	27.3	9-17-69	11.1	.406
*Spafford Creek	SW 1/4 NW 1/4 sec.15, T.1 N., R.5 E., at country road, 1.1 mile southwest of South Wayne.	47.2	≠9-17-69	16.5	.350
East Branch Pecatonica River	NW 1/4 NE 1/4 sec.28, T.5 N., R.5 E., at country road, 1.7 miles east of Hollandale.	52.0	9-16-69	21.9	.421
*Dodge Branch	SE 1/4 NE 1/4 sec.30, T.5 N., R.5 E., at State Highway 191, at Hollandale.	66.1	≠9-16-69	30.4	.460
Blue Mounds Branch	SE 1/4 NE 1/4 sec.26, T.5 N., R.5 E., at County Trunk FF, 3.8 miles east of Hollandale.	30.8	9-16-69	15.7	.510
Pleasant Valley Branch	SW 1/4 NW 1/4 sec.36, T.5 N., R.5 E., at country road, 4.1 miles southeast of Hollandale.	32.8	9-16-69	14.8	.451
Sawmill Creek	NE 1/4 SE 1/4 sec.2, T.3 N., R.5 E., at State Highway 78, 3.3 miles south of Blanchardville.	21.9	9-18-69	11.2	.511

* Also a low-flow partial-record station.
≠ Other discharge measurements available.

STREAMS TRIBUTARY TO MISSISSIPPI RIVER

Grant, Platte, Galena, Pecatonica, and Sugar River basins low-flow investigations--Continued

Stream	Location	Drainage area (sq mi)	Measured Discharge		
			Date	Cfs	Cfsm
Discharge measurements of Pecatonica River and tributaries--Continued					
Yellowstone River	SE 1/4 SE 1/4 sec.23, T.4 N., R.4 E., at country road, 3.6 miles southeast of Waldwick.	18.6	9-18-69	3.48	0.187
Dougherty Creek	SW 1/4 SW 1/4 sec.25, T.3 N., R.5 E., at State Highway 81, 0.6 mile southeast of Argyle.	26.7	9-18-69	12.5	.468
*Whiteside Creek	SE 1/4 SW 1/4 sec.3, T.2 N., R.5 E., at State Highway 78, 2.4 miles southwest of Argyle.	19.9	≠9-18-69	10.6	.533
Skinner Creek	NE 1/4 NW 1/4 sec.3, T.1 N., R.6 E., at country road, 1.4 miles northeast of Browntown.	47.1	9-17-69	21.5	.456
*Jordan Creek	SW 1/4 SE 1/4 sec.28, T.2 N., R.6 E., at County Trunk M, 2.3 miles north of Browntown.	14.4	≠9-17-69	6.45	.448
Honey Creek	SW 1/4 NE 1/4 sec.34, T.1 N., R.6 E., at County Trunk P, 1.7 miles east of Martintown.	32.7	≠9-17-69	10.8	.330
Richland Creek	NW 1/4 NW 1/4 sec.34, T.1 N., R.7 E., at County Trunk P, at Clarno.	38.9	9-17-69	12.7	.326
Discharge measurements of Sugar River and tributaries					
*Sugar River	NE 1/4 SE 1/4 sec.33, T.6 N., R.8 E., at State Highway 69, 2.9 miles south of Verona.	84.1	≠9-16-69	19.3	.229
West Branch Sugar River	NE 1/4 NE 1/4 sec.14, T.5 N., R.7 E., at State Highway 92, 2.9 miles southeast of Mount Vernon.	32.9	9-16-69	11.6	.352
Sugar River	SW 1/4 SW 1/4 sec.19, T.4 N., R.9 E., at County Trunk X, 2.3 miles southeast of Dayton.	217	9-17-69	92.3	.425
Gill Creek	NW 1/4 NW 1/4 sec.20, T.4 N., R.9 E., at country road, 2.5 miles southeast of Dayton.	a4.7	9-17-69	1.18	.251
*Allen Creek	SW 1/4 NE 1/4 sec.16, T.3 N., R.9 E., at County Trunk E, 1.9 miles north of Albany.	77.2	≠9-17-69	21.6	.280
Little Sugar River	SE 1/4 SW 1/4 sec.3, T.4 N., R.7 E., at County Trunk U, 2.3 miles northwest of New Glarus.	10.6	9-16-69	6.25	.590
Legler School Branch	SE 1/4 SW 1/4 sec.23, T.4 N., R.7 E., at State Highway 69, 0.8 mile south of New Glarus.	a4.0	9-16-69	1.87	.468
*Little Sugar River	SE 1/4 SE 1/4 sec.30, T.4 N., R.8 E., at country road, 2.9 miles southeast of New Glarus.	39.5	≠9-17-69	17.7	.448
Hefty Creek	SW 1/4 NE 1/4 sec.4, T.3 N., R.7 E., at country road, 4.2 miles northwest of Monticello.	11.2	9-16-69	5.30	.473
West Branch Little Sugar River	NW 1/4 SW 1/4 sec.7, T.3 N., R.8 E., at State Highways 39 and 69, at Monticello.	-	9-16-69	15.4	-
Burgy Creek	SW 1/4 SW 1/4 sec.19, T.3 N., R.8 E., at State Highway 69, 2.2 miles south of Monticello.	13.9	9-16-69	4.33	.312
Do	NE 1/4 NE 1/4 sec.20, T.3 N., R.8 E., at State Highway 39, 0.9 mile upstream from mouth, and 1.8 miles southeast of Monticello.	24.4	9-17-69	7.05	.289
Little Sugar River	SW 1/4 SE 1/4 sec.14, T.3 N., R.8 E., at country road, 4.3 miles southeast of Monticello.	-	9-17-69	48.9	-

* Also a low-flow partial-record station.
≠ Other discharge measurements available.
a Approximately.

STREAMS TRIBUTARY TO MISSISSIPPI RIVER

Rock River basin low-flow investigations

A series of base-flow discharge measurements was made on the major tributaries of the Rock River in Wisconsin during the periods October 17-21 and November 1. Weather records indicate that a few hundredths of an inch of rain fell in the area on October 17 and 18 during the period October 10-21. Up to an inch of precipitation fell on October 22-24 and a few hundredths of an inch between October 25 and November 1. Based on recorded streamflow data in the area and the weather data, the following discharge measurements are considered to represent high-range base-flow conditions. A previous low-flow investigation was made in the following areas during the 1968 water year.

Stream	Location	Drainage area (sq mi)	Measured Discharge		
			Date	Cfs	Cfsm
Discharge measurements of Bass Creek and other small Rock River tributaries					
Fisher Creek	NW 1/4 SE 1/4 sec.3, T.2 N., R.12 E., at bridge on County Trunk D, 2.3 miles southwest of Janesville.	3.93	≠10-21-68	0.22	0.056
Fisher Creek Tributary	NW 1/4 SE 1/4 sec.3, T.2 N., R.12 E., at bridge on County Trunk D, 2.2 miles southwest of Janesville.	1.62	≠10-21-68	.18	.111
Markham Creek	NW 1/4 SW 1/4 sec.10, T.2 N., R.12 E., at bridge on County Trunk D, 3.4 miles southwest of Janesville.	9.99	≠10-21-68	1.19	.119
Bass Creek	SW 1/4 NW 1/4 NW 1/4 sec.31, T.3 N., R.11 E., at bridge on country road, 2.2 miles northwest of Footville.	2.75	≠10-21-68	.19	.069
Bass Creek Tributary	NW 1/4 NW 1/4 NW 1/4 sec.31, T.3 N., R.11 E., at bridge on country road, 2.2 miles northwest of Footville.	2.53	≠10-21-68	.41	.162
Do	SW 1/4 SE 1/4 sec.30, T.3 N., R.11 E., at bridge on County Trunk B, 1.8 miles northwest of Footville.	2.50	≠10-21-68	0	0
Bass Creek	NW 1/4 SW 1/4 sec.4, T.2 N., R.11 E., at bridge on State Highway 11, 0.7 mile south of Footville.	14.0	≠10-21-68	6.16	.440
Stevens Creek	SE 1/4 SE 1/4 sec.27, T.3 N., R.11 E., at bridge on Mineral Point Road, 2.1 miles northeast of Footville.	7.32	≠10-21-68	.52	.070
Stevens Creek Tributary	SW 1/4 SW 1/4 sec.26, T.3 N., R.11 E., at bridge on Mineral Point Road, 2.2 miles northeast of Footville.	3.19	≠10-21-68	.51	.160
Stevens Creek	SE 1/4 SW 1/4 sec.2, T.2 N., R.11 E., at bridge on country road, 2.6 miles southeast of Footville.	13.9	≠10-21-68	2.49	.179
Bass Creek Tributary	NW 1/4 NE 1/4 sec.18, T.2 N., R.11 E., at bridge on State Highway 11, 2.6 miles southwest of Footville.	2.52	≠10-21-68	.51	.202
Do	SW 1/4 SE 1/4 sec.10, T.2 N., R.11 E., at bridge on country road, 0.6 mile west of Hanover.	14.7	≠10-21-68	2.63	.179
Bass Creek	NE 1/4 NW 1/4 sec.14, T.2 N., R.11 E., at bridge on County Trunk H, at Hanover.	47.0	≠10-21-68	13.9	.296
*Do	SE 1/4 NE 1/4 sec.24, T.2 N., R.11 E., at country road, 6.7 miles southwest of downtown Janesville.	58.1	≠10-21-68	18.2	.313
Do	SW 1/4 SE 1/4 sec.27, T.2 N., R.12 E., at Chicago and Northwestern Railroad crossing, 0.7 mile east of Afton.	65.7	≠10-21-68	20.8	.316
Rock River Tributary	SW 1/4 NW 1/4 sec.11, T.1 N., R.12 E., at bridge on Duggan at Walters Road, 4.0 miles north of Beloit.	13.2	≠10-21-68	1.47	.111
Discharge measurements of Turtle Creek and tributaries					
Turtle Creek	SE 1/4 NW 1/4 sec.14, T.3 N., R.15 E., at culvert on country road, 1/4 mile downstream from outlet of Turtle Lake, 6.4 miles north of Delavan.	1.46	≠10-17-68	0	0

* Also a low-flow partial-record station.
≠ Other discharge measurements available.

STREAMS TRIBUTARY TO MISSISSIPPI RIVER

Rock River basin low-flow investigations--Continued

Stream	Location	Drainage area (sq mi)	Measured Discharge		
			Date	Cfs	Cfsm
	Discharge measurements of Turtle Creek and tributaries--Continued				
Turtle Creek	NW 1/4 NE 1/4 sec.35, T.3 N., R.15 E., at bridge on Island Road, 4.5 miles northwest of Delavan.	14.3	ƒ10-17-68	3.39	0.237
Turtle Creek Tributary	NW 1/4 SW 1/4 sec.31, T.3 N., R.16 E., at bridge on County Trunk P, 0.45 mile upstream from mouth, 3.0 miles north of Delavan.	2.58	ƒ10-17-68	0	0
Turtle Creek	NE 1/4 NW 1/4 sec.18, T.2 N., R.16 E., at bridge on town road, at outlet of Comus Lake at Delavan	33.1	ƒ10-17-68 10-17-68	5.99 6.23	.181 .188
Jackson Creek	NE 1/4 SE 1/4 sec.12, T.2 N., R.16 E., at bridge on State Highway 67, 1.9 miles south of Elkhorn.	9.59	ƒ10-17-68	.62	.065
Delavan Lake Tributary	SE 1/4 SE 1/4 sec.32, T.2 N., R.16 E., at culvert on Shore Drive, 3.5 miles south of Delavan.	9.54	ƒ10-17-68	.15	.016
Delavan Lake Outlet	SW 1/4 SE 1/4 sec.20, T.2 N., R.16 E., at bridge on country road, 1.4 miles southeast of Delavan.	40.6	ƒ10-17-68	1.67	.041
Do	SW 1/4 NW 1/4 sec.18, T.2 N., R.16 E., at bridge on County Trunk P, at Delavan.	47.4	ƒ10-21-68	2.41	.051
Turtle Creek	SE 1/4 SE 1/4 sec.24, T.2 N., R.14 E., at bridge on country road, 2.3 miles northwest of Allens Grove.	113	ƒ10-17-68	29.8	.264
Little Turtle Creek	SE 1/4 SE 1/4 sec.26, T.1 N., R.14 E., at bridge on County Trunk W, 5.4 miles south of Allens Grove.	7.43	ƒ10-17-68	1.31	.176
Do	SE 1/4 SE 1/4 sec.14, T.1 N., R.14 E., at bridge on County Trunk J, 3.5 miles southwest of Allens Grove.	18.4	ƒ10-17-68	5.06	.275
Ladd Creek	SW 1/4 SE 1/4 sec.17, T.1 N., R.15 E., at bridge on Salt Box Road, 3.0 miles south of Allens Grove.	6.33	ƒ10-17-68	.63	.100
Do	NE 1/4 SW 1/4 Sec.7, T.1 N., R.15 E., about 70 ft upstream from mouth, 1.9 miles south of Allens Grove.	12.1	ƒ10-17-68	2.10	.174
Little Turtle Creek Tributary	SE 1/4 SE 1/4 sec.1, T.1 N., R.14 E., at culvert on County Line Road, 1.3 miles southwest of Allens Grove.	6.04	ƒ10-17-68	.97	.160
*Little Turtle Creek	SE 1/4 NE 1/4 sec.6, T.1 N., R.15 E., at country road, 0.2 mile south of Allens Grove.	41.8	ƒ10-17-68	8.82	.211
Little Turtle Creek Tributary	NE 1/4 SE 1/4 sec.32, T.2 N., R.15 E., at culvert on State Highway 15, 1.2 miles east of Allens Grove.	11.0	ƒ10-17-68	1.69	.154
Little Turtle Creek	SE 1/4 SW 1/4 sec.25, T.2 N., R.14 E., just upstream from mouth, 1.8 miles northwest of Allens Grove.	68.1	ƒ10-17-68	10.8	.158
Spring Brook	NE 1/4 SW 1/4 sec.27, T.2 N., R.14 E., at bridge on north-south country road, 3.5 miles northeast of Clinton.	9.29	ƒ10-17-68	.46	.050
Turtle Creek Tributary	SE 1/4 SW 1/4 sec.35, T.2 N., R.13 E., at bridge on country road, 0.3 mile upstream from mouth, 1.1 miles northeast of Shopiere.	7.28	ƒ10-17-68	0	0
Do	SW 1/4 NE 1/4 sec.2, T.1 N., R.13 E., at bridge on County Trunk J, 0.9 mile northeast of Shopiere.	3.67	ƒ10-17-68	.35	.095
Turtle Creek	NE 1/4 NW 1/4 sec.9, T.1 N., R.13 E., at bridge on Lathers Road, 1.3 miles west of Shopiere.	223	ƒ10-17-68	43.4	.195
Do	SW 1/4 SW 1/4 sec.30, T.1 N., R.13 E., at bridge on State Highway 15, at Beloit.	233	ƒ10-17-68	45.0	.202
Spring Brook	SW 1/4 NW 1/4 sec.31, T.1 N., R.13 E., at bridge on country road, 0.3 mile upstream from mouth, at Beloit.	11.6	ƒ10-17-68	.23	.020

* Also a low-flow partial-record station.
ƒ Other discharge measurements available.

STREAMS TRIBUTARY TO MISSISSIPPI RIVER

Rock River basin low-flow investigations--Continued

Stream	Location	Drainage area (sq mi)	Measured Discharge		
			Date	Cfs	Cfsm
Discharge measurements of Honey Creek and tributaries					
Honey Creek	SW 1/4 SE 1/4 sec.33, T.2 N., R.7 E., just upstream from sewage disposal plant outlet, on south side of State Highway 11, 1.7 miles west of Monroe.	4.75	≠10-21-68	2.63	0.554
Do	SW 1/4 SE 1/4 sec.33, T.2 N., R.7 E., just downstream from sewage disposal plant outlet, on south side of State Highway 11, 1.7 miles west of Monroe.	4.75	≠10-21-68	5.84	1.229
Do	SE 1/4 SE 1/4 sec.8, T.1 N., R.7 E., at bridge on country road, 3 miles southwest of Monroe.	8.55	≠10-21-68	6.71	.785
Honey Creek Tributary	NW 1/4 NW 1/4 sec.16, T.1 N., R.7 E., at bridge on country road, 3 miles southwest of Monroe.	3.45	≠10-21-68	.64	.186
Spring Creek	NE 1/4 SE 1/4 sec.25, T.1 N., R.6 E., at bridge on County Trunk Hk, 6 miles southwest of Monroe.	4.61	≠10-21-68	1.09	.236
Honey Creek	SW 1/4 NW 1/4 sec.25, T.1 N., R.6 E., 0.1 mile east of bridge on country road, downstream from mouth of Spring Creek, upstream from mouth at small unnamed tributary, 6.2 miles southwest of Monroe.	22.4	≠11- 1-68	7.82	.350
Whitehead Creek	SE 1/4 SE 1/4 sec.23, T.1 N., R.6 E., near bridge on country road, just downstream from unnamed tributary, 6 miles southwest of Monroe.	3.63	10-21-68	.55	.152
Honey Creek	SW 1/4 SW 1/4 sec.23, T.1 N., R.6 E., at bridge on country road, 7 miles southwest of Monroe.	29.7	≠11- 1-68	12.7	.428
Honey Creek Tributary	SW 1/4 SW 1/4 sec.23, T.1 N., R.6 E., at bridge on country road, 0.1 mile upstream from mouth, 7 miles southwest of Monroe.	.86	≠11- 1-68	.08	.093
Honey Creek	South line of sec.34, T.1 N., R.6 E., at bridge on State Line Road, 1.9 miles east of Martintown.	34.2	≠11- 1-68	12.8	.374
Discharge measurements of Richland Creek and tributaries					
Richland Creek	SE 1/4 SW 1/4 sec.31, T.2 N., R.8 E., 0.1 mile upstream from bridge on State Highway 11 and 81, just upstream from mouth of unnamed tributary, 1.5 miles east of Monroe.	2.02	≠11- 1- 68	.54	.267
Richland Creek Tributary	SE 1/4 SW 1/4 sec.31, T.2 N., R.8 E., 0.1 mile upstream from bridge on State Highway 11 and 81, just upstream from mouth, 1.5 miles east of Monroe.	1.26	≠11- 1-68	.23	.183
Richland Creek	SE 1/4 SW 1/4 sec.8, T.1 N., R.8 E., at bridge on country road, 3.5 miles southeast of Monroe.	10.7	≠11- 1-68	4.30	.402
Richland Creek Tributary	SE 1/4 SW 1/4 sec.17, T.1 N., R.8 E., at bridge on County Trunk K, 4.2 miles southeast of Monroe.	2.97	≠11- 1-68	.85	.286
Twin Grove Branch	NE 1/4 NW 1/4 sec.29, T.1 N., R.8 E., at bridge on County Trunk P, 5.1 miles southeast of Monroe.	6.41	≠11- 1-68	2.57	.401
Richland Creek	SW 1/4 SW 1/4 sec.26, T.1 N., R.7 E., just upstream from mouth of Little Richland Creek, 5.4 miles south of Monroe.	28.2	≠11- 1-68	11.0	.390
Little Richland Creek	SW 1/4 SW 1/4 sec.14, T.1 N., R.7 E., at bridge on country road, 3.5 miles south of Monroe.	5.63	≠11- 1-68	1.42	.252
Do	SW 1/4 SW 1/4 sec.26, T.1 N., R.7 E., just upstream from mouth, 5.4 miles south of Monroe.	9.87	≠11- 1-68	3.61	.366

≠ Other discharge measurements available.

