1972

Water Resources Data for North Dakota

Part 1. Surface Water Records

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Prepared in cooperation with the State of North Dakota
and with other agencies

CALENDAR FOR WATER YEAR 1972

OCTOBER 1971

S	M	T	W	T	F	S
					1	2
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31						

NOVEMBER 1971

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DECEMBER 1971

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JANUARY 1972

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FEBRUARY 1972

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MARCH 1972

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APRIL 1972

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MAY 1972

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JUNE 1972

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JULY 1972

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AUGUST 1972

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SEPTEMBER 1972

S	M	T	W	T	F	S
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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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North Dakota State Water Commission
North Dakota Highway Department
Oliver County, North Dakota
Corps of Engineers, U.S. Army
Bureau of Reclamation, U.S. Department of the Interior
International Joint Commission, U.S. Department of State
Fish and Wildlife Service, U.S. Department of the Interior
Soil Conservation Service, U.S. Department of Agriculture

Water resources records, 1972, for North Dakota are in the following reports of the U.S. Geological Survey:

1. Water Resources Data for North Dakota
   Part 1: Surface Water Records

2. Water Resources Data for North Dakota
   Part 2: Water Quality Records

Copies of this report may be obtained from
District Chief, Water Resources Division
U.S. Geological Survey
Room 348 - Federal Building
Bismarck, N. Dak. 58501

1973

CONTENTS

ILLUSTRATIONS

GAGING STATIONS, IN DOWNSTREAM ORDER,
FOR WHICH RECORDS ARE PUBLISHED

HUDSON BAY BASIN

Gaging-station records--Continued

HUDSON BAY BASIN--Continued

Gaging-station records--Continued

WATER RESOURCES DATA FOR NORTH DAKOTA, 1972

PART 1. SURFACE-WATER RECORDS

INTRODUCTION

Surface-water records for the 1972 water year for North Dakota including records of streamflow or reservoir storage at gaging stations, partial-record stations, and miscellaneous sites, are given in this report. The locations of the gaging stations are shown in figure 1. 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 R. C. Williams, 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 North Dakota.

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, surface-water records 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 and reservoir storage records for 1961-65 are also published in a Geological Survey water-supply paper series entitled, "Surface Water Supply of the United States 1961-65." There will be a similar series of water-supply papers for the water years 1966-70.

COOPERATION

The U.S. Geological Survey and organizations of the State of North Dakota have had cooperative agreements for the systematic collection of surface-water records since 1903. Organizations that supplied data are acknowledged in station descriptions. Organizations that assisted in collecting data through cooperative agreements with the Survey are:

North Dakota State Water Commission
M. W. Hoisveen, Chief Engineer.

North Dakota State Highway Department
W. R. Hjelle, Commissioner.

Oliver County Board of Commissioners
William R. Van Oosting, Chairman.

Assistance in the form of funds or services was given by other Federal agencies:

Corps of Engineers, U.S. Army
International Joint Commission, U.S. Department of State
Soil Conservation Service, U.S. Department
Bureau of Sport Fisheries and Wildlife, U.S. Department of the Interior
Bureau of Reclamation, U.S. Department of the Interior

Certain stations are maintained under agreement with Canada and the records are obtained and compiled in a manner equally acceptable in both countries. Most of these stations are designated as "International gaging stations."

DEFINITION OF TERMS

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

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

Cfs-day is the volume of water represented by the 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.

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.

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 feet 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.

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 more 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.

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

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.

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.

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 reference 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 man-made 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

Stations 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 list 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 and partial-record 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. 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 06330000, which appears to the left of the station name, includes the 2-digit part number "06" plus a 6-digit downstream order number "330000". In this report, the records are listed in downstream order by parts. All records for a drainage basin 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.

EXPLANATION OF SURFACE-WATER DATA

Collection and Computation of Data

The base data collected at gaging stations consists of records of stage and measurement 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 streamgaging 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 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 curve 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 heights 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 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 a lake or reservoir station, capacity tables giving the contents for any stage are prepared from stage-area relation curves defined by surveys. Discharge over spillways is computed from a stage-discharge relation curve defined by discharge measurements. The application of the stage to the capacity table gives the contents, from which the daily, monthly, or yearly change in contents is computed.

If the stage-capacity curve is subject to changes because of deposition of sediment in the reservoir, periodic resurveys of the reservoir are necessary to define new stage-capacity curves. During the period between reservoir resurveys the computed contents may be increasingly in error due to the gradual accumulation of sediment.

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 comparisons with other station records from the same or nearby basins. Likewise, daily contents may be estimated on the basis of operator's log, adjoining good record, inflow-outflow studies, and other information.

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 and reservoirs a monthly summary table of stage and contents or a table showing the daily contents is given. Tables of daily mean gage heights are included for some streamflow stations and for some reservoir stations. Records are published for the water year, which begins on October 1 and ends on September 30. A calendar for the 1972 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 station gives the location, drainage area, period of record, type and history of gages, average discharge, extremes of discharge or contents, 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 or other agencies. 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 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. In addition, the median of yearly mean discharges is given for stream-gaging stations having 10 or more complete years of record if the median differs from the average by more than 10 percent. The maximum discharge (or contents) and the maximum gage height, the minimum discharge if there is little or no regulation (or the minimum contents), 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 (or contents) corresponds to the crest stage obtained by the use of a water-stage recorder (grapic 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 or contents, 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"; for reservoir stations information on the dam forming the reservoir, the capacity, outlet works and spillway, and purpose and use of the reservoir, is also 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 headed "REVISIONS (WATER YEARS)" has been added to the description of all stations for which revised records have been published. Listed therein are all 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 date 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.

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

Skeleton capacity tables are published for all reservoirs for which records of contents are published on a daily basis.

The daily tables for stream-gaging stations give 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 readings; but for periods of rapidly changing stage the discharge is determined from a gage-height graph based on gage readings.

The daily tables for reservoir stations give the contents corresponding to the water-surface elevation at a given time, usually at 2400 each day. For some reservoirs the elevation at a given time is given in the daily table.

The monthly summary is given below the daily table. For stream-gaging stations the line headed "TOTAL" gives the sum of the daily figures; it is the total cubic feet per second per day for the month. The line headed "MEAN" gives the average flow in cubic feet per second during the month. The line 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"), or in inches (line headed "IN") or in acre-feet (line headed "AC-FT"). Figures of cubic feet per second per square mile and runoff are omitted if there is extensive regulation

or diversion, if the drainage area includes large noncontributing areas, or if the average rainfall on the drainage basin is usually less than 20 inches.

For reservoir stations the monthly summary gives the elevation (or gage height) at the end of the month and the change in contents during the month. If elevation or gage height is given in the daily table, the monthly summary gives the contents at the end of the month, rather than the elevation or gage height. For some reservoirs, a tabulation of monthly evaporation from the water surface is also included.

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 the minimum daily discharges.

For reservoir stations the yearly summary gives the change in contents for the calendar year and for the water year. For some reservoirs the yearly evaporation also is included.

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, or for any stream for which the peaks are subject to substantial control by man. The time of day is expressed in 24-hour local time; for example, 12:30 a.m. is 0030 and 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. Footnotes to reservoir tables may be used to explain the use of new capacity tables or for other special conditions.

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 station description under "REMARKS" states the degree of accuracy of the records. "Excellent" means that about 95 percent of the daily discharge is 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, or other factors. For such stations, discharge in cubic feet 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 for 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.

Records through September 1950 for the area covered by this report have been compiled and published in Water-Supply Papers 1308 (5) and 1309 (6); records for October 1950 to September 1960 have been compiled and published in Water-Supply Papers 1728 (5) and 1729 (6); records for October 1960 to September 1965 have been compiled and published in Water-Supply Papers 1913 (5) and 1917 (6). 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 re-examined and revised where warranted. Estimates of discharge were made to fill short gaps 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 records, and rating tables, is on file in the district office. Many gaging-station records in North Dakota through 1968 have been analyzed to give several statistical summaries: (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.

At or near some gaging stations, water-quality records also are collected. Data are obtained on the chemical quality of the stream water, on water temperature, on suspended-sediment concentration, and on the particle-size distribution of suspended sediment and bed material. These data are given in Part 2 of this report. Under the "REMARKS" paragraph of the gaging-station description, reference is made to water-quality records collected on a regular basis.

Hydrologic Conditions

Streamflow was above normal throughout the State. Precipitation was below normal in the northeastern part of the State and above normal elsewhere.

Some flooding occurred in the southwestern part of the State during the spring breakup owing to the rapid melting of snow and the formation of large ice jams. Thunderstorms during the summer caused localized flooding in several areas of the State.

Reservoirs in the State were at or above desired operating levels at the end of the year.

For two key gaging stations, a comparison of monthly and yearly mean discharges for the 1972 water year with the median discharge for the 30 years (1931-60) is shown in figure 2.

SELECTED REFERENCES

Carter, R. W., and Davidian, Jacob, 1968, General procedure for gaging streams: U.S. Geol. Survey Techniques of Water-Resources Inv., book 3, chap. A6, 13 p.

Corbett, D. M. and others, 1943, Stream-gaging procedure, a manual describing methods and practices of the Geological Survey: U.S. Geol. Survey Water-Supply Paper 888, 245 p.

Langbein, W. B., and Iseri, K. T., 1960, General introduction and hydrologic definitions: U.S. Geol. Survey Water-Supply Paper 1541-A, 29 p.

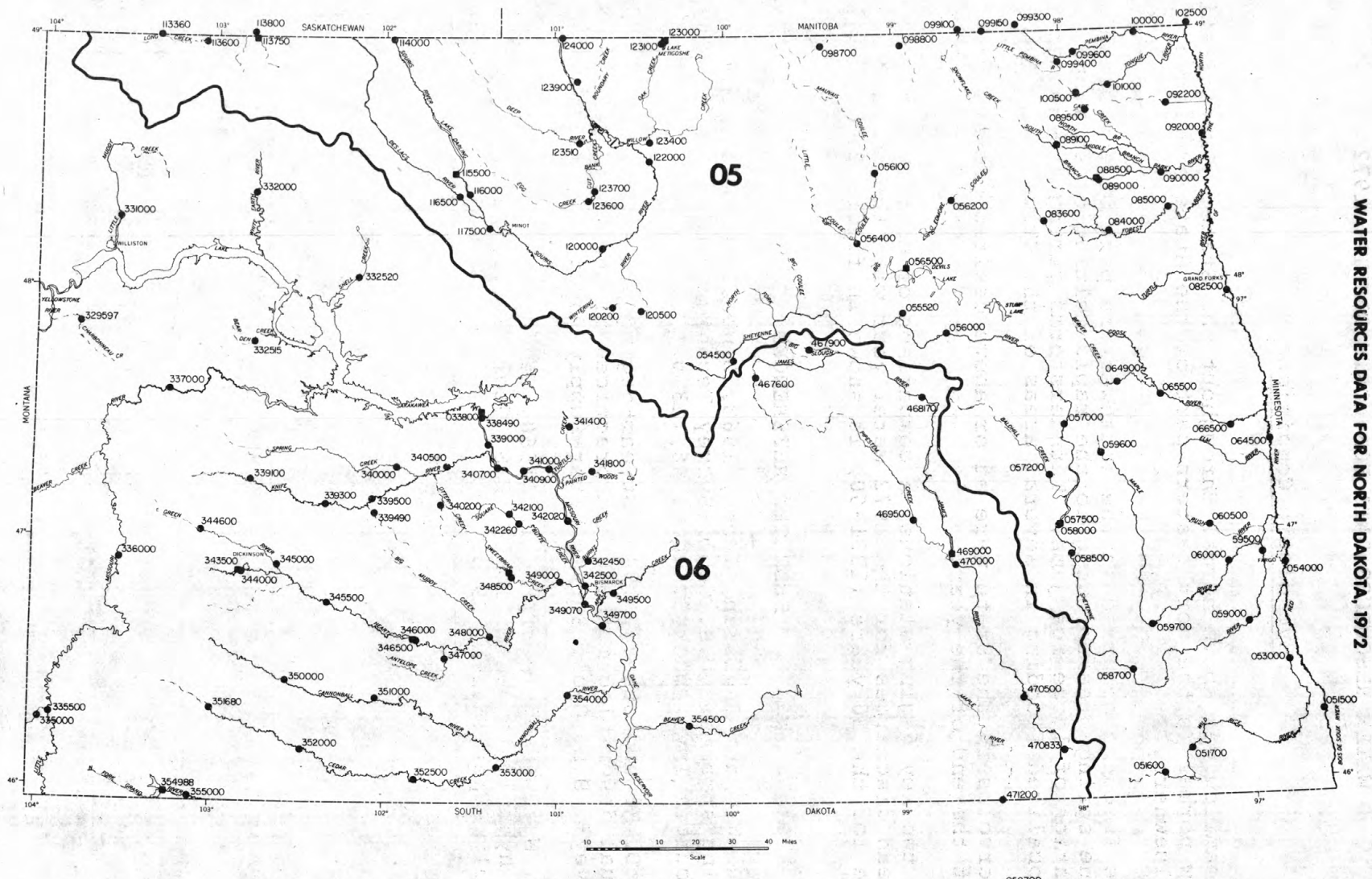

FIGURE 1.-- Locations of lake and stream gaging stations.

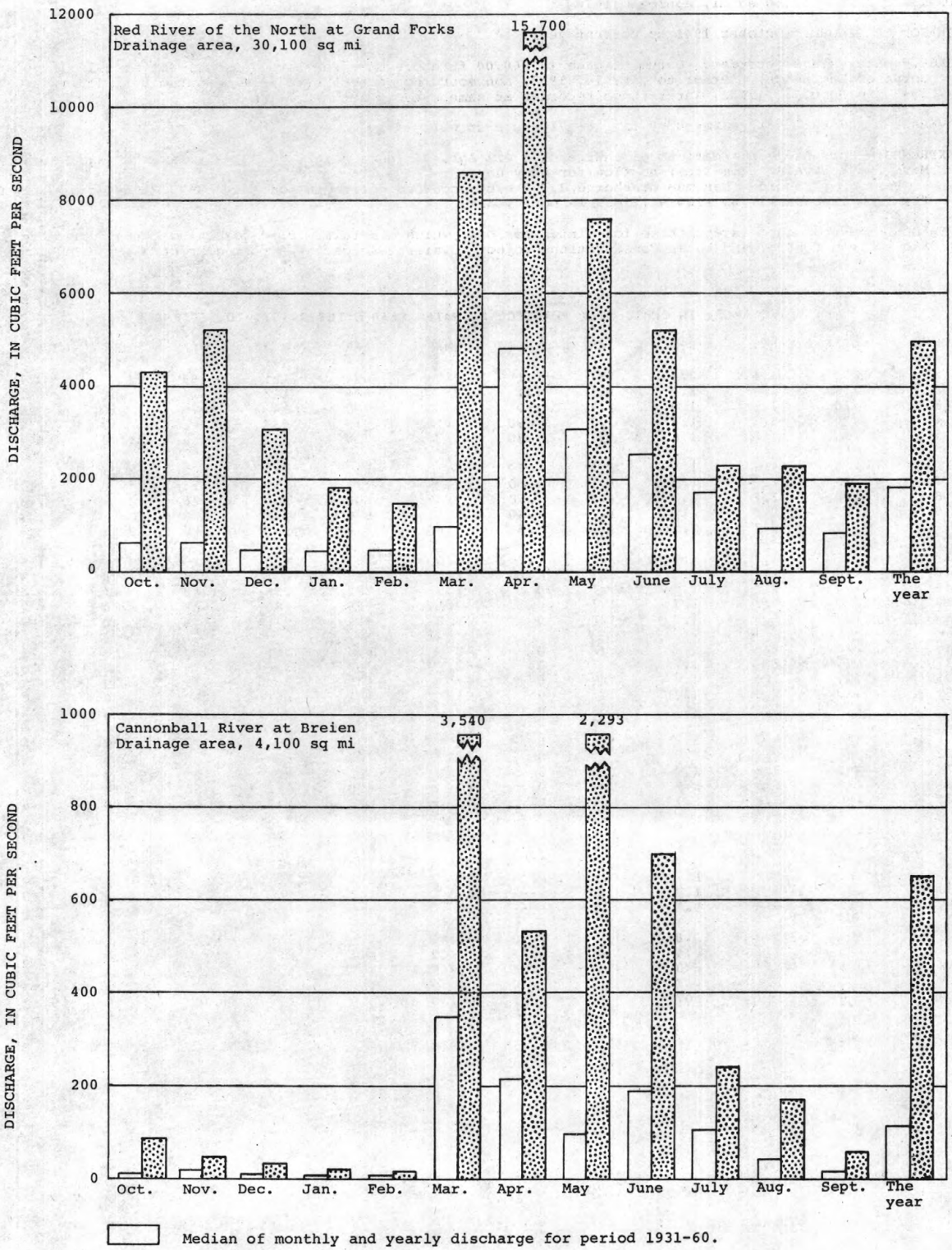

Figure 2.--RUNOFF DURING 1972 WATER YEAR COMPARED WITH MEDIAN RUNOFF FOR PERIOD 1931-60 FOR TWO REPRESENTATIVE GAGING STATIONS.

05050000 Bois de Sioux River near White Rock, S. Dak.

LOCATION.--Lat 45°51'45", long 96°34'25", in SW¼SW¼ sec.27, T.128 N., R.47 W., Roberts County, on left bank just downstream from Big Slough Outlet, 300 ft downstream from White Rock Dam, 4 miles south of White Rock, and 5 miles northwest of Wheaton, Minn.

DRAINAGE AREA.--1,160 sq mi, approximately.

PERIOD OF RECORD.--October 1941 to current year.

GAGE.--Water-stage recorder. Datum of gage is 960.00 ft above mean sea level, adjustment of 1912 (levels by Corps of Engineers). Prior to Jan. 14, 1943, nonrecording gage at same site at datum 0.11 ft lower. Jan. 15, 1943, to Sept. 30, 1963, water-stage recorder at same site at datum 0.11 ft lower.

AVERAGE DISCHARGE.--31 years, 83.8 cfs (60,710 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 776 cfs Apr. 10 (gage height, 9.39 ft); maximum gage height, 9.61 ft Mar. 29 (backwater from ice); no flow for many days.
Period of record: Maximum discharge, 3,770 cfs, occurred during period Apr. 19-21, 1969 (gage height, 15.07 ft, from floodmark); no flow at times in most years.

REMARKS.--Records good except those for winter periods, which are fair. Flow regulated by Lake Traverse-Bois de Sioux Flood Control and Water Conservation project (available capacity for flood control, 137,000 acre-ft).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.30	1.6	2.0	1.7	1.1	0	694	121	183	12	237	12
2	.30	1.9	1.9	1.7	1.1	0	684	142	414	.40	239	10
3	.20	1.9	1.9	1.7	1.0	0	700	144	496	.10	234	10
4	.20	8.2	1.8	1.7	.90	.10	715	147	542	.10	239	10
5	.20	1.2	1.8	1.7	.80	.20	728	151	550	.10	237	10
6	.20	1.2	1.8	1.7	.70	.30	719	147	546	0	236	10
7	.20	1.2	1.8	1.7	.60	.40	711	150	538	.10	230	9.8
8	.20	1.2	1.7	1.7	.50	.50	696	151	526	0	215	1.8
9	.20	1.2	1.7	1.7	.40	.60	675	152	509	0	209	1.5
10	.20	1.2	1.7	1.7	.30	.80	723	153	490	1.2	204	.90
11	.20	1.2	1.7	1.7	.20	1.0	755	150	479	0	155	.80
12	.10	1.2	1.7	1.7	.10	1.3	732	151	463	.10	75	.40
13	.20	1.2	1.7	1.7	0	1.5	728	156	448	.10	72	0
14	.30	1.2	1.7	1.7	0	2.1	728	180	432	.10	72	0
15	.20	1.3	1.7	1.7	0	3.0	704	276	411	.10	70	0
16	.20	1.6	1.7	1.7	0	10	675	381	350	.10	73	3.0
17	.20	2.2	1.7	1.7	0	82	700	369	279	.20	76	0
18	.20	3.6	1.7	1.7	0	95	732	360	273	.20	63	39
19	.20	4.0	1.7	1.7	0	96	732	351	268	.20	30	83
20	.20	5.1	1.7	1.6	0	93	711	338	249	.10	26	82
21	.20	4.7	1.7	1.6	0	90	700	348	228	.10	24	81
22	1.6	4.3	1.7	1.5	0	86	707	356	60	.20	22	74
23	.40	3.8	1.7	1.5	0	83	681	372	54	.40	21	54
24	.30	3.5	1.7	1.4	0	80	650	411	68	.90	39	45
25	.40	3.2	1.7	1.4	0	78	620	412	64	.80	46	.20
26	3.3	2.9	1.7	1.4	0	76	584	411	52	3.0	22	0
27	.60	2.6	1.7	1.3	0	79	324	417	40	29	21	0
28	.50	2.4	1.7	1.3	0	288	137	429	37	88	22	5.2
29	.60	2.2	1.7	1.2	0	460	139	321	36	196	24	.10
30	.70	2.0	1.7	1.2	------	684	142	63	29	229	20	0
31	1.1	------	1.7	1.2	------	709	------	59	------	229	17	------
TOTAL	13.90	75.0	53.8	48.9	7.70	3,100.80	18,926	7,769	9,114	791.60	3,270	543.70
MEAN	.45	2.50	1.74	1.58	.27	100	631	251	304	25.5	105	18.1
MAX	3.3	8.2	2.0	1.7	1.1	709	755	429	550	229	239	83
MIN	.10	1.2	1.7	1.2	0	0	137	59	29	0	17	0
AC-FT	28	149	107	97	15	6,150	37,540	15,410	18,080	1,570	6,490	1,080

CAL YR 1971 TOTAL 3,621.40 MEAN 9.9 MAX 187 MIN 0 AC-FT 7,180
WTR YR 1972 TOTAL 43,714.40 MEAN 119 MAX 755 MIN 0 AC-FT 86,710

05051500 Red River of the North at Wahpeton, N. Dak.

LOCATION.--Lat 46°15'55", long 96°35'40", in NE¼ sec.8, T.132 N., R.47 W., Richland County, on left bank in Wahpeton, 800 ft downstream from confluence of Bois de Sioux and Otter Tail Rivers and at mile 548.6.

DRAINAGE AREA.--4,010 sq mi, approximately.

PERIOD OF RECORD.--April 1942 to current year. Gage-height records collected in this vicinity since 1917 are contained in reports of U.S. Weather Bureau.

GAGE.--Water-stage recorder and concrete and wooden dam. Datum of gage is 942.97 ft above mean sea level. Prior to Aug. 6, 1943, U.S. Weather Bureau nonrecording gage 800 ft upstream, converted to present datum. Aug. 6, 1943, to Oct. 27, 1950, nonrecording gage at present site and datum.

AVERAGE DISCHARGE.--29 years (1943-72), 538 cfs (389,800 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 3,380 cfs Mar. 19 (gage height, 11.67 ft, backwater from ice); minimum, 93 cfs Nov. 6 (gage height, 3.43 ft).
Period of record: Maximum discharge, 9,200 cfs Apr. 10, 1969 (gage height, 16.34 ft); minimum, 8 cfs Aug. 25, 1961 (gage height, 2.26 ft); minimum gage height, 1.76 ft Sept. 8, 9, 1969 (gates open).
A stage of 17.0 ft (discharge, 10,500 cfs) occurred in the spring of 1897 and has not been exceeded since.

REMARKS.--Records good. Flow regulated by Orwell Reservoir (capacity, 14,100 acre-ft at elevation 1,070 ft above mean sea level, adjustment of 1912); Lake Traverse (capacity, 137,000 acre-ft), available for flood control; numerous other controlled lakes and ponds, and several powerplants. Records of chemical analyses for water year 1972 are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	189	338	350	668	520	534	1,890	1,090	2,100	962	864	572
2	191	348	560	647	522	564	1,890	1,080	1,800	936	764	566
3	178	412	570	630	510	562	1,880	1,070	1,870	904	740	559
4	186	440	600	623	492	558	1,860	1,080	1,950	873	731	552
5	183	429	680	619	482	530	1,860	1,100	1,980	850	671	560
6	189	274	670	637	477	541	1,850	1,110	1,960	806	616	558
7	187	338	670	662	475	551	1,850	1,120	1,940	741	616	482
8	187	429	580	649	477	540	1,820	1,120	1,910	704	616	464
9	194	600	520	635	454	552	1,790	1,120	1,870	657	608	469
10	194	564	640	620	466	600	1,750	1,120	1,830	641	648	456
11	194	446	680	611	493	600	1,780	1,120	1,810	628	724	455
12	197	408	690	615	475	588	1,820	1,130	1,770	741	728	428
13	199	401	660	600	494	604	1,870	1,180	1,740	985	682	382
14	197	404	665	600	491	656	1,850	1,180	1,700	1,010	642	380
15	199	401	680	590	476	812	1,840	1,190	1,660	1,030	623	376
16	217	415	670	590	456	1,110	1,820	1,260	1,630	992	596	374
17	223	443	560	590	458	1,840	1,800	1,390	1,580	933	558	377
18	223	528	520	580	427	2,780	1,790	1,390	1,480	883	594	380
19	207	652	640	580	415	3,310	1,780	1,350	1,470	838	585	385
20	229	680	720	580	447	3,280	1,760	1,300	1,420	770	578	394
21	271	664	700	580	458	2,960	1,730	1,780	1,300	731	546	455
22	307	680	680	570	450	2,710	1,710	2,100	1,260	689	550	476
23	307	680	670	570	458	1,960	1,700	1,930	1,170	755	550	472
24	310	680	720	570	449	1,310	1,690	1,740	1,070	814	547	461
25	307	680	680	560	446	1,110	1,680	1,730	1,040	804	548	454
26	310	664	700	560	452	1,250	1,660	1,960	1,030	797	571	446
27	314	556	640	560	493	1,360	1,610	2,250	1,020	829	575	423
28	317	415	680	550	529	1,320	1,410	2,440	1,030	839	566	394
29	310	395	684	550	532	1,380	1,160	2,800	1,020	864	571	394
30	352	380	702	540	------	1,790	1,110	3,000	996	920	569	395
31	348	------	693	530	------	1,890	------	2,530	------	912	567	------
TOTAL	7,416	14,744	19,874	18,466	13,774	40,152	52,010	47,760	46,406	25,838	19,344	13,539
MEAN	239	491	641	596	475	1,295	1,734	1,541	1,547	833	624	451
MAX	352	680	720	668	532	3,310	1,890	3,000	2,100	1,030	864	572
MIN	178	274	350	530	415	530	1,110	1,070	996	628	546	374
AC-FT	14,710	29,240	39,420	36,630	27,320	79,640	103,200	94,730	92,050	51,250	38,370	26,850

CAL YR 1971 TOTAL 125,685 MEAN 344 MAX 874 MIN 86 AC-FT 249,300
WTR YR 1972 TOTAL 319,323 MEAN 872 MAX 3,310 MIN 178 AC-FT 633,400

05051600 Wild Rice River near Rutland, N. Dak.

LOCATION.--Lat 46°01'20", long 97°30'40", in SE¼SE¼ sec.36, T.130 N., R.55 W., Sargent County, on right bank 1,000 ft upstream from bridge on county highway, 2 miles south of Rutland, and 10 miles upstream from Lake Tewaukon.

DRAINAGE AREA.--546 sq mi, of which about 250 sq mi is probably noncontributing.

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

GAGE.--Water-stage recorder. Datum of gage is 1,197.73 ft above mean sea level. Prior to Dec. 11, 1960, nonrecording gage at same site and datum.

AVERAGE DISCHARGE.--13 years, 11.1 cfs (8,040 acre-ft); median of yearly mean discharges, 8.2 cfs (5,900 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 435 cfs Mar. 18 (gage height, 6.64 ft, backwater from ice); no flow for several months.
Period of record: Maximum discharge, 1,270 cfs Apr. 8, 1969 (gage height, 8.77 ft, backwater from ice); maximum gage height, 8.78 ft Apr. 8, 1969 (backwater from ice); no flow for several months each year.

REMARKS.--Records good. Records of chemical analyses for water year 1972 are published in Part 2 of this report.

REVISIONS.--WSP 1728: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1						0	35	9.5	77	1.0	12	
2						0	27	11	77	.74	11	
3						0	31	11	69	.56	11	
4						0	34	10	55	.47	8.9	
5						0	31	12	42	.42	7.8	
6						0	31	15	26	.34	7.5	
7						0	31	15	23	.34	7.8	
8						0	28	16	19	.38	5.0	
9						0	27	17	16	.30	3.1	
10						0	28	17	13	.18	2.0	
11						0	29	17	10	.31	.94	
12						0	28	17	8.0	.60	.56	
13						0	26	25	7.0	.34	.51	
14						0	25	40	5.8	.51	.38	
15						0	24	110	5.0	.42	.18	
16						0	22	182	3.5	.42	.06	
17						.10	20	177	3.2	.38	.10	
18						319	17	141	3.1	.22	.06	
19						254	15	113	3.1	.14	.02	
20						240	13	89	3.0	.30	.01	
21						268	13	74	2.2	1.4	0	
22						248	12	60	1.3	1.5	.01	
23						248	12	67	1.1	2.7	.01	
24						236	11	69	.94	2.8	0	
25						198	11	69	.74	3.0	0	
26						159	10	73	.60	3.5	0	
27						137	9.2	75	.51	3.4	0	
28						103	9.2	74	.83	3.8	0	
29						83	8.6	72	1.0	8.0	0	
30					------	60	8.6	65	1.2	11	0	
31		------			------	47	------	66	------	12	0	------
TOTAL	0	0	0	0	0	2,600.10	626.6	1,808.5	479.12	61.47	78.94	0
MEAN	0	0	0	0	0	83.9	20.9	58.3	16.0	1.98	2.55	0
MAX	0	0	0	0	0	319	35	182	77	12	12	0
MIN	0	0	0	0	0	0	8.6	9.5	.51	.14	0	0
AC-FT	0	0	0	0	0	5,160	1,240	3,590	950	122	157	0

CAL YR 1971 TOTAL 442.99 MEAN 1.21 MAX 49 MIN 0 AC-FT 879
WTR YR 1972 TOTAL 5,654.73 MEAN 15.5 MAX 319 MIN 0 AC-FT 11,220

PEAK DISCHARGE (BASE, 30 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
3-18	--	--	435	5-16	1600	4.33	190
4- 4	1000	3.22	58				

05051700 Wild Rice River near Cayuga, N. Dak.

LOCATION.--Lat 46°07'30", long 97°21'40", on line between secs.29 and 30, T.131 N., R.53 W., Sargent County, on left bank 20 ft downstream from county highway bridge, 1.2 miles downstream from Shortfoot Creek, 2.5 miles downstream from Crooked Creek, and 3.5 miles northeast of Cayuga.

DRAINAGE AREA.--955 sq mi, of which about 390 sq mi is probably noncontributing.

PERIOD OF RECORD.--May 1956 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,095.64 ft above mean sea level (levels by Bureau of Reclamation). Prior to Oct. 9, 1957, nonrecording gage 0.8 mile upstream at different datum.

AVERAGE DISCHARGE.--16 years, 21.5 cfs (15,580 acre-ft per year); median of yearly mean discharges 10 cfs (7,200 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 488 cfs Mar. 27 (gage height, 6.05 ft); no flow for many days. Period of record: Maximum discharge 1,710 cfs Apr. 12, 1969 (gage height, 9.32 ft); maximum gage height, 10.90 ft Apr. 7, 1969 (backwater from ice); no flow at times each year.

REMARKS.--Records good. Some regulation by Fish and Wildlife Service reservoirs, of which Lake Tewaukon is the largest. Small diversions for irrigation. Records of chemical analyses for water year 1972 are published in Part 2 of this report.

REVISIONS.--WSP 1728: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.14	0	.10			0	185	50	95	5.5	1.7	.04
2	.14	.04	.06			0	178	50	89	4.6	1.7	.02
3	.04	.10	.04			0	158	46	83	4.1	1.1	.01
4	.02	.02	.04			0	143	44	75	3.6	.78	.01
5	.01	.02	.04			0	138	47	69	2.9	.68	.01
6	.01	.02	.04			0	127	46	66	2.7	.78	.01
7	.02	.02	.04			0	118	46	62	2.5	1.2	.01
8	.02	.01	.04			0	113	43	59	2.7	2.0	.01
9	.10	.01	.04			0	113	43	56	2.5	2.3	.01
10	.04	.01	.04			.10	104	40	53	2.1	2.7	.01
11	.04	.01	.04			1.0	100	38	48	1.6	2.0	.01
12	.02	.02	.02			5.0	98	39	44	4.1	1.1	.01
13	.02	.02	.01			25	98	63	41	4.3	.58	.01
14	.01	.10	.01			50	96	79	38	5.5	.33	.01
15	.01	.14	.01			135	91	75	33	4.1	.26	.01
16	.10	.40	.01			120	87	93	32	3.8	.14	0
17	.10	.48	0			110	82	104	29	3.3	.14	0
18	.06	.26	0			62	77	102	26	2.9	.26	0
19	.02	.58	0			74	74	111	24	2.7	.14	0
20	.01	.48	0			100	72	142	24	2.1	.10	0
21	.01	.40	0			254	72	200	23	5.3	.10	0
22	.01	.33	0			361	69	175	20	9.2	.10	0
23	.01	.26	0			418	68	195	16	18	.06	0
24	.01	.19	0			413	62	178	13	21	.04	.01
25	.01	.19	0			373	59	159	12	15	.02	.01
26	.01	.26	0			335	57	142	11	11	.02	.02
27	.01	.19	0			296	59	129	9.7	9.2	.01	.04
28	.01	.19	0			292	54	133	8.7	7.4	.01	.02
29	.01	.14	0			281	51	135	7.4	5.2	.01	.02
30	0	.14	0		------	226	51	122	6.6	3.6	.01	.02
31	0	------	0		------	202	------	104	------	2.5	.06	------
TOTAL	1.02	5.03	.58	0	0	4,133.10	2,854	2,973	1,173.4	175.0	20.43	.33
MEAN	.033	.17	.019	0	0	133	95.1	95.9	39.1	5.65	.66	.011
MAX	.14	.58	.10	0	0	418	185	200	95	21	2.7	.04
MIN	0	0	0	0	0	0	51	38	6.6	1.6	.01	0
AC-FT	2.0	10.0	1.2	0	0	8,200	5,660	5,900	2,330	347	41	.7

CAL YR 1971 TOTAL 288.76 MEAN .79 MAX 40 MIN 0 AC-FT 573
WTR YR 1972 TOTAL 11,335.89 MEAN 31.0 MAX 418 MIN 0 AC-FT 22,480

05053000 Wild Rice River near Abercrombie, N. Dak.

LOCATION.--Lat 46°28'05", long 96°47'00", in NE¼NE¼ sec.36, T.135 N., R.49 W., Richland County, on right bank 420 ft upstream from bridge on county highway, 0.75 mile upstream from rubble masonry dam which serves as control, 3.2 miles northwest of Abercrombie, and 7 miles downstream from Antelope Creek.

DRAINAGE AREA.--2,080 sq mi, of which about 590 sq mi is probably noncontributing.

PERIOD OF RECORD.--April 1932 to current year. Monthly discharge only for some periods, published in WSP 1308.

GAGE.--Water-stage recorder and masonry control. Datum of gage is 907.94 ft above mean sea level. Prior to Dec. 7, 1939, nonrecording gage at site 420 ft downstream at datum 5.0 ft lower. Dec. 7, 1939, to Nov. 24, 1952, nonrecording gage at site 0.75 mile downstream at present datum.

AVERAGE DISCHARGE.--40 years, 72.3 cfs (52,380 acre-ft per year); median of yearly mean discharges, 31 cfs (22,500 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 2,100 cfs Mar. 18 (gage height, 14.69 ft, backwater from ice); no flow Sept. 24-30.
Period of record: Maximum discharge, 9,540 cfs Apr. 11, 1969 (gage height, 24.58 ft); no flow at times most years.
Flood in spring of 1897 reached a stage of 27.5 ft, present site and datum, from floodmarks pointed out by local residents.

REMARKS.--Records good. Some regulation by Fish and Wildlife Service reservoirs, of which Lake Tewaukon is the largest. Some small diversions for irrigation. Records of chemical analyses and water temperatures for the water year 1972 are published in Part 2 of this report.

REVISIONS (WATER YEARS).--WSP 1388: 1939, 1941(M). WSP 1728: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.69	22	18	5.6	1.1	.6	335	119	553	28	57	2.2
2	.98	24	17	5.6	1.1	.6	383	112	477	25	52	2.1
3	.69	23	17	5.2	1.1	.6	438	107	428	22	50	1.8
4	.42	20	16	4.4	.98	.6	454	102	350	20	45	1.6
5	.30	20	14	4.4	.90	.5	440	102	292	19	39	1.3
6	.21	18	14	4.4	.83	.5	415	106	236	18	34	.83
7	.17	17	13	4.1	.83	.5	401	100	206	18	29	.48
8	.14	16	12	4.1	.62	.6	371	98	182	17	27	.30
9	.14	18	12	4.1	.62	.6	338	102	159	14	23	.21
10	.14	18	11	4.1	.55	.7	330	106	147	13	18	.12
11	.14	18	11	4.1	.62	.8	316	100	131	11	16	.10
12	.17	17	11	4.1	.62	1.0	305	98	119	14	13	.08
13	.21	15	11	4.1	.62	1.4	415	112	106	55	13	.08
14	.21	16	11	3.1	.69	1.8	395	201	98	89	11	.08
15	.21	14	10	2.4	.69	228	347	223	90	75	6.0	.07
16	.30	14	10	2.3	.69	940	300	332	81	58	4.8	.06
17	1.1	18	8.6	2.1	.69	1,710	266	392	74	58	4.8	.05
18	1.1	22	8.0	1.9	.62	2,060	241	380	70	58	7.5	.04
19	.98	22	7.5	1.8	.55	2,050	218	344	68	52	4.8	.04
20	1.2	24	7.5	1.6	.55	1,870	201	316	67	46	3.8	.03
21	1.2	21	7.5	1.6	.55	1,580	186	786	61	40	5.2	.02
22	1.1	22	7.0	1.6	.55	1,470	177	1,450	55	40	9.3	.02
23	.98	22	7.5	1.6	.55	1,180	168	1,310	52	46	5.6	.01
24	.83	22	7.0	1.6	.55	822	159	1,120	50	60	3.3	.01
25	1.1	21	7.0	1.6	.55	573	153	694	47	92	2.2	0
26	6.0	21	7.5	1.5	.55	495	149	488	44	141	1.7	.01
27	10	20	6.5	1.4	.55	438	143	938	41	123	2.1	.01
28	12	20	5.6	1.2	.55	415	135	1,870	37	104	2.6	0
29	14	20	5.2	1.1	.55	347	129	1,520	34	86	2.6	0
30	16	20	5.6	1.1	------	335	125	1,020	30	68	2.4	0
31	19	------	5.6	1.1	------	318	------	734	------	60	2.1	------
TOTAL	91.71	585	311.6	88.9	19.92	16,841.8	8,433	15,482	4,385	1,570	497.8	11.65
MEAN	2.96	19.5	10.1	2.87	.69	543	281	499	146	50.6	16.1	.39
MAX	19	24	18	5.6	1.1	2,060	454	1,870	553	141	57	2.2
MIN	.14	14	5.2	1.1	.55	.50	125	98	30	11	1.7	0
AC-FT	182	1,160	618	176	40	33,410	16,730	30,710	8,700	3,110	987	23

CAL YR 1971 TOTAL 8,868.55 MEAN 24.3 MAX 443 MIN 0 AC-FT 17,590
WTR YR 1972 TOTAL 48,318.38 MEAN 132 MAX 2,060 MIN 0 AC-FT 95,840

PEAK DISCHARGE (BASE, 300 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
3-18	--	--	2,100	5-22	0830	8.49	1,480
4- 4	--	--	454	5-28	1400	10.73	1,940
4-13	1600	3.56	440				

05054000 Red River of the North at Fargo, N. Dak.

LOCATION.--Lat 46°51'40", long 96°47'00", in NW¼NE¼ sec.18, T.139 N., R.48 W., Cass County, at city waterplant on 4th St. S. in Fargo, 25 miles upstream from mouth of Sheyenne River and at mile 453.0.

DRAINAGE AREA.--6,800 sq mi, approximately.

PERIOD OF RECORD.--May 1901 to current year. Published as "at Moorhead, Minn." 1901. Monthly discharge only for some periods, published in WSP 1308.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 861.8 ft above mean sea level. Oct. 1, 1960, to Sept. 30, 1962, water-stage recorder at present site at datum 5.6 ft higher. See WSP 1728 or 1913 for history of changes prior to Oct. 1, 1960.

AVERAGE DISCHARGE (UNADJUSTED).--71 years, 541 cfs (392,000 acre-ft per year); median of yearly mean discharges, 440 cfs (319,000 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 7,250 cfs Mar. 24 (gage height, 25.36 ft); minimum discharge, 181 cfs Oct. 5-9 (gage height, 13.90 ft).
Period of record: Maximum discharge, 25,300 cfs Apr. 15, 1969 (gage height, 37.34 ft); no flow for many days in each year for period 1932-41, Sept. 30, Oct. 1, 2, 1970.
Flood of Apr. 7, 1897 reached a stage of 39.1 ft, present datum (discharge, 25,000 cfs) at site 1.5 miles downstream.

REMARKS.--Records good. Flow regulated by Orwell Reservoir (capacity, 14,100 acre-ft at elevation 1,070 ft above mean sea level, adjustment of 1912); Lake Traverse (capacity, 137,000 acre-ft, available for flood control); other controlled lakes and ponds and several powerplants. Some small diversions for municipal supply. Figures of daily discharge do not include diversion by cities of Fargo and Moorhead. Records of chemical analyses and water temperatures for the water year 1972 are published in Part 2 of this report.

REVISIONS (WATER YEARS).--WSP 1308: 1902-4, 1906-7, 1910-14, 1916, 1918, 1924. WSP 1388: 1905-6, 1917-20(M), 1935(M), 1938-39(M), 1943.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	190	517	449	600	510	455	2,200	1,430	4,140	1,030	1,010	560
2	246	568	386	590	495	470	2,250	1,340	3,670	1,000	1,000	552
3	222	582	356	585	460	480	2,320	1,320	2,700	968	941	560
4	218	560	386	580	440	490	2,440	1,300	2,200	941	852	552
5	190	560	436	575	460	490	2,490	1,320	2,150	896	812	531
6	181	545	462	575	440	490	2,490	1,310	2,100	869	748	510
7	181	392	552	575	440	500	2,500	1,300	2,000	852	780	510
8	181	332	598	575	420	500	2,440	1,330	1,900	812	692	517
9	181	299	552	575	430	500	2,400	1,370	1,850	756	668	475
10	190	374	456	575	435	510	2,420	1,370	1,800	700	684	436
11	186	598	380	570	435	520	2,440	1,370	1,800	644	676	423
12	186	708	404	570	425	520	2,320	1,380	1,760	636	700	442
13	186	668	552	565	430	530	2,900	1,500	1,750	732	764	442
14	186	660	700	560	420	540	3,500	2,250	1,740	887	784	410
15	186	628	724	560	385	710	3,200	2,300	1,700	860	716	374
16	190	605	690	555	385	1,600	2,770	1,800	1,670	1,070	668	356
17	310	605	660	550	390	3,700	2,400	1,750	1,650	1,210	644	344
18	392	636	640	540	375	4,300	2,200	1,740	1,620	1,160	628	344
19	392	644	636	545	350	5,100	2,000	1,850	1,600	1,070	652	350
20	332	692	640	550	330	5,700	1,980	1,850	1,500	1,000	700	356
21	288	796	650	545	325	6,100	1,930	1,850	1,520	932	660	368
22	262	572	680	540	325	6,600	1,890	2,200	1,490	896	628	362
23	277	628	750	540	350	6,900	1,850	2,750	1,460	914	590	386
24	316	636	700	530	380	7,080	1,830	3,250	1,300	923	568	423
25	344	652	650	530	380	6,420	1,820	3,250	1,210	959	568	436
26	350	772	625	530	380	4,810	1,820	2,500	1,120	1,040	568	442
27	350	860	605	525	400	3,150	1,790	2,210	1,070	1,100	568	430
28	339	788	598	525	410	2,270	1,770	2,400	1,060	1,120	568	430
29	332	700	570	520	435	1,900	1,700	3,150	1,050	1,090	568	362
30	332	628	560	510	------	1,800	1,600	3,750	1,030	1,050	575	344
31	436	------	580	510	------	1,800	------	4,120	------	1,010	590	------
TOTAL	8,161	18,205	17,627	17,175	11,840	76,525	67,660	62,610	53,610	29,127	21,550	13,027
MEAN	263	607	569	554	408	2,469	2,255	2,020	1,787	940	695	434
MAX	436	860	750	600	510	7,080	3,500	4,120	4,140	1,210	1,010	560
MIN	181	299	356	510	325	455	1,600	1,300	1,030	636	568	344
AC-FT	16,190	36,110	34,960	34,070	23,480	151,800	134,200	124,200	106,300	57,770	42,740	25,840
(+)	643	651	683	737	824	807	676	764	1,090	1,016	889	838
MEAN*	274	618	580	566	423	2,482	2,267	2,032	1,805	956	710	448
AC-FT*	16,830	36,760	35,650	34,800	24,310	152,610	134,490	125,000	107,400	58,790	43,630	26,680

		OBSERVED					ADJUSTED	
CAL YR 1971	TOTAL 145,618.00	MEAN 399	MAX 1,850	MIN 0	AC-FT 288,800		MEAN 412	AC-FT 298,200
WTR YR 1972	TOTAL 397,117.00	MEAN 1,085	MAX 7,080	MIN 181	AC-FT 787,700		MEAN 1,098	AC-FT 797,300

\+ Diversions in acre-feet by cities of Fargo and Moorhead.
* Adjusted for diversion by Fargo and Moorhead.

05054500 Sheyenne River above Harvey, N. Dak.

LOCATION.--Lat 47°42'10", long 99°56'55", in SW¼SE¼ sec.24, T.149 N., R.73 W., Wells County, on right bank just downstream from county road, 2 miles upstream from unnamed tributary and 4.5 miles south of Harvey.

DRAINAGE AREA.--424 sq mi, of which about 270 sq mi is probably noncontributing.

PERIOD OF RECORD.--September 1955 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,547.30 ft above mean sea level.

AVERAGE DISCHARGE.--17 years, 5.42 cfs (3,930 acre-ft per year); median of yearly mean discharges, 4.0 cfs (2,900 acre-ft per year).

EXTREMES.--Current year: Maximum discharge during year, 177 cfs Mar. 15 (gage height, 9.09 ft); no flow Jan. 2 to Mar. 9.
Period of record: Maximum discharge, 410 cfs Mar. 15, 1966 (gage height, 9.21 ft); maximum gage height, 10.30 ft Apr. 1, 1971 (backwater from ice); no flow at times most years.

REMARKS.--Records good except those for the winter period, which are poor. Records of chemical analyses for the 1972 water year are published in Part 2 of this report.

REVISIONS.--WSP 1728: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.3	3.3	2.3	.04		0	42	16	3.0	1.6	1.1	.16
2	12	3.8	2.4	0		0	38	16	3.0	1.4	2.1	.20
3	10	2.0	3.6	0		0	25	16	4.0	1.4	1.1	.22
4	6.3	2.3	3.2	0		0	24	17	3.5	1.2	1.0	.22
5	5.0	2.2	4.5	0		0	62	16	3.4	1.2	1.0	.29
6	4.2	3.8	2.7	0		0	36	16	3.2	1.1	1.7	.29
7	3.6	1.8	.76	0		0	29	17	2.9	1.1	1.9	.35
8	2.6	2.7	1.2	C		0	21	16	2.6	1.1	1.4	.44
9	2.4	5.7	.67	0		0	34	15	2.5	1.0	1.1	.50
10	2.2	6.3	.76	0		5.0	37	16	2.4	.96	1.2	.44
11	1.9	4.2	.81	0		50	32	17	2.4	.86	1.1	.35
12	1.8	3.5	.76	0		100	27	20	2.3	.86	.96	.56
13	1.8	2.8	.71	0		150	27	18	6.8	.86	.81	1.1
14	1.7	2.3	.59	0		153	26	18	4.7	.81	.67	.91
15	1.6	2.0	.50	0		153	26	16	3.3	.71	.67	.76
16	1.7	1.7	.47	0		131	24	15	2.7	.71	.63	.71
17	2.1	1.8	.44	0		123	23	15	2.4	.71	.63	.67
18	15	2.0	.38	0		100	21	13	4.4	.67	.53	.67
19	12	2.3	.35	0		97	21	12	4.5	.81	.50	.71
20	5.7	2.1	.35	0		94	20	11	3.4	.91	.50	.67
21	4.9	2.2	.22	C		91	19	10	3.0	.96	.59	.53
22	3.9	2.0	.16	0		90	19	19	2.6	1.0	.59	.56
23	3.5	2.0	.12	0		86	19	13	2.3	1.1	.59	.63
24	3.2	1.6	.06	0		67	19	12	2.5	1.1	.56	.81
25	2.9	1.4	.03	0		63	19	11	2.7	1.4	.50	.96
26	2.9	1.4	.03	0		61	17	12	2.8	1.9	.44	1.4
27	2.5	1.4	.03	0		55	17	10	2.7	1.5	.38	1.7
28	1.9	1.0	.01	0		49	17	11	2.5	1.4	.32	1.6
29	2.2	1.8	.02	0		76	17	8.0	2.2	1.4	.26	1.5
30	1.9	1.4	.02	C	------	59	16	5.0	1.9	1.1	.22	1.4
31	4.9	------	.01	0	------	45	------	4.0	------	1.0	.16	------
TOTAL	129.6	74.8	28.16	.04	C	1,898.0	774	431.0	92.6	33.83	25.21	21.31
MEAN	4.18	2.49	.91	.001	0	61.2	25.8	13.9	3.09	1.09	.81	.71
MAX	15	6.3	4.5	.04	0	153	62	20	6.8	1.9	2.1	1.7
MIN	1.3	1.0	.01	0	C	C	16	4.0	1.9	.67	.16	.16
AC-FT	257	148	56	.08	0	3,760	1,540	855	184	67	50	42

CAL YR 1971 TOTAL 5,590.10 MEAN 15.3 MAX 270 MIN .01 AC-FT 11,090
WTR YR 1972 TOTAL 3,508.55 MEAN 9.59 MAX 153 MIN 0 AC-FT 6,960

PEAK DISCHARGE (BASE, 25 CFS, REVISED)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
3-15	0900	9.09	177	4- 5	2200	6.97	48
3-29	1100	8.08	82	4- 9	1700	6.66	40
3-31	2300	7.36	58	5-22	0700	5.87	25
4- 3	2100	6.47	36				

05055520 Big Coulee near Fort Totten, N. Dak.

LOCATION.--Lat 47°52'57", long 98°58'02", in NE¼SW¼ sec.22, T.151 N., R.65 W., Benson County, on right bank 30 ft upstream from culvert in county highway, 7 miles south of Fort Totten.

DRAINAGE AREA.--23.2 sq mi of which about 15.5 sq mi is probably noncontributing.

PERIOD OF RECORD.--October 1965 to current year.

GAGE.--Water-stage recorder. Concrete culvert control. Altitude of gage is 1,480 ft (from topographic map).

AVERAGE DISCHARGE.--7 years, 2.07 cfs (1,500 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 70 cfs Mar. 15 (gage height, 3.70 ft); minimum, 0.23 cfs Aug. 29 to Sept. 1 (gage height, 0.93 ft); minimum gage height, 0.90 ft July 25.
Period of record: Maximum discharge, 270 cfs Apr. 10, 1969 (gage height, 8.46 ft, from floodmark); no flow Dec. 25-29, 1965.

REMARKS.--Records fair. Records of chemical analyses for the water year 1972 are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.77	1.4	.56	.55	.35	.40	1.1	2.3	4.2	.62	.47	.29
2	3.6	1.4	.56	.55	.35	.44	1.2	2.5	3.6	.60	.68	.29
3	2.6	1.5	.56	.50	.35	.45	1.2	2.5	3.0	.70	.56	.38
4	6.8	1.5	.56	.50	.35	.45	1.2	2.5	2.5	.80	.56	.32
5	6.3	1.6	.56	.50	.35	.45	1.5	2.4	2.1	.90	1.3	.32
6	3.6	1.1	.56	.50	.35	.75	1.7	2.5	1.8	1.1	2.0	.47
7	2.0	.89	.56	.50	.35	1.0	1.5	2.3	1.7	1.1	.89	.44
8	1.7	.89	.56	.50	.35	1.0	4.9	2.2	1.4	1.0	.85	.38
9	1.4	1.1	.56	.50	.35	1.0	10	2.1	1.3	1.0	.93	.35
10	1.3	1.2	.56	.50	.35	5.0	11	2.1	1.1	.90	1.7	.32
11	1.2	1.3	.56	.50	.35	8.0	21	2.4	1.0	.90	1.2	.32
12	1.2	1.4	.56	.50	.35	10	14	3.1	.93	.89	.81	1.3
13	1.2	1.9	.56	.45	.35	22	11	3.4	1.9	.77	1.0	.97
14	1.2	2.9	.56	.45	.35	34	11	3.3	1.5	.53	.77	.78
15	1.1	3.1	.56	.40	.40	63	12	3.1	1.5	.63	.68	.56
16	1.2	2.9	.56	.40	.40	46	13	3.0	1.4	.50	.62	.50
17	1.6	2.7	.56	.40	.40	28	8.6	3.0	1.2	.41	.59	.56
18	2.5	2.5	.56	.40	.40	15	5.7	2.9	1.7	.70	.56	.56
19	3.6	2.1	.56	.40	.40	8.0	3.9	2.9	2.2	.74	.53	.56
20	3.3	2.0	.56	.40	.40	4.9	3.0	4.9	1.5	.50	.50	.50
21	2.9	1.6	.56	.40	.40	3.6	2.6	5.5	1.3	.50	.74	.44
22	2.2	1.3	.56	.40	.40	2.4	2.4	6.8	1.1	.62	.62	.47
23	2.8	1.2	.56	.40	.40	1.8	2.3	7.0	.85	1.3	.53	.53
24	1.6	1.2	.56	.40	.40	1.4	2.3	8.9	.77	.74	.53	.56
25	1.5	.97	.56	.40	.40	1.2	2.1	14	.74	.53	.50	.62
26	1.5	.93	.56	.35	.40	.97	2.1	14	.81	.68	.41	.81
27	1.5	.85	.56	.35	.40	1.0	2.2	11	.89	.59	.35	.74
28	1.4	1.1	.56	.35	.40	1.1	2.2	9.1	.68	1.4	.32	.71
29	1.3	.97	.56	.35	.40	1.1	2.3	7.6	.53	.56	.26	.68
30	1.4	.56	.56	.35	------	1.0	2.3	6.1	.50	.56	.26	.65
31	1.5	------	.55	.35	------	1.1	------	5.1	------	.47	.26	------
TOTAL	67.77	46.06	17.35	13.50	10.90	266.51	161.3	150.5	45.70	23.24	21.98	16.38
MEAN	2.19	1.54	.56	.44	.38	8.60	5.38	4.85	1.52	.75	.71	.55
MAX	6.8	3.1	.56	.55	.40	63	21	14	4.2	1.4	2.0	1.3
MIN	.77	.56	.55	.35	.35	.40	1.1	2.1	.50	.41	.26	.29
AC-FT	134	91	34	27	22	529	320	299	91	46	44	32

CAL YR 1971 TOTAL 942.62 MEAN 2.58 MAX 113 MIN .31 AC-FT 1,870
WTR YR 1972 TOTAL 841.19 MEAN 2.30 MAX 63 MIN .26 AC-FT 1,670

PEAK DISCHARGE (BASE, 10 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
10-23	1600	1.90	13	4-11	1600	2.41	25
3-15	1930	3.70	70	4-15	1800	2.06	16
4- 8	1800	1.93	14	5-25	0400	2.02	15

05056000 Sheyenne River near Warwick, N. Dak.

LOCATION.--Lat 47°48'20", long 98°42'57", on south quarter of line between secs.15 and 16, T.150 N., R.63 W., Eddy County, on left bank on downstream side of county highway bridge, 3.3 miles south of Warwick.

DRAINAGE AREA.--2,070 sq mi, approximately, of which about 1,310 sq mi is probably noncontributing (includes 227 sq mi in closed basins).

PERIOD OF RECORD.--October 1949 to current year. Monthly discharge only for some periods, published in WSP 1308.

GAGE.--Water-stage recorder and rubble masonry control. Altitude of gage is 1,370 ft (by barometer).

AVERAGE DISCHARGE.--23 years, 51.1 cfs (37,020 acre-ft per year); median of yearly mean discharges, 48 cfs (34,800 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 1,360 cfs Mar. 21 (gage height, 5.08 ft, backwater from ice); minimum, 0.68 cfs Sept. 3; minimum gage height, 2.10 ft Feb. 3-5, 9-13, 20.
Period of record: Maximum discharge, 4,660 cfs Apr. 14, 1969 (gage height, 7.51 ft); maximum gage height, 7.83 ft Apr. 18, 1956; no flow Aug. 7 to Sept. 1, Sept. 3-9, 1961.

REMARKS.--Records good. Records of chemical analyses and water temperatures for water year 1972 are published in Part 2 of this report. Records include flow of spring which enters below gage and just above control. Discharge measurements of spring inflow, in cubic feet per second, made during the year are listed below:

Oct. 7	1.2	Apr. 26	1.6
Dec. 1	1.1	June 1	2.7
29	1.2	29	1.8
Feb. 3	1.1	Aug. 2	1.1
Mar. 2	.9	29	.9
28	1.1		

REVISIONS (WATER YEARS).--WSP 1438: 1952(M). WSP 1728: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.9	30	16	4.1	3.5	4.1	191	60	116	10	.94	1.1
2	20	30	16	4.1	3.0	4.1	155	58	98	7.4	1.1	.94
3	26	26	15	4.8	2.5	4.1	151	53	84	5.6	1.1	.68
4	46	24	15	4.8	2.5	4.1	151	58	70	4.2	1.4	.80
5	56	24	15	4.8	2.5	4.1	151	53	58	3.3	2.4	.80
6	46	20	15	4.8	2.5	4.1	151	49	49	3.0	3.0	1.1
7	39	26	15	4.1	2.5	4.1	148	49	42	2.4	2.0	1.4
8	32	24	13	4.1	2.5	4.1	148	46	37	4.2	1.8	1.8
9	39	20	13	4.8	2.5	4.1	169	44	32	4.2	3.8	2.2
10	44	20	12	4.8	2.5	4.1	247	44	26	4.2	5.6	2.0
11	32	20	11	4.1	2.5	4.8	247	42	21	3.3	4.8	1.2
12	26	22	9.8	4.8	2.5	8.8	211	42	20	2.4	4.8	2.0
13	26	24	8.8	4.8	3.0	20	211	46	25	2.4	4.2	2.7
14	25	25	7.9	4.8	3.5	35	247	53	22	1.8	2.4	4.2
15	26	28	7.0	4.8	3.5	100	242	46	22	1.6	2.2	4.2
16	28	30	7.0	4.8	3.0	460	214	49	24	1.4	2.0	3.3
17	28	32	7.0	4.1	3.5	720	199	44	19	1.4	1.8	2.2
18	25	30	7.0	4.1	3.5	860	165	40	16	1.1	1.6	2.0
19	28	25	7.0	4.1	3.0	1,050	155	37	15	1.8	1.4	2.7
20	40	32	7.9	3.5	3.0	1,160	135	39	19	3.0	1.2	3.3
21	44	21	6.1	3.0	3.5	1,330	122	35	33	2.0	1.1	1.8
22	32	24	5.4	3.0	3.5	1,150	107	46	35	1.8	1.1	1.4
23	26	24	5.4	3.0	3.5	891	98	58	28	1.8	1.1	1.2
24	26	22	5.4	3.0	3.5	614	95	78	24	1.2	.94	1.4
25	30	21	5.4	3.5	3.5	431	87	138	21	1.4	.94	1.4
26	32	21	4.8	4.1	3.5	359	78	176	18	1.8	.94	1.6
27	37	21	4.8	4.1	3.5	165	70	218	15	2.0	.94	1.6
28	37	21	4.8	4.1	3.5	107	70	222	15	2.7	.94	2.2
29	37	20	4.8	3.5	4.1	148	68	195	15	3.3	.94	2.0
30	37	19	4.8	3.5	------	226	60	165	10	1.6	.94	2.4
31	29	------	4.8	3.5	------	222	------	138	------	1.1	1.2	------
TOTAL	1,002.9	726	281.9	127.4	89.6	10,102.6	4,543	2,421	1,029	89.4	60.62	57.62
MEAN	32.4	24.2	9.09	4.11	3.09	326	151	78.1	34.3	2.88	1.96	1.92
MAX	56	32	16	4.8	4.1	1,330	247	222	116	10	5.6	4.2
MIN	7.9	19	4.8	3.0	2.5	4.1	60	35	10	1.1	.94	.68
AC-FT	1,990	1,440	559	253	178	20,040	9,010	4,800	2,040	177	120	114

CAL YR 1971 TOTAL 32,752.60 MEAN 89.7 MAX 2,330 MIN 1.3 AC-FT 64,960
WTR YR 1972 TOTAL 20,531.04 MEAN 56.1 MAX 1,330 MIN .68 AC-FT 40,720

PEAK DISCHARGE (BASE, 200 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
3-21	--	--	1,360	4-10	2400	3.17	259
3-30	0300	3.12	238	5-28	0400	3.08	226

05056100 Mauvais Coulee near Cando, N. Dak.

LOCATION.--Lat 48°26'53", long 99°06'08", in SE¼NE¼SE¼ sec.1, T.157 N., R.66 W., Towner County, on left bank 0.3 mile upstream from highway bridge, about 4 miles upstream from West Fork, 5.5 miles southeast of Cando, and 7 miles northeast of Maza.

DRAINAGE AREA.--387 sq mi, of which about 10 sq mi is probably noncontributing.

PERIOD OF RECORD.--May 1956 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,445 ft above mean sea level (unadjusted). Prior to July 2, 1957, nonrecording gage at present site and datum.

AVERAGE DISCHARGE.--16 years, 15.8 cfs (11,450 acre-ft per year); median of yearly mean discharges, 9.2 cfs (6,700 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 550 cfs Mar. 28 (gage height, 7.66 ft, backwater from ice); no flow Jan. 27 to Mar. 11.
Period of record: Maximum discharge, 2,500 cfs Apr. 14, 1969 (gage height, 11.16 ft); no flow at times each year.
Flood of June 16, 1954, reached a stage of 9.83 ft, and flood of Apr. 20, 1956, reached a stage of 10.71 ft, from floodmarks set by local resident.

REMARKS.--Records fair. Records of chemical analyses for water year 1972 are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.79	5.2	2.9	.04		0	174	63	14	1.4	.15	.06
2	1.3	6.4	2.6	.04		0	148	58	12	1.2	.21	.06
3	1.3	7.5	2.4	.04		0	85	53	10	1.0	.16	.06
4	1.3	7.0	2.3	.03		0	101	47	8.4	.91	.16	.07
5	1.4	8.2	2.2	.03		0	122	41	7.5	1.0	.16	.07
6	1.4	7.4	2.1	.03		0	102	38	6.1	1.2	.30	.12
7	1.3	6.0	1.8	.03		0	72	34	6.4	1.2	.30	.13
8	1.4	3.2	1.4	.03		0	78	32	5.4	1.2	.34	.11
9	1.7	2.7	1.4	.02		0	88	31	3.6	1.1	.35	.10
10	1.8	4.0	1.2	.02		0	77	29	2.8	1.1	.45	.09
11	1.7	4.4	1.0	.02		0	76	27	2.5	1.0	.41	.06
12	1.5	4.1	.78	.02		.50	98	28	2.5	1.0	.39	.13
13	1.5	3.9	.63	.02		1.0	152	28	2.6	1.0	.38	.23
14	1.6	4.1	.55	.02		2.2	181	26	2.6	.95	.36	.15
15	1.5	4.0	.48	.02		15	193	27	2.8	.89	.37	.11
16	1.5	4.2	.42	.01		50	191	26	2.9	.79	.33	.11
17	1.7	4.5	.35	.01		67	181	25	2.4	.68	.26	.10
18	2.0	5.0	.29	.01		80	169	23	2.0	.65	.19	.09
19	2.2	5.0	.24	.01		156	155	24	1.8	.85	.16	.10
20	2.3	5.2	.20	.01		278	143	25	1.7	.94	.14	.10
21	2.5	5.1	.17	.01		367	130	24	1.5	.87	.18	.06
22	2.6	4.3	.15	.01		382	120	23	1.5	.77	.19	.07
23	2.7	3.8	.13	.01		422	114	21	1.4	.67	.17	.08
24	3.0	5.0	.11	.01		436	106	20	1.2	.59	.13	.15
25	2.8	6.8	.10	.01		437	97	23	1.2	.56	.13	.12
26	3.2	6.2	.09	.01		449	91	21	1.3	.53	.11	.15
27	3.4	5.6	.08	0		381	86	20	1.5	.48	.10	.14
28	4.4	5.1	.07	0		491	80	20	1.5	.43	.08	.14
29	5.2	3.7	.06	0		434	74	18	1.6	.38	.09	.11
30	6.1	3.1	.06	0	------	297	69	16	1.5	.32	.08	.10
31	5.8	------	.05	0	------	217	------	15	------	.21	.07	------
TOTAL	72.89	150.7	26.31	.52	0	4,962.70	3,553	906	114.2	25.87	6.90	3.17
MEAN	2.35	5.02	.85	.017	0	160	118	29.2	3.81	.83	.22	.11
MAX	6.1	8.2	2.9	.04	0	491	193	63	14	1.4	.45	.23
MIN	.79	2.7	.05	0	0	0	69	15	1.2	.21	.07	.06
AC-FT	145	299	52	1.0	0	9,840	7,050	1,800	227	51	14	6.3

CAL YR 1971 TOTAL 14,168.23 MEAN 38.8 MAX 1,030 MIN 0 AC-FT 28,100
WTR YR 1972 TOTAL 9,822.26 MEAN 26.8 MAX 491 MIN 0 AC-FT 19,480

PEAK DISCHARGE (BASE, 24 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
3-28	0515	7.66	550	4-15	1945	5.22	195

05056200 Edmore Coulee near Edmore, N. Dak.

LOCATION.--Lat 48°20'14", long 98°39'33", on line between secs.17 and 18, T.156 N., R.62 W., Ramsey County, on left downstream wingwall of bridge on county highway, 11 miles southwest of Edmore and about 13 miles upstream from Sweetwater Lake.

DRAINAGE AREA.--382 sq mi, of which about 100 sq mi is probably noncontributing.

PERIOD OF RECORD.--April to June 1956, June 1957 to current year.

GAGE.--Water-stage recorder. Prior to June 26, 1957, nonrecording gage at same site and datum.

AVERAGE DISCHARGE.--15 years (1957-72) 12.2 cfs (8,840 acre-ft per year); median of yearly mean discharges, 8.9 cfs (6,400 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 435 cfs Mar. 20 (gage height, 6.05 ft, backwater from ice); no flow for several months.
Period of record: Maximum discharge, 875 cfs Apr. 23, 1956 (gage height, 6.30 ft, backwater from ice); maximum gage height, 6.63 ft Mar. 25, 1966 (backwater from ice); no flow for several months each year.

REMARKS.--Records fair. Records of chemical analyses for water year 1972 are published in Part 2 of this report.

REVISIONS.--WSP 1728: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	.40	.05			0	70	26	6.8	0		
2	0	.31	.05			0	65	23	7.0	0		
3	0	.20	.05			0	60	20	7.0	0		
4	.10	.15	.05			0	59	18	6.9	0		
5	.18	.15	.05			0	60	17	6.3	0		
6	.10	.10	.03			0	59	15	5.8	0		
7	.06	.10	.02			0	56	14	5.3	.27		
8	0	.10	.02			0	58	13	4.6	.05		
9	0	.10	.01			0	70	12	3.7	0		
10	0	.10	.01			0	83	11	3.2	0		
11	0	.10	0			0	78	9.7	2.8	0		
12	0	.10	0			0	74	9.2	2.2	0		
13	0	.10	0			0	79	8.4	2.0	0		
14	0	.10	0			5.0	163	7.9	1.9	0		
15	0	.10	0			10	247	7.4	1.2	0		
16	0	.10	0			20	218	6.9	.59	0		
17	0	.10	0			40	198	6.2	.26	0		
18	0	.10	0			304	170	5.4	.24	0		
19	.21	.10	0			320	130	4.2	.26	0		
20	.35	.10	0			420	106	3.9	.06	0		
21	.35	.10	0			420	88	3.9	0	0		
22	.31	.10	0			350	78	3.9	0	0		
23	.27	.10	0			317	71	4.0	0	0		
24	.24	.10	0			300	65	4.4	0	0		
25	.18	.10	0			280	57	5.1	0	0		
26	.18	.05	0			250	51	5.0	0	0		
27	.14	.05	0			200	44	5.1	0	0		
28	.03	.05	0			150	40	5.2	0	0		
29	0	.05	0			84	36	5.9	0	0		
30	.10	.05	0		------	80	32	6.3	0	0		
31	.50	------	0		------	75	------	6.5	------	0		------
TOTAL	3.30	3.46	.34	0	0	3,625.0	2,665	293.5	68.11	.32	0	0
MEAN	.11	.12	.011	0	0	117	88.8	9.47	2.27	.010	0	0
MAX	.50	.40	.05	0	0	420	247	26	7.0	.27	0	0
MIN	0	.05	0	0	0	0	32	3.9	0	0	0	0
AC-FT	6.6	6.9	.7	0	0	7,190	5,290	582	135	.6	0	0

CAL YR 1971 TOTAL 7,163.81 MEAN 19.6 MAX 633 MIN 0 AC-FT 14,210
WTR YR 1972 TOTAL 6,659.03 MEAN 18.2 MAX 420 MIN 0 AC-FT 13,210

PEAK DISCHARGE (BASE, 50 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
3-20	2400	6.05	435	4-14	1100	4.66	272

05056400 Big Coulee near Churchs Ferry, N. Dak.

LOCATION.--Lat 48°10'40", long 99°13'15", in NW¼NW¼ sec.12, T.154 N., R.67 W., Benson County, on right bank on downstream side of bridge on U.S. Highway 281, 1 mile downstream from Little Coulee and 6 miles south of Churchs Ferry.