STREAMS TRIBUTARY TO MISSISSIPPI RIVER

Rock River basin low-flow investigations--Continued

Stream	Location	Drainage area (sq mi)	Measured Discharge		
			Date	Cfs	Cfsm
Discharge measurements of Richland Creek and tributaries--Continued					
Richland Creek	SW 1/4 SE 1/4 sec.34, T.1 N., R.7 E., 0.1 mile upstream from bridge on country road at Illinois state line, 5.7 miles south of Monroe.	42.0	≠11- 1-68	15.8	0.377
East Branch Richland Creek	SE 1/4 SE 1/4 sec.36, T.1 N., R.7 E., at bridge on country road, 5.6 miles south of Monroe.	4.08	≠11- 1-68	1.43	.351
Discharge measurements of Sugar River and tributaries					
Searles Creek	SE 1/4 SE 1/4 sec.11, T.2 N., R.8 E., at bridge on County Trunk S, 4.8 miles north of Juda.	5.55	≠10-18-68	.71	.128
Do	NE 1/4 SE 1/4 sec.17, T.2 N., R.9 E., at bridge on County Trunk F, 4.0 miles northwest of Brodhead.	18.5	10-18-68	1.79	.097
Norwegian Creek	SE 1/4 SE 1/4 sec.29, T.3 N., R.10 E., at bridge on County Trunk B, 5.2 miles northeast of Brodhead.	4.32	≠10-18-68	.33	.076
Do	SW 1/4 NW 1/4 sec.12, T.2 N., R.9 E., at bridge on County Trunk E, 3.8 miles southeast of Albany.	15.1	10-18-68	3.99	.264
Sylvester Creek	SW 1/4 NE 1/4 sec.20, T.2 N., R.8 E., at bridge on country road near intersection with State Highway 59, 4 miles northeast of Monroe.	5.99	≠10-18-68	3.46	.578
Do	SE 1/4 SE 1/4 sec.23, T.2 N., R.8 E., at bridge on County Trunk S, 2.6 miles north of Juda.	15.3	≠10-18-68	7.01	.458
Juda Branch	SE 1/4 NE 1/4 sec.2, T.1 N., R.8 E., at bridge on County Trunk S, 0.2 mile south of Juda.	4.73	≠10-18-68	2.03	.429
Riley School Branch	SW 1/4 NW 1/4 sec.6, T.1 N., R.9 E., at bridge on State Highway 11 and 81, 1.0 mile east of Juda.	4.91	≠10-18-68	.68	.138
Juda Branch	NW 1/4 SW 1/4 sec.32, T.2 N., R.9 E., at bridge on County Trunk OK, 2.4 miles northeast of Juda.	16.8	≠10-18-68	5.67	.338
*Sylvester Creek	NE 1/4 SW 1/4 sec.34, T.2 N., R.9 E., at country road, 2.4 miles southwest of Brodhead.	44.9	≠10-18-68	18.7	.416
OK Creek	NE 1/4 SW 1/4 sec.11, T.1 N., R.9 E., at bridge on country road, 3.8 miles south of Brodhead.	8.37	≠10-18-68	2.33	.278
Spring Creek	SE 1/4 SE 1/4 sec.19, T.1 N., R.9 E., 200 ft downstream from bridge on County Trunk OK, 70 ft downstream from mouth of Oakley Branch, 7.5 miles southwest of Brodhead.	11.5	≠10-18-68	5.25	.456
Do	SE 1/4 SW 1/4 sec.11, T.1 N., R.9 E., at bridge on country road, 4.2 miles south of Brodhead.	18.1	≠10-18-68	8.93	.493
Taylor Creek	SE 1/4 SW 1/4 sec.4, T.2 N., R.10 E., at culvert on country road, 4.1 miles northeast of Brodhead.	2.99	≠10-18-68	.45	.150
Swan Creek	SE 1/4 SE 1/4 sec.17, T.2 N., R.10 E., at bridge on State Highway 11, 2.4 miles east of Brodhead.	8.71	≠10-18-68	1.41	.162
*Taylor Creek	NE 1/4 NW 1/4 sec.31, T.2 N., R.10 E., at country road, 1.7 miles southeast of Brodhead.	26.5	≠10-18-68	7.98	.301
Willow Creek	SW 1/4 NE 1/4 sec.11, T.1 N., R.10 E., just upstream from mouth of unnamed tributary, 4.5 miles south of Orfordville.	8.85	≠10-18-68	1.76	.199
Willow Creek Tributary	SW 1/4 NE 1/4 sec.11, T.1 N., R.10 E., at bridge on Skinner Road, 4.5 miles south of Orfordville.	6.94	≠10-18-68	1.06	.153
Willow Creek	NE 1/4 NE 1/4 sec.7, T.1 N., R.10 E., at bridge on State Highway 81, 3.6 miles south of Brodhead.	22.8	≠10-18-68	4.97	.218

* Also a low-flow partial-record station.
≠ Other discharge measurements available.

STREAMS TRIBUTARY TO MISSISSIPPI RIVER

Rock River basin low-flow investigations--Continued

Stream	Location	Drainage area (sq mi)	Measured Discharge		
			Date	Cfs	Cfsm
Discharge measurements of Sugar River and tributaries--Continued					
Taylor Creek	SW 1/4 SE 1/4 sec.7, T.1 N., R.10 E., at bridge on Smith Road, 1.0 mile upstream from mouth, 4.3 miles south of Brodhead.	53.6	≠10-18-68	16.8	0.313
Sugar River Tributary	SE 1/4 NE 1/4 sec.19, T.1 N., R.10 E., at bridge on country road, 5.8 miles south of Brodhead.	3.88	≠10-18-68	.17	.044
Sugar River	NW 1/4 SW 1/4 sec.27, T.1 N., R.10 E., at bridge on Nelson Road, 7.7 miles southeast of Brodhead.	671	≠10-18-68	288	.429
Sugar River Tributary	NW 1/4 SW 1/4 sec.34, T.1 N., R.10 E., at bridge on Nelson Road, 8.7 miles southeast of Brodhead.	14.3	≠10-18-68	4.32	.302
Sugar River	SW 1/4 NE 1/4 sec.32, T.29 N., R.11 E., Illinois, at bridge on Yale Bridge Road in Illinois, 11.9 miles southeast of Brodhead.	705	≠10-18-68	320	.454
Discharge measurement of Raccoon Creek and tributaries					
Raccoon Creek	NW 1/4 SW 1/4 sec.4, T.1 N., R.11 E., at bridge on Luther Valley Road, 4.4 miles southeast of Orfordville.	6.02	≠10-18-68	.34	.056
Do	SW 1/4 SE 1/4 sec.8, T.1 N., R.11 E., at bridge on Cleopas Road, 5.3 miles south of Orfordville.	8.01	≠10-18-68	2.23	.278
Do	NW 1/4 NE 1/4 sec.28, T.1 N., R.11 E., at bridge on State Highway 81, 7.5 miles southeast of Orfordville.	12.1	≠10-18-68	4.01	.331
Raccoon Creek Tributary	NW 1/4 NE 1/4 sec.27, T.1 N., R.11 E., at bridge on State Highway 81, 6.3 miles west of intersection SH 81-213 in Beloit.	3.26	≠10-18-68	.36	.110
Raccoon Creek	SE 1/4 NW 1/4 sec.35, T.1 N., R.11 E., at bridge on St. Lawrence Street, 5.4 miles west of intersection SH 81-213 in Beloit.	24.9	≠10-18-68	7.11	.286
East Fork Raccoon Creek	SE 1/4 SE 1/4 sec.12, T.1 N., R.11 E., at bridge on country road, 5.0 miles northwest of intersection SH 81-213 in Beloit.	3.18	≠10-18-68	.69	.217
East Fork Raccoon Creek Tributary	SE 1/4 SE 1/4 sec.19, T.1 N., R.12 E., at bridge on country road, 3.0 miles northwest of intersection SH 81-213 in Beloit.	2.36	≠10-18-68	.23	.097
East Fork Raccoon Creek	SE 1/4 SW 1/4 sec.30, T.1 N., R.12 E., at bridge on State Highway 81, 3.3 miles west of SH 81-213 intersection in Beloit.	10.7	≠10-18-68	4.35	.406
East Fork Raccoon Creek Tributary	SE 1/4 SE 1/4 sec.20, T.1 N., R.12 E., at bridge on country road, 2.3 miles northwest of SH 81 and 213 intersection in Beloit.	3.01	≠10-18-68	.85	.282
Do	On common boundary of secs.30 and 31, T.1 N., R.12 E., at culvert on State Highway 81, 2.9 miles west of Beloit.	4.67	≠10- 8-68	2.21	.473
East Fork Raccoon Creek	SW 1/4 NE 1/4 sec.31, T.1 N., R.12 E., at bridge on country road, 4.3 miles west of Rock River in Beloit.	16.3	≠10-18-68	6.78	.416

≠ Other discharge measurements available.

GPO 922-131-16

PART 2. WATER QUALITY RECORDS

4-0637. POPPLE RIVER NEAR FENCE, WIS.
(Hydrologic bench-mark station)

LOCATION.--Lat 45°45'49", long 88°27'47", temperature recorder at gaging station on left bank, 20 feet upstream from bridge on U.S. Forest Service Road 2159, 1.8 miles downstream from Mud Creek, 2.6 miles northwest of Fence, Florence County, and 11.5 miles upstream from mouth.
DRAINAGE AREA.--131 square miles.
PERIOD OF RECORD.--Water temperatures: June 1964 to current year.
EXTREMES.--Current year: Water temperatures: Maximum, 26°C June 10; minimum, freezing point on many days during November to April.
Period of record: Water temperatures: Maximum 28°C July 24, 1964; minimum, freezing point on many days during winter months.
REMARKS.-- No temperature record Apr. 3-7. Samples for chemical analysis are collected monthly.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	DIS-CHARGE (CFS)	SILICA (SIO2) (MG/L)	IRON (FE) (UG/L)	MAN-GANESE (MN) (UG/L)	CAL-CIUM (CA) (MG/L)	MAG-NE-SIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	ALKA-LINITY AS CACO3 (MG/L)	SULFATE (SO4) (MG/L)
OCT.												
16...	137	10	680	120	16	7.2	1.2	.6	75	0	62	9.6
NOV.												
12...	104	10	760	90	18	7.8	1.2	.5	81	0	66	10
DEC.												
17...	110	12	320	100	16	8.2	1.4	.6	82	0	67	6.8
JAN.												
21...	83	--	--	--	--	--	--	--	--	--	--	--
22...	92	12	480	40	17	9.8	1.7	.9	94	0	77	6.8
FEB.												
19...	74	13	570	110	19	9.1	1.6	.7	98	0	80	7.6
MAR.												
11...	65	13	740	150	30	5.1	1.5	.7	107	0	88	12
APR.												
15...	715	6.1	80	10	7.5	2.5	.9	.6	27	0	22	6.4
MAY												
14...	152	6.1	340	60	12	6.6	1.2	.6	62	0	51	5.8
JUNE												
18...	138	5.8	--	--	15	7.5	1.3	.4	66	0	54	15
JULY												
16...	72	--	--	--	--	--	--	--	--	--	--	--
30...	80	11	--	--	22	10	1.7	.4	110	0	90	5.2
AUG.												
19...	35	12	40	130	26	12	1.6	.9	137	0	112	8.4
SEPT.												
18...	40	11	220	20	26	14	1.6	1.0	140	0	115	8.0

DATE	CHLO-RIDE (CL) (MG/L)	FLUO-RIDE (F) (MG/L)	NITRATE (NO3) (MG/L)	TOTAL PHOS-PHORUS (PO4) (MG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	PERCENT SODIUM	SODIUM AD-SORP-TION RATIO
OCT.												
16...	.5	.3	.6	.12	117	83	.16	43.3	70	8	4	.1
NOV.												
12...	1.0	.3	.6	.08	107	89	.15	30.0	77	10	3	.1
DEC.												
17...	.5	.2	1.4	.00	96	87	.13	28.5	74	6	4	.1
JAN.												
21...	--	--	--	--	--	--	--	--	--	--	--	--
22...	1.0	.2	1.6	.01	115	145	.16	28.6	83	6	4	.1
FEB.												
19...	2.0	.1	.9	.18	101	102	.14	20.3	85	4	4	.1
MAR.												
11...	1.0	.3	.9	.06	108	--	.15	19.0	96	8	3	.1
APR.												
15...	2.5	.2	.7	.00	58	40	.08	112	29	7	6	.1
MAY												
14...	1.0	.2	.4	.06	68	64	.09	27.9	57	6	4	.1
JUNE												
18...	3.0	.2	.8	.06	70	81	.10	26.1	68	14	4	.1
JULY												
16...	--	--	--	--	--	--	--	--	--	--	--	--
30...	.6	.2	.6	.05	122	106	.17	26.4	96	6	4	.1
AUG.												
19...	1.7	.2	.4	.10	146	130	.20	13.8	114	2	3	.1
SEPT.												
18...	1.0	.2	.0	.02	123	132	.17	13.3	122	8	3	.1

4-0637. POPPLE RIVER NEAR FENCE, WIS.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	BIOCHEMICAL OXYGEN DEMAND (MG/L)	FECAL COLIFORM (COLONIES PER 100 ML)	COLIFORM (COLONIES PER 100 ML)	TOTAL ORGANIC CARBON (C) (MG/L)	ALDRIN (UG/L)	ALDRIN IN BOTTOM DEPOSITS (UG/KG)
OCT.												
16...	--	--	--	--	--	--	--	--	--	22	.00	.00
16...	129	7.1	16	150	--	--	--	--	--	--	--	--
16...	130	7.4	16	--	8.1	81	1.0	--	1400	--	--	--
NOV.												
12...	143	7.4	1	110	--	--	--	--	--	--	--	--
12...	150	7.6	1	--	8.4	59	1.0	5	420	--	--	--
DEC.												
17...	146	7.9	0	80	--	--	--	--	--	--	--	--
17...	145	7.0	0	--	12.0	82	1.0	5	150	--	--	--
JAN.												
21...	180	7.2	0	--	11.2	77	1.0	5	50	--	--	--
22...	167	7.3	0	60	--	--	--	--	--	--	--	--
FEB.												
19...	170	7.3	0	35	12.6	86	--	--	--	--	--	--
19...	180	7.2	0	--	--	86	--	--	--	--	--	--
MAR.												
02...	--	7.2	--	--	--	--	4.9	10	60	--	--	--
11...	188	7.4	0	40	--	--	--	--	--	--	--	--
11...	--	7.4	0	--	12.2	84	1.5	5	160	--	--	--
APR.												
14...	--	6.9	--	--	--	--	9.2	5	280	--	.00	--
14...	--	--	--	--	--	--	9.2	5	280	--	--	--
15...	61	6.9	3	80	--	--	--	--	--	--	--	--
MAY												
14...	112	7.3	11	80	--	--	--	--	--	--	--	--
14...	105	7.2	11	--	10.4	94	1.5	5	250	--	--	--
JUNE												
18...	113	7.4	14	100	--	--	--	--	--	--	--	--
18...	100	7.2	14	--	9.2	88	1.5	10	560	--	--	--
JULY												
16...	200	7.8	20	--	9.0	98	1.5	10	270	--	--	--
30...	190	7.7	21	60	--	--	--	--	--	--	--	--
AUG.												
19...	230	7.8	18	40	--	--	--	--	--	--	--	--
19...	180	8.0	--	--	8.8	--	1.5	45	230	--	--	--
SEPT.												
18...	250	8.0	13	--	12.9	--	2.1	40	2600	--	--	--
18...	232	7.8	--	15	--	--	--	--	--	--	--	--

DATE	DDD (UG/L)	DDD IN BOTTOM DEPOSITS (UG/KG)	DDE (UG/L)	DDE IN BOTTOM DEPOSITS (UG/KG)	DDT (UG/L)	DDT IN BOTTOM DEPOSITS (UG/KG)	DIELDRIN (UG/L)	DIELDRIN IN BOTTOM DEPOSITS (UG/KG)	ENDRIN (UG/L)	ENDRIN IN BOTTOM DEPOSITS (UG/KG)	HEPTACHLOR (UG/L)	HEPTACHLOR IN BOTTOM DEPOSITS (UG/KG)
OCT.												
16...	.00	2.2	.00	.00	.00	1.0	.00	.00	.00	.00	.00	.00
APR.												
14...	.00	--	.00	--	.00	--	.00	--	.00	--	.00	--

DATE	LINDANE (UG/L)	LINDANE IN BOTTOM DEPOSITS (UG/KG)	2,4-D (UG/L)	2,4,5-T (UG/L)	SILVEX (UG/L)	DISSOLVED ALPHA (UG/L)	DISSOLVED BETA (PC/L)	SUSPENDED ALPHA (UG/L)	SUSPENDED BETA (PC/L)	DISSOLVED RADIUM 226 (RA) (PC/L)	DISSOLVED NATURAL URANIUM (U) (UG/L)
OCT.											
16...	.00	.00	.00	.00	.00	3.2	3.6	1.3	1.4	.03	.3
APR.											
14...	.00	--	.00	.00	.00	.70	3.2	.40	.40	.04	.02
AUG.											
19...	--	--	--	--	--	2.6	3.3	.40	.40	.03	.01

STREAMS TRIBUTARY TO LAKE MICHIGAN--Continued

4-0637. POPPLE RIVER NEAR FENCE, WIS.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(CONTINUOUS ETHYL ALCOHOL-ACTUATED THERMOGRAPH)

	DAY																													AVER-
MONTH	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	AGE
OCTOBER																																
MAXIMUM	16	16	14	11	9	8	10	11	11	11	11	11	12	14	16	18	16	14	12	9	9	8	8	7	5	6	6	5	4	3	3	10
MINIMUM	13	14	11	9	8	8	8	11	11	10	9	9	11	12	14	16	14	12	9	8	7	8	6	5	3	4	5	4	3	2	2	9
NOVEMBER																																
MAXIMUM	4	5	4	4	4	3	3	2	2	2	1	1	1	2	2	2	0	1	0	0	0	1	1	1	1	1	1	0	0	0	--	2
MINIMUM	3	4	4	3	3	3	2	2	1	1	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	--	1
DECEMBER																																
MAXIMUM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MINIMUM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
JANUARY																																
MAXIMUM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MINIMUM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FEBRUARY																																
MAXIMUM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	--	--	--	0
MINIMUM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	--	--	--	0
MARCH																																
MAXIMUM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	--	0
MINIMUM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	--	0
APRIL																																
MAXIMUM	0	0	--	--	--	--	1	1	1	2	3	3	4	6	5	7	7	7	7	7	7	6	6	7	9	9	8	4	6	8	--	5
MINIMUM	0	0	--	--	--	--	0	0	1	1	1	2	2	3	5	4	6	4	4	6	6	3	3	4	6	8	4	3	2	4	--	3
MAY																																
MAXIMUM	8	9	11	12	12	12	13	12	9	8	7	6	11	13	13	18	16	13	13	14	13	13	12	14	16	15	19	24	23	23	22	14
MINIMUM	7	6	8	9	9	11	10	9	8	7	5	5	6	8	12	11	12	10	11	12	11	10	11	11	12	12	14	18	21	18	17	11
JUNE																																
MAXIMUM	21	18	14	12	12	20	21	23	25	26	24	17	16	15	15	16	17	16	16	16	15	13	12	14	13	16	17	17	16	17	--	17
MINIMUM	18	14	12	10	10	12	13	14	14	16	17	13	12	13	13	13	15	14	13	13	13	12	11	12	13	13	15	16	14	15	--	13
JULY																																
MAXIMUM	18	18	18	18	17	17	19	18	17	22	23	25	26	26	24	25	25	24	24	23	23	23	23	23	22	22	22	21	22	23	22	22
MINIMUM	14	16	16	16	17	14	14	16	15	16	18	20	21	22	21	22	21	21	21	20	19	19	21	19	19	19	19	17	18	19	21	18
AUGUST																																
MAXIMUM	22	22	22	22	22	22	22	22	21	22	22	22	22	24	23	24	23	23	22	19	20	21	22	23	22	22	22	22	23	24	24	22
MINIMUM	19	18	18	19	21	19	21	18	18	18	18	19	21	21	20	21	21	21	18	16	16	17	18	19	19	19	18	19	21	21	20	19
SEPTEMBER																																
MAXIMUM	21	21	21	20	20	21	21	17	15	16	17	18	19	19	21	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MINIMUM	18	18	17	18	19	18	17	14	12	12	14	14	16	18	17	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

INSTANTANEOUS SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	TIME	DISCHARGE (CFS)	CONCENTRATION (MG/L)	SUSPENDED SEDIMENT DISCHARGE (TONS/DAY)	DATE	TIME	DISCHARGE (CFS)	CONCENTRATION (MG/L)	SUSPENDED SEDIMENT DISCHARGE (TONS/DAY)
Nov. 12, 1968	1230	103	3	1	Apr. 15, 1969	0800	718	8	16
Dec. 17, 1968	1300	114	7	2	May 14, 1969	1100	150	0	0
Jan. 22, 1969	1000	99	2	1	June 18, 1969	1230	123	6	2
Feb. 19, 1969	1520	99	2	1	July 16, 1969	1530	74	4	1
Mar. 12, 1969	0800	101	1	T	Sept.16, 1969	1600	43	4	T

T Less than 0.50 ton.