DRAINAGE AREA.--2,510 sq mi, approximately, of which about 690 sq mi is probably noncontributing.

PERIOD OF RECORD.--March 1950 to current year. Prior to October 1960, published as Mauvais Coulee near Churchs Ferry.

GAGE.--Water-stage recorder. Datum of gage is 1,432.65 ft above mean sea level. Prior to June 21, 1950, reference marks, and June 21, 1950, to July 17, 1956, nonrecording gage at former bridge on U.S. Highway 281, 0.1 mile upstream, at datum 0.70 ft higher.

AVERAGE DISCHARGE.--22 years, 28.8 cfs (20,870 acre-ft per year); median of yearly mean discharges, 1.1 cfs (800 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 400 cfs Apr. 8 (gage height, 4.55 ft, backwater from ice); no flow Jan. 14 to Mar. 9, Sept. 5, 6, 11, 20-22; minimum gage height, 0.16 ft Sept. 21.
Period of record: Maximum discharge, 964 cfs Apr. 27, 1969 (gage height, 6.49 ft); no flow at times each year.

REMARKS.--Records good except those for the winter period, which are poor. Flow affected by many lakes on the mainstem and tributaries. Records of chemical analyses for the water year 1972 are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	20	30	1.0		0	131	294	227	77	10	.25
2	39	20	30	1.0		0	166	286	224	74	6.8	1.2
3	32	18	25	.75		0	187	292	226	72	9.5	.46
4	26	18	25	.75		0	203	284	219	65	5.8	.04
5	22	17	25	.72		0	230	280	206	64	4.5	0
6	24	16	25	.75		0	300	294	203	57	8.7	0
7	16	15	25	.75		0	320	286	199	58	6.8	.07
8	27	20	25	.75		0	340	282	200	48	7.9	.74
9	24	20	25	.75		0	330	280	197	48	7.6	.67
10	9.8	25	25	.50		5.0	320	280	173	36	5.2	.07
11	15	30	20	.50		10	316	278	155	36	5.0	0
12	11	30	15	.50		10	316	278	156	36	5.8	.04
13	9.5	30	15	.25		15	320	286	148	32	4.5	.67
14	8.7	30	15	0		20	316	290	139	27	6.0	.55
15	12	30	15	0		25	306	278	142	29	5.2	.25
16	11	30	15	0		35	306	275	179	22	3.8	.02
17	13	30	12	0		30	308	268	125	21	5.2	.04
18	17	30	12	0		20	310	255	119	21	5.8	.90
19	11	25	12	0		10	308	241	127	30	5.2	.74
20	13	25	10	0		10	306	280	119	30	4.0	0
21	11	20	10	0		10	306	268	115	24	4.7	0
22	15	25	9.0	0		8.0	304	258	109	20	6.0	0
23	15	25	8.0	0		6.0	306	249	100	11	4.2	.02
24	13	30	7.0	0		7.0	304	249	91	9.1	3.6	1.1
25	10	30	6.0	0		7.0	302	251	90	11	3.2	.90
26	12	30	5.0	0		15	294	253	84	12	2.8	1.0
27	13	30	4.0	0		50	298	249	85	12	2.6	1.0
28	21	30	3.0	0		140	296	248	85	12	2.1	.42
29	20	30	2.0	0		111	292	249	77	11	1.4	.25
30	20	30	1.0	0	------	94	288	243	76	10	.67	.25
31	20	------	1.0	0	------	103	------	229	------	10	.13	------
TOTAL	523.0	759	457.0	8.97	0	741.0	8,629	8,333	4,394	1,025.1	154.70	11.65
MEAN	16.9	25.3	14.7	.29	0	23.9	288	269	146	33.1	4.99	.39
MAX	39	30	30	1.0	0	140	340	294	227	77	10	1.2
MIN	8.7	15	1.0	0	0	0	131	229	76	9.1	.13	0
AC-FT	1,040	1,510	906	18	0	1,470	17,120	16,530	8,720	2,030	307	23

CAL YR 1971 TOTAL 38,998.00 MEAN 107 MAX 480 MIN 0 AC-FT 77,350
WTR YR 1972 TOTAL 25,036.42 MEAN 68.4 MAX 340 MIN 0 AC-FT 49,660

05056500 Devils Lake near Devils Lake, N. Dak.

LOCATION.--Lat 48°04'00", long 98°56'07", in SW¼ sec.18, T.153 N., R.64 W., Ramsey County, at Lakewood, on east bank of Creel Bay, 4.5 miles southwest of city of Devils Lake. Creel Bay, which is 0.5 mile wide, is an arm of Devils Lake and extends 2 miles to the north of the lake.

DRAINAGE AREA.--3,130 sq mi, approximately, of which about 1,000 sq mi is probably noncontributing.

PERIOD OF RECORD.--1867, 1879, 1883, 1887, 1890, 1896 (one gage height for each year), 1901-63 (fragmentary), 1964 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,400.00 ft above mean sea level; gage readings have been reduced to elevations above mean sea level. June 23, 1950, to June 6, 1963, nonrecording gage at present site and datum. See WSP 1913 for history of changes prior to June 23, 1950.

EXTREMES.--Current year: Maximum elevation, 1,422.27 ft June 3; minimum, 1,420.59 ft Sept. 23, 27.
Period of record: Maximum elevation observed, 1,438.40 ft in 1867, present datum; minimum observed, 1,400.87 ft Oct. 24, 1940.
The lake level was about elevation 1,446 ft about 1830 and lower thereafter, according to the tree growth noted 1885-89. Reference is Geological Survey monograph, volume XXV, the Glacial History of Lake Agassiz by Warren Upham.

REMARKS.--Elevation at gage frequently affected by wind. Records of chemical analyses for water year 1972 are published in Part 2 of this report.

REVISIONS.--WSP 1913: Drainage area.

MONTHEND ELEVATION, IN FEET, AT 2400, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

Oct. 31	1,421.10	Jan. 31	1,420.90	Apr. 30	1,421.75	July 31	1,421.34
Nov. 30	1,421.10	Feb. 29	1,420.85	May 31	1,422.25	Aug. 31	1,421.00
Dec. 31	1,421.03	Mar. 31	1,420.99	June 30	1,421.85	Sept.30	1,420.63

05057000 Sheyenne River near Cooperstown, N. Dak.

LOCATION.--Lat 47°26'01", long 98°01'43", in NE¼NE¼SE¼ sec.27, T.146 N., R.58 W., Griggs County, on right bank 150 ft downstream from county bridge and 5 miles east of Cooperstown.

DRAINAGE AREA.--6,470 sq mi, approximately, of which about 5,200 sq mi is probably noncontributing (includes 3,800 sq mi in closed basins).

PERIOD OF RECORD.--October 1944 to current year. Monthly discharge only for some periods, published in WSP 1308.

GAGE.--Water-stage recorder. Datum of gage is 1,271.04 ft above mean sea level (Corps of Engineers benchmark). Prior to Aug. 3, 1950, nonrecording gage at site 150 ft upstream at same datum.

AVERAGE DISCHARGE.--28 years, 102 cfs (73,900 acre-ft per year); median of yearly mean discharges, 77 cfs (55,800 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 1,120 cfs Mar. 27 (gage height, 12.26 ft); minimum discharge, 4.1 cfs Sept. 11(gage height, 3.66 ft).
Period of record: Maximum discharge, 7,830 cfs Apr. 17, 1950 (gage height, 18.69 ft); no flow at times.

REMARKS.--Records good. Records of chemical analyses and water temperatures for the water year 1972 are published in Part 2 of this report.
REVISIONS.--WSP 1728: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22	56	39	15	8.0	7.0	480	194	328	38	16	5.8
2	29	69	37	13	7.5	6.5	386	182	327	37	16	6.1
3	34	65	36	13	7.5	6.5	358	175	316	34	15	7.2
4	38	60	35	13	7.5	6.5	337	165	292	32	14	6.7
5	39	59	35	13	7.0	6.0	318	157	266	30	14	6.1
6	38	57	35	13	7.0	7.5	288	154	234	29	15	6.1
7	38	56	37	13	7.0	7.5	272	150	206	28	15	6.7
8	46	56	37	13	7.0	7.5	260	145	184	27	15	6.4
9	43	53	35	12	7.0	8.0	256	142	156	26	14	6.7
10	40	50	30	12	7.0	10	296	135	130	26	18	6.7
11	63	50	25	12	7.0	75	393	139	117	24	17	5.3
12	61	50	25	12	7.0	100	493	127	106	23	16	8.2
13	57	50	25	12	7.0	200	699	131	102	22	16	7.6
14	53	50	20	9.0	7.2	370	871	138	97	20	16	9.0
15	55	50	20	9.0	7.0	525	895	140	91	20	17	8.7
16	57	50	20	8.0	7.0	550	964	139	82	19	16	16
17	56	50	20	8.0	7.0	565	1,030	133	78	18	16	19
18	62	50	18	8.0	7.0	600	1,020	128	78	17	18	14
19	63	50	18	8.0	6.5	700	885	125	77	17	17	12
20	60	50	18	8.0	6.5	720	687	126	74	16	17	8.2
21	57	50	18	8.0	7.0	700	531	338	74	16	17	5.3
22	60	50	18	8.0	7.0	725	433	419	73	15	16	4.6
23	62	50	18	8.0	7.0	750	374	512	78	15	21	5.5
24	59	50	18	8.0	7.0	850	336	579	62	14	18	4.8
25	57	50	15	8.0	7.0	900	305	543	57	14	14	5.0
26	61	50	15	8.0	7.0	1,060	279	554	53	15	14	6.1
27	64	50	15	8.0	7.0	1,080	253	840	50	15	16	5.8
28	59	50	15	8.0	7.0	1,020	233	530	47	14	20	6.7
29	53	50	15	8.0	7.0	1,060	218	374	44	14	12	8.4
30	52	40	15	8.0	------	1,000	205	328	42	14	8.7	9.0
31	39	------	15	8.0	------	699	------	322	------	14	6.4	------
TOTAL	1,597	1,571	742	312.0	204.7	14,322.0	14,355	8,264	3,921	663	481.1	233.7
MEAN	51.5	52.4	23.9	10.1	7.06	462	479	267	131	21.4	15.5	7.79
MAX	64	69	39	15	8.0	1,080	1,030	840	328	38	21	19
MIN	22	40	15	8.0	6.5	6.0	205	125	42	14	6.4	4.6
AC-FT	3,170	3,120	1,470	619	406	28,410	28,470	16,390	7,780	1,320	954	464

CAL YR 1971 TOTAL 54,140.5 MEAN 148 MAX 2,280 MIN 7.0 AC-FT 107,400
WTR YR 1972 TOTAL 46,666.5 MEAN 128 MAX 1,080 MIN 4.6 AC-FT 92,560

PEAK DISCHARGE (BASE, 200 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
3-27	0530	12.26	1,120	5-24	2130	8.91	580
4-17	2300	11.83	1,040	5-27	0900	11.35	956

05057200 Baldhill Creek near Dazey, N. Dak.

LOCATION.--Lat 47°13'45", long 98°07'28", in NW¼SE¼SW¼ sec.2, T.143 N., R.59 W., Barnes County, on left bank 500 ft upstream from bridge on county highway, 4.5 miles northeast of Dazey, and 14 miles upstream from mouth.

DRAINAGE AREA.--691 sq mi, of which about 340 sq mi is probably noncontributing.

PERIOD OF RECORD.--March 1956 to current year.

GAGE.--Water-stage recorder. Prior to Nov. 9, 1956, nonrecording gage 500 ft downstream at same datum.

AVERAGE DISCHARGE.--16 years, 14.4 cfs (10,430 acre-ft per year); median of yearly mean discharges, 11 cfs (8,000 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 305 cfs Apr. 14 (gage height, 5.03 ft); maximum gage height, 5.24 ft Mar. 12 (backwater from ice); minimum discharge, 0.11 cfs Feb. 24-26, Mar. 2-5.
Period of record: Maximum discharge, 2,510 cfs Apr. 11, 1969 (gage height, 10.90 ft, backwater from ice); maximum gage height, 11.21 ft Apr. 10, 1969 (backwater from ice); no flow at times.

REMARKS.--Records good except those for the winter period, which are poor. Records of chemical analyses for water year 1972 are published in Part 2 of this report.

REVISIONS.--WSP 1728: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.7	7.6	4.9	2.1	.20	.16	23	29	33	3.5	2.0	1.1
2	6.0	7.7	4.7	2.3	.20	.11	24	28	30	3.4	1.9	.96
3	7.0	6.9	4.5	2.2	.20	.11	22	26	29	3.1	1.6	.93
4	6.4	6.3	4.5	2.1	.20	.11	19	24	25	2.8	1.5	.97
5	4.8	6.1	4.6	2.0	.20	.11	16	25	23	2.5	1.8	.98
6	4.2	5.7	4.5	1.8	.20	.54	17	25	20	2.7	3.4	1.2
7	3.7	5.4	4.3	1.7	.18	.44	16	23	18	2.6	3.4	1.3
8	3.5	5.8	4.0	1.7	.16	.16	15	22	17	2.4	4.0	1.2
9	3.6	6.1	3.6	1.7	.16	.14	19	22	15	2.1	3.5	1.3
10	3.5	6.4	3.8	1.7	.16	15	27	21	12	2.0	4.2	1.9
11	3.3	6.5	3.2	1.8	.16	65	52	21	12	1.8	3.8	1.6
12	3.2	6.4	2.7	1.9	.21	115	71	22	12	1.6	3.4	2.0
13	3.2	6.6	2.4	1.8	.27	125	144	25	14	1.5	3.8	3.5
14	3.2	7.5	2.6	1.8	.29	139	256	25	13	1.9	4.4	3.4
15	3.0	8.1	3.2	1.7	.27	156	210	23	11	1.7	5.3	3.1
16	3.6	8.6	3.2	1.6	.27	130	214	22	9.9	1.7	5.0	3.0
17	4.9	9.0	2.4	1.5	.26	178	251	22	8.9	1.7	3.8	2.4
18	5.7	9.0	2.1	1.4	.17	154	219	21	13	1.6	3.3	2.4
19	7.0	8.3	2.3	1.3	.16	112	163	21	16	2.5	2.7	2.4
20	6.5	8.4	2.5	1.3	.30	102	119	21	13	2.6	2.4	2.2
21	5.1	8.8	2.7	1.1	.23	83	92	44	10	2.6	2.8	1.7
22	5.0	8.7	2.6	1.0	.16	93	75	77	8.9	2.9	2.9	1.4
23	5.1	8.0	2.8	.90	.15	100	62	65	7.5	2.9	2.4	2.0
24	5.5	7.4	2.7	.80	.11	153	52	57	6.5	2.4	2.2	2.1
25	5.8	7.0	2.2	.70	.11	115	44	59	6.1	2.5	1.8	1.7
26	6.1	6.6	1.9	.60	.11	54	40	51	5.6	4.3	1.6	2.0
27	6.8	6.4	1.7	.60	.16	24	37	49	5.2	4.2	1.5	2.0
28	6.4	6.1	1.6	.50	.16	44	34	51	4.7	3.9	1.4	2.6
29	5.8	5.3	1.5	.40	.16	38	31	47	4.1	3.2	1.3	2.4
30	6.6	5.2	1.5	.40	------	29	30	41	3.8	2.7	1.2	2.6
31	7.9	------	1.6	.30	------	27	------	37	------	2.4	1.3	------
TOTAL	156.1	211.9	92.8	42.70	5.57	2,052.88	2,394	1,046	407.2	79.7	85.6	58.34
MEAN	5.04	7.06	2.99	1.38	.19	66.2	79.8	33.7	13.6	2.57	2.76	1.94
MAX	7.9	9.0	4.9	2.3	.30	178	256	77	33	4.3	5.3	3.5
MIN	3.0	5.2	1.5	.30	.11	.11	15	21	3.8	1.5	1.2	.93
AC-FT	310	420	184	85	11	4,070	4,750	2,070	808	158	170	116

CAL YR 1971 TOTAL 5,616.53 MEAN 15.4 MAX 253 MIN .07 AC-FT 11,140
WTR YR 1972 TOTAL 6,632.79 MEAN 18.1 MAX 256 MIN .11 AC-FT 13,160

PEAK DISCHARGE (BASE, 60 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
3-12	--	--	213	4-14	1715	5.03	305
3-17	--	--	192	4-17	0630	4.75	256
3-24	0815	4.92	286	5-22	1200	3.74	103

05057500 Lake Ashtabula at Baldhill Dam, N. Dak.

LOCATION.--Lat 47°02'00", long 98°05'00", in NW¼ sec.18, T.141 N., R.58 W., Barnes County, at Baldhill Dam on Sheyenne River, 8 miles northwest of Valley City.

DRAINAGE AREA.--7,470 sq mi, approximately, of which about 5,560 sq mi is probably noncontributing (includes 3,800 sq mi in closed basins).

PERIOD OF RECORD.--July 1949 to current year.

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

EXTREMES.--Current year: Maximum contents, 77,866 acre-ft Mar. 31 (elevation, 1,267.27 ft); minimum, 50,450 acre-ft Mar. 10 (elevation, 1,262.10 ft).
Period of record: Maximum contents, 91,400 acre-ft May 14, 1950 (elevation, 1,269.46 ft); minimum since reservoir first reached spillway level, 6,660 acre-ft Aug. 11-14, 1950 (elevation, 1,245.13 ft).

REMARKS.--Reservoir is formed by an earth-fill dam, 1,650 ft long; storage began on July 30, 1949; dam completed September 1949. Usable capacity, 69,100 acre-ft between invert of outlet conduit, elevation, 1,238.0 ft, and normal pool level, elevation, 1,266.0 ft. Dead storage below elevation 1,238.0 ft, 1,500 acre-ft. Maximum pool elevation, 1,273.2 ft, capacity, 116,500 acre-ft. Low flows are controlled by 2 sluice gates 3 ft in diameter. The spillway crest is 120 ft long at elevation 1,252.0 ft, surmounted by 3 taintor gates, each 15 ft high and 40 ft long. The reservoir is operated for flood control and to increase low-water flow.

COOPERATION.--Records furnished by Corps of Engineers.

REVISIONS (WATER YEARS).--WSP 1238: 1950(M). WSP 1728: Drainage area.

MONTHEND ELEVATION AND CONTENTS AT 2400, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30	1,265.50	67,800	
Oct. 31	1,265.85	69,760	+1,960
Nov. 30	1,265.26	66,460	-3,300
Dec. 31	1,263.88	58,900	-7,560
CAL YR 1971	--	--	-5,820
Jan. 31	1,262.63	52,840	-6,060
Feb. 29	1,262.16	50,720	-2,120
Mar. 31	1,267.23	77,630	+26,910
Apr. 30	1,266.00	70,600	-7,030
May 31	1,266.24	71,970	+1,370
June 30	1,265.74	69,140	-2,830
July 31	1,265.58	68,250	-890
Aug. 31	1,265.48	67,690	-560
Sept. 30	1,265.10	65,560	-2,130
WTR YR 1972	--	--	-2,240

05058000 Sheyenne River below Baldhill Dam, N. Dak.

LOCATION.--Lat 47°01'50", long 98°05'50", in NW¼ sec.18, T.141 N., R.58 W., Barnes County, on right bank 600 ft downstream from Baldhill Dam, 8 miles northwest of Valley City, and at mile 270.5.

DRAINAGE AREA.--7,470 sq mi, approximately, of which about 5,560 sq mi is probably noncontributing (includes 3,800 sq mi in closed basins).

PERIOD OF RECORD.--October 1949 to current year. Monthly discharge only for some periods, published in WSP 1308.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1,200.00 ft above mean sea level.

AVERAGE DISCHARGE (UNADJUSTED).--23 years, 118 cfs (85,490 acre-ft per year); median of yearly mean discharges, 88 cfs (63,800 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 991 cfs Apr. 26 (gage height, 27.82 ft); minimum, 7.3 cfs July 6 (gage height, 25.68 ft).
Period of record: Maximum discharge, 4,580 cfs Apr. 19, 1969 (gage height, 35.47 ft); no flow at times in 1950, 1952-53, 1970.
Maximum discharge of Apr. 27 or 28, 1948, about 4,600 cfs.

REMARKS.--Records good. Flow completely regulated by Lake Ashtabula (see station 05057500). Records prior to 1955 do not include releases at Baldhill Dam to the fish-rearing ponds of the Fish and Wildlife Service.
Records of chemical analyses for the water year 1972 are published in Part 2 of this report.

REVISIONS.--WSP 1728: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	41	90	156	160	71	20	957	174	806	18	15	24
2	41	90	145	160	73	20	950	174	715	17	15	24
3	41	90	160	163	73	20	952	174	594	17	15	24
4	41	90	155	163	70	20	941	174	585	16	17	24
5	40	107	165	167	70	20	940	174	585	13	17	23
6	40	124	155	160	70	20	933	174	452	9.2	17	23
7	40	121	154	167	70	19	936	170	330	11	17	22
8	40	119	153	160	67	19	930	170	276	12	18	20
9	40	115	147	167	69	20	920	170	251	12	17	20
10	41	113	153	167	68	20	920	174	210	12	18	20
11	41	114	151	170	67	20	631	174	210	12	18	20
12	41	113	154	167	69	20	416	174	168	12	18	19
13	40	112	151	163	70	20	522	174	140	13	18	19
14	40	112	157	163	63	20	782	174	139	13	17	18
15	41	112	156	163	55	19	920	177	136	13	17	18
16	41	112	150	156	55	18	957	177	107	13	18	17
17	41	124	151	150	51	21	957	177	90	13	18	17
18	39	148	160	122	35	22	957	181	89	13	17	17
19	39	149	156	79	21	22	974	160	89	22	17	18
20	40	143	163	79	21	22	974	142	85	41	17	19
21	41	158	153	76	21	22	974	139	83	42	17	18
22	41	145	160	76	21	196	974	139	69	42	17	18
23	42	143	160	75	21	319	974	337	59	44	9.2	17
24	43	155	160	73	21	404	983	594	59	32	8.5	16
25	42	159	163	78	21	484	983	817	57	14	16	15
26	42	143	160	79	21	484	631	817	49	14	15	14
27	42	146	163	75	21	604	276	817	38	14	15	14
28	66	165	160	76	20	704	227	817	38	15	16	13
29	90	157	160	74	20	704	174	840	28	14	22	13
30	90	158	156	75	------	704	174	829	21	15	21	13
31	90	------	163	73	------	949	------	806	------	15	22	------
TOTAL	1,437	3,827	4,850	3,876	1,395	5,976	23,839	10,390	6,558	563.2	519.7	557
MEAN	46.4	128	156	125	48.1	193	795	335	219	18.2	16.8	18.6
MAX	90	165	165	170	73	949	983	840	806	44	22	24
MIN	39	90	145	73	20	18	174	139	21	9.2	8.5	13
AC-FT	2,850	7,590	9,620	7,690	2,770	11,850	47,280	20,610	13,010	1,120	1,030	1,100
(+)	0	0	0	0	0	0	0	0	258	173	0	0
*MEAN	46.4	128	156	125	48.1	193	795	335	225	21.0	16.8	18.6
*AC-FT	2,850	7,590	9,620	7,690	2,770	11,850	47,280	20,610	13,370	1,290	1,030	1,110

	OBSERVED				ADJUSTED	
CAL YR 1971	TOTAL 60,308.1	MEAN 165	MAX 1,800	MIN 1.1	AC-FT 119,600	MEAN 166 AC-FT 120,000
WTR YR 1972	TOTAL 63,787.9	MEAN 174	MAX 983	MIN 8.5	AC-FT 126,500	MEAN 175 AC-FT 127,000

\+ Diversion equivalent in acre-feet from Lake Ashtabula by U.S. Fish and Wildlife Service.
* Adjusted for diversion from Lake Ashtabula by U.S. Fish and Wildlife Service.

05058500 Sheyenne River at Valley City, N. Dak.

LOCATION.--Lat 46°54'50", long 98°00'30", in SE¼NW¼ sec.28, T.140 N., R.58 W., Barnes County, on left bank 100 ft downstream from College Dam in Valley City, and at mile 253.0.

DRAINAGE AREA.--7,810 sq mi, approximately, of which about 5,700 sq mi is probably noncontributing (includes 3,800 sq mi in closed basins).

PERIOD OF RECORD.--March to August 1919, March to June 1938, August 1938 to current year. Records for July 1938, published in WSP 855, have been found to be unreliable and should not be used.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1,199.27 ft above mean sea level. March to August 1919, nonrecording gage at site half a mile upstream at different datum. March to Oct. 13, 1938, nonrecording gage at present site and datum.

AVERAGE DISCHARGE (UNADJUSTED).--34 years (1938-72), 121 cfs (87,660 acre-ft per year); median of yearly mean discharges, 97 cfs (70,300 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 1,070 cfs Apr. 16 (gage height, 7.23 ft); minimum, 10 cfs Aug. 26 (gage height, 2.79 ft).
Period of record: Maximum discharge, 4,580 cfs Apr. 28, 1948 (gage height, 17.51 ft); maximum gage height, 17.62 ft Apr. 19, 1969; no flow during several periods in 1938-41.

REMARKS.--Records good. Flow completely regulated by Lake Ashtabula 13 miles upstream (see station 05057500). Small diversions above station for municipal supply. Records of chemical analyses for the water year 1972 are published in Part 2 of this report.

REVISIONS (WATER YEARS).--WSP 1388: 1939(M). WSP 1728: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	47	78	155	163	68	18	1,020	185	705	23	18	21
2	94	78	154	157	68	18	1,030	181	654	19	20	21
3	59	76	162	157	67	18	1,020	179	496	19	19	22
4	45	74	153	165	67	18	1,010	181	490	19	19	23
5	43	76	157	161	66	18	1,010	199	496	18	22	21
6	41	100	156	155	65	18	1,000	195	438	23	25	22
7	42	138	151	154	64	20	996	187	279	15	25	22
8	42	134	148	152	64	25	986	187	220	14	22	21
9	41	134	147	157	63	29	985	185	197	14	20	21
10	42	127	151	157	62	45	979	183	159	17	25	27
11	41	125	148	159	62	244	752	183	166	17	23	24
12	41	113	147	155	62	439	619	185	145	17	21	28
13	41	127	151	157	62	429	782	199	114	17	23	30
14	43	132	156	140	60	350	875	201	119	19	22	26
15	43	130	151	134	48	317	1,000	193	118	18	21	24
16	47	130	151	130	46	203	1,050	193	111	16	24	24
17	53	143	151	126	42	83	1,050	189	86	15	21	21
18	53	153	155	123	41	55	1,040	185	85	15	21	22
19	48	165	158	122	25	58	1,040	175	87	41	19	21
20	43	157	159	82	23	57	1,030	146	81	39	18	24
21	43	160	159	78	22	50	1,030	143	78	42	26	22
22	44	151	156	77	22	113	1,030	146	72	45	25	20
23	43	157	157	75	21	342	1,030	267	53	46	21	23
24	44	157	157	73	21	410	1,020	488	47	45	17	23
25	45	166	157	71	20	548	1,010	710	46	44	12	22
26	72	160	157	71	20	548	850	740	46	39	10	22
27	43	154	157	71	20	605	378	748	42	34	15	21
28	41	151	157	71	20	756	291	748	37	29	16	24
29	50	158	157	70	20	761	191	745	34	21	18	19
30	69	163	159	68	------	802	185	740	28	19	22	18
31	84	------	161	68	------	951	------	724	------	18	24	------
TOTAL	1,527	3,967	4,795	3,699	1,311	8,348	26,289	9,910	5,729	777	634	679
MEAN	49.3	132	155	119	45.2	269	876	320	191	25.1	20.5	22.6
MAX	94	166	162	165	68	951	1,050	748	705	46	26	30
MIN	41	74	147	68	20	18	185	143	28	14	10	18
AC-FT	3,030	7,870	9,510	7,340	2,600	16,560	52,140	19,660	11,360	1,540	1,260	1,350

CAL YR 1971 TOTAL 63,430 MEAN 174 MAX 1,810 MIN 15 AC-FT 125,800
WTR YR 1972 TOTAL 67,665 MEAN 185 MAX 1,050 MIN 10 AC-FT 134,200

05058700 Sheyenne River at Lisbon, N. Dak.

LOCATION.--Lat 46°26'49", long 97°40'44", on line between secs.1 and 2, T.134 N., R.56 W., Ransom County, on left bank 150 ft downstream from dam at State fish hatchery at north edge of city of Lisbon, 3 miles upstream from Timber Coulee, and at mile 162.1.

DRAINAGE AREA.--8,190 sq mi, approximately, of which about 5,700 sq mi is probably noncontributing (includes 3,800 sq mi in closed basins).

PERIOD OF RECORD.--September 1956 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,066.46 ft above mean sea level.

AVERAGE DISCHARGE.--16 years, 145 cfs (105,100 acre-ft per year); median of yearly mean discharges, 140 cfs (101,000 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 1,450 cfs Mar. 16 (gage height, 10.33 ft, backwater from ice); minimum, 13 cfs Sept. 2 (gage height, 2.16 ft).
Period of record: Maximum discharge, 4,380 cfs Apr. 24, 1969 (gage height, 16.54 ft); no flow Sept. 19-21, Oct. 23, 24, 1956, Aug. 16, 1961.

REMARKS.--Records good. Flow regulated by Lake Ashtabula 108.5 miles upstream (see station 05057500). Records of chemical analyses and water temperatures for water year 1972 are published in Part 2 of this report.

REVISIONS.--WSP 1728: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	46	62	124	155	115	35	825	277	677	51	34	26
2	59	72	150	154	115	35	1,020	247	670	48	27	16
3	69	81	154	153	110	35	1,090	238	649	44	22	13
4	106	78	158	152	110	30	1,010	224	622	40	20	16
5	98	79	163	151	105	30	982	224	511	34	20	16
6	71	41	161	151	105	30	972	231	474	31	20	16
7	55	67	156	150	105	28	972	231	479	30	20	16
8	46	69	161	149	100	28	969	227	440	32	21	16
9	41	92	158	148	100	28	962	207	290	30	21	16
10	41	122	154	147	95	28	954	198	207	32	25	16
11	38	122	154	145	90	28	959	191	183	29	27	16
12	40	119	154	145	90	40	964	189	156	26	27	16
13	40	115	154	145	85	250	874	227	147	43	27	20
14	40	117	154	140	85	750	825	247	145	32	26	22
15	38	111	158	140	80	1,200	852	260	117	26	26	23
16	44	117	158	140	75	1,350	882	242	107	26	23	25
17	74	122	165	135	75	1,170	977	211	109	23	22	25
18	72	117	169	135	70	850	1,010	196	111	23	25	23
19	66	102	165	135	65	600	1,010	185	109	24	23	22
20	67	136	167	135	65	360	1,000	176	102	23	22	22
21	66	107	165	135	60	280	998	172	96	27	26	19
22	60	92	165	130	55	190	995	156	92	49	30	16
23	54	102	165	130	55	170	998	150	88	60	32	17
24	49	113	165	130	50	150	995	147	85	54	29	18
25	48	143	165	130	48	180	991	187	81	66	27	19
26	48	147	165	125	48	360	985	414	72	71	29	21
27	49	147	160	125	45	430	977	626	66	62	26	19
28	46	143	160	120	40	500	882	668	62	57	22	23
29	52	136	160	120	38	570	525	674	60	55	19	23
30	69	128	155	120	------	730	378	677	57	46	17	21
31	62	------	155	115	------	803	------	672	------	41	38	------
TOTAL	1,754	3,199	4,917	4,285	2,279	11,268	27,833	8,971	7,064	1,235	773	577
MEAN	56.6	107	159	138	78.6	363	928	289	235	39.8	24.9	19.2
MAX	106	147	169	155	115	1,350	1,090	677	677	71	38	26
MIN	38	41	124	115	38	28	378	147	57	23	17	13
AC-FT	3,480	6,350	9,750	8,500	4,520	22,350	55,210	17,790	14,010	2,450	1,530	1,140

CAL YR 1971 TOTAL 69,268.0 MEAN 190 MAX 1,840 MIN 5.6 AC-FT 137,400
WTR YR 1972 TOTAL 74,155.0 MEAN 203 MAX 1,350 MIN 13 AC-FT 147,100

05059000 Sheyenne River near Kindred, N. Dak.

LOCATION.--Lat 46°37'35", long 97°00'05", in NE¼NW¼ sec.5, T.136 N., R.50 W., Richland County, on right bank 25 ft downstream from Burlington Northern Railway bridge, 1.5 miles southeast of Kindred, and at mile 68.1.

DRAINAGE AREA.--8,800 sq mi, approximately, of which about 5,780 sq mi is probably noncontributing (includes 3,800 sq mi in closed basins).

PERIOD OF RECORD.--July 1949 to current year.

GAGE.--Water-stage recorder. Datum of gage is 925.55 ft above mean sea level, datum of 1929. July 1949 to Sept. 30, 1962, nonrecording gage at same site and datum.

AVERAGE DISCHARGE.--23 years, 190 cfs (137,700 acre-ft per year); median of yearly mean discharges, 140 cfs (101,200 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 1,530 cfs Mar. 19 (gage height, 13.54 ft); minimum, 48 cfs Sept. 8.
Period of record: Maximum discharge, 4,690 cfs Apr. 15, 1969 (gage height, 21.03 ft); maximum gage height, 21.54 ft Apr. 14, 1969 (backwater from ice); minimum discharge, 13 cfs Nov. 13, 1955, Aug. 22-24, 1959; minimum gage height, 2.71 ft Aug. 20, 22, 1963.
Spring flood in 1947 or 1948 reached a stage of 22.1 ft, from floodmarks (discharge, about 3,600 cfs).

REMARKS.--Records good. Flow regulated to a large degree by Lake Ashtabula 202 miles upstream (see station 05057500) and several small reservoirs. Records of chemical analyses and water temperatures for water year 1972 are published in Part 2 of this report.

REVISIONS.--WSP 1728: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	75	107	167	187	113	75	922	742	810	113	110	63
2	67	120	159	185	110	75	835	550	787	111	100	59
3	65	122	145	181	104	75	843	448	763	117	90	59
4	89	110	141	193	105	75	922	393	742	115	80	64
5	102	117	151	201	105	70	996	371	722	113	70	65
6	107	110	167	203	105	70	1,020	376	696	113	68	58
7	129	64	165	193	110	70	996	367	632	115	66	53
8	153	89	159	167	120	70	982	357	561	90	65	50
9	131	113	161	173	124	70	982	357	542	86	64	49
10	108	112	177	177	124	70	990	355	528	87	60	50
11	97	105	163	173	124	83	986	343	455	86	58	50
12	89	112	157	185	124	100	984	338	395	160	59	50
13	81	120	155	171	122	136	1,000	434	343	134	68	53
14	80	173	159	153	120	232	1,000	570	307	115	71	54
15	78	183	161	170	120	275	968	544	271	99	62	54
16	80	179	157	170	115	375	872	561	249	99	62	54
17	89	173	145	170	115	790	886	524	226	117	57	54
18	97	167	157	170	115	1,210	904	482	200	113	68	54
19	110	167	157	160	115	1,490	949	439	194	101	77	55
20	117	169	157	160	115	1,390	986	405	190	101	80	55
21	124	147	155	160	110	1,130	997	374	186	101	82	54
22	113	110	155	160	110	806	1,000	362	168	185	85	54
23	105	89	161	160	100	680	998	357	150	228	90	53
24	105	118	157	160	100	576	998	369	132	152	92	53
25	105	140	171	160	100	502	992	369	130	130	97	53
26	102	157	193	160	90	420	990	359	122	145	87	53
27	94	169	197	140	85	358	989	352	117	150	80	52
28	91	181	193	124	80	346	987	559	108	130	74	52
29	88	177	185	119	75	617	979	779	108	130	69	52
30	94	173	183	120	------	748	938	848	110	120	68	52
31	107	------	191	115	------	860	------	832	------	110	65	------
TOTAL	3,072	4,073	5,101	5,120	3,155	13,844	28,891	14,516	10,944	3,766	2,324	1,631
MEAN	99.1	136	165	165	109	447	963	468	365	121	75.0	54.4
MAX	153	183	197	203	124	1,490	1,020	848	810	228	110	65
MIN	65	64	141	115	75	70	835	338	108	86	57	49
AC-FT	6,090	8,080	10,120	10,160	6,260	27,460	57,310	28,790	21,710	7,470	4,610	3,240

CAL YR 1971 TOTAL 83,973 MEAN 230 MAX 1,740 MIN 31 AC-FT 166,600
WTR YR 1972 TOTAL 96,437 MEAN 263 MAX 1,490 MIN 49 AC-FT 191,300

05059500 Sheyenne River at West Fargo, N. Dak.

LOCATION.--Lat 46°53'28", long 96°54'24", in SE¼SE¼ sec.31, T.140 N., R.49 W., Cass County, on right bank at downstream side of county highway bridge, 1 mile north of West Fargo, 3 miles upstream from Maple River, and at mile 24.5.

DRAINAGE AREA.--8,870 sq mi, approximately, of which about 5,780 sq mi is probably noncontributing (includes 3,800 sq mi in closed basins).

PERIOD OF RECORD.--March to November 1902 (gage heights only), April 1903 to October 1905, March to August 1919, September 1929 to current year. Published as "at or near Haggart" 1902-7, 1919. Records for March to November 1902 and November 1905 to June 1907, published in WSP 100, 171, 207, and 245, have been found to be unreliable and should not be used. Monthly discharge only for some periods, published in WSP 1308.

GAGE.--Water-stage recorder. Datum of gage is 877.19 ft above mean sea level. June 27, 1933 to September 1969 on left bank about 600 ft downstream on unimproved channel at same datum. See WSP 1728 or 1913 for history of changes prior to June 27, 1933.

AVERAGE DISCHARGE.--45 years (1903-5, 1929-72), 166 cfs (120,300 acre-ft per year); median of yearly mean discharges, 140 cfs (101,000 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 1,560 cfs Mar. 20 (gage height, 18.28 ft, backwater from ice); minimum, 23 cfs Sept. 19 (gage height, 3.64 ft).
Period of record: Maximum discharge, 3,110 cfs Apr. 4, 1966; maximum gage height, 21.70 ft Apr. 16, 17, 1969 (backwater from Red and/or Maple Rivers); minimum discharge, 2.0 cfs Dec. 14, 1936 (gage height, 1.90 ft).

REMARKS.--Records good. Flow regulated to a large degree by Lake Ashtabula (see station 05057500). Records of chemical analyses for water year 1972 are published in Part 2 of this report.

REVISIONS (WATER YEARS).--WSP 1388: 1904(M). WSP 1728: Drainage area. See also "PERIOD OF RECORD."

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	53	89	205	148	110	89	705	982	1,010	140	117	67
2	54	96	199	148	108	84	638	778	918	132	107	62
3	55	100	192	148	106	77	742	597	862	124	101	59
4	48	110	172	148	106	74	823	489	828	117	91	58
5	48	104	161	146	106	72	944	424	798	111	86	58
6	58	107	164	155	110	72	1,140	389	776	110	84	64
7	62	73	191	156	112	69	1,110	384	752	110	78	64
8	78	96	199	151	113	69	1,040	378	690	110	74	60
9	105	83	201	147	110	68	1,030	369	615	105	71	60
10	123	82	192	145	108	66	1,040	356	578	98	73	53
11	111	100	190	148	109	70	1,050	353	560	88	72	53
12	93	96	172	157	110	72	1,070	347	504	101	69	56
13	84	92	172	163	114	75	1,120	374	426	122	68	58
14	76	118	172	162	114	80	1,290	486	368	134	69	54
15	70	164	168	162	112	140	1,240	712	331	101	75	52
16	73	189	164	166	106	220	1,080	655	305	89	72	52
17	100	186	162	165	112	400	934	584	288	80	68	52
18	96	174	160	171	113	770	926	543	272	79	69	47
19	103	163	158	162	110	1,060	960	492	254	85	68	26
20	104	157	158	156	112	1,370	1,020	443	242	78	87	31
21	110	139	157	160	117	1,490	1,080	402	238	75	88	73
22	120	146	155	161	112	1,380	1,080	389	233	78	88	56
23	118	115	154	162	110	1,000	1,080	366	221	110	90	56
24	102	119	154	169	108	744	1,080	356	206	199	94	56
25	94	123	153	172	105	542	1,080	364	191	142	106	55
26	94	140	151	167	102	454	1,060	370	180	125	113	54
27	92	171	149	146	100	405	1,050	357	174	143	92	53
28	82	190	148	124	100	367	1,040	358	165	147	82	53
29	78	199	148	118	92	320	1,040	643	158	136	76	51
30	88	217	148	117	------	390	1,030	1,040	152	135	74	52
31	86	------	148	113	------	606	------	1,120	------	131	76	------
TOTAL	2,668	3,938	5,207	4,713	3,147	12,695	30,522	15,900	13,295	3,535	2,578	1,645
MEAN	86.1	131	168	152	109	410	1,017	513	443	114	83.2	54.8
MAX	123	217	205	172	117	1,490	1,290	1,120	1,010	199	117	73
MIN	48	73	148	113	92	66	638	347	152	75	68	26
AC-FT	5,290	7,810	10,330	9,350	6,240	25,180	60,540	31,540	26,370	7,010	5,110	3,260

CAL YR 1971 TOTAL 85,274 MEAN 234 MAX 1,780 MIN 33 AC-FT 169,100
WTR YR 1972 TOTAL 99,843 MEAN 273 MAX 1,490 MIN 26 AC-FT 198,000

05059600 Maple River near Hope, N. Dak.

LOCATION.--Lat 47°19'30", long 97°47'25", in NW¼NW¼ sec.4, T.144 N., R.56 W., Steele County, 100 ft downstream from box culvert on State Highway 38, 500 feet east of the intersection of State Highways 32 and 38, and 3 miles west of Hope.

DRAINAGE AREA.--20.2 sq mi, of which about 2.8 sq mi is probably noncontributing.

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

GAGE.--Water-stage recorder. Datum of gage is 1,296.62 ft above mean sea level.

AVERAGE DISCHARGE.--8 years, 4.16 cfs (3,010 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 465 cfs May 27 (gage height, 4.65 ft); no flow for several months. Period of record: Maximum discharge, 734 cfs June 10, 1968 (gage height, 4.78 ft); maximum gage height, 5.46 ft Mar. 15, 1968 (backwater from ice); no flow for several months each year.

REMARKS.--Records fair. Records of chemical analyses for the water year 1972 are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1						0	.84	.72	9.8	.01	0	0
2						0	.98	.84	6.7	.01	0	0
3						0	1.1	.78	4.4	0	0	0
4						0	1.0	.72	3.2	0	0	0
5						0	1.2	.66	2.0	0	0	0
6						0	1.9	.84	1.3	0	0	0
7						0	2.1	.78	.98	0	0	0
8						0	1.8	.78	.60	0	0	0
9						0	2.2	.72	.45	0	0	0
10						5.0	7.0	.60	.28	0	0	0
11						10	15	.55	.24	0	0	0
12						30	58	.60	.21	0	0	.03
13						59	95	1.0	.28	.02	.04	0
14						60	99	1.4	.32	0	0	0
15						50	43	1.5	.36	0	0	0
16						38	27	1.5	.36	0	0	0
17						27	17	1.7	.28	0	0	0
18						18	10	1.7	.28	0	0	0
19						14	7.6	1.6	.24	.24	0	0
20						10	5.0	1.3	.24	.01	0	0
21						8.5	3.8	1.1	.18	0	.03	0
22						6.1	2.9	1.0	.10	0	0	0
23						4.9	2.4	1.2	.06	0	0	0
24						4.2	2.0	1.2	.03	0	0	0
25						3.5	1.7	2.7	.03	0	0	0
26						2.5	1.4	6.1	.01	0	0	0
27						2.0	1.3	203	.01	0	0	0
28						5.0	1.1	69	.02	0	0	0
29						2.0	1.0	29	.02	0	0	0
30					------	1.0	.91	19	.02	0	0	0
31		------			------	.98	------	14	------	0	0	------
TOTAL	0	0	0	0	0	361.68	415.23	367.59	33.00	.29	.07	.03
MEAN	0	0	0	0	0	11.7	13.8	11.9	1.10	.009	.002	.001
MAX	0	0	0	0	0	60	99	203	9.8	.24	.04	.03
MIN	0	0	0	0	0	0	.84	.55	.01	0	0	0
AC-FT	0	0	0	0	0	717	824	729	65	.6	.1	.06

CAL YR 1971 TOTAL 1,008.33 MEAN 2.76 MAX 103 MIN 0 AC-FT 2,000
WTR YR 1972 TOTAL 1,177.89 MEAN 3.22 MAX 203 MIN 0 AC-FT 2,340

PEAK DISCHARGE (BASE, 50 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
3-14	--	--	60	5-27	0730	4.65	465
4-13	1400	3.65	155				

05059700 Maple River near Enderlin, N. Dak.

LOCATION.--Lat 46°37'18", long 97°34'25", on west line sec.2, T.136 N., R.55 W., Ransom County, on left bank 25 ft downstream from county highway bridge, 1 mile downstream from South Branch 1.2 miles east of Enderlin.

DRAINAGE AREA.--843 sq mi, of which about 47 sq mi is probably noncontributing.

PERIOD OF RECORD.--May 1956 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,056.72 ft above mean sea level. Sept. 21, 1956 to June 9, 1969, recording gage on right bank at same datum. Prior to Sept. 20, 1956, nonrecording gage at site 25 ft upstream at same datum.

AVERAGE DISCHARGE.--16 years, 37.0 cfs (26,810 acre-ft per year); median of yearly mean discharges, 20 cfs (14,500 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 742 cfs Mar. 18 (gage height, 7.48 ft); minimum, 1.9 cfs Oct. 1 (gage height, 3.42 ft).
Period of record: Maximum discharge, 5,750 cfs Apr. 11, 1969 (gage height, 13.55 ft); minimum, 0.1 cfs Dec. 7-9, 1963; minimum gage height, 1.90 ft Oct. 5, 1956.

REMARKS.--Records good. Records of chemical analyses for water year 1972 are published in Part 2 of this report.

REVISIONS.--WSP 1728: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.2	15	7.0	3.1	4.5	4.0	57	53	71	15	9.0	31
2	3.5	13	7.0	3.1	4.5	4.0	50	49	71	15	11	30
3	2.5	13	7.0	3.1	4.5	4.0	47	45	97	13	13	29
4	2.7	12	7.0	2.8	4.5	3.8	45	42	102	12	15	26
5	3.1	9.7	6.9	2.8	4.5	3.5	42	45	95	17	15	22
6	3.1	9.0	6.9	3.1	4.5	3.5	41	48	82	12	13	21
7	2.8	8.0	6.9	3.3	4.9	3.3	41	46	72	10	13	16
8	3.1	7.5	6.9	3.5	4.9	3.3	40	46	66	9.7	13	15
9	4.5	7.0	6.9	3.5	4.9	3.5	41	44	60	9.0	13	13
10	4.9	7.0	6.2	3.1	4.9	4.9	40	41	53	6.2	13	11
11	5.5	7.0	5.5	3.3	4.9	20	41	40	51	4.1	12	10
12	4.5	7.0	5.5	3.1	4.9	61	48	40	47	5.5	9.0	9.0
13	4.5	7.5	5.5	3.3	4.9	142	66	61	43	3.8	9.0	9.7
14	3.5	7.5	5.5	3.3	4.9	201	106	91	40	3.8	7.6	10
15	3.1	8.0	5.5	3.3	4.9	275	310	93	36	3.5	6.9	8.3
16	2.7	8.5	4.9	3.3	4.9	565	485	87	33	3.5	6.2	8.3
17	15	9.0	4.1	3.3	4.9	674	539	87	32	3.5	4.5	6.9
18	17	9.0	3.8	3.5	4.9	670	458	78	30	3.1	4.5	6.9
19	16	8.5	3.8	3.5	4.5	560	369	66	29	3.8	6.2	7.6
20	17	8.5	3.8	3.5	4.5	470	315	57	29	3.8	4.5	4.9
21	15	8.0	3.8	3.5	4.3	377	277	49	25	3.8	29	3.8
22	11	8.0	3.8	3.5	4.1	317	244	45	24	4.9	142	3.8
23	9.7	8.0	3.8	3.8	4.1	275	215	45	20	6.9	60	3.3
24	10	8.0	3.3	4.5	4.1	233	180	46	18	5.5	44	3.3
25	7.6	8.0	3.3	4.5	4.1	194	150	47	16	4.1	37	4.1
26	6.9	8.0	3.3	4.5	4.1	162	122	48	14	6.2	30	4.1
27	7.6	7.8	3.3	4.5	4.1	125	101	84	13	4.1	26	4.1
28	8.3	7.5	3.3	4.5	4.0	92	84	80	12	3.8	23	4.1
29	7.6	7.5	3.3	4.5	4.0	84	66	74	13	4.9	24	3.8
30	12	7.0	3.3	4.5	------	77	59	86	14	6.2	30	3.8
31	13	------	3.1	4.5	------	70	------	85	------	7.6	32	------
TOTAL	229.9	259.5	154.2	111.6	131.7	5,681.8	4,679	1,848	1,308	215.3	675.4	333.8
MEAN	7.42	8.65	4.97	3.60	4.54	183	156	59.6	43.6	6.95	21.8	11.1
MAX	17	15	7.0	4.5	4.9	674	539	93	102	17	142	31
MIN	2.2	7.0	3.1	2.8	4.0	3.3	40	40	12	3.1	4.5	3.3
AC-FT	456	515	306	221	261	11,270	9,280	3,670	2,590	427	1,340	662

CAL YR 1971 TOTAL 5,618.0 MEAN 15.4 MAX 120 MIN 1.7 AC-FT 11,140
WTR YR 1972 TOTAL 15,628.2 MEAN 42.7 MAX 674 MIN 2.2 AC-FT 31,000

PEAK DISCHARGE (BASE, 100 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
3-18	0600	7.48	748	5-27	0400	4.68	110
3-28	1530	4.65	110	6- 3	1800	4.65	113
4-17	0830	6.96	548	8-22	0430	5.37	192
5-14	1800	4.65	104				

05060000 Maple River near Mapleton, N. Dak.

LOCATION.--Lat 46°51'40", long 97°06'10", in SW¼SE¼ sec.10, T.139 N., R.51 W., Cass County, on left bank 25 ft upstream from dam, 3 miles southwest of Mapleton, and 20 miles upstream from mouth.

DRAINAGE AREA.--1,450 sq mi, of which about 71 sq mi is probably noncontributing.

PERIOD OF RECORD.--April 1944 to current year. Prior to October 1958, published as "at Mapleton."

GAGE.--Water-stage recorder and rubble masonry dam. Datum of gage is 893.53 ft above mean sea level (levels by Soil Conservation Service). Prior to Oct. 1, 1958, nonrecording gage at site 7 miles downstream at different datum.

AVERAGE DISCHARGE.--28 years, 64.0 cfs (46,370 acre-ft per year); median of yearly mean discharges, 33 cfs (23,900 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 2,430 cfs Mar. 17 (gage height, 12.27 ft, backwater from ice); minimum discharge, 0.60 cfs Mar. 4, 5.
Period of record: Maximum discharge, 7,000 cfs Apr. 11, 1969 (gage height, 14.00 ft); no flow at times in most years.

REMARKS.--Records good. Some small diversions for irrigation. Records of chemical analyses for water year 1972 are published in Part 2 of this report.

REVISIONS (WATER YEARS).--WSP 1175: 1947(M). WSP 1728: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.3	34	21	5.3	2.7	.7	183	133	458	26	57	72
2	8.6	46	19	5.3	2.6	.7	131	121	300	25	45	61
3	11	65	17	5.0	2.6	.7	139	108	240	25	35	57
4	9.6	69	17	4.3	2.5	.6	139	99	198	24	27	55
5	8.1	58	17	4.0	2.5	.6	121	97	169	25	20	53
6	12	43	17	3.7	2.5	.8	108	108	161	20	21	51
7	16	34	16	3.7	2.5	.9	106	127	157	22	23	47
8	8.2	27	15	3.7	2.5	1.0	103	119	151	21	24	46
9	5.0	25	15	3.7	2.5	2.5	100	114	135	18	26	44
10	4.7	24	15	3.7	2.5	1.1	115	104	121	19	29	41
11	5.8	23	14	3.7	2.5	3.5	137	99	105	18	32	34
12	8.2	23	12	4.0	2.5	2.5	139	96	94	51	27	33
13	14	24	11	3.5	2.7	2.1	440	147	90	46	30	39
14	16	29	11	3.5	2.7	3.0	740	772	81	38	40	36
15	20	37	11	3.5	2.7	279	491	944	70	28	45	30
16	31	49	9.6	3.5	2.7	1,370	335	521	67	18	45	27
17	84	50	8.6	3.4	3.2	2,360	268	526	63	11	38	24
18	179	60	8.6	3.4	2.3	2,240	356	250	59	7.4	30	21
19	266	51	8.6	3.4	1.4	1,730	509	193	56	5.0	25	20
20	232	50	9.1	3.4	1.1	1,340	551	163	57	4.7	24	19
21	157	26	8.1	3.4	.80	1,160	494	143	56	4.7	25	11
22	104	35	7.7	3.4	.80	958	422	125	53	46	36	9.8
23	68	29	8.1	3.3	.80	740	362	125	50	141	46	8.2
24	46	27	7.7	3.1	.80	620	325	272	47	114	69	4.4
25	40	26	7.2	3.0	.80	482	295	356	43	81	137	3.0
26	30	26	6.8	2.9	.80	407	268	298	40	75	171	2.7
27	27	26	6.0	2.8	.75	310	235	325	37	85	139	5.0
28	24	25	6.0	2.8	.75	263	205	1,170	34	88	103	5.8
29	22	24	6.8	2.8	.70	215	180	1,540	32	76	87	3.8
30	24	22	5.7	2.8	------	175	159	1,400	29	68	69	3.3
31	32	------	5.7	2.7	------	147	------	923	------	63	91	------
TOTAL	1,521.5	1,087	348.3	110.7	56.20	14,816.7	8,156	11,618	3,253	1,293.8	1,616	867.0
MEAN	49.1	36.2	11.2	3.57	1.94	478	272	375	108	41.7	52.1	28.9
MAX	266	69	21	5.3	3.2	2,360	740	1,540	458	141	171	72
MIN	4.3	22	5.7	2.7	.70	.60	100	96	29	4.7	20	2.7
AC-FT	3,020	2,160	691	220	111	29,390	16,180	23,040	6,450	2,570	3,210	1,720

CAL YR 1971 TOTAL 17,986.69 MEAN 49.3 MAX 736 MIN 0 AC-FT 35,680
WTR YR 1972 TOTAL 44,744.20 MEAN 122 MAX 2,360 MIN .60 AC-FT 88,750

PEAK DISCHARGE (BASE, 300 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
3-17	--	--	2,430	5-15	0200	7.34	1,050
4-14	0700	6.44	803	5-25	0330	5.04	395
4-20	0800	5.59	557	5-29	1500	9.39	1,570

05060500 Rush River at Amenia, N. Dak.

LOCATION.--Lat 47°01'00", long 97°12'50", in sec.24, T.141 N., R.52 W., Cass County, on left bank on downstream side of bridge on State Highway 18, 0.6 mile north of Amenia.

DRAINAGE AREA.--116 sq mi.

PERIOD OF RECORD.--July 1946 to current year.

GAGE.--Water-stage recorder. Altitude of gage is about 943 ft above mean sea level (from topographic map). See WSP 1913 for history of changes prior to June 10, 1961.

AVERAGE DISCHARGE.--26 years, 8.08 cfs (5,850 acre-ft per year); median of yearly mean discharges, 5.6 cfs (4,100 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 252 cfs Apr. 14 (gage height, 7.05 ft); maximum gage height, 9.45 ft Mar. 16 (backwater from ice); no flow for many days.
Period of record: Maximum discharge, 1,690 cfs Apr. 10, 1969; maximum gage height, 12.15 ft Mar. 23, 1966 (backwater from ice); no flow at times each year.

REMARKS.--Records good. Records of chemical analyses for water year 1972 are published in Part 2 of this report.

REVISIONS.--WSP 1728: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	2.8	.71	.10		0	10	7.2	7.2	.47	1.0	.03
2	0	3.7	.63	.10		0	11	7.2	4.6	.51	.85	.03
3	0	3.5	.59	.10		0	11	6.9	3.9	.55	.71	.02
4	0	4.2	.59	.05		0	9.2	6.1	3.2	.47	.43	.02
5	0	4.0	.59	.02		0	8.7	6.1	2.8	.43	.28	.02
6	0	3.0	.55	.02		0	9.8	8.7	2.4	.71	.31	.02
7	0	2.2	.59	.02		0	9.8	12	2.1	.31	.25	.02
8	0	2.2	.47	.02		0	6.7	13	1.6	.31	.19	.02
9	0	1.8	.47	.02		0	6.4	12	1.3	.28	.08	.02
10	0	1.6	.43	.02		0	6.4	8.7	1.0	.25	.08	.01
11	0	1.6	.43	.01		0	8.2	7.2	1.0	.19	.04	0
12	0	1.6	.39	0		0	21	5.9	.97	.08	.02	0
13	0	1.4	.31	0		0	140	12	.85	.02	.10	.10
14	0	1.7	.31	0		0	213	22	.78	.02	.10	.06
15	0	2.0	.31	0		30	144	33	.74	.02	.06	.06
16	0	2.3	.31	0		150	106	25	.67	.01	.59	.03
17	.02	2.7	.28	0		80	87	18	.55	.01	1.3	.03
18	.28	2.9	.28	0		60	71	15	.63	.01	1.0	.03
19	1.1	2.9	.28	0		50	57	14	.74	.32	.74	.04
20	1.1	2.5	.28	0		40	46	10	.71	.59	.43	.03
21	.93	2.2	.28	0		34	37	6.4	4.8	.82	.31	.02
22	.85	2.0	.28	0		34	28	5.6	3.9	1.4	.31	.02
23	1.1	1.8	.28	0		35	22	6.4	2.5	4.4	.22	0
24	1.7	1.6	.28	0		30	19	16	1.8	4.8	.22	0
25	2.4	1.2	.28	0		20	16	27	1.1	3.9	.13	0
26	1.4	1.2	.22	0		16	14	21	1.5	3.7	.08	0
27	1.3	1.1	.08	0		15	12	18	.78	2.7	.02	0
28	1.1	1.0	.08	0		14	10	21	.47	2.1	.01	0
29	1.0	1.0	.10	0		14	9.2	26	.47	1.7	0	0
30	1.4	.82	.10	0	------	14	8.7	19	.47	1.7	0	0
31	2.7	------	.10	0	------	13	------	13	------	1.5	.02	------
TOTAL	18.38	64.52	10.88	.48	0	649	1,158.1	429.4	55.53	34.28	9.88	.63
MEAN	.59	2.15	.35	.016	0	20.9	38.6	13.9	1.85	1.11	.32	.021
MAX	2.7	4.2	.71	.10	0	150	213	33	7.2	4.8	1.3	.10
MIN	0	.82	.08	0	0	0	6.4	5.6	.47	.01	0	0
AC-FT	36	128	22	1.0	0	1,290	2,300	852	110	68	20	1.3

CAL YR 1971 TOTAL 1,589.74 MEAN 4.36 MAX 65 MIN 0 AC-FT 3,150
WTR YR 1972 TOTAL 2,431.08 MEAN 6.64 MAX 213 MIN 0 AC-FT 4,820

PEAK DISCHARGE (BASE, 27 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
3-16	--	--	230	5-25	0800	4.26	28
4-14	0130	7.05	252	5-28	2130	4.37	31
5-15	0100	4.46	34				

05064500 Red River of the North at Halstad, Minn.

LOCATION.--Lat 47°21'10", long 96°50'50", on line between secs.24 and 25, T.145 N., R.49 W., Traill County, on left bank on upstream side of highway bridge, 0.5 mile west of Halstad, 2.5 miles downstream from Wild Rice River, and at mile 375.2.

DRAINAGE AREA.--21,800 sq mi, approximately (includes 3,800 sq mi in closed basins).

PERIOD OF RECORD.--April 1936 to June 1937 (no winter records), April 1942 to September 1960 (spring and summer months only), May 1961 to current year.

GAGE.--Water-stage recorder. Datum of gage is 826.65 ft above mean sea level. Prior to July 17, 1961, nonrecording gage at same site and datum.

AVERAGE DISCHARGE.--11 years, 1,867 cfs (1,353,000 acre-ft per year); median of yearly mean discharges, 1,760 cfs (1,280,000 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 16,200 cfs Mar. 24 (gage height, 28.96 ft); minimum, 434 cfs Oct. 1 (gage height, 3.27 ft).
Period of record: Maximum discharge, 35,700 cfs Apr. 18, 1969 (gage height, 38.29 ft); minimum discharge observed, 5.4 cfs Oct. 8, 9, 12-14, 1936.
Flood in 1897 reached a stage of about 38.5 ft.

REMARKS.--Records good. Some regulation by many controlled lakes and reservoirs on tributaries. Records of chemical analyses for water year 1972 are published in Part 2 of this report.

REVISIONS (WATER YEARS).--WSP 1388: 1936, 1950. WSP 1728: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	474	2,160	1,710	1,030	891	772	4,750	4,680	7,300	1,530	1,610	902
2	636	2,650	1,620	1,030	902	783	4,600	4,380	7,400	1,520	1,520	902
3	868	2,840	1,450	1,040	902	805	4,810	4,030	6,860	1,490	1,450	853
4	1,310	2,900	1,280	1,040	890	812	5,160	3,730	6,160	1,450	1,370	812
5	1,190	2,830	1,160	1,040	890	826	5,300	3,470	5,270	1,400	1,270	790
6	1,030	2,570	1,120	1,020	890	834	5,500	3,340	4,550	1,350	1,190	780
7	933	1,910	1,150	1,000	890	834	5,600	3,350	4,140	1,310	1,190	769
8	841	1,560	1,180	1,000	891	834	5,700	3,370	3,940	1,280	1,180	765
9	801	1,520	1,200	1,000	883	826	5,600	3,320	3,780	1,250	1,150	758
10	758	1,470	1,230	1,000	864	819	5,500	3,260	3,580	1,210	1,110	747
11	740	1,430	1,220	1,000	857	816	5,650	3,180	3,400	1,140	1,090	708
12	733	1,400	1,150	1,010	841	823	6,300	3,100	3,260	1,080	1,090	672
13	704	1,350	1,040	1,010	823	841	10,000	3,100	3,130	1,040	1,080	664
14	654	1,800	990	1,010	812	891	12,900	3,630	2,980	1,050	1,090	700
15	625	1,770	1,050	982	801	1,020	13,900	5,250	2,800	1,170	1,110	682
16	593	1,650	1,170	948	805	1,640	13,900	6,630	2,670	1,330	1,100	636
17	697	1,530	1,200	933	812	3,950	12,100	6,350	2,560	1,460	1,060	589
18	2,410	1,490	1,150	930	812	6,820	10,800	5,580	2,470	1,520	1,010	559
19	4,060	1,420	1,130	925	808	8,970	9,600	4,920	2,410	1,540	967	550
20	4,520	1,400	1,110	920	808	10,600	8,550	4,520	2,360	1,590	936	541
21	4,520	1,430	1,100	920	780	12,500	7,420	4,170	2,280	1,490	952	518
22	3,910	1,510	1,110	920	765	15,500	6,630	3,860	2,190	1,450	1,070	504
23	2,990	1,580	1,100	920	762	15,100	6,180	3,860	2,120	1,510	1,140	527
24	2,340	1,400	1,090	910	762	15,700	6,000	4,240	2,040	1,860	1,040	547
25	1,980	1,400	1,080	910	769	16,200	5,940	4,730	1,930	1,960	948	559
26	1,780	1,450	1,070	910	776	15,600	5,760	5,200	1,840	1,880	920	603
27	1,640	1,550	1,060	900	780	14,200	5,550	5,300	1,730	1,830	940	625
28	1,550	1,670	1,050	900	780	12,300	5,320	4,880	1,650	1,750	990	632
29	1,470	1,750	1,060	900	769	9,900	5,120	4,720	1,590	1,790	974	625
30	1,450	1,740	1,040	900	------	7,300	4,930	5,650	1,560	1,810	936	618
31	1,470	------	1,020	895	------	5,600	------	6,600	------	1,720	910	------
TOTAL	49,677	53,130	36,090	29,853	24,015	184,416	215,070	136,400	99,950	45,760	34,393	20,137
MEAN	1,602	1,771	1,164	963	828	5,949	7,169	4,400	3,332	1,476	1,109	671
MAX	4,520	2,900	1,710	1,040	902	16,200	13,900	6,630	7,400	1,960	1,610	902
MIN	474	1,350	990	895	762	772	4,600	3,100	1,560	1,040	910	504
AC-FT	98,530	105,400	71,580	59,210	47,630	365,800	426,600	270,500	198,300	90,760	68,220	39,940

CAL YR 1971 TOTAL 438,805 MEAN 1,202 MAX 5,400 MIN 180 AC-FT 870,400
WTR YR 1972 TOTAL 928,891 MEAN 2,538 MAX 16,200 MIN 474 AC-FT 1,842,000

05064900 Beaver Creek near Finley, N. Dak.
(Hydrologic bench-mark station)

LOCATION.--Lat 47°35'40", long 97°42'18", in NE¼ sec.31, T.148 N., R.55 W., Steele County, on right bank 500 ft upstream from bridge on county highway 7 miles northeast of Finley.

DRAINAGE AREA.--160 sq mi, approximately.

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

GAGE.--Water-stage recorder and concrete broad-crested weir. Datum of gage is 1,170.08 ft above mean sea level.

AVERAGE DISCHARGE.--8 years, 10.5 cfs (7,610 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 736 cfs May 26 (gage height, 5.65 ft); no flow for several months. Period of record: Maximum discharge, 1,320 cfs Apr. 9, 1969 (gage height, 6.55 ft); maximum gage height, 9.70 ft Mar. 14, 1966 (backwater from ice); no flow for several months each year.

REMARKS.--Records fair. Records of chemical analyses, suspended sediment loads, and water temperatures for water year 1972 are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.2	1.9	.30			0	.75	8.2	13		0	
2	7.6	1.9	.30			0	.43	7.1	9.5		0	
3	7.1	1.9	.30			0	.69	5.4	6.5		0	
4	6.0	1.8	.30			0	.51	4.7	4.0		0	
5	6.0	1.3	.30			0	.18	4.2	2.9		0	
6	6.0	1.6	.30			0	.18	4.7	1.9		0	
7	6.5	1.6	.20			0	.21	4.2	1.5		0	
8	6.2	1.8	.20			0	.12	3.5	1.2		0	
9	7.4	1.5	.20			0	1.2	2.9	.96		0	
10	7.4	1.5	.20			0	12	2.7	.82		0	
11	7.4	1.4	.10			5.0	65	2.5	.64		0	
12	7.4	1.5	.10			40	152	2.7	.55		0	
13	7.4	1.5	0			94	198	4.4	1.1		0	
14	7.9	1.5	0			105	269	5.4	1.0		0	
15	4.6	1.5	0			177	458	4.7	.96		0	
16	2.5	1.5	0			170	255	3.5	.64		0	
17	2.5	1.5	0			133	154	2.9	.59		.01	
18	2.5	1.5	0			263	96	2.5	.51		.03	
19	2.5	1.5	0			172	77	1.8	.55		0	
20	2.5	1.5	0			62	62	1.6	.51		0	
21	2.5	1.4	0			35	50	1.6	.55		0	
22	2.5	1.4	0			38	41	78	.64		0	
23	2.3	1.4	0			15	34	67	.43		0	
24	2.3	1.4	0			9.8	28	51	.35		0	
25	1.5	1.4	0			10	23	41	.27		0	
26	1.5	1.4	0			4.4	19	122	.21		0	
27	1.1	1.4	0			8.2	15	178	.12		0	
28	1.2	1.0	0			4.2	13	68	.03		0	
29	1.3	.70	0			1.1	10	37	0		0	
30	1.8	.40	0		------	.82	8.8	22	0		0	------
31	2.8	------	0		------	.64	------	16	------		0	
TOTAL	133.4	43.60	2.80	0	0	1,348.16	2,044.07	761.2	51.93	0	.04	0
MEAN	4.30	1.45	.090	0	0	43.5	68.1	24.6	1.73	0	.001	0
MAX	7.9	1.9	.30	0	0	263	458	178	13	0	.03	0
MIN	1.1	.40	0	0	0	0	.12	1.6	0	0	0	0
AC-FT	265	86	5.6	0	0	2,670	4,050	1,510	103	0	.1	0

CAL YR 1971 TOTAL 3,727.84 MEAN 10.2 MAX 248 MIN 0 AC-FT 7,390
WTR YR 1972 TOTAL 4,385.20 MEAN 12.0 MAX 458 MIN 0 AC-FT 8,700

PEAK DISCHARGE (BASE, 50 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
3-15	1800	4.24	252	4-13	1930	4.44	380
3-18	1800	5.20	640	4-15	0300	4.74	508
3-22	1300	3.60	66	5-22	1100	4.21	177
4-12	1830	4.40	364	5-26	2030	5.65	736

05065500 Goose River near Portland, N. Dak.

LOCATION.--Lat 47°32'20", long 97°27'20", in SE¼NE¼ sec.19, T.147 N., R.53 W., Traill County, on left bank 75 ft upstream from bridge on State Highway 18, 1.2 miles upstream from unnamed tributary, 4 miles downstream from Beaver Creek, and 5 miles northwest of Portland.