PERIODIC DETERMINATION OF SUSPENDED SEDIMENT AND PARTICLE SIZE, WATER YEARS OCTOBER 1967 TO SEPTEMBER 1969
(METHODS OF ANALYSIS: B, BOTTOM WITHDRAWAL TUBE; C, CHEMICALLY DISPERSED; N, IN NATIVE WATER; P, PIPET; S, SIEVE; V, VISUAL ACCUMULATION TUBE; W, IN DISTILLED WATER)

DATE	TIME	WATER TEMPERATURE (°C)	DISCHARGE (CFS)	CONCENTRATION (MG/L)	SUSPENDED SEDIMENT DISCHARGE (TONS/DAY)	PARTICLE SIZE PERCENT FINER THAN THE SIZE (IN MILLIMETERS) INDICATED											METHOD OF ANALYSIS
						.002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	
Apr. 27, 1968	1540	7	319	2	2	-	-	5	28	47	64	82	100	-	-	-	SWBC
Apr. 14, 1969	1450	6	-	8	16	27	33	39	48	60	68	86	93	97	100	-	SWBC

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SITES

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	DIS-CHARGE (CFS)	SILICA (SIO2) (MG/L)	IRON (FE) (UG/L)	MAN-GANESE (MN) (UG/L)	CAL-CIUM (CA) (MG/L)	MAG-NE-SIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	ALKA-LINITY AS CACO3 (MG/L)	SULFATE (SO4) (MG/L)
STREAMS TRIBUTARY TO LAKE MICHIGAN												
04066500 - PIKE RIVER AT AMBERG, WIS. (LAT 45 29 46 LONG 087 59 04)												
AUG., 1969 12...	--	--	--	--	--	--	--	--	144	0	118	8.8
04067700 - PESHTIGO RIVER AT ARGONNE, WIS. (LAT 45 40 22 LONG 088 49 07)												
AUG., 1969 13...	--	--	--	--	--	--	--	--	100	0	82	5.8
04067870 - PESHTIGO RIVER NR. HOMESTEAD LAKE, WIS. (LAT 45 27 58 LONG 088 20 00)												
AUG., 1969 14...	139	--	--	--	--	--	--	--	136	0	112	10
04067900 - RAT RIVER AT BLACKWELL, WIS. (LAT 45 29 00 LONG 088 29 50)												
AUG., 1969 13...	--	--	--	--	--	--	--	--	124	0	102	6.0
04069290 - MIDDLE INLET AT MIDDLE INLET, WIS. (LAT 45 17 38 LONG 087 56 16)												
AUG., 1969 14...	33	--	--	--	--	--	--	--	192	0	157	7.6
04069350 - SOUTH BRANCH BEAVER CREEK NEAR BEAVER, WIS. (LAT 45 07 50 LONG 088 01 02)												
AUG., 1969 14...	19	--	--	--	--	--	--	--	248	0	203	10
04070760 - SOUTH BRANCH OCONTO RIVER NEAR HAYES, WIS. (LAT 45 01 45 LONG 088 26 29)												
AUG., 1969 13...	150	--	--	--	--	--	--	--	154	0	126	8.6
04070900 - OCONTO RIVER NEAR UNDERHILL, WIS (LAT 45 54 57 LONG 088 24 33)												
AUG., 1969 14...	--	--	--	--	--	--	--	--	148	0	121	9.2
04072000 - SUAMICO RIVER AT SUAMICO, WIS. (LAT 44 37 55 LONG 088 04 00)												
AUG., 1969 12...	3.4	--	--	--	--	--	--	--	234	0	192	30
04072100 - DUCK CREEK AT GREEN BAY, WIS. (LAT 44 31 59 LONG 088 07 46)												
AUG., 1969 12...	--	--	--	--	--	--	--	--	296	0	243	57

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SITES--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969--Continued

DATE	CHLORIDE (CL) (MG/L)	FLUORIDE (F) (MG/L)	NITRATE (NO3) (MG/L)	TOTAL PHOSPHORUS (PO4) (MG/L)	DISSOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	DISSOLVED SOLIDS (TONS PER AC-FT)	DISSOLVED SOLIDS (TONS PER DAY)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	PERCENT SODIUM	SODIUM ADSORPTION RATIO
STREAMS TRIBUTARY TO LAKE MICHIGAN												
04066500 - PIKE RIVER AT AMBERG, WIS. (LAT 45 29 46 LONG 087 59 04)												
AUG., 1969 12...	1.4	--	.6	--	166	--	.23	--	123	5	--	--
04067700 - PESHTIGO RIVER AT ARGONNE, WIS. (LAT 45 40 22 LONG 088 49 07)												
AUG., 1969 13...	1.7	--	1.0	--	126	--	.17	--	84	2	--	--
04067870 - PESHTIGO RIVER NR. HOMESTEAD LAKE, WIS. (LAT 45 27 58 LONG 088 20 00)												
AUG., 1969 14...	1.4	--	.5	--	152	--	.21	57.0	116	4	--	--
04067900 - RAT RIVER AT BLACKWELL, WIS. (LAT 45 29 00 LONG 088 29 54)												
AUG., 1969 13...	1.2	--	7.0	--	144	--	.20	--	105	4	--	--
04069290 - MIDDLE INLET AT MIDDLE INLET, WIS. (LAT 45 17 38 LONG 087 56 16)												
AUG., 1969 14...	1.4	--	1.5	--	190	--	.26	16.9	163	6	--	--
04069350 - SOUTH BRANCH BEAVER CREEK NEAR BEAVER, WIS. (LAT 45 07 50 LONG 088 01 02)												
AUG., 1969 14...	2.8	--	3.6	--	258	--	.35	13.2	218	15	--	--
04070760 - SOUTH BRANCH OCONTO RIVER NEAR HAYES, WIS. (LAT 45 01 45 LONG 088 26 29)												
AUG., 1969 13...	1.2	--	8.0	--	164	--	.22	66.4	132	6	--	--
04070900 - OCONTO RIVER NEAR UNDERHILL, WIS (LAT 45 54 57 LONG 088 24 33)												
AUG., 1969 14...	1.7	--	1.7	--	160	--	.22	--	130	9	--	--
04072000 - SUAMICO RIVER AT SUAMICO, WIS. (LAT 44 37 55 LONG 088 04 00)												
AUG., 1969 12...	7.9	--	1.3	--	308	--	.42	2.83	228	36	--	--
04072100 - DUCK CREEK AT GREEN BAY, WIS. (LAT 44 31 59 LONG 088 07 46)												
AUG., 1969 12...	16	--	2.4	--	400	--	.54	--	308	65	--	--

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SITES--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969--Continued

DATE	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)
STREAMS TRIBUTARY TO LAKE MICHIGAN				
04066500 - PIKE RIVER AT AMBERG, WIS. (LAT 45 29 46 LONG 087 59 04)				
AUG., 1969				
12...	249	7.3	20	--
04067700 - PESHTIGO RIVER AT ARGONNE, WIS. (LAT 45 40 22 LONG 088 49 07)				
AUG., 1969				
13...	178	7.5	23	--
04067870 - PESHTIGO RIVER NR. HOMESTEAD LAKE, WIS. (LAT 45 27 58 LONG 088 20 00)				
AUG., 1969				
14...	223	7.7	--	--
04067900 - RAT RIVER AT BLACKWELL, WIS. (LAT 45 29 00 LONG 088 29 54)				
AUG., 1969				
13...	197	7.7	23	--
04069290 - MIDDLE INLET AT MIDDLE INLET, WIS. (LAT 45 17 38 LONG 087 56 16)				
AUG., 1969				
14...	315	7.5	21	--
04069350 - SOUTH BRANCH BEAVER CREEK NEAR BEAVER, WIS. (LAT 45 07 50 LONG 088 01 02)				
AUG., 1969				
14...	396	8.1	23	--
04070760 - SOUTH BRANCH OCONTO RIVER NEAR HAYES, WIS. (LAT 45 01 45 LONG 088 26 29)				
AUG., 1969				
13...	250	7.9	19	--
04070900 - OCONTO RIVER NEAR UNDERHILL, WIS (LAT 45 54 57 LONG 088 24 33)				
AUG., 1969				
14...	255	7.4	23	--
04072000 - SUAMICO RIVER AT SUAMICO, WIS. (LAT 44 37 55 LONG 088 04 00)				
AUG., 1969				
12...	438	7.8	26	--
04072100 - DUCK CREEK AT GREEN BAY, WIS. (LAT 44 31 59 LONG 088 07 46)				
AUG., 1969				
12...	596	7.7	24	--

The following table contains a series of periodic specific conductance measurements obtained as part of water-resources investigations at stream gaging stations in Wisconsin. The purpose of these measurements is to determine the range in specific conductance under various streamflow conditions.

Specific conductance (micromhos at 25°C), October 1968 to September 1969

Date	Time	Water temperature (°C)	Discharge (cfs)	Specific conductance	Date	Time	Water temperature (°C)	Discharge (cfs)	Specific conductance
STREAMS TRIBUTARY TO LAKE SUPERIOR									
4-0255. BOIS BRULE RIVER AT BRULE, WIS. (LAT 46°32'16" LONG 91°35'43")									
Oct. 2, 1968	-	12	146	125	Apr. 15, 1969	1215	4	767	70
Nov. 6, 1968	1520	4	173	120	May 20, 1969	0900	9	173	115
Dec. 18, 1968	1040	0	151	<50	June 18, 1969	1040	14	135	110
Jan. 21, 1969	1505	1	161	95	July 25, 1969	0845	16	122	120
Feb. 19, 1969	0910	1	147	90	Aug. 20, 1969	1330	16	120	130
Mar. 19, 1969	1030	3	139	125	Sept.24, 1969	1500	9	144	120
4-0270. BAD RIVER NEAR ODANAH, WIS. (LAT 46°29'15" LONG 90°41'45")									
Oct. 3, 1968	-	10	265	125	Apr. 10, 1969	1845	2	8,040	50
Nov. 6, 1968	0930	4	544	95	May 21, 1969	1115	12	383	120
Dec. 17, 1968	1145	0	851	80	June 19, 1969	1330	21	-	110
Jan. 20, 1969	1600	0	353	125	July 24, 1969	1330	22	180	135
Feb. 18, 1969	1440	0	303	115	Aug. 19, 1969	1415	21	102	180
Mar. 18, 1969	1200	0	291	150	Sept.23, 1969	1315	14	188	190
4-0275. WHITE RIVER NEAR ASHLAND, WIS. (LAT 46°29'50" LONG 90°54'15")									
Oct. 3, 1968	1050	11	159	190	Apr. 12, 1969	1030	2	1,520	180
Nov. 5, 1968	1615	4	156	165	May 20, 1969	1550	14	164	130
Dec. 17, 1968	1340	0	283	<50	June 18, 1969	1720	17	169	200
Jan. 21, 1969	1325	1	228	170	July 24, 1969	1500	21	178	170
Feb. 17, 1969	1310	0	222	160	Aug. 19, 1969	1100	19	167	185
Mar. 18, 1969	1440	1	259	180	Sept.23, 1969	1150	14	188	215
4-0300. MONTREAL RIVER NEAR SAXON, WIS. (LAT 46°32'41" LONG 90°24'06")									
Oct. 4, 1968	1050	9	247	100	May 20, 1969	1730	14	243	80
Nov. 5, 1968	1220	2	-	100	June 19, 1969	1200	17	249	90
Jan. 21, 1969	0945	0	222	80	July 24, 1969	0945	22	204	65
Feb. 18, 1969	1000	0	328	100	Aug. 19, 1969	1445	22	216	75
Mar. 18, 1969	1100	3	427	100	Sept.23, 1969	1630	14	111	115
Apr. 10, 1969	1345	2	3,980	50					
STREAMS TRIBUTARY TO LAKE MICHIGAN									
4-0645. PINE RIVER AT PINE RIVER POWERPLANT NEAR FLORENCE, WIS. (LAT 45°50'16" LONG 88°13'31")									
Oct. 17, 1968	0800	15	343	165	Apr. 7, 1969	1140	1	868	145
Oct. 18, 1968	1100	-	619	-	Apr. 10, 1969	1150	1	1,740	100
Nov. 12, 1968	1600	1	44.4	180	Apr. 14, 1969	1500	6	2,170	80
Nov. 13, 1968	1400	1	132	175	May 14, 1969	1715	12	606	120
Nov. 13, 1968	1400	1	448	175	June 18, 1969	1530	16	500	150
Nov. 13, 1968	1200	1	225	175	July 18, 1969	1145	21	596	180
Jan. 22, 1969	1600	0	470	150	Aug. 19, 1969	1635	20	329	150
Feb. 19, 1969	1200	0	286	160	Sept. 9, 1969	1325	18	74.3	-
4-0660. MENOMINEE RIVER NEAR PEMBINE, WIS. (LAT 45°35'24" LONG 87°46'34")									
Oct. 10, 1968	1615	12	4,130	220	June 19, 1969	1115	14	3,570	200
Nov. 14, 1968	1110	2	2,880	220	July 17, 1969	1455	22	3,660	160
Apr. 10, 1969	1425	2	8,230	140	Aug. 8, 1969	1050	22	1,880	140
May 15, 1969	1300	12	4,080	180	Sept.10, 1969	1230	18	971	220
4-0665. PIKE RIVER AT AMBERG, WIS. (LAT 45°29'50" LONG 87°59'37")									
Oct. 10, 1968	1200	9	204	215	Apr. 9, 1969	1800	-	989	-
Nov. 13, 1968	0900	1	169	200	May 15, 1969	1400	12	263	200
Dec. 26, 1968	1500	0	161	-	June 19, 1969	1500	17	234	220
Jan. 23, 1969	1300	0	214	185	July 17, 1969	1730	19	171	200
Feb. 20, 1969	1100	0	159	250	Aug. 7, 1969	1330	20	149	210
Mar. 12, 1969	1400	0	168	460	Sept. 9, 1969	1600	14	123	220
Apr. 7, 1969	1400	1	653	140					

Specific conductance (micromhos at 25°C), October 1968 to September 1969--Continued

Date	Time	Water temperature (°C)	Discharge (cfs)	Specific conductance	Date	Time	Water temperature (°C)	Discharge (cfs)	Specific conductance
STREAMS TRIBUTARY TO LAKE MICHIGAN--Continued									
4-0695. PESHTIGO RIVER AT PESHTIGO, WIS. (LAT 45°02'49" LONG 87°44'40")									
Oct. 28, 1968	1640	8	981	220	June 20, 1969	0955	17	609	320
Dec. 4, 1968	1210	2	486	310	July 1, 1969	1010	-	4,090	-
Jan. 7, 1969	1630	0	849	140	July 28, 1969	1325	18	852	380
Mar. 19, 1969	0955	1	544	340	Aug. 21, 1969	1400	21	255	380
Apr. 9, 1969	1505	6	2,780	160	Sept.18, 1969	1240	18	427	260
May 27, 1969	0855	14	861	205					
4-0710. OCONTO RIVER NEAR GILLETT, WIS. (LAT 44°51'53" LONG 88°18'00")									
Oct. 29, 1968	1200	6	513	375	Apr. 28, 1969	1300	8	949	200
Dec. 4, 1968	0915	1	480	280	May 27, 1969	1100	13	635	220
Dec. 27, 1968	1330	-	457	-	June 23, 1969	1500	12	614	250
Jan. 28, 1969	1300	0	637	265	June 30, 1969	1700	15	3,100	300
Feb. 25, 1969	1100	0	470	280	July 29, 1969	0900	18	600	320
Mar. 19, 1969	1345	0	500	320	Aug. 22, 1969	1000	19	330	280
Apr. 9, 1969	0930	6	1,810	170	Sept.25, 1969	1100	12	338	280
4-0735. FOX RIVER AT BERLIN, WIS. (LAT 43°57'14" LONG 88°57'08")									
Nov. 4, 1968	1500	8	652	360	Apr. 24, 1969	1205	12	2,080	340
Dec. 6, 1968	1340	0	399	380	June 2, 1969	1430	18	909	400
Jan. 20, 1969	1255	0	514	260	July 14, 1969	1600	25	30.5	800
Mar. 6, 1969	1230	0	906	420	Aug. 27, 1969	1650	26	463	320
Mar. 28, 1969	1445	2	2,770	270	Sept.25, 1969	1630	14	435	330
4-0749.5 WOLF RIVER AT LANGLADE, WIS. (LAT 45°11'24" LONG 88°44'00")									
Oct. 15, 1968	1100	16	464	170	May 2, 1969	1445	13	677	140
Nov. 7, 1968	1300	3	452	180	June 5, 1969	1240	12	428	165
Jan. 8, 1969	1200	0	481	190	July 1, 1969	1100	18	937	110
Feb. 11, 1969	1400	0	433	-	July 24, 1969	1330	23	285	220
Apr. 8, 1969	1100	5	956	140	Aug. 20, 1969	1000	17	244	220
Apr. 10, 1969	1230	-	1,170	-	Sept.11, 1969	1330	17	238	210
Apr. 11, 1969	1100	4	1,350	100					
4-0752. EVERGREEN CREEK NEAR LANGLADE, WIS. (LAT 45°10'11" LONG 88°48'12")									
Oct. 11, 1968	1030	7	12.3	300	Apr. 7, 1969	1825	7	18.1	220
Oct. 15, 1968	1020	12	11.1	310	May 2, 1969	1200	9	19.7	230
Nov. 7, 1968	1100	4	10.6	320	June 5, 1969	1045	9	11.7	280
Dec. 5, 1968	1245	2	11.5	300	June 30, 1969	1130	15	15.9	260
Jan. 8, 1969	1400	0	11.4	380	July 24, 1969	1145	15	13.0	330
Feb. 11, 1969	1100	1	10.5	-	Aug. 20, 1969	1130	12	11.8	320
Mar. 24, 1969	1120	3	12.9	260	Sept.11, 1969	1115	9	11.0	300
4-0770. WOLF RIVER AT KESHENA FALLS, WIS. (LAT 44°53'28" LONG 88°39'18")									
Oct. 29, 1968	1600	5	833	190	Apr. 29, 1969	1100	7	1,340	180
Dec. 3, 1968	1445	2	702	-	May 27, 1969	1540	16	841	220
Jan. 6, 1969	1310	0	705	220	June 23, 1969	1245	13	969	210
Jan. 29, 1969	1000	0	895	180	June 30, 1969	1515	17	2,140	170
Feb. 25, 1969	1400	0	634	250	July 29, 1969	1415	18	1,010	200
Mar. 18, 1969	1530	0	631	300	Aug. 29, 1969	0830	19	471	260
Apr. 8, 1969	1515	3	1,630	180	Sept.19, 1969	1215	13	525	290
Apr. 16, 1969	1330	9	2,140	130					
4-0785. EMBARRASS RIVER NEAR EMBARRASS, WIS. (LAT 44°43'29" LONG 88°44'10")									
Oct. 30, 1968	1220	6	287	325	Apr. 30, 1969	1000	8	752	220
Dec. 3, 1968	1245	1	211	390	May 28, 1969	0900	17	296	380
Jan. 6, 1969	1520	0	167	280	June 24, 1969	1100	13	758	310
Jan. 29, 1969	1200	0	409	320	July 30, 1969	1020	20	593	350
Feb. 26, 1969	0915	0	214	320	Aug. 29, 1969	1020	21	130	350
Mar. 18, 1969	1245	2	186	420	Sept.25, 1969	1420	12	146	290
Apr. 8, 1969	1730	5	1,620	170					

Specific conductance (micromhos at 25°C), October 1968 to September 1969--Continued

Date	Time	Water temperature (°C)	Discharge (cfs)	Specific conductance	Date	Time	Water temperature (°C)	Discharge (cfs)	Specific conductance
STREAMS TRIBUTARY TO LAKE MICHIGAN--Continued									
4-0790. WOLF RIVER AT NEW LONDON, WIS. (LAT 44°23'32" LONG 88°44'25")									
Oct. 23, 1968	1445	10	1,540	290	May 20, 1969	1350	15	2,660	335
Nov. 20, 1968	1500	1	1,331	-	June 16, 1969	1655	19	1,903	290
Jan. 20, 1969	1650	0	1,450	270	July 22, 1969	1110	23	1,493	330
Mar. 6, 1969	1820	0	1,330	275	Aug. 27, 1969	1230	24	783.3	-
Apr. 8, 1969	1550	8	6,070	260	Sept.24, 1969	1400	14	861	335
4-0800. LITTLE WOLF AT ROYALTON, WIS. (LAT 44°24'47" LONG 88°51'55")									
Nov. 21, 1968	1055	1	318.8	-	Apr. 9, 1969	1530	-	2,140	-
Dec. 18, 1968	1350	0	254.5	390	May 20, 1969	1600	16	657	325
Jan. 22, 1969	1445	0	336.9	280	June 17, 1969	1355	16	345	370
Feb. 26 1969	1520	0	666.7	380	July 22, 1969	1300	23	311.5	390
Mar. 26, 1969	1500	1	1,698	240	Sept.24, 1969	1530	13	227.6	400
4-0852. KEWAUNEE RIVER NEAR KEWAUNEE, WIS. (LAT 44°27'30" LONG 87°33'23")									
Oct. 22, 1968	1240	11	17.4	540	Apr. 22, 1969	1355	8	110	590
Dec. 17, 1968	1355	1	22.8	590	May 19, 1969	1310	12	70.6	590
Jan. 21, 1969	-	0	17.1	620	June 16, 1969	1235	19	31.4	570
Feb. 25, 1969	1355	0	17.8	600	July 21, 1969	1315	23	34.2	540
Mar. 25, 1969	1500	1	463	360					
4-0860. SHEBOYGAN RIVER AT SHEBOYGAN, WIS. (LAT 43°44'27" LONG 87°45'37")									
Nov. 1, 1968	1335	11	43.1	690	Apr. 28, 1969	1340	11	369	570
Dec. 18, 1968	1110	0	51.4	800	June 4, 1969	1850	15	223	460
Jan. 15, 1969	1235	0	40.8	-	July 8, 1969	1515	20	467	470
Feb. 18, 1969	0855	1	71.4	720	Aug. 14, 1969	1515	28	56.8	630
Feb. 25, 1969	1650	1	315	580	Sept.18, 1969	1640	20	32.6	650
4-0865. CEDAR CREEK NEAR CEDARBURG, WIS. (LAT 43°19'25" LONG 87°58'48")									
Oct. 25, 1968	1330	7	16.9	710	June 9, 1969	1115	17	42.0	680
Dec. 12, 1968	1635	0	25.4	660	July 10, 1969	1110	22	66.5	650
Jan. 21, 1969	1545	0	37.5	-	Aug. 15, 1969	1000	23	15.0	750
Feb. 25, 1969	1350	0	67.7	560	Sept.24, 1969	1030	14	9.39	800
Apr. 29, 1969	1145	9	76.1	650					
4-0870. MILWAUKEE RIVER AT MILWAUKEE, WIS. (LAT 43°06'00" LONG 87°54'32")									
Oct. 28, 1968	1140	9	126	670	June 9, 1969	1545	18	317	640
Dec. 13, 1968	1040	0	142	730	Aug. 8, 1969	1140	25	160	650
Jan. 22, 1969	1055	0	224	-	Sept. 9, 1969	1245	21	126	680
Feb. 21, 1969	1150	0	186	700	Sept.23, 1969	1135	19	87.6	750
Apr. 23, 1969	1200	9	741	650					
4-0871.2 MENOMONEE RIVER AT WAUWATOSA, WIS. (LAT 43°02'44" LONG 87°59'59")									
Oct. 28, 1968	1400	7	23.5	960	Apr. 23, 1969	1500	9	101	1,100
Dec. 13, 1968	1240	0	30.3	1,320	June 9, 1969	1740	20	50.1	1,000
Jan. 22, 1969	1330	0	105	-	June 26, 1969	1140	20	666	700
Feb. 21, 1969	1455	0	57	700	July 17, 1969	1115	22	527	320
Mar. 25, 1969	1500	-	288	-	Aug. 8, 1969	1445	25	28.8	950
Apr. 17, 1969	1830	8	1,880	460	Sept.23, 1969	1510	19	18.1	950
Apr. 17, 1969	1900	8	1,790	460					
4-0872.04 OAK CREEK AT SOUTH MILWAUKEE, WIS. (LAT 42°55'30" LONG 87°52'12")									
Oct. 2, 1968	0955	17	2.10	1,400	May 1, 1969	1225	12	7.92	1,250
Nov. 4, 1968	1515	10	1.18	1,100	June 4, 1969	1730	15	12.2	750
Dec. 23, 1968	1415	1	21.0	1,450	June 23, 1969	1325	14	16.1	1,050
Jan. 27, 1969	1705	0	22.1	1,280	July 15, 1969	1255	23	13.3	1,100
Jan. 28, 1969	0855	0	17.6	-	Aug. 5, 1969	1250	22	7.11	-
Feb. 27, 1969	1430	2	31.7	950	Aug. 26, 1969	0950	20	2.34	1,150
Mar. 27, 1969	0905	0.5	33.1	1,675	Sept.20, 1969	1520	19.5	1.56	1,125
Apr. 18, 1969	1020	-	288	-					

Specific conductance (micromhos at 25°C), October 1968 to September 1969--Continued

Date	Time	Water temperature (°C)	Discharge (cfs)	Specific conductance	Date	Time	Water temperature (°C)	Discharge (cfs)	Specific conductance
STREAMS TRIBUTARY TO LAKE MICHIGAN--Continued									
4-0872.2 ROOT RIVER NEAR FRANKLIN, WIS. (LAT 42°52'25" LONG 87°59'45")									
Oct. 2, 1968	1530	19	9.29	920	Apr. 18, 1969	1030	-	772	-
Nov. 4, 1968	1225	9	9.28	900	May 9, 1969	1155	14	44.4	1,050
Jan. 7, 1969	1225	0	18.0	400	June 4, 1969	2040	14	38.9	950
Jan. 28, 1969	1130	0	44.2	1,150	July 15, 1969	0730	18	33.6	900
Feb. 27, 1969	1610	0	75.5	850	Aug. 25, 1969	1945	22	3.82	1,100
Mar. 28, 1969	0810	3	86.4	1,375	Aug. 25, 1969	-	21	22.4	900
Apr. 2, 1969	1415	4	141	960	Sept.19, 1969	1610	15.5	19.41	925
4-0872.33 ROOT RIVER CANAL NEAR FRANKLIN, WIS. (LAT 42°48'55" LONG 87°59'40")									
Oct. 1, 1968	1250	16	4.25	1,150	June 5, 1969	1100	12	17.3	950
Nov. 6, 1968	1430	8	3.15	1,240	June 23, 1969	1520	13	19.2	950
Jan. 28, 1969	1550	0	59.8	850	July 2, 1969	1345	21	394	405
Feb. 28, 1969	1125	1	78.2	580	July 15, 1969	1000	19	31.7	800
Mar. 27, 1969	1520	3	99	825	Aug. 5, 1969	1445	21	11.7	-
Apr. 18, 1969	1250	-	359	-	Aug. 25, 1969	1725	22	3.82	1,100
May 2, 1969	1610	14	23.0	900	Sept.19, 1969	1400	15.5	2.93	1,050
4-0872.4 ROOT RIVER AT RACINE, WIS. (LAT 42°45'05" LONG 87°49'25")									
Oct. 2, 1968	1025	17	18.6	890	May 9, 1969	0905	14	79.6	925
Nov. 6, 1968	1155	9	17.2	890	July 2, 1969	1730	21	1,880	425
Jan. 2, 1969	1240	0	80.4	900	July 3, 1969	1045	-	1,410	-
Jan. 29, 1969	1130	0	186	925	July 15, 1969	1800	26	120	750
Feb. 27, 1969	1210	0	295	600	Aug. 26, 1969	1300	23	32.0	900

Instantaneous Suspended Sediment, water year October 1968 to September 1969

Date	Time	Discharge (cfs)	Concentration (mg/l)	Suspended Sediment Discharge (tons/day)	Date	Time	Discharge (cfs)	Concentration (mg/l)	Suspended Sediment Discharge (tons/day)
STREAMS TRIBUTARY TO LAKE SUPERIOR									
4-0255. BOIS BRULE RIVER AT BRULE, WIS. (LAT 46°32'16" LONG 91°35'43")									
Oct. 2, 1968	1550	169	4	2	May 20, 1969	0750	176	3	1
4-0263. SIOUX RIVER NEAR WASHBURN, WIS. (LAT 46°41'20" LONG 90°57'04")									
Apr. 11, 1969	1030	140	78	3	May 20, 1969	1130	10.6	6	T
STREAMS TRIBUTARY TO LAKE MICHIGAN									
4-0660. MENOMINEE RIVER NEAR PEMBINE, WIS. (LAT 45°35'24" LONG 87°46'34")									
Oct. 10, 1968	1345	6,060	3	49					
4-0730.5 GRAND RIVER NEAR KINGSTON, WIS. (LAT 43°41'09" LONG 89°05'09")									
Oct. 23, 1968	1350	18.4	178	9	July 18, 1969	1400	40.8	90	10
June 3, 1969	1600	26.6	68	5	Aug. 18, 1969	1140	17.4	106	5
June 27, 1969	1515	406	454	498	Sept.25, 1969	1145	10.3	14	T
4-0735. FOX RIVER AT BERLIN, WIS. (LAT 43°57'14" LONG 88°57'08")									
June 2, 1969	1450	909	26	64	Aug. 27, 1969	1700	463	31	39
4-0727.5 LAWRENCE CREEK NEAR WESTFIELD, WIS. (LAT 43°29'50" LONG 88°27'50")									
Oct. 1, 1968	0945	15	2	T	Apr. 14, 1969	0820	17	12	1
Oct. 14, 1968	0755	16	6	T	Apr. 21, 1969	0815	17	6	T
Oct. 28, 1968	0755	17	6	T	Apr. 28, 1969	0820	17	10	T
Oct. 28, 1968	1210	16	2	T	May 5, 1969	0815	16	9	T
Nov. 4, 1968	0800	16	3	T	May 19, 1969	0800	16	31	1
Nov. 11, 1968	0800	16	2	T	May 26, 1969	0810	16	30	1
Nov. 18, 1968	0800	16	4	T	June 2, 1969	0800	17	39	2
Nov. 25, 1968	0800	16	4	T	June 9, 1969	0815	16	10	T
Dec. 2, 1968	0810	16	5	T	June 16, 1969	0810	16	12	1
Dec. 9, 1968	-	15	2	T	June 23, 1969	0815	17	8	T
Dec. 16, 1968	-	16	2	T	June 30, 1969	0800	19	14	1
Jan. 5, 1969	1020	20	3	T	July 7, 1969	0800	16	27	1
Jan. 14, 1969	1355	16	2	T	July 14, 1969	0800	16	36	2
Jan. 20, 1969	0905	17	2	T	July 21, 1969	0810	16	30	1
Jan. 27, 1969	0855	16	4	T	July 28, 1969	0800	17	16	1
Feb. 3, 1969	0900	18	2	T	Aug. 4, 1969	0810	16	27	1
Feb. 10, 1969	0905	16	4	T	Aug. 11, 1969	0815	16	30	1
Feb. 17, 1969	1040	16	3	T	Aug. 19, 1969	0810	16	22	1
Feb. 24, 1969	0840	16	4	T	Aug. 25, 1969	0815	16	40	2
Mar. 3, 1969	0845	16	4	T	Sept. 2, 1969	0815	17	14	1
Mar. 10, 1969	0840	16	2	T	Sept. 8, 1969	0815	17	18	1
Mar. 17, 1969	0945	16	3	T	Sept.15, 1969	0820	17	26	1
Mar. 24, 1969	0845	18	13	1	Sept.22, 1969	0815	17	25	1
Mar. 31, 1969	0830	16	6	T	Sept.29, 1969	0820	18	28	1
Apr. 7, 1969	0830	17	8	T					
4-0800. LITTLE WOLF RIVER AT ROYALTON, WIS. (LAT 44°24'47" LONG 88°51'55")									
Oct. 24, 1968	1100	270	1	1					
4-0852. KEWAUNEE RIVER NEAR KEWAUNEE, WIS. (LAT 44°27'30" LONG 87°33'23")									
Oct. 22, 1968	1150	17.6	8	T					
4-0861.5 MILWAUKEE RIVER AT KEWASKUM, WIS. (LAT 43°31'02" LONG 88°13'22")									
Aug. 7, 1969	1230	30.7	50	4					

Instantaneous Suspended Sediment, water year October 1968 to September 1969--Continued

Date	Time	Discharge (cfs)	Concentration (mg/l)	Suspended Sediment Discharge (tons/day)	Date	Time	Discharge (cfs)	Concentration (mg/l)	Suspended Sediment Discharge (tons/day)
STREAMS TRIBUTARY TO LAKE MICHIGAN--Continued									
4-0862. EAST BRANCH MILWAUKEE RIVER NEAR NEW FANE, WIS. (LAT 43°33'01" LONG 88°11'18")									
June 5, 1969	1350	27.6	11	1	Aug. 7, 1969	1540	11.4	6	T
4-0863.4 NORTH BRANCH MILWAUKEE RIVER NEAR FILLMORE, WIS. (LAT 43°28'58" LONG 88°03'39")									
June 5, 1969	1115	115	18	6	Aug. 7, 1969	1730	24.4	39	3
July 15, 1969	1100	56	78	12					
4-0863.6 MILWAUKEE RIVER AT WAUBEKA, WIS. (LAT 43°28'22" LONG 87°59'23")									
June 5, 1969	0900	226	14	9	Aug. 15, 1969	1400	70.3	20	4
July 17, 1969	1545	176	18	9					
4-0865. CEDAR CREEK NEAR CEDARBURG, WIS. (LAT 43°19'25" LONG 87°58'48")									
Oct. 25, 1968	1330	16.7	152	69	July 10, 1969	1115	66.5	48	9
June 9, 1969	1125	42	23	3					
4-0870. MILWAUKEE RIVER AT MILWAUKEE, WIS. (LAT 43°06'00" LONG 87°54'32")									
Oct. 28, 1968	1145	126	120	41	Aug. 8, 1969	1200	160	13	6
June 9, 1969	1550	317	13	11					
4-0872.4 ROOT RIVER AT RACINE, WIS. (LAT 42°45'25" LONG 87°49'25")									
Oct. 11, 1968	1030	20	160	9	July 2, 1969	1740	1,880	230	117

4-0727.5 LAWRENCE CREEK NEAR WESTFIELD, WIS. (LAT 43°29'50" LONG 88°27'50")

PERIODIC DETERMINATION OF SUSPENDED SEDIMENT AND PARTICLE SIZE, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(METHODS OF ANALYSIS: B, BOTTOM WITHDRAWAL TUBE; C, CHEMICALLY DISPERSED; N, IN NATIVE WATER; P, PIPET; S, SIEVE; V, VISUAL ACCUMULATION TUBE; W, IN DISTILLED WATER)

DATE	TIME	DISCHARGE (CFS)	CONCENTRATION (MG/L)	SUSPENDED SEDIMENT DISCHARGE (TONS/DAY)	PERCENT FINER THAN THE INDICATED PARTICLE SIZE (IN MILLIMETERS) .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	METHOD OF ANALYSIS
June 21, 1968	1100	22	8	T	3	15	20	26	30	34	45	69	97	100	-	SWBC

WISCONSIN RIVER BASIN

5-4010.2 TENMILE CREEK DITCH 5, NEAR BANCROFT, WIS.

LOCATION.--Lat 44°18'08", long 89°32'59", Portage County, temperature recorder at gaging station at bridge on country road, 1.2 miles west of U.S. Highway 51, and 1.8 miles southwest of Bancroft.
DRAINAGE AREA.--8.8 square miles, approximately.
PERIOD OF RECORD.--Water temperatures: June 1965 to current year.
EXTREMES.--Current year: Water temperatures: Maximum, 20°C May 27; minimum, 1°C Jan. 14, 15, Feb. 3-6, 13.
Period of record: Water temperatures: Maximum, that of May 27, 1969; minimum, freezing point on many days during winter months in 1965-67.