DRAINAGE AREA.--517 sq mi, of which about 110 sq mi is probably noncontributing.

PERIOD OF RECORD.--October 1939 to current year.

GAGE.--Water-stage recorder and wooden control. Datum of gage is 967.48 ft above mean sea level. Prior to Oct. 1, 1956, nonrecording gages at site 2 miles upstream at datum 11.28 ft higher.

AVERAGE DISCHARGE.--33 years, 29.8 cfs (21,590 acre-ft per year); median of yearly mean discharges, 14 cfs (10,100 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 1,720 cfs Apr. 17 (gage height, 15.27 ft); minimum, 0.01 cfs Sept. 24-27, 30.
Period of record: Maximum discharge, 8,530 cfs May 9, 1950 (gage height, 20.12 ft) on basis of contracted-opening measurement, present site and datum; no flow at times most years.

REMARKS.--Records good. Records of chemical analyses for water year 1972 are published in Part 2 of this report.

REVISIONS.--WSP 1728: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.07	7.3	5.9	1.3	.59	.45	27	81	54	5.0	.05	.04
2	.46	8.9	4.7	1.1	.57	.45	23	72	48	4.5	.05	.02
3	.34	6.8	4.5	1.0	.56	.45	26	62	45	4.0	.08	.02
4	.43	5.9	4.5	.97	.44	.45	23	57	40	3.5	.13	.02
5	.18	6.8	4.5	1.0	.44	.45	25	53	34	3.0	.72	.04
6	.33	5.5	4.6	1.0	.44	.45	27	50	32	2.0	5.0	.07
7	.67	5.5	4.4	.91	.44	.43	26	45	28	2.0	1.4	.23
8	1.1	5.5	4.3	.96	.33	.38	25	44	25	1.3	3.2	.13
9	.93	5.1	4.2	.92	.33	.44	30	41	23	.89	.06	.08
10	.73	5.1	4.1	.86	.35	.70	37	34	20	.86	.02	.06
11	1.3	5.5	4.1	.72	.43	1.5	58	32	18	.27	.13	.03
12	1.1	5.5	3.5	.85	.44	4.3	128	31	17	.28	.75	.19
13	2.1	6.4	3.0	.72	.44	17	536	31	19	.51	1.7	1.2
14	2.5	6.8	2.8	.59	.44	74	961	31	20	3.0	6.2	.90
15	3.0	8.0	2.8	.61	.45	490	1,190	32	19	1.9	4.9	.17
16	3.0	8.9	2.6	.77	.45	836	1,470	33	17	.93	3.2	.14
17	3.9	8.9	2.2	.89	.45	954	1,700	31	15	.67	2.5	.18
18	5.1	9.8	2.1	.76	.45	866	1,580	29	17	.65	1.1	.16
19	2.8	8.9	2.1	.59	.45	762	1,180	25	17	1.7	.24	.11
20	2.4	8.5	2.1	.57	.45	412	594	23	16	2.4	.09	.10
21	4.0	8.0	1.8	.61	.45	248	356	20	14	.92	.42	.06
22	4.9	7.5	1.8	.73	.45	164	259	20	13	2.2	.44	.03
23	4.0	7.5	1.8	.72	.45	107	207	22	11	.94	.10	.02
24	3.3	7.0	1.6	.71	.45	89	176	54	11	1.2	.07	.01
25	2.5	7.0	1.5	.60	.45	78	153	87	8.7	.48	.07	.01
26	3.4	6.5	1.3	.57	.45	70	135	67	7.5	1.3	.10	.01
27	3.6	6.5	1.3	.57	.45	60	124	56	8.0	.91	.05	.01
28	2.3	6.0	1.4	.68	.45	55	111	143	7.0	.38	.05	.03
29	1.8	6.0	1.3	.59	.45	51	100	176	5.9	.17	.05	.02
30	3.9	6.0	1.3	.57	------	57	90	95	6.8	.17	.05	.01
31	6.3	------	1.3	.71	------	39	------	62	------	.10	.04	------
TOTAL	72.44	207.6	89.4	24.15	12.99	5,439.45	11,377	1,639	616.9	48.13	32.96	4.10
MEAN	2.34	6.92	2.88	.78	.45	175	379	52.9	20.6	1.55	1.06	.14
MAX	6.3	9.8	5.9	1.3	.59	954	1,700	176	54	5.0	6.2	1.2
MIN	.07	5.1	1.3	.57	.33	.38	23	20	5.9	.10	.02	.01
AC-FT	144	412	177	48	26	10,790	22,570	3,250	1,220	95	65	8.1

CAL YR 1971 TOTAL 10,804.75 MEAN 29.6 MAX 1,130 MIN .05 AC-FT 21,430
WTR YR 1972 TOTAL 19,564.12 MEAN 53.5 MAX 1,700 MIN .01 AC-FT 38,810

PEAK DISCHARGE (BASE, 200 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
3-17	--	--	982	5-28	2230	5.99	252
4-17	1000	15.27	1,720				

05066500 Goose River at Hillsboro, N. Dak.

LOCATION.--Lat 47°24'20", long 97°03'40", in NW¼ sec.5, T.145 N., R.50 W., Traill County, on right bank 600 ft upstream from Foogman Dam in Hillsboro 27.5 miles upstream from mouth.

DRAINAGE AREA.--1,203 sq mi, of which 110 sq mi is probably noncontributing.

PERIOD OF RECORD.--March 1931 to current year (no winter records 1932-34). Monthly discharge only for some periods, published in WSP 1308.

GAGE.--Water-stage recorder and masonry dam. Datum of gage is 879.52 ft above mean sea level. Sept. 26, 1941, to Oct. 27, 1965, at site 600 ft downstream at same datum. See WSP 1728 or 1913 for history of changes prior to Sept. 26, 1941.

AVERAGE DISCHARGE.--39 years (1931-32, 1934-72), 63.7 cfs (46,150 acre-ft per year); median of yearly mean discharges, 39 cfs (28,300 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 2,380 cfs Apr. 15 (gage height, 6.62 ft); maximum gage height, 6.97 ft Mar. 17 (backwater from ice); minimum discharge, 0.62 cfs Sept. 30 (gage height, 1.67 ft).
Period of record: Maximum discharge, 9,420 cfs Apr. 19, 1950; maximum gage height, 14.94 ft Apr. 19, 1950; no flow at times.

REMARKS.--Records good. Records of chemical analyses for water year 1972 are published in Part 2 of this report.

REVISIONS (WATER YEAR).--WSP 925: 1935-36, 1939. WSP 1728: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	89	36	32	9.4	5.6	4.8	133	194	381	20	6.5	3.2
2	56	36	30	9.4	5.6	4.8	114	185	300	19	5.1	4.1
3	29	45	30	8.0	4.7	4.8	98	172	256	16	4.7	4.4
4	15	50	23	8.0	4.7	4.8	89	162	217	15	4.2	3.8
5	11	43	20	8.0	4.7	4.8	87	154	190	14	5.3	3.8
6	18	44	20	8.0	4.7	4.8	110	152	165	12	14	3.8
7	29	46	20	8.0	4.7	4.8	114	149	142	12	7.8	3.1
8	27	33	20	8.0	4.4	4.5	107	148	123	10	7.4	2.4
9	24	37	20	8.0	4.5	4.5	120	141	102	8.0	11	2.3
10	24	46	18	8.0	4.5	4.5	140	137	71	8.0	13	2.4
11	22	47	18	8.0	4.5	5.5	196	128	88	7.6	12	2.0
12	19	47	18	8.0	4.5	8.2	470	123	72	5.7	10	3.7
13	17	47	18	8.0	4.5	15	1,460	121	57	6.2	8.3	3.2
14	15	47	16	8.0	4.5	32	2,160	121	46	6.4	8.5	2.4
15	12	51	13	8.0	4.5	569	2,360	121	48	6.1	8.0	6.0
16	12	53	13	8.0	5.0	1,470	2,360	129	51	6.8	7.6	5.8
17	19	57	13	8.1	5.5	2,160	2,280	134	54	6.8	5.1	3.8
18	31	61	12	8.0	5.5	2,140	2,210	136	54	6.3	5.4	3.1
19	40	61	12	7.1	5.5	1,850	2,120	125	57	9.2	4.7	3.1
20	37	60	12	7.1	5.5	1,300	1,670	115	58	12	4.7	2.5
21	44	34	12	7.0	5.5	971	1,120	119	59	23	8.2	1.4
22	43	53	12	6.8	5.5	638	725	102	57	20	7.5	1.4
23	40	56	12	6.5	5.5	348	530	94	50	12	4.1	1.1
24	40	55	12	6.5	5.0	297	446	106	47	11	5.4	1.9
25	39	51	12	6.5	4.8	270	397	274	42	14	4.9	1.5
26	35	46	11	6.5	4.8	248	337	320	30	16	4.3	1.4
27	31	43	11	6.0	4.8	186	288	308	27	13	3.8	1.4
28	26	39	11	5.4	4.8	130	250	448	24	12	4.3	.95
29	26	35	10	5.6	4.8	114	229	1,190	22	8.8	5.4	.73
30	32	35	10	5.6	------	124	212	929	21	6.7	5.1	.62
31	33	------	9.4	5.6	------	147	------	572	------	6.4	4.1	------
TOTAL	935	1,394	500.4	229.1	143.1	13,069.8	22,932	7,309	2,911	350.0	210.4	81.30
MEAN	30.2	46.5	16.1	7.39	4.93	422	764	236	97.0	11.3	6.79	2.71
MAX	89	61	32	9.4	5.6	2,160	2,360	1,190	381	23	14	6.0
MIN	11	33	9.4	5.4	4.4	4.5	87	94	21	5.7	3.8	.62
AC-FT	1,850	2,770	993	454	284	25,920	45,490	14,500	5,770	694	417	161

CAL YR 1971 TOTAL 26,576.35 MEAN 72.8 MAX 1,370 MIN .93 AC-FT 52,710
WTR YR 1972 TOTAL 50,065.10 MEAN 137 MAX 2,360 MIN .62 AC-FT 99,300

PEAK DISCHARGE (BASE, 200 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
3-17	--	--	2,190	5-29	1045	4.02	1,260
4-15	1915	6.62	2,380				

05082500 Red River of the North at Grand Forks, N. Dak.

LOCATION.--Lat 47°56'34", long 97°03'10", in SW¼NE¼ sec.33, T.152 N., R.50 W., Grand Forks County, on left bank on second floor of old sewage plant in Grand Forks, 2.3 miles downstream from Red Lake River, and at mile 296.0.

DRAINAGE AREA.--30,100 sq mi, approximately (includes 3,800 sq mi in closed basins).

PERIOD OF RECORD.--April 1882 to current year. Monthly discharge only prior to May 1901, published in WSP 1308.

GAGE.--Water-stage recorder. Datum of gage is 778.35 ft above mean sea level. Nov. 3, 1933, to Apr. 13, 1965, water-stage recorder 0.3 mile upstream at present datum. See WSP 1728 or 1913 for history of changes prior to Nov. 3, 1933.

AVERAGE DISCHARGE.--90 years, 2,463 cfs (1,784,000 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 31,400 cfs Apr. 17 (gage height, 38.50 ft); maximum gage height, 38.73 ft Apr. 18; minimum discharge, 819 cfs Oct. 1 (gage height, 5.04 ft).
Period of record: Maximum discharge about 80,000 cfs Apr. 10, 1897 (gage height, 50.2 ft, site and datum then in use), from rating curve extended above 54,000 cfs; minimum, 2.4 cfs Feb. 3-5, 12, 14, 16-19, 1937 (caused by unusual regulation during repair of dam at Grand Forks).

REMARKS.--Records good. Flow regulated by many lakes and reservoirs on tributaries. Records of chemical analysis and water temperatures for water year 1972 are published in Part 2 of this report.

REVISIONS (WATER YEARS).--WSP 855: 1936(M). WSP 1115: 1942. WSP 1175: 1897(M). WSP 1388: 1904, 1914-15, 1917-19, 1921-22, 1927, 1950. WSP: 1728: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1,000	3,830	4,100	2,450	1,500	1,500	15,100	10,200	10,200	2,440	2,620	2,030
2	1,850	6,050	3,900	2,400	1,500	1,500	12,100	9,650	10,300	2,380	2,500	2,000
3	3,740	8,100	3,800	2,400	1,500	1,500	9,750	9,080	10,000	2,320	2,420	1,990
4	5,340	9,060	3,650	2,350	1,500	1,500	9,200	8,500	9,400	2,300	2,320	1,980
5	6,030	9,320	3,500	2,350	1,500	1,500	8,880	8,000	8,700	2,240	2,240	1,960
6	5,760	8,750	3,400	2,300	1,500	1,500	8,680	7,400	7,500	2,190	2,210	1,960
7	4,800	6,880	3,400	2,300	1,500	1,550	8,520	7,200	6,600	2,160	2,210	1,980
8	3,970	5,300	3,300	2,200	1,500	1,550	8,390	6,950	6,080	2,100	2,210	1,970
9	3,420	4,460	3,200	2,100	1,450	1,550	8,300	6,890	5,650	2,060	2,230	1,970
10	3,060	4,550	3,150	2,000	1,450	1,550	8,270	6,820	5,400	2,030	2,320	1,940
11	2,780	5,100	3,100	2,000	1,450	1,550	8,250	6,520	5,100	1,990	2,380	1,940
12	2,580	5,260	3,100	2,000	1,450	1,550	8,600	6,160	4,850	1,910	2,430	1,960
13	2,400	5,430	3,100	1,900	1,450	1,600	12,000	5,850	4,690	1,840	2,450	2,020
14	2,240	5,430	3,050	1,800	1,450	1,700	18,300	5,660	4,580	1,800	2,420	2,000
15	2,100	5,620	3,000	1,700	1,450	1,900	23,400	5,880	4,390	1,800	2,390	2,000
16	1,960	6,000	2,950	1,700	1,450	2,500	27,600	7,600	4,190	1,830	2,380	2,020
17	1,920	6,300	3,000	1,600	1,450	4,150	30,400	9,800	3,940	1,920	2,340	2,050
18	2,020	6,350	3,050	1,600	1,500	6,200	30,900	9,700	3,860	2,000	2,270	2,030
19	3,630	6,000	3,050	1,500	1,500	8,500	27,900	8,600	3,810	2,110	2,250	1,960
20	7,480	5,550	2,950	1,500	1,500	10,600	26,000	7,850	3,760	2,250	2,200	1,880
21	9,310	5,000	2,900	1,500	1,500	12,700	24,200	7,250	3,740	2,320	2,130	1,830
22	9,660	4,000	2,850	1,500	1,480	14,900	21,600	6,830	3,850	2,380	2,170	1,850
23	8,760	3,150	2,800	1,500	1,480	16,900	19,000	6,320	3,980	2,460	2,220	1,790
24	7,110	2,700	2,750	1,500	1,480	18,400	16,900	6,100	3,750	2,480	2,260	1,750
25	5,860	2,600	2,750	1,500	1,480	19,900	15,700	6,300	3,440	2,590	2,250	1,710
26	4,940	2,500	2,700	1,500	1,480	21,400	14,700	6,900	3,140	2,780	2,170	1,700
27	4,480	2,450	2,650	1,500	1,480	23,000	13,600	7,600	2,950	2,910	2,080	1,710
28	4,080	3,100	2,600	1,500	1,480	23,500	12,500	8,100	2,820	2,880	2,050	1,720
29	3,740	3,400	2,550	1,500	1,500	22,200	11,600	8,100	2,660	2,760	2,060	1,720
30	3,520	4,000	2,500	1,500	------	20,200	10,900	8,100	2,580	2,680	2,070	1,740
31	3,440	------	2,450	1,500	------	17,900	------	9,600	------	2,660	2,040	------
TOTAL	132,990	156,540	95,250	56,650	42,910	266,450	471,140	235,510	155,910	70,570	70,290	57,160
MEAN	4,290	5,218	3,073	1,827	1,480	8,595	15,700	7,597	5,197	2,276	2,267	1,905
MAX	9,660	9,320	4,100	2,450	1,500	23,500	30,800	10,200	10,300	2,910	2,620	2,050
MIN	1,000	2,500	2,450	1,500	1,450	1,500	8,250	5,660	2,580	1,800	2,040	1,700
AC-FT	263,800	310,500	188,900	112,400	85,110	528,500	934,500	467,100	309,200	140,000	139,400	113,400

CAL YR 1971 TOTAL 1,033,230 MEAN 2,831 MAX 15,800 MIN 696 AC-FT 2,049,000
WTR YR 1972 TOTAL 1,811,370 MEAN 4,949 MAX 30,800 MIN 1,000 AC-FT 3,593,000

05083600 Middle Branch Forest River near Whitman, N. Dak.

LOCATION.--Lat 48°14'50", long 98°07'00", in SE¼NW¼ sec.16, T.155 N., R.58 W., Walsh County, 150 ft downstream from bridge on State Highway 35, and 6 miles north of Whitman.

DRAINAGE AREA.--73 sq mi, approximately.

PERIOD OF RECORD.--October 1960 to current year.

GAGE.--Water-stage recorder.

AVERAGE DISCHARGE.--12 years, 2.58 cfs (1,870 acre-ft per year); median of yearly mean discharges, 2.1 cfs (1,500 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 53 cfs Apr. 16 (gage height, 4.12 ft); maximum gage height, 4.61 ft Mar. 23, backwater from ice); no flow for several months.
Period of record: Maximum discharge, 425 cfs Apr. 11, 1969 (gage height, 6.82 ft, backwater from ice); no flow for several months each year.

REMARKS.--Records good. Records of chemical analyses for water year 1972 are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1						0	0	4.3	.08			
2						0	0	3.9	.06			
3						0	0	3.6	.05			
4						0	0	2.8	.03			
5						0	0	2.0	.01			
6						0	0	2.5	0			
7						0	0	2.0	0			
8						0	0	1.4	0			
9						0	1.0	1.1	0			
10						0	2.0	.88	0			
11						0	2.0	.76	0			
12						0	30	.94	0			
13						0	49	1.2	0			
14						3.0	48	1.1	0			
15						12	51	.82	0			
16						14	53	.58	0			
17						21	47	.42	0			
18						22	38	.20	0			
19						24	27	.08	0			
20						27	20	.38	0			
21						38	17	.46	0			
22						21	14	.88	0			
23						31	12	1.1	0			
24						27	9.5	2.5	0			
25						29	6.9	3.6	0			
26						16	5.4	2.9	0			
27						5.6	6.2	2.0	0			
28						3.0	5.6	1.2	0			
29						.01	4.9	.71	0			
30					------	0	4.3	.34	0			
31		------			------	0	------	.16	------			------
TOTAL	0	0	0	0	0	293.61	454.8	46.81	.23	0	0	0
MEAN	0	0	0	0	0	9.47	15.2	1.51	.008	0	0	0
MAX	0	0	0	0	0	38	53	4.3	.08	0	0	0
MIN	0	0	0	0	0	0	0	.08	0	0	0	0
AC-FT	0	0	0	0	0	582	902	93	.5	0	0	0

CAL YR 1971 TOTAL 1,198.52 MEAN 3.28 MAX 137 MIN 0 AC-FT 2,380
WTR YR 1972 TOTAL 795.45 MEAN 2.17 MAX 53 MIN 0 AC-FT 1,580

PEAK DISCHARGE (BASE, 70 CFS).--NO PEAK ABOVE BASE.

05084000 Forest River near Fordville, N. Dak.

LOCATION.--Lat 48°11'50", long 97°43'49", on line between secs.32 and 33, T.155 N., R.55 W., Walsh County, on right bank 50 ft upstream from highway bridge, 0.5 mile downstream from South Branch, and 3 miles southeast of Fordville.

DRAINAGE AREA.--456 sq mi, of which about 120 sq mi is probably noncontributing.

PERIOD OF RECORD.--April 1940 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,040 ft (by barometer). Prior to July 21, 1951, nonrecording gage at site 50 ft downstream at same datum.

AVERAGE DISCHARGE.--32 years, 37.1 cfs (26,880 acre-ft per year); median of yearly mean discharges, 35 cfs (25,400 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 1,500 cfs April 14 (gage height, 6.43 ft); minimum, 4.7 cfs Aug. 5 (gage height, 1.36 ft).
Period of record: Maximum discharge, 16,400 cfs Apr. 18, 1950 (gage height, 14.48 ft, from floodmark), from rating curve extended above 5,600 cfs on basis of contracted-opening and slope-area measurements of peak flow; no flow Apr. 1-13, Sept. 3, 1940.

REMARKS.--Records good. Some regulation of high flows by temporary retention in several retarding basins above station. Retarding basins have a combined capacity of about 14,000 acre-feet. Records of chemical analyses for the water year 1972 are published in Part 2 of this report.

REVISIONS (WATER YEARS).--WSP 1175: 1948. WSP 1728: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	16	13	7.5	5.4	9.4	75	53	33	9.6	6.2	5.8
2	18	17	13	7.5	5.4	9.4	65	50	29	9.6	6.2	5.8
3	17	18	12	7.5	5.4	9.4	57	47	27	9.1	6.2	7.0
4	16	18	13	7.5	5.4	9.4	51	43	24	8.7	5.4	8.3
5	15	15	12	7.5	5.4	9.4	50	41	22	8.3	5.1	7.0
6	14	15	12	7.5	5.4	9.4	40	41	21	8.3	5.4	7.4
7	14	15	12	7.5	5.4	9.4	35	40	20	8.3	6.2	7.8
8	14	15	13	7.5	5.4	9.4	30	39	19	8.3	6.6	7.8
9	14	16	13	7.5	5.4	9.4	37	36	18	7.8	6.2	7.0
10	15	17	13	7.5	5.4	9.4	143	35	17	7.8	7.0	7.4
11	15	19	13	7.8	5.4	9.4	713	35	16	7.8	7.0	7.4
12	15	20	12	7.8	5.7	9.4	493	35	16	7.4	6.6	7.0
13	15	20	12	7.8	6.5	9.8	589	36	20	7.4	7.0	6.6
14	15	20	11	7.8	6.8	320	1,130	36	20	7.4	8.7	5.4
15	14	20	12	7.8	6.8	970	691	34	17	7.8	8.3	5.8
16	15	20	12	7.5	6.8	1,150	408	33	15	7.4	8.7	5.4
17	15	20	13	7.5	6.8	880	285	31	15	7.4	7.8	5.8
18	15	20	12	7.5	6.8	530	237	30	18	8.3	8.3	6.2
19	14	20	12	7.5	6.8	400	200	28	20	8.3	7.4	6.6
20	13	20	11	7.5	7.1	300	172	33	17	8.3	7.0	6.2
21	13	20	11	7.1	7.5	285	147	43	14	8.3	6.6	6.6
22	12	20	10	7.1	8.6	195	128	52	14	8.3	7.0	7.0
23	12	20	9.8	7.1	9.0	175	114	78	13	7.4	7.0	7.8
24	13	18	10	7.1	9.4	155	104	71	12	7.0	6.6	10
25	12	17	10	7.1	9.4	135	95	107	12	7.0	6.2	9.1
26	13	16	9.0	6.8	9.4	130	78	83	12	7.0	6.2	10
27	13	15	8.2	6.8	9.4	115	77	62	11	7.4	5.8	9.1
28	13	14	7.8	6.2	9.4	115	66	65	11	7.4	5.4	8.3
29	13	14	7.5	5.7	9.4	132	61	62	9.6	7.4	5.1	8.3
30	14	14	7.1	5.4	------	132	57	50	9.1	6.2	5.1	7.8
31	15	------	7.1	5.4	------	95	------	40	------	6.2	5.8	------
TOTAL	439	529	343.5	223.3	201.0	6,336.6	6,428	1,469	521.7	242.9	204.1	217.7
MEAN	14.2	17.6	11.1	7.20	6.93	204	214	47.4	17.4	7.84	6.58	7.26
MAX	18	20	13	7.8	9.4	1,150	1,130	107	33	9.6	8.7	10
MIN	12	14	7.1	5.4	5.4	9.4	30	28	9.1	6.2	5.1	5.4
AC-FT	871	1,050	681	443	399	12,570	12,750	2,910	1,030	482	405	432

CAL YR 1971 TOTAL 20,910.0 MEAN 57.3 MAX 2,160 MIN 5.4 AC-FT 41,470
WTR YR 1972 TOTAL 17,155.8 MEAN 46.9 MAX 1,150 MIN 5.1 AC-FT 34,030

PEAK DISCHARGE (BASE, 200 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
3-16	--	--	1,300	4-14	0730	6.43	1,500
4-11	0800	5.28	1,010				

05085000 Forest River at Minto, N. Dak.

LOCATION.--Lat 48°16'10", long 97°22'10", in SE¼ sec.31, T.156 N., R.52 W., Walsh County, on right bank 30 ft upstream from dam in Minto, 150 ft upstream from Burlington Northern Railway bridge, and 2 blocks east of U.S. Highway 81.

DRAINAGE AREA.--740 sq mi, of which about 120 sq mi is probably noncontributing.

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

GAGE.--Water-stage recorder and concrete control. Datum of gage is 806.95 ft above mean sea level. Prior to July 15, 1954, nonrecording gage at site 400 ft upstream at same datum.

AVERAGE DISCHARGE.--28 years, 49.2 cfs (35,650 acre-ft per year); median of yearly mean discharges, 39 cfs (28,300 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 2,120 cfs Mar. 17 (gage height, 5.96 ft, backwater from ice); minimum daily discharge, 0.10 cfs Feb. 14,15; minimum gage height, 0.88 ft Mar. 8,9.
Period of record: Maximum discharge, 16,600 cfs Apr. 18, 1950 (gage height, 11.80 ft, from floodmarks), from rating curve extended above 7,200 cfs on basis of contracted-opening measurement of peak flow; no flow at times each year 1945-47, 1953-55, 1959-64.

REMARKS.--Records good. Occasionally during high stages, particularly when the channel is filled with snow, overflow occurs 0.5 mile below the municipality of Forest River and bypasses the gage 3 miles south of Minto and flows into Lake Ardoch. Bypass flow is not included in computation of discharge record for station at Minto. Records of chemical analyses for water year 1972 are published in Part 2 of this report.

REVISIONS (WATER YEARS).--WSP 1438: 1948-50. WSP 1728: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.1	11	11	1.9	.35	.35	100	95	68	13	6.5	1.4
2	8.5	9.5	9.0	1.9	.35	.40	97	89	64	13	6.2	.96
3	10	14	8.6	1.9	.30	.40	95	84	57	13	5.5	1.8
4	13	15	8.5	1.7	.30	.40	85	79	54	11	5.3	1.4
5	13	15	8.5	1.2	.30	.40	52	76	50	11	5.2	1.1
6	12	11	8.0	1.2	.30	.40	65	73	48	11	4.6	2.3
7	12	10	8.0	1.0	.25	.40	65	71	45	10	4.3	2.5
8	11	9.4	7.5	.85	.20	.40	55	71	41	10	5.0	2.4
9	10	11	7.5	.75	.15	.40	66	65	38	10	6.0	4.5
10	12	12	7.5	.67	.15	.44	82	61	34	9.8	6.3	4.8
11	12	14	7.5	.65	.12	.37	202	60	26	9.5	6.3	5.2
12	11	14	7.0	.65	.12	.55	744	58	25	10	6.6	4.7
13	9.0	16	7.0	.64	.12	1.2	1,000	59	28	9.9	6.8	3.6
14	9.8	16	6.3	.62	.10	2.8	1,860	60	28	9.5	6.0	4.6
15	11	18	6.0	.60	.10	23	1,790	58	27	9.5	5.5	7.0
16	11	18	5.3	.60	.20	576	1,080	53	25	9.4	4.9	6.6
17	12	19	5.5	.60	.35	1,710	647	52	23	9.0	5.3	5.3
18	13	20	5.3	.60	.35	1,920	430	53	24	8.9	5.0	4.6
19	14	18	4.8	.60	.30	1,300	332	51	24	9.8	4.4	4.7
20	14	17	4.2	.60	.30	715	291	54	26	9.3	4.4	5.4
21	16	16	3.8	.60	.30	531	239	52	25	10	4.1	4.2
22	16	14	3.6	.60	.30	286	205	54	22	10	2.6	4.7
23	16	14	3.5	.60	.30	238	183	59	20	9.8	2.4	5.9
24	16	16	3.3	.60	.30	204	166	80	18	10	2.9	6.0
25	14	17	3.2	.60	.30	197	154	91	17	9.8	3.3	4.7
26	14	16	3.1	.60	.30	161	145	106	17	9.0	2.8	5.4
27	14	16	2.7	.50	.30	106	131	115	16	9.3	2.8	5.5
28	13	15	2.3	.40	.35	81	119	96	17	9.3	2.5	6.3
29	12	14	2.3	.40	.35	94	109	85	15	9.8	2.2	6.9
30	13	12	2.1	.35	------	108	100	89	14	9.3	2.2	8.1
31	11	------	2.0	.35	------	105	------	80	------	7.4	1.8	------
TOTAL	381.4	437.9	174.9	24.83	7.51	8,363.91	10,689	2,229	936	310.3	139.7	132.56
MEAN	12.3	14.6	5.64	.80	.26	270	356	71.9	31.2	10.0	4.51	4.42
MAX	16	20	11	1.9	.35	1,920	1,860	115	68	13	6.8	8.1
MIN	8.1	9.4	2.0	.35	.10	.35	52	51	14	7.4	1.8	.96
AC-FT	757	869	347	49	15	16,590	21,200	4,420	1,860	615	277	263

CAL YR 1971 TOTAL 22,484.14 MEAN 61.6 MAX 2,230 MIN .42 AC-FT 44,600
WTR YR 1972 TOTAL 23,827.01 MEAN 65.1 MAX 1,920 MIN .10 AC-FT 47,260

PEAK DISCHARGE (BASE, 200 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
3-17	--	--	2,120	4-13	2230	5.02	1,980

05088500 Homme Lake near Park River, N. Dak.

LOCATION.--Lat 48°24'20", long 97°47'10", in SE¼NW¼ sec.19, T.157 N., R.55 W., Walsh County, at Homme Dam on South Branch Park River, 2 miles west of town of Park River.

DRAINAGE AREA.--226 sq mi.

PERIOD OF RECORD.--September 1949 to current year.

GAGE.--Water-stage recorder. Datum of gage is at mean sea level.

EXTREMES.--Current year: Maximum contents during year, 4,143 acre-ft Mar. 17 (elevation, 1,082.22 ft); minimum, 1,787 acre-ft Mar. 14 (elevation, 1,069.38 ft).
Period of record: Maximum contents, 4,498 acre-ft Apr. 11, 1965 (elevation, 1,083.70 ft); minimum since first reaching spillway level, 184 acre-ft Feb. 8, 1952 (elevation, 1,051.22 ft).

REMARKS.--Reservoir is formed by an earth-fill dam, 865 ft long; storage began in September 1949; dam completed in October 1950. Usable capacity between invert of outlet, elevation, 1,048.0 ft, and crest of spillway, elevation, 1,080.0 ft, is 3,550 acre-ft. Dead storage is 100 acre-ft. Low flows are controlled by two sluice gates 3 x 5 ft. The spillway, which is 150 ft long, is uncontrolled. The records herein represent total contents. The reservoir is operated for flood control, water supply, and pollution abatement during low-flow periods.

COOPERATION.--Records furnished by Corps of Engineers.

REVISIONS.--WSP 1728: Drainage area.

MONTHEND ELEVATION AND CONTENTS AT 2400, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30	1,079.50	3,565	
Oct. 31	1,078.93	3,457	-108
Nov. 30	1,078.20	3,318	-139
Dec. 31	1,077.59	3,202	-116
CAL YR 1971	--	--	+226
Jan. 31	1,075.40	2,786	-416
Feb. 29	1,070.09	1,894	-892
Mar. 31	1,076.48	2,991	+1,097
Apr. 30	1,079.75	3,613	+622
May 31	1,080.09	3,677	+64
June 30	1,079.76	3,614	-63
July 31	1,079.40	3,546	-68
Aug. 31	1,078.65	3,404	-142
Sept. 30	1,077.80	3,242	-162
WTR YR 1972	--	--	-323

05089000 South Branch Park River below Homme Dam, N. Dak.

LOCATION.--Lat 48°24'07", long 97°46'55", in SE¼ sec.19, T.157 N., R.55 W., Walsh County, on right bank 0.5 mile downstream from Homme Dam and 2 miles west of town of Park River.

DRAINAGE AREA.--226 sq mi.

PERIOD OF RECORD.--October 1949 to current year. Monthly discharge only for October and November 1949, published in WSP 1308.

GAGE.--Water-stage recorder. Datum of gage is 1,000.00 ft above mean sea level.

AVERAGE DISCHARGE.--23 years, 27.0 cfs (19,560 acre-ft per year); median of yearly mean discharges, 22 cfs (15,900 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 1,210 cfs Mar. 17 (gage height, 27.20 ft); minimum, 0.11 cfs June 11 (gage height, 22.33 ft).
Period of record: Maximum discharge, about 13,000 cfs Apr. 24, 1950 (gage height, 37.52 ft), from rating curve extended above 5,500 cfs, result of failure of emergency embankment at site of Homme Dam; no flow Oct. 1 to Dec. 3, 1949, Oct. 1-4, 1969, Sept. 21, 1970.

REMARKS.--Records good. Flow regulated by Homme Lake (see station 05088500). Records of chemical analyses for water year 1972 are published in Part 2 of this report.

REVISIONS.--WSP 1728: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.61	4.4	3.2	5.0	5.4	6.5	57	35	3.9	2.2	2.9	2.8
2	1.1	4.3	3.2	7.5	5.2	5.9	20	23	5.3	2.1	2.6	1.8
3	.35	4.2	3.2	7.5	5.2	5.6	9.6	15	3.2	1.9	2.4	1.1
4	.26	4.2	3.2	7.5	5.0	5.0	4.5	15	1.5	1.9	2.3	.74
5	.30	5.2	3.0	7.4	4.8	5.0	1.6	16	3.3	1.9	2.2	13
6	7.0	4.5	3.0	7.4	4.7	5.0	4.2	15	1.1	1.7	2.1	34
7	15	4.5	3.0	7.4	4.5	5.3	3.8	16	.90	1.7	2.2	35
8	8.1	4.2	3.0	7.4	4.3	5.3	3.9	16	1.1	1.8	1.8	18
9	7.4	4.3	3.0	7.4	4.5	5.0	3.9	19	.42	1.7	1.8	6.6
10	7.4	3.9	3.0	7.4	13	5.3	89	20	.17	1.8	1.8	6.9
11	7.2	3.8	2.9	7.4	19	5.0	519	21	.12	1.9	2.6	7.2
12	7.1	3.8	2.9	7.4	19	5.0	348	20	.13	1.8	2.5	7.2
13	6.6	3.4	2.9	6.9	18	5.0	290	20	13	2.0	2.4	4.2
14	6.4	3.5	2.9	6.8	17	5.2	462	20	9.6	2.5	2.1	1.3
15	5.6	3.5	2.9	6.7	17	5.7	398	15	.17	2.0	2.1	1.4
16	5.2	3.3	2.9	6.6	18	73	308	8.2	.33	1.9	1.8	1.4
17	4.7	3.3	2.8	6.5	18	992	242	6.1	1.5	1.9	2.0	1.4
18	4.4	2.9	2.1	6.6	21	679	124	6.1	1.9	1.9	2.2	1.2
19	4.5	2.7	1.5	6.6	23	438	72	6.2	2.0	1.9	2.1	.98
20	4.5	3.1	1.9	6.2	23	307	75	6.3	1.6	1.8	2.1	1.0
21	4.7	3.1	2.3	6.4	23	304	65	5.9	2.1	1.8	2.4	.89
22	4.8	3.1	2.3	6.8	19	161	65	5.8	1.4	1.8	2.5	.56
23	4.5	3.3	2.3	6.6	16	91	66	7.7	1.2	1.8	2.4	.57
24	4.3	3.7	2.2	7.3	16	92	65	7.2	1.5	1.7	2.4	.62
25	4.5	3.7	2.2	9.9	15	74	65	7.1	1.5	1.9	2.3	.23
26	4.4	3.9	2.2	10	15	55	46	4.9	.83	2.0	2.4	.28
27	4.5	3.8	2.2	10	15	39	34	2.4	.57	1.6	2.6	.16
28	4.5	3.8	2.2	8.8	15	16	34	2.8	.97	1.8	2.8	.18
29	4.5	3.7	2.2	7.2	11	124	34	3.5	2.6	1.6	2.6	.18
30	4.7	3.4	2.2	6.5	------	191	35	2.3	2.6	1.3	3.0	.18
31	4.5	------	2.2	5.9	------	127	------	3.7	------	1.3	3.0	------
TOTAL	153.62	112.5	81.0	225.0	394.6	3,842.8	3,544.5	372.2	66.51	56.9	72.4	151.07
MEAN	4.96	3.75	2.61	7.26	13.6	124	118	12.0	2.22	1.84	2.34	5.04
MAX	15	5.2	3.2	10	23	992	519	35	13	2.5	3.0	35
MIN	.26	2.7	1.5	5.0	4.3	5.0	1.6	2.3	.12	1.3	1.8	.16
AC-FT	305	223	161	446	783	7,620	7,030	738	132	113	144	300

CAL YR 1971 TOTAL 13,043.83 MEAN 35.7 MAX 2,500 MIN .17 AC-FT 25,870
WTR YR 1972 TOTAL 9,073.10 MEAN 24.8 MAX 992 MIN .12 AC-FT 18,000

05089100 Middle Branch Park River near Union, N. Dak.

LOCATION.--Lat 48°32'32", long 98°01'10", on north line of sec.5, T.158 N., R.57 W., Walsh County, on left bank 20 ft downstream from bridge on county highway between Walsh and Cavalier Counties, 3.5 miles southwest of Union.

DRAINAGE AREA.--15.3 sq mi.

PERIOD OF RECORD.--October 1965 to current year.

GAGE.--Water-stage recorder.

AVERAGE DISCHARGE.--7 years, 2.64 cfs (1,910 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, about 385 cfs Mar. 16 (gage height, 6.07 ft, backwater from ice); no flow Dec. 26 to Mar. 13.
Period of record: Maximum discharge, 687 cfs May 6, 1967 (gage height, 7.22 ft, from floodmark); maximum gage height, 7.51 ft May 4, 1966, from floodmark, backwater from snowdrift; no flow for several months each year.

REMARKS.--Records fair below 20 cfs and poor above. Records of chemical analyses for water year 1972 are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.07	.35	.02			0	.40	.87	.35	.35	.01	.01
2	4.7	.07	.02			0	.40	.60	.24	.47	.01	.01
3	.87	.02	.04			0	.40	.47	.24	.35	.01	.01
4	.73	.02	.03			0	.40	.35	.24	.15	.01	.01
5	.60	.07	.02			0	.40	.60	.24	.15	.01	.01
6	.24	.01	.02			0	.50	1.2	.24	.01	.02	.02
7	.02	.01	.02			0	.50	.87	.24	.01	.02	.06
8	.07	.01	.02			0	15	.47	.20	.01	.02	.02
9	.07	.01	.02			0	60	.35	.15	.01	.02	.04
10	.01	.01	.02			0	70	.35	.10	.01	.02	.02
11	.01	.01	.02			0	45	.47	.10	.01	.02	.02
12	.01	.02	.02			0	20	.73	.05	.02	.02	.10
13	.15	.02	.02			0	40	.47	.05	.07	.01	.20
14	.02	.07	.02			2.0	34	.35	.02	.15	.02	.10
15	.01	.07	.02			6.0	20	.24	.02	.15	.03	.10
16	.02	.02	.02			100	7.7	.15	.02	.15	.02	.02
17	.47	.02	.02			190	5.8	.15	.02	.15	.01	.02
18	.87	.02	.02			150	4.3	.24	.02	.01	.01	.02
19	.73	.05	.02			125	2.4	.35	.07	.24	.01	.04
20	.24	.03	.02			42	2.1	.35	.02	.24	.01	.04
21	.02	.02	.02			30	1.8	.35	.02	.02	.02	.02
22	.01	.02	.02			20	1.6	.35	.01	.02	.02	.02
23	.01	.02	.02			9.6	1.6	.35	.01	.01	.01	.15
24	.01	.02	.02			14	1.4	.35	.01	.01	.01	.50
25	.02	.02	.01			9.6	1.3	.35	.01	.01	.01	.20
26	.01	.02	0			8.6	1.3	.35	.35	.01	.01	.20
27	.01	.02	0			2.7	1.3	.35	1.2	.02	.01	.10
28	.01	.02	0			2.5	1.3	.35	1.0	.02	.01	.10
29	.07	.02	0			1.2	1.3	.35	.60	.01	.01	.04
30	.15	.02	0		------	.40	1.2	.35	.24	.01	.01	.02
31	.15	------	0		------	.40	------	.35	------	.01	.02	------
TOTAL	10.38	1.11	.52	0	0	714.00	343.40	13.48	6.08	2.86	.45	2.22
MEAN	.33	.037	.017	0	0	23.0	11.4	.43	.20	.092	.015	.074
MAX	4.7	.35	.04	0	0	190	70	1.2	1.2	.47	.03	.50
MIN	.01	.01	0	0	0	0	.40	.15	.01	.01	.01	.01
AC-FT	21	2.2	1.0	0	0	1,420	681	27	12	5.7	.9	4.4

CAL YR 1971 TOTAL 1,253.06 MEAN 3.43 MAX 300 MIN 0 AC-FT 2,490
WTR YR 1972 TOTAL 1,094.50 MEAN 2.99 MAX 190 MIN 0 AC-FT 2,170

PEAK DISCHARGE (BASE, 20 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
3-16	--	--	385	4-11	--	--	230

05089500 Cart Creek at Mountain, N. Dak.

LOCATION.--Lat 48°40'37", long 97°51'41", in SW¼ sec.15, T.160 W., R.56 W., Pembina County, on right bank 50 ft downstream from bridge on State Highway 32 and 0.7 mile south of Mountain.

DRAINAGE AREA.--16.9 sq mi.

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

GAGE.--Water-stage recorder and wooden control. Datum of gage is 1,027.40 ft above mean sea level.

AVERAGE DISCHARGE.--18 years, 2.86 cfs (2,070 acre-ft per year); median of yearly mean discharges, 3.1 cfs (2,200 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 230 cfs Mar. 16 (gage height, 4.85 ft, backwater from ice); no flow for many days.
Period of record: Maximum discharge, 1,300 cfs June 18, 1964 (gage height, 9.18 ft); no flow at times in some years.

REMARKS.--Records fair. Records of chemical analyses for water year 1972 are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.42	.64	.30			0	3.2	3.2	.35	.18	.08	0
2	1.2	.71	.25			0	2.8	3.0	.32	.20	.08	0
3	.71	.58	.20			0	3.4	2.8	.30	.20	.08	0
4	.42	.58	.15			0	4.4	2.4	.30	.18	.06	0
5	.34	.42	.15			0	4.0	2.6	.32	.15	.05	0
6	.31	.47	.15			0	3.4	3.6	.30	.12	.05	0
7	.28	.52	.10			0	3.0	3.0	.30	.12	.04	0
8	.31	.52	.08			0	3.8	3.0	.30	.13	.10	0
9	.38	.86	.06			0	13	3.0	.25	.11	.10	0
10	.34	1.4	.04			0	34	3.0	.20	.10	.08	0
11	.34	1.0	.02			0	25	3.2	.20	.08	.08	0
12	.34	.95	.01			0	20	4.1	.30	.04	.08	0
13	.34	.78	0			0	45	3.6	.38	.08	.06	0
14	.34	.71	0			0	54	3.0	.36	.10	.20	0
15	.34	.78	0			5.0	42	2.8	.35	.08	.30	0
16	.42	.71	0			140	28	2.4	.30	.05	.18	0
17	.86	.64	0			66	20	2.2	.25	.05	0	0
18	.78	.64	0			35	15	1.8	.28	.05	0	0
19	.64	.52	0			28	14	1.6	.30	.30	0	0
20	.47	.47	0			23	9.9	2.2	.30	.35	0	0
21	.42	.64	0			17	8.6	1.7	.25	.25	0	0
22	.42	.47	0			16	7.5	1.6	.25	.32	0	0
23	.42	.58	0			12	16	1.2	.25	.25	0	0
24	.42	.58	0			16	15	1.2	.20	.20	0	0
25	.42	.47	0			12	9.4	2.0	.20	.10	0	.04
26	.38	.47	0			14	7.8	1.2	.25	.12	0	.14
27	.38	.40	0			18	7.2	2.0	.30	.35	0	.14
28	.38	.40	0			9.0	6.6	.95	.30	.32	0	.10
29	.34	.35	0			2.2	5.1	.78	.25	.25	0	.08
30	.28	.30	0		------	4.1	3.8	.47	.20	.10	0	.06
31	.34	------	0		------	1.4	------	.38	------	.08	0	------
TOTAL	13.78	18.56	1.51	0	0	418.7	434.9	69.98	8.41	5.01	1.62	.56
MEAN	.44	.62	.049	0	0	13.5	14.5	2.26	.28	.16	.052	.019
MAX	1.2	1.4	.30	0	0	140	54	4.1	.38	.35	.30	.14
MIN	.28	.30	0	0	0	0	2.8	.38	.20	.04	0	0
AC-FT	27	37	3.0	0	0	830	863	139	17	9.9	3.2	1.1

CAL YR 1971 TOTAL 1,251.85 MEAN 3.43 MAX 164 MIN 0 AC-FT 2,480
WTR YR 1972 TOTAL 973.03 MEAN 2.66 MAX 140 MIN 0 AC-FT 1,930

PEAK DISCHARGE (BASE, 30 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
3-16	--	--	230	4-14	1900	3.13	112
4-10	1900	3.15	113				

05090000 Park River at Grafton, N. Dak.

LOCATION.--Lat 48°25'24", long 97°24'30", in NE¼ sec.13, T.157 N., R.53 W., Walsh County, on right bank 30 ft upstream from Wakeman Avenue Bridge in Grafton and 3.5 miles downstream from South Branch.

DRAINAGE AREA.--695 sq mi, approximately.

PERIOD OF RECORD.--April 1931 to current year. Monthly discharge only for some periods, published in WSP 1308.

GAGE.--Water-stage recorder. Datum of gage is 807.39 ft above mean sea level. Prior to Sept. 30, 1940, nonrecording gage at site 30 ft downstream at same datum. Oct. 1, 1940, to Sept. 17, 1946, nonrecording gage at site 2 miles downstream above masonry dam at same datum. Sept. 18, 1946, to July 25, 1952, nonrecording gage at site 30 ft downstream at same datum.

AVERAGE DISCHARGE (UNADJUSTED).--41 years (1931-72), 56.3 cfs (40,790 acre-ft per year); median of yearly mean discharges, 36 cfs (26,100 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 2,150 cfs Apr. 14 (gage height, 14.30 ft, backwater from ice); maximum gage height, 16.18 ft Mar. 21 (backwater from ice); no flow Jan. 8 to Feb. 20.
Period of record: Maximum discharge, 12,600 cfs Apr. 19, 1950 (gage height, 20.13 ft), from rating curve extended above 9,000 cfs; no flow at times in most years.

REMARKS.--Records good. Flow regulated by Homme Lake (see station 05088500) and several small reservoirs. Diversion by city of Grafton started in 1955. Records of chemical analyses for water year 1972 are published in Part 2 of this report.

REVISIONS (WATER YEARS).--WSP 955: 1941. WSP 1438: 1932, 1933(M), 1936-37(M), 1939(M), 1944. WSP 1728: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.01	9.6	1.5	.01	0	7.2	275	111	28	.72	.02	.01
2	.01	13	1.5	.01	0	5.0	145	99	24	1.3	.02	.01
3	.01	13	1.5	.01	0	5.0	40	90	23	1.5	.02	.01
4	.01	12	1.2	.01	0	3.5	20	70	19	.86	.02	.01
5	.01	11	1.0	.01	0	3.0	20	66	16	.46	.02	.01
6	.01	4.1	1.0	.01	0	3.0	15	66	14	.58	.02	.01
7	.01	4.1	.90	.01	0	2.0	10	60	14	.72	.02	.01
8	.01	6.0	.90	0	0	1.5	10	60	13	.02	.02	.01
9	.01	8.4	.85	0	0	1.0	10	56	9.6	.01	.02	.92
10	.01	8.4	.80	0	0	.50	20	54	8.4	.01	.04	26
11	.01	9.6	.80	0	0	.40	280	56	6.0	.01	.04	4.1
12	.02	8.4	.40	0	0	.30	1,120	60	4.1	.01	.04	5.0
13	2.1	8.4	.20	0	0	.30	1,300	64	9.6	.01	.04	5.0
14	8.4	8.4	.10	0	0	.40	1,910	64	7.2	.01	.04	7.2
15	9.4	8.4	.10	0	0	2.0	1,510	60	17	.01	.04	4.1
16	9.6	8.4	.08	0	0	20	1,290	58	17	.01	.04	2.1
17	11	8.4	.05	0	0	50	1,020	49	8.4	.01	.04	.72
18	12	8.4	.04	0	0	810	743	41	9.6	.01	.02	.28
19	9.6	7.2	.04	0	0	1,100	449	40	7.2	.01	.02	.15
20	6.0	6.0	.04	0	0	1,360	341	45	6.0	.02	.02	.10
21	7.2	4.1	.04	0	5.0	1,500	283	41	6.0	.04	.02	.08
22	6.0	3.4	.02	0	10	975	271	40	3.4	.04	.02	.04
23	6.0	3.4	.02	0	12	900	254	40	2.9	.05	.02	.04
24	8.4	3.2	.02	0	12	840	214	38	2.4	.05	.02	.20
25	9.6	3.0	.02	0	12	630	203	36	1.5	.04	.02	.10
26	9.6	3.0	.02	0	13	480	198	38	2.1	.04	.02	.20
27	11	2.8	.02	0	17	275	183	47	2.9	.04	.01	.15
28	8.4	2.5	.02	0	19	170	150	92	2.1	.04	.01	.28
29	9.6	2.0	.01	0	12	190	125	60	1.5	.04	.01	.22
30	13	1.5	.01	0	------	190	113	40	.86	.04	.01	.15
31	9.6	------	.01	0	------	433	------	33	------	.04	.01	------
TOTAL	165.63	200.1	13.21	.07	112.0	9,948.10	12,522	1,774	286.76	6.75	.73	57.21
MEAN	5.34	6.67	.43	.002	3.86	321	417	57.2	9.56	.22	.024	1.91
MAX	13	13	1.5	.01	19	1,500	1,910	111	28	1.5	.04	26
MIN	.01	1.5	.01	0	0	.30	10	33	.86	.01	.01	.01
AC-FT	329	397	26	.1	222	19,730	24,840	3,520	569	13	1.5	113
(+)	62	58	63	66	68	71	75	59	72	75	78	64
*MEAN	6.35	7.64	1.45	1.08	5.05	322	418	58.2	10.8	1.44	1.30	2.98
*AC-FT	391	455	89	66	290	19,800	24,920	3,580	641	88	79	177

		OBSERVED						ADJUSTED		
CAL YR 1971	TOTAL	33,728.27	MEAN	92.4	MAX	3,050	MIN	0	AC-FT	66,900	MEAN	93.4	AC-FT	67,660
WTR YR 1972	TOTAL	25,086.56	MEAN	68.5	MAX	1,910	MIN	0	AC-FT	49,760	MEAN	69.7	AC-FT	50,570

\+ Diversion in acre-feet by city of Grafton.
* Adjusted for diversion by city of Grafton.

05092000 Red River of the North at Drayton, N. Dak.

LOCATION.--Lat 48°34'20", long 97°08'50", in SE¼SE¼SE¼ sec.24, T.159 N., R.51 W., Pembina County, on downstream end of east pier of interstate highway bridge, 1.5 miles northeast of Drayton and at mile 206.7.

DRAINAGE AREA.--34,800 sq mi, approximately (includes 3,800 sq mi in closed basins).

PERIOD OF RECORD.--April 1936 to June 1937, April 1941 to current year (fragmentary prior to April 1949).

GAGE.--Water-stage recorder and concrete control. Datum of gage is 755.00 ft above mean sea level (Minnesota highway benchmark). Prior to Nov. 30, 1954, nonrecording gage at site 1.5 miles upstream at datum 1.59 ft higher.

AVERAGE DISCHARGE.--23 years (1949-72) 3,752 cfs (2,718,000 acre-ft per year); median of yearly mean discharges, 2,650 cfs (1,920,000 acre-ft per year).

EXTREMES.--Current vear: Maximum discharge, 31,100 cfs Apr. 20; maximum gage height, 35.73 ft Apr. 23; minimum discharge, 784 cfs Oct. 1 (gage height, 9.66 ft).
Period of record: Maximum discharge, 86,500 cfs May 12, 1950 (gage height, 41.58 ft, former site and datum); minimum observed, 7.7 cfs Oct. 16, 1936 (gage height, 1.75 ft, former site and datum).
Maximum discharge known since 1860, that of May 12, 1950. Flood of April 1897 reached a stage of about 41 ft, at site and datum in use prior to Nov. 30, 1954.

REMARKS.--Records good. Some regulation by reservoirs on tributaries. Records of chemical analyses and water temperatures for the water year 1972 are published in Part 2 of this report.

REVISIONS (WATER YEARS).--WSP 1388: 1949-50. WSP 1728: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	793	3,920	3,490	2,500	1,450	1,450	19,100	17,300	8,740	2,820	2,830	2,230
2	890	4,130	4,130	2,500	1,450	1,450	19,300	15,700	9,380	2,680	2,770	2,210
3	1,200	5,630	4,410	2,450	1,450	1,500	19,400	14,700	9,840	2,540	2,710	2,200
4	2,860	7,040	4,400	2,450	1,450	1,500	19,400	13,700	10,000	2,480	2,580	2,140
5	4,960	8,150	4,240	2,400	1,450	1,500	19,300	12,700	9,970	2,410	2,460	2,140
6	5,800	8,850	4,050	2,400	1,450	1,500	18,600	11,300	9,640	2,370	2,380	2,140
7	6,000	8,910	3,870	2,350	1,450	1,500	17,000	10,100	9,080	2,300	2,340	2,170
8	5,650	8,020	3,690	2,300	1,450	1,500	15,900	8,900	8,320	2,240	2,310	2,140
9	5,000	6,640	3,520	2,250	1,450	1,500	15,000	8,100	7,580	2,180	2,310	2,130
10	4,330	5,440	3,300	2,160	1,450	1,500	14,300	7,600	6,940	2,160	2,310	2,100
11	3,790	4,860	3,110	2,050	1,450	1,550	13,800	7,300	6,410	2,170	2,370	2,100
12	3,380	5,240	2,920	1,900	1,450	1,550	13,200	7,100	6,060	2,140	2,460	2,090
13	3,080	5,670	2,820	1,900	1,450	1,550	13,000	6,900	5,830	2,070	2,530	2,110
14	2,830	5,870	2,780	1,900	1,450	1,550	18,600	6,600	5,640	1,970	2,640	2,140
15	2,620	5,990	2,780	1,850	1,450	1,600	22,500	6,220	5,500	1,910	2,600	2,140
16	2,460	6,120	2,720	1,800	1,450	1,800	24,800	6,200	5,340	1,870	2,560	2,140
17	2,310	6,370	2,620	1,700	1,450	2,000	27,400	7,000	5,060	1,880	2,530	2,170
18	2,200	6,680	2,540	1,650	1,450	4,600	29,500	8,520	4,420	1,920	2,480	2,180
19	2,160	6,850	2,590	1,600	1,450	7,120	30,900	9,170	4,400	2,120	2,470	2,210
20	3,080	6,800	2,660	1,600	1,450	9,030	31,000	9,330	4,280	2,160	2,410	2,140
21	6,120	6,630	2,700	1,550	1,450	11,100	30,500	9,120	4,180	2,280	2,350	2,100
22	8,560	6,200	2,650	1,550	1,450	13,000	30,400	8,740	4,320	2,410	2,320	2,030
23	8,590	5,600	2,650	1,500	1,450	14,400	30,200	8,320	4,730	2,480	2,280	2,000
24	8,720	4,820	2,650	1,500	1,450	15,100	29,900	7,870	4,970	2,560	2,340	2,000
25	8,120	3,900	2,650	1,500	1,430	16,100	29,200	7,490	4,420	2,600	2,400	1,950
26	7,200	3,440	2,600	1,400	1,450	16,800	27,200	7,380	4,090	2,680	2,420	1,900
27	6,350	3,270	2,600	1,400	1,450	17,400	24,900	7,790	3,700	2,880	2,400	1,860
28	5,640	2,720	2,550	1,380	1,450	17,900	22,600	8,100	3,380	3,030	2,320	1,830
29	4,960	2,840	2,530	1,400	1,450	18,300	20,900	8,320	3,160	3,080	2,270	1,840
30	4,520	3,000	2,500	1,400	------	18,600	19,100	8,360	2,980	2,980	2,230	1,840
31	4,170	------	2,500	1,400	------	19,000	------	8,360	------	2,890	2,230	------
TOTAL	138,343	169,600	95,220	57,690	42,030	224,950	666,900	284,290	182,360	74,260	75,610	62,370
MEAN	4,463	5,653	3,072	1,861	1,449	7,256	22,230	9,171	6,079	2,395	2,439	2,079
MAX	8,720	8,910	4,410	2,500	1,450	19,000	31,000	17,300	10,000	3,080	2,830	2,230
MIN	793	2,720	2,500	1,380	1,430	1,450	13,000	6,200	2,980	1,870	2,230	1,830
AC-FT	274,400	336,400	188,900	114,400	83,370	446,200	1,323M	563,900	361,700	147,300	150,000	123,700

CAL YR 1971 TOTAL 1,218,447 MEAN 3,338 MAX 23,300 MIN 793 AC-FT 2,417,000
WTR YR 1972 TOTAL 2,073,623 MEAN 5,666 MAX 31,000 MIN 793 AC-FT 4,113,000

05092200 Pembina County drain 20 near Glasston, N. Dak.

LOCATION.--Lat 48°41'49", long 97°23'03", in NW¼ sec.8, T.160 N., R.52 W., Pembina County, on left bank 50 ft downstream from bridge on county highway three miles southeast of Glasston.

DRAINAGE AREA.--40.7 sq mi.

PERIOD OF RECORD.--October 1971 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 808 ft above mean sea level (from topographic map).

EXTREMES.--Current year: Maximum discharge, 85 cfs Apr. 13 (gage height, 6.02 ft, backwater from ice): maximum gage height, 7.03 ft Apr. 5 (backwater from ice); no flow for many months.

REMARKS.--Records good. Records of chemical analyses for water year 1972 are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1							0					
2							0					
3							0					
4							0					
5							0					
6							0					
7							0					
8							0					
9							0					
10							1.0					
11							2.0					
12							25					
13							50					
14							69					
15							47					
16							20					
17							11					
18							4.8					
19							2.9					
20							2.2					
21							1.2					
22							.57					
23							.44					
24							.32					
25							.13					
26							.10					
27							.09					
28							.02					
29							.02					
30					------		0					
31		------			------		------		------			------
TOTAL	0	0	0	0	0	0	237.79	0	0	0	0	0
MEAN	0	0	0	0	0	0	7.93	0	0	0	0	0
MAX	0	0	0	0	0	0	69	0	0	0	0	0
MIN	0	0	0	0	0	0	0	0	0	0	0	0
AC-FT	0	0	0	0	0	0	472	0	0	0	0	0

WTR YR 1972 TOTAL 237.79 MEAN .65 MAX 69 MIN 0 AC-FT 472

PEAK DISCHARGE (BASE 25 CFS).--APRIL 13 (85 CFS).

05098700 Hidden Island Coulee near Hansboro, N. Dak.
(International gaging station)

LOCATION.--Lat 48°57'10", long 99°25'35", in SW¼SE¼ sec.11, T.163 N., R.68 W., Towner County, on right bank 400 ft downstream from bridge on county highway 2.0 miles west of Hansboro.

DRAINAGE AREA.--38 sq mi, approximately.

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

GAGE.--Water-stage recorder. Prior to May 20, 1962, nonrecording gage 400 ft upstream at same datum.

AVERAGE DISCHARGE.--11 years, 3.20 cfs (2,320 acre-ft per year); median of yearly mean discharges, 2.8 cfs (2,000 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 354 cfs Mar. 16 (gage height, 7.62 ft); no flow for several months.
Period of record: Maximum discharge, 700 cfs Apr. 12, 1969 (gage height, 8.80 ft); no flow for several months each year.

REMARKS.--Records good. Records of chemical analyses for the water year 1972 are published in Part 2 of this report.

COOPERATION.--This station is one of the international gaging stations maintained by the United States under agreement with Canada.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	.15				0	6.5	4.2	.24	1.7	.01	
2	0	.14				0	5.0	3.2	.18	1.8	.02	
3	0	.14				0	5.3	3.3	.20	1.8	.01	
4	0	.12				0	3.5	2.5	.20	1.8	0	
5	0	.10				0	3.5	2.1	.30	1.8	0	
6	0	.10				0	3.6	2.1	.30	1.8	0	
7	0	.09				0	3.9	1.8	.24	1.8	0	
8	0	.06				0	9.7	1.5	.09	1.3	0	
9	0	.04				0	38	1.3	.04	1.2	0	
10	0	.02				0	38	.92	0	1.0	0	
11	0	.01				0	29	.92	0	.80	0	
12	0	.01				0	26	.77	0	.60	0	
13	0	.01				0	25	1.5	1.8	.50	0	
14	0	.01				1.0	23	1.5	1.1	.40	0	
15	0	.01				25	19	1.5	.64	.30	0	
16	0	.01				100	16	1.3	.41	.20	0	
17	0	0				159	13	1.1	.20	.10	0	
18	0	0				36	12	1.1	.47	.20	0	
19	.05	0				106	16	1.0	.56	.40	0	
20	.15	0				76	15	1.0	.82	.60	.33	
21	.15	0				44	13	.82	1.6	.40	.77	
22	.15	0				41	11	.77	1.8	.30	.20	
23	.15	0				45	11	.68	1.8	.25	.09	
24	.12	0				45	10	.60	1.7	.20	.03	
25	.10	0				20	9.4	.64	1.5	.15	.01	
26	.05	0				12	7.8	.60	1.6	.10	0	
27	.05	0				11	6.9	.56	1.9	.07	0	
28	.10	0				13	6.0	.44	1.6	.05	0	
29	.15	0				6.7	5.3	.44	1.4	.03	0	
30	.15	0			------	6.7	4.6	.30	1.6	.02	0	
31	.16	------			------	7.5	------	.28	------	.01	0	------
TOTAL	1.53	1.01	0	0	0	753.9	396.0	40.74	24.29	21.68	1.47	0
MEAN	.049	.034	0	0	0	24.3	13.2	1.31	.81	.70	.047	0
MAX	.16	.15	0	0	0	158	38	4.2	1.9	1.8	.77	0
MIN	0	0	0	0	0	0	3.5	.28	0	.01	0	0
AC-FT	3.0	2.0	0	0	0	1,500	785	81	48	43	2.9	0

CAL YR 1971 TOTAL 2,291.36 MEAN 6.28 MAX 370 MIN 0 AC-FT 4,540
WTR YR 1972 TOTAL 1,240.62 MEAN 3.39 MAX 158 MIN 0 AC-FT 2,460

PEAK DISCHARGE (BASE, 25 CFS)

DATE	TIME	G.HT.	DISCHARGE	DATE	TIME	G.HT.	DISCHARGE
3-16	2000	7.62	354	4- 9	1500	6.49	64

05098800 Long River near Sarles, N. Dak.
(International gaging station)

LOCATION.--Lat 48°56'35", long 98°57'05", in SW¼SE¼ sec.9, T.163 N., R.64 W., Cavalier County, on right bank 150 ft downstream from twin multiplate culverts on county highway, 2.5 miles east of Sarles.

DRAINAGE AREA.--71 sq mi, approximately.

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

GAGE.--Water-stage recorder.

AVERAGE DISCHARGE.--11 years, 6.98 cfs (5,060 acre-ft per year); median of yearly mean discharges, 5.0 cfs (3,600 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 245 cfs Mar. 19 (gage height, 4.98 ft, backwater from ice); no flow for several months.
Period of record: Maximum discharge, 1,920 cfs Apr. 10, 1971 (gage height, 8.56 ft); no flow for several months each year.

REMARKS.--Records good. Records of chemical analyses for water year 1972 are published in Part 2 of this report.

COOPERATION.--This station is one of the international gaging stations maintained by the United States under agreement with Canada.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1						0	12	1.5	.05			
2						0	11	1.4	.02			
3						0	19	1.2	0			
4						0	9.6	.93	0			
5						0	6.6	.80	0			
6						0	7.9	.74	0			
7						0	6.4	.74	0			
8						0	6.9	.62	0			
9						0	23	.50	0			
10						0	40	.40	0			
11						0	60	.27	0			
12						0	52	.35	0			
13						0	39	.40	0			
14						0	32	.31	0			
15						0	27	.27	0			
16						33	19	.20	0			
17						84	17	.14	0			
18						156	18	.10	0			
19						221	16	.09	0			
20						166	13	.08	0			
21						119	11	.07	0			
22						105	9.0	.07	0			
23						113	6.9	.06	0			
24						63	5.2	.06	0			
25						56	4.3	.20	0			
26						43	4.1	.18	0			
27						41	3.9	.14	0			
28						27	2.8	.12	0			
29						20	2.1	.10	0			
30					------	19	1.7	.08	0			
31		------			------	15	------	.07	------			------
TOTAL	0	0	0	0	0	1,281	486.4	12.19	.07	0	0	0
MEAN	0	0	0	0	0	41.3	16.2	.39	.002	0	0	0
MAX	0	0	0	0	0	221	60	1.5	.05	0	0	0
MIN	0	0	0	0	0	0	1.7	.06	0	0	0	0
AC-FT	0	0	0	0	0	2,540	965	24	.1	0	0	0

CAL YR 1971 TOTAL 3,636.86 MEAN 9.96 MAX 1,170 MIN 0 AC-FT 7,210
WTR YR 1972 TOTAL 1,779.66 MEAN 4.86 MAX 221 MIN 0 AC-FT 3,530

PEAK DISCHARGE (BASE, 50 CFS)

DATE	TIME	G.HT.	DISCHARGE	DATE	TIME	G.HT.	DISCHARGE
3-19	1300	4.98	245	4-11	0700	3.58	64

05099100 Snowflake Creek near Snowflake, Manitoba
(International gaging station)

LOCATION.--Lat 49°01'17", long 98°36'13", in SW¼ sec.10, T.1, R.9 W., 1st meridian, at traffic bridge, 2.5 miles east and 1.5 miles south of Snowflake.

DRAINAGE AREA.--348 sq mi.

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

GAGE.--Water-stage recorder since March 1968 and nonrecording gage prior thereto. Datum of gage is 1,222.63 ft above mean sea level, Geodetic Survey of Canada datum. Prior to Apr. 2, 1964, nonrecording gage at present site and datum. Apr. 2, 1964, to May 10, 1965, nonrecording gage at site one-half mile downstream at present datum.

AVERAGE DISCHARGE.--11 years, 15.2 cfs (11,010 acre-ft per year); median of yearly mean discharges, 16 cfs (11,600 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 402 cfs Apr. 16 (gage height, not determined); no flow for several months.
Period of record: Maximum daily discharge, 653 cfs Apr. 11, 1969 (gage height, 7.39 ft); no flow for several months each year.

REMARKS.--Records good.

COOPERATION.--This station is one of the international gaging stations maintained by Canada under agreement with the United States.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.2	1.1	.43			0	5.2	125	11	1.2		
2	3.8	.84	.41			0	9.8	113	11	1.1		
3	4.8	.70	.29			0	8.1	100	9.5	.99		
4	4.8	.61	.24			0	2.7	95	8.0	.92		
5	3.8	.57	.24			0	2.9	94	9.8	.83		
6	3.0	.54	.25			0	2.8	80	8.9	.71		
7	2.8	.49	.25			0	2.4	79	7.2	.56		
8	2.5	.43	.20			0	13	76	6.5	.42		
9	2.3	.44	.13			0	43	73	5.0	.24		
10	2.1	.47	.09			0	52	68	4.3	.05		
11	1.9	.46	.06			0	39	66	4.4	0		
12	1.8	.58	.05			0	27	68	4.5	0		
13	1.7	.61	0			2.0	23	58	7.4	0		
14	1.7	.66	0			2.0	28	52	8.2	0		
15	1.8	.63	0			14	82	51	6.6	0		
16	2.2	.60	0			34	328	46	5.2	0		
17	2.6	.56	0			56	341	42	4.6	0		
18	3.3	.48	0			65	315	39	5.3	0		
19	5.7	.37	0			101	292	40	6.1	0		
20	4.3	.33	0			77	268	33	5.1	0		
21	3.4	.27	0			50	248	28	4.6	0		
22	2.8	.23	0			18	231	25	3.8	0		
23	2.2	.22	0			28	222	23	3.5	0		
24	1.6	.22	0			25	206	22	3.2	0		
25	1.0	.22	0			22	195	21	2.8	0		
26	2.2	.22	0			16	188	20	2.5	0		
27	1.8	.21	0			4.5	178	19	2.4	0		
28	1.3	.22	0			2.1	162	18	2.1	0		
29	1.0	.24	0			1.1	149	16	1.6	0		
30	1.0	.31	0		------	.82	138	13	1.3	0		
31	1.6	------	0		------	3.3	------	11	------	0		------
TOTAL	78.0	13.83	2.64	0	0	521.82	3,801.9	1,614	166.4	7.02	0	0
MEAN	2.52	.46	.085	0	0	16.8	127	52.1	5.55	.23	0	0
MAX	5.7	1.1	.43	0	0	101	341	125	11	1.2	0	0
MIN	1.0	.21	0	0	0	0	2.4	11	1.3	0	0	0
AC-FT	155	27	5.2	0	0	1,040	7,540	3,200	330	14	0	0

CAL YR 1971 TOTAL 15,031.47 MEAN 40.9 MAX 571 MIN 0 AC-FT 29,620
WTR YR 1972 TOTAL 6,205.61 MEAN 17.0 MAX 341 MIN 0 AC-FT 12,310

NOTE.--Differences between figures published herein and corresponding figures in reports of the Water Survey of Canada are due to variations in automated program techniques.