Temperature (°F) of water, water year October 1968 to September 1969
(Continuous ethyl alcohol-actuated thermograph)

	DAY																													AVER-
MONTH	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	AGE
OCTOBER																																
MAXIMUM	13	13	11	8	8	9	9	9	9	9	10	11	13	13	15	14	14	12	9	9	9	9	8	8	8	8	8	7	8	7	8	10
MINIMUM	12	10	8	7	6	8	8	8	9	8	8	9	10	12	13	13	12	9	8	8	8	8	7	7	6	7	8	7	6	6	7	8
NOVEMBER																																
MAXIMUM	9	9	8	7	8	8	7	7	6	6	6	6	6	7	7	7	7	7	6	4	5	6	7	7	6	5	5	4	4	4	--	6
MINIMUM	8	8	6	7	7	7	6	6	6	6	6	4	6	6	7	6	6	6	3	3	4	4	6	6	5	5	4	4	4	4	--	6
DECEMBER																																
MAXIMUM	4	6	6	6	5	2	2	2	2	3	4	6	6	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3
MINIMUM	4	4	6	6	2	2	2	2	2	2	3	4	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3
JANUARY																																
MAXIMUM	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	3	3	4	4	4	4	2	2	2	2	3	3	2	2
MINIMUM	2	2	2	2	2	2	2	2	2	2	2	2	1	1	2	2	2	2	2	2	3	4	4	2	2	2	2	2	2	3	2	2
FEBRUARY																																
MAXIMUM	2	2	2	1	1	2	2	3	3	2	2	2	2	2	2	3	3	4	4	4	4	4	6	6	6	5	4	4	--	--	--	3
MINIMUM	2	2	1	1	1	1	2	2	2	2	2	2	1	2	2	2	2	3	4	2	3	4	4	4	4	3	2	2	--	--	--	2
MARCH																																
MAXIMUM	4	4	4	4	4	6	4	3	3	3	3	3	3	4	4	5	7	8	7	7	6	7	7	7	6	6	7	6	4	4	4	5
MINIMUM	2	2	3	3	3	4	3	2	2	2	2	2	2	3	2	3	4	4	5	4	3	3	6	5	4	3	3	4	2	2	3	3
APRIL																																
MAXIMUM	6	8	8	6	8	9	11	9	11	9	10	11	8	11	9	9	9	9	10	10	10	9	10	11	12	11	11	10	10	11	--	10
MINIMUM	4	6	6	2	2	5	6	7	8	8	7	7	6	9	9	9	8	7	7	8	9	8	7	7	8	9	9	8	7	8	--	7
MAY																																
MAXIMUM	11	13	13	13	14	14	14	14	11	11	10	11	13	14	14	15	15	11	12	13	13	12	12	13	13	12	20	18	16	14	13	13
MINIMUM	9	10	10	11	11	12	11	11	9	9	8	8	9	11	11	12	11	9	9	11	9	9	10	10	11	10	11	14	12	10	10	10
JUNE																																
MAXIMUM	12	11	9	10	12	11	13	12	14	15	12	11	14	11	13	13	12	13	12	14	12	11	11	11	11	14	16	14	12	15	--	12
MINIMUM	11	9	8	8	8	10	9	9	9	10	11	9	8	9	8	9	10	10	10	9	9	10	10	9	10	11	12	11	11	11	--	10
JULY																																
MAXIMUM	14	13	13	15	14	12	13	12	13	16	15	16	15	13	17	17	14	16	15	16	15	16	16	16	16	13	14	16	16	16	16	15
MINIMUM	9	10	11	11	11	10	9	10	9	10	11	11	11	11	11	12	12	12	11	11	11	11	12	11	11	11	12	12	11	11	13	11
AUGUST																																
MAXIMUM	14	16	15	16	16	16	16	16	16	16	17	17	17	17	16	17	17	17	15	15	15	16	16	16	16	16	17	17	18	18	17	16
MINIMUM	11	11	11	11	12	12	14	12	12	11	12	13	14	13	12	12	13	14	12	11	11	11	12	12	12	13	13	13	14	14	13	12
SEPTEMBER																																
MAXIMUM	14	14	14	15	15	16	14	13	12	12	13	14	14	14	14	14	12	11	12	12	12	13	11	10	--	--	--	--	--	--	--	13
MINIMUM	12	11	11	13	14	13	12	11	9	9	11	10	12	13	13	12	10	9	10	9	10	11	9	9	--	--	--	--	--	--	--	11

5-4305. ROCK RIVER AT AFTON, WIS.

LOCATION.--Lat 42°36'33", long 89°04'14", Rock County, temperature recorder at gaging station on right bank in Afton, Rock County, 0.3 mile downstream from highway bridge, and 1.1 miles upstream from Bass Creek.
DRAINAGE AREA.--3,300 square miles, approximately.
PERIOD OF RECORD.--Water temperatures: September 1954 to current year.
EXTREMES.--Water Temperatures: Maximum, 27°C July 14, Aug. 14, 15, 17-19, 29, 30; minimum, 1°C many days during December, January, and February.
Period of record: Water temperatures: Maximum, 32°C July 27-30, Aug. 4, 1955, July 26, 28, 1964; minimum, freezing point on many days during winter months.

Temperature (°C) of water, water year October 1968 to September 1969
(Continuous ethyl alcohol-actuated thermograph)

	DAY																													AVER-
MONTH	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	AGE
OCTOBER																																
MAXIMUM	19	19	18	15	13	13	14	13	13	13	13	13	15	16	18	17	17	16	14	14	16	13	12	12	11	11	11	10	9	9	10	14
MINIMUM	17	17	16	14	12	12	12	12	12	12	12	12	13	14	15	16	16	14	13	13	12	12	11	11	10	9	9	9	9	8	8	12
NOVEMBER																																
MAXIMUM	12	11	10	10	9	9	8	8	7	7	6	6	5	6	6	6	6	6	5	4	4	4	4	5	5	5	5	4	3	3	--	6
MINIMUM	10	9	9	9	9	8	8	7	6	6	6	4	4	5	6	6	6	5	4	3	3	3	4	4	4	4	4	3	3	3	--	6
DECEMBER																																
MAXIMUM	3	3	3	3	3	2	1	1	1	1	2	3	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2
MINIMUM	3	3	2	2	2	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
JANUARY																																
MAXIMUM	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	1	1	1	2	1
MINIMUM	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	1	1	1	1	1	1
FEBRUARY																																
MAXIMUM	2	2	2	1	1	1	1	1	1	1	2	2	1	1	1	2	2	2	2	3	3	2	3	3	3	3	3	3	--	--	--	2
MINIMUM	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	3	3	3	3	3	--	--	--	2
MARCH																																
MAXIMUM	3	3	3	3	3	3	3	3	3	3	2	2	2	2	2	3	4	5	5	5	5	5	5	5	4	3	4	4	4	3	3	3
MINIMUM	2	2	2	3	3	3	3	2	2	2	2	2	2	2	2	2	2	4	4	5	4	4	5	4	3	3	3	4	3	3	3	3
APRIL																																
MAXIMUM	3	3	4	6	6	6	7	8	9	9	9	10	11	12	13	13	13	12	11	11	12	12	11	11	13	13	13	13	13	13	--	10
MINIMUM	3	3	3	4	6	6	6	7	8	9	9	9	10	11	12	13	12	11	11	11	11	11	11	10	11	13	13	13	12	12	--	9
MAY																																
MAXIMUM	14	15	17	18	20	19	19	18	18	17	15	15	16	17	18	20	20	17	16	17	17	15	16	17	17	18	19	22	23	24	23	18
MINIMUM	13	13	15	17	18	19	17	18	17	15	14	13	14	14	16	17	17	15	14	15	14	14	13	14	16	16	17	19	21	22	22	16
JUNE																																
MAXIMUM	22	21	18	17	17	18	18	17	18	20	20	22	22	21	21	21	22	21	21	21	21	19	18	18	19	21	23	24	23	23	--	20
MINIMUM	21	18	17	16	15	17	17	16	16	17	19	20	20	19	19	19	19	20	20	20	19	18	17	17	17	18	21	22	22	22	--	19
JULY																																
MAXIMUM	23	23	23	23	24	24	22	21	21	22	24	26	26	27	26	26	26	26	24	25	25	25	25	25	25	25	24	24	24	24	24	24
MINIMUM	22	22	23	23	23	22	21	21	20	21	22	24	25	26	24	25	26	26	24	24	24	24	24	24	24	24	24	23	23	23	24	23
AUGUST																																
MAXIMUM	24	24	25	26	26	26	26	26	26	24	25	26	26	27	27	26	27	27	27	26	26	26	25	26	26	26	26	26	27	27	26	26
MINIMUM	23	23	23	24	24	24	24	24	24	23	23	23	24	24	24	24	22	24	24	24	22	21	21	21	22	23	23	23	23	23	23	23
SEPTEMBER																																
MAXIMUM	25	24	24	23	23	23	23	23	21	20	21	21	22	21	22	21	21	20	19	19	18	19	19	18	17	17	17	23	16	22	--	21
MINIMUM	23	21	21	21	21	22	21	21	18	18	17	17	18	19	19	19	19	17	18	16	16	17	18	16	14	14	9	6	8	7	--	17

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SITES

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	DIS-CHARGE (CFS)	SILICA (SIO2) (MG/L)	IRON (FE) (UG/L)	MAN-GANESE (MN) (UG/L)	CAL-CIUM (CA) (MG/L)	MAG-NE-SIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	ALKA-LINITY AS CACO3 (MG/L)	SULFATE (SO4) (MG/L)
BLACK RIVER BASIN												
05381000 - BLACK RIVER AT NEILLSVILLE, WISCONSIN (LAT 44 33 35 LONG 090 36 50)												
OCT., 1968												
25...	145	8.0	880	0	15	5.2	4.0	2.0	68	0	56	9.2
AUG., 1969												
29...	27	6.4	120	20	17	5.9	7.5	3.2	73	0	60	12
WISCONSIN RIVER BASIN												
05396000 - RIB R AT RIB FALLS, WIS. (LAT 44 58 25 LONG 089 54 15)												
OCT., 1968												
24...	--	9.5	480	0	16	4.3	3.4	1.4	63	0	52	11
AUG., 1969												
27...	23	10	80	60	19	5.0	5.9	1.5	86	0	71	8.0
05399500 - BIG EAU PLEINE RIVER NR STRATFORD, WIS. (LAT 44 49 15 LONG 090 04 35)												
OCT., 1968												
24...	23	6.8	820	0	17	6.3	5.6	3.5	78	0	64	11
AUG., 1969												
27...	4.3	5.9	230	40	17	4.7	6.9	5.0	68	0	56	14
05400100 - LITTLE EAU PLEINE RIVER NEAR MARSHFIELD, WIS. (LAT 44 43 18 LONG 090 05 77)												
OCT., 1968												
23...	5.1	8.1	890	0	16	5.9	5.4	4.0	70	0	57	12
05400710 - MILL CREEK NEAR STEVENS POINT, WISCONSIN (LAT 44 31 08 LONG 089 39 58)												
OCT., 1968												
23...	--	9.8	1	0	20	2.9	9.0	3.9	59	0	48	16
AUG., 1969												
27...	4.8	8.0	560	120	17	5.4	12	5.4	61	0	50	18
05402000 - YELLOW RIVER AT BABCOCK, WISCONSIN (LAT 44 18 05 LONG 090 07 15)												
OCT., 1968												
24...	32	8.7	1400	0	9.8	3.8	3.8	3.1	38	0	31	9.6
AUG., 1969												
28...	9.3	12	1300	300	11	3.3	4.8	2.4	41	0	34	7.2
05409830 - N F NEDERLO CR NR GAYS MILLS WIS (LAT 43 21 47 LONG 090 54 34)												
OCT., 1968												
23...	--	9.6	190	0	64	32	1.6	.7	324	0	266	13
05409830 - N F NEDERLO CR NR GAYS MILLS WIS (LAT 43 21 47 LONG 090 54 34)												
OCT., 1968												
23...	--	9.6	190	0	64	32	1.6	.7	324	0	266	13
05409860 - NEDERLO CREEK NEAR GAYS MILLS, WISCONSIN (LAT 43 21 36 LONG 090 54 31)												
OCT., 1968												
23...	--	12	0	--	65	27	1.4	.6	314	0	258	13
DEC.												
17...	.86	12	0	--	52	32	1.6	.6	306	0	251	11
JAN., 1969												
23...	1.2	15	0	--	56	29	1.7	.8	304	0	249	10
05409870 - NEDERLO CREEK NEAR GAYS MILLS, WISCONSIN (LAT 43 21 30 LONG 090 53 49)												
OCT., 1968												
23...	--	11	0	0	57	27	1.6	.6	296	0	243	12
DEC.												
17...	1.6	13	0	--	48	33	1.9	.7	146	0	120	13
JAN., 1969												
23...	2.1	15	0	--	56	30	1.8	.9	294	0	241	11

GPO 823-131-15

DATE	CHLORIDE (CL) (MG/L)	FLUORIDE (F) (MG/L)	NITRATE (NO3) (MG/L)	TOTAL PHOSPHORUS (PO4) (MG/L)	DISSOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	DISSOLVED SOLIDS (TONS PER AC-FT)	DISSOLVED SOLIDS (TONS PER DAY)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	PERCENT SODIUM	SODIUM ADSORPTION RATIO
BLACK RIVER BASIN												
05381000 - BLACK RIVER AT NEILLSVILLE, WISCONSIN (LAT 44 33 35 LONG 090 36 50)												
OCT., 1968												
25...	4.0	.1	.9	--	110	81	.15	43.1	59	4	12	.2
AUG., 1969												
29...	8.0	.0	1.5	.82	94	98	.13	6.85	66	6	19	.4
WISCONSIN RIVER BASIN												
05396000 - RIB R AT RIB FALLS, WIS. (LAT 44 58 25 LONG 089 54 15)												
OCT., 1968												
24...	3.0	.2	.7	--	74	--	.10	--	58	6	11	.2
AUG., 1969												
27...	3.0	.0	1.0	.05	95	96	.13	5.90	68	0	16	.3
05399500 - BIG EAU PLEINE RIVER NR STRATFORD, WIS. (LAT 44 49 15 LONG 090 04 35)												
OCT., 1968												
24...	9.0	.1	.6	--	114	98	.16	7.08	68	4	14	.3
AUG., 1969												
27...	10	.0	2.0	.33	105	99	.14	1.22	62	6	18	.4
05400100 - LITTLE EAU PLEINE RIVER NEAR MARSHFIELD, WIS. (LAT 44 43 18 LONG 090 05 77)												
OCT., 1968												
23...	8.0	.1	1.0	--	118	94	.16	1.65	64	6	14	.3
05400710 - MILL CREEK NEAR STEVENS POINT, WISCONSIN (LAT 44 31 08 LONG 089 39 58)												
OCT., 1968												
23...	15	.3	1.6	--	129	--	.18	--	62	14	23	.5
AUG., 1969												
27...	16	.0	3.0	.74	123	116	.17	--	64	14	27	.6
05402000 - YELLOW RIVER AT BABCOCK, WISCONSIN (LAT 44 18 05 LONG 090 07 15)												
OCT., 1968												
24...	7.0	.1	1.2	--	89	66	.12	7.83	40	9	16	.3
AUG., 1969												
28...	6.0	.0	3.6	.10	67	72	.09	1.68	41	8	19	.3
05409830 - N F NEDERLO CR NR GAYS MILLS WIS (LAT 43 21 47 LONG 090 54 34)												
OCT., 1968												
23...	3.0	.2	.6	--	268	--	.36	--	291	26	1	.0
05409830 - N F NEDERLO CR NR GAYS MILLS WIS (LAT 43 21 47 LONG 090 54 34)												
OCT., 1968												
23...	3.0	.2	.6	--	268	--	.36	--	291	26	1	.0
05409860 - NEDERLO CREEK NEAR GAYS MILLS, WISCONSIN (LAT 43 21 36 LONG 090 54 31)												
OCT., 1968												
23...	3.0	.2	1.4	--	257	--	.35	--	273	16	1	.0
DEC.												
17...	2.0	.1	3.4	--	241	265	.33	.56	261	10	1	.0
JAN., 1969												
23...	.5	.0	3.0	--	254	265	.35	.82	259	10	1	.0
05409870 - NEDERLO CREEK NEAR GAYS MILLS, WISCONSIN (LAT 43 21 30 LONG 090 53 49)												
OCT., 1968												
23...	3.5	.2	1.1	--	241	--	.33	--	253	10	1	.0
DEC.												
17...	4.0	.1	4.1	--	245	264	.33	1.06	256	12	2	.1
JAN., 1969												
23...	.5	.0	3.4	--	284	263	.39	1.61	263	22	1	.0

DATE	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)
BLACK RIVER BASIN				
05381000 - BLACK RIVER AT NEILLSVILLE, WISCONSIN (LAT 44 33 35 LONG 090 36 50)				
OCT., 1968				
25...	131	7.5	7	80
AUG., 1969				
29...	159	7.7	24	25
WISCONSIN RIVER BASIN				
05396000 - RIB R AT RIB FALLS, WIS. (LAT 44 58 25 LONG 089 54 15)				
OCT., 1968				
24...	122	7.3	6	50
AUG., 1969				
27...	160	7.4	21	10
05399500 - BIG EAU PLEINE RIVER NR STRATFORD, WIS. (LAT 44 49 15 LONG 090 04 35)				
OCT., 1968				
24...	165	7.4	8	50
AUG., 1969				
27...	162	7.5	26	20
05400100 - LITTLE EAU PLEINE RIVER NEAR MARSHFIELD, WIS. (LAT 44 43 18 LONG 090 05 77)				
OCT., 1968				
23...	155	7.2	8	80
05400710 - MILL CREEK NEAR STEVENS POINT, WISCONSIN (LAT 44 31 08 LONG 089 39 58)				
OCT., 1968				
23...	181	7.0	8	50
AUG., 1969				
27...	199	6.9	--	35
05402000 - YELLOW RIVER AT BABCOCK, WISCONSIN (LAT 44 18 05 LONG 090 07 15)				
OCT., 1968				
24...	108	6.8	9	50
AUG., 1969				
28...	111	6.7	--	10
05409830 - N F NEDERLO CR NR GAYS MILLS WIS (LAT 43 21 47 LONG 090 54 34)				
OCT., 1968				
23...	482	8.2	8	5
05409860 - NEDERLO CREEK NEAR GAYS MILLS, WISCONSIN (LAT 43 21 36 LONG 090 54 31)				
OCT., 1968				
23...	469	8.0	8	5
DEC.				
17...	471	8.0	2	4
JAN., 1969				
23...	469	8.1	--	5
05409870 - NEDERLO CREEK NEAR GAYS MILLS, WISCONSIN (LAT 43 21 30 LONG 090 53 49)				
OCT., 1968				
23...	449	8.0	9	5
DEC.				
17...	472	8.1	0	3
JAN., 1969				
23...	452	8.2	--	3

The following table contains a series of periodic specific conductance measurements obtained as part of water-resources investigations at stream gaging stations in Wisconsin. The purpose of these measurements is to determine the range of specific conductance under various streamflow conditions.