05099150 Mowbray Creek near Mowbray, Manitoba

LOCATION.--Lat 49°00'00", long 98°27'15", in SE¼ sec.3, T.1, R.8 W., 1st meridian, on downstream side of bridge on Municipal Road on international boundary, 1.5 miles east of Mowbray.

DRAINAGE AREA.--93.9 sq mi.

PERIOD OF RECORD.--March to October, 1962 to current year.

GAGE.--Nonrecording gage.

EXTREMES.--Current year: Maximum daily discharge, 138 cfs Mar. 21 (gage height, 5.37 ft); maximum daily gage height, 5.39 ft Mar. 23; no flow for several months.
Period of record: Maximum daily discharge, 630 cfs Apr. 12, 1971 (gage height, 6.95 ft); maximum gage height, 7.88 ft Mar. 29, 1966 (backwater from ice); no flow for several months each year.

REMARKS.--Records good.

COOPERATION.--Records furnished by Inland Waters Branch, Water Survey of Canada.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1						0	17	14	1.9			
2						0	14	10	1.8			
3						0	8.5	8.7	1.7			
4						0	12	7.8	1.5			
5						0	9.3	7.3	1.6			
6						0	13	6.2	1.3			
7						0	7.9	6.7	1.0			
8						0	12	6.7	.80			
9						0	32	6.1	.57			
10						0	51	5.7	.43			
11						0	55	5.7	.39			
12						0	71	6.3	.28			
13						0	85	5.9	.58			
14						0	90	6.5	.60			
15						0	90	6.8	.44			
16						0	80	6.8	.44			
17						0	77	5.4	.47			
18						0	73	3.2	.49			
19						11	64	2.5	.44			
20						57	55	2.1	.30			
21						138	47	1.9	.24			
22						80	40	1.8	.17			
23						124	36	1.7	.08			
24						123	33	1.8	0			
25						97	30	2.2	0			
26						89	27	2.2	0			
27						35	23	2.4	0			
28						59	21	2.2	0			
29						38	18	2.2	0			
30					------	26	16	2.1	0			
31		------			------	18	------	2.3	------			------
TOTAL	0					895	1,207.7	153.2	17.52	0	0	0
MEAN	0					28.9	40.3	4.94	.58	0	0	0
MAX	0					138	90	14	1.9	0	0	0
MIN	0					0	7.9	1.7	0	0	0	0
AC-FT	0					1,780	2,400	304	35	0	0	0

NOTE.--Differences between figures published herein and corresponding figures in reports of the Water Survey of Canada are due to variations in automated program techniques.

05099300 Pembina River near Windygates, Manitoba
(International gaging station)

LOCATION.--Lat 49°01'53", long 98°16'40", in SE¼ sec.13, T.1, R.7 W., 1st meridian, on left bank 0.2 mile downstream from bridge, 3 miles northeast of Windygates.

DRAINAGE AREA.--3,020 sq mi.

PERIOD OF RECORD.--April 1962 to current year.

GAGE.--Water-stage recorder and nonrecording gage. Datum of recording gage is 1,102.02 ft above mean sea level. Datum of nonrecording gage is 1,105.00 ft above mean sea level, both gages referred to Geodetic Survey of Canada datum.

AVERAGE DISCHARGE.--10 years, 238 cfs (172,400 acre-ft per year); median of yearly mean discharges, 172 cfs (125,000 acre-ft per year).

EXTREMES.--Current year: Maximum daily discharge, 1,620 cfs Apr. 12; minimum daily discharge, 9.6 cfs Mar. 14.
Period of record: Maximum discharge, 8,170 cfs Apr. 19, 1969 (gage height, 17.29 ft); no flow in some years.

REMARKS.--Records good.

COOPERATION.--This station is one of the international gaging stations maintained by Canada under agreement with the United States.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	88	67	48	23	17	11	569	1,090	519	199	207	104
2	96	66	48	22	17	11	541	1,050	503	201	213	103
3	99	65	49	22	16	10	488	1,030	488	202	222	103
4	98	65	48	21	16	10	506	1,010	481	206	226	101
5	97	64	45	20	16	10	610	996	477	208	224	95
6	94	63	43	19	16	10	777	976	451	207	218	103
7	90	63	40	19	16	10	872	947	425	207	212	107
8	88	62	43	19	15	9.9	1,040	934	410	207	205	101
9	87	61	43	19	15	9.9	1,310	915	382	206	202	97
10	87	61	43	19	15	9.8	1,500	877	351	205	207	94
11	89	63	40	19	15	9.8	1,570	853	328	199	188	94
12	85	70	42	19	15	9.7	1,620	843	318	197	167	92
13	81	60	42	19	14	9.7	1,600	816	328	194	162	94
14	80	61	41	19	14	9.6	1,570	791	335	192	158	97
15	78	58	39	19	14	71	1,520	774	312	189	154	97
16	77	57	35	19	14	130	1,510	759	302	187	146	95
17	79	56	37	18	14	193	1,570	733	296	184	142	97
18	80	56	42	18	13	314	1,580	709	276	185	139	97
19	79	43	38	18	13	407	1,520	687	252	185	136	98
20	74	56	39	18	13	524	1,450	665	226	184	143	98
21	75	46	32	18	13	714	1,390	639	218	184	140	98
22	76	54	33	18	13	678	1,330	631	207	192	147	99
23	76	56	31	18	12	723	1,290	623	200	193	144	98
24	77	54	26	18	12	716	1,290	612	199	190	138	97
25	75	56	28	18	12	666	1,270	609	196	189	134	96
26	73	52	29	18	12	657	1,230	606	193	195	129	95
27	71	48	29	17	11	554	1,200	602	191	203	126	92
28	69	47	28	17	11	452	1,170	582	188	206	124	93
29	69	48	26	17	11	462	1,140	565	186	208	120	93
30	68	47	27	17	------	465	1,120	554	188	209	116	93
31	67	------	24	17	------	521	------	537	------	209	109	------
TOTAL	2,522	1,725	1,158	582	405	8,387.4	36,153	24,015	9,426	6,122	5,098	2,921
MEAN	81.4	57.5	37.4	18.8	14.0	271	1,205	775	314	197	164	97.4
MAX	99	70	49	23	17	723	1,620	1,090	519	209	226	107
MIN	67	43	24	17	11	9.6	488	537	186	184	109	92
AC-FT	5,000	3,420	2,300	1,150	803	16,640	71,710	47,630	18,700	12,140	10,110	5,790

CAL YR 1971 TOTAL 145,270.8 MEAN 398 MAX 5,910 MIN 6.7 AC-FT 288,100
WTR YR 1972 TOTAL 98,514.4 MEAN 269 MAX 1,620 MIN 9.6 AC-FT 195,400

NOTE.--Differences between figures published herein and corresponding figures in reports of the Water Survey of Canada are due to variations in automated program techniques.

05099400 Little Pembina River near Walhalla, N. Dak.

LOCATION.--Lat 48°51'55", long 98°00'20", in SW¼ sec.10, T.162 N., R.57 W., Cavalier County, on right bank 25 ft upstream from county bridge, 3.5 miles above mouth, and 6 miles southwest of Walhalla.

DRAINAGE AREA.--182 sq mi, of which 10 sq mi is noncontributing.

PERIOD OF RECORD.--April 1956 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,099.48 ft above mean sea level. Prior to Sept. 10, 1956, non-recording gage at bridge 25 ft downstream at same datum.

AVERAGE DISCHARGE.--16 years, 22.3 cfs (16,160 acre-ft per year); median of yearly mean discharges, 19 cfs (13,800 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 626 cfs Mar. 17 (gage height, 9.56 ft, backwater from ice); minimum daily discharge, 0.01 cfs Feb. 18.
Period of record: Maximum discharge, 6,600 cfs Apr. 25, 1970 (gage height, 13.95 ft); no flow at times in some years.

REMARKS.--Records good. Flow regulated since March 1971 by Mt. Carmel Reservoir 30 miles upstream (capacity, 4,200 acre-ft). Records of chemical analyses and suspended sediment loads for water year 1972 are published in Part 2 of this report.

REVISIONS.--WSP 1728: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.0	2.3	.60	.33	.10	.14	24	39	7.0	.92	.08	.08
2	3.0	2.3	.60	.33	.10	.16	25	33	6.6	.92	.12	.10
3	2.8	2.8	.58	.33	.08	.20	14	29	5.8	.92	.06	.10
4	2.7	2.1	.55	.33	.08	.20	19	27	5.1	.74	.06	.12
5	2.3	4.0	.55	.33	.08	.25	28	23	6.6	.65	.08	.12
6	1.9	3.0	.55	.33	.06	.25	14	21	5.4	.65	.10	.92
7	1.7	2.8	.55	.33	.06	.30	13	19	4.7	.65	.22	.32
8	1.6	3.0	.50	.33	.06	.30	13	17	4.1	.56	.26	.18
9	1.6	3.3	.50	.33	.04	.30	73	15	3.7	.47	.15	.18
10	1.5	3.1	.50	.33	.04	.35	100	14	3.5	.39	.18	.18
11	1.5	2.5	.45	.33	.02	.35	150	14	3.5	.39	.10	.18
12	1.5	3.3	.40	.33	.02	.40	200	14	3.2	.56	.06	.22
13	1.5	3.1	.30	.33	.02	.40	446	14	5.8	.56	.06	.32
14	1.6	2.7	.25	.30	.02	.45	415	14	4.3	.56	4.0	.15
15	1.6	2.8	.28	.25	.02	.45	400	13	3.5	.47	3.5	.10
16	1.8	2.8	.33	.25	.02	.50	311	12	2.2	.47	1.6	.10
17	3.0	2.7	.30	.25	.02	415	150	12	2.1	.47	1.1	.10
18	3.8	2.8	.30	.22	.01	419	110	11	1.9	.47	.83	.15
19	3.6	3.3	.30	.20	.02	446	110	9.5	1.9	.83	.32	.15
20	3.1	3.0	.30	.20	.02	439	98	10	1.8	.74	.32	.18
21	3.0	2.8	.30	.20	.02	390	89	8.8	1.4	.47	.32	.10
22	2.7	2.5	.35	.18	.04	175	75	8.1	1.4	.32	.32	.15
23	2.5	2.0	.35	.15	.04	164	98	7.7	1.2	.32	.26	.22
24	2.5	1.6	.35	.15	.06	112	147	7.7	1.2	.22	.18	.65
25	2.4	1.3	.35	.14	.06	102	110	8.8	1.2	1.0	.15	.26
26	2.3	1.0	.35	.14	.08	66	83	8.8	1.2	.65	.12	.39
27	2.4	.90	.33	.12	.10	33	68	17	1.2	.39	.10	.32
28	2.4	.80	.33	.12	.12	35	60	14	1.1	.39	.10	.39
29	2.8	.70	.33	.12	.12	35	51	10	.92	.22	.12	.39
30	3.0	.60	.33	.10	------	28	44	8.8	.92	.15	.08	.32
31	2.7	------	.33	.10	------	30	------	7.3	------	.10	.08	------
TOTAL	71.8	71.90	12.39	7.48	1.53	2,894.00	3,538	467.5	94.44	16.62	15.03	7.14
MEAN	2.32	2.40	.40	.24	.053	93.4	118	15.1	3.15	.54	.48	.24
MAX	3.8	4.0	.60	.33	.12	446	446	39	7.0	1.0	4.0	.92
MIN	1.0	.60	.25	.10	.01	.14	13	7.3	.92	.10	.06	.08
AC-FT	142	143	25	15	3.0	5,740	7,020	927	187	33	30	14

CAL YR 1971 TOTAL 12,452.09 MEAN 34.1 MAX 2,310 MIN .15 AC-FT 24,700
WTR YR 1972 TOTAL 7,197.83 MEAN 19.7 MAX 446 MIN .01 AC-FT 14,280

05099600 Pembina River at Walhalla, N. Dak.

LOCATION.--Lat 48°54'50", long 97°55'00", in NE¼NE¼ sec.29, T.163 N., R.56 W., Pembina County, on left bank at downstream side of bridge on State Highway 32, at south edge of Walhalla, and 7 miles downstream from Little Pembina River.

DRAINAGE AREA.--3,350 sq mi, approximately.

PERIOD OF RECORD.--October 1939 to current year. Prior to October 1963, published as "near Walhalla."

GAGE.--Water-stage recorder. Altitude of gage is 934 ft (from topographic map). Prior to Nov. 10, 1943 non-recording gage and Nov. 10, 1943, to Sept. 30, 1963, water-stage recorder at site 5.5 miles upstream at different datum.

AVERAGE DISCHARGE.--33 years, 228 cfs (165,200 acre-ft per year); median of yearly mean discharges, 170 cfs (123,000 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 3,160 cfs Apr. 9 (gage height, 9.81 ft, back water from ice); minimum daily discharge 12 cfs Feb. 27 to Mar. 2.
Period of record: Maximum discharge, 20,400 cfs Apr. 18, 1950 (gage height, 19.2 ft, former site and datum) from rating curve extended above 7,000 cfs on basis of contracted-opening measurement of peak flow; no flow at times in some years.

REMARKS.--Records fair. Records of chemical analyses, water temperatures, and suspended sediment loads for the water year 1972 are published in Part 2 of this report.

REVISIONS (WATER YEARS).--WSP 1388: 1943, 1950(P). WSP 1558: 1957. WSP 1728: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	95	69	55	22	16	12	390	1,200	524	184	181	128
2	96	76	50	22	15	12	370	1,180	505	188	184	125
3	101	90	50	20	15	13	350	1,130	496	189	183	124
4	104	75	50	20	15	14	330	1,100	480	193	183	122
5	106	68	50	18	15	14	250	1,080	482	191	184	119
6	103	70	45	18	15	15	260	1,050	466	189	183	128
7	100	68	45	20	14	15	280	1,020	442	186	184	133
8	98	70	40	23	14	15	353	985	431	183	183	114
9	98	68	35	25	14	16	1,360	975	410	180	181	111
10	95	67	30	30	14	17	2,270	960	390	178	180	109
11	93	66	30	35	14	18	1,960	935	372	176	178	106
12	98	66	27	33	14	19	1,900	925	350	176	178	103
13	95	64	25	30	14	19	2,140	900	338	172	176	101
14	88	62	25	28	15	20	2,340	875	328	172	176	98
15	86	60	25	25	16	20	2,290	842	311	173	178	98
16	84	62	24	25	16	250	2,140	804	290	173	173	95
17	87	62	20	28	16	880	2,000	788	284	173	173	92
18	90	62	20	30	16	860	1,910	772	277	172	170	90
19	96	65	25	30	16	850	1,890	760	259	175	167	90
20	90	60	25	25	15	850	1,780	744	242	176	167	90
21	86	70	20	25	15	1,040	1,680	708	230	180	172	90
22	80	75	20	20	15	890	1,590	672	225	191	167	87
23	81	75	22	20	14	800	1,590	650	215	193	175	84
24	81	80	22	20	14	820	1,620	632	205	200	167	98
25	80	75	22	18	13	780	1,490	625	194	205	156	103
26	80	70	22	18	13	740	1,490	625	189	200	149	103
27	78	65	20	18	12	640	1,400	636	188	198	142	96
28	74	65	20	16	12	605	1,320	628	188	194	141	92
29	72	60	20	16	12	420	1,270	590	184	191	138	87
30	68	55	20	16	------	450	1,250	572	181	189	135	82
31	70	------	22	16	------	420	------	548	------	184	135	------
TOTAL	2,753	2,040	926	710	419	11,534	41,263	25,911	9,676	5,724	5,239	3,098
MEAN	88.8	68.0	29.9	22.9	14.4	372	1,375	836	323	185	169	103
MAX	106	90	55	35	16	1,040	2,340	1,200	524	205	184	133
MIN	68	55	20	16	12	12	250	548	181	172	135	82
AC-FT	5,460	4,050	1,840	1,410	831	22,880	81,850	51,390	19,190	11,350	10,390	6,140

CAL YR 1971 TOTAL 178,944.0 MEAN 490 MAX 9,320 MIN 8.5 AC-FT 354,900
WTR YR 1972 TOTAL 109,293.0 MEAN 299 MAX 2,340 MIN 12 AC-FT 216,800

PEAK DISCHARGE (BASE, 400 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
3-17	-	-	1,320	4-9	-	-	3,160

05100000 Pembina River at Neche, N. Dak.
(International gaging station)

LOCATION.--Lat 48°59'20", long 97°33'05", in SE¼NW¼ sec.31, T.164 N., R.53 W., Pembina County, on right bank 4 blocks east of State Highway 18, at north edge of Neche.

DRAINAGE AREA.--3,410 sq mi, approximately.

PERIOD OF RECORD.--May 1903 to September 1908, June 1909 to September 1915, April 1919 to current year. Monthly discharge only for some periods, published in WSP 1308.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 809.69 ft above mean sea level. Prior to May 24, 1932, nonrecording gage at Burlington Northern Railway bridge 1 mile upstream, at same datum, May 25, 1932, to Apr. 17, 1939, nonrecording gage on bridge on State Highway 18, 500 ft downstream from railway bridge, at same datum.

AVERAGE DISCHARGE.--64 years (1903-8, 1909-15, 1919-72) 182 cfs (131,900 acre-ft per year); median of yearly mean discharges, 130 cfs (94,200 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 2,550 cfs Apr. 16 (gage height, 15.87 ft); minimum daily, 9.0 cfs Mar. 9-11; minimum gage height, 7.51 ft Jan. 4.
Period of record: Maximum discharge, 10,700 cfs Apr. 20, 1950 (gage height, 21.58 ft, backwater from ice), from rating curve extended 5,300 cfs; maximum gage height, 22.22 ft Apr. 12, 1971; no flow at times each year 1932-41, 1953, 1960-62.

REMARKS.--Records good. Records of chemical analyses for the 1972 water year are published in Part 2 of this report.

COOPERATION.--This station is one of the international gaging stations maintained by the United States under agreement with Canada.

REVISIONS (WATER YEARS).--WSP 1308: 1904-8, 1910-15, 1920, 1921, 1923, 1924. WSP 1388: 1904(M), 1914, 1915(M), 1931(M), 1933, 1938(M). WSP 1728: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	104	50	72	20	13	10	490	1,230	606	190	190	146
2	104	70	68	17	13	9.5	495	1,200	579	197	190	140
3	116	96	63	18	12	9.5	460	1,160	547	200	190	133
4	127	102	63	17	12	9.5	445	1,140	516	200	190	130
5	127	96	58	17	12	9.5	415	1,120	500	204	190	104
6	127	70	50	20	12	9.5	460	1,090	500	207	190	114
7	121	50	50	21	12	9.5	550	1,080	485	207	190	121
8	116	48	45	21	12	9.5	560	1,050	460	204	186	127
9	116	54	45	21	12	9.0	650	1,030	440	200	190	130
10	113	58	45	21	12	9.0	1,490	1,010	421	200	190	124
11	110	65	40	20	12	9.0	2,080	977	402	200	190	114
12	107	65	35	20	12	9.5	2,050	956	388	200	190	105
13	107	70	31	18	11	10	1,870	949	379	204	190	105
14	107	72	31	17	10	10	1,980	928	374	200	190	108
15	104	72	29	16	11	10	2,330	914	347	200	190	111
16	102	74	23	16	10	10	2,250	879	330	207	190	108
17	102	79	23	17	9.5	10	1,880	858	312	210	183	105
18	104	79	21	18	9.5	500	1,740	837	304	210	180	105
19	107	79	24	20	9.5	1,160	1,720	816	292	210	166	102
20	107	70	23	18	9.5	1,200	1,700	802	288	197	169	98
21	110	58	18	18	9.5	1,150	1,620	788	268	193	173	95
22	107	65	18	16	9.5	1,300	1,540	753	250	193	169	95
23	102	54	18	16	10	1,080	1,490	732	242	193	166	95
24	96	61	20	15	10	865	1,480	704	232	193	166	95
25	96	68	20	14	10	977	1,490	683	224	193	166	98
26	96	72	23	14	10	750	1,420	669	214	193	166	98
27	96	72	24	14	10	860	1,370	662	207	193	163	105
28	94	74	24	14	10	760	1,330	669	200	193	156	105
29	92	77	23	14	10	640	1,300	669	197	193	156	105
30	86	77	23	14	------	430	1,260	655	193	193	153	102
31	41	------	20	14	------	430	------	634	------	190	150	------
TOTAL	3,244	2,097	1,070	536	315.0	12,265.0	39,915	27,644	10,697	6,167	5,518	3,323
MEAN	105	69.9	34.5	17.3	10.9	396	1,331	892	357	199	178	111
MAX	127	102	72	21	13	1,300	2,330	1,230	606	210	190	146
MIN	41	48	18	14	9.5	9.0	415	634	193	190	150	95
AC-FT	6,430	4,160	2,120	1,060	625	24,330	79,170	54,830	21,220	12,230	10,940	6,590

CAL YR 1971 TOTAL 167,761.0 MEAN 460 MAX 7,080 MIN 12 AC-FT 332,800
WTR YR 1972 TOTAL 112,791.0 MEAN 308 MAX 2,330 MIN 9.0 AC-FT 223,700

PEAK DISCHARGE (BASE, 400 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
3-22	-	-	1,330	4-16	0030	1587	2,550

RED RIVER OF THE NORTH BASIN

05100500 Herzog Creek near Concrete, N. Dak.

LOCATION.--Lat 48°45'13", long 97°54'22", in SE¼ sec.20, T.161 N., R.56 W., Pembina County, on left bank 1.7 miles northeast of Concrete and 1.7 miles upstream from mouth.

DRAINAGE AREA.--18.9 sq mi.

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

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1,108.95 ft above mean sea level (levels by Soil Conservation Service). Prior to Sept. 15, 1971, recording gage at site 0.5 mile downstream at same datum.

AVERAGE DISCHARGE.--18 years, 3.32 cfs (2,410 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 94 cfs Apr. 14 (gage height, 10.29 ft); maximum gage height, 11.85 ft Mar. 14 (backwater from ice); no flow Jan. 13 to Mar. 14.
Period of record: Maximum discharge, 260 cfs Apr. 2, 1955 (gage height, 9.74 ft, from floodmarks, backwater from ice); no flow at times each year.

REMARKS.--Records fair. Flood flow affected by temporary retention in four retarding basins above station. The farthest downstream retarding basin, located 0.8 mile above station, is used to regulate summer flow. Records of chemical analyses for water year 1972 are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.03	.03	.35	.01		0	3.3	3.7	.85	.03	.20	.02
2	.03	.03	.35	.01		0	2.0	4.4	.55	.03	.03	.02
3	.03	.03	.35	.01		0	1.7	4.4	.35	.03	.03	.02
4	.03	.02	.35	.01		0	1.1	3.3	.20	.03	.03	.02
5	.02	.02	.20	.01		0	.35	3.3	.20	.03	.08	.02
6	.02	.01	.03	.01		0	.08	3.7	.20	.03	.08	.02
7	.02	.01	.02	.01		0	.08	2.6	.20	.03	.20	.02
8	.03	.01	.02	.01		0	0	2.6	.20	.03	.20	.02
9	.03	3.3	.02	.01		0	.20	2.3	.08	.03	.03	.02
10	.03	8.9	.02	.01		0	19	1.7	.08	.03	.20	.02
11	.03	8.1	.02	.01		0	68	1.7	.08	.01	.20	.01
12	.03	4.7	.02	.01		0	55	2.0	.08	.20	.20	.02
13	.03	4.0	.02	0		0	62	2.3	.55	.03	.20	11
14	.03	4.7	.02	0		0	73	2.3	.35	.03	.03	24
15	.03	4.4	.03	0		.50	76	2.0	.08	.03	.03	1.1
16	.03	4.0	.03	0		.75	59	1.7	.08	.03	.02	.85
17	.03	3.7	.02	0		1.0	48	1.4	.08	.03	.02	19
18	.03	3.7	.01	0		1.5	40	1.1	.03	.03	.01	38
19	.03	3.0	.01	0		5.0	36	.85	.03	.20	.01	33
20	.03	3.0	.01	0		28	32	1.1	.03	.20	.01	26
21	.03	3.3	.02	0		8.5	20	1.1	.03	.20	.02	16
22	.03	2.6	.02	0		7.3	10	1.1	.03	.08	.02	8.9
23	.03	1.4	.02	0		20	9.3	1.1	.03	.08	.01	5.1
24	.03	.85	.02	0		7.3	17	1.1	.03	.03	.02	4.4
25	.02	.55	.01	0		1.1	9.3	1.7	.03	.08	.01	3.3
26	.02	.55	.01	0		.03	8.5	1.7	.03	.08	.01	3.0
27	.02	.45	.01	0		.55	7.3	1.4	.03	.20	.01	2.3
28	.02	.30	.01	0		2.6	6.9	2.3	.03	.20	.01	2.3
29	.02	.20	.01	0		5.8	5.8	2.0	.03	.20	.01	1.7
30	.02	.20	.01	0	------	5.4	1.7	1.1	.03	.20	.01	1.7
31	.03	------	.01	0	------	4.4	------	1.1	------	.20	.02	------
TOTAL	.84	66.06	2.05	.12	0	99.73	672.61	64.15	4.60	2.64	1.96	201.88
MEAN	.027	2.20	.066	.004	0	3.22	22.4	2.07	.15	.085	.063	6.73
MAX	.03	8.9	.35	.01	0	28	76	4.4	.85	.20	.20	38
MIN	.02	.01	.01	0	0	0	0	.85	.03	.01	.01	.01
AC-FT	1.7	131	4.1	.2	0	198	1,330	127	9.1	5.2	3.9	400

CAL YR 1971 TOTAL 2,077.27 MEAN 5.69 MAX 118 MIN 0 AC-FT 4,120
WTR YR 1972 TOTAL 1,116.64 MEAN 3.05 MAX 76 MIN 0 AC-FT 2,210

05101000 Tongue River at Akra, N. Dak.

LOCATION.--Lat 48°46'40", long 97°42'55", in SE¼ sec.11, T.161 N., R.55 W., Pembina County, on right bank 0.6 mile east of Akra and 4.2 miles west of Cavalier.

DRAINAGE AREA.--162 sq mi.

PERIOD OF RECORD.--April to June 1950 (in WSP 1137-B), October 1951 to current year.

GAGE.--Water-stage recorder. Datum of gage is 920.90 ft above mean sea level (levels by Soil Conservation Service). Prior to July 10, 1954, nonrecording gage 1.5 miles upstream at datum 20.90 ft lower.

AVERAGE DISCHARGE.--21 years (1951-72) 22.2 cfs (16,080 acre-ft per year); median of yearly mean discharges, 21 cfs (15,200 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 325 cfs Apr. 16 (gage height, 5.79 ft); maximum gage height, 7.90 ft Mar. 23 (backwater from ice); minimum daily discharge, 0.75 cfs Sept. 17-21.
Period of record: Maximum discharge, 11,800 cfs Apr. 18, 1950 (gage height, 48.7 ft, from floodmarks, site and datum then in use), from rating curve extended above 1,500 cfs on basis of contracted-opening measurement of peak flow; no flow Dec. 1-27, 1952, Aug. 13, 14, 1961.
Flood of Apr. 18, 1950, is the highest known since settlement of the region (about 1860).

REMARKS.--Records good. Flow regulated by temporary retention in ten retarding basins beginning 2.5 miles above station, four of which have slow release outlet structures to regulate the flow. Retarding basins were completed during period 1955 to 1961 and have a combined capacity of 19,245 acre-ft. Records of chemical analyses for the water year 1972 are published in Part 2 of this report.

REVISIONS.--WSP 1728: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.80	11	5.8	1.9	1.5	9.5	18	53	6.4	3.5	4.1	2.2
2	.80	13	5.4	2.0	1.5	9.7	15	48	6.4	3.5	4.0	2.2
3	.85	13	5.1	2.0	1.5	9.5	15	44	6.6	3.9	3.5	2.1
4	.96	13	5.1	2.0	1.5	8.2	15	41	6.2	3.4	2.7	2.0
5	1.2	14	4.9	2.3	1.5	7.4	14	38	6.4	3.2	2.3	1.8
6	1.0	15	4.4	2.3	1.5	8.4	13	36	6.2	3.0	2.3	1.6
7	1.3	3.3	3.3	2.4	1.5	4.9	13	36	5.8	3.0	2.3	1.4
8	1.4	10	3.7	2.7	1.5	3.9	14	34	5.8	2.9	2.3	1.2
9	.90	19	3.5	2.8	1.5	3.2	17	32	5.6	2.9	2.3	1.0
10	.80	17	3.3	3.0	1.5	3.6	32	29	5.2	2.9	2.3	.90
11	1.0	16	3.2	3.3	1.8	2.6	157	28	5.2	2.7	2.3	.90
12	1.1	17	3.2	3.3	2.0	2.0	215	30	5.2	2.6	2.3	.85
13	1.1	17	3.2	3.0	2.0	2.0	212	31	6.8	2.5	2.4	.85
14	1.0	15	3.2	2.7	2.5	2.3	251	31	5.8	2.4	3.1	.85
15	1.1	15	3.9	2.5	3.5	2.9	302	28	5.8	2.2	2.4	.85
16	1.2	16	3.7	2.4	2.5	4.3	316	25	5.6	2.5	2.4	.80
17	1.5	16	3.3	2.3	2.2	22	291	19	5.6	2.1	2.4	.75
18	1.4	15	3.3	2.2	2.2	37	216	4.3	5.6	5.2	2.4	.75
19	1.8	14	3.3	2.1	2.2	68	167	3.2	5.6	27	2.6	.75
20	1.5	14	3.3	2.0	1.5	217	131	9.4	5.4	15	2.4	.75
21	1.6	13	3.3	2.0	2.5	212	115	14	5.2	7.8	2.4	.75
22	1.8	13	3.5	1.9	4.0	214	106	16	5.0	7.3	2.4	1.0
23	2.0	9.4	3.3	1.8	5.6	183	100	16	4.7	6.8	2.4	1.5
24	2.4	11	3.2	1.7	6.4	143	98	12	4.5	6.3	2.2	1.8
25	2.5	8.0	3.3	1.5	7.0	95	96	5.8	4.3	6.1	2.2	2.4
26	3.3	6.5	3.0	1.5	7.9	76	88	5.4	4.3	6.4	2.2	8.8
27	4.4	6.1	2.8	1.5	9.3	71	80	5.8	4.3	6.3	2.2	14
28	5.1	7.3	2.5	1.5	10	64	72	6.0	3.9	5.8	2.1	12
29	6.5	6.5	2.3	1.5	10	40	65	6.4	3.7	5.4	2.1	12
30	9.7	5.8	2.0	1.5	------	28	59	6.4	3.7	4.8	2.2	12
31	14	------	2.0	1.5	------	22	------	6.4	------	4.6	2.2	------
TOTAL	76.01	369.9	109.3	67.1	100.1	1,576.4	3,303	700.1	160.8	164.0	77.4	90.75
MEAN	2.45	12.3	3.53	2.16	3.45	50.9	110	22.6	5.36	5.29	2.50	3.03
MAX	14	19	5.8	3.3	10	217	316	53	6.8	27	4.1	14
MIN	.80	3.3	2.0	1.5	1.5	2.0	13	3.2	3.7	2.1	2.1	.75
AC-FT	151	734	217	133	199	3,130	6,550	1,390	319	325	154	180

CAL YR 1971 TOTAL 11,696.76 MEAN 32.0 MAX 562 MIN .75 AC-FT 23,200
WTR YR 1972 TOTAL 6,794.86 MEAN 18.6 MAX 316 MIN .75 AC-FT 13,480

05102500 Red River of the North at Emerson, Manitoba
(International gaging station)

LOCATION.--Lat 49°00'30", long 97°12'40", in sec.2, T.1, R.2 E., on right bank 1,500 ft downstream from Canadian National Railway bridge in Emerson, 0.8 mile downstream from international boundary, 3.6 miles downstream from Pembina River, and at mile 154.3.

DRAINAGE AREA.--40,200 sq mi, approximately (includes 3,800 sq mi in closed basins).

PERIOD OF RECORD.--March to November 1902 (gage heights only), May 1912 to September 1929 (monthly discharge only, published in WSP 1308), October 1929 to current year.

GAGE.--Water-stage recorder. Datum of gage is 700.00 ft above mean sea level, datum of 1929, by Geodetic Survey of Canada. See WSP 1728 or 1913 for history of changes prior to Apr. 10, 1953.

AVERAGE DISCHARGE.--60 years (1912-72) 3,146 cfs (2,279,000 acre-ft per year); median of yearly mean discharges, 2,630 cfs (1,910,000 acre-ft per year).

EXTREMES.--Current year: Maximum daily discharge, 30,700 cfs Apr. 23-24; maximum gage height, 78.16 ft Apr. 24; minimum daily discharge, 862 cfs Oct. 2.
Period of record: Maximum discharge, 95,500 cfs May 13, 1950 (gage height, 90.89 ft); minimum observed, 0.9 cfs Feb. 6-8, 1937 (gage height, 44.00 ft).

REMARKS.--Records good. Discharge partially regulated by reservoirs on tributaries.

COOPERATION.--This station is one of the international gaging stations maintained by Canada under agreement with the United States.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	864	4,120	2,8CC	2,190	1,67C	1,580	19,600	23,800	8,360	3,170	2,960	2,180
2	862	3,880	2,910	2,180	1,65C	1,590	19,300	22,2CC	9,010	2,970	2,890	2,180
3	907	3,950	3,170	2,170	1,640	1,600	19,000	20,300	9,70C	2,800	2,820	2,170
4	1,150	4,870	3,440	2,160	1,63C	1,600	19,500	18,300	10,400	2,670	2,750	2,140
5	2,340	6,250	3,580	2,150	1,62C	1,600	19,900	16,900	10,80C	2,580	2,66C	2,120
6	3,950	7,320	3,600	2,140	1,62C	1,59C	19,60C	15,1CC	1C,60C	2,530	2,550	2,120
7	4,870	7,890	3,560	2,140	1,61C	1,590	19,100	13,600	10,20C	2,480	2,490	2,120
8	5,170	8,010	3,48C	2,140	1,6CC	1,61C	18,40C	12,1CC	9,52C	2,440	2,450	2,130
9	5,02C	7,58C	3,390	2,150	1,590	1,640	17,700	10,8CC	8,69C	2,390	2,420	2,120
10	4,610	6,490	3,260	2,150	1,55C	1,65C	17,200	9,850	7,87C	2,370	2,400	2,100
11	4,130	5,33C	3,110	2,150	1,58C	1,670	17,100	9,190	7,14C	2,310	2,390	2,07C
12	3,720	4,620	2,940	2,120	1,58C	1,69C	17,300	8,730	6,530	2,270	2,400	2,060
13	3,37C	4,600	2,750	2,090	1,580	1,710	17,70C	8,34C	6,120	2,240	2,45C	2,06C
14	3,090	4,910	2,56C	2,060	1,58C	1,730	18,800	8,000	5,75C	2,190	2,500	2,070
15	2,860	5,180	2,410	2,030	1,58C	1,750	21,7CC	7,650	5,44C	2,140	2,530	2,080
16	2,67C	5,280	2,360	2,0CC	1,58C	1,79C	24,900	7,390	5,18C	2,090	2,54C	2,090
17	2,520	5,380	2,320	1,970	1,58C	2,200	28,100	7,4CC	4,93C	2,040	2,560	2,090
18	2,390	5,55C	2,27C	1,95C	1,590	3,100	29,100	8,030	4,68C	2,030	2,57C	2,10C
19	2,270	5,750	2,220	1,920	1,59C	5,20C	29,900	8,85C	4,47C	2,070	2,550	2,110
20	2,210	5,87C	2,220	1,890	1,600	7,500	30,200	9,4CC	4,30C	2,140	2,47C	2,13C
21	2,850	6,17C	2,250	1,860	1,6CC	9,5CC	3C,50C	9,520	4,17C	2,230	2,430	2,100
22	4,97C	5,92C	2,280	1,820	1,600	11,40C	30,600	9,320	4,13C	2,320	2,38C	2,07C
23	6,73C	5,350	2,290	1,78C	1,6CC	12,90C	3C,700	8,940	4,32C	2,410	2,330	2,020
24	7,62C	4,650	2,290	1,750	1,590	14,100	30,700	8,47C	4,47C	2,480	2,300	1,990
25	7,87C	3,930	2,28C	1,73C	1,59C	15,100	30,500	8,01C	4,53C	2,540	2,300	1,97C
26	7,590	3,360	2,260	1,71C	1,58C	15,900	29,900	7,64C	4,44C	2,610	2,32C	1,940
27	6,950	3,470	2,240	1,7CC	1,58C	16,80C	29,200	7,56C	4,23C	2,680	2,340	1,900
28	6,20C	3,37C	2,23C	1,69C	1,57C	17,4CC	28,200	7,8CC	3,96C	2,79C	2,340	1,86C
29	5,500	3,000	2,220	1,69C	1,57C	17,600	27,100	8,03C	3,69C	2,940	2,310	1,83C
30	4,920	2,84C	2,21C	1,69C	------	17,800	25,70C	8,19C	3,39C	3,02C	2,25C	1,82C
31	4,490	------	2,200	1,68C	------	18,900	------	8,23C	------	3,01C	2,200	------
TOTAL	124,663	154,89C	83,100	6C,85C	46,34C	211,79C	717,200	337,64C	191,02C	76,940	76,85C	61,74C
MEAN	4,021	5,163	2,681	1,963	1,598	6,832	23,910	10,89C	6,367	2,482	2,479	2,058
MAX	7,87C	8,01C	3,60C	2,190	1,67C	18,900	30,700	23,800	10,800	3,170	2,960	2,18C
MIN	862	2,340	2,200	1,68C	1,57C	1,58C	17,10C	7,35C	3,39C	2,03C	2,200	1,82C
AC-FT	247,3CC	3C7,200	164,3CC	12C,7CC	91,92C	420,100	1,423M	669,700	378,9CC	152,6CC	152,4CC	122,500

CAL YR 1971 TOTAL 1,365,504 MEAN 3,741 MAX 26,6CC MIN 862 AC-FT 2,708,000
WTR YR 1972 TOTAL 2,143,023 MEAN 5,855 MAX 3C,700 MIN 862 AC-FT 4,251,000

M - Expressed in thousands

NOTE.--Differences between figures published herein and corresponding figures in reports of the Water Survey of Canada are due to variations in automated program techniques.

05113360 Long Creek at western crossing of international boundary
(International gaging station)

LOCATION.--Lat 49°00'01", long 103°21'08", in SE¼ sec.1, T.1, R.11 W., 2d meridian of right bank 10 miles south of Outram, Saskatchewan.

DRAINAGE AREA.--1,320 sq mi.

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

GAGE.--Water-stage recorder and artificial control. Datum of gage is 1,894.00 ft above mean sea level, international boundary survey.

AVERAGE DISCHARGE.--13 years, 31.0 cfs (22,460 acre-ft per year); median of yearly mean discharges, 25 cfs (18,100 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 1,940 cfs June 10; maximum daily gage height, 8.13 ft June 10; no flow for several months.
Period of record: Maximum discharge, 3,970 cfs Apr. 10, 1969 (gage height, 12.17 ft, backwater from ice); no flow for several months each year.

REMARKS.--Records good. Discharge affected by storage in upstream reservoirs.

COOPERATION.--This station is one of the international gaging stations maintained by Canada under agreement with the United States.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	.47				0	106	19	35	27	7.0	
2	0	.19				0	105	20	28	24	6.5	
3	0	.15				0	104	19	23	20	5.9	
4	.10	.10				0	104	18	21	18	5.4	
5	.16	.05				0	87	18	20	16	4.8	
6	0	.05				0	65	18	18	14	4.3	
7	0	.05				0	68	18	17	12	3.8	
8	0	.05				0	74	17	18	11	3.2	
9	0	.05				0	72	17	115	10	2.7	
10	0	.05				0	65	17	1,650	10	2.1	
11	0	0				0	57	18	1,170	9.9	1.6	
12	0	0				0	54	20	525	9.7	1.5	
13	0	0				70	51	20	334	9.7	1.5	
14	0	0				340	52	19	220	9.6	1.6	
15	0	0				700	44	19	166	9.5	1.3	
16	0	0				1,100	44	19	140	9.3	.49	
17	0	0				1,210	44	19	107	9.2	0	
18	0	0				879	41	18	75	9.2	0	
19	0	0				687	39	20	57	9.2	.56	
20	.48	0				1,000	36	19	45	9.1	2.3	
21	1.5	0				1,250	33	19	39	9.1	5.1	
22	2.5	0				1,070	31	65	36	8.6	7.0	
23	2.5	0				917	31	24	33	8.1	6.9	
24	2.3	0				696	27	23	34	7.8	6.1	
25	1.7	0				450	25	34	36	8.0	4.6	
26	1.4	0				314	23	143	37	7.9	2.6	
27	1.5	0				257	22	112	46	7.9	1.8	
28	1.1	0				198	21	67	76	7.3	2.9	
29	.30	0				127	20	80	51	6.9	1.5	
30	.76	0			------	108	19	63	34	6.3	.41	
31	.73	------			------	107	------	44	------	5.8	0	------
TOTAL	17.53	1.20	0	0	0	11,480	1,564	1,046	5,206	340.1	95.46	0
MEAN	.57	.040	0	0	0	370	52.1	33.7	174	11.0	3.08	0
MAX	2.5	.47	0	0	0	1,250	106	143	1,650	27	7.0	0
MIN	0	0	0	0	0	0	19	17	17	5.8	0	0
AC-FT	35	2.4	0	0	0	22,770	3,100	2,070	10,330	675	189	0

CAL YR 1971 TOTAL 11,329.46 MEAN 31.0 MAX 651 MIN 0 AC-FT 22,470
WTR YR 1972 TOTAL 19,750.29 MEAN 54.0 MAX 1,650 MIN 0 AC-FT 39,170

NOTE.--Differences between figures published herein and corresponding figures in reports of the Water Survey of Canada are due to variations in automated program techniques.

05113600 Long Creek near Noonan, N. Dak.
(International gaging station)

LOCATION.--Lat 48°58'52", long 103°04'34", near north line of NE¼ sec.1, T.163 N., R.96 W., Divide County, on right bank 150 ft upstream from county highway bridge, 1.5 miles upstream from international boundary, and 7 miles northwest of Noonan.

DRAINAGE AREA.--1,790 sq mi, approximately, of which about 1,160 sq mi is probably noncontributing.

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

GAGE.--Water-stage recorder. Altitude of gage is 1,840 ft (from topographic map). Prior to Aug 18, 1960, non-recording gage at same site and datum.

AVERAGE DISCHARGE.--13 years, 38.8 cfs (28,110 acre-ft per year); median of yearly mean discharges, 28 cfs (20,300 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 1,850 cfs Mar. 17 (gage height, 11.92 ft, backwater from ice); no flow Jan. 22 to Mar. 11.
Period of record: Maximum discharge, 4,980 cfs Apr. 10, 1969 (gage height, 16.23 ft); no flow for many days each year.

REMARKS.--Records good. Records of chemical analyses for water year 1972 are published in Part 2 of this report.

COOPERATION.--This station is one of the international gaging stations maintained by the United States under agreement with Canada.

REVISIONS.--WSP 2113: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.71	2.3	1.1	.34		0	125	32	86	55	13	2.3
2	1.7	2.3	1.1	.28		0	129	32	65	44	16	1.8
3	3.4	2.3	1.2	.28		0	112	29	51	39	9.6	1.1
4	3.2	2.3	1.3	.28		0	84	27	41	34	7.5	1.1
5	1.7	2.4	1.4	.23		0	98	26	36	28	8.6	1.1
6	1.1	2.8	1.4	.23		0	95	25	31	25	13	1.2
7	.99	1.7	1.4	.23		0	84	23	26	22	10	1.3
8	1.3	1.2	1.4	.28		0	89	23	27	20	8.2	1.0
9	1.2	.99	1.4	.28		0	90	22	33	17	6.6	1.0
10	.92	1.1	1.4	.28		0	82	19	577	17	5.7	1.6
11	.78	1.1	1.3	.28		0	73	21	1,620	15	4.8	1.1
12	.71	1.1	1.2	.23		1.0	70	27	928	14	4.0	1.4
13	.71	1.2	.99	.18		10	70	27	528	13	3.7	1.1
14	.71	1.6	.85	.08		90	69	27	348	13	3.4	1.3
15	.64	1.6	.78	.04		750	64	25	249	11	3.0	1.3
16	.71	1.3	.64	.08		1,300	59	24	193	10	3.0	1.3
17	.92	1.4	.52	.13		1,500	63	22	162	8.9	3.0	1.3
18	1.3	1.4	.58	.18		1,750	61	21	125	8.6	2.7	1.3
19	4.4	1.7	.71	.08		1,100	63	24	95	13	2.3	1.4
20	3.2	1.4	.64	.04		900	62	26	78	12	2.5	1.0
21	3.2	1.3	.52	.04		1,270	58	23	64	15	3.7	1.1
22	8.1	1.6	.52	0		1,390	56	37	57	20	4.5	1.3
23	7.7	1.8	.52	0		1,140	55	73	52	17	4.0	.64
24	5.5	1.6	.52	0		865	50	40	58	13	6.9	1.3
25	4.8	1.3	.52	0		600	46	36	57	13	13	.88
26	4.0	1.2	.46	0		394	44	88	92	13	11	.64
27	4.0	1.2	.34	0		303	39	285	84	12	7.8	.88
28	3.0	1.2	.34	0		231	36	187	85	13	5.7	1.3
29	2.2	1.1	.34	0		176	32	145	103	11	4.5	1.4
30	2.0	1.1	.34	0	------	133	32	133	74	10	3.7	1.3
31	2.2	------	.34	0	------	126	------	103	------	8.2	2.7	------
TOTAL	77.00	46.59	26.07	4.07	0	14,029.0	2,090	1,652	6,025	564.7	198.1	36.74
MEAN	2.48	1.55	.84	.13	0	453	69.7	53.3	201	18.2	6.39	1.22
MAX	8.1	2.8	1.4	.34	0	1,750	129	285	1,620	55	16	2.3
MIN	.64	.99	.34	0	0	0	32	19	26	8.2	2.3	.64
AC-FT	153	92	52	8.1	0	27,830	4,150	3,280	11,950	1,120	393	73

CAL YR 1971 TOTAL 14,830.99 MEAN 40.6 MAX 776 MIN 0 AC-FT 29,420
WTR YR 1972 TOTAL 24,749.27 MEAN 67.6 MAX 1,750 MIN 0 AC-FT 49,090

PEAK DISCHARGE (BASE, 200 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
3-17	--	--	1,850	6-11	0730	11.70	1,790
3-27	0500	6.74	336				

05113750 East Branch Short Creek Reservoir near Columbus, N. Dak.

LOCATION.--Lat 48°59'26", long 102°47'07", in SW¼NW¼ sec.32, T.164 N., R.93 W., Burke County, on left bank of reservoir on East Branch Short Creek, 0.5 mile south of international boundary, and 6.0 miles north of Columbus.

DRAINAGE AREA.--280 sq mi of which 175 sq mi is noncontributing.

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

GAGE.--Water-stage recorder. Datum of gage is 1,860.00 ft above mean sea level.

EXTREMES.--Current year: Maximum contents, 1,587 acre-ft Mar. 18 (elevation, 30.21 ft); minimum, 1,118 acre-ft Feb. 7 (elevation, 26.25 ft).
Period of record: Maximum contents, 1,705 acre-ft Apr. 6, 1969 (elevation, 31.11 ft); minimum, 1,002 acre-ft Dec. 10-13, 1967.

REMARKS.--Reservoir is formed by earth-fill dam; storage began April 1963. Outlet of lake is a fixed-crest concrete dam; average crest elevation, 1,886.90 ft above mean sea level. Reservoir capacity at crest elevation, 1,200 acre-ft. The reservoir is operated for water supply and recreation.

MONTHEND GAGE HEIGHT AND CONTENTS AT 2400, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

Date	Gage height (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30	26.30	1,123	
Oct. 31	26.48	1,143	+20
Nov. 30	26.38	1,132	-11
Dec. 31	26.30	1,123	-9
CAL YR 1971	--	--	-52
Jan. 31	26.28	1,121	-2
Feb. 29	26.32	1,125	+4
Mar. 31	29.00	1,440	+315
Apr. 30	28.40	1,368	-72
May 31	28.20	1,344	-24
June 30	28.02	1,322	-22
July 31	27.65	1,278	-44
Aug. 31	28.52	1,382	+104
Sept. 30	28.00	1,320	-62
WTR YR 1972	--	--	+197

05113800 Short Creek below international boundary near Roche Percee, Saskatchewan
(International gaging station)

LOCATION.--Lat 49°01'42", long 102°51'00", in SW¼ sec.14, T.1, R.7 W., 2d meridian, 4 miles southwest of Roche Percee and 5 miles upstream from mouth.

DRAINAGE AREA.--480 sq mi.

PERIOD OF RECORD.--March 1960 to current year.

GAGE.--Water-stage recorder.

AVERAGE DISCHARGE.--12 years, 8.26 cfs (5,980 acre-ft per year); median of yearly mean discharges, 4.3 cfs (3,100 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 551 cfs Mar. 17; maximum daily gage height, 8.46 ft Mar. 17; no flow for many days.
Period of record: Maximum discharge, 1,700 cfs Apr. 7, 1969 (gage height, 14.33 ft); maximum gage height, 14.39 ft Mar. 28, 1960; no flow many days each year.

REMARKS.--Records good.

COOPERATION.--This station is one of the international gaging stations maintained by Canada under agreement with the United States.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.21	5.1	1.3			0	116	23	42	3.1	4.1	35
2	1.2	4.6	1.2			0	120	21	30	2.2	3.3	30
3	.55	4.2	1.1			0	89	20	22	1.9	2.7	25
4	.03	4.1	1.0			0	76	18	16	1.7	1.9	20
5	.24	4.0	.90			0	70	14	12	1.2	1.6	17
6	.34	3.9	.70			0	78	12	9.8	.93	1.4	15
7	.23	3.8	.60			0	75	12	8.3	.89	1.0	13
8	.20	3.7	.50			0	79	11	9.2	.71	1.8	12
9	.19	3.6	.48			0	79	9.8	9.7	.64	2.5	11
10	.15	3.5	.46			0	72	9.2	8.4	.62	3.1	9.8
11	.14	3.4	.43			0	65	10	7.5	.52	2.3	8.2
12	.12	3.3	.41			.10	60	11	6.7	.45	2.3	7.8
13	.09	3.2	.39			10	64	10	7.5	.37	2.5	7.0
14	7.8	3.1	.37			314	64	9.7	7.3	.27	2.9	6.4
15	6.1	3.0	.34			397	62	9.6	6.9	.36	2.8	5.3
16	4.9	2.9	.32			468	60	8.6	7.9	.24	16	4.8
17	4.2	2.8	.30			523	60	7.9	9.8	.96	40	3.9
18	4.7	2.7	.28			419	56	6.7	10	.68	28	3.6
19	6.1	2.6	.25			385	60	5.4	8.7	.57	26	3.1
20	6.5	2.5	.23			316	58	4.9	8.1	.24	29	3.0
21	8.3	2.3	.21			289	54	4.7	8.0	.44	50	2.6
22	17	2.2	.19			257	50	7.0	6.9	.34	153	2.2
23	15	2.1	.17			223	47	7.7	6.1	.33	124	1.9
24	12	2.0	.14			200	45	6.5	5.3	.34	116	2.1
25	9.5	1.9	.12			185	42	5.8	4.8	.23	111	2.6
26	8.7	1.8	.10			139	36	11	6.8	.13	101	3.7
27	8.1	1.7	.08			93	35	25	6.7	.10	96	2.4
28	7.4	1.6	.05			88	34	62	6.0	.02	78	3.0
29	6.3	1.5	.03			105	30	73	4.8	.05	62	2.5
30	6.0	1.4	.01		------	103	26	68	3.8	.07	51	1.5
31	5.8	------	.01		------	101	------	54	------	3.7	40	------
TOTAL	317.59	88.5	12.57	0	0	4,605.10	1,862	558.5	307.0	24.30	1,157.2	266.2
MEAN	10.2	2.95	.41	0	0	149	62.1	18.0	10.2	.78	37.3	8.87
MAX	34	5.1	1.3	0	0	523	120	73	42	3.7	153	35
MIN	.03	1.4	.01	0	0	0	26	4.7	3.8	.02	1.0	1.8
AC-FT	630	176	25	0	0	9,130	3,690	1,110	609	48	2,300	528

CAL YR 1971 TOTAL 1,720.69 MEAN 4.74 MAX 67 MIN 0 AC-FT 3,430
WTR YR 1972 TOTAL 9,198.96 MEAN 25.1 MAX 523 MIN 0 AC-FT 18,250

NOTE.--Differences between figures published herein and corresponding figures in reports of the Water Survey of Canada are due to variations in automated program techniques.

05114000 Souris (Mouse) River near Sherwood, N. Dak.
(International gaging station)

LOCATION.--Lat 48°59'24", long 101°57'28", in NW¼SE¼NE¼ sec.33, T.164 N., R.87 W., Renville County, on right bank 0.8 mile downstream from international boundary and 16 miles northwest of Sherwood and at mile 511.4.

DRAINAGE AREA.--8,940 sq mi, approximately, of which about 5,900 sq mi is probably noncontributing.

PERIOD OF RECORD.--March 1930 to current year. Monthly discharge only for some periods, published in WSP 1308.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1,603.73 ft above mean sea level. Prior to Apr. 8, 1935, nonrecording gage at same site and datum.

AVERAGE DISCHARGE.--42 years, 109 cfs (78,970 acre-ft per year); median of yearly mean discharges, 77 cfs (55,800 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 3,310 cfs Mar. 27 (gage height, 21.71 ft); minimum, 2.6 cfs Mar. 8 (gage height, 1.47 ft).
Period of record: Maximum discharge, 12,400 cfs Apr. 11, 1969 (gage height, 24.72 ft, backwater from ice); no flow at times in some years.
Flood in 1927 reached a stage of about 22 ft, from information by local residents.

REMARKS.--Records good. Some regulation at low flows by reservoirs in Canada. Some small diversions for irrigation and municipal supply. Records of chemical analyses for the water year 1972 are published in Part 2 of this report.

COOPERATION.--This station is one of the international gaging stations maintained by the United States under agreement with Canada.

REVISIONS (WATER YEARS).--WSP 1308: 1934, 1945. WSP 2113: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	411	24	24	7.1	3.5	3.1	1,700	218	388	140	52	135
2	372	22	22	7.1	3.5	3.0	1,530	205	366	138	50	126
3	349	19	20	6.9	3.4	3.1	1,460	195	369	134	43	119
4	267	18	18	6.3	3.2	3.0	1,310	189	372	133	40	109
5	174	15	16	5.8	3.2	3.0	1,060	177	357	132	40	99
6	108	16	15	5.7	3.1	3.1	799	177	309	120	45	98
7	73	16	13	5.7	3.0	3.0	740	168	260	110	42	96
8	58	15	8.8	6.0	2.9	2.9	743	156	226	95	36	94
9	45	15	10	6.2	2.9	2.9	748	153	195	101	32	89
10	36	15	11	6.4	2.9	2.9	856	153	159	90	28	87
11	37	16	8.8	6.9	2.9	3.5	1,120	146	143	85	26	76
12	41	15	8.5	7.1	3.0	3.7	1,170	145	231	81	25	75
13	36	15	8.3	6.4	3.1	6.5	967	145	453	77	22	75
14	34	15	8.3	5.7	3.0	25	777	143	493	70	22	70
15	31	15	8.1	5.2	2.9	250	678	144	624	62	20	71
16	30	63	6.9	5.1	2.9	500	654	137	834	55	19	73
17	28	74	6.9	5.1	3.0	1,000	662	129	904	53	19	74
18	28	69	7.1	5.1	3.0	1,400	640	123	664	59	18	65
19	27	68	7.1	5.0	3.0	1,850	595	117	447	69	18	52
20	27	68	7.6	5.0	3.0	2,000	524	111	368	63	18	38
21	27	69	7.4	4.8	2.9	2,150	465	110	275	62	27	30
22	26	55	7.3	4.8	2.9	2,250	429	121	213	58	105	27
23	25	77	7.3	4.7	2.9	2,340	401	143	182	61	81	24
24	24	77	7.3	4.7	2.9	2,610	352	146	175	58	65	22
25	22	69	7.1	4.4	2.9	2,840	309	221	169	61	57	18
26	20	57	6.9	4.2	2.9	3,040	288	200	174	63	101	16
27	18	44	6.9	3.9	3.0	3,210	267	213	182	68	150	16
28	17	35	6.9	3.8	3.0	3,040	258	198	171	64	164	14
29	20	31	6.9	3.6	3.1	2,680	249	181	151	62	157	12
30	27	28	6.9	3.6	------	2,360	232	218	144	63	151	12
31	23	------	6.9	3.5	------	1,990	------	353	------	56	147	------
TOTAL	2,461	1,135	313.2	165.8	87.9	35,578.7	21,983	5,235	9,998	2,543	1,820	1,912
MEAN	79.4	37.8	10.1	5.35	3.03	1,148	733	169	333	82.0	58.7	63.7
MAX	411	77	24	7.1	3.5	3,210	1,700	353	904	140	164	135
MIN	17	15	6.9	3.5	2.9	2.9	232	110	143	53	18	12
AC-FT	4,880	2,250	621	329	174	70,570	43,600	10,380	19,830	5,040	3,610	3,790

CAL YR 1971 TOTAL 51,377.7 MEAN 141 MAX 1,480 MIN 5.4 AC-FT 101,900
WTR YR 1972 TOTAL 83,232.6 MEAN 227 MAX 3,210 MIN 2.9 AC-FT 165,100

05115500 Lake Darling near Foxholm, N. Dak.

LOCATION.--Lat 48°27'27", long 101°35'14", in NE¼NE¼ sec.1, T.157 N., R.85 W., Ward County, on control structure of Lake Darling Dam, reservoir of Fish and Wildlife Service, on Souris River about 6 miles north of Foxholm, and at mile 430.0.

DRAINAGE AREA.--9,450 sq mi, approximately, of which about 6,200 sq mi is probably noncontributing.

PERIOD OF RECORD.--April 1936 to current year (no winter records 1936-39).

GAGE.--Water-stage recorder. Datum of gage is 1,577.00 ft above mean sea level. April 1936 to Aug. 8, 1963, nonrecording gages at same site and datum.

EXTREMES.--Current year: Maximum contents, 113,700 acre-ft Apr. 4 (gage height, 21.17 ft); minimum, 72,700 acre-ft Mar. 12 (gage height, 16.67 ft).
Period of record: Maximum contents observed, 130,000 acre-ft Apr. 23, 24, 1943 (gage height, 22.83 ft); minimum observed since April 1943 when reservoir was first filled to spillway level, 31,200 acre-ft Feb. 18, 25, 1963 (gage height, 10.04 ft).

REMARKS.--Reservoir is formed by earth dam; storage began in April 1936; dam completed in July 1936. Usable capacity, 108,500 acre-ft between gage heights 0.0 ft (sill of control gates) and 21.0 ft (crest of spillway). Dead storage, 3,500 acre-ft. Water is used during periods of low flow at wildlife refuge downstream.

COOPERATION.--Supplementary gage readings furnished by Fish and Wildlife Service.

REVISIONS (WATER YEARS).--WSP 1338: 1942. WSP 2113: Drainage area.

MONTHEND GAGE HEIGHT AND CONTENTS AT 2400, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

Date	Gage height (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30	17.94	83,500	
Oct. 31	18.21	85,900	+2,400
Nov. 30	17.99	83,900	-2,000
Dec. 31	17.60	80,600	-3,300
CAL YR 1971	--	--	-7,700
Jan. 31	17.25	77,600	-3,000
Feb. 29	16.80	73,800	-3,800
Mar. 31	20.79	109,900	+36,100
Apr. 30	19.52	97,700	-12,200
May 31	19.88	100,900	+3,200
June 30	19.40	96,600	-4,300
July 31	19.06	93,500	-3,100
Aug. 31	19.20	94,800	+1,300
Sept. 30	19.12	94,100	-700
WTR YR 1972	--	--	+10,600

05116000 Souris (Mouse) River near Foxholm, N. Dak.

LOCATION.--Lat 48°22'20", long 101°30'18", in SW¼SE¼ sec.34, T.157 N., R.84 W., Ward County, on left bank 30 ft upstream from county highway bridge, 3 miles east of Foxholm, 19 miles upstream from Des Lacs River, and at mile 414.5.

DRAINAGE AREA.--9,470 sq mi, approximately, of which about 6,200 sq mi is probably noncontributing.

PERIOD OF RECORD.--June 1904 to November 1905, March to July 1906 (gage heights only), October 1936 to current year. Monthly discharge only for some periods, published in WSP 1308. Published as Mouse River near Foxholm, 1904-6.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1,560.73 ft above mean sea level. June 23, 1904, to July 31, 1906, nonrecording gage at site 3.2 miles upstream at different datum. Apr. 1, 1937, to Mar. 25, 1938, nonrecording gage at site 600 ft downstream at datum about half a foot higher.

AVERAGE DISCHARGE (UNADJUSTED).--37 years, 109 cfs (78,970 acre-ft per year); median of yearly mean discharges, 60 cfs (43,500 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 1,800 cfs Apr. 4 (gage height, 13.39 ft); minimum, 36 cfs Aug. 30-31 (gage height, 5.32 ft).
Period of record: Maximum discharge, 5,380 cfs Apr. 17, 18, 1969 (gage height, 15.84 ft); maximum reverse flow, 25 cfs Apr. 4, 1949 caused by backwater from Des Lacs River; no flow at times in many years.

REMARKS.--Records good. Flow completely regulated since 1936 by Lake Darling (see station 05115500) 15 miles upstream and several smaller reservoirs (combined capacity, about 184,000 acre-ft). Some small diversions for irrigation and municipal supply. Records of chemical analyses for the 1972 water year are published in Part 2 of this report.

REVISIONS.--WSP 1308: 1905. WSP 2113: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	40	64	63	70	72	70	1,730	159	421	207	48	41
2	40	55	74	70	72	74	1,760	147	427	207	48	41
3	40	55	76	70	74	72	1,770	141	426	207	48	40
4	40	59	76	72	74	70	1,790	129	424	207	44	41
5	40	59	76	72	74	70	1,770	120	421	207	39	41
6	40	59	76	72	72	72	1,770	120	418	209	39	40
7	40	57	74	70	72	72	1,770	120	414	209	39	41
8	41	59	72	72	70	74	1,780	120	411	212	38	44
9	41	59	72	72	74	70	1,770	120	410	212	37	42
10	41	59	72	72	74	70	1,760	120	406	114	38	44
11	41	61	72	74	74	72	1,750	123	405	51	38	44
12	41	61	72	74	74	74	1,760	126	406	51	39	44
13	41	61	72	74	74	101	1,740	126	416	51	39	45
14	41	61	72	72	72	100	1,740	126	422	51	39	45
15	41	63	70	72	70	100	1,720	126	419	51	39	45
16	41	63	72	72	70	100	1,620	126	434	49	39	45
17	41	63	70	72	70	100	1,530	129	538	49	39	44
18	42	63	70	72	70	100	1,380	126	554	49	39	41
19	42	63	70	72	70	100	1,260	135	557	48	38	42
20	42	63	70	72	70	200	1,190	135	554	48	38	44
21	42	63	70	72	70	550	1,010	135	550	48	38	45
22	42	63	70	72	72	1,120	739	144	544	48	38	44
23	42	63	70	72	70	1,190	638	144	538	48	38	41
24	42	63	70	70	70	1,260	574	144	534	47	38	40
25	42	63	72	74	70	1,400	533	144	528	48	38	40
26	42	63	72	74	68	1,520	523	153	438	48	38	41
27	54	63	72	70	70	1,640	518	153	222	48	39	42
28	72	63	70	72	70	1,690	373	153	215	48	39	47
29	72	63	70	72	70	1,700	162	150	204	48	39	47
30	74	63	68	72	------	1,700	162	147	204	48	39	47
31	74	------	70	72	------	1,710	------	263	------	48	39	------
TOTAL	1,414	1,837	2,215	2,230	2,072	17,241	38,592	4,304	12,860	3,016	1,228	1,288
MEAN	45.6	61.2	71.5	71.9	71.4	556	1,286	139	429	97.3	39.6	42.9
MAX	74	64	76	74	74	1,710	1,790	263	557	212	48	47
MIN	40	55	63	70	68	70	162	120	204	47	37	40
AC-FT	2,800	3,640	4,390	4,420	4,110	34,200	76,550	8,540	25,510	5,980	2,440	2,550

CAL YR 1971 TOTAL 55,119.70 MEAN 151 MAX 1,070 MIN .30 AC-FT 109,300
WTR YR 1972 TOTAL 88,297.00 MEAN 241 MAX 1,790 MIN 37 AC-FT 175,100

05116500 Des Lacs River at Foxholm, N. Dak.

LOCATION.--Lat 48°22'14", long 101°34'11", in NW¼NE¼NW¼ sec.2, T.156 N., R.85 W., Ward County, on left bank 200 ft upstream from county highway bridge in Foxholm and at mile 23.0.

DRAINAGE AREA.--939 sq mi, of which about 400 sq mi is probably noncontributing.

PERIOD OF RECORD.--June 1904 to July 1906, October 1945 to current year. Monthly discharge only for some periods, published in WSP 1308.

GAGE.--Water-stage recorder. Datum of gage is 1,632.98 ft above mean sea level. June 14 to Oct. 23, 1955, non-recording gage at site 200 ft downstream from present gage at same datum. See WSP 1728 to 1913 for history of changes prior to June 14, 1955.

AVERAGE DISCHARGE.--29 years, 24.8 cfs (18,000 acre-ft per year); median of yearly mean discharges, 16 cfs (11,600 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 1,030 cfs Mar. 16 (gage height, 15.02 ft, backwater from ice); no flow Jan. 29 to Mar. 5.
Period of record: Maximum discharge, 3,660 cfs Apr. 30, 1970 (gage height, 20.71 ft from floodmark); no flow at times in some years.

REMARKS.--Records good. Some regulation at low flow by a series of wildfowl refuge ponds, beginning about 53 miles upstream, combined capacity about 64,000 acre-feet. Some small diversions for irrigation above station. Records of chemical analyses for water year 1972 are published in Part 2 of this report.

REVISIONS.--WSP 1728: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.8	8.6	4.2	1.3		0	141	137	175	32	25	76
2	12	8.0	2.2	1.3		0	160	145	172	27	60	67
3	36	7.5	10	1.2		0	176	150	169	24	112	66
4	59	7.0	6.0	1.2		0	164	150	165	22	70	76
5	34	7.0	5.6	1.1		0	184	149	161	20	41	88
6	17	6.4	5.2	1.1		.10	233	146	157	20	64	98
7	11	6.0	4.8	1.1		.20	316	143	152	20	80	106
8	9.6	6.4	4.6	1.0		.30	332	138	149	20	56	111
9	8.4	6.8	4.6	1.0		.40	511	133	146	20	39	115
10	7.2	6.8	4.4	1.0		.60	562	128	144	20	52	116
11	8.2	6.8	5.0	1.0		8.0	408	125	139	20	82	116
12	8.2	6.9	4.6	.80		80	335	126	134	20	60	116
13	7.2	6.9	3.4	.80		300	382	123	183	20	39	117
14	6.6	6.9	2.6	.80		600	340	112	286	19	49	115
15	6.4	6.9	2.2	.80		900	278	96	185	19	116	113
16	6.4	6.8	2.2	.60		1,000	236	82	134	25	184	111
17	6.9	6.8	2.4	.60		873	194	71	106	22	97	108
18	10	6.6	2.4	.60		578	173	63	106	20	61	92
19	10	6.6	2.4	.80		435	161	56	144	21	54	72
20	31	6.6	2.4	.70		418	156	52	143	29	50	74
21	27	6.0	2.4	.60		332	146	50	89	32	116	96
22	15	6.2	2.4	.50		258	137	198	69	27	289	77
23	11	6.2	2.2	.40		175	130	896	61	26	409	96
24	9.8	6.2	2.2	.30		140	124	638	58	24	260	112
25	9.0	6.0	2.0	.20		115	118	200	55	26	173	107
26	7.8	6.0	1.9	.10		98	114	155	78	40	157	104
27	7.4	6.0	1.8	.05		76	112	258	102	73	138	99
28	7.2	5.6	1.6	.01		74	114	236	93	45	121	94
29	7.4	4.4	1.4	0		114	116	193	68	33	107	88
30	7.2	5.8	1.3	0	------	115	125	187	48	29	96	82
31	7.5	------	1.3	0	------	128	------	181	------	26	84	------
TOTAL	418.2	196.7	101.7	20.96	0	6,818.60	6,678	5,517	3,871	821	3,341	2,908
MEAN	13.5	6.56	3.28	.68	0	220	223	178	129	26.5	108	96.9
MAX	59	8.6	10	1.3	0	1,000	562	896	286	73	409	117
MIN	6.4	4.4	1.3	0	0	0	112	50	48	19	25	66
AC-FT	830	390	202	42	0	13,520	13,250	10,940	7,680	1,630	6,630	5,770

CAL YR 1971 TOTAL 4,161.95 MEAN 11.4 MAX 150 MIN .75 AC-FT 8,260
WTR YR 1972 TOTAL 30,692.16 MEAN 83.9 MAX 1,000 MIN 0 AC-FT 60,880

05117500 Souris (Mouse) River above Minot, N. Dak.

LOCATION.--Lat 48°14'45", long 101°22'15", in NW¼NW¼SE¼ sec.17, T.155 N., R.83 W., Ward County, on right bank 180 ft downstream from county highway bridge 3.5 miles west of Minot, 7 miles downstream from Des Lacs River, and at mile 388.5.

DRAINAGE AREA.--10,600 sq mi, approximately, of which about 6,700 sq mi is probably noncontributing.

PERIOD OF RECORD.--May 1903 to current year. Monthly discharge only for some periods, published in WSP 1308. Published as Mouse River at Minot 1903-24, Souris River at Minot, 1927-28, 1929-34, and Souris River near Minot 1928-29.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1,545.75 ft above mean sea level. May 5, 1903, to Sept. 30, 1928, Oct. 1, 1929, to Sept. 30, 1934, nonrecording gages at mile 377.6 in Minot, at datum 12.5 ft lower, Oct. 1, 1928, to Sept. 30, 1929, nonrecording gages at Saugstad bridge at mile 366.8, 5 miles southeast of Minot and at datum 19.2 ft lower than present datum. Records equivalent except those for periods of extreme low flow, as some industrial and sanitary waste enters river between the sites.

AVERAGE DISCHARGE (UNADJUSTED).--69 years, 145 cfs (105,100 acre-ft per year); median of yearly mean discharges, 90 cfs (65,200 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 2,380 cfs Apr. 11 (gage height, 14.43 ft); minimum, 35 cfs Nov. 5 (gage height, 4.48 ft).
Period of record: Maximum discharge, 12,000 cfs Apr. 20, 1904 (gage height, 21.9 ft at site in Minot), from rating curve extended above 8,100 cfs; no flow at times in some years.
Maximum stage at present site, about 23 ft in April 1904. Maximum stage in Minot at least 3 ft higher than 1904 peak, in 1881, according to Apr. 20, 1904 issue of Minot Daily Optic. This peak probably occurred in 1882.

REMARKS.--Records fair. Flow almost completely regulated by Lake Darling (see station 05115500), 41 miles upstream and several smaller reservoirs (combined capacity, about 248,000 acre-ft). Some small diversions for irrigation and municipal supply. Records of chemical analyses for 1972 water year are published in Part 2 of this report.

REVISIONS (WATER YEARS).--WSP 1308: 1905, 1909-14, 1918, 1924-25, 1927. WSP 1338: 1903-4, 1906, 1917, 1928, 1929(M), WSP 2113: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	40	98	66	70	70	75	1,740	410	498	257	85	114
2	53	83	66	70	70	75	1,750	333	598	235	87	110
3	60	71	73	70	70	75	1,780	307	614	238	103	100
4	73	64	75	70	70	75	1,790	300	608	225	131	96
5	107	53	77	70	70	75	1,880	300	596	222	128	103
6	89	50	79	70	70	75	1,920	274	584	219	121	119
7	71	71	79	70	70	80	1,990	264	572	222	114	128
8	58	77	78	70	70	75	2,080	264	564	219	100	133
9	51	75	78	70	70	70	2,250	257	562	219	98	141
10	50	73	78	70	70	70	2,340	251	554	219	94	143
11	50	71	78	70	70	150	2,370	254	554	131	81	143
12	48	71	78	70	70	300	2,290	257	554	66	85	148
13	50	71	76	70	70	600	2,270	251	825	66	114	156
14	50	71	76	70	70	800	2,230	228	1,080	66	94	151
15	48	71	76	70	70	1,000	2,140	225	910	66	96	146
16	48	71	74	70	70	1,150	2,040	217	701	67	151	143
17	48	71	74	70	75	1,200	1,900	192	618	69	219	141
18	53	71	74	70	75	1,400	1,770	181	628	73	141	141
19	75	64	72	75	75	1,230	1,640	178	723	77	100	126
20	62	77	72	75	75	950	1,510	178	723	75	92	107
21	67	66	72	75	75	850	1,410	167	708	75	89	103
22	77	69	72	75	75	900	1,210	364	640	85	148	124
23	64	69	72	75	75	1,100	998	487	600	81	320	116
24	58	66	72	75	75	1,200	897	938	588	73	456	133
25	57	66	72	75	75	1,300	833	917	580	75	323	148
26	55	67	72	75	75	1,400	788	560	582	81	213	148
27	51	67	72	75	75	1,500	789	441	516	79	189	143
28	55	62	72	75	75	1,630	778	544	373	170	172	141
29	75	62	72	70	75	1,670	660	505	326	103	154	133
30	79	66	72	70	------	1,710	520	382	280	57	141	131
31	62	------	70	70	------	1,730	------	313	------	55	126	------
TOTAL	1,884	2,084	2,289	2,220	2,095	24,515	48,563	10,739	18,259	3,965	4,565	3,909
MEAN	60.8	69.5	73.8	71.6	72.2	791	1,619	346	609	128	147	130
MAX	107	98	79	75	75	1,730	2,370	938	1,080	257	456	156
MIN	40	50	66	70	70	70	520	167	280	55	81	96
AC-FT	3,740	4,130	4,540	4,400	4,160	48,630	96,320	21,300	36,220	7,860	9,050	7,750

CAL YR 1971 TOTAL 63,910 MEAN 175 MAX 1,090 MIN 40 AC-FT 126,800
WTR YR 1972 TOTAL 125,087 MEAN 342 MAX 2,370 MIN 40 AC-FT 248,100

05120000 Souris (Mouse) River near Verendrye, N. Dak.

LOCATION.--Lat 48°09'35", long 100°43'45", in NW¼SE¼ sec.17, T.154 N., R.78 W., McHenry County, on left bank 2.7 miles north of Verendrye, 7.5 miles southwest of (19 miles upstream from) mouth of Wintering River, and at mile 302.0.

DRAINAGE AREA.--11,300 sq mi, approximately, of which about 6,900 sq mi is probably noncontributing.

PERIOD OF RECORD.--February to June 1933 (gage heights only), April 1937 to current year. Monthly discharge only for some periods, published in WSP 1308.

GAGE.--Water-stage recorder. Datum of gage is 1,464.87 ft above mean sea level. February to June 1933, at site 4 miles upstream at datum 1.65 ft higher. Apr. 1, 1937, to Mar. 3, 1938, nonrecording gage at present site, at datum 1.97 ft higher.

AVERAGE DISCHARGE.--35 years, 170 cfs (123,200 acre-ft per year); median of yearly mean discharges, 110 cfs (79,700 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 2,460 cfs Apr. 16 (gage height, 14.7 ft, from plotted graph); maximum gage height, 15.2 ft Mar. 20 (from floodmark, backwater from ice); minimum discharge, 40 cfs Oct. 31, Nov. 1 (gage height, 3.80 ft).
Period of record: Maximum discharge, 5,960 cfs Apr. 30, 1969 (gage height,17.05 ft); minimum recorded, 0.3 cfs Aug. 11-19, 1937, Oct. 10-21, 1939.

REMARKS.--Records fair. Flow regulated by reservoirs on Souris and Des Lacs Rivers, the largest of which is Lake Darling, 128 miles upstream (see station 05115500), (combined capacity about 248,000 acre-ft). Some small diversions for irrigation and municipal supply. Records of chemical analyses for the water year 1972 are published in Part 2 of this report.

REVISIONS.--WSP 2113: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	49	48	73	65	70	85	1,650	692	405	442	131	150
2	56	71	76	65	70	85	1,700	554	405	371	105	144
3	71	98	76	65	70	85	1,700	439	373	340	103	138
4	103	78	76	65	70	85	1,750	395	452	308	120	120
5	156	80	78	65	70	85	1,800	379	533	281	110	118
6	133	90	80	65	70	85	1,850	363	540	272	131	113
7	108	84	82	65	70	85	1,900	342	550	267	147	103
8	108	84	84	65	70	85	2,000	332	560	262	141	110
9	113	133	89	65	70	85	2,100	321	566	258	125	173
10	103	125	90	65	70	90	2,200	304	560	255	133	188
11	84	108	85	65	70	150	2,250	302	550	253	147	118
12	73	113	85	65	70	200	2,300	313	563	245	147	123
13	56	120	85	65	70	350	2,350	321	605	225	144	164
14	55	108	80	65	70	600	2,350	319	588	175	144	173
15	55	98	80	65	70	800	2,400	310	609	91	128	180
16	55	98	80	65	70	1,100	2,450	295	755	56	147	173
17	56	96	75	65	70	1,400	2,380	280	852	101	113	164
18	67	89	75	70	75	1,600	2,360	265	836	125	103	161
19	76	87	75	70	80	1,700	2,300	260	780	82	138	158
20	84	87	75	70	85	1,900	2,210	270	750	80	193	153
21	133	91	70	70	85	2,100	2,090	290	740	103	147	136
22	138	80	70	70	85	1,900	1,970	300	725	113	120	138
23	113	82	70	70	85	1,800	1,830	305	715	105	101	128
24	91	93	70	70	85	1,700	1,700	320	700	98	161	110
25	89	87	70	70	85	1,500	1,510	520	690	108	141	108
26	118	82	70	70	85	1,400	1,220	800	680	105	255	141
27	84	84	70	70	85	1,300	960	835	665	87	325	141
28	56	82	70	70	85	1,400	851	810	653	110	293	150
29	56	78	65	70	85	1,500	776	700	632	96	219	170
30	60	71	65	70	------	1,600	748	540	551	110	196	158
31	48	------	65	70	------	1,600	------	460	------	164	180	------
TOTAL	2,647	2,725	2,354	2,085	2,195	28,455	55,655	12,936	18,583	5,688	4,788	4,304
MEAN	85.4	90.8	75.9	67.3	75.7	918	1,855	417	619	183	154	143
MAX	156	133	90	70	85	2,100	2,450	835	852	442	325	188
MIN	48	48	65	65	70	85	748	260	373	56	101	103
AC-FT	5,250	5,410	4,670	4,140	4,350	56,440	110,400	25,660	36,860	11,280	9,500	8,540

CAL YR 1971 TOTAL 80,533 MEAN 221 MAX 1,550 MIN 43 AC-FT 159,700
WTR YR 1972 TOTAL 142,415 MEAN 389 MAX 2,450 MIN 48 AC-FT 282,500

05120200 Wintering River near Bergen, N. Dak.

LOCATION.--Lat 47°55'50", long 100°40'15", on west line of sec.4, T.151 N., R.78 W., McHenry County, on left downstream wingwall of bridge, 6 miles southeast of Bergen.

DRAINAGE AREA.--176 sq mi, of which about 50 sq mi is probably noncontributing.

PERIOD OF RECORD.--October 1956 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,587.91 ft.

AVERAGE DISCHARGE.--16 years, 5.44 cfs (3,940 acre-ft per year); median of yearly mean discharges, 4.5 cfs (3,300 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 232 cfs Mar. 16 (gage height, 4.15 ft); no flow for several months. Period of record: Maximum discharge, 900 cfs Apr. 10, 1969 (gage height, 5.90 ft); no flow during several months each year.

REMARKS.--Records poor. Some regulation by Fish and Wildlife Service dams on Cottonwood and Wintering Lakes (controlled capacity, about 850 acre-ft). Records of chemical analyses for the water year 1972 are published in Part 2 of this report.

REVISIONS.--WSP 1728: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	.09	.06			0	48	4.9	10			
2	0	.09	.04			0	37	4.1	8.3			
3	0	.08	.04			0	23	3.1	5.3			
4	0	.08	.04			0	26	2.9	3.1			
5	0	.08	.04			0	22	2.5	1.5			
6	0	.08	.04			0	20	1.9	.68			
7	0	.08	.04			0	16	1.9	.12			
8	0	.08	.04			0	16	1.7	.03			
9	0	.10	.04			0	29	1.4	.01			
10	0	.14	.02			0	43	1.4	0			
11	0	.12	.02			0	36	1.8	0			
12	0	.12	.02			10	25	2.4	0			
13	0	.11	.01			100	26	2.0	.05			
14	0	.11	.01			160	24	2.0	.02			
15	0	.10	.01			130	20	1.9	0			
16	0	.10	.01			166	17	1.8	0			
17	0	.09	.01			202	17	1.7	0			
18	.25	.08	0			210	16	1.6	.50			
19	.40	.08	0			202	15	1.2	1.0			
20	.30	.07	0			181	13	1.1	.60			
21	.26	.06	0			143	12	1.1	.40			
22	.24	.06	0			121	10	1.3	.20			
23	.22	.06	0			110	9.0	1.3	.10			
24	.20	.06	0			94	9.2	1.1	.10			
25	.18	.06	0			81	8.1	1.0	.20			
26	.16	.06	0			58	6.8	1.4	.10			
27	.14	.06	0			40	8.3	1.7	.05			
28	.12	.06	0			48	8.3	2.3	.02			
29	.10	.06	0			47	7.0	3.0	0			
30	.10	.06	0		------	44	5.8	5.2	0			
31	.09	------	0		------	48	------	10	------			------
TOTAL	2.76	2.48	.49	0	0	2,195	573.5	72.7	32.38	0	0	0
MEAN	.089	.083	.016	0	0	70.8	19.1	2.35	1.08	0	0	0
MAX	.40	.14	.06	0	0	210	48	10	10	0	0	0
MIN	0	.06	0	0	0	0	5.8	1.0	0	0	0	0
AC-FT	5.5	4.9	1.0	0	0	4,350	1,140	144	64	0	0	0

CAL YR 1971 TOTAL 1,465.26 MEAN 4.01 MAX 176 MIN 0 AC-FT 2,910
WTR YR 1972 TOTAL 2,879.31 MEAN 7.87 MAX 210 MIN 0 AC-FT 5,710

05120500 Wintering River near Karlsruhe, N. Dak.

LOCATION.--Lat 48°10'14", long 100°32'20", on line between secs.10 and 11, T.154 N., R.77 W., McHenry County, on left bank 30 ft upstream from county highway bridge, 4 miles upstream from mouth, and 7 miles northeast of Karlsruhe.

DRAINAGE AREA.--705 sq mi, of which about 420 sq mi is noncontributing.

PERIOD OF RECORD.--March 1937 to current year. Monthly discharge only for some periods, published in WSP 1308.

GAGE.--Water-stage recorder. Altitude of gage is 1,480 ft, from river-profile map.

AVERAGE DISCHARGE.--35 years, 12.1 cfs (8,770 acre-ft per year); median of yearly mean discharges, 11 cfs (8,000 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 200 cfs Mar. 24 (gage height, 7.37 ft, backwater from ice); maximum gage height, 7.74 ft Mar. 15, backwater from ice; no flow Feb. 1 to Mar. 13.
Period of record: Maximum discharge, 3,000 cfs Apr. 7, 1949, by velocity-area studies; maximum gage height, 12.0 ft Apr. 7, 1949 (channel choked by packed snow); no flow at times in many years.

REMARKS.--Records good except those for the winter period, which are poor. Some regulation by Fish and Wildlife Service dams on Cottonwood and Wintering Lakes (controlled capacity, about 850 acre-feet). Records of chemical analyses for water year 1972 are published in Part 2 of this report.

REVISIONS.--WSP 1728: Drainage area.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.6	8.1	4.8	1.2		0	80	26	15	9.2	2.2	1.8
2	8.1	7.7	4.8	1.3		0	75	24	14	8.4	3.0	1.8
3	9.6	5.4	4.8	1.3		0	70	23	13	8.1	3.0	1.8
4	7.7	5.0	4.6	1.2		0	70	22	12	7.4	2.4	1.8
5	6.3	5.0	4.3	1.2		0	75	22	12	6.3	2.4	1.8
6	5.4	4.8	4.3	1.2		0	80	22	10	5.7	4.8	2.1
7	5.1	4.6	3.8	1.2		0	91	21	9.2	5.4	5.1	2.8
8	4.6	4.8	3.8	1.2		0	88	20	8.8	4.8	5.4	3.3
9	4.3	5.7	3.0	1.2		0	74	20	8.4	4.6	4.8	3.6
10	4.0	6.7	2.8	1.2		0	68	20	8.1	4.3	7.4	2.6
11	4.0	7.0	6.0	1.0		0	60	20	7.7	3.6	7.4	2.4
12	7.1	7.0	3.3	1.0		0	55	22	7.4	3.6	5.7	5.9
13	5.4	7.0	1.6	1.0		0	54	21	8.4	3.3	5.7	13
14	4.6	7.0	1.3	1.0		2.0	48	20	7.7	3.0	6.0	8.8
15	3.8	7.4	1.2	1.0		20	43	20	7.4	2.6	4.8	5.7
16	4.3	7.0	1.2	1.0		60	38	19	7.0	2.8	4.3	4.6
17	5.4	7.0	1.0	1.2		60	34	18	6.7	3.0	3.8	5.7
18	13	6.0	1.0	1.2		60	32	18	7.7	3.6	3.6	4.8
19	17	6.3	.85	1.0		55	31	17	10	4.8	3.3	4.0
20	13	7.0	1.0	1.0		50	29	17	9.6	5.7	2.8	3.6
21	9.6	4.8	1.0	.80		60	29	17	8.4	5.1	3.6	3.8
22	9.2	6.3	1.2	.80		90	29	20	7.4	4.8	3.8	3.0
23	9.2	6.3	1.3	.60		170	29	19	7.4	4.6	3.8	3.6
24	8.1	6.0	1.2	.60		190	30	17	7.4	4.0	3.3	5.4
25	8.4	5.4	1.2	.40		160	29	16	7.7	4.0	3.0	6.0
26	8.1	5.4	1.2	.40		140	29	17	8.1	4.3	2.8	7.0
27	7.7	5.4	1.2	.20		120	29	18	9.2	4.6	2.4	8.4
28	7.4	4.8	1.2	.20		80	28	18	14	3.8	2.2	8.4
29	6.3	5.4	1.2	.10		90	27	18	10	3.6	2.1	7.0
30	6.7	5.7	1.2	.10	------	100	26	16	8.4	2.4	1.8	5.7
31	5.1	------	1.2	.05	------	110	------	15	------	2.1	1.6	------
TOTAL	222.1	182.0	72.55	26.85	0	1,617.0	1,480	603	278.1	143.5	118.3	140.2
MEAN	7.16	6.07	2.34	.87	0	52.2	49.3	19.5	9.27	4.63	3.82	4.67
MAX	17	8.1	6.0	1.3	0	190	91	26	15	9.2	7.4	13
MIN	3.6	4.6	.85	.05	0	0	26	15	6.7	2.1	1.6	1.8
AC-FT	441	361	144	53	0	3,210	2,940	1,200	552	285	235	278

CAL YR 1971 TOTAL 5,989.80 MEAN 16.4 MAX 482 MIN 0 AC-FT 11,880
WTR YR 1972 TOTAL 4,883.60 MEAN 13.3 MAX 190 MIN 0 AC-FT 9,690

05122000 Souris (Mouse) River near Bantry, N. Dak.

LOCATION.--Lat 48°30'20", long 100°26'04", in SE¼NW¼SE¼ sec.14, T.158 N., R.76 W., McHenry County, on left bank 200 ft upstream from Nelson bridge, 8 miles east of Bantry, 18 miles upstream from Willow Creek, and at mile 228.0.

DRAINAGE AREA.--12,300 sq mi, approximately, of which about 7,600 sq mi is probably noncontributing.

PERIOD OF RECORD.--March 1937 to current year. Monthly discharge only for some periods, published in WSP 1308.

GAGE.--Water-stage recorder. Datum of gage is 1,427.56 ft above mean sea level. Prior to Mar. 16, 1938, non-recording gage at same site at datum 0.17 ft lower.

AVERAGE DISCHARGE.--35 years, 187 cfs (135,500 acre-ft per year); median of yearly mean discharges, 130 cfs 94,200 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 2,320 cfs Apr. 24 (gage height, 12.53 ft); minimum, 50 cfs Feb. 1-13. Period of record: Maximum discharge, 5,660 cfs May 4, 1969 (gage height, 13.80 ft); no flow at times each year 1937-40, 1963.

REMARKS.--Records good. Flow regulated by reservoirs on Souris, Des Lacs, and Wintering Rivers (total capacity, about 249,000 acre-ft). Diversions for irrigation of about 7,600 acres at Eaton Dam about 42 miles above station and other small diversions for irrigation and municipal supply. Records of chemical analyses for water year 1972 are published in Part 2 of this report.

REVISIONS.--WSP 2113: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	62	116	80	70	50	60	1,630	1,740	724	683	115	258
2	65	99	80	65	50	60	1,790	1,640	682	657	121	233
3	70	92	80	65	50	60	1,780	1,560	637	609	134	210
4	65	90	80	65	50	60	1,840	1,450	603	546	139	186
5	64	90	80	65	50	60	2,200	1,350	551	483	131	166
6	65	80	80	65	50	65	2,170	1,220	531	431	124	156
7	69	80	75	65	50	70	2,090	1,100	542	390	128	145
8	85	95	75	65	50	70	2,080	1,030	570	358	131	135
9	99	95	75	65	50	70	2,080	950	584	337	134	128
10	105	100	75	65	50	70	2,020	879	596	321	145	120
11	104	100	70	65	50	70	2,000	824	604	306	150	116
12	102	105	70	65	50	70	2,000	792	610	293	150	132
13	101	110	70	65	50	70	2,000	757	616	284	153	158
14	100	120	70	60	55	70	2,020	718	614	281	158	163
15	96	125	75	60	55	75	2,040	679	616	273	161	160
16	90	125	75	60	55	90	2,060	648	617	260	159	167
17	84	130	70	60	55	150	2,030	621	621	229	155	177
18	92	115	70	60	55	350	2,080	592	643	183	151	183
19	106	125	70	60	55	550	2,140	565	690	146	144	182
20	108	120	70	60	55	650	2,210	542	739	131	136	180
21	112	85	75	60	55	700	2,270	522	770	133	125	177
22	117	95	80	60	55	800	2,270	553	775	130	128	168
23	119	110	80	55	60	900	2,290	573	764	123	150	160
24	125	100	80	55	60	950	2,310	561	749	120	158	157
25	135	95	80	55	60	950	2,280	547	742	125	150	152
26	139	90	80	55	60	900	2,220	530	738	127	136	151
27	137	90	75	55	60	1,000	2,180	517	739	126	135	146
28	129	85	70	55	60	1,150	2,090	528	736	126	148	141
29	125	80	70	55	60	1,380	1,970	600	722	125	198	140
30	123	80	70	55	------	1,560	1,850	672	701	121	256	147
31	129	------	70	55	------	1,600	------	736	------	117	270	------
TOTAL	3,122	3,022	2,320	1,885	1,565	14,680	61,990	25,996	19,826	8,574	4,673	4,894
MEAN	101	101	74.8	60.8	54.0	474	2,066	839	661	277	151	163
MAX	139	130	80	70	60	1,600	2,310	1,740	775	683	270	258
MIN	62	80	70	55	50	60	1,630	517	531	117	115	116
AC-FT	6,190	5,990	4,600	3,740	3,100	29,120	123,000	51,560	39,320	17,010	9,270	9,710

CAL YR 1971 TOTAL 90,174 MEAN 247 MAX 1,180 MIN 46 AC-FT 178,900
WTR YR 1972 TOTAL 152,547 MEAN 417 MAX 2,310 MIN 50 AC-FT 302,600

05123000 Lake Metigoshe near Bottineau, N. Dak.

LOCATION.--Lat 48°59'05", long 100°20'52", in SE¼SW¼ sec.35, T.164 N., R.75 W., Bottineau County, on east end of north abutment of "Maid of Moonshine" bridge over Lake Metigoshe, 11.7 miles northeast of Bottineau.

DRAINAGE AREA.--59 sq mi.

PERIOD OF RECORD.--June 1931 to September 1932, September 1953 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,130.00 ft above mean sea level. 1931-32, nonrecording gage on north abutment of bridge at datum 6.32 ft lower (reduced to elevations above mean sea level). Sept. 4, 1953, to Jan. 19, 1955, nonrecording gage at present datum of east end of south abutment of bridge.

EXTREMES.--Current year: Maximum gage height, 9.05 ft Apr. 25; minimum gage height recorded, 7.74 ft on Sept. 30. Period of record: Maximum gage height, 9.24 ft Apr. 21-24, 1969; minimum, 4.28 ft Sept. 17, 1932, present datum.

REMARKS.--Outlet of lake is a concrete dam with removable stoplogs; average crest elevation without stoplogs about 2,138.0 ft above mean sea level. Lake level regulated since 1959 by dam and control works in the outlet of Sharpe Lake located on the principal tributary in Manitoba.

MONTHEND GAGE HEIGHT, IN FEET, AT 2400, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

Oct. 31	*8.36	Jan. 31	*8.17	Apr. 30	8.99	July 31	*8.11
Nov. 30	*8.27	Feb. 29	*8.17	May 31	8.62	Aug. 31	7.99
Dec. 31	*8.18	Mar. 31	8.55	June 30	8.32	Sept. 30	7.74

* Estimated.

05123100 Oak Creek at Lake Metigoshe Outlet near Bottineau, N. Dak.

LOCATION.--Lat 48°57'56", long 100°21'47", in SE¼SE¼ sec.3, T.163 N., R.75 W., Bottineau County, at outlet of Lake Metigoshe, 10 miles northeast of Bottineau.

DRAINAGE AREA.--59 sq mi.

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

GAGE.--Water-stage recorder and concrete control with stoplogs. Datum of gage is 2,130.00 ft above mean sea level. Prior to Jan. 20, 1955, nonrecording gage at same site and datum. Gage is located 1.5 miles northeast of outlet of lake, and is same as that used for station on Lake Metigoshe.

AVERAGE DISCHARGE.--19 years, 3.55 cfs (2,570 acre-ft per year); median of yearly mean discharges, 1.9 cfs (1,400 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 55 cfs Apr. 25 (gage height, 9.05 ft); no flow at times; minimum gage height, 7.73 ft Sept. 24.
Period of record: Maximum discharge, 95 cfs June 10, 1963 (gage height, 8.69 ft); maximum gage height, 9.25 ft Apr. 20-24, 1969 (due to stoplogs); no flow at times each year.

REMARKS.--Records poor. Flow regulated since 1959 by dam and control works on the outlet of Sharpe Lake located on the principal tributary in Manitoba. Records of chemical analyses for water year 1972 are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.02	0	6.4	3.0	.02	0	.02	48	29	9.1	1.8	.02
2	.02	0	6.4	2.9	.02	0	.02	46	29	8.1	1.7	.02
3	.02	0	6.4	2.8	.02	0	.02	46	29	7.1	1.6	.02
4	.02	0	6.3	2.7	.02	0	.02	44	29	6.8	1.4	.01
5	.02	0	6.3	2.2	.02	0	.10	44	29	6.6	.85	.01
6	.02	0	6.3	2.6	.02	0	.20	42	29	6.4	1.2	0
7	.02	2.9	6.2	1.0	.02	0	.35	46	29	6.2	1.2	0
8	.02	5.8	6.2	.02	.05	0	.50	49	27	6.0	.85	0
9	.02	5.8	6.1	.02	.10	0	1.0	48	27	5.8	.75	0
10	.02	5.8	6.0	.02	.08	0	1.8	45	26	5.6	.75	0
11	.02	5.5	6.0	.02	.06	0	3.2	48	26	5.4	.75	0
12	.02	5.5	5.9	.02	.04	0	4.1	44	27	5.2	.75	0
13	.02	5.5	5.8	.02	.02	0	5.1	46	33	5.0	.65	0
14	.02	5.0	5.7	.02	.02	0	7.4	52	31	4.8	1.6	0
15	.02	5.0	5.6	.02	.02	0	10	52	29	4.6	1.9	0
16	.01	5.0	5.4	.02	.02	0	17	48	28	4.4	2.6	0
17	.01	5.0	5.3	.02	.02	.01	28	47	27	4.2	2.2	0
18	.01	5.0	5.1	.02	.02	.02	36	45	27	4.0	1.9	0
19	.01	5.0	5.0	.02	.01	.01	44	44	25	3.8	1.7	0
20	.01	5.0	4.8	.02	.01	.01	53	41	23	3.6	1.9	0
21	.01	5.0	4.7	.02	.01	.01	54	40	22	3.4	2.2	0
22	.01	6.0	4.5	.02	.01	.01	54	42	20	3.2	2.0	0
23	.01	8.0	4.4	.02	.01	.01	54	42	18	3.0	1.8	0
24	.01	7.8	4.2	.02	0	.01	54	40	16	2.8	1.7	0
25	.01	7.6	4.1	.02	0	.01	54	39	14	2.6	1.7	0
26	.01	7.4	3.9	.02	0	.01	52	36	14	2.4	1.6	0
27	.01	7.2	3.8	.02	0	.01	52	35	14	2.2	1.2	0
28	.01	7.0	3.6	.02	0	.02	50	32	13	2.0	1.2	0
29	.01	6.8	3.5	.02	0	.02	50	29	12	2.0	.75	0
30	0	6.6	3.3	.02	------	.02	50	29	9.6	1.9	.75	0
31	0	------	3.2	.02	------	.02	------	29	------	1.9	.25	------
TOTAL	.44	141.2	160.4	17.68	.64	.20	735.83	1,318	711.6	140.1	43.20	.08
MEAN	.014	4.71	5.17	.57	.022	.007	24.5	42.5	23.7	4.52	1.39	.003
MAX	.02	8.0	6.4	3.0	.10	.02	54	52	33	9.1	2.6	.02
MIN	0	0	3.2	.02	0	0	.02	29	9.6	1.9	.25	0
AC-FT	.9	280	318	35	1.3	.4	1,460	2,610	1,410	278	86	.2

CAL YR 1971 TOTAL 976.70 MEAN 2.68 MAX 23 MIN 0 AC-FT 1,940
WTR YR 1972 TOTAL 3,269.37 MEAN 8.93 MAX 54 MIN 0 AC-FT 6,480

05123400 Willow Creek near Willow City, N. Dak.

LOCATION.--Lat 48°35'20", long 100°26'30", in NE¼NW¼ sec.23, T.159 N., R.76 W., McHenry County, on left bank 50 feet downstream from bridge on county road, 1.5 miles upstream from Snake Creek, and 7 miles west of Willow City.

DRAINAGE AREA.--1,160 sq mi, approximately, of which about 430 sq mi is probably noncontributing.

PERIOD OF RECORD.--August 1956 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,430 ft (from topographic map). Prior to Oct. 5, 1956, non-recording gage at site 50 ft upstream at same datum.

AVERAGE DISCHARGE.--16 years, 36.7 cfs (26,590 acre-ft per year); median of yearly mean discharges, 15 cfs (10,900 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 1,030 cfs Mar. 25 (gage height, 13.44 ft); no flow Jan. 14 to Mar. 14, Sept. 23.
Period of record: Maximum discharge, 5,900 cfs Apr. 12, 1969 (gage height, 16.76 ft); no flow at times each year.

REMARKS.--Records fair. Records of chemical analyses for water year 1972 are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	45	14	.70		0	568	530	151	32	1.4	1.0
2	13	47	13	.40		0	540	522	146	30	1.2	.82
3	12	32	11	.30		0	471	515	142	27	1.8	.70
4	10	46	10	.25		0	391	509	137	23	1.6	.51
5	10	44	9.4	.20		0	374	513	131	19	1.0	.33
6	9.9	42	8.5	.18		0	333	511	125	16	.65	.29
7	9.4	40	7.8	.14		0	292	498	116	14	.51	.23
8	8.5	46	7.3	.12		0	257	486	110	14	.41	.20
9	8.3	35	7.3	.10		0	273	471	104	13	.26	.16
10	8.3	30	6.2	.05		0	284	452	98	12	.26	.07
11	8.3	26	6.2	.02		0	323	433	92	10	1.6	.04
12	8.3	24	6.0	.01		0	365	422	90	8.3	1.7	.04
13	8.0	22	6.0	.01		0	395	409	90	7.1	1.9	.07
14	7.6	24	4.9	0		0	413	385	89	6.2	2.4	.04
15	6.5	24	3.2	0		5.0	441	359	94	6.0	3.1	.02
16	5.6	30	2.3	0		25	463	334	92	5.1	3.4	.04
17	5.4	30	1.9	0		30	484	313	85	4.6	3.7	.29
18	10	28	2.5	0		75	498	294	81	4.4	5.4	.23
19	31	28	2.4	0		300	509	279	78	5.5	4.5	.13
20	57	36	1.9	0		500	511	266	76	4.8	3.8	.10
21	73	55	1.4	0		846	520	252	72	4.1	2.9	.02
22	85	35	1.3	0		831	528	247	67	3.5	2.2	.01
23	100	30	1.4	0		792	534	238	62	3.2	1.6	0
24	109	28	1.4	0		855	532	224	58	2.9	1.1	.03
25	104	24	1.4	0		986	526	210	53	2.7	.76	.03
26	95	22	1.2	0		855	530	200	50	2.8	.55	.05
27	83	21	1.0	0		632	534	188	47	2.5	.70	.07
28	69	19	1.0	0		674	532	178	42	2.3	1.2	.13
29	58	17	.90	0		722	528	171	38	2.1	1.5	.07
30	53	16	.80	0	------	695	528	164	35	1.9	1.4	.04
31	58	------	.80	0	------	618	------	157	------	1.5	1.3	------
TOTAL	1,136.1	946	144.40	2.48	0	9,441.0	13,477	10,730	2,651	291.5	55.80	5.76
MEAN	36.6	31.5	4.66	.080	0	305	449	346	88.4	9.40	1.80	.19
MAX	109	55	14	.70	0	986	568	530	151	32	5.4	1.0
MIN	5.4	16	.80	0	0	0	257	157	35	1.5	.26	0
AC-FT	2,250	1,880	286	4.9	0	18,730	26,730	21,280	5,260	578	111	11

CAL YR 1971 TOTAL 23,954.50 MEAN 65.6 MAX 680 MIN 0 AC-FT 47,510
WTR YR 1972 TOTAL 38,881.04 MEAN 106 MAX 986 MIN 0 AC-FT 77,120

PEAK DISCHARGE (BASE, 50 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
10-24	1800	7.44	110	3-25	2100	13.44	1,030
11-21	1200	6.91	73	4-27	0700	11.58	536

05123510 Deep River near Upham, N. Dak.

LOCATION.--Lat 48°35'03", long 100°51'44", in SW¼NW¼ sec.22, T.159 N., R.79 W., McHenry County, 60 ft downstream from county highway bridge, 0.8 mile downstream from Little Deep River, and 6.3 miles west of Upham.

DRAINAGE AREA.--975 sq mi, of which 605 sq mi is probably noncontributing.

PERIOD OF RECORD.--September 1957 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,430 ft (from topographic map).

AVERAGE DISCHARGE.--15 years, 10.3 cfs (7,460 acre-ft per year); median of yearly mean discharges, 0.7 cfs (510 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 660 cfs Mar. 22 (gage height, 12.50 ft, backwater from ice); no flow for several months.
Period of record: Maximum discharge, 6,760 cfs Apr. 12, 1969 (gage height, 18.18 ft); no flow for part or all of each year.
Flood in April 1951 reached a stage of about 16 ft, from information by a local resident (discharge, 2,700 cfs).

REMARKS.--Records good.

REVISIONS.--WSP 1728: Drainage area. Records of chemical analyses for water year 1972 are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	.01				0	140	29	9.7	5.9	.78	.02
2	.08	.01				0	120	27	8.9	5.4	1.0	.02
3	.03	0				0	110	24	8.2	5.1	.87	.01
4	.01	0				0	95	22	7.7	4.3	.66	.01
5	0	.03				0	80	21	7.2	3.7	.53	.01
6	0	.05				0	70	20	6.6	3.4	.42	.01
7	.01	.08				0	70	18	6.1	2.8	.33	.01
8	0	.20				0	64	16	5.9	2.8	.24	.01
9	0	.27				0	57	15	4.9	3.2	.18	.01
10	0	.38				0	52	14	4.0	3.9	.14	0
11	0	.46				0	51	14	3.9	3.4	.07	0
12	.01	.23				0	50	15	4.7	2.4	.05	.01
13	.01	.11				0	48	14	13	2.0	.48	.02
14	0	.08				1.0	46	13	15	2.3	1.0	.01
15	0	.05				20	46	11	16	2.6	1.2	.01
16	.01	.03				25	46	9.4	17	3.2	.97	0
17	.03	.01				20	49	7.7	19	2.6	.75	0
18	.11	.01				12	54	6.1	19	2.4	.64	0
19	.05	.01				50	56	5.4	18	2.9	.53	0
20	.05	.01				180	56	4.9	15	3.2	.50	0
21	.05	0				340	54	4.8	13	2.6	.48	0
22	.03	0				620	50	6.5	11	2.6	.38	0
23	.03	.01				560	47	6.5	8.9	2.6	.35	0
24	.03	0				480	43	6.6	8.7	2.3	.33	0
25	.03	0				420	40	10	8.4	2.1	.28	0
26	.02	0				340	37	13	7.7	1.5	.22	.01
27	.02	0				240	36	13	7.7	1.2	.20	.01
28	.02	0				200	33	13	6.6	1.0	.16	.01
29	.01	0				200	31	12	6.3	.90	.10	.01
30	.01	0			------	177	29	12	5.9	.81	.06	0
31	.01	------			------	156	------	11	------	.66	.03	------
TOTAL	.66	2.04	0	0	0	4,041.0	1,760	414.9	294.0	85.77	13.93	.20
MEAN	.021	.068	0	0	0	130	58.7	13.4	9.80	2.77	.45	.007
MAX	.11	.46	0	0	0	620	140	29	19	5.9	1.2	.02
MIN	0	0	0	0	0	0	29	4.8	3.9	.66	.03	0
AC-FT	1.3	4.1	0	0	0	8,020	3,490	823	583	170	28	.4

CAL YR 1971 TOTAL 331.77 MEAN .91 MAX 30 MIN 0 AC-FT 658
WTR YR 1972 TOTAL 6,612.50 MEAN 18.1 MAX 620 MIN 0 AC-FT 13,120

PEAK DISCHARGE (BASE, 50 CFS).--Mar. 22 (660 CFS).

051236000 Egg Creek near Granville, N. Dak.

LOCATION.--Lat 48°21'18", long 100°49'19", on west line of sec.10, T.156 N., R.79 W., McHenry County, on right downstream wingwall of bridge, 2 miles downstream from Hay Coulee, 3.5 miles upstream from North Lake, and 6 miles northeast of Granville.

DRAINAGE AREA.--289 sq mi, of which 150 sq mi is probably noncontributing.

PERIOD OF RECORD.--October 1956 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,478.14 ft above mean sea level (levels by Bureau of Reclamation).

AVERAGE DISCHARGE.--16 years, 4.38 cfs (3,170 acre-ft per year); median of yearly mean discharges, 2.8 cfs (2,000 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 314 cfs Mar. 16 (gage height, 5.97 ft); no flow for several months. Period of record: Maximum discharge, 1,710 cfs Apr. 10, 1969 (gage height, 7.28 ft); maximum gage height, 8.10 ft Apr. 9 (from floodmark, backwater from snow); no flow most of the time each year.

REMARKS.--Records good. Records of chemical analyses for water year 1972 are published in Part 2 of this report.

REVISIONS.--WSP 1728: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.9	18	3.6			0	40	15	10	7.3	.32	.85
2	6.8	17	3.2			0	40	13	9.2	6.6	.41	1.0
3	7.1	17	3.0			0	35	12	8.9	5.9	.46	1.3
4	7.1	15	2.8			0	34	11	8.6	5.4	.48	1.6
5	7.1	13	2.6			0	33	11	8.2	4.8	.39	2.0
6	7.1	13	2.4			0	31	10	7.8	3.9	.42	2.6
7	7.1	12	2.2			0	28	10	7.6	3.2	.42	3.4
8	7.0	12	2.0			0	26	9.7	7.4	2.4	.36	4.2
9	7.1	11	1.6			0	25	9.4	7.2	1.6	.38	4.5
10	7.4	10	1.2			0	25	9.0	6.8	1.1	.35	4.8
11	7.4	9.0	.80			0	26	9.1	6.4	.80	.22	5.0
12	7.7	8.0	.60			0	26	9.8	6.2	.77	.27	5.3
13	8.7	7.0	.60			0	29	9.8	6.2	.64	.38	5.4
14	11	6.5	.40			0	35	9.6	6.0	.64	.46	5.5
15	12	6.0	.40			5.0	38	8.9	5.7	.62	.52	5.3
16	13	6.5	.40			310	40	8.5	5.6	.59	.56	5.4
17	14	7.0	.20			300	39	7.9	5.7	.70	.64	5.4
18	15	8.0	.20			275	37	7.4	6.6	.64	1.0	5.7
19	16	8.0	.20			250	34	7.5	7.4	1.1	1.0	5.9
20	15	8.0	.20			200	32	7.6	7.6	1.4	1.0	5.9
21	15	9.0	.20			150	30	7.6	7.7	1.3	1.0	5.8
22	15	8.5	.20			120	28	7.8	8.9	1.2	1.1	5.8
23	14	8.0	.10			130	26	7.7	10	1.2	1.0	5.8
24	14	7.0	.10			110	25	7.7	12	.85	1.0	5.9
25	14	6.5	.05			88	24	8.0	12	.77	1.2	4.7
26	14	6.0	.05			67	22	9.4	12	.70	1.3	4.8
27	15	5.5	0			55	21	10	12	.64	.95	4.9
28	16	5.0	0			47	20	11	11	.61	1.0	5.2
29	18	4.5	0			45	18	11	9.5	.52	1.0	4.9
30	19	4.0	0		------	44	17	11	8.1	.43	1.0	4.6
31	19	------	0		------	42	------	10	------	.34	.90	------
TOTAL	362.5	276.0	29.30	0	0	2,238.0	884	297.4	248.3	58.66	21.49	133.45
MEAN	11.7	9.20	.95	0	0	72.2	29.5	9.59	8.28	1.89	.69	4.45
MAX	19	18	3.6	0	0	310	40	15	12	7.3	1.3	5.9
MIN	5.9	4.0	0	0	0	0	17	7.4	5.6	.34	.22	.85
AC-FT	719	547	58	0	0	4,440	1,750	590	493	116	43	265

CAL YR 1971 TOTAL 2,754.60 MEAN 7.55 MAX 300 MIN 0 AC-FT 5,460
WTR YR 1972 TOTAL 4,549.10 MEAN 12.4 MAX 310 MIN 0 AC-FT 9,020

PEAK DISCHARGE (BASE, 20 CFS)

DATE	TIME	G.HT.	DISCHARGE	DATE	TIME	G.HT.	DISCHARGE
3-16	unknown	5.97	314	4-16	0800	4.56	40

051237000 Cut Bank Creek at North Lake Outlet near Granville, N. Dak.

LOCATION.--Lat 48°23'10", long 100°46'00", on south line of sec.29, T.157 N., R.78 W., McHenry County, on right downstream wingwall of bridge, 9 miles northeast of Granville and 13.5 miles east of Deering.

DRAINAGE AREA.--534 sq mi, of which 290 sq mi is probably noncontributing.

PERIOD OF RECORD.--October 1956 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,477.25 ft above mean sea level.

AVERAGE DISCHARGE.--16 years, 2.44 cfs (1,770 acre-ft per year); median of yearly mean discharges, no flow.

EXTREMES.--Current year: Maximum discharge, 116 cfs Mar. 23 (gage height, 3.74 ft, backwater from ice); no flow for many days,
Period of record: Maximum discharge, 339 cfs Apr. 14, 1969 (gage height, 3.78 ft); no flow for most of the time.

REMARKS.--Records fair. Records of chemical analyses for water year 1972 are published in Part 2 of this report.

REVISIONS.--WSP 1728: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.51	4.4	4.4	1.3		0	72	34	15	6.8	9.4	5.3
2	.95	4.4	4.4	1.2		0	67	32	15	6.3	8.8	5.2
3	1.3	4.4	4.2	1.2		0	67	29	15	6.3	8.8	4.9
4	1.8	4.6	4.2	1.1		0	74	30	15	6.2	8.4	4.9
5	1.9	4.6	4.2	1.0		0	68	26	14	6.0	8.2	5.0
6	2.0	4.6	4.0	1.0		0	71	26	14	5.8	8.8	5.0
7	2.2	4.8	4.0	.92		0	66	26	14	6.1	8.5	5.2
8	2.4	4.8	4.0	.85		0	61	25	14	8.6	8.4	5.3
9	2.6	4.8	4.0	.81		0	58	24	10	14	8.4	5.2
10	2.8	5.0	4.0	.73		0	53	24	10	16	8.4	4.8
11	2.8	5.0	3.8	.67		0	52	24	9.5	19	8.1	4.6
12	3.0	5.0	3.8	.60		0	50	24	9.0	19	7.9	4.5
13	3.0	5.2	3.6	.54		0	49	22	9.0	19	7.9	5.1
14	3.2	5.2	3.6	.48		0	48	23	8.3	17	7.7	5.4
15	3.2	5.2	3.4	.40		1.0	47	21	7.9	17	7.6	4.9
16	3.4	5.1	3.2	.30		4.8	45	21	7.9	17	7.5	4.9
17	3.6	5.0	3.0	.20		7.3	44	20	8.0	16	7.4	4.6
18	3.8	5.0	2.8	.10		16	45	20	7.8	15	7.5	4.6
19	3.8	5.0	2.6	.06		28	45	18	7.3	15	7.2	4.8
20	3.8	5.0	2.6	.04		50	45	18	7.4	15	6.9	4.7
21	4.0	4.8	2.4	.02		70	44	17	7.3	14	6.8	4.1
22	4.0	4.8	2.2	.01		90	43	18	7.3	14	6.8	4.1
23	4.0	4.8	2.0	0		110	43	17	7.3	14	6.7	3.9
24	4.2	4.8	2.0	0		110	44	17	7.2	14	6.5	4.1
25	4.2	4.8	1.8	0		110	46	16	7.2	13	6.3	4.1
26	4.2	4.6	1.8	0		108	44	17	7.3	12	6.2	4.5
27	4.2	4.6	1.8	0		108	41	16	7.3	11	5.9	4.5
28	4.4	4.6	1.6	0		107	40	16	7.2	11	5.8	4.6
29	4.4	4.6	1.6	0		106	40	16	6.9	10	5.7	4.6
30	4.4	4.4	1.4	0	------	105	38	15	6.8	9.5	5.7	4.6
31	4.4	------	1.4	0	------	94	------	15	------	9.2	5.3	------
TOTAL	98.36	143.9	93.8	13.53	0	1,225.1	1,550	667	289.9	382.8	229.5	142.0
MEAN	3.17	4.80	3.03	.44	0	39.5	51.7	21.5	9.66	12.3	7.40	4.73
MAX	4.4	5.2	4.4	1.3	0	110	74	34	15	19	9.4	5.4
MIN	.51	4.4	1.4	0	0	0	38	15	6.8	5.8	5.3	3.9
AC-FT	195	285	186	27	0	2,430	3,070	1,320	575	759	455	282

CAL YR 1971 TOTAL 1,965.45 MEAN 5.38 MAX 57 MIN 0 AC-FT 3,900
WTR YR 1972 TOTAL 4,835.89 MEAN 13.2 MAX 110 MIN 0 AC-FT 9,590

05123900 Boundary Creek near Landa, N. Dak.

LOCATION.--Lat 48°48'46", long 100°51'46", at west line sec.26, T.162 N., R.79 W., Bottineau County, on right bank 80 ft downstream from bridge on county road, 5 miles upstream from mouth and 6 miles southeast of Landa.

DRAINAGE AREA.--230 sq mi, of which about 60 sq mi is probably noncontributing.

PERIOD OF RECORD.--September 1957 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,420.03 ft above mean sea level.

AVERAGE DISCHARGE.--15 years, 9.33 cfs (6,760 acre-ft per year); median of yearly mean discharges, 5.4 cfs (3,900 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 1,000 cfs Mar. 18 (gage height, 11.2 ft, backwater from ice); no flow for several months.
Period of record: Maximum discharge, 3,580 cfs Apr. 9, 1969 (gage height, 11.70 ft); no flow for several months each year.

REMARKS.--Records fair. Records of chemical analyses for water year 1972 are published in Part 2 of this report.

REVISIONS.--WSP 1728: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	2.6	.02			0	47	22	23	13	.16	.02
2	.64	2.4	.02			0	41	20	19	14	.16	0
3	1.3	1.8	.02			0	30	19	15	16	.14	0
4	1.8	1.8	.01			0	31	17	12	14	.14	0
5	1.3	1.3	.01			0	30	15	9.6	12	.12	0
6	1.1	1.1	.01			0	25	14	7.2	10	.12	0
7	1.0	.52	.01			0	23	13	5.7	10	.10	0
8	.92	.42	.01			0	16	11	5.0	8.8	.10	0
9	.92	.47	.01			0	27	10	4.6	8.0	.09	0
10	.84	.45	0			0	32	9.6	3.6	6.8	.09	0
11	.84	.40	0			0	34	9.6	2.4	4.0	.09	0
12	1.1	.50	0			0	44	11	2.0	3.3	.09	0
13	1.5	1.0	0			1.0	47	10	255	2.9	.06	0
14	1.5	1.0	0			10	50	9.2	581	2.4	.12	0
15	1.3	.80	0			25	50	9.2	309	2.4	.47	0
16	1.1	.60	0			45	44	8.8	169	2.0	.38	0
17	1.1	.50	0			850	50	8.4	111	1.8	.24	0
18	2.4	.40	0			950	53	8.8	104	1.3	.20	0
19	2.6	.30	0			950	56	9.2	125	1.1	.12	0
20	2.4	.20	0			600	58	9.6	105	1.0	.09	0
21	1.9	.30	0			350	51	10	83	.92	.12	0
22	1.8	.40	0			290	45	11	71	.84	.12	0
23	1.8	.30	0			227	40	12	57	.76	.09	0
24	1.8	.30	0			166	37	14	43	.64	.09	0
25	4.3	.20	0			136	34	21	32	.52	.06	0
26	14	.15	0			83	30	30	27	.47	.06	0
27	10	.10	0			93	31	36	24	.33	.04	0
28	7.6	.05	0			88	30	38	20	.24	.04	0
29	5.3	.05	0			68	27	33	17	.20	.04	0
30	4.0	.05	0		------	67	24	30	15	.18	.02	0
31	3.3	------	0		------	53	------	26	------	.18	.02	------
TOTAL	81.46	20.46	.12	0	0	5,052.0	1,137	505.4	2,257.1	140.08	3.78	.02
MEAN	2.63	.68	.004	0	0	163	37.9	16.3	75.2	4.52	.12	.0007
MAX	14	2.6	.02	0	0	950	58	38	581	16	.47	.02
MIN	0	.05	0	0	0	0	16	8.4	2.0	.18	.02	0
AC-FT	162	41	.2	0	0	10,020	2,260	1,000	4,480	278	7.5	.04

CAL YR 1971 TOTAL 1,846.72 MEAN 5.06 MAX 217 MIN 0 AC-FT 3,660
WTR YR 1972 TOTAL 9,197.42 MEAN 25.1 MAX 950 MIN 0 AC-FT 18,240

PEAK DISCHARGE (BASE, 50 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
3-18	--	--	1,000	6-14	0700	9.92	736
4-20	0600	6.68	60				

05124000 Souris (Mouse) River near Westhope, N. Dak.
(International gaging station)

LOCATION.--Lat 48°59'47", long 100°57'29", in SW¼SE¼ sec.30, T.164 N., R.79 W., Bottineau County, on left bank 1,200 ft upstream from second crossing of international boundary, 1 mile downstream from Fish and Wildlife Service Dam 357, 7 miles northeast of Westhope, 11 miles downstream from Boundary Creek, and at mile 154.5.

DRAINAGE AREA.--16,900 sq mi, approximately, of which about 10,300 sq mi is probably noncontributing.

PERIOD OF RECORD.--July to October 1929, April 1930 to current year. Monthly discharge only for some periods, published in WSP 1308.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1,402.52 ft above mean sea level. Prior to Mar. 28, 1938, nonrecording gage at site 6.3 miles upstream at datum 2.52 ft higher.

AVERAGE DISCHARGE (UNADJUSTED).--42 years (1930-72), 199 cfs (144,200 acre-ft per year); median of yearly mean discharges, 110 cfs (79,700 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 3,060 cfs Apr. 20 (gage height, 13.34 ft); minimum, 29 cfs Oct. 8 (gage height, 5.75 ft).
Period of record: Maximum discharge, 6,400 cfs Apr. 18, 1949; maximum gage height, 17.56 ft Apr. 19, 1969; maximum daily reverse flow, 35 cfs Apr. 8, 1943, caused by backwater from downstream tributary inflow; no flow at times in some years.

REMARKS.--Records fair. Flow regulated by dams on Souris River and tributaries (combined capacity, about 321,000 acre-ft). Diversion at Eaton Dam for irrigation of about 7,600 acres; and other small diversions for irrigation and municipal supply above station. Records of chemical analyses for the water year 1972 are published in Part 2 of this report.

COOPERATION.--This station is one of the international gaging stations maintained by the United States under agreement with Canada.

REVISIONS (WATER YEARS).--WSP 1338: 1932. WSP 2113: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	35	196	136	85	70	45	1,300	2,280	737	750	173	88
2	36	196	136	79	70	45	1,320	2,280	750	750	106	91
3	34	196	133	79	70	45	1,340	2,270	750	746	109	91
4	34	199	133	79	65	45	1,380	2,270	750	742	109	91
5	34	228	130	79	65	45	1,440	2,270	750	742	109	94
6	34	256	130	82	65	45	1,500	2,270	750	737	106	94
7	34	260	112	82	60	45	1,600	2,270	750	732	106	94
8	30	256	88	82	60	50	2,000	2,270	750	732	106	97
9	34	252	100	82	60	50	2,200	2,270	750	732	106	97
10	32	252	100	82	60	50	2,520	2,260	750	732	103	94
11	34	252	118	80	60	50	2,660	2,260	750	732	100	97
12	59	252	106	80	60	50	2,820	2,260	750	728	100	97
13	82	252	94	80	60	50	2,920	2,230	750	724	97	97
14	82	252	91	75	60	50	2,960	2,160	750	724	97	97
15	82	252	88	75	60	60	3,000	2,100	750	724	94	97
16	82	248	88	75	60	75	3,040	1,750	750	724	94	94
17	82	248	85	75	65	120	3,050	1,640	750	696	94	94
18	85	248	85	75	65	100	3,050	1,520	750	595	91	97
19	82	248	85	75	60	90	3,050	1,460	750	521	91	100
20	82	244	85	75	60	160	3,050	1,270	750	438	91	97
21	136	248	85	75	60	450	3,000	1,130	750	538	88	94
22	190	244	85	75	55	600	2,900	1,050	750	548	88	97
23	193	244	82	75	55	650	2,690	880	750	543	88	97
24	193	208	82	75	55	650	2,520	768	750	526	88	94
25	193	181	82	75	50	700	2,470	696	750	516	88	97
26	193	169	82	70	45	700	2,460	674	750	504	88	97
27	187	133	82	70	45	750	2,380	665	750	350	88	100
28	187	136	82	70	45	750	2,300	670	750	208	88	97
29	193	136	82	70	45	800	2,290	665	750	202	88	97
30	193	136	82	70	------	1,000	2,290	670	750	196	88	97
31	196	------	82	70	------	1,300	------	701	------	199	88	------
TOTAL	3,143	6,622	3,031	2,371	1,710	9,620	71,500	49,929	22,487	18,331	3,050	2,865
MEAN	101	221	97.8	76.5	59.0	310	2,383	1,611	750	591	98.4	95.5
MAX	196	260	136	85	70	1,300	3,050	2,280	750	750	173	100
MIN	30	133	82	70	45	45	1,300	665	737	196	88	88
AC-FT	6,230	13,130	6,010	4,700	3,390	19,080	141,800	99,030	44,600	36,360	6,050	5,680

CAL YR 1971 TOTAL 104,863.4 MEAN 287 MAX 1,340 MIN 1.7 AC-FT 208,000
WTR YR 1972 TOTAL 194,659.0 MEAN 532 MAX 3,050 MIN 30 AC-FT 386,100

06185500 Missouri River near Culbertson, Mont.

LOCATION.--Lat 48°07'24", long 104°28'30", in SE¼NW¼ sec.3, T.27 N., R.56 E., Richland County, on right bank at downstream side of bridge on State Highway 16, 3 miles southeast of Culbertson, 9.6 miles downstream from Big Muddy Creek, and at mile 1,620.76.

DRAINAGE AREA.--91,557 sq mi.

PERIOD OF RECORD.--July 1941 to December 1951, April 1958 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,883.4 ft above mean sea level, datum of 1929 (Corps of Engineers bench mark). July 1 to Nov. 6, 1941, water-stage recorder at site 400 ft upstream at datum 0.11 ft higher. Nov. 7, 1941, to Aug. 17, 1950, water-stage recorder at site 580 ft downstream at present datum. Aug. 18, 1950, to Dec. 31, 1951, nonrecording gage on bridge at present datum. Apr. 1, 1958,to Nov. 1, 1967, water-stage recorder at site 500 ft downstream at present datum.

AVERAGE DISCHARGE.--22 years (1943-51, 1958-72, after operational level at Fort Peck Lake was reached), 10,330 cfs (7,484,000 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, about 35,000 cfs Mar. 20; maximum gage height observed, 18.30 ft Mar. 18 (backwater from ice); minimum daily discharge, 6,800 cfs Nov. 7, Dec. 8.
Period of record: Maximum discharge, 78,200 cfs Mar. 26, 1943 (gage height, 14.80 ft), from rating curve extended above 30,000 cfs; maximum gage height, 19.14 ft Mar. 23, 1960 (backwater from ice); minimum daily discharge, 575 cfs Nov. 22, 1941.

REMARKS.--Records fair except those for winter period, which are poor. Flow partly regulated by Fort Peck Lake and many other reservoirs above station. Diversions for irrigation of about 1,030,400 acres above station.

REVISIONS.--WSP 1729: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9,130	8,550	8,320	10,300	14,800	13,200	15,500	14,100	13,000	9,080	10,900	9,500
2	9,150	7,960	8,240	10,800	14,500	12,300	16,800	14,500	13,200	8,650	11,000	9,980
3	9,350	8,200	8,320	11,300	14,200	11,000	17,400	14,800	13,000	8,380	11,100	10,100
4	9,450	8,250	8,060	11,200	13,700	10,700	17,200	14,900	12,400	8,280	11,000	9,900
5	8,950	8,220	7,500	11,200	13,200	10,800	17,300	15,100	12,500	8,060	10,700	10,100
6	8,430	8,420	7,600	12,000	12,600	10,900	16,700	15,100	12,400	7,740	10,400	9,100
7	8,280	6,800	7,400	13,200	12,300	11,200	16,400	14,800	12,300	7,800	10,300	9,480
8	8,240	8,500	6,800	14,000	11,900	11,000	16,000	14,300	13,000	7,900	10,200	9,750
9	8,240	9,000	7,000	14,800	11,800	10,900	16,100	14,500	14,400	7,960	10,200	9,630
10	8,220	9,000	7,600	15,000	12,000	11,100	15,900	14,600	15,400	8,020	10,300	9,780
11	8,260	8,370	7,800	14,600	12,400	11,400	16,200	14,800	17,300	7,920	10,300	10,100
12	8,160	8,230	7,600	14,000	13,000	11,800	16,000	14,800	18,600	7,980	10,400	9,730
13	8,140	8,180	7,400	12,800	13,800	13,000	15,800	15,300	21,700	8,200	10,200	9,630
14	8,060	8,160	7,200	12,000	15,600	15,000	16,100	15,300	19,600	7,700	10,700	9,700
15	8,020	8,110	7,100	11,400	15,200	18,000	15,600	15,300	18,200	8,120	10,900	9,730
16	8,060	8,030	7,000	11,400	15,500	20,600	15,100	15,100	19,200	9,680	11,000	9,980
17	8,080	8,190	7,000	11,400	15,800	23,400	15,000	15,200	19,900	9,900	10,900	9,350
18	8,200	8,370	7,500	11,900	16,000	26,000	15,100	15,200	18,600	9,500	11,100	8,730
19	8,680	8,800	8,200	12,600	16,400	29,400	15,000	13,300	15,100	9,550	11,200	8,680
20	9,130	8,500	9,000	12,800	16,700	35,000	14,900	12,000	11,600	9,880	11,300	8,550
21	9,850	8,410	9,800	12,700	16,000	29,200	13,400	11,500	10,200	10,200	11,400	9,000
22	9,230	8,380	10,700	12,600	14,700	26,400	11,900	11,000	9,730	10,400	11,300	9,030
23	9,450	8,240	11,300	12,500	14,500	23,800	13,200	10,900	9,700	10,300	11,600	8,830
24	8,530	8,000	11,600	12,400	14,400	20,800	14,400	11,700	9,700	10,300	12,000	9,030
25	8,220	8,160	11,100	12,100	14,300	18,800	14,400	12,800	9,730	10,200	12,900	8,450
26	8,300	8,360	10,600	11,900	14,200	18,500	13,000	14,000	10,500	10,200	12,900	8,550
27	8,140	7,880	10,100	11,800	14,100	17,700	11,400	13,700	9,950	10,800	12,200	8,700
28	8,300	7,980	9,600	12,400	14,100	16,600	11,100	13,900	9,750	11,400	10,900	8,980
29	8,280	8,300	9,700	13,900	14,000	16,100	11,200	14,200	9,730	10,900	10,300	8,880
30	8,280	8,450	9,700	15,200	------	15,400	13,000	13,200	9,430	11,000	10,100	8,730
31	8,380	------	9,800	15,000	------	15,100	------	12,800	------	10,900	10,100	------
TOTAL	265,190	248,000	266,640	391,200	411,700	535,100	447,100	432,700	409,820	286,900	339,800	279,680
MEAN	8,555	8,267	8,601	12,620	14,200	17,260	14,900	13,960	13,660	9,255	10,960	9,323
MAX	9,850	9,000	11,600	15,200	16,700	35,000	17,400	15,300	21,700	11,400	12,900	10,100
MIN	8,020	6,800	6,800	10,300	11,800	10,700	11,100	10,900	9,430	7,700	10,100	8,450
AC-FT	526,000	491,900	528,900	775,900	816,600	1,061M	886,800	858,300	812,900	569,100	674,000	554,700

CAL YR 1971 TOTAL 4,512,820 MEAN 12,360 MAX 22,100 MIN 6,800 AC-FT 8,951,000
WTR YR 1972 TOTAL 4,313,830 MEAN 11,790 MAX 35,000 MIN 6,800 AC-FT 8,556,000

M - Expressed in thousands.

06329500 Yellowstone River near Sidney, Mont.

LOCATION.--Lat 47°40'42", long 104°09'22", in SW¼NE¼SW¼ sec.9, T.22 N., R.59 E., Richland County, on left bank at Montana-Dakota Utilities Company powerplant, 0.2 mile downstream from bridge on State Highway 23, 2.5 miles south of Sidney, 3.0 miles downstream from Fox Creek, and 30 miles upstream from mouth.

DRAINAGE AREA.--69,103 sq mi. Area at site 4.5 miles upstream, 68,812 sq mi.

PERIOD OF RECORD.--October 1910 to September 1931 (published as "at Intake"), October 1933 to current year. If monthly figures of diversion to Lower Yellowstone Canal at Intake area added to records at this site, records equivalent to those published as Yellowstone River at Glendive (1898-1910, 1931-34) can be obtained. Monthly discharge only for some periods, published in WSP 1309. Monthly figures of diversions into Lower Yellowstone Canal prior to 1951 published in WSP 1309, 1951-60 published in WSP 1729, 1961-65 published in WSP 1916, and 1966 to current year are published in annual reports.

GAGE.--Water-stage recorder. Datum of gage is 1,881.3 ft above mean sea level (levels by Corps of Engineers). Jan. 1, 1911, to Sept. 30, 1931, nonrecording gage at site 32 miles upstream at different datum. Apr. 9, 1934, to May 16, 1945, water-stage recorder at two sites within 500 ft of highway bridge 0.2 mile upstream and May 17, 1945, to Apr. 3, 1952, nonrecording gage on same bridge at datum 1.36 ft higher. Apr. 4, 1952, to Nov. 19, 1967, water-stage recorder at site 4.5 miles upstream at different datum.

AVERAGE DISCHARGE.--60 years, 13,030 cfs (9,440,000 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 59,400 cfs June 12 (gage height, 14.65 ft); minimum daily, 4,000 cfs Jan. 16.
Period of record: Maximum discharge observed, 159,000 cfs June 2, 1921 (gage height, 12.6 ft, site and datum then in use); maximum gage height observed, 21.85 ft Mar. 22, 1947, site and datum then in use (backwater from ice); minimum discharge, 470 cfs May 17, 1961 (gage height, 2.73 ft, site and datum then in use).

REMARKS.--Records good except those for winter period, which are fair. Some regulation on tributary streams. Diversion for irrigation of about 1,250,000 acres above station. Lower Yellowstone Project Main Canal diverts from left bank in NW¼ sec.36, T.18 N., R.56 E., at Lower Yellowstone diversion dam at Intake about 36.6 miles upstream for irrigation of about 52,000 acres, of which about one third lies above station (see table below).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8,620	12,300	10,700	6,200	5,300	16,000	13,400	12,500	23,700	28,200	11,600	9,730
2	12,900	11,900	10,700	6,100	5,500	17,000	13,200	13,500	27,000	26,600	11,100	9,610
3	29,100	11,700	10,200	5,900	5,500	18,000	13,000	13,800	32,200	27,600	11,100	9,490
4	29,800	12,000	8,800	6,400	5,400	17,700	14,300	14,500	39,300	28,200	11,500	9,460
5	22,200	12,000	8,400	6,700	5,400	18,500	14,600	14,300	44,400	26,400	13,100	9,460
6	17,000	10,500	7,900	7,100	5,700	20,000	14,800	13,500	47,600	25,500	15,200	9,430
7	14,300	10,000	7,500	7,600	6,000	23,500	14,700	13,200	49,100	22,500	13,600	9,160
8	14,200	10,300	7,000	8,100	6,600	25,500	14,500	13,200	50,400	20,400	12,500	9,130
9	13,600	10,200	7,700	8,600	7,200	28,600	12,700	14,000	51,400	20,400	11,700	9,010
10	13,300	10,400	8,000	9,000	8,300	32,000	14,000	15,100	54,600	20,600	11,100	9,220
11	13,100	10,500	7,000	8,600	9,300	36,000	14,000	16,300	58,700	20,300	10,600	10,000
12	11,500	10,700	6,000	7,500	10,000	39,000	13,700	16,400	59,300	19,600	10,100	10,500
13	10,400	11,200	5,200	6,300	9,500	45,000	13,700	16,400	57,700	19,100	9,790	10,100
14	10,900	11,000	6,000	5,200	9,000	49,000	13,600	16,900	54,300	18,200	9,490	10,400
15	11,900	10,900	5,200	4,500	8,800	52,000	13,400	16,000	53,600	17,500	9,250	11,200
16	12,000	10,700	4,700	4,000	9,200	49,000	13,300	14,700	48,900	17,100	9,370	11,300
17	12,000	10,800	5,300	4,500	9,900	49,700	13,200	14,200	43,600	17,300	9,700	10,900
18	12,500	10,600	6,000	5,300	10,000	41,200	12,900	13,700	41,500	17,100	10,900	10,600
19	18,400	10,600	6,800	6,400	10,800	37,000	12,900	16,200	41,800	16,600	10,800	10,200
20	24,900	10,400	7,000	7,400	12,000	20,600	12,800	20,800	40,200	16,900	11,400	9,730
21	20,900	10,300	6,800	8,800	13,700	19,000	13,200	25,100	41,800	15,700	11,400	9,520
22	17,700	10,200	6,500	7,700	15,000	17,000	13,000	27,100	42,700	16,500	10,800	9,400
23	15,300	10,300	6,100	7,200	16,000	16,100	12,900	29,900	39,000	17,600	10,600	9,160
24	15,100	10,400	5,900	6,700	16,700	15,600	12,100	31,000	38,400	18,100	10,600	9,280
25	14,600	9,970	5,800	6,400	16,800	15,600	12,600	31,800	37,900	18,600	10,400	9,520
26	14,600	10,500	5,700	5,700	16,500	14,400	12,700	30,000	38,400	17,200	10,300	9,940
27	14,200	10,400	5,600	5,200	16,200	15,100	12,600	27,600	39,000	16,100	11,300	10,100
28	13,900	10,400	5,500	5,000	16,100	14,800	12,400	26,000	37,700	15,500	12,000	10,100
29	13,500	10,600	5,700	6,000	16,000	14,600	12,200	25,100	33,900	13,800	11,300	10,400
30	12,700	10,600	6,200	6,700	------	14,200	12,300	22,200	30,800	12,900	11,300	10,300
31	12,500	------	6,500	7,300	------	13,700	------	21,300	------	12,300	10,400	------
TOTAL	477,620	322,370	212,400	204,100	302,400	805,400	398,700	596,300	1,298.9M	600,400	344,300	296,350
MEAN	15,410	10,750	6,852	6,584	10,430	25,980	13,290	19,240	43,300	19,370	11,110	9,878
MAX	29,800	12,300	10,700	9,000	16,800	52,000	14,800	31,800	59,300	28,200	15,200	11,300
MIN	8,620	9,970	4,700	4,000	5,300	13,700	12,100	12,500	23,700	12,300	9,250	9,010
AC-FT	947,400	639,400	421,300	404,800	599,800	1,598M	790,800	1,183M	2,576M	1,191M	682,900	587,800
(+)	3,050	3,810	3,960	3,960	1,910	0	0	26,430	64,720	78,660	79,380	70,690

CAL YR 1971 TOTAL 6,513,390 MEAN 17,840 MAX 62,100 MIN 4,700 AC-FT 12,920,000
WTR YR 1972 TOTAL 5,859,240 MEAN 16,010 MAX 59,300 MIN 4,000 AC-FT 11,620,000

M - Expressed in thousands.
(+) Diversions, in acre-feet, by Lower Yellowstone Canal, furnished by Bureau of Reclamation.