Specific conductance (micromhos at 25°C), October 1968 to September 1969

Date	Time	Water temperature (°C)	Discharge (cfs)	Specific conductance	Date	Time	Water temperature (°C)	Discharge (cfs)	Specific conductance
ST. CROIX RIVER BASIN									
5-3325. NAMEKAGON RIVER NEAR TREGO, WIS. (LAT 45°56'53" LONG 91°53'17")									
Apr. 10, 1969	1520	6	1,370	105					
5-3335. ST. CROIX RIVER NEAR DANBURY, WIS. (LAT 46°04'28" LONG 92°14'50")									
Oct. 2, 1968	1120	13	1,510	115	May 19, 1969	1315	15	1,540	130
Nov. 7, 1968	1115	4	1,700	100	June 17, 1969	1500	19	1,200	140
Dec. 13, 1968	1115	0	-	125	July 30, 1969	1515	24	1,220	125
Jan. 22, 1969	1250	0	1,480	120	Aug. 20, 1969	1800	22	838	130
Feb. 19, 1969	1215	1	-	140	Sept.25, 1969	1030	12	992	165
Mar. 14, 1969	1000	0	1,350	140					
5-3360. ST. CROIX RIVER NEAR GRANTSBURG, WIS. (LAT 45°55'26" LONG 92°38'21")									
Oct. 1, 1968	1440	15	3,400	140	Apr. 11, 1969	1225	2	14,200	<50
Nov. 8, 1968	1300	4	2,610	135	May 19, 1969	1050	15	2,380	125
Dec. 13, 1968	1325	0	-	80	June 13, 1969	1015	12	1,820	-
Jan. 22, 1969	1600	1	2,360	170	July 30, 1969	1245	24	1,510	150
Feb. 19, 1969	1625	0	2,220	180	Aug. 21, 1969	0850	19	1,170	160
Mar. 14, 1969	1330	1	2,250	170	Sept.25, 1969	1415	14	1,510	175
5-3405. ST. CROIX RIVER AT ST. CROIX FALLS, WIS. (LAT 45°24'25" LONG 92°38'49")									
Oct. 15, 1968	1230	14	13,100	120	Apr. 16, 1969	0945	7	-	80
Oct. 29, 1968	1445	8	-	290	May 9, 1969	1300	14	-	120
Dec. 6, 1968	1000	1	-	-	June 12, 1969	1750	14	-	220
Jan. 9, 1969	1100	1	-	135	July 7, 1969	1150	19	-	180
Feb. 13, 1969	1100	3	-	250	Aug. 6, 1969	1230	23	-	190
Mar. 11, 1969	1115	3	-	270	Sept. 5, 1969	1100	21	1,710	160
Apr. 7, 1969	1200	1	-	140					
CHIPPEWA RIVER BASIN									
5-3560. CHIPPEWA RIVER AT BISHOPS BRIDGE NEAR WINTER, WIS. (LAT 45°50'57" LONG 91°04'44")									
Oct. 8, 1968	-	11	493	70	Apr. 3, 1969	1530	3	619	100
Oct. 30, 1968	-	7	462	70	Apr. 22, 1969	1215	8	143	-
Dec. 16, 1968	1058	0	-	80	May 22, 1969	0830	12	148	70
Jan. 15, 1969	1615	1	-	75	June 19, 1969	2000	18	225	90
Feb. 20, 1969	1630	1	-	<50	Aug. 18, 1969	1130	23	601	70
Mar. 17, 1969	0940	2	-	120	Sept.22, 1969	1130	16	167	100
5-3565. CHIPPEWA RIVER NEAR BRUCE, WIS. (LAT 45°27'08" LONG 91°15'39")									
Oct. 21, 1968	1245	10	3,750	70	May 16, 1969	1345	18	-	105
Dec. 2, 1968	1115	1	1,820	70	June 9, 1969	1200	19	593	105
Jan. 6, 1969	1240	1	2,150	75	July 11, 1969	1200	24	529	85
Feb. 10, 1969	0950	1	1,810	90	Aug. 5, 1969	1000	22	1,050	75
Mar. 10, 1969	1025	0	1,390	105	Sept. 8, 1969	1130	17	377	120
Apr. 9, 1969	1140	2	9,060	<50					
5-3585. FLAMBEAU RIVER AT BABBS ISLAND, NEAR WINTER, WIS. (LAT 45°46'07" LONG 90°45'41")									
Oct. 30, 1968	1700	6	1,290	100	June 20, 1969	1000	15	733	100
Dec. 16, 1968	1310	0	713	70	July 3, 1969	1320	19	734	90
Jan. 15, 1969	1515	1	1,220	85	July 23, 1969	1130	22	848	85
Feb. 20, 1969	1600	0	2,100	70	Aug. 18, 1969	1415	23	926	85
Mar. 17, 1969	1115	0	1,150	120	Sept. 2, 1969	1000	22	882	105
Apr. 3, 1969	1315	4	932	105	Sept.22, 1969	1300	17	776	100
May 22, 1969	0945	13	832	90					

Specific conductance (micromhos at 25°C), October 1968 to September 1969--Continued

Date	Time	Water temperature (°C)	Discharge (cfs)	Specific conductance	Date	Time	Water temperature (°C)	Discharge (cfs)	Specific conductance
CHIPPEWA RIVER BASIN--Continued									
5-3595. SOUTH FORK FLAMBEAU RIVER NEAR PHILLIPS, WIS. (LAT 45°42'08" LONG 90°36'58")									
Oct. 9, 1968	1020	9	791	80	Apr. 11, 1969	1030	2	4,710	-
Oct. 31, 1968	1020	5	518	80	May 21, 1969	1530	15	791	55
Dec. 16, 1968	1425	0	559	90	June 20, 1969	1250	17	479	80
Jan. 15, 1969	1235	0	374	80	July 3, 1969	1105	19	669	70
Feb. 20, 1969	1225	0	410	<50	July 23, 1969	1555	24	725	70
Mar. 17, 1969	1510	2	387	120	Aug. 18, 1969	1615	26	208	75
Apr. 3, 1969	1100	2	514	115	Sept. 2, 1969	1330	22	161	90
Apr. 9, 1969	1740	2	2,940	80	Sept.22, 1969	1500	17	169	100
5-3605. FLAMBEAU RIVER NEAR BRUCE, WIS. (LAT 45°22'21" LONG 91°12'34")									
Oct. 21, 1968	1540	10	1,760	70	May 5, 1969	1120	14	2,180	65
Dec. 2, 1968	1400	2	1,640	95	June 9, 1969	1230	20	1,770	90
Jan. 6, 1969	1510	1	1,440	85	July 11, 1969	1600	23	1,600	100
Feb. 10, 1969	1215	1	2,390	130	Aug. 5, 1969	1515	23	1,240	90
Mar. 10, 1969	1415	0	-	90	Sept. 8, 1969	1430	17	826	100
Apr. 11, 1969	1300	3	9,920	75					
5-3620 JUMP RIVER AT SHELDON, WIS. (LAT 45°18'29" LONG 90°57'23")									
Oct. 22, 1968	-	9	286	110	May 5, 1969	1415	13	485	95
Dec. 2, 1968	1630	0	234	130	June 10, 1969	0730	20	179	120
Jan. 10, 1969	1255	1	173	80	July 9, 1969	1410	19	249	100
Feb. 11, 1969	1255	1	290	95	Aug. 5, 1969	1205	23	98.9	150
Mar. 11, 1969	1120	1	211	<50	Sept. 8, 1969	1610	18	39.8	200
Apr. 16, 1969	0720	5	-	65					
5-3655. CHIPPEWA RIVER AT CHIPPEWA FALLS, WIS. (LAT 44°55'37" LONG 91°24'33")									
Oct. 22, 1968	1610	11	7,980	90	Apr. 15, 1969	1115	7	-	<50
Dec. 3, 1968	1415	2	-	130	May 6, 1969	1345	13	-	110
Jan. 7, 1969	1510	1	-	<50	June 10, 1969	1410	17	-	130
Feb. 11, 1969	1730	1	-	125	July 9, 1969	0615	16	280	180
Mar. 12, 1969	1545	1	-	150	Aug. 7, 1969	1730	23	8,560	115
Mar. 26, 1969	1130	2	-	160	Sept. 9, 1969	1000	19	-	190
5-3674.25 RED CEDAR RIVER NEAR CAMERON, WIS. (LAT 45°24'05" LONG 91°46'38")									
Oct. 11, 1968	-	9	1,090	130	Apr. 17, 1969	0945	8	220	155
Nov. 1, 1968	0950	8	714	140	Apr. 30, 1969	1435	11	443	120
Nov. 29, 1968	1510	1	411	140	June 16, 1969	1540	21	256	160
Jan. 7, 1969	1315	1	425	140	July 29, 1969	1545	24	332	150
Feb. 11, 1969	1240	1	445	150	Aug. 28, 1969	1345	24	122	170
Mar. 13, 1969	1140	2	616	160	Sept.11, 1969	1320	18	206	180
Mar. 27, 1968	1000	2	562	140					
5-3680. HAY RIVER AT WHEELER, WIS. (LAT 45°02'52" LONG 91°54'39")									
Oct. 23, 1968	1410	8	447	290	May 6, 1969	2040	18	340	330
Dec. 3, 1968	1630	1	252	340	May 27, 1969	1140	17	244	330
Jan. 9, 1969	1120	0	217	<50	July 8, 1969	1755	16	234	320
Feb. 13, 1969	1000	0	190	<50	Aug. 8, 1969	1450	21	187	330
Mar. 12, 1969	1515	3	192	320	Sept. 9, 1969	1330	18	165	340
Apr. 7, 1969	1400	4	2,300	100					
5-3690. RED CEDAR RIVER AT MENOMONIE, WIS. (LAT 44°53'02" LONG 91°55'57")									
Oct. 23, 1968	1230	9	2,760	180	Apr. 17, 1969	1130	9	-	130
Dec. 4, 1968	1040	1	-	200	May 7, 1969	1400	16	2,020	190
Jan. 7, 1969	1515	1	-	150	June 12, 1969	1120	17	-	220
Jan. 27, 1969	1115	1	-	180	July 8, 1969	1400	19	2,730	195
Feb. 11, 1969	1440	1	-	180	Aug. 13, 1969	1100	24	430	200
Mar. 12, 1969	1415	1	-	200	Sept.10, 1969	0945	19	454	210
Apr. 7, 1969	1505	3	5,310	160					

Specific conductance (micromhos at 25°C), October 1968 to September 1969--Continued

Date	Time	Water temperature (°C)	Discharge (cfs)	Specific conductance	Date	Time	Water temperature (°C)	Discharge (cfs)	Specific conductance
CHIPPEWA RIVER BASIN--Continued									
5-3695. CHIPPEWA RIVER AT DURAND, WIS. (LAT 44°37'40" LONG 91°58'10")									
Oct. 24, 1968	1015	9	12,000	110	Apr. 17, 1969	1000	9	-	80
Dec. 4, 1968	1145	3	6,980	240	May 8, 1969	1415	16	10,510	110
Jan. 8, 1969	1300	1	7,520	<50	June 10, 1969	1700	21	4,100	130
Feb. 12, 1969	0845	0	8,680	140	July 8, 1969	1230	19	8,400	120
Mar. 12, 1969	-	0	-	120	Aug. 13, 1969	1455	26	5,990	120
Apr. 9, 1969	1915	5	43,900	110	Sept.10, 1969	1300	18	3,300	155
Apr. 12, 1969	1110	7	48,800	145					
5-3700. EAU GALLE RIVER AT SPRING VALLEY, WIS. (LAT 44°51'10" LONG 92°14'17")									
Nov. 13, 1968	-	-	7.38	-	Apr. 16, 1969	1300	9	-	440
Dec. 4, 1968	0930	2	1.00	460	May 7, 1969	0945	17	22.1	250
Jan. 8, 1969	1600	4	5.23	350	June 11, 1969	1330	18	17.1	340
Feb. 12, 1969	1700	1	6.07	300	July 7, 1969	1630	19	9.95	360
Mar. 11, 1969	1745	3	5.67	350	Aug. 8, 1969	1200	18	0.42	450
Apr. 6, 1969	1815	1	699	130	Sept. 9, 1969	1630	20	8.28	380
Apr. 8, 1969	1030	4	361	140					
TREMPEALEAU RIVER BASIN									
5-3794. TREMPEALEAU RIVER AT ARCADIA, WIS. (LAT 44°15'14" LONG 91°30'27")									
Nov. 8, 1968	1005	6	315	270	May 8, 1969	1230	16	511	190
Dec. 4, 1968	1615	4	295	240	May 27, 1969	1630	-	385	-
Dec. 18, 1968	1325	0	299	270	June 10, 1969	1210	18	304	240
Jan. 23, 1969	1600	0	330	260	July 17, 1969	1340	23	465	220
Feb. 25, 1969	1050	0	235	-	Aug. 19, 1969	1230	18	228	405
Apr. 3, 1969	1415	5	-	-	Sept.24, 1969	1320	13	265	-
5-3795. TREMPEALEAU RIVER AT DODGE, WIS. (LAT 44°07'55" LONG 91°33'14")									
Nov. 7, 1968	1535	6	356	270	May 8, 1969	1450	17	583	-
Dec. 18, 1968	1105	0	274	260	June 10, 1969	1510	-	312	-
Jan. 23, 1969	1405	-	375	180	July 17, 1969	1650	24	552	240
Feb. 25, 1969	1415	0	377	-	Aug. 19, 1969	1540	21	286	450
Apr. 8, 1969	0925	4	1,880	175	Sept.24, 1969	1040	13	314	-
BLACK RIVER BASIN									
5-3810. BLACK RIVER AT NEILLSVILLE, WIS. (LAT 44°33'37" LONG 90°36'54")									
Nov. 8, 1968	1545	5	188	130	May 7, 1969	1345	18	2,530	95
Jan. 24, 1969	1200	-	325	-	June 9, 1969	1435	21	147	-
Feb. 24, 1969	1340	-	197	-	July 21, 1969	1320	26	127	130
Apr. 7, 1969	1705	2	11,000	-	Aug. 18, 1969	1555	27	56.8	175
5-3820. BLACK RIVER NEAR GALESVILLE, WIS. (LAT 44°03'42" LONG 91°17'32")									
Nov. 6, 1968	1300	6	1,080	110	Apr. 7, 1969	1730	4	19,400	70
Dec. 17, 1968	1700	0	1,080	90	May 13, 1969	1540	18	2,050	90
Jan. 23, 1969	1035	-	1,100	100	June 12, 1969	1520	18	778	150
Feb. 25, 1969	1640	0	849	-	Aug. 20, 1969	1135	19	504	225
Apr. 2, 1969	1625	2	3,860	-	Sept.17, 1969	1200	-	416	-
LA CROSSE RIVER BASIN									
5-3830. LA CROSSE RIVER NEAR WEST SALEM, WIS. (LAT 43°54'05" LONG 91°07'08")									
Nov. 7, 1968	0945	6	282	200	May 9, 1969	1315	17	331	-
Dec. 17, 1968	1400	2	235	300	June 13, 1969	1000	18	306	260
Jan. 21, 1969	1045	-	250	260	July 21, 1969	1755	27	298	270
Mar. 3, 1969	1720	2	262	300	Aug. 20, 1969	1505	26	226	355
Mar. 28, 1969	1125	2	534	400	Sept.23, 1969	1425	-	205	-

Specific conductance (micromhos at 25°C), October 1968 to September 1969--Continued

Date	Time	Water temperature (°C)	Discharge (cfs)	Specific conductance	Date	Time	Water temperature (°C)	Discharge (cfs)	Specific conductance
WISCONSIN RIVER BASIN									
5-3901.8 WISCONSIN RIVER AT CONOVER, WIS. (LAT 46°02'52" LONG 89°15'57")									
Oct. 18, 1968	1520	11	177	90	Apr. 11, 1969	1300	4	381	<50
Nov. 11, 1968	1640	2	202	75	Apr. 14, 1969	1607	9	380	<50
Dec. 16, 1968	1420	0	261	100	May 13, 1969	0905	9	151	80
Jan. 20, 1969	1700	0	239	100	June 17, 1969	1335	17	156	75
Feb. 17, 1969	1705	0	106	95	July 14, 1969	1240	20	123	80
Mar. 10, 1969	1400	0	142	110	Aug. 18, 1969	1220	20	100	75
Apr. 9, 1969	1855	3	314	-	Sept.15, 1969	1200	17	126	90
Apr. 10, 1969	0820	-	359	-					
5-3910. WISCONSIN RIVER AT RAINBOW LAKE NEAR LAKE TOMAHAWK, WIS. (LAT 45°49'58" LONG 89°32'51")									
Oct. 22, 1968	1300	11	645	105	Apr. 17, 1969	1200	4	161	50
Nov. 11, 1968	1410	8	884	75	May 12, 1969	1515	12	577	50
Dec. 10, 1968	1210	1	989	85	June 6, 1969	1300	15	710	70
Jan. 20, 1969	1400	1	1,180	80	July 10, 1969	1350	18	712	80
Feb. 17, 1969	1415	1	1,210	65	Aug. 15, 1969	1500	23	810	70
Mar. 6, 1969	1250	1	1,030	60	Sept. 3, 1969	1100	22	744	75
Apr. 9, 1969	1630	1	207	70					
5-3935. SPIRIT RIVER AT SPIRIT FALLS, WIS. (LAT 45°26'58" LONG 89°58'47")									
Oct. 1, 1968	1500	16	34.7	85	Apr. 11, 1969	1900	5	870	-
Nov. 4, 1968	1500	4	43.0	115	May 13, 1969	1000	11	70.7	100
Dec. 11, 1968	1400	0	34.9	115	June 11, 1969	0930	17	23.3	90
Jan. 14, 1969	1330	0	31.8	110	June 27, 1969	1500	17	835	70
Feb. 6, 1969	1500	0	55.8	100	July 16, 1969	1130	23	25.2	90
Mar. 6, 1969	1100	0	35.7	110	Aug. 18, 1969	1100	21	5.14	130
Apr. 9, 1969	1200	1	1,350	150	Sept. 3, 1969	1500	22	3.29	150
Apr. 10, 1969	1800	-	1,400	-					
5-3945. PRAIRIE RIVER NEAR MERRILL, WIS. (LAT 45°14'09" LONG 89°38'59")									
Oct. 1, 1968	1400	14	150	145	Apr. 7, 1969	0900	2	756	70
Oct. 11, 1968	1330	11	265	110	Apr. 8, 1969	1030	2	985	60
Nov. 6, 1968	1430	5	156	150	Apr. 10, 1969	1630	3	1,600	-
Dec. 2, 1968	1430	2	126	180	May 5, 1969	1100	15	310	90
Jan. 3, 1969	1430	0	120	70	June 10, 1969	1345	17	125	160
Feb. 4, 1969	1100	0	152	130	July 9, 1969	1000	16	146	140
Mar. 3, 1969	1500	1	117	200	Aug. 8, 1969	1015	18	115	180
Apr. 1, 1969	1430	1	178	100	Sept. 4, 1969	1030	17	83	130
5-3950. WISCONSIN RIVER AT MERRILL, WIS. (LAT 45°10'41" LONG 89°40'52")									
Oct. 3, 1968	1100	13	2,600	120	Apr. 2, 1969	1100	1	2,500	105
Nov. 1, 1968	1500	7	2,450	95	Apr. 10, 1969	1500	3	13,600	-
Dec. 2, 1968	1425	1	2,690	110	May 7, 1969	1430	16	3,900	100
Jan. 15, 1969	1100	0	3,060	140	June 10, 1969	1040	16	1,970	80
Jan. 30, 1969	1500	0	3,260	95	July 9, 1969	1430	18	2,440	100
Feb. 13, 1969	1430	0	2,800	90	Aug. 8, 1969	1440	19	3,020	120
Feb. 27, 1969	1400	0	2,850	100	Sept. 4, 1969	1425	22	2,120	80
Mar. 14, 1969	1400	0	2,310	120					
5-3975. EAU CLAIRE RIVER AT KELLY, WIS. (LAT 44°55'06" LONG 89°33'00")									
Oct. 25, 1968	1500	6	136	240	Apr. 10, 1969	1800	-	2,120	-
Nov. 19, 1968	1030	1	149	205	May 6, 1969	1200	14	510	120
Dec. 12, 1968	1030	0	143	320	May 9, 1969	1030	12	484	50
Jan. 9, 1969	1300	0	110	230	June 9, 1969	1500	16	138	200
Feb. 12, 1969	1030	-	192	-	June 27, 1969	1100	17	3,590	70
Mar. 7, 1969	1400	0	126	200	June 30, 1969	1100	18	1,220	120
Apr. 2, 1969	1500	1	321	120	July 10, 1969	1000	17	174	190
Apr. 4, 1969	1600	1	792	140	Aug. 13, 1969	1030	21	103	220
Apr. 7, 1969	1500	3	2,040	55	Sept. 5, 1969	0800	22	81.2	200
Apr. 8, 1969	1330	4	2,350	50					

Specific conductance (micromhos at 25°C), October 1968 to September 1969--Continued

Date	Time	Water temperature (°C)	Discharge (cfs)	Specific conductance	Date	Time	Water temperature (°C)	Discharge (cfs)	Specific conductance
WISCONSIN RIVER BASIN--Continued									
5-3980. WISCONSIN RIVER AT ROTHSCHILD, WIS. (LAT 44°53'09" LONG 89°38'05")									
Oct. 25, 1968	1400	7	3,140	145	May 7, 1969	1245	15	9,100	150
Nov. 1, 1968	1150	-	3,550	-	June 9, 1969	1320	17	3,320	180
Jan. 17, 1969	1250	1	3,700	140	July 10, 1969	1440	18	3,310	120
Apr. 2, 1969	1310	1	4,890	120	Aug. 13, 1969	1355	24	3,030	120
Apr. 10, 1969	1100	-	26,800	-	Sept. 5, 1969	1145	23	2,280	130
5-3995. BIG EAU PLEINE RIVER NEAR STRATFORD, WIS. (LAT 44°49'19" LONG 90°04'46")									
Oct. 22, 1968	1415	9	28.4	180	Apr. 24, 1969	1400	13	70	210
Nov. 19, 1968	1610	0	41.5	280	May 20, 1969	1235	14	151	130
Dec. 9, 1968	1545	0	18.8	260	June 13, 1969	1255	15	216	400
Jan. 13, 1969	1305	0	19.7	300	July 23, 1969	1520	26	124	165
Feb. 12, 1969	1315	-	59.3	-	July 31, 1969	1060	24	25	220
Mar. 4, 1969	1325	0	41.9	420	Aug. 15, 1969	1045	23	11.4	220
Apr. 8, 1969	1700	3	3,000	80	Aug. 27, 1969	1240	-	3.37	-
Apr. 9, 1969	1205	-	2,790	-					
5-4006. LITTLE PLOVER RIVER NEAR ARNOTT, WIS. (LAT 44°28'05" LONG 89°29'20")									
Oct. 25, 1968	1240	5	2.69	-	Apr. 3, 1969	1929	9	13.1	380
Nov. 19, 1968	1230	3	2.56	-	Apr. 30, 1969	1515	11	4.21	240
Dec. 9, 1968	1250	2	2.49	340	May 21, 1969	1325	11	3.95	-
Jan. 13, 1969	1600	1	2.33	210	May 27, 1969	1855	18	19.0	200
Feb. 10, 1969	1325	2	2.22	380	June 25, 1969	0945	11	5.14	210
Mar. 4, 1969	1325	8	1.99	240	July 23, 1969	1105	13	4.38	340
Apr. 3, 1969	1255	9	4.54	360	Aug. 15, 1969	1545	14	3.31	200
Apr. 3, 1969	1345	10	5.34	380	Sept. 8, 1969	1035	12	3.78	250
Apr. 3, 1969	1635	10	10.3	380					
5-4006.5 LITTLE PLOVER RIVER AT PLOVER, WIS. (LAT 44°28'33" LONG 89°31'40")									
Oct. 25, 1968	1117	6	9.01	310	Apr. 7, 1969	1520	11	13.0	320
Nov. 19, 1968	1100	3	8.59	300	Apr. 30, 1969	1645	12	12.9	300
Dec. 9, 1968	1210	3	7.71	320	May 21, 1969	1210	9	11.6	<50
Jan. 10, 1969	1510	0	7.39	340	June 24, 1969	1635	11	16.7	310
Feb. 10, 1969	1140	2	7.48	350	July 23, 1969	1145	12	12.7	310
Mar. 4, 1969	1535	6	7.62	320	Sept. 8, 1969	1130	11	9.67	300
5-4010.5 TENMILE CREEK NEAR NEKOOSA, WIS. (LAT 44°18'08" LONG 89°32'59")									
Oct. 30, 1968	1150	6	60.7	290	Apr. 9, 1969	1215	10	220	-
Dec. 3, 1968	1630	4	53.0	280	Apr. 28, 1969	1755	8	115	330
Jan. 14, 1969	1620	2	29.9	215	June 3, 1969	0955	9	119	290
Feb. 17, 1969	1650	4	38.3	-	July 9, 1969	1735	15	117	300
Mar. 28, 1969	1125	3	150	280	Aug. 12, 1969	1400	19	48.2	250
Apr. 9, 1969	1000	10	197	-	Sept.30, 1969	1150	9	36.7	250
5-4011. FOURTEEN MILE CREEK NEAR NEW ROME, WIS. (LAT 44°12'15" LONG 89°48'29")									
Oct. 1, 1968	1625	17	57.6	320	Apr. 29, 1969	1505	12	85.4	315
Dec. 4, 1968	1335	2	44.2	310	June 3, 1969	1150	16	51.6	300
Jan. 14, 1969	1505	1	30.0	255	July 10, 1969	1010	19	77.2	300
Feb. 18, 1969	1215	1	31.1	300	Aug. 12, 1969	1600	23	19.6	305
Mar. 28, 1969	1335	2	55.7	280	Sept.30, 1969	1045	14	21.0	325
5-4015.35 BIG ROCHE A CRI CREEK NEAR ADAMS, WIS. (LAT 44°05'52" LONG 89°46'30")									
Oct. 1, 1968	1800	14	64.5	250	Apr. 9, 1969	1635	10	135	-
Oct. 30, 1968	1620	6	57.4	250	Apr. 29, 1969	1645	9	92.0	215
Dec. 4, 1968	1520	4	51.4	235	June 3, 1969	1350	10	62.1	230
Jan. 13, 1969	1650	0	49.3	210	July 10, 1969	1200	15	95.0	300
Feb. 18, 1969	1400	2	51.7	220	Aug. 11, 1969	1650	17	48.7	230
Mar. 28, 1969	1600	3	98.3	220	Sept.30, 1969	0930	8	44.3	240

Specific conductance (micromhos at 25°C), October 1968 to September 1969--Continued

Date	Time	Water temperature (°C)	Discharge (cfs)	Specific conductance	Date	Time	Water temperature (°C)	Discharge (cfs)	Specific conductance
WISCONSIN RIVER BASIN--Continued									
5-4020. YELLOW RIVER AT BABCOCK, WIS. (LAT 44°18'05" LONG 90°07'15")									
Oct. 29, 1968	1635	7	27.6	105	Apr. 28, 1969	1410	11	167	110
Dec. 3, 1968	1335	3	57.1	130	June 2, 1969	1505	14	60.4	80
Jan. 15, 1969	1355	0	33.9	130	July 9, 1969	1205	17	130	75
Feb. 17, 1969	1320	0	82.1	130	Aug. 12, 1969	1030	22	28.6	100
Mar. 27, 1969	1350	1	1,570	-	Sept.25, 1969	1305	11	9.72	-
5-4035. LEMONWEIR RIVER AT NEW LISBON, WIS. (LAT 43°52'47" LONG 90°09'40")									
Nov. 12, 1968	1135	3	320	125	June 18, 1969	1450	18	271	125
Dec. 19, 1968	1415	0	208	155	July 1, 1969	1220	19	2,900	80
Jan. 28, 1969	1225	-	409	-	July 16, 1969	1500	24	384	120
Feb. 26, 1969	1325	0	344	-	Aug. 21, 1969	1020	19	96.6	175
Mar. 27, 1969	1445	1	2,110	135	Sept.25, 1969	1525	13	96.0	-
May 6, 1969	1210	18	550	100					
5-4040. WISCONSIN RIVER NEAR WISCONSIN DELLS, WIS. (LAT 43°36'22" LONG 89°45'25")									
Oct. 10, 1968	1405	13	6,410	150	June 19, 1969	1215	-	5,680	-
Nov. 13, 1968	1250	4	6,240	175	July 1, 1969	1520	18	34,930	155
Apr. 10, 1969	1240	4	37,500	120	July 14, 1969	1130	24	9,220	110
May 12, 1969	1345	13	9,430	100	Aug. 22, 1969	1500	24	4,370	135
5-4050. BARABOO RIVER NEAR BARABOO, WIS. (LAT 43°28'51" LONG 89°38'09")									
Oct. 9, 1968	1130	10.5	187	340	Apr. 10, 1969	1550	12	1,420	180
Nov. 12, 1968	1505	4	169	355	May 16, 1969	1020	17	197	-
Dec. 23, 1968	1220	0	161	345	June 20, 1969	1000	18	173	340
Jan. 17, 1969	1300	0	194	460	July 14, 1969	1430	23	208	340
Feb. 28, 1969	1255	0	235	-	Aug. 21, 1969	1450	24	133	400
Apr. 1, 1969	-	1	491	290					
5-4065. BLACK EARTH CREEK AT BLACK EARTH, WIS. (LAT 43°08'03" LONG 89°43'56")									
Oct. 1, 1968	1105	13	27.2	540	June 24, 1969	1515	-	26.6	-
Oct. 16, 1968	1035	14	21.7	600	June 26, 1969	1010	18	289	190
Oct. 28, 1968	1125	8	23.2	510	June 27, 1969	1105	19	435	190
Nov. 20, 1968	1050	4	25.0	530	July 15, 1969	1425	18	37.6	520
Dec. 16, 1968	1340	2	19.6	360	Aug. 5, 1969	1120	16	32.0	520
Jan. 29, 1969	1425	-	25.2	-	Aug. 7, 1969	1015	27	31.99	-
Mar. 5, 1969	1200	3	40.0	500	Aug. 7, 1969	1025	27	32.5	-
Apr. 1, 1969	1550	7	30.0	600	Aug. 15, 1969	1455	19	30.2	530
May 19, 1969	0855	9	27.0	505	Aug. 27, 1969	1445	18	27.0	600
June 2, 1969	0905	10	26.4	535	Sept.22, 1969	1640	15.5	23.9	540
5-4070. WISCONSIN RIVER AT MUSCODA, WIS. (LAT 43°11'56" LONG 90°26'26")									
Oct. 21, 1968	1355	14	9,400	220	May 5, 1969	1500	18	12,300	170
Dec. 2, 1968	1440	-	7,790	-	June 11, 1969	1810	21	11,900	195
Jan. 7, 1969	1630	-	6,500	-	July 3, 1969	1530	22	44,044	160
Feb. 13, 1969	1355	0	11,100	220	Aug. 22, 1969	1435	26	4,380	200
Apr. 1, 1969	-	1	21,500	190	Sept. 4, 1969	1250	23	4,440	240
Apr. 15, 1969	1510	11	21,000	-					
5-4080. KICKAPOO RIVER AT LA FARGE, WIS. (LAT 43°34'27" LONG 90°38'35")									
Oct. 7, 1968	1540	11.5	37.3	420	Apr. 17, 1969	1055	9	223	-
Nov. 4, 1968	1215	6	223	440	May 14, 1969	1045	15	225	420
Jan. 7, 1969	1235	0	112	400	June 11, 1969	1640	19	36.2	460
Jan. 22, 1969	1050	-	252	410	July 23, 1969	1610	23	44.6	450
Jan. 22, 1969	1340	-	72.8	410	Aug. 25, 1969	1040	21	83.3	480
Mar. 3, 1969	1215	0	238	440	Sept.29, 1969	1100	12	88.7	425

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Specific conductance (micromhos at 25°C), October 1968 to September 1969--Continued

Date	Time	Water temperature (°C)	Discharge (cfs)	Specific conductance	Date	Time	Water temperature (°C)	Discharge (cfs)	Specific conductance
WISCONSIN RIVER BASIN--Continued									
5-4085. KNAPP CREEK NEAR BLOOMINGDALE, WIS. (LAT 43°40'05" LONG 90°46'53")									
Oct. 7, 1968	1805	12	2.33	312	Apr. 4, 1969	1715	4	85.1	165
Nov. 5, 1968	1040	6	2.21	335	May 14, 1969	1315	18	2.86	320
Dec. 16, 1968	1525	0	1.98	320	June 17, 1969	1625	21	2.38	320
Jan. 20, 1969	1340	0	2.48	320	July 22, 1969	1430	23	1.68	340
Mar. 4, 1969	1445	0	2.84	330	Aug. 25, 1969	1330	20	1.64	360
Apr. 2, 1969	1135	1	7.60	-					
5-4100. KICKAPOO RIVER AT GAYS MILLS, WIS. (LAT 43°19'10" LONG 90°51'08")									
Oct. 30, 1968	0845	6	290	490	Mar. 26, 1969	1015	-	1,460	-
Dec. 10, 1968	0850	0	263	460	Apr. 29, 1969	1610	12	454	460
Jan. 8, 1969	1250	-	251	285	June 2, 1969	1535	15	304	480
Feb. 17, 1969	1555	0	283	460	July 11, 1969	0850	19	368	480
Mar. 25, 1969	1715	3	1,400	270	Aug. 12, 1969	1350	21	274	455
5-4105. KICKAPOO RIVER AT STEUBEN, WIS. (LAT 43°11'27" LONG 90°52'28")									
Oct. 29, 1968	1530	7	352	500	Mar. 25, 1969	1340	3	1,290	275
Dec. 9, 1968	1530	0	283	470	Apr. 29, 1969	1350	12	548	460
Dec. 9, 1968	1645	0	305	-	June 2, 1969	1315	15	369	480
Jan. 8, 1969	1655	0	305	425	July 11, 1969	1315	21	444	510
Feb. 17, 1969	1215	0	296	460	Aug. 12, 1969	1635	21	330	460
GRANT RIVER BASIN									
5-4135. GRANT RIVER AT BURTON, WIS. (LAT 42°43'13" LONG 90°49'09")									
Oct. 25, 1968	1245	7	73.6	600	Mar. 26, 1969	1655	5	214	540
Nov. 5, 1968	0840	-	69.5	-	Apr. 24, 1969	0935	11	163	580
Nov. 26, 1968	1130	4	69.3	550	May 27, 1969	1130	17	134	-
Dec. 5, 1968	1040	1	45.41	-	June 3, 1969	0970	14	106	-
Dec. 18, 1968	1600	0	65.0	580	June 27, 1969	1445	-	932	-
Jan. 16, 1969	1120	0	73.5	580	Sept.24, 1969	1300	14	86.5	520
Feb. 26, 1969	1120	0	124	530					
PLATTE RIVER BASIN									
5-4140. PLATTE RIVER NEAR ROCKVILLE, WIS. (LAT 42°43'52" LONG 90°38'25")									
Oct. 25, 1968	1025	6	54.5	575	Mar. 27, 1969	1110	4	131	560
Nov. 5, 1968	0940	-	47.8	-	Apr. 24, 1969	1220	13	112	550
Nov. 26, 1968	1415	4	52.2	520	May 27, 1969	1450	20	79	-
Dec. 5, 1968	1015	1	44.7	-	June 5, 1969	1120	14	76.6	-
Dec. 19, 1968	1140	0	246	360	June 12, 1969	1120	18	342	470
Jan. 8, 1969	1430	-	53.8	-	June 12, 1969	1655	-	469	-
Jan. 15, 1969	1530	0	47.3	560	June 27, 1969	1225	-	896	-
Feb. 4, 1969	1130	-	67.3	-	July 21, 1969	2130	21	126	600
Feb. 26, 1969	1445	3	81.6	530					
GALENA RIVER BASIN									
5-4150. GALENA RIVER AT BUNCOMBE, WIS. (LAT 42°30'49" LONG 92°22'40")									
Oct. 28, 1968	1420	8	47.8	870	June 3, 1969	0955	12	43.5	810
Dec. 5, 1968	1335	1	30.3	810	June 26, 1969	1540	22	432	360
Dec. 6, 1968	1535	0	56.0	880	June 27, 1969	0850	-	1,720	-
Jan. 14, 1969	1705	0	36.0	800	June 27, 1969	0905	-	1,540	-
Feb. 25, 1969	1330	2	166	560	June 30, 1969	1915	21	637	500
Apr. 3, 1969	1550	-	60.6	-	July 22, 1969	1345	25	91.5	825
Apr. 30, 1969	1105	-	64.8	-	Aug. 13, 1969	1640	26	57.4	770

Specific conductance (micromhos at 25°C), October 1968 to September 1969--Continued