06329597 Charbonneau Creek near Charbonneau, N. Dak.

LOCATION.--Lat 47°51'10", long 103°47'40", in SW¼ sec.31, T.151 N., R.102 W., McKenzie County, Custer National Forest, on right bank 45 ft downstream from county highway bridge, 1.5 miles west of Charbonneau.

DRAINAGE AREA.--149 sq mi.

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

GAGE.--Water-stage recorder.

AVERAGE DISCHARGE.--6 years, 14.0 cfs (10,140 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 4,880 cfs Mar. 13 (gage height, 8.56 ft, backwater from ice); minimum, 0.35 cfs Aug. 13, 14, Aug. 31 to Sept. 4 (gage height, 2.66 ft).
Period of record: Maximum discharge, 4,880 cfs Mar. 13, 1972 (gage height, 8.56 ft); no flow at times most years.

REMARKS.--Records good except those for the winter period, which are poor. Records of chemical analyses for the water year 1972 are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.75	1.1	.92	.50	.46	.46	4.7	3.5	23	1.3	.62	.35
2	29	1.1	.85	.50	.46	.46	20	4.7	14	.97	.53	.35
3	89	1.1	.85	.50	.46	.46	18	12	7.9	.97	.48	.35
4	52	1.1	.85	.50	.46	.46	12	9.8	5.8	.90	.44	.35
5	27	1.1	.85	.50	.46	.46	12	7.5	4.4	.97	.44	.38
6	14	1.1	.77	.50	.46	.50	9.8	5.8	3.5	.97	.44	.38
7	5.6	.99	.77	.50	.46	1.0	7.9	4.7	2.8	.90	.48	.41
8	3.4	.99	.77	.50	.46	1.0	9.3	3.7	3.2	.84	.48	.41
9	2.4	.92	.70	.50	.46	1.0	8.3	3.5	3.5	.71	.44	.41
10	1.6	.92	.70	.50	.46	5.0	5.8	3.5	3.0	.66	.41	.41
11	1.4	.92	.70	.50	.46	100	5.8	5.9	2.6	.62	.41	.44
12	1.1	.85	.65	.50	.46	1,000	27	27	2.6	.62	.38	.53
13	.99	.85	.65	.50	.56	2,520	105	30	224	.62	.35	.57
14	.92	.85	.65	.50	.60	2,040	63	23	33	.48	.35	.57
15	.85	.85	.65	.50	.56	756	38	14	12	.41	.38	.48
16	.77	.85	.65	.50	.60	485	19	7.9	8.3	.44	.41	.48
17	.77	.85	.60	.50	.60	470	9.3	5.2	4.9	.48	.38	.44
18	1.6	.92	.60	.48	.63	237	6.2	3.9	3.7	.48	.41	.44
19	3.9	.99	.56	.48	.77	103	4.7	3.5	2.2	1.1	.41	.44
20	12	.99	.56	.48	1.0	70	3.7	8.6	1.7	.90	.53	.44
21	3.6	.99	.53	.48	.80	52	3.2	12	1.4	.90	.87	.38
22	2.4	.99	.53	.48	.70	36	2.8	9.8	1.2	.90	.84	.35
23	1.9	.99	.53	.48	.56	24	2.2	20	1.0	.77	.71	.38
24	1.6	.99	.53	.48	.50	16	1.9	7.9	.90	.66	.62	.44
25	1.4	.99	.53	.46	.46	12	1.8	6.6	.97	1.0	.53	.57
26	1.4	.99	.50	.46	.46	8.8	1.7	391	1.0	.84	.48	1.0
27	1.2	.99	.50	.46	.46	7.0	1.6	205	3.6	.85	.48	1.1
28	1.1	.99	.50	.46	.46	6.2	1.6	103	6.2	3.1	.41	1.0
29	1.1	.99	.50	.46	.46	4.9	1.6	140	3.0	1.7	.41	.90
30	1.1	.92	.50	.46	------	4.4	1.5	69	1.8	.97	.38	.77
31	1.1	------	.50	.46	------	4.2	------	40	------	.71	.35	------
TOTAL	266.95	29.17	19.95	15.08	15.70	7,967.30	403.4	1,192.0	387.17	27.74	14.85	15.52
MEAN	8.61	.97	.64	.49	.54	257	13.6	38.5	12.9	.89	.48	.52
MAX	89	1.1	.92	.50	1.0	2,520	105	391	224	3.1	.87	1.1
MIN	.75	.85	.50	.46	.46	.46	1.5	3.5	.90	.41	.35	.35
AC-FT	530	58	40	30	31	15,800	810	2,360	768	55	29	31

CAL YR 1971 TOTAL 7,020.59 MEAN 19.2 MAX 1,580 MIN 0 AC-FT 13,930
WTR YR 1972 TOTAL 10,359.83 MEAN 28.3 MAX 2,520 MIN .35 AC-FT 20,550

PEAK DISCHARGE (BASE, 100 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
10- 3	0230	4.21	174	5-26	1700	5.51	708
3-13	-	-	4,880	5-29	0600	4.38	191
4-13	0300	4.18	151	6-13	0530	6.25	1,450

06331000 Little Muddy Creek below Cow Creek near Williston, N. Dak.

LOCATION.--Lat 48°17'04", long 103°34'21", in NE¼NW¼ sec.5, T.155 N., R.100 W., Williams County, on left bank 37 ft downstream from centerline of highway, 1 mile downstream from Cow Creek, 4 miles upstream from Camp Creek, 10 miles northeast of Williston, and 13 miles upstream from mouth.

DRAINAGE AREA.--875 sq mi, approximately, of which about 100 sq mi is probably noncontributing.

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

GAGE.--Water-stage recorder. Datum of gage is 1,863.18 ft above mean sea level.

AVERAGE DISCHARGE.--18 years, 32.1 cfs (23,260 acre-ft per year); median of yearly mean discharges, 27 cfs (19,600 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 4,230 cfs, Mar. 14 (gage height, 12.72 ft, backwater from ice); minimum, 3.1 cfs Feb. 11 (gage height, 5.77 ft).
Period of record: Maximum discharge, 6,910 cfs Mar. 27, 1960 (gage height, 13.57 ft); minimum, 0.2 cfs Nov. 27, 1960, Feb. 5, 1963, and June 4, 1968; minimum gage height, 2.26 ft July 26, 1954.

REMARKS.--Records good. Some small diversions for irrigation. Some regulation by Lake Zahl, Fish and Wildlife Service reservoir 22 miles upstream. Records of chemical analyses for the water year 1972 are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	14	13	5.0	4.2	6.0	64	33	44	26	14	26
2	19	14	12	5.0	4.4	6.2	59	40	37	22	12	23
3	21	15	12	5.0	4.5	6.0	56	40	33	20	11	20
4	23	15	12	5.0	4.4	5.6	52	37	30	18	10	19
5	21	14	12	5.0	4.3	5.6	51	35	27	16	9.4	18
6	16	13	12	5.0	4.1	6.0	54	32	24	15	9.2	18
7	14	12	11	5.0	4.1	6.0	83	29	22	15	9.4	17
8	12	12	9.0	5.0	3.9	5.9	129	28	24	15	8.8	17
9	11	13	8.0	5.0	3.6	6.2	107	28	24	13	8.8	16
10	11	13	8.0	5.0	3.5	5.0	91	28	24	12	8.5	16
11	11	13	7.0	5.0	3.4	4.5	75	31	24	12	7.8	15
12	11	13	7.0	5.0	3.5	350	86	39	22	12	8.2	16
13	10	13	6.0	5.0	3.7	2,460	120	49	25	12	8.1	16
14	11	14	6.0	4.5	4.0	3,620	119	44	24	11	18	16
15	10	14	6.0	4.5	4.2	2,460	99	37	22	10	16	16
16	10	14	5.5	4.5	5.8	2,260	71	32	21	11	27	16
17	11	16	5.5	4.5	5.8	1,570	61	29	19	11	38	16
18	15	15	5.5	4.5	5.8	1,240	63	26	18	13	44	16
19	22	15	5.5	4.5	6.0	858	64	25	17	19	48	15
20	30	18	5.5	4.0	8.0	584	56	24	24	19	230	15
21	31	18	5.5	4.0	8.0	380	49	26	22	32	205	14
22	23	20	5.5	4.0	7.3	260	45	50	19	46	160	15
23	19	17	5.5	4.0	6.6	187	41	43	17	41	120	14
24	17	15	5.5	4.0	6.3	154	38	37	18	37	85	17
25	15	15	5.5	4.0	6.0	118	36	34	26	33	66	18
26	15	15	5.5	4.0	5.8	99	34	114	52	28	85	22
27	15	14	5.0	4.0	5.9	69	31	97	71	23	77	26
28	13	13	5.0	3.5	5.8	65	30	80	64	21	60	26
29	13	13	5.0	3.5	6.0	72	29	77	47	19	47	25
30	14	13	5.0	3.8	------	73	29	68	35	17	39	23
31	13	------	5.0	3.9	------	69	------	54	------	15	32	------
TOTAL	488	433	226.5	138.7	148.9	17,011.0	1,922	1,346	876	614	1,522.2	547
MEAN	15.7	14.4	7.31	4.47	5.13	549	64.1	43.4	29.2	19.8	49.1	18.2
MAX	31	20	13	5.0	8.0	3,620	129	114	71	46	230	26
MIN	10	12	5.0	3.5	3.4	4.5	29	24	17	10	7.8	14
AC-FT	968	859	449	275	295	33,740	3,810	2,670	1,740	1,220	3,020	1,080

CAL YR 1971 TOTAL 12,250.8 MEAN 33.6 MAX 580 MIN 5.0 AC-FT 24,300
WTR YR 1972 TOTAL 25,273.3 MEAN 69.1 MAX 3,620 MIN 3.4 AC-FT 50,130

PEAK DISCHARGE (BASE, 250 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
3-14	--	--	4,230	8-20	1545	8.46	476

06332000 White Earth River at White Earth, N. Dak.

LOCATION.--Lat 48°22'35", long 102°46'00", in SE¼SW¼ sec.36, T.157 N., R.94 W., Mountrail County, 35 ft upstream from bridge on county highway, 0.2 mile east of White Earth.

DRAINAGE AREA.--780 sq mi, approximately, of which about 290 sq mi is probably noncontributing.

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

GAGE.--Water-stage recorder. Datum of gage is 2,070.00 ft above mean sea level. Prior to Oct. 25, 1959, non-recording gages at site 0.2 mile upstream at datum 1.64 ft higher.

AVERAGE DISCHARGE.--18 years, 21.7 cfs (15,720 acre-ft per year); median of yearly mean discharges, 14 cfs (10,100 acre-feet per year).

EXTREMES.--Current year: Maximum discharge, 2,370 cfs Mar. 16 (gage height, 18.19 ft); no flow Feb. 7-9.
Period of record: Maximum discharge, 2,370 cfs Mar. 16, 1972 (gage height, 18.19 ft); no flow at times in some years.
Flood of 1929 reached a stage of 21.8 ft (former site and datum) from information by local residents.

REMARKS.--Records good. Flow regulated by White Earth Reservoir 12 miles upstream beginning August 1970 (capacity, 1,600 acre-feet). Records of chemical analyses for the water year 1972 are published in Part 2 of this report.

REVISIONS.--WSP 2117: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.1	4.8	4.2	1.5	.11	.4	227	66	45	24	8.5	90
2	10	5.5	4.2	1.5	.14	.4	220	66	40	20	11	80
3	14	8.1	4.2	1.5	.14	.4	164	64	40	18	10	70
4	7.0	5.3	4.2	1.5	.11	.3	134	62	38	14	9.3	60
5	4.8	4.5	4.2	1.4	.10	.3	157	60	39	13	8.7	56
6	4.5	4.0	4.2	1.0	.05	.3	269	58	35	11	7.8	55
7	5.5	3.6	3.9	.85	0	.3	255	55	32	11	7.3	52
8	8.0	3.1	3.7	.80	0	.3	336	53	26	10	6.3	49
9	8.5	3.6	3.7	.70	0	.3	283	50	27	7.8	5.1	46
10	7.8	3.4	3.7	.70	.05	1.7	196	50	26	8.4	6.0	43
11	7.8	3.6	3.7	.70	.08	20	170	50	24	8.0	5.6	39
12	7.5	4.0	3.4	.90	.11	49	160	50	26	7.0	5.3	38
13	7.5	3.7	3.0	.96	.14	228	150	48	34	6.1	5.1	37
14	6.5	3.7	2.8	1.1	.10	836	145	48	35	5.8	66	35
15	5.6	4.2	2.7	1.1	.11	1,330	140	47	32	5.6	153	35
16	5.6	4.0	2.5	.80	.11	1,760	135	47	26	5.3	85	30
17	5.6	3.9	2.2	.90	.14	1,550	130	46	26	4.8	46	28
18	6.5	4.0	2.0	.90	.18	1,430	125	45	32	5.1	34	26
19	16	4.2	2.0	.80	.18	1,160	120	45	33	8.2	35	24
20	12	4.2	2.0	.80	7.7	754	115	43	33	9.6	405	22
21	9.3	4.2	1.9	.90	2.2	676	110	42	31	8.5	354	20
22	8.2	4.0	1.9	.85	1.0	506	111	40	31	9.4	188	18
23	7.7	4.0	1.8	.80	.90	403	118	42	27	9.8	192	18
24	6.1	3.3	1.6	.96	.90	331	106	45	31	9.6	255	20
25	5.0	4.2	1.6	.96	.90	306	93	50	32	11	230	21
26	5.6	4.0	1.5	.90	.75	282	80	70	36	14	191	22
27	5.8	4.2	1.5	.65	.50	249	76	75	38	13	161	21
28	6.1	4.2	1.5	.40	.40	237	74	75	35	11	137	20
29	4.7	4.2	1.5	.25	.40	235	71	65	29	10	120	19
30	4.2	4.2	1.5	.18	------	228	67	55	24	9.6	106	18
31	5.1	------	1.5	.18	------	226	------	50	------	9.1	98	------
TOTAL	219.6	125.9	84.3	27.44	17.50	12,800.7	4,537	1,662	963	317.7	2,952.0	1,112
MEAN	7.08	4.20	2.72	.89	.60	413	151	53.6	32.1	10.2	95.2	37.1
MAX	16	8.1	4.2	1.5	7.7	1,760	336	75	45	24	405	90
MIN	1.1	3.1	1.5	.18	0	.30	67	40	24	4.8	5.1	18
AC-FT	436	250	167	54	35	25,390	9,000	3,300	1,910	630	5,860	2,210

CAL YR 1971 TOTAL 4,779.40 MEAN 13.1 MAX 215 MIN .50 AC-FT 9,480
WTR YR 1972 TOTAL 24,819.14 MEAN 67.8 MAX 1,760 MIN 0 AC-FT 49,230

06332515 Bear Den Creek near Mandaree, N. Dak.
(Hydrologic bench-mark station)

LOCATION.--Lat 47°47'14", long 102°46'05", in NW¼ sec.30, T.150 N., R.94 W., McKenzie County, on right bank half a mile upstream from county highway culvert and 5.5 miles northwest of Mandaree.

DRAINAGE AREA.--74 sq mi.

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

GAGE.--Water-stage recorder. Datum of gage is 1,947.58 ft above mean sea level.

AVERAGE DISCHARGE.--6 years, 9.17 cfs (6,640 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 2,840 cfs Mar. 13 (gage height, 9.02 ft); no flow Dec. 13 to Feb. 28. Period of record: Maximum discharge, 2,840 cfs Mar. 13, 1972 (gage height, 9.02 ft); maximum gage height, 10.03 ft Apr. 6, 1969; no flow for several months each year.

REMARKS.--Records good except those above 50 cfs, which are poor. Records of chemical analyses for the water year 1972 are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.3	.75	.53			.37	3.8	7.3	2.3	.75	.22	.21
2	253	.75	.49			.80	11	11	1.4	.57	.37	.23
3	106	.80	.49			1.4	10	5.9	1.1	.46	.37	.23
4	16	.80	.46			1.4	6.7	3.8	.80	.46	.43	.25
5	6.9	.80	.46			2.6	98	2.5	.65	.40	.46	.28
6	3.4	.70	.35			3.0	214	1.2	.49	.43	.49	.37
7	1.6	.57	.25			55	118	.80	.37	.40	.49	.40
8	.92	.61	.20			45	96	.57	.65	.40	.46	.28
9	.80	.70	.15			39	40	.57	.75	.40	.46	.23
10	.61	.65	.10			66	20	.53	.61	.40	.49	.25
11	.49	.65	.08			391	12	.98	1.6	.40	.43	.23
12	.49	.70	.05			464	36	3.6	8.4	.40	.43	.34
13	.65	.75	0			907	176	2.8	8.1	.37	.43	.43
14	.75	.80	0			1,110	104	1.1	4.7	.40	.43	.34
15	.70	.86	0			667	32	.61	1.8	.40	.40	.25
16	.80	.86	0			755	15	.53	1.2	.40	.40	.28
17	.57	.98	0			675	8.8	.50	.80	.37	.43	.28
18	3.5	.92	0			341	6.7	.45	.57	.40	.53	.28
19	21	1.1	0			120	5.2	1.3	.43	.34	.86	.31
20	9.0	3.2	0			89	4.0	7.0	.40	.34	.49	.34
21	4.5	2.5	0			72	4.0	2.8	.43	.62	.53	.28
22	2.3	1.5	0			40	4.0	23	.57	.31	.43	.31
23	1.3	1.1	0			27	3.8	.53	.25	.40	.34	.40
24	.98	.86	0			18	3.0	4.5	.61	.40	.31	.49
25	.86	1.2	0			12	1.8	1.8	.70	.34	.31	.98
26	.70	.65	0			11	1.5	7.1	.80	.40	.28	1.2
27	.92	.65	0			5.5	2.5	8.4	.53	.35	.25	.57
28	.70	.70	0			3.6	1.7	6.7	.97	.35	.23	.43
29	.70	.70	0			3.2	1.4	4.7	.98	.35	.24	.46
30	.57	.61	0		------	3.7	1.6	3.4	.70	.45	.21	.46
31	.70	------	0		------	4.9	------	2.8	------	.46	.23	------
TOTAL	442.71	28.42	3.61	0	0	5,934.47	1,042.5	118.77	43.66	12.92	12.43	11.39
MEAN	14.3	.95	.12	0	0	191	34.8	3.83	1.46	.42	.40	.38
MAX	253	3.2	.53	0	0	1,110	214	23	8.4	.75	.86	1.2
MIN	.49	.57	0	0	0	.37	1.4	.45	.25	.31	.21	.21
AC-FT	878	56	7.2	0	0	11,770	2,070	236	87	26	25	23

CAL YR 1971 TOTAL 3,881.97 MEAN 10.6 MAX 350 MIN 0 AC-FT 7,700
WTR YR 1972 TOTAL 7,650.88 MEAN 20.9 MAX 1,110 MIN 0 AC-FT 15,180

PEAK DISCHARGE (BASE, 100 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
10- 2	1200	4.90	482	4- 8	0400	3.66	141
3-13	2200	9.02	2,840	4-13	0200	3.92	209
4- 5	2200	4.49	356				

06332520 Shell Creek near Parshall, N. Dak.

LOCATION.--Lat 48°03'11", long 102°08'10", in SE¼NE¼ sec.29, T.153 N., R.89 W., Mountrail County, on left bank 800 ft downstream from bridge on county highway 6 miles northwest of Parshall.

DRAINAGE AREA.--465 sq mi.

PERIOD OF RECORD.--August 1965 to current year.

GAGE.--Water-stage recorder.

AVERAGE DISCHARGE.--7 years, 11.9 cfs (8,620 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 1,110 cfs Mar. 15 (gage height, 7.11 ft, backwater from ice); no flow Jan. 4 to Mar. 11.
Period of record: Maximum discharge, 2,270 cfs Apr. 6, 1969 (gage height, 7.60 ft); no flow at times each year.

REMARKS.--Records fair. Records of chemical analyses for water year 1972 are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.7	3.2	2.1	.03		0	33	15	57	10	4.1	3.2
2	8.0	3.5	2.2	.02		0	48	15	46	10	4.0	3.1
3	8.4	3.4	2.0	.01		0	26	14	38	10	4.0	3.1
4	8.3	3.7	1.9	0		0	18	13	30	9.8	4.0	3.0
5	7.0	3.6	1.9	0		0	25	12	27	9.6	5.1	2.9
6	5.8	3.2	1.8	0		0	71	12	28	9.4	4.4	3.0
7	5.0	2.8	1.7	0		0	71	11	21	9.2	4.1	3.2
8	4.4	2.7	1.6	0		0	69	11	16	8.7	3.8	2.7
9	4.3	2.6	1.4	0		0	85	10	14	7.7	3.5	2.4
10	4.1	2.3	1.4	0		0	69	10	12	7.0	3.0	2.2
11	3.9	2.3	1.0	0		0	68	13	11	6.7	2.9	2.1
12	4.0	2.5	.95	0		10	134	15	12	6.3	3.0	2.4
13	4.0	2.5	.90	0		100	147	13	16	5.9	3.0	2.2
14	4.0	2.8	.90	0		370	109	11	16	5.9	3.0	2.6
15	3.8	2.8	.85	0		730	91	11	14	5.9	3.8	2.7
16	3.7	2.5	.80	0		670	61	9.8	14	5.9	4.0	2.5
17	3.8	2.6	.75	0		640	44	9.2	16	5.4	4.2	2.3
18	5.4	2.7	.70	0		350	31	14	15	5.4	4.1	1.9
19	7.8	2.8	.65	0		310	26	86	14	5.8	4.4	2.1
20	8.0	2.9	.65	0		240	23	152	13	5.8	4.4	1.9
21	6.4	2.9	.60	0		201	21	180	13	6.2	4.3	2.2
22	5.2	2.5	.60	0		149	21	106	11	5.9	4.3	2.6
23	4.5	2.6	.55	0		121	21	70	12	5.4	4.0	3.3
24	4.2	2.3	.50	0		100	18	85	12	5.6	3.8	5.2
25	3.9	1.9	.40	0		75	16	167	17	5.3	3.5	6.8
26	3.7	1.8	.30	0		47	15	165	17	5.3	3.3	7.3
27	3.6	1.7	.20	0		27	15	216	16	5.4	3.0	6.4
28	3.0	1.7	.15	0		31	14	150	14	4.6	3.4	5.8
29	3.2	1.8	.10	0		38	14	109	12	4.6	3.4	5.6
30	3.0	2.0	.05	0	------	42	14	85	11	4.2	3.3	5.0
31	3.3	------	.03	0	------	33	------	68	------	4.1	3.2	------
TOTAL	151.4	78.6	29.63	.06	0	4,284	1,418	1,858.0	565	207.0	116.3	101.7
MEAN	4.88	2.62	.96	.002	0	138	47.3	59.9	18.8	6.68	3.75	3.39
MAX	8.4	3.7	2.2	.03	0	730	147	216	57	10	5.1	7.3
MIN	3.0	1.7	.03	0	0	0	14	9.2	11	4.1	2.9	1.9
AC-FT	300	156	59	.1	0	8,500	2,810	3,690	1,120	411	231	202

CAL YR 1971 TOTAL 3,355.87 MEAN 9.19 MAX 200 MIN 0 AC-FT 6,660
WTR YR 1972 TOTAL 8,809.69 MEAN 24.1 MAX 730 MIN 0 AC-FT 17,470

PEAK DISCHARGE (BASE, 150 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
3-15	--	--	1,110	5-27	0200	4.54	240
5-20	1830	5.64	675				

06334500 Little Missouri River at Camp Crook, S. Dak.

LOCATION.--Lat 45°32'49", long 103°58'23", in SW¼ sec.2, T.18 N., R.1 E., Harding County, on left bank 15 ft upstream from bridge on State Highway 20 at east edge of Camp Crook.

DRAINAGE AREA.--1,970 sq mi, approximately.

PERIOD OF RECORD.--September 1903 to November 1906, May 1956 to current year. Monthly discharge only for some periods, published in WSP 1309.

GAGE.--Water-stage recorder. Datum of gage is 3,110.98 ft above mean sea level. Prior to Nov. 30, 1906, nonrecording gage at site 0.5 mile upstream at different datum. May 1956 to Oct. 8, 1957, nonrecording gage at site 15 ft downstream at present datum.

AVERAGE DISCHARGE.--19 years, 142 cfs (102,900 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 3,720 cfs Mar. 9 (gage height, 9.59 ft); maximum gage height, 9.65 ft Oct. 5; minimum daily discharge, 0.15 cfs Feb. 3-6.
Period of record: Maximum discharge, 7,600 cfs May 28, 1962 (gage height, 13.07 ft); no flow at times. Flood of 1952 reached a stage of about 16 ft, from information by local residents.

REMARKS.--Records good except those for winter periods, which are poor. Small diversions above station for irrigation.

REVISIONS (WATER YEARS).--WSP 1309: 1904. WSP 1729: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.5	144	40	10	.50	600	300	45	466	194	34	9.4
2	236	119	90	8.0	.25	700	250	58	290	140	28	7.5
3	1,290	104	90	5.0	.15	800	250	62	141	92	73	8.2
4	2,310	92	90	4.0	.15	1,000	200	113	89	69	59	8.2
5	2,910	71	85	5.0	.15	1,500	179	186	65	55	47	14
6	2,800	42	80	6.0	.15	2,840	226	538	46	45	71	12
7	2,300	67	60	7.0	.20	2,920	259	310	37	39	99	10
8	1,930	90	30	8.0	.50	3,150	250	192	30	34	52	8.6
9	1,610	106	40	9.0	1.0	3,430	240	161	26	33	35	9.0
10	1,230	117	50	10	5.0	3,520	235	196	34	32	23	9.4
11	734	99	30	8.0	10	3,200	230	991	29	30	17	8.6
12	408	84	25	6.0	30	3,000	220	1,500	27	26	16	7.8
13	244	75	20	4.0	50	3,000	200	1,110	176	24	16	7.8
14	169	65	25	2.0	80	3,200	190	699	199	24	15	7.8
15	123	58	35	4.0	100	3,330	180	527	107	25	12	8.2
16	112	55	25	6.0	200	2,850	160	355	74	24	10	7.1
17	123	55	20	8.0	500	2,360	140	260	48	24	10	5.8
18	198	55	25	10	500	1,830	120	203	37	23	11	6.4
19	412	60	30	8.0	600	1,410	100	144	32	45	19	6.4
20	1,320	119	35	6.0	800	1,140	80	114	31	30	24	6.1
21	1,360	110	30	8.0	700	948	60	92	65	25	35	6.1
22	1,150	150	25	10	600	808	100	172	157	92	30	5.8
23	1,190	200	20	8.0	500	681	80	398	459	84	22	6.4
24	1,010	200	15	4.0	400	547	60	242	310	32	41	6.4
25	638	200	10	2.0	300	450	41	179	167	24	38	6.7
26	349	150	9.0	1.0	200	450	41	165	130	22	28	7.5
27	242	140	9.0	.50	500	400	42	125	69	21	36	7.5
28	210	130	9.0	.50	1,000	400	44	106	62	20	28	7.1
29	206	100	9.0	.60	1,200	425	44	218	110	20	25	7.8
30	186	40	9.5	.80	------	400	44	322	152	18	12	7.8
31	160	------	10	1.0	------	350	------	519	------	37	12	------
TOTAL	27,169.5	3,097	1,080.5	170.40	8,278.05	51,639	4,565	10,302	3,665	1,403	978	237.4
MEAN	876	103	34.9	5.50	285	1,666	152	332	122	45.3	31.5	7.91
MAX	2,910	200	90	10	1,200	3,520	300	1,500	466	194	99	14
MIN	9.5	40	9.0	.50	.15	350	41	45	26	18	10	5.8
AC-FT	53,890	6,140	2,140	338	16,420	102,400	9,050	20,430	7,270	2,780	1,940	471

CAL YR 1971 TOTAL 147,594.80 MEAN 404 MAX 3,720 MIN .30 AC-FT 292,800
WTR YR 1972 TOTAL 112,584.85 MEAN 308 MAX 3,520 MIN .15 AC-FT 223,300

PEAK DISCHARGE (BASE, 1,000 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
10- 5	0430	9.65	3,130	3- 9	2015	9.59	3,720
10-20	1930	5.72	1,570	5-12	1415	5.44	1,580
2-29	--	--	1,400				

06334630 Box Elder Creek near Webster, Mont.

LOCATION.--Lat 45°54'25", long 104°03'30", in NE¼ sec.30, T.2 N., R.62 E., Fallon County, on left bank at Wayne Cox Ranch, 0.5 mile west of Montana-South Dakota State line, 2 miles upstream from Coal Bank Creek, 17 miles southeast of Webster, and 33 miles southeast of Baker.

DRAINAGE AREA.--1,092 sq mi.

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

GAGE.--Water-stage recorder. Altitude of gage is 2,950 ft (from topographic map). Prior to Nov. 8, 1960, non-recording gage at site 300 ft upstream at different datum.

AVERAGE DISCHARGE.--13 years, 92.5 cfs (67,020 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 4,450 cfs Mar. 13 (gage height, 8.10 ft); maximum gage height, 12.5 ft Mar. 10, from floodmark (backwater from ice); minimum daily discharge, 2.0 cfs Feb. 3.
Period of record: Maximum discharge, 7,340 cfs May 9, 1967 (gage height, 10.26 ft); maximum gage height, 13.09 ft Mar. 25, 1969, from floodmark (ice jam); no flow at times.

REMARKS.--Records fair except those for the winter period, which are poor. Diversions for irrigation of about 14,000 acres above station.

REVISIONS.--WSP 1729: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20	79	32	14	4.0	350	120	61	174	79	76	7.0
2	300	83	32	13	3.0	280	116	150	145	67	56	7.0
3	700	76	32	12	2.0	250	105	166	118	58	56	7.0
4	1,370	76	31	11	3.0	280	103	116	90	52	90	3.3
5	1,390	60	30	10	4.0	400	99	181	70	45	200	3.3
6	1,210	55	29	11	3.0	500	99	181	58	38	134	3.7
7	1,050	50	27	12	4.0	450	101	304	56	35	103	3.7
8	840	80	27	13	5.0	640	96	398	65	30	81	4.2
9	685	132	29	12	4.0	1,000	92	402	58	25	61	4.2
10	444	103	30	10	5.0	1,500	85	310	61	21	45	4.2
11	232	79	30	11	6.0	2,400	87	395	51	21	36	4.2
12	134	88	28	12	6.0	3,480	101	512	43	18	30	4.2
13	105	85	29	10	7.0	4,000	103	648	42	16	24	4.2
14	85	72	29	8.0	8.0	4,020	88	632	36	13	19	4.2
15	88	69	28	8.0	14	3,890	81	552	35	8.5	15	4.7
16	105	70	30	10	20	2,740	76	364	35	10	8.5	4.2
17	120	65	32	12	33	1,750	69	246	35	10	20	4.2
18	141	60	33	13	50	1,180	67	181	40	10	96	4.2
19	148	55	33	12	86	820	60	145	52	13	82	3.7
20	419	75	32	10	140	500	52	132	40	18	70	2.9
21	760	70	31	12	200	346	51	101	35	18	30	2.9
22	865	65	30	12	90	268	69	96	35	129	21	3.3
23	850	60	28	10	40	221	63	92	305	63	16	3.3
24	710	52	26	10	20	186	56	83	664	277	13	3.3
25	358	46	20	9.0	15	164	58	90	189	246	10	4.2
26	210	40	18	8.0	10	152	51	110	494	176	8.5	7.0
27	190	37	16	6.0	58	148	47	101	292	132	7.0	21
28	150	34	15	4.0	150	145	51	108	143	96	5.5	8.5
29	130	34	14	3.0	400	137	63	141	116	87	8.5	5.5
30	110	33	14	4.0	------	130	52	181	103	118	10	5.5
31	90	------	14	4.0	------	124	------	229	------	114	7.0	------
TOTAL	14,009	1,983	829	306.0	1,390.0	32,451	2,361	7,408	3,680	2,043.5	1,439.0	152.8
MEAN	452	66.1	26.7	9.87	47.9	1,047	78.7	239	123	65.9	46.4	5.09
MAX	1,390	132	33	14	400	4,020	120	648	664	277	200	21
MIN	20	33	14	3.0	2.0	124	47	61	35	8.5	5.5	2.9
AC-FT	27,790	3,930	1,640	607	2,760	64,370	4,680	14,690	7,300	4,050	2,850	303

CAL YR 1971 TOTAL 81,542.90 MEAN 223 MAX 4,330 MIN .10 AC-FT 161,700
WTR YR 1972 TOTAL 68,052.30 MEAN 186 MAX 4,020 MIN 2.0 AC-FT 135,000

PEAK DISCHARGE (BASE, 1,000 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
10- 4	1600	5.38	1,530	6-23	2400	6.00	1,960
3-13	0700	8.10	4,450				

06335000 Little Beaver Creek near Marmarth, N. Dak.

LOCATION.--Lat 46°16'29", long 103°58'33", in NE¼ sec.7, T.132 N., R.106 W., Bowman County, on right bank 150 ft downstream from concreted ford, 0.8 mile downstream from Corral Creek, 3 miles southwest of Marmarth, and 5 miles upstream from mouth.

DRAINAGE AREA.--587 sq mi, approximately.

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

GAGE.--Water-stage recorder. Datum of gage is 2,733.14 ft above mean sea level. June 28, 1951 to May 17, 1968, water-stage recorder 300 ft upstream at datum 10.00 ft higher. See WSP 1729 or 1917 for history of changes prior to June 28, 1951.

AVERAGE DISCHARGE.--34 years, 44.2 cfs (32,020 acre-ft per year); median of yearly mean discharges, 30 cfs (21,700 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 5,000 cfs Mar. 11 (gage height, 21.65 ft, backwater from ice); minimum, 4 cfs Jan. 21 to Feb. 3; minimum gage height, 8.15 ft Sept. 16.
Period of record: Maximum discharge, 12,700 cfs Apr. 6, 1952 (gage height, 13.9 ft, from floodmark, site and datum then in use), from rating curve extended above 4,500 cfs on basis of slope-area measurement of peak flow; no flow at times in most years.

REMARKS.--Records good except those for the winter period, which are fair. Records of chemical analyses for water year 1972 are published in Part 2 of this report.

REVISIONS (WATER YEARS).--WSP 1279: 1939(M), 1940, 1943-44(M), 1945, 1948.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	29	21	15	13	4.0	830	79	24	45	49	9.3	7.8
2	1,960	25	14	13	4.0	750	102	408	35	36	8.3	7.3
3	1,130	22	13	13	4.0	450	65	155	27	31	10	13
4	480	21	13	12	5.0	350	55	136	22	28	39	12
5	233	15	13	12	5.0	280	52	100	18	24	22	11
6	125	11	13	12	5.0	370	49	70	15	21	18	7.8
7	81	11	12	12	5.0	650	44	69	16	20	14	7.3
8	61	24	10	11	6.0	900	40	98	16	19	12	6.7
9	52	22	10	11	6.0	800	55	530	13	17	9.8	6.7
10	54	19	11	10	6.0	1,500	48	1,010	40	16	8.8	6.7
11	47	16	12	10	6.0	3,900	39	1,300	20	14	8.3	5.8
12	39	16	13	9.0	6.0	3,500	40	423	14	12	7.8	5.5
13	29	16	14	8.0	7.0	2,500	47	232	12	12	7.0	6.1
14	23	18	15	7.0	7.0	1,900	38	131	117	12	6.7	6.4
15	20	19	15	7.0	8.0	1,200	33	102	35	12	6.7	6.1
16	32	19	14	6.0	9.0	600	29	81	26	12	6.4	5.2
17	81	21	14	6.0	9.0	420	25	69	19	12	374	5.2
18	172	20	14	5.0	10	248	24	60	32	10	1,190	5.5
19	264	16	14	5.0	11	190	24	69	44	9.8	256	5.2
20	135	54	15	5.0	11	155	24	109	22	10	177	5.2
21	91	63	14	4.0	100	125	22	66	22	12	57	5.2
22	59	41	14	4.0	150	104	23	51	31	18	37	4.9
23	46	34	14	4.0	230	88	25	44	29	25	26	4.9
24	39	38	14	4.0	210	87	22	55	132	19	22	5.8
25	33	30	14	4.0	160	106	19	47	600	19	21	7.8
26	24	22	14	4.0	120	92	20	55	780	16	18	9.3
27	23	19	14	4.0	80	84	17	40	154	64	17	10
28	22	18	13	4.0	90	76	16	37	144	27	12	13
29	19	17	13	4.0	260	73	14	63	88	15	11	9.3
30	19	16	13	4.0	------	71	14	45	62	12	9.3	7.8
31	15	------	13	4.0	------	71	------	52	------	10	8.3	------
TOTAL	5,442	704	414	231.0	1,534.0	22,470	1,104	5,731	2,630	613.8	2,429.7	220.5
MEAN	176	23.5	13.4	7.45	52.9	725	36.8	185	87.7	19.8	78.4	7.35
MAX	1,960	63	15	13	260	3,900	102	1,300	780	64	1,190	13
MIN	15	11	10	4.0	4.0	71	14	24	12	9.8	6.4	4.9
AC-FT	10,790	1,400	821	458	3,040	44,570	2,190	11,370	5,220	1,220	4,820	437

CAL YR 1971 TOTAL 49,337.20 MEAN 135 MAX 3,540 MIN .30 AC-FT 97,860
WTR YR 1972 TOTAL 43,524.00 MEAN 119 MAX 3,900 MIN 4.0 AC-FT 86,330

PEAK DISCHARGE (BASE, 2,000 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
10- 2	unknown	18.54	3,300	5-10	1800	16.47	2,430
3-11	--	--	5,000	8-18	0200	16.32	2,340

06335500 Little Missouri River at Marmarth, N. Dak.

LOCATION.--Lat 46°17'44", long 103°55'06", in SW¼ sec.30, T.133 N., R.105 W., Slope County, on left bank 90 ft downstream from bridge on U.S. Highway 12 in Marmarth and 1.5 miles downstream from Little Beaver Creek.

DRAINAGE AREA.--4,640 sq mi, approximately.

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

GAGE.--Water-stage recorder. Datum of gage is 2,686.32 ft above mean sea level. Prior to June 23, 1950, various nonrecording gages on former highway bridge at present site and datum. June 23, 1950, to Sept. 2, 1957, nonrecording gage at site 90 ft upstream at present datum.

AVERAGE DISCHARGE.--34 years, 343 cfs (248,500 acre-ft per year); median of yearly mean discharges, 280 cfs (203,000 acre-ft per year).

EXTREMES.--Current Year: Maximum discharge, 15,500 cfs Mar. 12 (gage height, 13.56 ft, backwater from ice); maximum gage height, 18.30 ft Feb. 29 (caused by ice jam); minimum discharge, 0.90 cfs Feb. 3; minimum gage height, 1.86 ft Sept. 22.
Period of record: Maximum discharge, 45,000 cfs Mar. 23, 1947 (gage height, 21.7 ft); maximum gage height, 23.4 ft Mar. 31, 1952 (backwater from ice); no flow for part of most years.
According to local residents, the greatest known flood prior to 1953 occurred in June 1907 (stage unknown). Other major floods occurred in March 1913, May 1929, and March 1920 and reached stages of about 21.5, 20.2, and 19.7 ft, respectively. These stages are not comparable to stages during period of record, owing to construction of levees.

REMARKS.--Records good except those for the winter period, which are fair. Small diversions for irrigation above station. Records of chemical analyses for the water year 1972 are published in Part 2 of this report.

REVISIONS (WATER YEARS).--WSP 896: 1938-39. WSP 1086: 1943-44. WSP 1279: 1943(M), 1945-46, 1948. WSP 1439: 1950 (calendar year figures).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	53	204	90	28	6.7	4,400	632	168	692	292	145	44
2	3,180	278	90	29	3.6	2,500	728	804	715	260	127	43
3	4,200	234	90	32	2.1	2,200	578	567	677	264	123	44
4	2,240	234	90	31	1.8	2,000	476	448	560	266	204	41
5	2,790	128	90	34	1.6	2,200	432	352	410	229	189	39
6	3,450	120	85	37	1.8	2,500	398	370	314	190	219	35
7	3,500	100	85	36	4.4	3,000	381	342	267	166	213	32
8	3,020	128	85	38	13	2,900	350	816	415	149	152	31
9	2,380	164	85	42	16	3,400	362	2,030	229	125	127	30
10	1,870	184	85	41	22	5,100	345	2,250	215	107	122	29
11	1,580	188	85	46	27	11,000	291	3,620	225	93	90	28
12	1,180	220	85	51	32	14,000	290	2,280	197	82	72	27
13	836	188	85	52	35	13,000	293	2,250	283	77	59	26
14	614	234	82	47	38	14,000	265	2,180	270	74	54	25
15	464	224	62	41	46	12,000	231	1,580	151	66	51	27
16	415	95	52	27	54	8,500	206	1,240	263	62	44	26
17	506	68	53	21	60	6,200	185	921	249	59	188	25
18	596	55	57	20	60	4,600	172	682	224	48	1,250	25
19	936	42	59	22	80	3,100	167	564	194	70	1,290	25
20	656	172	59	24	140	2,120	162	649	163	141	590	23
21	968	200	60	25	350	1,540	150	637	159	89	388	23
22	2,020	132	58	25	1,100	1,180	143	426	183	150	168	21
23	1,880	120	49	21	1,800	968	158	344	143	488	109	21
24	1,720	120	37	26	2,200	854	160	320	1,400	249	83	22
25	1,650	110	31	26	1,200	854	123	525	2,260	292	74	29
26	1,180	110	25	23	900	752	116	653	3,570	372	65	40
27	806	100	24	17	700	698	113	543	1,590	537	56	47
28	566	100	23	15	1,000	686	112	542	903	454	59	44
29	420	100	20	14	5,500	638	102	719	536	222	53	37
30	292	90	21	14	------	632	106	518	355	143	49	31
31	192	------	25	13	------	638	------	488	------	125	47	------
TOTAL	46,160	4,442	1,927	918	15,395.0	128,160	8,227	29,828	17,812	5,941	6,460	940
MEAN	1,489	148	62.2	29.6	531	4,134	274	962	594	192	208	31.3
MAX	4,200	278	90	52	5,500	14,000	728	3,620	3,570	537	1,290	47
MIN	53	42	20	13	1.6	632	102	168	143	48	44	21
AC-FT	91,560	8,810	3,820	1,820	30,540	254,200	16,320	59,160	35,330	11,780	12,810	1,860

CAL YR 1971 TOTAL 303,176.40 MEAN 831 MAX 14,800 MIN 0 AC-FT 601,400
WTR YR 1972 TOTAL 266,210.00 MEAN 727 MAX 14,000 MIN 1.6 AC-FT 528,000

PEAK DISCHARGE (BASE, 3,000 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
10- 2	2200	9.95	7,030	3-12	--	--	15,500
10- 6	2200	7.13	3,780	5-11	1645	7.16	4,690
2-29	--	--	14,200	6-26	0315	8.17	6,220
3- 7	--	--	3,150				

06336000 Little Missouri River at Medora, N. Dak.

LOCATION.--Lat 46°55'10", long 103°31'40", in NE¼ sec.27, T.140 N., R.102 W., Billings County, on left bank 600 ft downstream from bridge on county highway and 1 mile upstream from Andrews Creek and bridge on I-94.

DRAINAGE AREA.--6,190 sq mi, approximately.

PERIOD OF RECORD.--May 1903 to October 1908, October to November 1921, March to June and November to December 1922, May 1923 to September 1924, September 1928 to September 1934, October 1945 to current year. Monthly discharge only for some periods, published in WSP 1309.

GAGE.--Water-stage recorder, and supplemental nonrecording gage on downstream side of highway bridge. Datum of gage is 2,246.75 ft above mean sea level. Prior to Oct. 9, 1945, nonrecording gages at several sites within 0.2 mile upstream from present site at various datums. Oct. 9, 1945, to Aug. 22, 1951, nonrecording gage at site 600 ft upstream at same datum.

AVERAGE DISCHARGE.--39 years (1903-08, 1923-24, 1928-34, 1945-72), 479 cfs (347,000 acre-ft per year); median of yearly mean discharges, 460 cfs (333,000 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 40,000 cfs Mar. 11 (gage height, 18.0 ft, backwater from ice); maximum gage height, 18.68 ft Mar. 11 (result of ice jam); minimum discharge, 25 cfs Jan. 29 to Feb. 19; minimum gage height, 1.09 ft Sept. 20.
Period of record: Maximum discharge, 65,000 cfs Mar. 23, 1947 (gage height, 20.5 ft); no flow at times.

REMARKS.--Records good except those for the winter period, which are poor. Small diversions above station for irrigation. Records of chemical analyses for 1972 water year are published in Part 2 of this report.

REVISIONS (WATER YEARS).--WSP 546: Drainage area. WSP 1279: 1903-7, 1923-24, 1930-31, 1934(M).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	79	432	115	45	25	550	838	465	829	847	269	82
2	897	420	110	45	25	2,800	910	920	624	553	208	74
3	2,490	326	105	42	25	4,200	1,000	667	576	432	176	69
4	5,550	326	100	42	25	1,900	1,010	1,240	640	368	173	69
5	3,350	288	100	42	25	1,000	829	1,050	649	342	173	76
6	2,820	235	100	42	25	1,500	712	802	658	326	170	60
7	3,760	302	100	42	25	4,200	676	739	632	311	194	63
8	4,270	292	95	42	25	5,200	658	632	532	269	223	67
9	3,800	274	95	41	25	5,900	584	632	426	231	212	58
10	3,100	265	95	40	25	5,300	560	1,490	420	197	227	54
11	2,580	261	95	40	25	18,600	584	3,070	656	176	212	50
12	2,190	269	95	40	25	31,400	584	5,240	554	163	176	48
13	1,780	283	92	35	25	28,000	608	4,330	374	147	156	48
14	1,360	342	90	35	25	22,400	525	2,770	326	144	144	46
15	1,000	358	85	35	25	19,100	511	2,660	292	135	123	41
16	829	374	80	35	25	14,300	484	2,500	307	129	110	41
17	694	374	80	35	25	10,100	426	2,000	326	116	110	39
18	560	350	75	35	25	7,330	385	1,530	261	110	194	37
19	608	300	70	35	25	5,800	342	1,230	754	197	646	35
20	883	250	70	30	30	4,520	316	1,480	635	150	2,840	34
21	1,250	200	65	30	100	3,550	302	1,040	374	110	2,740	34
22	901	180	65	30	250	2,760	292	901	307	123	1,250	35
23	991	160	60	30	250	2,180	278	829	370	187	766	32
24	2,410	140	60	30	200	1,480	265	649	1,220	163	452	35
25	2,130	120	55	30	100	1,430	244	553	629	176	297	41
26	2,010	120	50	30	100	1,290	252	1,090	1,770	409	216	60
27	1,940	120	50	30	300	1,230	269	1,550	3,630	283	176	56
28	1,400	120	50	30	900	1,060	240	1,190	2,960	374	144	54
29	930	120	50	25	650	920	227	950	2,030	847	129	76
30	802	120	50	25	------	910	227	766	1,360	553	108	103
31	546	------	50	25	------	856	------	829	------	414	87	------
TOTAL	57,910	7,721	2,452	1,093	3,355	211,766	15,138	45,794	25,121	8,982	13,101	1,617
MEAN	1,868	257	79.1	35.3	116	6,831	505	1,477	837	290	423	53.9
MAX	5,550	432	115	45	900	31,400	1,010	5,240	3,630	847	2,840	103
MIN	79	120	50	25	25	550	227	465	261	110	87	32
AC-FT	14,900	15,310	4,860	2,170	6,650	420,000	30,030	90,830	49,830	17,820	25,990	3,210

CAL YR 1971 TOTAL 446,132.40 MEAN 1,222 MAX 16,700 MIN 0 AC-FT 884,900
WTR YR 1972 TOTAL 394,050.00 MEAN 1,077 MAX 31,400 MIN 25 AC-FT 781,600

PEAK DISCHARGE (BASE, 4,000 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
10- 4	0700	7.17	6,330	5-12	1300	6.80	5,910
10- 8	1030	6.02	4,400	6-27	1400	6.08	4,510
3- 2	--	--	6,000	8-21	0200	5.76	4,060
3-11	--	--	40,000				

06337000 Little Missouri River near Watford City, N. Dak.

LOCATION.--Lat 47°35'25", long 103°15'05", in NW¼SE¼SE¼ sec.35, T.148 N., R.99 W., McKenzie County, at bridge on U.S. Highway 85, 17 miles upstream from Cherry Creek, and 17.5 miles south of Watford City.

DRAINAGE AREA.--8,310 sq mi, approximately.

PERIOD OF RECORD.--October 1934 to current year.

GAGE.--Water-stage recorder and supplemental nonrecording gage. Datum of gage is 1,929.03 ft above mean sea level. Oct. 2, 1959, to June 17, 1963, water-stage recorder at present site and datum. June 18, 1963, to Nov. 28, 1964, at site 700 ft upstream at present datum. See WSP 1729 or 1917 for history of changes prior to Oct. 2, 1959.

AVERAGE DISCHARGE.--38 years, 609 cfs (441,200 acre-ft per year); median of yearly mean discharges, 512 cfs (371,000 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 52,800 cfs Mar. 13 (gage height, 14.68 ft); minimum, 45 cfs Jan. 23 to Feb. 19.
Period of record: Maximum discharge, 110,000 cfs Mar. 25, 1947 (gage height, 24.0 ft from floodmark, site then in use); no flow at times in most years.

REMARKS.--Records fair. Records of chemical analyses and suspended sediment loads for the water year 1972 are published in Part 2 of this report.

REVISIONS (WATER YEARS).--WSP 926: 1935. WSP 1270: 1943.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	118	916	70	70	45	50	1,110	869	1,140	2,160	677	150
2	2,960	788	70	70	45	50	1,210	3,630	1,140	1,570	514	138
3	5,260	684	70	70	45	50	1,120	2,710	1,110	1,120	384	135
4	2,410	612	65	70	45	100	1,130	1,400	875	839	283	130
5	4,660	540	65	70	45	200	1,210	1,110	812	659	210	125
6	3,480	520	65	75	45	400	1,630	1,660	884	562	177	125
7	2,590	500	65	75	45	600	1,390	1,290	884	498	163	125
8	3,740	490	60	75	45	1,000	1,220	1,080	875	462	168	120
9	4,060	480	60	70	45	2,000	1,070	980	839	483	168	115
10	3,970	470	60	70	45	5,000	1,020	839	884	408	200	113
11	4,030	460	60	70	45	10,000	1,880	1,190	1,560	355	205	110
12	3,560	450	60	70	45	30,000	1,450	4,680	1,290	316	225	110
13	2,900	440	60	60	45	49,400	1,090	5,350	1,090	289	250	113
14	2,210	430	60	60	45	47,700	1,590	4,580	650	267	182	103
15	1,820	420	60	60	45	43,900	1,060	3,090	530	250	146	97
16	1,520	410	60	60	45	36,200	920	2,900	483	230	138	87
17	1,260	400	65	60	45	27,400	722	2,780	441	205	134	77
18	1,120	350	65	50	45	17,100	731	2,390	960	205	192	74
19	1,270	300	65	50	45	9,520	848	2,040	1,600	305	586	77
20	1,240	290	65	50	50	7,750	990	2,800	634	240	414	74
21	1,050	280	65	50	50	5,850	776	1,600	902	230	2,570	69
22	1,070	270	65	50	50	4,400	434	1,790	893	250	3,220	50
23	1,370	260	65	45	50	3,320	414	1,410	602	256	2,070	52
24	1,090	250	65	45	50	2,780	420	1,070	420	205	1,510	46
25	2,030	200	65	45	50	2,360	408	1,540	390	200	1,070	48
26	2,710	150	65	45	50	2,060	390	5,680	2,600	200	776	177
27	2,460	100	65	45	50	1,770	349	2,810	2,520	182	538	250
28	2,570	90	65	45	50	1,660	338	2,560	3,820	1,080	366	250
29	2,080	80	65	45	50	1,630	349	2,180	3,120	713	278	205
30	1,520	70	70	45	------	1,280	402	1,660	2,520	476	225	138
31	1,160	------	70	45	------	1,280	------	1,400	------	866	168	------
TOTAL	73,288	11,700	1,995	1,810	1,355	316,810	27,671	71,068	36,468	16,081	18,207	3,483
MEAN	2,364	390	64.4	58.4	46.7	10,220	922	2,293	1,216	519	587	116
MAX	5,260	916	70	75	50	49,400	1,880	5,680	3,820	2,160	3,220	250
MIN	118	70	60	45	45	50	338	839	390	182	134	46
AC-FT	145,400	23,210	3,960	3,590	2,690	628,400	54,890	141,000	72,330	31,900	36,110	6,910

CAL YR 1971 TOTAL 681,364.30 MEAN 1,867 MAX 25,000 MIN 0 AC-FT 1,351,000
WTR YR 1972 TOTAL 579,936.00 MEAN 1,585 MAX 49,400 MIN 45 AC-FT 1,150,000

PEAK DISCHARGE (BASE, 8,000 CFS).--Mar. 13 (1800) 52,800 cfs (14.68 ft).

06338000 Lake Sakakawea near Riverdale, N. Dak.

LOCATION.--Lat 47°30'10", long 101°25'50", in S½ sec.31, T.147 N., R.84 W., Mercer County, in control structure of Garrison Dam, 2.5 miles west of Riverdale and 14 miles upstream from Knife River at mile 1389.9.

DRAINAGE AREA.--181,400 sq mi, approximately.

PERIOD OF RECORD.--October 1953 to current year. Prior to October 1966, published as Garrison Reservoir near Riverdale.

GAGE.--Water-stage recorder. Datum of gage is at mean sea level.

EXTREMES.--Current year: Maximum contents, 22,259,000 acre-ft July 31 (elevation, 1,848.9 ft); minimum, 19,195,000 acre-ft Mar. 7 (elevation, 1,840.2).
Period of record: Maximum contents, 23,092,000 acre-ft July 23, 1969 (elevation, 1,850.7 ft); minimum contents since reaching maximum shown above, 18,427,000 acre-ft Apr. 4, 1970 (elevation, 1,837.2 ft).

REMARKS.--Reservoir is formed by earth-fill dam; storage began in November 1953. Maximum capacity, 24,790,000 acre-ft below elevation 1,854.0 ft (top of 29-ft gates). Normal maximum, 22,640,000 acre-ft below elevation 1,850.0 ft, of which about 4,250,000 acre-ft is designated for flood control. Elevation of crest of spillway, 1,825.0 ft, surmounted by radial gates. Inactive storage, 4,881,000 acre-ft below elevation 1,775.0 ft. Dead storage, zero at elevation 1,672.0 ft. Snake Creek arm of the reservoir has connecting gate to main reservoir, with sill at elevation, 1,810 ft. Figures herein represent total contents.

COOPERATION.--Elevation and contents furnished by Corps of Engineers from capacity table dated July 1971. Elevations are those observed; contents are adjusted for wind effect.

REVISIONS (WATER YEARS).--WSP 1559: 1957(M).

MONTHEND ELEVATION AND CONTENTS, AT 2400, WATER YEAR OCTOBER 1971 to SEPTEMBER 1972

	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30	1,846.5	21,390,000	
Oct. 31	1,846.6	21,434,000	+44,000
Nov. 30	1,845.4	20,957,000	-477,000
Dec. 31	1,843.4	20,278,000	-679,000
CAL YR 1971	--	--	+466,000
Jan. 31	1,841.3	19,573,000	-705,000
Feb. 29	1,840.2	19,201,000	-372,000
Mar. 31	1,847.7	21,816,000	+2,615,000
Apr. 30	1,846.5	21,380,000	-436,000
May 31	1,845.8	21,134,000	-246,000
June 30	1,848.8	22,218,000	+1,084,000
July 31	1,848.9	22,259,000	+41,000
Aug. 31	1,848.7	22,142,000	-117,000
Sept. 30	1,847.9	21,908,000	-234,000
WTR YR 1972	--	--	+518,000

06338490 Missouri River at Garrison Dam, N. Dak.

LOCATION.--Lat 47°30'08", long 101°25'50", in S½ sec.31, T.147 N., R.84 W., Mercer County, in control structure of Garrison Dam, 2.5 miles west of Riverdale and 14 miles upstream from Knife River at mile 1,389.9.

DRAINAGE AREA.--181,400 sq mi, approximately.

PERIOD OF RECORD.--October 1969 to current year.

GAGE.--Flow meter and gate readings.

EXTREMES.--Current year: Maximum daily discharge, 38,800 cfs May 26, June 1-3, 6; minimum daily discharge, 11,400 cfs Mar. 18.
Period of record: Maximum daily discharge, 39,300 May 24, 1971; minimum daily discharge, 11,400 cfs Mar. 18, 1972.

REMARKS.--Records good. Many diversions above station. Flow regulated by Lake Sakakawea (see station 06338000). Prior to October 1969 records were obtained at a site 9.1 miles downstream. Discharges at the downstream site were generally about 7 percent greater than those furnished by the Corps of Engineers for the present site.

COOPERATION.--Records furnished by the Corps of Engineers. Records of chemical analyses for the water year 1972 are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23,800	23,900	27,200	23,800	30,000	30,000	37,800	38,500	38,700	34,800	25,600	20,100
2	23,500	23,800	29,600	25,400	29,200	29,600	37,900	38,500	38,800	29,800	25,200	19,800
3	19,700	23,900	30,100	25,500	30,200	30,300	37,900	39,500	38,800	32,700	24,900	20,000
4	23,700	24,100	28,600	26,200	29,000	29,900	38,000	38,600	38,800	29,900	25,300	20,000
5	23,900	24,000	26,200	27,400	29,300	30,100	38,000	38,500	38,300	33,000	24,900	20,200
6	23,600	24,000	29,900	28,100	27,400	30,000	38,000	38,500	38,800	30,400	23,200	20,000
7	23,400	20,300	29,800	28,300	29,700	30,200	37,900	37,300	38,600	30,100	23,000	20,500
8	23,400	24,700	30,200	29,300	28,800	30,500	37,900	38,500	37,800	27,700	23,400	20,200
9	24,000	24,400	30,400	29,400	29,000	30,200	33,900	38,400	38,700	25,500	23,000	20,500
10	19,900	24,300	30,400	29,800	29,100	30,400	29,800	38,500	38,600	26,600	23,400	20,600
11	23,700	24,200	30,400	29,100	28,500	29,900	33,900	38,700	38,600	24,900	23,100	23,200
12	23,800	24,100	22,900	29,600	28,600	15,000	38,000	38,700	38,700	25,400	23,100	20,700
13	23,900	24,200	20,200	29,800	26,000	15,300	38,000	38,700	38,300	25,800	23,200	21,400
14	23,800	20,200	20,200	30,300	28,200	14,900	37,900	37,800	38,300	25,300	22,700	21,700
15	23,800	24,400	20,500	30,300	27,900	14,700	37,900	38,200	38,400	25,100	23,300	20,800
16	23,900	26,700	20,100	30,200	28,200	14,400	37,900	38,700	38,300	24,900	23,900	20,400
17	20,000	25,000	20,100	30,400	28,300	11,700	38,000	38,600	38,200	25,600	24,700	20,400
18	24,200	25,400	20,100	30,200	28,400	11,400	38,000	38,700	35,700	25,100	23,600	21,300
19	24,100	26,200	17,200	29,900	28,500	14,400	38,100	38,600	37,700	25,400	24,600	20,400
20	26,000	26,100	17,100	29,900	25,900	19,200	38,200	38,500	37,900	24,300	24,600	20,000
21	24,400	26,200	17,200	30,000	26,100	24,000	38,100	38,500	37,900	25,900	23,800	20,200
22	24,100	25,400	19,000	30,200	28,700	26,200	38,200	38,500	37,900	25,700	24,600	20,000
23	24,100	26,300	20,200	27,300	28,400	29,600	38,000	37,800	35,500	24,900	21,800	20,200
24	20,100	26,200	21,100	30,000	29,800	35,300	38,100	38,700	32,400	25,300	22,000	19,900
25	24,000	26,200	21,900	29,900	30,700	35,600	38,100	38,600	30,200	25,400	20,100	20,000
26	24,000	24,100	22,100	30,100	30,500	35,100	38,100	38,800	35,100	24,800	20,000	20,000
27	24,500	26,000	22,600	28,100	30,200	35,100	38,500	38,700	35,200	25,300	20,000	20,000
28	25,400	26,100	22,700	29,800	30,500	35,000	38,200	38,700	35,200	25,500	19,900	19,900
29	24,400	26,200	23,400	27,600	30,600	35,200	38,200	38,600	35,500	25,300	20,400	19,900
30	24,000	26,600	24,000	25,500	------	37,800	38,600	38,700	35,300	24,800	19,900	20,000
31	17,700	------	24,200	27,900	------	37,700	------	38,700	------	25,700	20,600	------
TOTAL	722,800	745,200	739,600	889,300	835,100	828,700	1,125.1M	1,193.3M	1,116.2M	830,900	711,800	612,300
MEAN	23,320	24,840	23,860	28,690	28,800	26,730	37,500	38,490	37,210	26,800	22,960	20,410
MAX	26,000	26,700	30,400	30,400	30,700	37,800	38,600	38,800	38,800	34,800	25,600	23,200
MIN	17,700	20,200	17,100	23,800	25,900	11,400	29,800	37,300	30,200	24,300	19,900	19,800
AC-FT	1,434M	1,478M	1,467M	1,764M	1,656M	1,644M	2,232M	2,367M	2,214M	1,648M	1,412M	1,214M

CAL YR 1971 TOTAL 10,670,300 MEAN 29,230 MAX 39,300 MIN 17,100 AC-FT 21,160,000
WTR YR 1972 TOTAL 10,350,300 MEAN 28,280 MAX 38,800 MIN 11,400 AC-FT 20,530,000

06339000 Missouri River below Garrison Dam, N. Dak.

LOCATION.--Lat 47°23'08", long 101°23'36", in NE¼NW¼NW¼ sec.16, T.145 N., R.84 W., Mercer County, on right bank 4.3 miles north of Stanton, 5.1 miles upstream from Knife River, 9.1 miles downstream from Garrison Dam at mile 1,380.8.

DRAINAGE AREA.--181,400 sq mi, approximately.

PERIOD OF RECORD.--April 1948 to current year. Daily discharge record published April 1948 to September 1969.

GAGE.--Water-stage recorder. Datum of gage is at 1,600.00 ft above mean sea level. Operated as a regular discharge station Apr. 1948 to Sept. 1969.

EXTREMES.--Current year: Maximum daily gage height recorded, 76.08 ft Jan. 14; minimum daily recorded, 69.72 ft Dec. 20.
Period of record: Maximum daily gage height recorded, 76.24 ft Feb. 1, 1971; minimum daily recorded, 68.06 ft Mar. 24, 1970.

REMARKS.--Records good. Stage regulated by Lake Sakakawea (see station 06338000). Gage height record not published April 1948 to September 1969.