Date	Time	Water temperature (°C)	Discharge (cfs)	Specific conductance	Date	Time	Water temperature (°C)	Discharge (cfs)	Specific conductance
GALENA RIVER BASIN--Continued									
5-4155. EAST FORK GALENA RIVER AT COUNCIL HILL, ILL. (LAT 42°28'06" LONG 90°20'20")									
Oct. 28, 1968	1600	7	4.09	1,110	June 3, 1969	1155	12	6.44	750
Dec. 5, 1968	1535	0	3.65	930	June 27, 1969	0955	19	73.8	-
Jan. 15, 1969	1025	0	5.06	1,000	June 30, 1969	1525	23	32.1	650
Feb. 25, 1969	1155	1	14.8	485	July 22, 1969	1640	25	9.9	750
Apr. 3, 1969	1725	10	10.4	750	Aug. 14, 1969	1135	24	5.84	890
Apr. 30, 1969	1240	12	9.73	800					
ROCK RIVER BASIN									
5-4230. WEST BRANCH ROCK RIVER NEAR WAUPUN, WIS. (LAT 43°40'04" LONG 88°39'08")									
Oct. 24, 1968	1410	9	2.86	680	Apr. 25, 1969	1200	14	33.5	690
Dec. 3, 1968	1415	9	2.27	750	June 6, 1969	1445	16	10.6	750
Jan. 14, 1969	1115	-	1.31	-	July 16, 1969	1440	27	15.6	635
Feb. 26, 1969	1655	0	6.43	670	Aug. 21, 1969	1310	24	3.10	700
Apr. 1, 1969	1230	2	33.7	725	Sept.22, 1969	1355	20	2.34	750
5-4235. SOUTH BRANCH ROCK RIVER AT WAUPUN, WIS. (LAT 43°38'31" LONG 88°43'13")									
Oct. 24, 1968	1600	8	3.03	810	Apr. 1, 1969	1045	3	49.6	815
Dec. 4, 1968	1045	2	2.31	800	Apr. 25, 1969	1035	14	44.8	800
Jan. 13, 1969	1545	-	1.11	-	June 6, 1969	1245	17	19.3	775
Feb. 19, 1969	1010	0	3.61	900	Aug. 21, 1969	1055	19	4.94	750
Mar. 20, 1969	1355	1	242	360					
5-4240. EAST BRANCH ROCK RIVER NEAR MAYVILLE, WIS. (LAT 43°31'48" LONG 88°33'58")									
Oct. 25, 1968	1045	8	18.1	700	Apr. 25, 1969	1430	13	148	660
Dec. 4, 1968	1530	0	37.1	850	June 6, 1969	1020	16	78.4	700
Jan. 14, 1969	1410	-	17.3	-	July 16, 1969	1145	26	54.1	650
Feb. 19, 1969	1255	0	26.8	950	Aug. 7, 1969	1040	24	86.0	650
Apr. 1, 1969	1630	1	212	560	Sept.22, 1969	1145	18	7.66	900
5-4255. ROCK RIVER AT WATERTOWN, WIS. (LAT 43°11'17" LONG 88°43'33")									
Nov. 1, 1968	1100	11	65.8	680	May 1, 1969	1245	13	483	660
Dec. 23, 1968	1220	0	462	630	June 10, 1969	1200	19	665	670
Jan. 28, 1969	1205	0	572	750	July 11, 1969	1410	24	1,200	570
Feb. 24, 1969	1350	1	194	700	Aug. 22, 1969	1040	23	98.3	700
Apr. 3, 1969	1415	5	1,320	525	Sept.24, 1969	1625	17	34.6	650
Apr. 21, 1969	1755	13	1,130	600					
5-4260. CRAWFISH RIVER AT MILFORD, WIS. (LAT 43°06'00" LONG 88°50'58")									
Nov. 1, 1968	1400	12	54.7	620	May 1, 1969	0915	13	440	700
Dec. 23, 1968	1000	0	223	600	June 10, 1969	1350	22	287	660
Jan. 28, 1969	1015	0	293	650	July 11, 1969	1100	23	1,100	575
Feb. 24, 1969	1055	0	128	800	Aug. 22, 1969	1300	24	81.2	630
Apr. 3, 1969	1025	4	1,020	550	Sept.17, 1969	1625	22	68.3	610
5-4295. YAHARA RIVER NEAR MC FARLAND, WIS. (LAT 43°00'32" LONG 89°18'18")									
Oct. 1, 1968	1400	19	107	415	Apr. 1, 1969	-	4	289	400
Oct. 9, 1968	1500	14	100	410	May 5, 1969	1010	16	162	440
Oct. 16, 1968	1435	18	62.1	440	June 2, 1969	1145	17	115	420
Oct. 22, 1968	1155	13	97.3	420	July 1, 1969	1500	23	336	450
Oct. 28, 1968	1505	8	103	420	July 2, 1969	0955	22	318	430
Nov. 13, 1968	1205	6	76.8	435	July 17, 1969	1400	26	212	410
Nov. 20, 1968	1410	3	81.7	430	Aug. 5, 1969	1545	27	168	-
Dec. 5, 1968	1515	1	80.1	420	Aug. 15, 1969	1215	23	147	460
Jan. 10, 1969	1240	0	102	360	Sept. 8, 1969	1120	22	149	400
Feb. 20, 1969	1240	2	200	480	Sept.19, 1969	0940	18	38.8	400

Specific conductance (micromhos at 25°C), October 1968 to September 1969--Continued

Date	Time	Water temperature (°C)	Discharge (cfs)	Specific conductance	Date	Time	Water temperature (°C)	Discharge (cfs)	Specific conductance
ROCK RIVER BASIN--Continued									
5-4305. ROCK RIVER AT AFTON, WIS. (LAT 42°36'33" LONG 89°04'14")									
Oct. 4, 1968	1430	14	995	610	Apr. 2, 1969	1230	3	3,737	480
Nov. 5, 1968	1315	9	796	640	May 6, 1969	1345	18	2,207	575
Dec. 13, 1968	1200	1	1,010	650	July 18, 1969	1255	25	3,970	550
Jan. 20, 1969	1415	1	959	750	Aug. 22, 1969	1420	24	654	630
Feb. 25, 1969	1420	3	901	665	Sept.30, 1969	1400	16	577	680
5-4315. TURTLE CREEK NEAR CLINTON, WIS. (LAT 42°35'47" LONG 88°51'50")									
Oct. 17, 1968	1430	20	44.0	650	May 7, 1969	1120	18	80.4	640
Oct. 25, 1968	1450	9	77.8	610	June 6, 1969	1605	21	128	600
Dec. 12, 1968	1415	0	82.6	560	July 8, 1969	1410	18	160	570
Jan. 30, 1969	1240	0	118	550	Aug. 19, 1969	1125	24	59.8	650
Mar. 3, 1969	1050	2	195	460	Sept.11, 1969	1400	19	65.6	600
Apr. 2, 1969	1510	5	283	450					
5-4325. PECATONICA RIVER AT DARLINGTON, WIS. (LAT 42°40'38" LONG 90°07'07")									
Oct. 24, 1968	0940	8	89.0	670	Apr. 30, 1969	1620	12	166	640
Nov. 5, 1968	1045	6	80.4	-	June 3, 1969	1550	13	110	650
Nov. 20, 1968	1055	1	85.6	620	June 12, 1969	2105	18	930	490
Dec. 4, 1968	0930	2	80.8	630	June 26, 1969	2300	22	2,469	-
Jan. 14, 1969	1135	0	66.9	670	June 27, 1969	0710	-	2,740	-
Feb. 18, 1969	1445	0	91.6	630	June 30, 1969	1220	22	6,650	190
Mar. 5, 1969	1630	-	579	-	July 21, 1969	1640	23	264	650
Mar. 27, 1969	1415	4	227	605	Aug. 21, 1969	1420	22	141	560
5-4330. E. BRANCH PECATONICA RIVER NEAR BLANCHARDVILLE, WIS. (LAT 42°47'10" LONG 89°51'40")									
Oct. 23, 1968	1005	9	101	535	June 4, 1969	1210	12	127	520
Dec. 3, 1968	1125	3	94.7	500	June 13, 1969	0940	16	354	360
Jan. 9, 1969	1220	0	87.0	370	June 27, 1969	1150	-	1,800	-
Feb. 24, 1969	1220	1	128	500	July 1, 1969	1410	18	487	480
Apr. 17, 1969	1000	12	204	540	July 21, 1969	1225	20	186	575
May 2, 1969	1320	14	151	520	Aug. 19, 1969	1540	23	124	-
5-4345. PECATONICA RIVER AT MARTINTOWN, WIS. (LAT 42°30'34" LONG 89°47'58")									
Oct. 24, 1968	1320	9	420	610	June 27, 1969	1805	21	2,330	250
Dec. 4, 1968	1650	2	368	570	June 30, 1969	1820	-	9,925	-
Jan. 9, 1969	1515	0	250	570	July 1, 1969	1025	22	15,000	195
Feb. 24, 1969	1650	0	620	480	July 1, 1969	1740	-	14,600	-
Mar. 13, 1969	1350	2	652	540	July 1, 1969	2140	-	14,200	-
Apr. 17, 1969	1530	12	919	560	July 2, 1969	1040	-	12,800	-
May 2, 1969	1045	13	680	600	July 3, 1969	1545	24	8,484	-
June 4, 1969	1545	14	496	570	Aug. 19, 1969	1145	24	581	540
5-4365. SUGAR RIVER NEAR BRODHEAD, WIS. (LAT 42°36'42" LONG 89°23'52")									
Oct. 25, 1968	1110	9	266	500	June 13, 1969	1100	20	432	530
Dec. 12, 1968	1130	20	243	520	June 27, 1969	1505	-	1,080	-
Jan. 17, 1969	1330	0	246	510	June 30, 1969	1415	-	2,940	-
Feb. 25, 1969	1100	1	347	495	July 2, 1969	1625	23	1,720	340
Mar. 25, 1969	1155	4	582	460	July 18, 1969	1710	24	592	450
May 6, 1969	1125	19	306	510	Aug. 22, 1969	1210	23	231	540
June 6, 1969	1210	19	325	500	Sept.30, 1969	1625	17	236	520

Specific conductance (micromhos at 25°C), October 1968 to September 1969--Continued

Date	Time	Water temperature (°C)	Discharge (cfs)	Specific conductance	Date	Time	Water temperature (°C)	Discharge (cfs)	Specific conductance
ILLINOIS RIVER BASIN									
5-5438.3 FOX RIVER AT WAUKESHA, WIS. (LAT 43°00'17" LONG 88°14'37")									
Oct. 29, 1968	1175	10	7.07	860	June 23, 1969	1100	15	58.2	725
Jan. 27, 1969	1310	0	125	850	July 14, 1969	1700	25	30.7	800
Mar. 28, 1969	1105	4	170	1,125	Aug. 25, 1969	1300	22	33.0	880
Apr. 18, 1969	1515	8	391	710	Sept.19, 1969	1055	17.5	17.5	940
Apr. 30, 1969	1340	13	76.54	825					
5-5465. FOX RIVER AT WILMOT, WIS. (LAT 42°30'40" LONG 88°10'45")									
Nov. 6, 1968	-	8	-	690	July 9, 1969	1935	21	1,370	570

Instantaneous Suspended Sediment, water year October 1968 to September 1969

Date	Time	Discharge (cfs)	Concentration (mg/l)	Suspended Sediment Discharge (tons/day)	Date	Time	Discharge (cfs)	Concentration (mg/l)	Suspended Sediment Discharge (tons/day)
ST. CROIX RIVER BASIN									
5-3353.8 BASHAW BROOK NEAR SHELL LAKE, WIS. (LAT 45°47'02" LONG 97°07'51")									
Oct. 1, 1968	1000	11.9	10	T	Apr. 14, 1969	1545	25	10	1
Oct. 3, 1968	0820	-	4	0	May 19, 1969	1050	7.69	27	1
Apr. 11, 1969	1245	58	16	3					
CHIPPEWA RIVER BASIN									
5-3595. SOUTH FORK FLAMBEAU RIVER NEAR PHILLIPS, WIS. (LAT 45°42'08" LONG 90°36'58")									
Oct. 9, 1968	0945	822	8	18	May 21, 1969	1645	768	6	12
Apr. 29, 1969	1115	1,100	52	154					
5-3680. HAY RIVER AT WHEELER, WIS. (LAT 45°02'52" LONG 91°54'39")									
Oct. 23, 1968	1550	450	62	75	Apr. 7, 1969	1415	2,470	223	1,487
Mar. 12, 1969	1515	212	2	1	May 6, 1969	2020	320	18	16
TREMPEALEAU RIVER BASIN									
5-3794. TREMPEALEAU RIVER AT ARCADIA, WIS. (LAT 44°15'15" LONG 91°30'25")									
Mar. 21, 1969	0300	1,160	784	2,460	Apr. 8, 1969	1500	1,700	320	1,470
Mar. 24, 1969	1030	1,280	408	1,410	Apr. 10, 1969	1500	1,090	229	674
Apr. 3, 1969	2230	1,270	1,460	5,010	June 27, 1969	1400	1,580	4,020	17,150
Apr. 5, 1969	1030	2,340	615	3,890	July 4, 1969	1000	1,350	6,785	24,730
Apr. 6, 1969	1430	2,820	440	3,350	July 17, 1969	1400	453	187	229
BLACK RIVER BASIN									
5-3813.5 LEVIS CREEK NEAR BLACK RIVER FALLS, WIS. (LAT 44°18'42" LONG 90°48'23")									
Apr. 4, 1969	1215	144	50	19	Aug. 18, 1969	1330	13	3	T
BAD AXE RIVER BASIN									
5-3871. NORTH FORK BAD AXE RIVER NEAR GENOA, WIS. (LAT 43°33'10" LONG 91°08'58")									
July 22, 1969	0840	25	140	9					
WISCONSIN RIVER BASIN									
5-3935. SPIRIT RIVER AT SPIRIT FALLS, WIS. (LAT 45°26'58" LONG 89°58'47")									
Oct. 1, 1968	1415	36	2	T	Apr. 9, 1969	1245	1,570	12	51
Oct. 31, 1968	1400	54	20	3	June 27, 1969	1445	851	26	60
Nov. 4, 1968	1425	40	43	5					
5-3945. PRAIRIE RIVER NEAR MERRILL, WIS. (LAT 45°14'09" LONG 89°38'59")									
Apr. 7, 1969	1020	770	8	17	July 9, 1969	1030	147	6	2
June 27, 1969	1315	902	20	49	Aug. 8, 1969	1040	115	8	2

Instantaneous Suspended Sediment, water year October 1968 to September 1969--Continued

Date	Time	Discharge (cfs)	Concentration (mg/l)	Suspended Sediment Discharge (tons/day)	Date	Time	Discharge (cfs)	Concentration (mg/l)	Suspended Sediment Discharge (tons/day)
WISCONSIN RIVER BASIN--Continued									
5-3995. BIG EAU PLEINE RIVER NEAR STRATFORD, WIS. (LAT 44°49'19" LONG 90°04'46")									
Oct. 22, 1968	1430	28.3	2	T	May 2, 1969	1650	2,140	58	335
Apr. 5, 1969	0745	3,500	45	425	May 6, 1969	1545	1,300	26	91
Apr. 5, 1969	1720	3,500	218	2,060	May 17, 1969	0920	296	48	38
Apr. 7, 1969	1615	3,500	29	274	May 27, 1969	0830	631	97	165
Apr. 8, 1969	1650	3,000	22	178	May 27, 1969	1215	2,030	250	1,370
Apr. 9, 1969	0800	2,710	24	176	June 23, 1969	0750	799	50	108
Apr. 24, 1969	1430	70	8	2	June 25, 1969	1655	2,130	161	926
Apr. 28, 1969	1615	424	12	14	June 25, 1969	2010	4,060	137	1,502
May 2, 1969	0750	1,570	180	763	June 27, 1969	0745	8,460	89	2,033
May 2, 1969	1200	2,060	90	501	Aug. 7, 1969	0810	208	24	13
5-4006.5 LITTLE PLOVER RIVER AT PLOVER, WIS. (LAT 44°28'33" LONG 89°31'40")									
Oct. 25, 1968	1130	9.01	14	T	July 23, 1969	1155	12.7	2	T
May 21, 1969	1240	11.6	0	0	Aug. 15, 1969	1420	20.8	7	T
5-4010.5 TENMILE CREEK NEAR NEKOOSA, WIS. (LAT 44°15'44" LONG 89°48'38")									
Mar. 28, 1969	1145	142	198	76	Apr. 9, 1969	-	195	199	105
5-4042. NARROWS CREEK AT LOGANVILLE, WIS. (LAT 43°26'32" LONG 90°02'06")									
June 26, 1969	1235	50	323	44	June 29, 1969	1530	330	376	335
June 29, 1969	0900	920	377	936	July 18, 1969	0900	25	253	17
June 29, 1969	1230	1,150	958	2,970					
5-4098.3 NORTH FORK NEDERLO CREEK NEAR GAYS MILLS, WIS. (LAT 43°21'47" LONG 90°54'34")									
Nov. 13, 1968	1500	0.74	24	T	Apr. 4, 1969	1200	2.20	82	T
Feb. 11, 1969	0945	.63	6	T	May 21, 1969	1030	.73	27	T
Mar. 19, 1969	1300	.91	18	T	May 21, 1969	1200	.84	30	T
Mar. 19, 1969	1445	1.10	13	T	June 26, 1969	0815	76	12,600	2,586
Mar. 19, 1969	1600	3.62	95	1	June 26, 1969	0845	29	7,210	565
5-4098.6 SOUTH FORK NEDERLO CREEK NEAR GAYS MILLS, WIS. (LAT 43°21'36" LONG 90°54'31")									
Nov. 13, 1968	1515	1.1	27	T	Apr. 4, 1969	1230	2.65	183	1
Feb. 11, 1969	1045	.92	6	T	May 21, 1969	1110	1.08	29	T
Mar. 19, 1969	1335	1.43	43	T	June 27, 1969	-	9.2	1,710	42
5-4098.7 NEDERLO CREEK NEAR GAYS MILLS, WIS. (LAT 43°21'30" LONG 90°53'49")									
Nov. 29, 1968	1220	2.1	23	T	May 21, 1969	1240	2.27	10	T
Feb. 11, 1969	1140	1.6	6	T	June 26, 1969	0830	156	6,360	2,679
Mar. 19, 1969	1230	1.25	9	T	June 26, 1969	0850	81.6	4,580	1,009
Mar. 19, 1969	1510	2.90	49	T	June 27, 1969	-	15.2	2,870	118
Apr. 4, 1969	1120	4.35	256	3	June 27, 1969	-	39	2,000	211
Apr. 4, 1969	1300	4.11	167	2	Aug. 7, 1969	0830	2.26	21	T
May 21, 1969	1015	1.95	32	T	Aug. 7, 1969	-	15.2	1,110	46
5-4098.9 NEDERLO CREEK NEAR GAYS MILLS, WIS. (LAT 43°21'43" LONG 90°52'44")									
Nov. 29, 1968	1130	3.2	28	T	June 25, 1969	0830	6.20	143	2
Mar. 19, 1969	1200	5.52	22	T	June 25, 1969	0830	53	1,050	150
Mar. 19, 1969	1520	17.6	323	15	June 25, 1969	0930	30	888	72
Mar. 19, 1969	1630	19.6	355	19	June 25, 1969	1700	31	1,170	98
Apr. 4, 1969	1100	22.8	875	54	June 25, 1969	1840	29	1,750	137
Apr. 4, 1969	1320	16.7	416	18	June 27, 1969	-	41	5,160	571
June 25, 1969	0800	70	2,170	410	Aug. 7, 1969	0835	4.3	49	1

Instantaneous Suspended Sediment, water year October 1968 to September 1969--Continued

Date	Time	Discharge (cfs)	Concentration (mg/l)	Suspended Sediment Discharge (tons/day)	Date	Time	Discharge (cfs)	Concentration (mg/l)	Suspended Sediment Discharge (tons/day)
ROCK RIVER BASIN									
5-4230. WEST BRANCH ROCK RIVER NEAR WAUPUN, WIS. (LAT 43°40'04" LONG 88°39'08")									
Oct. 24, 1968	1420	2.86	236	2	July 16, 1969	1430	17	59	3
June 6, 1969	1500	12	68	2	Aug. 21, 1969	1300	3	38	T
5-4235. SOUTH BRANCH ROCK RIVER AT WAUPUN, WIS. (LAT 43°38'31" LONG 88°43'13")									
Oct. 24, 1968	1600	3.03	151	1					
5-4335. YELLOWSTONE RIVER NEAR BLANCHARDVILLE, WIS. (LAT 42°46'55" LONG 89°59'50")									
Apr. 4, 1969	1110	80	1,705	368					

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Part 1. Surface Water Records

Part 2. Water Quality Records