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1969 TO SEPTEMBER 1970

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	71.35	72.30	70.40	70.31	72.52	71.44	70.95	73.84	71.30	71.83	72.02	71.57
2	71.04	72.18	70.95	70.80	73.52	71.68	70.47	71.54	71.51	72.03	71.91	70.84
3	71.06	72.51	71.51	71.09	74.93	72.13	70.13	69.42	71.73	72.14	71.55	70.94
4	71.54	73.01	72.03	71.18	75.32	72.31	70.62	71.62	71.94	71.98	72.03	70.88
5	71.70	73.22	72.68	71.68	74.56	72.59	69.96	71.40	72.41	72.10	71.85	70.50
6	71.84	72.91	73.19	72.14	73.70	72.39	69.12	72.63	72.51	71.91	71.47	70.54
7	72.23	73.00	73.37	73.70	72.88	72.08	69.22	70.75	72.62	72.10	71.36	70.34
8	72.88	72.96	73.29	75.83	72.54	71.52	69.57	71.43	72.08	72.11	71.95	70.61
9	72.62	72.52	73.61	75.61	72.65	71.52	69.27	69.93	71.78	71.99	71.40	70.54
10	72.62	72.53	73.95	75.74	72.95	71.58	68.70	69.25	71.49	71.86	72.02	70.58
11	72.63	72.42	74.04	75.15	72.79	71.60	68.83	70.54	71.60	72.03	71.95	70.55
12	72.00	72.55	74.30	74.90	72.86	71.60	69.70	71.71	71.60	72.08	72.11	70.41
13	72.30	72.23	74.27	74.77	72.90	71.53	71.02	72.65	72.31	71.70	72.15	70.70
14	72.73	72.39	74.30	74.17	72.95	71.27	72.04	72.63	72.37	71.52	71.94	70.50
15	72.64	72.37	74.32	74.64	72.66	70.94	72.56	73.15	72.08	71.82	71.99	70.58
16	72.66	72.07	74.28	74.90	72.59	70.46	72.72	72.95	72.32	72.00	72.03	70.91
17	72.53	72.08	74.17	75.13	72.34	70.00	72.58	71.53	72.30	72.14	72.03	70.73
18	71.95	72.62	74.39	75.10	72.52	69.82	72.62	71.84	71.86	72.13	71.97	71.10
19	71.15	72.75	74.11	75.19	72.42	69.09	72.18	72.67	72.67	70.85	71.77	70.96
20	71.17	72.65	73.13	75.23	72.61	68.97	72.55	72.86	73.09	71.70	71.98	70.53
21	71.19	71.78	72.81	75.36	72.42	68.79	72.68	72.91	72.89	71.53	72.03	71.07
22	71.36	71.80	73.18	75.39	71.94	69.22	72.70	73.08	72.67	72.74	71.99	71.03
23	71.30	70.84	73.08	75.29	71.98	68.64	72.44	73.36	72.43	71.58	71.99	71.12
24	71.37	71.11	71.94	75.11	71.97	68.06	72.27	72.77	72.20	71.58	72.05	71.26
25	71.21	70.98	70.83	74.63	72.00	68.44	72.74	73.53	72.06	71.91	71.78	71.23
26	70.95	70.79	70.90	74.15	71.90	68.26	72.88	73.46	71.80	72.45	72.29	71.39
27	71.13	70.93	70.84	73.76	71.84	68.65	73.00	73.73	72.02	71.72	72.60	71.13
28	71.99	70.63	70.71	73.19	71.78	69.36	73.40	73.13	71.58	71.50	73.10	71.46
29	71.75	70.52	71.06	73.50	------	70.92	73.45	72.92	71.74	71.04	71.91	71.35
30	71.91	70.59	70.89	73.45	------	71.01	73.41	72.60	72.02	71.57	71.63	71.44
31	72.26	------	70.52	72.39	------	71.45	------	71.37	------	72.05	72.01	------
MEAN	71.84	72.04	72.68	73.98	72.79	70.56	71.46	72.17	72.10	71.86	71.96	70.89
MAX	72.88	73.22	74.39	75.83	75.32	72.59	73.45	73.84	73.09	72.74	73.10	71.57
MIN	70.95	70.52	70.40	70.31	71.78	68.06	68.70	69.25	71.30	70.85	71.36	70.34

06339000 Missouri River below Garrison Dam, N. Dak.

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	71.35	71.75	72.24	72.38	76.24	71.94	72.04	73.80	73.39	73.49	71.91	71.17
2	71.17	71.98	72.14	72.36	75.33	72.10	72.05	73.82	72.95	73.52	71.96	71.14
3	71.37	72.09	72.78	72.47	74.44	71.80	72.07	73.80	73.07	73.62	72.05	71.01
4	71.02	72.73	72.27	73.32	73.98	72.02	72.05	73.46	73.38	73.51	72.02	71.16
5	71.49	72.77	72.67	74.92	73.70	71.98	71.92	73.59	73.38	73.58	72.04	70.43
6	71.62	72.64	72.68	75.09	73.66	71.92	72.05	73.76	73.35	73.43	71.67	70.74
7	71.67	72.86	72.07	74.75	74.17	71.67	72.24	73.76	73.05	73.54	71.70	71.14
8	71.73	71.55	70.79	74.63	73.87	71.78	73.02	73.83	73.21	73.58	71.65	71.07
9	72.14	71.58	72.59	74.42	73.80	72.10	73.70	73.83	73.17	73.60	71.63	71.02
10	72.11	71.83	71.09	74.32	73.40	72.52	73.33	73.81	72.91	73.55	71.48	70.97
11	70.58	71.59	72.06	74.31	73.18	72.48	73.56	73.85	72.82	73.58	71.81	71.13
12	71.60	71.61	71.52	74.47	72.61	72.35	72.91	73.85	72.91	73.53	71.71	71.25
13	72.03	71.50	71.55	75.08	72.22	72.29	72.72	73.84	73.43	73.53	71.77	71.08
14	72.26	71.81	71.61	74.74	71.81	72.25	73.54	73.83	72.14	73.53	71.70	70.98
15	72.27	71.79	71.65	74.77	72.08	72.38	73.55	73.85	72.34	73.53	71.67	71.25
16	72.03	71.68	70.61	74.51	72.04	72.13	73.42	73.90	72.69	73.54	71.67	71.06
17	71.68	71.87	70.44	74.25	72.02	72.12	73.68	73.85	73.20	73.56	71.66	71.22
18	71.14	71.74	70.53	74.00	72.04	72.10	73.59	73.86	73.23	73.57	71.35	71.16
19	71.75	71.84	70.60	74.02	71.96	72.10	73.47	73.88	73.50	73.49	71.48	70.51
20	70.98	71.59	70.55	73.83	71.85	72.14	73.64	73.85	73.44	73.60	71.86	71.04
21	71.59	72.31	71.26	73.76	71.57	72.11	73.50	73.89	73.27	73.14	71.78	71.29
22	71.59	72.54	71.29	73.92	72.14	72.11	73.64	73.87	73.63	73.15	71.36	71.15
23	72.38	72.61	71.70	73.90	71.90	72.15	73.64	73.84	73.60	72.81	71.55	71.23
24	72.22	72.60	72.51	73.76	72.15	72.00	73.60	73.85	73.62	72.60	71.42	71.20
25	71.98	72.39	72.88	73.79	72.00	72.02	73.68	73.28	73.68	72.58	71.53	71.30
26	72.39	72.51	72.88	73.70	71.93	72.06	73.78	73.50	73.50	72.72	71.78	70.64
27	72.20	72.46	72.81		71.91	72.11	73.59	73.45	73.54	72.26	71.62	71.10
28	72.70	72.52	73.02		72.00	71.78	73.72	73.18	73.67	72.26	71.65	71.27
29	72.41	72.41	73.07	73.58	------	72.18	73.73	73.45	73.70	71.99	71.44	71.06
30	72.59	72.08	73.10	73.88	------	72.25	73.61	73.05	73.37	72.06	71.16	71.08
31	72.50	------	72.77	75.65	------	72.06	------	72.93	------	71.93	71.27	------
MEAN	71.82	72.11	71.93		72.86	72.10	73.17	73.69	73.24	73.17	71.66	71.06
MAX	72.70	72.86	73.10		76.24	72.52	73.78	73.90	73.70	73.62	72.05	71.30
MIN	70.58	71.50	70.44		71.57	71.67	71.92	72.93	72.14	71.93	71.16	70.43

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	71.18	71.61	71.72	72.03	73.97	72.30	73.82	73.52	73.58	72.99	71.43	70.42
2	71.15	71.31	71.85	72.55	73.57	72.43	73.78	73.52	73.58	72.32	71.40	70.24
3	70.43	71.08	72.56	73.50	73.90	72.30	73.75	73.54	73.59	72.53	71.35	70.33
4	71.06	71.22	72.20	73.90	74.01	72.32	73.50	73.59	73.60	72.29	71.44	70.43
5	71.18	71.03	71.67	74.04	75.55	72.30	73.52	73.55	73.51	72.64	71.40	70.53
6	71.20	71.04	72.07	73.90	73.58	72.42	73.52	73.54	73.60	72.33	70.95	70.24
7	71.10	70.58	72.25	73.83	73.45	72.12	73.52	73.35	73.58	72.30	70.97	70.56
8	71.09	71.14	72.27	73.40	73.37	72.35	73.50	73.54	73.42	71.93	70.95	70.44
9	71.23	71.27	72.45	73.12	73.72	72.36	73.11	73.53	73.58	71.53	70.99	70.45
10	70.51	71.22	72.37	73.12	73.50	72.34	72.21	73.54	73.59	71.76	71.03	70.59
11	70.99	71.23	72.30	73.02	73.17	72.32	72.65	73.57	73.56	71.38	71.05	70.86
12	71.24	71.18	72.34	73.03	72.67	70.45	73.49	73.55	73.55	71.46	70.88	70.51
13	71.16	71.25	70.27	74.04	72.20	69.85	73.48	73.52	73.53	71.45	71.01	70.74
14	71.16	70.67	70.29	76.08	72.15	69.96	73.47	73.43	73.53	71.39	70.92	70.63
15	71.19	70.97	70.32		72.20		73.46	73.48	73.54	71.39	71.07	70.45
16	71.20	71.54	70.83		72.08		73.47	73.55	73.55	71.16	71.07	70.40
17	70.65	71.48	70.77	75.23	71.97		73.45	73.59	73.54	71.65	71.34	70.36
18	70.96	71.39	70.38	74.11	72.32		73.47	73.60	73.16	71.33	71.18	70.52
19	71.34	71.50	70.55	74.19	72.08		73.48	73.56	73.44	71.43	71.13	70.37
20	71.61	71.64	69.72	74.14	71.76		73.51	73.55	73.53	71.22	71.21	70.20
21	71.43	71.53	69.86	74.48	71.80		73.49	73.57	73.55	71.51	71.34	70.24
22	71.16	71.61	70.80	74.28	71.98		73.48	73.56	73.56	71.46	71.41	70.28
23	71.31	71.44	70.29	73.60	72.17	72.56	73.45	73.47	73.20	71.36	70.75	70.25
24	70.59	71.60	70.58	74.40	72.38	73.38	73.48	73.56	72.68	71.34	70.74	70.22
25	71.09	71.68	71.58	75.58	72.50	73.56	73.57	73.58	72.35	71.52	70.41	70.32
26	71.23	71.54	72.40	75.68	72.50	73.45	73.50	73.60	73.00	71.30	70.55	70.24
27	71.22	71.61	72.00	74.96	72.45	73.42	73.53	73.59	73.04	71.46	70.36	70.26
28	71.40	71.65	72.10	75.12	72.42	73.38	73.50	73.58	73.05	71.45	70.43	70.20
29	71.32	71.66	72.04	74.52	72.33	73.40	73.49	73.57	73.10	71.39	70.48	70.22
30	71.25	71.44	72.30	74.02	------	73.80	73.55	73.58	73.07	71.40	70.28	70.16
31	70.21	------	72.40	73.74	------	73.79	------	73.57	------	71.47	70.48	------
MEAN	71.09	71.34	71.47		72.82		73.44	73.54	73.37	71.68	70.97	70.39
MAX	71.61	71.68	72.56		75.55		73.82	73.60	73.60	72.99	71.44	70.86
MIN	70.21	70.58	69.72		71.76		72.21	73.35	72.35	71.16	70.28	70.16

06339100 Knife River at Manning, N. Dak.

LOCATION.--Lat 47°14'10", long 102°46'10", in SE¼NW¼ sec.6, T.143 N., R.95 W., Dunn County, on left bank 50 ft downstream from bridge on State Highway 22, 0.4 mile north of Manning.

DRAINAGE AREA.--205 sq mi, approximately.

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

GAGE.--Water-stage recorder. Datum of gage is 2,156.55 ft above mean sea level.

AVERAGE DISCHARGE.--5 years, 27.9 cfs (20,210 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 2,580 cfs Mar. 14 (gage height, 15.90 ft); no flow Sept. 18, 21, 22. Period of record: Maximum discharge 2,940 cfs June 15, 1970 (gage height, 16.20 ft); no flow Sept. 18, 21, 22, 1973.

REMARKS.--Records good. Records of chemical analyses for the water year 1972 are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.7	2.8	3.9	2.0	2.0	2.0	9.7	60	10	6.7	1.5	.91
2	28	3.3	3.7	1.5	2.0	2.0	11	382	8.6	4.1	1.5	.73
3	294	3.3	3.9	1.5	2.0	2.0	15	202	7.4	3.5	1.5	.73
4	291	3.3	3.9	1.5	2.0	2.0	20	56	5.8	3.1	1.3	.65
5	84	2.6	3.5	1.5	2.0	2.0	24	33	4.8	2.8	1.3	.61
6	37	1.1	3.7	1.5	2.0	3.0	227	23	4.1	2.8	1.4	.58
7	18	.86	3.9	1.5	2.0	4.0	205	18	3.5	2.5	1.4	.46
8	11	.86	4.1	1.5	2.0	4.0	68	16	3.3	2.2	1.4	.55
9	5.8	1.5	4.0	1.5	2.0	4.0	49	14	3.7	2.2	1.5	.58
10	3.2	1.8	4.0	1.5	2.0	40	35	13	4.1	2.0	1.5	.65
11	2.6	2.1	4.0	1.5	2.0	500	24	16	4.3	1.9	1.5	.73
12	2.5	2.4	3.5	1.5	2.0	1,500	20	95	3.7	1.8	1.5	.77
13	2.1	2.7	3.0	1.5	3.0	2,040	33	143	3.9	1.7	1.6	.65
14	2.2	2.9	3.0	1.5	3.0	2,400	103	54	3.2	1.7	1.7	.40
15	1.9	3.1	3.0	1.5	3.0	1,900	49	33	3.1	1.7	1.7	.25
16	1.9	3.1	3.0	1.5	3.0	1,580	30	24	2.7	1.7	1.6	.22
17	2.0	3.5	2.5	1.5	3.0	882	20	15	2.3	1.7	1.8	.08
18	2.9	3.7	2.5	1.5	3.0	658	15	13	2.2	1.6	6.5	0
19	7.8	3.5	2.5	1.0	3.0	305	13	12	2.4	1.8	25	.05
20	4.3	4.1	2.5	1.0	2.5	157	11	11	8.5	1.9	7.8	.03
21	3.2	4.3	2.5	1.0	2.5	93	9.7	9.7	14	1.9	3.7	0
22	3.3	4.3	2.5	1.0	2.5	79	8.2	10	7.4	2.4	5.4	0
23	5.0	4.8	2.5	1.0	2.5	50	7.8	9.7	5.0	2.5	9.4	.08
24	5.0	4.5	2.0	1.0	2.5	35	7.4	9.0	4.5	2.1	7.8	.16
25	4.5	4.3	2.0	1.0	2.5	29	6.7	9.0	3.9	2.0	5.0	.43
26	3.7	4.3	2.0	1.0	2.5	23	5.8	11	3.7	2.0	3.5	.96
27	3.5	4.3	2.0	1.0	2.5	20	6.1	23	3.5	2.0	2.2	.96
28	3.2	4.1	2.0	1.0	2.5	17	6.1	27	7.7	1.8	1.8	1.1
29	2.9	3.9	2.0	1.5	2.5	14	5.8	23	1.6	1.8	1.5	1.0
30	2.8	3.7	2.0	1.5	------	12	6.7	18	10	1.7	1.2	1.0
31	2.7	------	2.0	2.0	------	10	------	13	------	1.5	.96	------
TOTAL	848.7	95.02	91.6	42.5	70.0	12,369.0	1,052.0	1,395.4	152.9	71.1	107.46	15.32
MEAN	27.4	3.17	2.95	1.37	2.41	399	35.1	45.0	5.10	2.29	3.47	.51
MAX	294	4.8	4.1	2.0	3.0	2,400	227	382	14	6.7	25	1.1
MIN	1.9	.86	2.0	1.0	2.0	2.0	5.8	9.0	1.6	1.5	.96	0
AC-FT	1,680	188	182	84	139	24,530	2,090	2,770	303	141	213	30

CAL YR 1971 TOTAL 11,737.61 MEAN 32.2 MAX 800 MIN .37 AC-FT 23,280
WTR YR 1972 TOTAL 16,311.00 MEAN 44.6 MAX 2,400 MIN 0 AC-FT 32,350

PEAK DISCHARGE (BASE, 100 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
10-3	1800	8.99	449	4-14	0600	5.90	135
3-14	0500	15.90	2,580	5- 2	1430	9.64	522
4- 6	2100	9.24	479	5-12	2300	7.12	247

06339300 Knife River at Marshall, N. Dak.

LOCATION.--Lat 47°08'17", long 102°20'00", NW¼ sec.10, T.142 N., R.92 W., Dunn County, on right bank 250 ft downstream from bridge on State Highway 8 in Marshall.

DRAINAGE AREA.--722 sq mi.

PERIOD OF RECORD.--October 1970 to current year.

GAGE.--Water-stage recorder.

EXTREMES.--Current year: Maximum discharge, 9,080 cfs Mar. 14 (gage height, 19.37 ft); minimum, 3.3 cfs Sept. 18.
Period of record: Maximum discharge, 9,080 cfs Mar. 14, 1972 (gage height, 19.37 ft); minimum, 3.3 cfs Sept. 18, 1972.
Flood of March 1943 reached a stage of at least 18.5 ft prior to dike construction and is believed to be highest stage experienced since 1915.

REMARKS.--Records good. Records of chemical analyses for water year 1972 are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21	17	13	8.0	4.8	4.0	71	78	52	26	6.8	10
2	32	16	13	8.0	4.8	4.0	71	751	40	26	5.8	9.0
3	51	13	13	7.5	4.8	4.0	69	751	32	20	5.0	8.4
4	145	11	13	7.0	4.7	4.0	69	576	26	16	5.0	7.1
5	370	6.4	12	6.5	4.7	4.0	70	249	22	12	5.0	6.8
6	339	6.0	12	6.5	4.7	7.0	74	135	19	9.0	5.0	6.6
7	149	7.5	12	6.0	4.7	12	151	102	17	7.7	5.0	6.4
8	80	11	12	6.0	4.7	13	438	83	17	8.6	5.2	8.2
9	48	12	12	5.8	4.7	15	258	72	16	6.8	5.2	9.0
10	34	12	12	5.7	4.7	18	139	66	15	7.3	5.0	6.2
11	26	12	11	5.5	4.7	460	108	68	15	7.3	4.9	4.5
12	22	12	11	5.5	4.6	2,560	94	100	16	7.1	5.0	4.5
13	19	12	11	5.2	4.6	6,660	123	174	25	6.6	5.0	4.2
14	16	12	10	5.2	4.4	7,790	187	232	46	6.6	5.0	3.7
15	16	13	10	5.2	4.0	5,710	140	194	32	6.6	4.3	3.9
16	17	13	10	5.0	4.1	4,360	159	109	23	6.6	4.3	3.9
17	16	13	10	5.0	4.2	3,340	102	80	17	6.4	6.4	3.5
18	18	13	10	5.0	4.2	2,640	75	60	18	6.0	495	3.3
19	25	14	10	5.0	4.4	1,570	56	48	29	5.4	728	4.0
20	31	14	10	5.0	4.6	853	46	40	127	5.6	185	5.0
21	44	14	9.0	5.0	4.8	528	41	38	51	4.9	103	4.5
22	37	14	9.0	5.0	4.8	315	36	39	36	8.4	72	4.7
23	29	14	9.0	5.0	5.0	234	34	40	32	9.7	38	6.0
24	22	14	9.0	5.0	5.0	188	30	39	34	8.6	28	6.0
25	20	14	9.0	5.0	5.0	150	28	39	28	6.8	25	7.7
26	19	13	8.5	5.0	5.0	129	28	40	28	6.6	29	9.7
27	20	13	8.5	5.0	5.0	113	28	38	52	6.6	24	10
28	18	13	8.5	4.8	5.0	98	26	50	96	6.2	20	8.6
29	18	13	8.5	4.8	5.0	88	26	64	50	5.2	17	8.8
30	17	13	8.4	4.8	------	84	27	92	33	4.2	15	9.3
31	17	------	8.2	4.8	------	76	------	67	------	7.7	12	------
TOTAL	1,736	374.9	322.6	172.8	135.7	38,031.0	2,804	4,514	1,044	278.5	1,878.9	193.5
MEAN	56.0	12.5	10.4	5.57	4.68	1,227	93.5	146	34.8	8.98	60.6	6.45
MAX	370	17	13	8.0	5.0	7,790	438	751	127	26	728	10
MIN	16	6.0	8.2	4.8	4.0	4.0	26	38	15	4.2	4.3	3.3
AC-FT	3,440	744	640	343	269	75,430	5,560	8,950	2,070	552	3,730	384

CAL YR 1971 TOTAL 35,582.0 MEAN 97.5 MAX 2,100 MIN 2.0 AC-FT 70,580
WTR YR 1972 TOTAL 51,485.9 MEAN 141 MAX 7,790 MIN 3.3 AC-FT 102,100

PEAK DISCHARGE (BASE, 750 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
3-14	0500	19.37	9,080	8-18	2330	9.83	1,280
5- 1	1630	8.90	1,020				

06339490 Elm Creek near Golden Valley, N. Dak.

LOCATION.--Lat 47°06'25", long 102°03'05", in SE¼NW¼ sec.23, T.142 N., R.90 W., Mercer County, on right bank 60 ft upstream from highway bridge 13.5 miles south of Golden Valley.

DRAINAGE AREA.--82 sq mi, approximately.

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

GAGE.--Water-stage recorder. Datum of gage is 1,915.17 ft above mean sea level.

AVERAGE DISCHARGE.--5 years, 9.87 cfs (7,150 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 1,120 cfs June 18 (gage height, 17.15 ft); no flow for many days.
Period of record: Maximum discharge, 10,000 May 9, 1970 (gage height, 23.55 ft); no flow for several months each year.

REMARKS.--Records good. Records of chemical analyses for the water year 1972 are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	.02	.03		0	0	1.5	40	2.4	2.9	.60	.03
2	.32	.02	.03		0	0	1.5	90	1.8	2.2	.37	.03
3	3.7	.02	.03		0	0	1.7	22	1.5	1.8	.26	.03
4	.55	.02	.04		0	0	1.6	9.0	1.0	1.4	.15	.03
5	.13	.02	.04		0	0	1.6	4.9	.70	1.2	.15	.03
6	.08	.01	.03		0	.10	2.3	3.0	.45	1.0	.13	.03
7	.06	0	.03		0	.20	3.0	2.4	.23	.85	.11	.03
8	.04	0	.03		0	1.5	4.5	1.5	.21	.85	2.3	.02
9	.03	0	.03		0	6.0	4.6	1.3	.19	.80	5.7	.02
10	.04	.02	.03		0	45	3.0	.90	.15	.70	3.1	.02
11	.03	.03	.03		0	350	2.4	1.3	.17	.60	2.0	.02
12	.03	.03	.01		0	680	2.2	7.4	.27	.55	1.2	.02
13	.03	.03	0		0	550	5.2	8.5	79	.29	.80	.02
14	.02	.03	0		0	630	7.8	6.5	29	.23	.45	.02
15	.02	.03	0		0	410	6.9	3.9	7.6	.23	.29	.02
16	.02	.03	0		0	250	3.9	2.6	3.8	.49	.17	.02
17	.03	.03	0		0	260	2.6	2.1	2.7	.23	.55	.02
18	.07	.03	0		0	179	1.9	44	474	.05	4.7	.01
19	.30	.03	0		0	88	1.4	296	585	.75	2.1	0
20	.62	.05	0		1.0	38	1.1	70	79	1.0	.80	0
21	.17	.05	0		8.0	23	.90	18	27	.90	.65	0
22	.06	.04	0		3.0	17	.80	20	14	1.3	1.0	0
23	.04	.03	0		1.5	11	.75	15	8.8	3.2	.50	0
24	.03	.03	0		.50	7.4	.60	10	8.5	3.6	.45	0
25	.03	.02	0		.10	5.0	.50	6.5	9.0	5.5	.29	0
26	.03	.03	0		.05	4.0	.45	18	14	5.2	.11	.05
27	.03	.03	0		0	3.4	.50	24	11	3.6	.06	.06
28	.02	.03	0		0	2.5	.37	14	11	2.4	.05	.05
29	.02	.03	0		0	2.2	.37	7.8	5.0	1.8	.04	.04
30	.02	.03	0		------	1.7	.50	4.9	3.8	1.1	.04	.04
31	.02	------	0		------	1.3	------	3.3	------	.80	.03	------
TOTAL	6.59	.77	.36	0	14.15	3,566.30	66.44	758.80	1,381.27	47.52	29.15	.66
MEAN	.21	.026	.012	0	.49	115	2.21	24.5	46.0	1.53	.94	.022
MAX	3.7	.05	.04	0	8.0	680	7.8	296	585	5.5	5.7	.06
MIN	0	0	0	0	0	0	.37	.90	.15	.05	.03	0
AC-FT	13	1.5	.7	0	28	7,070	132	1,510	2,740	94	58	1.3

CAL YR 1971 TOTAL 2,460.49 MEAN 6.74 MAX 211 MIN 0 AC-FT 4,880
WTR YR 1972 TOTAL 5,872.01 MEAN 16.0 MAX 680 MIN 0 AC-FT 11,650

PEAK DISCHARGE (BASE, 100 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
3-12	--	--	750	5-19	0600	10.58	516
3-14	--	--	730	6-13	1530	6.18	193
3-17	--	--	330	6-18	2330	17.15	1,120
5- 2	0700	5.24	128				

06339500 Knife River near Golden Valley, N. Dak.

LOCATION.--Lat 47°09'40", long 102°03'39", in SE¼ sec.34, T.143 N., R.90 W., Mercer County, on left bank 6 ft downstream from highway bridge, 4.5 miles downstream from Elm Creek, and 9 miles south of Golden Valley.

DRAINAGE AREA.--1,230 sq mi, approximately.

PERIOD OF RECORD.--May 1903 to November 1906, April 1907 to November 1915, April 1916 to October 1919, and October 1921 to September 1924 (published as "at Broncho" or "near Broncho"), and April 1943 to current year. Monthly discharge only for some periods published in WSP 1309.

GAGE.--Water-stage recorder. Datum of gage is 1,847.13 ft above mean sea level. See WSP 1729 or 1917 for history of changes prior to May 1, 1946.

AVERAGE DISCHARGE.--46 years, 97.2 cfs (70,420 acre-ft per year); median of yearly mean discharges, 88 cfs (63,800 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 10,200 cfs Mar. 14 (gage height, 26.59 ft, backwater from ice); minimum discharge, 4.7 cfs Sept. 21 (gage height, 2.03 ft).
Period of record: Maximum discharge, 11,200 cfs May 9, 1970 (gage height, 25.84 ft); maximum gage height, 26.7 ft Mar. 26, 27, 1943 (from floodmark); no flow at times in some years.
The flood in 1943 was the only major flood in period 1930-49, according to local residents.

REMARKS.--Records good except those for the winter period, which are fair. Records of chemical analyses for water year 1972 are published in Part 2 of this report.

REVISIONS (WATER YEARS).--WSP 1006: Drainage area. WSP 1279: 1904, 1914-19(M), 1922-24(M), 1944.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	25	14	13	7.0	8.0	12	90	142	100	66	22	14
2	33	14	13	7.0	8.0	12	86	517	77	52	24	12
3	40	13	13	7.0	8.0	12	84	1,090	63	50	20	9.9
4	54	13	13	7.0	8.0	13	85	794	51	43	17	8.9
5	174	8.3	13	7.0	8.0	14	85	548	44	38	16	8.3
6	379	11	12	7.0	8.0	14	88	277	38	32	15	7.7
7	292	11	12	7.0	8.0	15	93	172	34	29	13	7.7
8	129	13	12	7.0	8.0	16	244	129	33	28	19	6.9
9	68	14	11	7.0	8.0	60	478	102	36	26	53	6.3
10	43	14	10	7.0	8.0	100	273	88	32	24	35	7.4
11	30	13	10	7.0	8.0	800	191	96	30	21	24	8.9
12	24	13	9.0	7.0	8.0	3,500	160	127	31	21	19	7.4
13	20	13	8.0	7.0	9.0	6,500	167	224	89	20	16	6.9
14	17	13	8.0	7.0	9.0	9,600	270	254	398	18	14	6.9
15	15	13	8.0	7.0	9.0	9,620	310	325	158	17	12	7.2
16	14	13	8.0	7.0	9.0	7,440	242	203	108	17	11	6.6
17	15	13	8.0	7.0	9.0	5,120	218	130	68	16	34	6.3
18	16	13	8.0	7.0	9.0	3,620	147	100	594	16	82	6.3
19	16	13	8.0	8.0	9.0	2,450	108	319	2,300	31	518	6.6
20	17	13	8.0	8.0	8.0	1,370	88	398	1,980	22	505	6.1
21	24	13	7.0	8.0	8.0	783	76	578	814	23	165	5.0
22	30	13	7.0	7.0	8.0	538	69	176	196	48	108	5.5
23	29	13	7.0	7.0	8.0	352	64	121	119	61	86	6.6
24	24	13	7.0	7.0	9.0	290	58	142	100	76	57	7.2
25	20	13	7.0	7.0	11	538	53	111	92	85	41	8.0
26	17	13	7.0	7.0	14	195	50	110	137	67	32	11
27	15	13	7.0	7.0	13	167	51	107	137	52	36	12
28	15	13	7.0	7.0	12	139	49	150	120	41	32	13
29	14	13	7.0	7.0	12	116	47	127	121	34	26	13
30	14	13	7.0	8.0	------	96	48	109	85	28	21	12
31	13	------	7.0	8.0	------	96	------	130	------	23	16	------
TOTAL	1,636	385.3	282.0	222.0	262.0	53,598	4,072	7,896	8,185	1,125	2,089	251.6
MEAN	52.8	12.8	9.10	7.16	9.03	1,729	136	255	273	36.3	67.4	8.39
MAX	379	14	13	8.0	14	9,620	478	1,090	2,300	85	518	14
MIN	13	8.3	7.0	7.0	8.0	12	47	88	30	16	11	5.0
AC-FT	3,250	764	559	440	520	106,300	8,080	15,660	16,230	2,230	4,140	499

CAL YR 1971 TOTAL 50,101.3 MEAN 137 MAX 2,520 MIN 5.8 AC-FT 99,380
WTR YR 1972 TOTAL 80,003.9 MEAN 219 MAX 9,620 MIN 5.0 AC-FT 158,700

PEAK DISCHARGE (BASE, 1,500 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
3-14	--	--	10,200	6-19	1500	17.00	2,820

06340000 Spring Creek at Zap, N. Dak.

LOCATION.--Lat 47°17'10", long 101°55'31", in SW¼ sec.14, T.144 N., R.89 W., Mercer County, on right bank 250 ft downstream from Burlington Northern Railway bridge in Zap and 9 miles upstream from mouth.

DRAINAGE AREA.--549 sq mi.

PERIOD OF RECORD.--March to September 1924, October 1945 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,819.39 ft above mean sea level. Mar. 4 to Sept. 30, 1924, non-recording gage at site 250 ft upstream at different datum. Oct. 1, 1945, to Sept. 30, 1947, nonrecording gage 250 ft upstream at datum 1.12 ft higher.

AVERAGE DISCHARGE.--27 years, 44.1 cfs (31,950 acre-ft per year); median of yearly mean discharges, 41 cfs (29,700 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 6,030 cfs Mar. 15 (gage height, 20.70 ft); minimum, 6.1 cfs Sept. 3-8.
Period of record: Maximum discharge, 6,130 cfs Apr. 7, 1952 (gage height, 20.03 ft); maximum gage height, 20.70 ft Mar. 15, 1972; no flow at times.
Maximum stage known occurred in about 1902, from ice jam. Floods of February 1913 and March 1943 reached a stage of about 20 ft and 19.5 ft, respectively, from information by local residents.

REMARKS.--Records good. Flow slightly regulated by Lake Ilo 56 miles upstream (capacity, 7,130 acre-ft). Records of chemical analyses for water year 1972 are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.9	15	13	8.0	7.0	7.0	65	54	31	17	9.5	6.8
2	18	17	13	8.0	7.0	7.0	55	102	28	16	9.0	6.4
3	22	16	12	8.0	7.0	7.0	88	124	25	15	9.0	6.1
4	22	15	12	8.0	7.0	7.0	65	174	24	14	9.0	6.1
5	27	13	11	7.0	7.0	7.0	54	130	23	14	9.0	6.1
6	25	9.0	11	7.0	7.0	7.0	88	94	23	13	9.0	6.1
7	22	11	11	7.0	7.0	7.0	65	78	22	13	15	6.1
8	18	13	10	7.0	7.0	7.0	87	64	21	13	30	6.1
9	16	16	10	7.0	7.0	20	179	53	20	13	20	6.4
10	14	17	10	7.0	7.0	100	134	47	21	13	16	6.4
11	13	16	10	7.0	7.0	400	110	50	20	12	14	6.4
12	12	14	10	7.0	7.0	1,200	97	60	20	12	12	18
13	12	14	10	7.0	7.0	2,000	90	63	20	12	9.0	21
14	12	14	10	7.0	7.0	4,000	83	56	20	12	7.5	23
15	12	14	10	7.0	7.0	5,370	80	53	23	11	7.5	23
16	11	14	10	7.0	7.0	4,920	76	52	25	11	7.1	23
17	12	13	9.0	7.0	7.0	3,810	78	49	23	11	7.1	23
18	13	13	9.0	7.0	7.0	2,820	67	46	22	11	7.1	23
19	15	13	9.0	7.0	7.0	1,390	63	42	23	12	9.0	21
20	15	13	9.0	7.0	7.0	943	95	40	21	13	24	13
21	15	13	9.0	7.0	7.0	499	57	34	20	13	22	9.9
22	17	13	9.0	7.0	7.0	316	48	34	19	13	19	8.6
23	17	13	9.0	7.0	7.0	225	48	34	16	14	14	18
24	17	13	9.0	7.0	7.0	174	54	34	16	13	11	23
25	15	13	9.0	7.0	7.0	138	43	34	19	12	10	24
26	14	13	8.0	7.0	7.0	114	44	36	22	12	9.9	27
27	13	13	8.0	7.0	7.0	101	41	38	25	12	9.0	27
28	12	13	8.0	7.0	7.0	90	37	38	31	11	8.6	27
29	12	13	8.0	7.0	7.0	82	36	37	25	10	8.2	27
30	12	13	8.0	7.0	------	75	35	37	20	9.9	7.8	27
31	11	------	8.0	7.0	------	73	------	34	------	9.9	7.1	------
TOTAL	475.9	410.0	302.0	221.0	203.0	28,916.0	2,162	1,821	668	387.8	366.4	475.5
MEAN	15.4	13.7	9.74	7.13	7.00	933	72.1	58.7	22.3	12.5	11.8	15.9
MAX	27	17	13	8.0	7.0	5,370	179	174	31	17	30	27
MIN	9.9	9.0	8.0	7.0	7.0	7.0	35	34	16	9.9	7.1	6.1
AC-FT	944	813	599	438	403	57,350	4,290	3,610	1,320	769	727	943

CAL YR 1971 TOTAL 27,568.4 MEAN 75.5 MAX 2,040 MIN 4.0 AC-FT 54,680
WTR YR 1972 TOTAL 36,408.6 MEAN 99.5 MAX 5,370 MIN 6.1 AC-FT 72,220

PEAK DISCHARGE (BASE, 1,000 CFS).--MAR. 15 (2000) 6,030 CFS (20.70 FT).

06340200 West Branch Otter Creek near Beulah, N. Dak.

LOCATION.--Lat 47°08'05", long 101°39'35", in NW¼NW¼SW¼ sec. 12,T.142 N., R.87 W., Oliver County, on right bank 10 miles southeast of Beulah.

DRAINAGE AREA.--26.5 sq mi.

PERIOD OF RECORD.--April 1965 to current year.

GAGE.--Water-stage recorder.

AVERAGE DISCHARGE.--7 years, 4.53 cfs (3,280 acre-ft per year).

EXTREMES.--Current year: maximum discharge, 380 cfs Mar. 11 (gage height, 7.23 ft, backwater from ice); no flow on many days.
Period of record: Maximum discharge, 23,700 cfs June 24, 1966 (gage height, 17.2 ft, from floodmark, from rating curve extended above 77 cfs on basis of slope-area measurement of peak flow); no flow at times in some years.

REMARKS.--Records fair except those for the winter period, which are poor. Records of chemical analyses for water year 1972 are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	.02	.04	0	0	1.5	1.3	8.0	1.1	.13	.08	.01
2	.06	.03	.04	.01	0	1.0	1.4	18	.64	.13	.08	.01
3	.05	.04	.04	.01	0	1.0	1.9	9.0	.42	.13	.08	.01
4	.04	.05	.04	.01	0	1.0	2.4	5.3	.28	.11	.07	.01
5	.04	.07	.04	0	0	1.0	1.4	3.5	.18	.09	.07	.01
6	.04	.03	.04	0	0	10	7.3	1.9	.15	.08	.07	.01
7	.04	.02	.04	0	0	25	10	1.3	.12	.08	.07	.01
8	.04	.02	.04	0	0	25	5.8	.86	.11	.08	.07	.01
9	.04	.03	.04	0	0	20	3.5	.71	.11	.07	.06	.02
10	.05	.02	.04	0	0	50	2.1	.64	.09	.06	.04	.02
11	.05	.02	.04	0	0	210	1.7	1.7	.10	.05	.04	.02
12	.05	.02	.04	0	0	160	1.9	9.0	.12	.05	.04	.02
13	.05	.02	.04	0	0	110	27	10	.12	.05	.02	.02
14	.06	.02	.04	0	0	120	13	6.1	.11	.05	.02	.02
15	.06	.03	.04	0	0	75	7.1	3.9	.09	.04	.01	.02
16	.06	.04	.04	0	1.0	50	4.4	2.4	.08	.03	.01	.02
17	.05	.06	.04	0	3.0	30	2.6	1.4	.08	.02	.03	.02
18	.09	.06	.04	0	5.0	30	1.6	.95	41	.02	.09	.01
19	.07	.06	.04	0	8.0	25	.95	1.1	18	.08	.10	.01
20	.16	.08	.04	0	10	20	.78	1.1	11	.10	.07	.01
21	.10	.08	.04	0	8.0	13	.78	.86	4.6	.09	.02	0
22	.20	.08	.04	0	6.0	8.3	.86	.86	1.4	.20	.01	0
23	.12	.07	.04	0	4.0	3.7	.86	1.1	.42	.28	.01	0
24	.08	.05	.04	0	3.0	2.8	.86	.86	1.5	.18	.01	.01
25	.06	.04	.03	0	2.0	2.4	.78	.64	.42	.13	.01	.01
26	.05	.03	.03	0	2.0	1.7	.86	9.2	.28	.12	.01	.02
27	.03	.04	.03	0	2.0	1.9	1.3	20	.28	.10	.01	.02
28	.02	.04	.02	0	1.5	2.2	1.1	11	.42	.10	.01	.02
29	.02	.04	.02	0	1.5	1.6	.95	5.8	.31	.10	.01	.02
30	.02	.04	.01	0	------	1.4	1.4	3.5	.18	.09	.01	.02
31	.02	------	.01	0	------	1.1	------	1.9	------	.09	.01	------
TOTAL	1.82	1.25	1.11	.03	57.0	1,005.6	107.88	142.58	83.71	2.93	1.24	.41
MEAN	.059	.042	.036	.001	1.97	32.4	3.60	4.60	2.79	.095	.040	.014
MAX	.20	.08	.04	.01	10	210	27	20	41	.28	.10	.02
MIN	0	.02	.01	0	0	1.0	.78	.64	.08	.02	.01	0
AC-FT	3.6	2.5	2.2	.06	113	1,990	214	283	166	5.8	2.5	.8

CAL YR 1971 TOTAL 1,062.02 MEAN 2.91 MAX 100 MIN 0 AC-FT 2,110
WTR YR 1972 TOTAL 1,405.56 MEAN 3.84 MAX 210 MIN 0 AC-FT 2,790

PEAK DISCHARGE (BASE, 100 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
3-11	-	-	380	6-18	0500	5.27	183

06340500 Knife River at Hazen, N. Dak.

LOCATION.--Lat 47°17'06", long 101°37'26", in SE¼ sec.18, T.144 N., R.86 W., Mercer County, on right bank at upstream side of highway bridge, 0.5 mile south of Hazen and 2 miles upstream from Antelope Creek.

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

PERIOD OF RECORD.--October to November 1928, March 1929 to September 1933, August 1937 to current year. Monthly discharge only for some periods, published in WSP 1309.

GAGE.--Water-stage recorder. Datum of gage is 1,712.35 ft above mean sea level. Prior to Sept. 25, 1947, nonrecording gages at same site and datum.

AVERAGE DISCHARGE.--39 years (1929-33, 1937-72), 183 cfs (132,600 acre-ft per year); median of yearly mean discharges, 157 cfs (114,000 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 19,000 cfs Mar. 15 (gage height, 26.17 ft, backwater from ice); minimum daily, 9.0 cfs Nov. 9; minimum gage height, 2.98 ft Sept. 22, 23.
Period of record: Maximum discharge, 35,300 cfs June 24, 1966 (gage height, 27.01 ft); no flow at times in 1933, 1959, 1962.
According to local residents, the floods of 1943 and 1950 were not exceeded during the period 1884 to 1942.

REMARKS.--Records good except those for the winter period, which are fair. Small diversions above station. Slight regulation by Lake Ilo 81 miles upstream (capacity, 7,130 acre-ft). Records of chemical analyses for water year 1972 are published in Part 2 of this report.

REVISIONS (WATER YEARS).--WSP 1146: 1943. WSP 1279: 1930-31, 1932-33(M). WSP 1917: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	28	35	65	15	30	30	238	174	199	153	72	46
2	42	30	50	16	30	30	229	408	170	130	98	42
3	90	25	35	15	29	30	220	714	142	116	77	40
4	107	20	19	14	29	30	207	1,170	126	108	66	37
5	77	16	16	14	28	30	200	898	112	101	59	35
6	183	14	13	16	27	33	217	591	102	93	56	34
7	329	12	18	18	27	34	257	339	97	87	56	35
8	291	10	17	19	26	38	267	256	92	85	63	34
9	181	9.0	12	21	24	48	452	216	87	82	68	33
10	117	11	10	22	25	165	622	191	85	76	81	32
11	90	12	10	22	26	2,000	418	188	87	69	84	31
12	75	11	10	21	25	5,400	304	222	87	68	70	31
13	64	10	10	21	21	6,400	322	243	856	66	57	44
14	59	10	10	20	20	8,000	365	306	474	64	48	48
15	55	10	10	23	20	15,900	397	320	376	64	42	49
16	54	10	10	23	20	15,500	392	358	230	64	39	48
17	53	10	10	22	19	13,000	332	278	178	62	39	48
18	60	10	10	22	20	9,100	308	220	409	59	84	47
19	72	10	10	24	20	7,390	255	571	1,820	70	159	44
20	77	10	10	26	20	4,200	220	495	2,820	83	393	40
21	66	10	10	26	30	2,380	196	464	2,090	80	514	32
22	64	10	10	26	40	1,460	183	586	839	80	231	28
23	73	10	11	26	40	938	173	285	317	100	160	29
24	81	10	13	26	40	694	162	214	247	119	132	43
25	75	10	12	28	40	567	152	214	259	125	104	54
26	67	10	12	28	40	463	146	221	221	135	87	60
27	59	10	12	30	35	381	146	253	221	117	76	64
28	56	10	13	31	35	340	146	238	237	102	70	66
29	50	20	13	30	30	305	140	264	198	89	69	66
30	45	86	13	30	------	274	136	221	201	78	62	66
31	40	------	14	31	------	251	------	192	------	71	53	------
TOTAL	2,780	471.0	488	706	816	95,411	7,802	11,310	13,379	2,796	3,269	1,306
MEAN	89.7	15.7	15.7	22.8	28.1	3,078	260	365	446	90.2	105	43.5
MAX	329	86	65	31	40	15,900	622	1,170	2,820	153	514	66
MIN	28	9.0	10	14	19	30	136	174	85	59	39	28
AC-FT	5,510	934	968	1,400	1,620	189,200	15,480	22,430	26,540	5,550	6,480	2,590

CAL YR 1971 TOTAL 96,389.0 MEAN 264 MAX 3,720 MIN 9.0 AC-FT 191,200
WTR YR 1972 TOTAL 140,534.0 MEAN 384 MAX 15,900 MIN 9.0 AC-FT 278,700

PEAK DISCHARGE (BASE, 1,500 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
3-15	--	--	19,000	6-20	1200	14.98	2,960
6-13	1830	11.05	1,580				

06340700 Missouri River near Stanton, N. Dak.

LOCATION.--Lat 47°17'14", long 101°20'25", in SW¼ sec.16, T.144 N., R.84 W., on right bank 3 miles southeast of Stanton, 0.1 mile below Ft. Clark irrigation pumping station, 0.4 mile above the United Power Association power plant at mile 1,372.

DRAINAGE AREA.--182,000 sq mi, approximately.

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

GAGE.--Water-stage recorder. Datum of gage is 1,650.00 ft above mean sea level (levels by Corps of Engineers). Prior to Sept. 30, 1964, at datum 20 ft lower.

EXTREMES.--Current year: Maximum daily gage height recorded, 18.60 ft Apr. 7; minimum daily recorded, 14.33 ft Sept. 2.
Period of record: Maximum daily gage height recorded, 24.56 ft Feb. 22, 1965; minimum daily recorded, 11.97 ft Mar. 28, 1968.

REMARKS.--Records good. Stage regulated by Lake Sakakawea (see station 06338000).

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1959 TO SEPTEMBER 1960

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		64.68	66.45	65.65	68.73	68.81	67.40	64.99	63.90		65.03	64.69
2		65.13	66.47	65.12	68.89	69.09	66.83	65.17	63.84		65.67	64.82
3		66.41	66.51	67.69	68.91	68.86		65.38	63.80		65.32	65.01
4		66.49	66.52	70.30	68.02	69.18					65.09	64.90
5		67.10	66.52	70.39	67.62	69.05					65.43	64.79
6		67 33	66.37	70.53	67.32	68.42					65.32	64.68
7		67.28	66.08	70.13	67.12	68.28				65.01	65.32	64.90
8		67.30	66.47	69.91	66.33	68.26				65.11	65.33	64.94
9		67.18	66 26	70.07	67.22	67.60					65.31	65.18
10		67.17	66.28	69.19	68.37	67.40					65.37	65.22
11		67.19	66.11	69.34	68.77	67.35					65.36	65.22
12		67.20	66.39	69.37	68.26	67.31		66.56		65.12	65.37	65.21
13		67.20	66.27	69.65	67.92	67.32		66.55		64.83	65.30	65.28
14		67.32	66.33	68.81	67.45	67.44		64.85	63.46	64.89	65.37	66.18
15		67.37	66.34	68.56	67.32	67.68		64.59		64.80	65.52	65.98
16		66.75	66.31	68.51	67.56	67.36		64.44		64.75	66.07	65.88
17		66.78	66.35	68.40	67.80	67.12		64.66		64.74	65.99	66.01
18		66.55	66.42	68.33	68.44	67.06		64.58		64.79	65.88	66.09
19		66.38	66.42	68.34	70.14	66.66		64.53		64.91	65.93	65.85
20		66.40	66.34	68.49	70.35	66.23		65.84		64.77	65.90	66.00
21		66.47	66.34	68.33	70.05	66.70		66.98		64.86	65.91	65.97
22			66.44	68.56	69.76	68.22	63.80	66.70		64.88	66.07	65.98
23		66.02	66.43	68.60	69.34	68.78	63.66	66.38		64.75	66.20	66.05
24		66.37	66.58	68.68	69.00	68.72		66.30		64.85	66.27	65.97
25		66.61	66.24	68.43	68.76	68.69		65.91		64.67	66.32	66.43
26		66.45	65.62	68.82	68.57	68.29		65.20		64.41	65.88	65.85
27		66.16	66.15	68.82	68.43		63.21		63.69	64.66	65.61	65.90
28	65.23	66.60	66.29	68.74	68.44		63.08			65.10	65.51	65.88
29	64.76	66.37	66.62	68.75	68.06		63.97			64.80	65.45	65.88
30	64.65	66.18	66.40	68.68	------	67.29	64.77			64.69	65.43	65.07
31	64 73	------	66.72	68.72	------	67.30	------		------	65.08	65.11	------
MEAN			66.36	68.77	68.38						65.60	65.53
MAX			66.72	70.53	70.35						66.32	66.43
MIN			65.62	65.12	66.33						65.03	64.68

MISSOURI RIVER MAIN STEM

06340700 Missouri River near Stanton, N. Dak.

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1960 TO SEPTEMBER 1961

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	65.33	64.89	66.59	71.21	70.81	67.75	68.30	67.30	66.53	64.76	67.02	65.08
2	64.94	64.99	66.42	71.69	70.83	67.71	67.89	67.58	66.49	64.86	67.11	64.59
3	64.71	64.76	66.37	71.92	70.91	67.78	67.49	67.51	66.33	64.88	67.16	64.47
4	65.02	64.76	66.70	71.83	70.90	67.82	67.64	67.50	66.09	64.88	67.28	64.58
5	64.86	64.74	66.19	71.74	70.99	67.72	67.52	67.62	65.90	64.72	66.88	64.29
6	64.78	64.78	66.61	71.60	70.85	67.62	67.65	67.52	66.30	64.46	66.52	64.37
7	64.57	65.00	66.55	71.52	70.60	67.56	67.57	67.24	66.05	64.53	66.64	64.31
8	64.54	64.57	66.62	71.58	70.57	67.64	67.55	67.31	65.76	64.64	66.12	64.20
9	64.53	64.79	66.53	71.48	70.67	67.68	67.30	67.51	65.62	64.33	65.82	64.36
10	64.50	64.78	66.56	71.48	70.49	67.60	67.39	67.54	65.51	64.39	66.24	63.92
11	64.37	64.75	66.63	71.36	70.07	67.54	67.65	67.44	65.30	64.59	66.26	64.10
12	64.33	64.77	66.64	71.20	69.61	67.69	67.64	67.31	64.75	65.19	65.88	64.29
13	63.90	64.83	66.52	71.14	68.91	67.60	67.68	67.36	64.60	65.19	65.43	64.31
14	64.25	64.74	66.57	71.14	68.93	67.56	67.51	67.14	65.00	65.10	66.15	64.12
15	64.12	64.73	66.55	70.96	68.84	67.64	67.48	67.21	67.42	65.18	66.24	64.17
16	64.15	64.77	66.55	70.81	68.81	67.60	67.22	67.45	67.50	64.99	66.61	63.86
17	63.90	66.22	66.46	70.68	69.75	67.61	67.32	67.45	67.36	65.20	66.78	63.88
18	63.99	66.15	66.37	70.53	69.43	67.28	67.66	67.40	67.10	65.06	66.60	63.84
19	64.35	66.49	66.77	70.41	69.01	67.01	67.55	67.19	66.40	64.96	65.42	63.88
20	64.02	66.61	66.62	70.02	68.73	67.06	67.46	67.05	64.74	65.36	65.07	63.60
21	64.38	66.38	66.69	70.14	68.26	66.74	67.40	66.41	64.49	65.49	65.42	63.34
22	64.09	66.56	68.87	70.35	67.89	66.40	67.48	66.30	64.40	65.86	66.13	63.58
23	64.09	66.69	71.75	70.28	68.19	66.36	67.31	67.06	64.42	65.18	66.29	63.49
24	64.07	66.64	71.76	70.17	68.53	66.39	66.78	66.94	64.43	65.83	66.54	63.34
25	63.98	66.56	71.33	70.52	68.31	66.34	67.49	66.84	64.35	66.00	66.80	63.39
26	64.19	66.60	71.16	70.66	67.87	66.32	67.34	66.24	64.68	67.04	66.78	63.18
27	64.78	66.69	71.16	70.82	67.83	67.11	67.48	65.98	64.38	67.04	66.72	63.19
28	64.89	66.33	71.29	70.91	67.81	67.96	67.34	65.94	64.57	66.94	66.63	63.00
29	64.95	66.52	71.09	70.95	------	68.53	67.50	65.36	64.46	66.58	65.57	63.20
30	64.92	66.69	71.03	70.89	------	68.34	67.24	65.58	64.70	66.33	65.66	63.04
31	65.04	------	70.86	70.77	------	68.20	------	65.93	------	66.35	65.29	------
MEAN	64.47	65.59	67.99	70.99	69.44	67.42	67.49	66.97	65.52	65.35	66.29	63.90
MAX	65.33	66.69	71.76	71.92	70.99	68.53	68.30	67.62	67.50	67.04	67.28	65.08
MIN	63.90	64.57	66.19	70.02	67.81	66.32	66.78	65.36	64.35	64.33	65.07	63.00

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1961 TO SEPTEMBER 1962

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	63.21	68.29	65.82	71.38	71.19	71.55	67.47	66.66	68.28		63.51	63.33
2	62.98	68.53	66.23	71.28	70.86	71.51	67.74	66.45	68.13		64.06	63.26
3	62.88	68.80	66.18	70.88	70.62	70.97	67.16	66.70	67.20		64.58	63.25
4	63.13	68.85	66.09	71.02	70.23	70.71	67.37	66.47	68.27		65.36	62.94
5	63.12	68.70	66.31	70.71	71.88	70.73	67.21	66.04	69.50		65.07	62.62
6	63.18	68.82	66.22	70.79	73.28	71.02	67.21	66.27	69.67		64.83	62.80
7	62.99	69.10	66.18	70.89	72.89	70.43	68.12	66.11	69.83		64.72	62.40
8	63.10	69.38	66.02	70.28	72.49	69.77	68.16	65.92	68.72		65.53	63.00
9	63.01	69.32	66.08	70.40	71.87	69.23	68.58	66.96	69.31		65.36	62.53
10	63.74	69.01	66.57	70.86	71.44	69.04	68.56	67.47	68.72		65.25	62.74
11	64.93	69.02	66.72	71.04	70.68	68.89	68.57	67.71	68.81	66.92	64.75	62.78
12	65.25	69.08	66.71	71.02	70.23	68.44	68.64	67.58	69.83	66.98	64.05	63.12
13	65.40	69.11	67.58	70.96	69.69	68.72	67.96	68.02	69.84	66.47	63.99	63.50
14	65.55	69.30	69.34	70.87	69.43	68.73	67.10	67.75	69.81	63.98	63.55	63.00
15	65.34	69.29	69.90	70.67	69.31	68.60	67.12	68.33	69.65	63.01	63.33	62.80
16	67.20	69.35	70.33	70.88	69.22	68.15	67.23	68.42	69.59	64.70	63.00	62.70
17	68.02	69.34	70.24	71.08	69.64	67.70	67.93	67.96	68.78	67.35	62.95	62.83
18	68.44	69.32	70.18	71.00	69.64	67.40	67.81	67.27	68.62	66.11	63.04	62.85
19	68.58	69.30	69.94	70.98	68.93	66.93	67.88	68.36	66.42	66.17	62.77	62.75
20	68.81	68.84	70.55	71.07	69.10	67.39	67.99	67.98	64.93	66.82	62.89	62.68
21	68.99	68.70	70.88	71.32	69.14	67.67	68.11	68.13	64.44	66.31	63.14	62.65
22	68.58	68.29	71.14	71.05	69.56	67.33	67.93	68.28	64.71	66.20	62.94	62.72
23	68.76	67.53	71.51	71.19	70.08	67.64	67.06	68.62	64.76	66.61	62.98	62.70
24	68.90	66.51	71.54	71.22	69.85	67.73	67.00	68.40	64.57	67.20	63.25	64.18
25	69.02	67.27	71.32	71.22	69.93	67.62	67.12	68.57	64.74	66.09	63.19	65.20
26	68.93	67.04	71.24	71.23	70.15	67.62	66.98	68.59	65.59	65.73	63.20	65.40
27	68.66	66.48	71.31	71.03	70.73	67.52	67.15	68.47	64.32	66.17	63.63	65.54
28	68.72	66.16	71.38	71.23	71.10	67.77	67.39	68.40	65.27	64.81	63.52	65.31
29	68.42	66.22		71.20	------	67.47	66.80	68.68	64.90	63.68	63.52	64.77
30	68.40	66.27	71.58	71.30	------	67.63	66.71	68.81	64.19	64.29	63.67	63.16
31	68.74	------	71.38	71.26	------	67.75	------	69.18	------	64.99	63.42	------
MEAN	66.29	68.37		71.01	70.47	68.70	67.60	67.70	67.38		63.84	63.32
MAX	69.02	69.38		71.38	73.28	71.55	68.64	69.18	69.84		65.53	65.54
MIN	62.88	66.16		70.28	68.93	66.93	66.71	65.92	64.19		62.77	62.40

06340700 Missouri River near Stanton, N. Dak.

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1962 TO SEPTEMBER 1963

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APP	MAY	JUN	JUL	AUG	SEP
1	63.15	63.05	65.12	68.30				63.46	64.36	65.16	65.27	62.49
2	63.80	62.72	65.25	67.68				63.02	64.48	64.50	64.80	62.49
3	63.57	62.84	65.45	67.41				63.36	66.46	64.92	64.88	62.49
4	64.63	62.90	66.04	67.13				63.01	66.58	65.27	64.94	62.49
5	64.46	63.09	65.56	67.01			62.25	62.76	66.74	65.50	65.19	62.48
6	63 57	62.96	65.41	66.91		67.00		63.58	66.33	65.58	65.03	62.44
7	63.38	62.91	65.22	66.90				63.53	66.54	64.87	64.97	62.46
8	63.61	63.30	65.49	66.91				63.70	66.54	65.09	64.95	62.46
9	63.92	62.96	65.75	66.96				63.29	67.20	64.78	64.97	62.62
10	63.93	62.71	65.35	67.46			65.27	63.71	67.19	64.66	64.24	62.36
11	64.64	62.63	66.06	69.85			65.51	63.43	66.60	64.68	64.05	62.46
12	65.10	62.62	66.12	71.70	67.55	67.13	63.88	62.78	65.29	64.43	64.25	62.41
13	64.09	62.64	66.13	72.30			63.06	63.81	64.89	64.45	63.96	62.55
14	63 11	62.94	65.98	72.24			62.56	64.62	64.70	65.41	63.85	63.30
15	63.39	62.85	65.95	72.67			63.74	63.79	64.93	66.65	63.36	64.09
16	63.27	62.68	65.90	72.58			64.85	63.80	65.69	66.58	62.43	64.32
17	63 27	63.13	65.90	72.54			67.03	64.03	67.20	67.87	62.60	64.80
18	62.99	62.80	65.89	72.37			67.98	63.00	67.38	67.96	62.68	64.64
19	62.91	63.38	65.90	72.20	67.52		68.02	62.68	66.93	68.02	62.54	64.64
20	62.88	64.51	66.33	72.23		66.01	67.96	64.09	66.80	68.88	62.53	64.71
21	62.78	64.33	65.95	72.83			68.09	64.61	65.18	68.29	62.50	64.64
22	62.71	64.04	65.90	72.78			68.21	64.11	64.94	68.44	62.49	65.18
23	62.67	64.12	66.14				67.29	63.82	64.53	68.69	62.51	64.34
24	63.21	64.24	65.92				69.00	63.33	65.38	68.61	62.48	64.90
25	63 11	64.27	66.10				68.49	62.78	66.54	66.73	62.59	64.79
26	62.86	64.23	66.12				69.10	62.64	67.19	66.44	62.61	64.80
27	62.70	64.34	66.19			65.17	66.99	63.40	67.11	65.69	62.58	64.75
28	62.71	64.61	66.26		67.28		64.63	63.89	66.60	65.56	62.51	64.78
29	62.94	65.00	66.36		------		64.09	63.53	65.80	65.51	62.49	64.78
30	62.91	65.02	67.18		------		64.45	62.84	65.25	65.36	62.51	64.91
31	63.01	------	68.54		------		------	63.31	------	65.25	62.53	------
MEAN	63.40	63.46	65.98					63.47	66.05	66.12	63.53	63.69
MAX	65.10	65.02	68.54					64.62	67.38	68.88	65.27	65.18
MIN	62.67	62.62	65.12					62.64	64.36	64.43	62.43	62.36

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	64.73	64.40	68.47	67.73	68.79	68.68	65.55	66.41	63.71	65.34	64.80	64.78
2	64.71	64.35	68.35	67.58	68.80	68.82	65.61	66.83	63.67	65.25	64.74	64.57
3	64.94	64.25	68.71	67.58	64.66	64.51	65.49	66.35	63.71	64.99	64.89	65.08
4	64 82	63.98	68.46	67.53	68.54	68.60	65.58	66.62	63.72	64.95	65.13	65.70
5	64.79	63.97	68.42	67.49	68.72	68.70	65.56	66.57	64.10	65.10	64.90	65.71
6	64.69	64.12	68.52	67.61	68.75	68.10	65.75	66.94	64.46	65.03	64.83	65.14
7	64.88	64.07	68.42	67.58	68.65	67.88	67.43	67.14	64.91	65.10	64.84	64.67
8	64 90	64.09	68.54	67.89	68.57	68.00	67.77	67.09	66.65	65.10	64.83	65.29
9	64 81	64.09	68.57	68.10	68.64	68.46	67.77	67.09	66.35	64.95	64.81	66.49
10	64.81	64.38	67.93	68.25	68.72	68.55	67.83	67.10	65.31	64.91	64.77	66.39
11	64.46	64.69	67.68	69.03	68.70	68.73	67.50	67.10	65.58	64.77	64.64	66.68
12	63 93	65.46	67.55		68.61	68.72	67.20	67.08	65.80	64.76	64.60	66.93
13	64.05	66.15	67.64	70.23	68.78	68.54	67.26	67.11	66.44	64.83	64.76	66.68
14	64.19	66.04	67.94	69.56	68.66	68.10	67.26	67.16	66.25	64.96	64.82	66.59
15	63.42	65.90	67.91	68.99	64.74	68.08	67.20	67.20	66.77	64.97	64.62	67.00
16	64.11	65.80	67.83	68.75	68.73	68.08	67.15	67.18	68.16	64.93	64.90	67.01
17	64.08	66.07	67.85	68.36	64.67	68.12	67.17	66.84	68.90	64.84	64.50	66.94
18	64.06	65.34	68.81	68.37	68.57	67.86	67.03	66.74	68.86	64.71	64.88	67.02
19	64.01	66.54	68.41	68.39	68.67	67.61	67.27	66.23	69.36	64.80	65.14	67.08
20	64.01	66.68		68.18	68.67	67.57	67.13	65.31	69.03	64.80	64.51	67.04
21	64.03	67.49	69.21	68.29	68.70	68.04	66.40	64.03	67.93	64.73	64.95	66.50
22	63.98	67.62	69.37	68.30	68.33	67.82	65.84	63.92	68.56	64.73	64.47	67.09
23	64.07	67.84	68.74	68.52	68.16	67.16	65.87	63.82	68.88	64.54	64.54	66.97
24	64.00			69.10	68.06	65.17	65.83	63.80	68.86	64.71	64.61	67.17
25	64.10			69.71	68.03	65.61	66.05	63.88	68.88	64.71	64.37	67.08
26	63.91			69.73	68.38	65.60	65.85	63.62	68.66	64.70	64.62	67.05
27	64.67	68.20		70.06	68.62	65.52	65.53	64.03	68.50	64.78	64.85	66.81
28	64.09	68.42		70.14	68.61	65.50	66.22	63.64	67.56	65.60	64.34	66.60
29	64.19	68.20		69.63	68.60	65.61	66.44	63.85	67.24	65.40	64.88	67.28
30	64.21	68.31		69.52	------	65.38	66.30	63.70	66.42	64.30	64.54	67.12
31	64.11	------		68.88	------	65.57	------	63.82	------	65.10	64.74	------
MEAN	64.31				68.18	67.38	66.56	65.75	66.77	64.92	64.74	66.42
MAX	64.94				68.80	68.82	67.83	67.20	69.36	65.60	65.14	67.28
MIN	63 42				64.66	64.51	65.49	63.62	63.67	64.30	64.34	64.57

MISSOURI RIVER MAIN STEM

06340700 Missouri River near Stanton, N. Dak.

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1964 TO SEPTEMBER 1965

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17.05	15.73	16.42	23.06	22.26	21.64	18.80	14.58	17.69	17.33	15.18	13.83
2	17.10	15.95	16.69	23.12	22.34	22.21	18.78	14.85	17.80	17.27	16.16	13.70
3	16.63	16.80	16.48	23.06	22.13	22.21	18.74		17.72	17.19	17.22	14.14
4	15.96	17.19	16.41	23.04	22.29	21.60	18.45		17.74	17.15	18.30	13.35
5	15.92	16.90	16.63	22.87	22.08	20.90	18.72		18.69	17.24	17.58	13.53
6	16.64	17.02	16.48	23.00	22.28	20.66	18.67		18.83	17.17	17.05	13.63
7	16.04	16.92	16.68	22.98	22.15	20.00	18.90		18.66	17.62	15.55	13.68
8	16.01	16.49	17.42	22.92	22.33	19.46	19.03		18.68	18.12	14.37	13.58
9	16.06	16.49	17.42	22.87	22.12	19.50	18.77		18.64	17.83	14.71	13.55
10	16.16	17.15	17.48	22.88	22.23	19.17	18.57		18.67	18.51	14.55	13.74
11	16.22	17.08	17.50	22.83	22.21	19.12	18.32		18.64	18.36	14.57	13.80
12	16.45	17.02	17.50	22.85	22.18	19.05	19.16		18.59	18.37	14.64	13.46
13	16.54	17.00	17.45	23.76	22.17	18.92	18.86		18.61	18.14	14.84	13.64
14	16.06	17.10	17.80	22.82	22.14	18.90	18.84		18.02	17.82	13.82	13.54
15	15.08	17.00	18.47	22.64	22.18	18.84	18.90		18.13	17.26	13.86	13.59
16	13.56	17.43	19.16	22.77	22.39	18.97	18.64		18.83	16.82	13.79	13.65
17	12.91	16.97	23.00	22.54	22.19	18.82	17.46		18.76	16.20	13.83	14.02
18	12.65	17.82	24.13	22.86	22.00	19.18	17.20		19.10	16.08	13.85	13.76
19	13.89	18.36	24.14	22.60	21.96	20.00	17.06		18.88	15.69	13.80	13.62
20	15.72	19.60	23.52	22.68	21.83	20.50	17.24	19.09	18.52	16.50	13.88	14.15
21	15.97	18.92	23.64	22.51	24.20	20.54	18.24	19.06	18.37	16.78	13.85	14.48
22	15.90	18.68	23.72	22.56	24.56	20.54	18.38	19.25	16.50	16.84	14.12	14.77
23	16.00	19.02	23.40	22.64	24.46	20.48	18.38	18.64	15.18	16.94	13.59	15.02
24	15.92	19.36	23.36	22.56	24.19	20.31	17.38	18.19	15.25	16.32	13.77	15.61
25	15.89	19.10	23.51	22.27	23.84	19.94	16.57	17.91	15.18	14.79	13.82	16.29
26	15.64	18.80	23.34	22.41	23.25	19.67	16.61	17.96	16.66	15.25	13.90	16.44
27	15.88	18.29	23.24	22.42	22.44	19.40	16.54	18.18	16.60	14.52	13.91	16.29
28	16.02	16.55	23.24	22.38	21.41	19.32	15.98	18.45	15.76	14.60	13.88	16.45
29	15.70	16.70	23.14	22.58	------	19.24	15.61	18.47	16.62	14.54	14.10	16.32
30	15.74	16.64	23.24	22.25	------	19.13	14.81	17.03	17.31	14.54	13.39	17.43
31	15.90	------	23.31	22.33	------	19.13	------	16.96	------	14.87	13.69	------
MEAN	15.72	17.44	20.26	22.74	22.56	19.91	17.92		17.75	16.67	14.63	14.44
MAX	17.10	19.36	24.14	23.76	24.56	22.21	19.16		19.10	18.51	18.30	17.43
MIN	12.65	15.73	16.41	22.25	21.41	18.82	14.81		15.18	14.52	13.39	13.35

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1965 TO SEPTEMBER 1966

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17.74	18.26	18.22	15.76	22.23	17.52	13.47			14.43	15.59	15.68
2	17.47	18.24	18.01	16.03	22.27	17.63	13.47			14.48	15.25	15.87
3	16.76	18.89	17.12	16.54	21.93	18.08	13.18			14.76	15.51	15.42
4	17.22	19.20	18.62	16.56	21.84	19.60	13.20	12.90		14.77	15.37	15.53
5	18.80	19.22	17.65	17.25	21.67	21.70	13.28			14.65	15.30	15.26
6	18.62	19.17	18.66	19.31	21.29	21.94	13.18			15.20	14.87	15.31
7	18.89	18.68	19.00	20.34	21.10	20.86	13.85			15.28	14.62	15.29
8	18.92	18.82	18.75	20.57	20.81	20.42				15.37	15.16	15.34
9	18.96	19.02	18.13	20.70	20.14	19.17				15.45	14.96	15.13
10	18.01	19.23	18.54	21.35	19.79	17.96				15.40	14.90	15.09
11	18.22	18.97	17.74	21.59	19.70	17.60				15.09	14.66	14.64
12	18.70	18.86	16.50	21.56	19.23	17.59				15.30	14.66	14.44
13	18.53	18.85	18.02	21.19	19.25	17.68				15.54	14.82	14.75
14	18.46	18.93	18.88	20.48	18.96	17.46				15.25	16.18	14.86
15	18.85	18.86	19.29	20.28	19.09	16.07				15.49	15.72	14.72
16	18.48	19.08	19.23	20.33	19.58	16.37				15.30	16.00	14.82
17	17.89	19.14	19.26	20.92	19.36	16.15			13.33	15.59	15.63	14.74
18	18.10	19.08	19.49	20.96	20.12	16.00			13.69	15.40	15.58	14.42
19	18.47	19.20	19.38	21.08	20.85	15.67	13.07			15.31	15.77	14.63
20	18.57	18.69	19.21	21.32	21.40	15.26	12.96	13.66		15.38	15.78	14.59
21	18.54	18.55	19.31	21.98	21.09	15.83	13.01	13.55		15.32	16.22	14.68
22	18.65	18.91	19.38	22.00	20.39	16.85	13.06	13.41		15.32	15.33	14.45
23	18.73	18.84	19.65	22.23	19.66	16.20	13.05	13.20		15.33	15.99	13.88
24	17.92	19.08	19.64	22.39	18.98	16.24	13.01	13.08		15.26	15.87	14.03
25	18.32	19.06	18.14	22.44	18.90	16.22	13.09	13.27		15.53	15.77	13.81
26	18.52	18.78	17.19	22.52	18.39	15.42	13.02			15.56	15.82	13.89
27	18.76	19.18	17.40	22.57	17.68	14.00	13.04			15.21	15.75	14.06
28	19.01	19.06	17.31	22.64	17.50	13.71	12.88				15.76	14.12
29	18.68	19.12	17.28	22.57	------	13.38					15.77	14.09
30	18.75	18.55	17.40	22.56	------	13.71			14.53	15.45	16.04	13.93
31	18.58	------	16.87	22.46	------	13.69	------		------	15.35	15.83	------
MEAN	18.39	18.92	18.36	20.66	20.11	16.97					15.50	14.72
MAX	19.01	19.23	19.65	22.64	22.27	21.94					16.22	15.87
MIN	16.76	18.24	16.50	15.76	17.50	13.38					14.62	13.81

06340700 Missouri River near Stanton, N. Dak.

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1966 TO SEPTEMBER 1967

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14.16	15.87	16.62	15.83	18.77	18.79	18.51	13.32	15.75	17.00	19.79	18.83
2	14.15	15.87	15.94	15.94	19.06	18.39	18.60	13.37	15.40	16.67	19.70	18.34
3	14.55	15.82	15.96	16.22	18.94	18.22	16.92	13.33	15.66	16.64	19.68	17.81
4	15.05	15.80	15.94	16.35	20.07	18.00	15.70	13.64	14.42	16.77	19.73	17.51
5	15.42	15.82	15.80	16.84	18.80	18.25	16.48	12.94	15.34	16.68	19.74	18.20
6	15.41	15.88	15.83	17.08	19.99	18.31	16.61	12.67	15.55	17.39	19.73	18.29
7	15.84	15.92	15.85	17.34	19.07	18.65	15.93	12.92	15.50	17.42	19.74	18.45
8	15.76	15.89	15.90	17.80	19.38	18.84	14.31	13.12	16.82	16.96	19.73	18.78
9	15.36	15.97	15.86	17.66	18.95	18.39	14.07	13.72	17.33	16.46	19.74	19.16
10	15.47	16.19	16.04	17.68	18.82	18.86	15.79	14.12	18.22	17.47	19.77	19.17
11	15.70	17.26	15.92	17.80	18.81	19.19	15.98	13.37	18.34	18.27	19.77	18.39
12	15.88	17.59	15.94	17.35	18.87	19.09	14.96	13.08	19.00	18.19	19.79	18.54
13	15.84	16.86	16.56	17.42	18.79	19.06	16.01	12.81	19.11	18.02	19.77	18.72
14	15.72	16.66	16.38	17.49	19.05	19.06	16.66	13.08	19.20	18.63	19.76	18.73
15	16.23	17.20	16.25	17.96	19.14	18.96	14.78	12.65	18.51	19.74	19.76	18.56
16	16.01	17.20	16.50	17.87	19.56	18.89	12.88	12.88	18.88	19.68	19.83	18.51
17	16.43	17.33	16.70	19.54	20.40	18.92	14.38	13.12	19.08	19.63	19.83	16.99
18	17.40	17.17	16.98	21.15	21.42	18.40	15.24	13.07	18.71	19.74	19.40	15.40
19	17.63	17.44	17.23	21.98	21.76	17.86	14.83	12.57	19.72	19.65	19.75	14.21
20	17.43	16.94	16.98	21.88	21.16	16.28	15.56	12.64	19.08	19.83	19.87	14.23
21	17.16	17.28	17.10	21.04	20.74	15.62	16.21	12.57	19.31	19.81	19.88	14.31
22	17.42	16.94	16.75	20.14	20.34	15.39	15.54	12.64	19.09	19.76	19.90	14.49
23	16.38	17.09	15.82	19.99	20.12	16.26	14.65	12.55	18.82	19.80	19.88	15.84
24	15.29	17.16	16.01	20.15	20.82	16.46	13.65	12.52	17.91	19.83	19.56	16.02
25	15.24	17.10	16.15	20.21	20.25	16.61	13.94	13.12	16.80	19.86	19.65	17.79
26	15.23	17.22	16.13	19.90	19.53	16.07	13.82	13.09	16.94	19.78	19.82	18.39
27	15.46	17.20	15.43	20.12	18.92	15.42	13.88	13.65	18.29	19.83	19.33	18.64
28	15.30	17.30	16.12	19.21	18.59	15.75	13.71	12.78	18.18	19.85	19.33	18.70
29	15.83	18.00	15.91	18.81	------	16.36	13.40	12.55	17.58	19.84	18.99	18.71
30	15.89	18.10	15.99	18.71	------	18.22	13.61	12.97	17.64	19.84	18.02	18.66
31	15.86	------	16.02	18.64	------	18.21	------	13.99	------	19.81	18.08	------
MEAN	15.82	16.80	16.21	18.58	19.65	17.77	15.22	13.06	17.67	18.67	19.59	17.61
MAX	17.63	18.10	17.23	21.98	21.76	19.19	18.60	14.12	19.72	19.86	19.90	19.17
MIN	14.15	15.80	15.43	15.83	18.59	15.39	12.88	12.52	14.42	16.46	18.02	14.21

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17.96	18.72	18.78	22.33	20.49	18.49	12.47	14.14	14.61	13.47	15.81	14.96
2	18.00	18.75	18.60	22.15	20.53	18.62	15.01	14.30	13.97	13.00	15.74	14.80
3	18.70	18.14	17.92	22.18	20.43	18.41	16.90	13.89	14.07	14.07	15.58	14.96
4	18.45	18.43	18.52	21.99	20.22	18.61	16.44	15.07	14.98	13.94	16.02	15.10
5	18.57	16.88	19.41	22.00	20.25	18.59	16.92	15.69	14.94	13.89	14.82	15.18
6	18.46	17.20	18.72	22.59	20.44	18.35	16.71	15.47	15.17	14.24	15.76	14.95
7	18.00	17.98	18.38	22.11	20.37	18.19	16.97	15.30	14.34	14.24	16.59	15.08
8	18.13	17.68	19.07	22.42	20.20	17.22	17.38	15.40	14.59	14.40	14.48	14.84
9	18.38	17.75	19.27	22.29	20.10	17.32	17.13	15.32	14.29	14.44	14.45	15.42
10	18.80	17.41	18.70	22.25	19.91	16.91	16.70	15.47	15.24	14.00	14.61	15.03
11	18.56	17.25	19.01	22.24	19.48	16.97	16.79	15.55	16.68	14.51	14.08	15.03
12	18.57	16.04	19.22	21.95	19.51	16.95	15.98	15.57	16.13	13.53	13.93	15.34
13	18.62	15.95	19.28	22.16	19.89	16.75	16.36	15.58	15.60	13.94	15.28	15.38
14	18.58	16.54	18.42	22.05	19.80	16.81	16.62	15.45	15.36	13.85	14.67	15.57
15	17.30	16.85	16.51	22.33	19.85	16.70	17.24	15.52	15.00	14.65	15.04	15.52
16	17.82	16.97	16.13	22.29	20.07	16.71	16.52	15.48	14.37	14.91	14.45	16.41
17	18.30	17.32	16.07	22.33	22.57	16.01	16.66	15.58	14.65	15.28	14.63	16.10
18	18.25	16.93	15.97	22.12	22.29	15.82	17.01	15.63	15.14	14.80	14.31	15.59
19	18.24	15.84	15.88	22.12	21.79	14.51	16.93	15.56	14.13	15.39	13.81	15.59
20	18.17	16.15	15.39	21.68	21.34	14.47	16.81	15.49	14.04	15.55	15.56	16.72
21	18.05	16.94		21.15	21.05	13.73	15.74	15.62	14.09	14.21	16.12	17.23
22	17.31	17.14		21.26	20.98	12.67	14.95	15.58	14.00	15.58	16.68	17.46
23	17.40	18.38		20.84	20.90	12.45	15.16	15.46	12.98	15.47	17.99	17.58
24	17.94	18.96		21.04	20.34	12.36	15.47	15.52	13.12	15.41	17.24	17.82
25	18.10	18.78		20.83	19.66	12.59	15.28	15.80	13.26	13.76	17.44	17.39
26	18.06	18.53		20.69	19.28	12.20	14.20	15.90	13.65	15.00	17.17	18.32
27	18.06	18.64		20.18	19.02	12.15	14.13	15.13	15.13	14.79	17.13	18.62
28	18.22	18.57		20.14	18.90	11.97	14.26	15.98	15.78	14.52	16.66	19.10
29	18.65	18.83	21.48	20.40	18.87	12.38	14.18	16.07	14.71	14.48	15.51	18.97
30	18.40	18.84	22.12	20.75	------	12.00	14.18	15.31	13.54	15.30	15.32	18.78
31	18.62	------	21.98	20.60	------	12.08	------	14.68	------	15.20	15.11	------
MEAN	18.22	17.61		21.66	20.29	15.45	15.90	15.37	14.59	14.51	15.55	16.29
MAX	18.80	18.96		22.59	22.57	18.62	17.38	16.07	16.68	15.58	17.99	19.10
MIN	17.30	15.84		20.14	18.87	11.97	12.47	13.89	12.98	13.00	13.81	

06340700 Missouri River near Stanton, N. Dak.

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	19.16	16.07	17.95			18.52	16.43	17.76	15.58	14.32	17.58	
2	18.76	16.48	18.83			17.92	16.49	17.77	16.03	15.09	17.50	
3	18.72	15.88	18.03			18.25	16.70	17.52	15.82	14.71	16.95	
4	19.26	16.25	17.76		20.30	18.57	17.22	16.44	15.75	14.27	17.28	
5	18.94	16.94	18.12	19.83	19.97	18.72	17.84	17.86	15.79	14.28	17.17	
6	18.32	16.46	18.77	19.90	19.97	18.63	18.28	17.18	15.68	14.72	17.17	
7	18.25	16.43	19.02	19.65	19.69	17.95	18.49	16.75	15.79	14.79	17.20	
8	18.76	16.52	19.16		19.54	18.33	18.51	16.97	15.42	15.24	16.93	
9	18.64	16.05	18.89		19.11	18.26	18.06	16.64	15.29	16.21	17.02	17.40
10	18.80	15.31	18.99		18.95	18.26	17.29	16.63	15.27	16.71	17.15	17.33
11	18.63	16.00	18.98		19.07	18.53	16.41	16.12	15.53	16.88	16.78	17.12
12	18.81	17.02	18.89	20.72	18.94	18.32	15.75	16.22	15.25	16.83	17.47	17.15
13	18.80	16.90	17.00	20.64	19.17	18.55	15.63	15.84	15.17	16.39	17.48	16.55
14	18.92	16.81	15.53	20.66	19.07	18.60	15.74	15.79	15.87	16.32	17.35	16.69
15	18.52	16.82	15.84	20.08	18.83	18.59	15.60	15.57	14.37	17.61	17.44	16.72
16	18.70	16.84	15.70	19.72	18.54	18.35	15.38	15.61	13.82	17.80	17.47	16.83
17	19.12	16.06	15.80	19.66	18.62	18.29	15.95	15.36	13.51	17.71	17.48	16.47
18	18.85	16.70	15.79		18.62	18.43	16.62	15.28	13.27	18.29	17.43	16.74
19	18.48	16.96	15.77		19.04	18.86	16.54	15.18	13.88	19.16	17.40	16.49
20	17.47	16.80	15.58	20.04	18.76	17.21	16.98	15.38	13.92	17.62	17.51	16.40
21	17.75	16.74	15.59	19.80	18.72	16.65	16.90	15.62	13.54	17.92	17.52	16.02
22	17.98	16.97	15.50	19.65	18.62	16.52	16.85	15.27	13.58	17.26	17.57	16.03
23	17.96	16.66	15.70		18.12	16.54	17.24	15.24	13.80	17.36	17.62	15.82
24	18.17	16.72	15.65		18.33	16.46	17.54	15.31	14.73	17.95	17.61	15.96
25	18.31	17.32	15.85		18.23	16.56	17.18	15.09	14.52	18.94	17.61	16.00
26	18.20	17.81	16.09		18.26	16.78	17.37	15.41	14.37	18.75	17.65	15.98
27	16.65	17.75	15.50		18.34	16.66	17.46	15.64	14.04	17.86	17.63	15.62
28	16.45	16.78	15.60		18.32	16.62	17.17	15.70	14.12	18.30	17.78	15.51
29	16.55	16.62	15.92		------	16.46	17.45	16.01	14.00	18.66		15.66
30	16.36	18.86			------	16.54	17.85	16.38	14.10	17.83		15.72
31	16.03	------			------	16.46	------	15.77	------	17.42		------
MEAN	18.20	16.72				17.72	16.96	16.11	14.73	16.88		
MAX	19.26	18.86				18.86	18.51	17.86	16.03	19.16		
MIN	16.03	15.31				16.46	15.38	15.09	13.27	14.27		

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1969 TO SEPTEMBER 1970

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15.90	17.03	14.98	14.95	18.40	16.25	15.55	18.90		16.60	16.74	16.21
2	15.80	16.95	15.59	15.42		16.46	15.35	17.20		16.64	16.60	15.55
3	15.58	17.21	16.12	15.71		16.78	14.93	14.32		17.01	16.20	15.49
4	16.16	17.77	16.67	15.98	23.50	17.05	15.46	16.00	16.68	16.68	16.78	15.56
5	16.38	18.00	17.38	16.43	22.17	17.31	14.85	16.15	17.18	16.78	16.59	15.08
6	16.43	17.68	17.86	17.97	20.67	17.12	14.15	17.35	17.27	16.59	16.19	15.21
7	16.90	17.72	18.12	21.03	19.28	16.88	14.40	15.83	17.39	16.84	16.04	14.99
8	17.62	17.77	18.03	20.40	18.63	16.28	14.66	16.16	16.90	16.82	16.66	15.21
9	17.37	17.24	18.36	21.54	18.42	16.21	14.58	15.26	16.55	16.69	16.13	15.06
10	17.34	17.33	18.71	21.90	18.52	16.26	13.58	14.93	16.20	16.58	16.70	15.20
11	17.38	17.13	18.82	21.12	18.23	16.30	13.61	15.82	16.30	16.71	16.66	15.25
12	16.90	17.27	19.10	21.00	18.09	16.32	14.77	17.17	16.33	16.76	16.83	15.17
13	16.93	17.00	19.10	21.00	18.34	16.19	15.45	17.95	17.04	16.41	16.87	15.37
14	17.53	17.06	19.18	20.93	18.54	15.97	16.75	17.69	17.07	16.22	16.69	15.08
15	17.35	17.16	19.11	20.95	18.10	15.60	17.30	17.92	16.96	16.44	16.67	15.16
16	17.45	16.88	19.15	20.78	17.96	15.12	17.46	17.88	17.09	16.75	16.73	15.46
17	17.28	16.64	18.99		17.52	14.66	17.34	16.58	17.09	16.80	16.75	15.40
18	16.80	17.36	19.21		17.65	14.42	17.38	16.46	16.78	16.89	16.71	15.80
19	15.97	17.45	19.06		18.16	13.50	16.97	17.46	17.48	15.83	16.45	15.61
20	15.72	17.34	18.02		18.63	13.54	17.27	17.66	18.04	15.97	16.65	15.16
21	15.90	16.56	17.57		17.86	13.16	17.42	17.75	17.82	16.20	16.76	15.58
22	16.04	16.56	18.00	21.20	17.06	13.59	17.44	17.86	17.54	17.36	16.65	15.72
23	15.96	15.56	17.81	21.24	16.81	13.25	17.15	18.18	17.29	16.25	16.72	15.62
24	16.30	15.82	17.03	21.30	16.77	13.66	16.96	17.65	17.03	16.25	16.76	15.98
25	15.74	15.77	15.63	21.10	16.84	13.40	17.50	18.28	16.88	16.60	16.45	15.83
26	15.72	15.44	15.63	20.67	16.68	13.42	17.70	18.30	16.58	17.17	16.99	16.11
27	15.80	15.63	15.56	20.30	16.61	13.76	17.86	18.57	16.84	16.43	17.29	15.79
28	16.45	15.36	15.37	19.54	16.60	14.53	18.48	17.98	16.45	16.17	17.87	16.00
29	16.44	15.16	15.77	19.63	------	15.45	18.50	17.76	16.44	15.75	16.71	15.99
30	16.63	15.27	15.62	19.52	------	15.54	18.53	17.53	16.81	16.10	16.40	16.08
31	16.98	------	15.31	19.28	------	16.02	------	16.38	------	16.81	16.83	------
MEAN	16.54	16.77	17.45			15.29	16.31	17.13		16.55	16.68	15.52
MAX	17.62	18.00	19.21			17.31	18.53	18.90		17.36	17.87	16.21
MIN	15.58	15.16	14.98			13.16	13.58	14.32		15.75	16.04	14.99

06340700 Missouri River near Stanton, N. Dak.

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16 00	16.59	16.88	19.03	23.34	16.97	17.28	18.80	18.47	18.55	16.78	16.03
2	15.87	16.77	17.06	18.87	22.63	17.11	17.09	18.80	18.08	18.48	16.88	16.00
3	15.95	16.91	17.59	19.00	21.68	16.69	17.10	18.83	18.13	18.68	16.92	15.87
4	15.71	17.46	17.17	19.81	21.12	16.96	17.02	18.48	18.48	18.52	16.91	15.96
5	16.06	17.55	17.47	20.59	20.62	17.00	16.86	18.60	18.50	18.60	16.96	15.38
6	16.30	17.37	17.74	20.80	20.73	16.90	16.91	18.79	18.64	18.45	16.56	15.45
7	16.35	17.60	16.99	20.76	21.09	16.60	17.13	18.80	18.45	18.55	16.51	15.95
8	16.37	16.33	15.74	20.88	20.82	16.66	17.87	18.83	18.52	18.59	16.51	15.93
9	16 84	16.25	17.41	20.94	20.76	16.84	18.63	18.87	18.46	18.60	16.59	15.80
10	16.80	16.54	16.04	20.86	20.09	17.48	18.35	18.88	18.19	18.59	16.27	15.79
11	15.54	16.29	16.81	20.80	19.66	17.48	18.56	18.90	17.92	18.57	16.65	15.91
12	16.12	16.31	16.55	20.84	18.93	17.40	18.03	18.91	18.07	18.58	16.57	16.10
13	16.88	16.21	16.33	21.20	18.45	17.35	17.66	18.90	17.63	18.53	16.65	15.95
14	17.10	16.53	16.39	21.32	17.92	17.32	18.43	18.89	17.17	18.55	16.51	15.77
15	17.04	16.50	16.66	21.21	17.72	17.71	18.57	18.92	17.45	18.54	16.54	16.05
16	16.83	16.42	15.59	20.91	17.56	17.30	18.36	18.93	17.71	18.55	16.53	15.83
17	16.31	16.58	15.06	21.04	17.37	17.34	18.69	18.93	18.24	18.57	16.51	16.02
18	15.94	16.50	15.30	20.82	17.00	17.35	18.56	18.93	18.29	18.57	16.18	15.91
19	16.34	16.60	15.38	20.49	17.00	17.34	18.48	18.95	18.64	18.49	16.29	15.39
20	15.85	16.39	15.74	20.66	16.81	17.28	18.58	18.93	18.51	18.59	16.77	15.75
21	16.29	17.17	16.32	20.71	16.71	17.24	18.54	18.97	18.37	18.19	16.62	16.06
22	16.30	17.37	16.79	20.60	16.80	17.17	18.61	18.98	18.72	18.11	16.32	15.94
23	16.91	17.42	17.08	20.64	16.98	17.19	18.76	18.97	18.71	17.81	16.39	16.02
24	16.97	17.38	19.06	20.32	17.17	16.97	18.65	18.96	18.75	17.52	16.27	15.99
25	16.73	17.16	20.08	20.26	16.98	16.97	18.70	18.38	18.77	17.50	16.44	16.08
26	17 12	17.25	20.01	20.51	16.98	17.06	18.77	18.56	18.59	17.66	16.65	15.56
27	16.96	17.30	19.66	20.40	16.94	17.10	18.50	18.46	18.59	17.19	16.51	15.72
28	17.50	17.34	19.40	20.32	17.06	16.78	18.63	18.23	18.72	17.16	16.54	16.08
29	17.20	17.25	19.81	20.09	------	17.27	18.71	18.56	18.74	16.92	16.51	15.87
30	17.37	17.06	19.80	21.15	------	17.54	18.59	18.19	18.43	16.98	16.02	15.90
31	17.31	------	19.40	23.53	------	17.33	------	17.88	------	16.86	16.11	------
MEAN	16.54	16.88	17.33	20.62	18.82	17.15	18.15	18.74	18.33	18.16	16.53	15.87
MAX	17.50	17.60	20.08	23.53	23.34	17.71	18.77	18.98	18.77	18.68	16.96	16.10
MIN	15.54	16.21	15.06	18.87	16.71	16.60	16.86	17.88	17.17	16.86	16.02	15.38

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15.91	15.20						18.45	18.40	17.69	15.77	14.63
2	16.02	16.13						18.43	18.40	16.97	15.76	14.33
3	15.34	15.82						18.47	18.41	17.05	15.67	14.45
4	15.70	15.99						18.55	18.38	16.92	15.77	14.60
5	15.95	15.77					18.55	18.57	18.30	17.16	15.74	14.67
6	16.01						18.56	18.50	18.37	16.89	15.21	14.39
7	15.92						18.60	18.26	18.36	16.87	15.35	14.73
8	15.91						18.50	18.41	18.21	16.48	15.18	14.58
9	16.03						18.21	18.40	18.36	15.96	15.34	14.62
10	15.44						17.10	18.41	18.36	16.26	15.32	14.91
11	15.58						17.41	18.44	18.35	15.80	15.38	14.89
12	16.04						18.47	18.41	18.31	15.85	15.18	14.71
13	15.88						18.44	18.41	18.30	15.81	15.34	14.92
14	15.95						18.45	18.30	18.38	15.79	15.28	14.83
15	15.96						18.43	18.35	18.32	15.79	15.36	14.67
16	15.97						18.47	18.44	18.33	15.50	15.33	14.65
17	15.61						18.44	18.45	18.30	16.10	15.69	14.58
18	15.44						18.46	18.45	17.93	15.74	15.51	14.76
19	16.18						18.44	18.44	18.27	15.88	15.32	14.68
20	17.07						18.43	18.44	18.52	15.66	15.49	14.42
21	16.31						18.43	18.43	18.54	15.88	15.82	14.48
22	15.91						18.40	18.46	18.45	15.90	15.80	14.57
23	16.07						18.38	18.35	17.97	15.79	15.06	14.53
24	15.49						18.37	18.38	17.37	15.79	14.95	14.50
25	15.77						18.40	18.35	16.99	15.97	14.68	14.58
26	16.02						18.40	18.43	17.67	15.77	14.78	14.56
27	16.00						18.43	18.44	17.72	15.87	14.49	14.59
28	16.15						18.40	18.42	17.94	15.88	14.58	14.49
29	16.14		18.43				18.38	18.41	17.79	15.84	14.65	14.54
30	16.15				------		18.44	18.41	17.76	15.84	14.57	14.47
31	15.32	------			------		------	18.39	------	15.91	14.58	------
MEAN	15.91							18.42	18.16	16.15	15.26	14.61
MAX	17.07							18.57	18.54	17.69	15.82	14.92
MIN	15.32							18.26	16.99	15.50	14.49	14.33

06340900 Missouri River near Hensler, N. Dak.

LOCATION.--Lat 47°16'45", long 101°11'03", SW¼ sec.22, T.144 N., R.83 W., on left bank about 7.5 miles west of Washburn at mile 1,362.

DRAINAGE AREA.--183,000 sq mi, approximately.

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

GAGE.--Water-stage recorder. Datum of gage is 1,640.00 ft above mean sea level (levels by Corps of Engineers). Prior to Sept. 30, 1964, at datum 40 ft lower.

EXTREMES.--Current year: Maximum daily gage height recorded, 25.45 ft Mar. 8; minimum daily recorded, 17.78 ft Dec. 20.
Period of record: Maximum daily gage height recorded, 27.77 ft Mar. 20, 1965; minimum daily recorded, 15.52 ft May 10, 1966.

REMARKS.--Records good. Stage regulated by Lake Sakakawea (see station 06338000).

GAGE HEIGHT, IN FEET, FOR THE PERIOD MAY TO SEPTEMBER 1959

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1									60.82	61.15	61.16	61.13
2									60.88	61.20	61.18	61.10
3									60.89	61.23	61.16	61.09
4									60.86	61.23	61.16	61.11
5									60.87	61.21	61.18	61.12
6									60.92	61.22	61.16	60.94
7									60.95	61.23	61.16	61.09
8									60.90	61.21	61.17	61.10
9									60.95	61.18	61.18	61.01
10									60.95	61.20	61.17	61.06
11									60.90	61.21	61.18	61.12
12									60.92	61.22	61.09	61.11
13									60.94	61.22	61.08	61.11
14									60.98	61.22	61.16	
15									61.01	60.48	61.15	
16									61.04	60.04	61.17	
17									61.06	59.99	61.16	
18									61.04	60.50	61.18	
19									61.02	61.16	61.20	60.66
20									61.06	61.17	61.16	61.08
21									61.08	61.16	61.17	61.11
22									61.07	61.16	61.17	61.13
23								60.91	61.09	61.13	61.13	60.35
24								60.92	61.08	61.13	61.13	60.64
25								60.94	61.09	61.17	61.15	61.15
26								60.93	61.15	61.17	61.14	61.10
27								60.94	61.13	61.16	61.16	61.08
28								60.94	61.11	61.12	61.16	61.11
29					------			60.93	61.06	61.12	61.15	61.10
30					------			60.97	61.03	61.14	61.14	61.09
31		------			------		------	60.88	------	61.16	61.17	------
MEAN									61.00	61.06	61.16	
MAX									61.15	61.23	61.20	
MIN									60.82	59.99	61.08	

06340900 Missouri River near Hensler, N. Dak.

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1959 TO SEPTEMBER 1960

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	61.11	57.76				61.77	60.67		57.02	58.13	58.24	57.97
2	61.13	57.89				62.29	60.23		57.00	58.06	58.90	58.05
3	61.11	58.53				62.27	59.62		56.97	58.10	58.70	58.20
4	61.12	59.37				62.57	59.43		56.91	58.02	58.32	58.23
5	61.10	60.31				62.36	60.25		56.92	58.03	58.66	58.06
6	61.12	60.56				62.42	60.08		56.95	57.93	58.57	58.00
7	60.26	60.59				62.16	59.97		56.98	58.21	58.58	58.08
8	59.81	60.60				62.60	59.60		57.00	58.36	58.59	58.12
9	59.69	60.47				62.30	59.17		56.95	58.38	58.60	58.42
10	59.65	60.49				62.33	58.82		56.95	58.12	58.62	58.49
11	59.31					62.38	58.51		57.07	57.98	58.63	58.50
12	59.24					62.60	59.35		57.35	58.32	58.61	58.46
13	59.59					62.65	59.70		57.22	58.12	58.58	58.49
14	59.59					62.29	59.33		56.60	58.07	58.63	59.29
15	59.60	60.61			62.29	62.65	59.22		57.07	58.02	58.68	59.22
16	59.54				63.11	63.08	59.85		57.06	58.00	59.30	59.11
17	59.51				63.10	62.80	59.69		56.98	57.92	59.28	59.18
18	59.34				62.69	62.14	58.15		57.85	58.01	59.16	59.32
19	59.06				62.50	60.92	59.17	57.67	57.53	58.10	59.20	59.04
20	59.58				63.03	60.45	57.92	58.68	57.62	58.04	59.17	59.18
21	59.61				63.14	60.12	56.97	60.13	57.74	58.08	59.19	59.21
22	59.57				63.22	61.72	56.90	59.93	56.87	58.08	59.25	59.15
23	59.16				63.29	62.55	56.87	59.60	56.90	57.97	59.47	59.24
24	58.69				63.30	62.43	56.92	59.50	56.85	58.07	59.48	59.22
25	58.55		60.35		63.29	62.44	56.85	59.36	56.88	57.98	59.60	59.71
26	58.42		58.82		63.28	62.00	57.02	58.50	56.90	57.64	59.24	59.09
27	58.68		59.33		63.31	61.89	56.42	57.69	56.92	57.75	58.90	59.11
28	58.46	59.93			63.23	61.44	56.25	57.22	57.00	58.27	58.77	59.10
29	57.85				62.74	61.11	56.97	57.10	56.94	58.11	58.70	59.09
30	57.73				------	60.54	57.84	57.12	57.13	57.91	58.72	58.40
31	57.75	------			------	60.68	------	57.07	------	58.34	58.51	------
MEAN	59.51					62.00	58.59		57.07	58.07	58.87	58.76
MAX	61.13					63.08	60.67		57.85	58.38	59.60	59.71
MIN	57.73					60.12	56.25		56.60	57.64	58.24	57.97

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1960 TO SEPTEMBER 1961

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	58.67	58.17	59.94	63.76		62.03		60.80	60.36	58.52	60.68	58.80
2	58.18	58.23	59.67	64.12		61.53		61.17	60.28	58.54	60.83	58.10
3	57.93	58.00	59.68	64.54	63.90	61.37		61.17	60.19	58.59	60.79	57.91
4	58.27	58.00	59.97	64.58		61.40		61.14	59.91	58.54	61.03	58.02
5	58.13	58.03	59.67	64.53		61.30		61.22	59.66	58.45	60.85	57.80
6	58.07	58.03	59.75	64.46	64.22	61.10		61.15	60.08	58.04	60.28	57.77
7	57.86	58.22	59.83	64.42	64.05	61.00		60.95	59.97	58.33	60.23	57.68
8	57.85	57.89	59.87	64.50	64.00	61.10	61.14	60.85	59.58	58.39	59.90	57.51
9	57.80	57.99	59.82	64.32	64.00	61.21	61.00	61.13	59.56	58.06	59.41	57.80
10	57.75	58.08	59.82	64.27	64.03	61.14	60.95	61.17	59.33	58.02	59.64	57.46
11	57.63	58.00	59.89	64.31	63.84	61.05	61.30	61.14	59.18	58.17	59.95	57.44
12	57.67	58.04	59.87	64.22	63.94	61.30	61.28	60.98	58.61	58.80	59.60	57.58
13	57.15	58.04	59.80	64.16	63.64	61.12	61.28	61.01	58.38	58.96	59.15	57.73
14	57.52	58.03	59.85	64.21	63.84	61.23	61.18	60.97	58.34	58.80	59.51	57.45
15	57.32	57.99	59.78	64.12	63.72	61.16	61.13	60.72	60.87	58.75	60.08	57.42
16	57.38	58.05	59.98	63.92	63.82	61.17	60.94	61.08	61.24	58.76	60.03	57.20
17	57.28	58.40	59.80	63.93	63.35	61.21	60.92	61.15	61.16	58.85	60.48	57.14
18	57.26	59.26	59.83	63.78	63.68	61.00	61.19	61.16	61.04	58.81	60.25	57.12
19	57.50	59.73	60.02	63.72	63.39	60.71	61.14	60.86	60.44	58.70	59.26	57.10
20	57.30	59.84	59.88	63.43	63.37	60.64	61.13	60.87	58.81	58.98	58.70	56.82
21	57.49	59.64		63.35	63.45	60.39	61.04	60.42	58.13	59.23	58.70	56.62
22	57.42	59.78		63.63	63.41	60.04	61.05	59.64	58.02	59.56	59.77	56.70
23	57.38	59.95	63.42	63.49	63.32	59.99	61.04	60.83	58.00	58.96	59.89	56.60
24	57.36	59.91	63.81	63.73	63.38	59.94	60.53	60.71	57.99	59.44	60.26	56.62
25	57.26	59.71	63.82		63.85	60.00	60.96	60.70	57.95	59.61	60.20	56.52
26	57.40	57.86	63.43		63.39	59.91	60.94	60.05	58.23	60.62	60.50	56.47
27	57.92	59.92	63.51		62.79	60.51	61.06	59.80	58.02	60.67	60.68	56.40
28	58.12	59.63	63.67	63.73	62.57	61.65	60.96	59.74	58.19	60.62	60.13	56.15
29	58.22	59.64	63.60	63.80	------	62.10	61.08	59.15	58.09	61.14	59.14	56.32
30	58.17	59.75	63.57	63.80	------		60.98	59.30	58.15	60.28	59.30	56.31
31	58.22	------	63.49	63.75	------		------	59.42	------	59.82	58.92	------
MEAN	57.73	58.73						60.66	59.26	59.06	59.94	57.22
MAX	58.67	59.95						61.22	61.24	61.14	61.03	58.80
MIN	57.15	57.86						59.15	57.95	58.02	58.70	56.15

MISSOURI RIVER MAIN STEM

06340900 Missouri River near Hensler, N. Dak.

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1961 TO SEPTEMBER 1962

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1					64.47	64.19	61.03	60.34	62.06	57.46	57.03	56.64
2					64.31	64.45	61.24	59.88	61.47	57.14	57.42	56.55
3					64.43	64.40	60.68	60.22	61.03	57.19	57.99	56.60
4					64.48	64.30	60.93	60.04	61.25	57.61	58.72	56.45
5					63.70	64.37	60.76	59.68	62.83	57.00	58.88	56.02
6					63.95	64.61	60.78	59.77	63.03	57.96		56.15
7					64.32	64.58	61.38	59.54	63.19	58.99		55.85
8					64.53	64.63	61.69	59.41	62.42	58.59		56.24
9					64.50	64.60	61.87	60.14	62.40	58.03		56.00
10					64.60	64.92	62.07	60.81	62.40	59.79		56.02
11					64.64	65.12	62.01	61.18	61.87	60.14		56.08
12					64.64	64.57	62.11	61.12	63.04	60.14		56.22
13				64.31	64.57	65.04	61.61	61.48	63.11	60.00		56.88
14				64.23	64.76	65.18	60.82	61.28	63.05	57.77		56.30
15				63.72	64.95	64.69	60.83	61.74	62.87	56.53		56.28
16				64.03	64.66	63.93	60.48	61.93	62.81	57.29	56.43	56.06
17				64.22	64.39	62.82	61.38	61.65	62.21	60.71	56.31	56.14
18				64.17	64.74	62.03	61.29	60.78	61.72	59.69	56.44	56.21
19				64.16	64.63	61.00	61.38	61.75	60.16	59.50	56.16	56.14
20				64.23	64.87	61.27	61.45	61.58	58.65	60.14	56.24	56.05
21				64.52	64.38	61.50	61.59	61.52	58.01	59.97	56.31	56.05
22				64.12	64.25	60.93	61.64	61.76	57.94	59.73	57.12	56.02
23				64.22	64.18	61.29	60.67	61.97	58.20	59.84	57.34	56.20
24				64.42	64.10	61.34	60.62	61.86	57.72	60.65	56.98	56.88
25				64.42	64.42	61.37	60.58	61.98	57.62	59.95	56.50	58.55
26				64.54	64.02	61.23	60.56	62.01		59.42	56.55	58.74
27				64.26	64.10	61.08	60.54	61.97		60.13	56.79	58.85
28				64.46	64.17	61.38	60.80	61.88		58.94	56.84	58.60
29				64.30	------	61.03	60.73	62.14		57.55	56.82	58.50
30				64.52	------	61.11	59.89	62.22	57.72	57.51	56.99	56.82
31		------		64.36	------	61.27	------	62.56	------	59.02	56.85	------
MEAN					64.42	63.04	61.11	61.17		58.85		56.67
MAX					64.95	65.18	62.11	62.56		60.71		58.85
MIN					63.70	60.93	59.89	59.41		56.53		55.85

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1962 TO SEPTEMBER 1963

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	56.18	56.48	58.32	65.09	64.73	62.57	58.04	56.85	56.93	58.58	58.74	56.00
2	57.15	56.11	58.59	64.75	64.44	62.01	57.86	56.32	58.20	58.00	58.34	55.99
3	56.63	56.21	58.59	64.26	64.81	61.75	57.79	56.46	59.57	58.30	58.20	55.95
4	57.67	56.28	59.37	63.82	64.65	61.59	57.73	56.44	60.42	58.85	58.22	55.94
5	57.84	56.27	58.91	63.29	64.50	61.72	57.77	56.07	60.57	58.66	58.44	55.92
6	57.00	56.39	58.72	62.85	64.23	61.64	57.49	56.39	60.26	59.27	58.29	55.91
7	56.75	56.19	58.56	62.02	64.22	61.65	56.89	56.78	60.18	58.60	58.41	55.90
8	56.44	56.60	58.72	63.30		61.72	56.94	56.99	60.40	58.26	58.40	55.90
9	57.42	56.41	59.01	61.08		61.62	58.09	56.45	60.83	58.37	58.40	55.97
10	57.10	56.08	58.53	63.22		61.55	59.27	56.99	60.89	58.25	58.08	55.96
11	57.63	55.99	59.26	64.31		61.35	59.76	56.77	60.68	58.22	57.60	55.88
12	58.36	55.96	59.35	64.28		61.43	58.43	56.29	59.21	57.86	57.58	55.89
13	57.89	55.97	59.44	65.20		61.39	57.20	56.62	58.50	58.01	57.49	55.92
14	56.65	56.13	59.35	65.16	64.22	61.61	56.65	57.90	58.18	58.58	57.42	56.35
15	56.39	56.29	59.22	65.41	64.01	61.50	56.74	57.49	58.45	59.76	57.33	57.64
16	56.78	56.26	59.22	65.56	64.22	61.54	58.10	56.87	58.89	60.16	56.15	57.57
17	56.53	56.55	59.16	65.57	63.84	61.47	59.99	57.83	60.61	61.32	56.15	58.37
18	56.45	56.33	59.23	65.49	63.77	60.82	61.36	57.17	61.06	61.72	56.20	58.27
19	56.25	56.27	59.21	65.34	63.68	60.79	61.58		60.56	61.65	56.16	58.24
20	56.31	57.74	59.61	65.20	63.90	60.78	61.63	57.23	60.93	62.55	56.10	58.33
21	56.17	57.69	59.21	65.07	64.29	60.55	61.65	58.63	58.95	62.29	56.07	58.28
22	56.13	57.57	59.35	66.01	64.85	60.76	61.63	58.04	58.57	62.14	56.07	59.11
23	56.07	57.39	59.74	66.04	64.69	60.21	61.09	57.60	58.22	62.56	56.07	57.79
24	56.36	57.56	59.78	66.58	63.83	60.15	61.99	57.07	58.30	62.61	56.05	58.78
25	56.63	57.58	59.98	66.43	63.66	60.16	62.07	56.71	60.03	60.62	56.12	58.51
26	56.30	57.59	60.21	66.23	62.67	60.16	62.50	56.40	60.85	60.42	56.13	58.53
27	56.14	57.66	60.43	65.95	63.22	59.89	60.99	57.00	60.72	59.34	56.13	58.46
28	56.11	57.78	60.50	65.45	62.94	59.59	58.61	57.54	60.32	59.53	56.06	58.44
29	56.18	59.28	60.45	65.13	------	59.15	57.16	57.06	59.74	58.38	56.03	58.40
30	56.42	58.32	62.71	65.03	------	57.91	58.15	56.73	58.91	58.89	56.03	58.73
31	56.25	------	64.39	64.73	------	57.85	------	56.53	------	58.67	56.04	------
MEAN	56.72	56.80	59.58	64.73		60.87	59.17		59.66	59.69	57.05	57.23
MAX	58.36	58.32	64.39	66.58		62.57	62.50		61.06	62.61	58.74	59.11
MIN	56.07	55.96	58.32	61.08		57.85	56.65		56.93	57.86	56.03	55.88

06340900 Missouri River near Hensler, N. Dak.

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	58.38	57.82	62.10	63.77	64.10	62.10	58.79	59.66	57.45	59.27	58.78	58.36
2	58.34	58.19	61.92	62.60	63.42	62.29	58.88	60.04	57.46	59.00	58.60	59.03
3	58.56	57.99	62.29	61.94	62.80	62.00	58.77	59.51	57.45	58.73	58.34	58.82
4	58.48	57.60	62.20	61.75	62.53	62.02	58.80	58.92	57.42	58.70	58.94	59.35
5	58.45	57.68	62.15	61.63	62.55	62.08	58.78	59.73	57.66	58.74	58.71	59.36
6	58.40	57.77	62.19	61.53	62.58	61.53	58.88	60.16	58.02	58.67	58.53	59.06
7	58.45	57.77	62.13	61.51	62.50	61.22	60.36	60.34	58.55	58.74	58.64	58.37
8	58.43	57.76	62.18	61.76	62.36	61.34	60.96	60.35	59.62	58.80	58.52	58.67
9	58.48	57.77	62.25	62.57	62.42	61.72	61.02	60.34	60.22	58.65	58.60	59.91
10	58.48	57.92	61.80	63.48	62.40	61.84	61.11	60.30	59.10	58.64	58.33	59.94
11	58.36	58.17	61.46	65.84	62.35	62.06	60.93	60.31	59.26	58.46	58.51	60.07
12	57.69	58.91	61.37	66.15	62.24	62.04	60.50	60.36	59.21	58.49	58.29	60.37
13	57.71	59.72	61.48	66.34	62.36	61.94	60.51	60.44	60.14	58.40	58.46	60.82
14	57.84	59.85	61.68	66.32	62.24	61.47	60.54	60.39	60.00	58.65	58.52	
15	57.59	59.68	61.62	65.69	62.32	61.47	60.48	60.39	59.91	58.66	58.40	
16	57.58	59.71	61.56	65.24	62.28	61.44	60.45	60.35	64.45	58.66	58.66	60.41
17	57.82	59.74	61.53	64.52	62.16	61.52	60.43	60.17	62.12	58.57	58.15	60.36
18	57.70	59.92	62.95	64.18	62.09	61.33	60.32	59.97	62.24	58.47	58.52	60.43
19	57.68	60.10	63.50	64.01	62.14	61.03	60.51	59.58	62.51	58.56	58.69	
20	57.66	60.32	64.46	63.18	62.15	61.00	60.51	58.88	62.54	58.41	58.48	
21	57.69	61.08	65.61	62.72	62.16	61.33	59.76	57.82	61.60	58.51	58.57	
22	57.65	61.32	65.81	62.51	61.86	61.37	59.24	57.75	61.60	58.48	58.24	
23	57.68	61.40	65.64	63.29	61.72	60.89	59.14	57.65	62.14	58.25	58.37	60.49
24	57.63	61.52	64.48	66.14	61.50	58.76	59.10	57.59	62.12	58.54	58.20	60.57
25	57.68	61.13	63.55	67.06	61.50	59.17	59.24	57.62	62.14	58.54	58.19	60.52
26	57.58	61.92	62.89	67.14	61.72	58.96	59.20	57.44	61.98	58.51	58.32	60.54
27	58.23	61.92	63.66	67.04	62.06	59.00	58.83	57.91	62.01	58.44	58.50	60.56
28	57.71	62.12	64.95	67.27	62.10	58.81	59.28	57.22	61.30	59.25	58.15	59.96
29	57.86	61.90	65.10	66.94	62.07	58.96	59.71	57.52	60.73	59.27	58.56	60.66
30	57.89	61.95	65.14	66.59	------	58.61	59.51	57.46	60.32	59.05	58.30	60.66
31	57.79	------	64.75	65.16	------	58.81	------	57.50	------	58.61	58.44	------
MEAN	57.98	59.69	63.05	64.38	62.30	60.91	59.82	59.15	60.38	58.64	58.47	
MAX	58.56	62.12	65.81	67.27	64.10	62.29	61.11	60.44	64.45	59.27	58.94	
MIN	57.58	57.60	61.37	61.51	61.50	58.61	58.77	57.22	57.42	58.05	58.15	

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1964 TO SEPTEMBER 1965

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20.57	19.55	20.22	26.43	25.58	25.78	22.87	18.23	21.52	20.90	18.88	17.41
2	20.62	19.18	20.47	26.45	25.88	25.72	22.89	18.49	21.71	20.93	19.45	17.21
3	20.28	20.33	20.36	26.39	25.58	25.99	22.48	18.19	21.60	20.85	20.64	17.74
4	19.81	20.76	20.18	26.25	25.88	25.71	22.11	18.90	21.59	20.80	21.97	16.96
5	19.33	20.40	20.44	26.18	25.68	25.77	22.50	20.09	22.34	20.86	21.44	17.10
6	20.18	20.55	20.26	26.26	25.89	26.06	22.50	19.65	22.67	20.88	20.92	17.19
7	19.76	20.51	20.34	26.33	25.87	26.07	22.62	18.96	22.48	21.23	19.56	17.10
8	19.60	20.33	21.00	26.19	25.90	25.57	22.69	18.45	22.47	21.81	18.20	17.22
9	19.64	19.86	21.08	26.13	25.72	25.59	22.64	18.32	22.46	21.57	18.15	17.20
10	19.73	20.71	21.24	26.18	25.80	25.02	22.46	18.20	22.46	22.16	18.06	17.44
11	19.84	20.64	21.23	26.18	25.70	24.30	22.03	20.06	22.44	22.17	18.18	17.30
12	19.76	20.59	21.11	26.11	25.60	23.68	22.67	19.56	22.45	22.02	17.28	17.15
13	20.26	20.64	21.19	26.10	25.60	23.20	22.65	20.12	22.43	22.01	17.32	17.19
14	19.70	20.68	21.36	26.19	25.58	23.05	22.51	19.65	21.92	21.43	17.20	17.11
15	19.06	20.57	22.13	26.01	25.54	22.77	22.56	19.95	21.96	21.22	17.28	17.23
16	17.90	20.88	23.66	26.17	25.72	23.02	22.39	21.14	22.57	20.52	17.11	17.30
17	17.02	20.64	25.14	25.95	25.58	23.80	21.24	19.88	22.74	19.98	17.38	17.50
18	16.76	21.22	26.47	26.16	25.57	26.30	20.96	22.31	22.96	19.86	17.42	17.68
19	17.26	21.74	26.92	26.00	25.74	27.58	20.78	22.46	22.75	19.22	17.40	17.18
20	19.18	22.12	26.62	26.13	25.31	27.77	20.93	22.73	22.42	20.12	17.44	17.62
21	19.50	22.41	26.51	25.93	24.65	27.68	21.80	22.66	22.17	20.38	17.44	18.05
22	19.48	22.36	26.70	26.04	25.36	27.25	22.30	22.90	20.90	20.55	17.94	18.48
23	19.54	22.39	26.37	26.17	25.73	27.10	22.27	22.62	18.86	20.62	16.92	18.80
24	19.61	22.88	26.35	26.08	25.72	26.71	21.57	22.16	18.86	20.33	17.41	19.18
25	19.56	22.59	26.55	25.80	25.78	26.28	20.61	21.81	18.83	18.26	17.48	19.99
26	19.27	22.55	26.41	25.80	25.67	26.12	20.67	21.76	19.87	19.05	17.48	20.19
27	19.53	22.12	26.33	25.81	25.76	25.59	20.60	21.94	20.78	18.07	17.53	20.02
28	19.64	20.35	26.24	25.90	25.98	25.31	20.19	22.22	19.40	18.08	17.44	20.06
29	19.45	20.48	26.39	25.96	------	24.60	19.70	22.28	19.92	18.04	18.00	20.14
30	19.43	20.35	26.45	25.81	------	23.57	18.94	21.40	20.99	18.08	16.67	20.94
31	19.55	------	26.58	25.98	------		------	20.47	------	18.30	17.22	------
MEAN	19.38	21.01	23.62	26.10	25.66		21.77	20.57	21.55	20.33	18.16	18.06
MAX	20.62	22.88	26.92	26.45	25.98		22.89	22.90	22.96	22.17	21.97	20.94
MIN	16.76	19.18	20.18	25.80	24.65		18.94	18.19	18.83	18.04	16.67	16.96

06340900 Missouri River near Hensler, N. Dak.

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1965 TO SEPTEMBER 1966

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21.48	21.81	21.77		25.40		16.46	15.82	17.18	18.36	19.53	19.73
2	21.35	21.70	21.53		25.54		16.41	15.65	17.18	18.36	19.20	19.80
3	20.85	22.18	20.69		25.37		16.28	15.57	16.65	18.76	19.44	19.44
4	20.68	22.65	21.87	19.49	25.40		15.90	15.65	16.51	18.61	19.31	19.59
5	22.34	22.73	21.36		25.39		16.32	15.62	16.79	18.48	19.28	19.14
6	22.50	22.72	22.01		25.34		16.13	15.63	16.45	18.90	18.90	19.23
7	22.61	22.34	22.58				16.94	15.72	16.62	19.14	18.52	19.13
8	22.43	22.19	22.46				15.70	15.77	16.94	19.27	19.03	19.28
9	22.55	22.56	21.71				15.91	15.78	17.06	19.32	18.94	19.10
10	21.85	22.91	22.11				16.15	15.52	17.05	19.45	18.90	19.07
11	21.40	22.55	21.49				15.94	15.84	16.95	18.76	18.56	18.67
12	22.35	22.58	20.09				15.99	15.63	16.80	19.07	18.62	18.25
13	22.10	22.34	21.16		24.77		15.92	15.64	17.02	19.30	18.67	18.66
14	21.88	22.60	22.49		24.66		15.86	15.74	16.82	19.12	20.12	18.83
15	22.13	22.39	22.89		24.80	19.02	15.79	16.00	16.87	19.23	19.62	18.67
16	22.03	22.61	22.85		24.70		15.74	16.23	17.51	19.07	19.91	18.84
17	21.62	22.78	22.88	24.79	24.61	19.30	15.68	16.18	17.02	19.43	19.60	18.66
18	21.12	22.66	23.09		24.40		15.72	16.39	17.44	19.17	19.52	18.68
19	22.28	22.82	23.02		24.51		15.78	16.58	17.54	19.17	19.75	18.46
20	21.98	22.27	22.79		24.51		15.72	16.56	17.47	19.18	19.76	18.56
21	22.16	22.25	22.86		24.55		15.69	16.64	17.47	19.18	20.32	18.74
22	22.13	22.18	22.93		24.71		15.72	16.45	17.58	19.17	19.22	18.55
23	22.24	22.37	23.20		24.59		15.68	16.22	17.53	19.20	20.00	17.83
24	21.68	22.59	23.21		24.58		15.65	16.28	18.11	19.08	19.85	18.05
25		22.64	21.88		25.03		15.77	16.85	19.94	19.41	19.79	17.84
26		22.32	20.70		24.99	18.90	15.90	16.68	19.18	19.42	19.81	17.60
27		22.67	21.40		24.65	17.70	15.74	16.74	18.49	19.17	19.74	18.00
28		22.66	21.55	25.56		16.78	15.59	16.67	18.39	19.34	19.82	18.15
29	22.25	22.60	20.96	25.44	------	16.26	15.61	16.76	18.51	19.15	19.57	18.04
30	22.24	22.18	20.98	25.50	------	16.62	15.55	16.62	18.42	19.32	20.07	17.96
31	22.15	------	20.79	25.49	------	16.59	------	16.64	------	19.32	19.88	------
MEAN		22.46	21.98				15.91	16.13	17.45	19.09	19.46	18.69
MAX		22.82	23.21				16.94	16.85	19.94	19.45	20.32	19.80
MIN		21.70	20.09				15.55	15.52	16.45	18.36	18.52	17.60

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1966 TO SEPTEMBER 1967

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18.13	19.91	20.94	19.83	25.10	23.77	21.78	17.04	18.89	20.44	23.05	22.46
2	18.24	19.90	19.90	19.96	25.29	23.08	22.20	16.97	18.84	20.29	23.00	21.76
3	18.28	19.86	19.88	20.16	24.84	22.60	20.86	16.89	18.90	19.86	22.98	21.36
4	19.02	19.82	19.98	20.25	24.33	22.87	19.45	17.25	18.37	20.44	22.99	20.94
5	19.59	19.84	19.78	20.89	24.74	22.84	19.66	16.77	18.40	19.82	22.96	21.57
6	19.32	19.90	19.84	21.26	27.35	22.53	20.13	16.40	18.92	20.78	22.95	21.67
7	19.86	19.96	19.85	22.59	26.60	22.71	19.71	16.65	18.92	20.88	22.96	21.91
8	19.82	19.90	19.89	24.73	26.07	23.46	18.16	16.67	20.02	20.55	22.93	22.04
9	19.59	19.99	19.89	24.74	24.61	22.53	17.73	17.28	20.74	20.15	22.96	22.52
10	19.35	20.09	20.33	24.82	23.55	22.78	18.74	17.69	21.39	20.60	22.88	21.69
11	19.71	21.11	20.50	24.77	23.38	23.13	19.64	17.15	21.82	21.80	22.99	21.66
12	19.87	21.67	19.89	23.53	23.67	23.02	18.58	16.86	22.08	21.86	23.02	22.02
13	19.81	21.14	20.59	22.85	23.02	22.81	18.97	16.56	22.46	21.68	23.02	22.04
14	19.79	20.60	20.48	22.57	23.06	22.94	20.24	16.74	22.64	21.98	23.02	22.12
15	20.31	21.33	20.26	22.94	24.96	22.70	19.00	16.37	21.83	23.18	23.05	22.02
16	19.96	21.21	20.57		26.46	22.62	16.92	16.50	22.13	23.27	23.15	22.02
17	20.04	21.34	20.74		26.18	22.61	17.38	16.64	22.34	23.10	23.15	20.87
18	21.22	21.16	21.04		26.40	22.22	18.71	16.72	22.14	23.12	22.94	
19	21.54	21.41	21.21		26.58	22.65	18.41	16.30	22.69	23.05	22.98	
20	21.43	21.01	21.06		26.52	20.06	18.85	16.30	22.42	23.16	23.24	
21	21.25	21.15	21.15		26.67	19.45	19.64	16.25	22.51	23.18	23.26	
22	21.39	20.86	21.15		26.42	19.02	19.55	16.24	22.44	23.08	23.27	
23	20.76	21.09	20.05		25.95	19.96	18.26	16.18	22.34	23.16	23.27	
24	19.39	21.16	20.00		26.11	20.06	17.42	16.10	21.64	23.12	22.97	
25	19.32	20.91	20.28		26.38	20.14	17.60	16.60	20.69	23.11	22.97	
26	19.19	21.14	20.29		26.22	19.95	17.51	16.62	20.15	23.00	23.17	
27	19.49	21.23	20.11	26.79	25.77	19.14	17.51	16.92	21.49	23.06	22.76	
28	19.38	21.05	20.37	25.92	24.52	19.55	17.46	16.53	21.57	23.06	22.61	
29	19.82	21.99	19.89	25.60	------	19.65	17.11	16.08	21.01	23.07	22.66	
30	19.91	22.15	20.00	25.17	------	21.56	17.43	16.47	21.04	23.06	21.42	
31	19.89	------	20.01	25.09	------	21.68	------	16.90	------	23.01	21.46	------
MEAN	19.83	20.80	20.32		25.38	21.74	18.82	16.67	21.03	22.06	22.90	
MAX	21.54	22.15	21.21		27.35	23.77	22.20	17.69	22.69	23.27	23.27	
MIN	18.13	19.82	19.78		23.02	19.02	16.92	16.08	18.37	19.82	21.42	

06340900 Missouri River near Hensler, N. Dak.

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		22.26	22.32	25.53	24.10	24.36	16.77	18.37	18.74		19.43	18.81
2		22.26	22.20	25.43	24.16	23.95	18.51	18.73	18.38		19.56	
3		21.80	21.72	25.60	24.07	23.46	20.77	18.39	18.23		19.37	
4		21.83	21.75	25.38	24.09	22.97	20.56	19.08	19.21	17.99	20.08	18.91
5		21.01	22.74	25.35	23.79	22.75	20.72	19.94	19.10	17.95	18.43	19.06
6		20.28	22.55	25.75	24.19	22.39	20.81	19.56	19.53	18.26	19.71	18.94
7	21.63	21.51	21.77	25.49	24.21	21.97	20.81	19.47	18.66	18.20	20.22	19.04
8	21.73	21.33	22.45	25.61	24.07	21.17	21.30	19.60	18.80	18.11	18.77	18.79
9	21.92	21.25	22.64	25.47	24.13	21.39	21.15	19.52	18.42	18.33	18.56	19.19
10	22.35	21.02	22.34	25.47	24.05	20.84	20.81	19.62		18.15	18.50	18.89
11	22.18	20.94	22.23	25.37	24.02	20.77	20.83	19.69		18.35	18.45	18.86
12	22.10	19.95	22.57	25.28	23.57	20.83	20.28	19.73		18.04	17.41	19.22
13	22.13	19.42	22.58	25.40	24.08	20.65	20.32	19.79	19.67	17.90	19.17	19.23
14	22.13	20.18	22.22	25.21	24.10	20.69	20.72	19.57	19.32	17.84	18.74	19.43
15	21.26	20.42	20.28	25.31	24.28	20.59	21.27	19.70	19.05	18.45	18.79	19.37
16	20.97	20.52	19.70	25.13	24.26	20.55	20.69	19.74	18.57	18.61	19.30	
17	21.71	20.87	19.65	25.20	23.92	20.14	20.80	19.73	18.55	18.97	18.56	
18	21.72	20.74	19.49	24.99	24.21	20.23	20.97		19.06	18.63	18.63	19.27
19	21.75	19.77	19.81	25.09	24.33		21.00		18.29	18.64	17.41	19.23
20	21.73	19.53	19.86	24.89	24.92		21.89	19.67	18.09	19.26	19.39	19.91
21	21.57	20.46	19.91	24.62	24.73		20.10	19.89	18.11	19.12	19.95	20.64
22	21.24	20.69	20.22	24.57	24.63		19.29	19.86	18.32	19.08	20.21	21.00
23	20.62	21.67	21.63	24.44	24.80		19.47	19.70	17.11	19.12	21.51	21.00
24	21.52	22.38	22.25	24.67	24.69		19.49	19.60		19.17	21.06	21.28
25	21.64	22.35	23.23	24.75	24.67		19.81	19.58		17.39	21.15	20.93
26	21.64	22.13	24.66	24.62	24.69		18.47	20.28		18.33	20.62	21.44
27	21.76	22.26	24.73	24.17	25.07		18.53	19.20		18.61	20.82	21.90
28	21.67	22.05	25.13	24.02	24.91		18.60	20.10		18.47	20.41	22.33
29	22.32	22.19	25.33	23.74	25.31	16.67	18.54	20.31		18.12	19.46	22.33
30	21.92	22.28	25.19	24.22	------	16.48	18.55	19.64		18.77	19.32	21.91
31	22.16	------	25.03	24.17	------	16.51	------	19.14	------	18.95	19.01	------
MEAN		21.18	22.20	25.00	24.35		20.06				19.42	
MAX		22.38	25.33	25.75	25.31		21.89				21.51	
MIN		19.42	19.49	23.74	23.57		16.77				17.41	

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	22.36	19.42	21.58	25.43	25.63	21.92		21.38	19.35	17.79	21.38	21.31
2	22.07	20.04	21.10	25.18	25.52	21.53		21.41	19.66	18.94	21.31	20.86
3	21.97	19.63	21.38	25.14	25.45	21.58		21.30	19.62	18.54	20.94	21.58
4	22.39	19.44	21.12	25.45	25.47	21.91		20.22		18.06	20.86	21.39
5	22.25	20.37	21.36	25.40	25.20	22.10		21.28		17.85	21.00	21.30
6	21.87	20.12	21.94	25.53	25.50	22.11		21.16		18.56	20.90	21.47
7	21.42	20.17	22.19	25.36	25.61	21.45		20.42		18.31	21.14	21.11
8	22.02	20.04	22.40	25.23	25.55	21.51		20.60		18.98	20.66	21.04
9	21.90	19.66	22.05	25.18	25.42	21.78		20.47		19.75	20.76	21.15
10	21.96	19.11	22.19	25.11	25.41	21.56		20.52		20.54	20.75	20.76
11	22.05	19.26	22.18	25.17	25.35	21.88		19.84		20.60	20.45	20.87
12	21.91	20.42	22.17	25.62	25.05	21.71		19.80		20.55	21.10	20.86
13	22.06	20.43	20.72	25.64	25.43	21.90	19.10	19.64		20.36	21.18	20.17
14	22.06	20.34	19.02	25.77	25.65	21.91	19.14	19.45		19.92	21.01	20.23
15	21.80	20.30	19.18	25.66	25.08	21.92	19.10	19.31		21.18	21.12	20.21
16	21.87	20.36	19.02	25.25	24.41	21.79	18.85	19.33		21.36	21.14	20.53
17	22.22	19.93	19.11	24.78	23.72	21.49	19.32	19.08		21.30	21.15	20.02
18	22.03	20.03	19.09	25.00	23.28		20.01	19.07		21.70	21.16	20.27
19	21.74	20.39	19.12	24.91	23.41		20.05	18.61		22.57	21.16	20.14
20	20.97	20.49	19.03	24.91	23.03		20.70	19.09		21.58	21.17	19.98
21	20.83	20.25	19.08	24.90	22.99		20.25	19.35		21.37	21.19	19.70
22	21.19	20.44	18.97	24.96	22.66		20.62	19.00		21.25	21.20	19.66
23	21.16	20.22	19.26	25.20	22.11		20.63	18.85		20.77	21.23	19.27
24	21.31	20.31	19.42	25.35	21.94		21.13	18.95		21.55	21.26	19.46
25	21.44	20.42	20.03	25.06	21.95		20.96	18.95	18.22	22.36	21.26	19.52
26	21.45	21.07	20.37	24.68	21.78		20.85	18.77	18.20	22.31	21.27	19.57
27	20.40	21.16	20.70	24.80	21.84		21.21	19.42	17.90	21.60	21.27	19.23
28	19.70	20.72	20.65	24.88	21.81		20.85	19.42	17.88	21.80	21.35	19.07
29	19.95	19.89	20.84	25.11	------		21.05	19.40	17.77	22.27	21.74	19.00
30	19.84	21.17	23.91	25.49	------		21.52	20.28	17.80	21.68	21.72	19.10
31	19.72	------	24.82	25.54	------		------	19.58	------	21.25	21.67	------
MEAN	21.48	20.19	20.77	25.22	24.15			19.80		20.54	21.15	20.29
MAX	22.39	21.17	24.82	25.77	25.65			21.41		22.57	21.74	21.58
MIN	19.70	19.11	18.97	24.68	21.78			18.61		17.79	20.45	19.00

06340900 Missouri River near Hensler, N. Dak.

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1969 TO SEPTEMBER 1970

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19.57		18.41		24.65	20.10	19.49	22.50	19.49	20.34	20.56	20.00
2	19.30		19.07		23.93	20.37	19.29	21.60	20.01	20.38	20.43	19.44
3	18.95		19.58		24.35	21.59	18.70	18.47	20.20	20.20	20.05	19.14
4	19.60	21.27	20.13		24.48	20.91	19.35	18.92	20.45	20.57	20.56	19.33
5	19.80	21.40	20.90		24.98	21.11	18.91	20.01	20.96	20.66	20.45	18.87
6	19.72	21.17	21.35		25.04	20.97	17.91	20.99	21.06		19.95	19.07
7	20.33	21.13	21.72		24.44	20.85	18.05	20.00	21.17		19.90	18.82
8	20.90	21.33	21.65		24.30	20.25	18.35	19.68	20.74		20.40	18.88
9	20.80	20.76	21.88		24.28	20.05	18.50	19.33	20.43		20.02	18.80
10	20.76	20.90	21.27		24.73	20.08	17.30	18.92	19.99		20.34	18.98
11	20.83	20.57	22.46		24.68	20.10	17.15	19.23	20.00		20.50	18.95
12	20.58	20.72	22.67		24.34	20.12	18.45	20.78	20.08		20.57	18.85
13	20.12	20.58	22.71		24.95	20.00	18.77	21.65	20.69		20.60	
14	20.83	20.60	22.78		24.95	19.93	20.43	21.48	20.72		20.51	
15	20.74	20.78	22.73		24.46	19.48	21.02	21.45	20.78		20.47	18.98
16	20.96	20.58	22.77		24.08	18.88	21.23	21.61	20.79	20.53	20.50	19.15
17	20.66	20.04	22.64		23.58	18.49	21.12	20.71	20.83	20.58	20.52	19.25
18	20.35	20.88	22.81		24.00	18.27	21.16	20.05	20.49	20.72	20.47	19.50
19	19.65	20.82	22.76		25.23	17.27	20.87	21.08	21.04	20.40	20.23	19.43
20	19.12	20.86	21.89		26.46	17.29	20.99	21.32	21.69	19.30	20.39	19.11
21	19.38	20.20	21.35		24.74	16.90	21.15	21.47	21.58	20.14	20.52	19.25
22	19.44	20.06	21.77		23.81	17.38	21.19	21.59	21.27	21.04	20.43	19.61
23	19.48	19.20	21.57	25.53	21.70	16.98	20.96	21.87	21.07	20.20	20.51	19.31
24	20.05	19.14	21.16	25.64	21.18	17.41	20.77	21.59	20.85	20.04	20.52	19.80
25	19.03	19.38		25.64	21.06	17.16	21.22	21.81	20.62	20.36	20.24	19.64
26	19.16	18.94		25.52	20.70	17.13	21.43	21.99	20.29	20.97	20.67	19.93
27	19.45	19.14		25.28	20.48	17.48	21.43	22.25	20.46	20.30	21.00	19.65
28		18.95		25.13	20.48	18.10	22.13	21.74	20.26	20.04	21.56	19.80
29		18.68		25.20	------	19.15	22.15	21.52	20.02	19.60	20.57	19.88
30		18.78		25.25	------	19.23	22.13	21.43	20.55	19.88	20.19	19.90
31		------		25.23	------	19.69	------	20.58	------	20.59	20.67	------
MEAN					23.79	19.12	20.05	20.89	20.62		20.46	
MAX					26.46	21.59	22.15	22.50	21.69		21.56	
MIN					20.48	16.90	17.15	18.47	19.49		19.90	

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20.94	20.58	20.83	24.80	25.70						20.47	19.79
2	20.79	20.49		24.68	25.92						20.62	19.75
3	20.82	20.73		24.60	25.73						20.60	19.64
4	20.81	21.28		24.20	26.41						20.65	19.68
5	20.70	21.49		24.67	26.33						20.77	19.30
6	21.26	21.30		24.87	26.51						20.35	18.98
7	21.24	21.40		25.03	26.70						20.14	19.65
8	21.33	20.51		25.14	26.84						20.15	19.71
9	21.78	20.03		25.22	26.34						20.60	19.51
10	21.71	20.47		25.21	26.28						19.92	19.51
11	20.93	20.15		25.19	26.32						20.31	19.60
12	20.30	20.18		25.14	25.14						20.23	19.84
13	21.56	20.17		25.32	24.66					22.16	19.62	19.73
14	21.89	20.40		25.59						22.19	18.81	19.54
15	21.97	20.48		25.46						22.17	19.10	19.79
16	21.94	20.30		25.30						22.18	18.99	19.62
17	21.18	20.54		24.45						22.20	18.95	19.79
18	21.10	20.45		25.42	22.28					22.20	18.38	19.66
19	20.84	20.50		25.37	22.50					22.17	18.36	19.25
20	20.50	20.30		25.43	22.14					22.22	18.56	19.38
21	20.14			25.65	22.46					21.94	18.81	19.79
22	20.20			25.67	21.44					21.74	18.62	19.73
23	20.48			25.86	21.77					21.58	18.49	19.77
24	20.92	21.10		25.86	21.89					21.16	18.76	19.73
25	20.72			25.69						21.18	20.15	19.80
26	20.89			25.94						21.35	20.31	19.49
27	20.88			25.80						20.85	20.20	19.27
28	21.34			25.92						20.88	20.21	19.84
29	21.18	21.02		25.96	------					20.63	20.42	20.29
30	21.27	20.75	24.44	25.06	------					20.67	19.78	19.67
31	21.14	------	24.70	24.98	------		------		------	20.60	19.85	------
MEAN	21.06			25.27							19.72	19.64
MAX	21.97			25.96							20.77	20.29
MIN	20.14			24.20							18.36	18.98

06340900 Missouri River near Hensler, N. Dak.

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19.65	18.54		24.31	23.65	24.03		23.13				18.31
2	19.84	19.82		24.48	23.43	24.03		23.05				17.96
3	19.29	19.53		24.33	23.66	23.79		23.10			19.32	18.10
4	19.25	19.67		24.15	23.97	24.49		23.14			19.43	18.22
5	19.70	19.57		24.43	23.29	23.85		23.18			19.44	18.32
6	19.71	19.53		24.62	23.58	23.94		23.15			18.87	18.11
7	19.69	19.16		24.52	23.37	24.41		22.97			19.00	18.45
8	19.69	19.33		24.48	23.18	25.45		23.03	21.88		18.76	18.23
9	19.79	19.72		24.23	23.57	25.07		23.06			19.02	18.42
10	19.38	19.68		24.23	23.53			23.06		19.15	18.92	18.74
11	19.12	19.63		24.04	23.43			23.09			19.02	18.47
12	19.76	19.63		23.70	23.36			23.05			18.83	18.49
13	19.61			23.57	23.30			23.04			18.98	18.55
14	19.71			23.10	23.45			22.94			18.89	18.56
15	19.70			23.77	23.69			22.93			19.02	18.39
16	19.70			24.07	23.47			23.04			18.96	18.36
17	19.54			24.22	23.40			23.06			19.44	18.28
18	18.79		18.76	23.93	23.70			23.06			19.29	18.44
19	19.83		18.50	23.62	23.83		23.01	23.08			18.90	18.45
20	20.05		17.78	23.56	23.31		23.02	23.11			19.14	18.07
21	20.14		18.07	23.47	23.68		23.03	23.08			19.46	18.16
22	19.61		18.69	23.55	23.89		22.99	23.08			19.60	18.25
23	19.73		18.77	23.46	23.94		22.97	23.03			18.79	18.22
24	19.31		18.72	23.15	24.27		22.97	22.89			18.59	18.29
25	19.32		20.11	23.19	24.13		22.98	23.20			18.34	18.13
26	19.69		22.80	23.49	23.96		23.00	22.27		19.74	18.41	18.23
27	19.26		24.52	23.33	23.92		23.03	21.85			18.13	18.24
28	18.60		24.70	23.58	24.02		23.05				18.15	18.16
29	19.03		24.54	23.48	23.70		23.01				18.08	18.21
30	19.95		24.51	23.15	------		23.06				18.36	18.13
31	19.45	------	24.57	22.87	------		------		------		18.13	------
MEAN	19.54			23.81	23.64							18.30
MAX	20.14			24.62	24.27							18.74
MIN	18.60			22.87	23.18							17.96

06341000 Missouri River at Washburn, N. Dak.

LOCATION.--Lat 47°17'20", long 101°02'15", SE¼SW¼ sec.14, T.144 N., R.82 W., on left bank near municipal water plant in Washburn at mile 1,355.

DRAINAGE AREA.--184,000 sq mi, approximately.

PERIOD OF RECORD.--August 1960 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,640.00 ft above mean sea level. Prior to Sept. 30, 1964, at datum 40 ft lower.

EXTREMES.--Current year: Maximum daily gage height recorded, 21.75 ft Feb. 4; minimum daily recorded, 11.47 ft Mar. 20.
Period of record: Maximum daily gage height recorded, 22.76 ft Jan. 11, 1964; minimum daily recorded, 10.62 ft Mar. 26, 1968.

REMARKS.--Records good. Stage regulated by Lake Sakakawea (see station 06338000).

GAGE HEIGHT, IN FEET, FOR THE PERIOD AUGUST 20, 1960 TO SEPTEMBER 30, 1960

Aug. 20, 1960	53.89	Aug. 31, 1960	53.59	Sept. 11, 1960	53.33	Sept. 21, 1960	53.94
21	53.89	Sept. 1, 1960	52.95	12	53.35	22	53.90
22	53.96	2	53.00	13	53.30	23	54.00
23	54.22	3	53.08	14	53.93	24	53.97
24	54.18	4	53.17	15	54.02	25	54.41
25	54.28	5	53.00	16	53.89	26	53.90
26	54.28	6	52.94	17	53.88	27	53.92
27	54.13	7	53.00	18	54.06	28	53.89
28	53.74	8	53.00	19	53.89	29	53.87
29	53.63	9	53.29	20	53.94	30	53.40
30	53.60	10	53.33				

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1960 TO SEPTEMBER 1961

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	53.50	53.12	54.55	57.96		58.34	56.12	55.08	54.64	53.11	54.97	53.47
2	53.13	53.13	54.34	56.31		57.72	55.95	55.38	54.58	53.05	55.12	52.99
3	52.87	52.94	54.37	55.81		56.98	55.38	55.45	54.54	53.04	55.01	52.97
4	53.11	52.97	54.59	57.36		56.72	55.48	55.37	54.32	53.04	55.27	52.98
5	53.02	53.01	54.38	58.40		56.41	55.48	55.44	54.03	52.96	55.20	52.94
6	53.03	53.41	54.40	59.07		55.98	55.51	55.43	54.33	52.59	54.65	52.80
7	52.80	53.26	54.48	58.98		55.74	55.51	55.25	54.25	52.84	54.52	52.86
8	52.80	52.90	54.58	58.99		55.73	55.50	55.07	54.00	52.84	54.48	
9	52.77	52.98	54.50	58.80		55.65	55.48	55.34	53.95	52.60	53.90	
10	52.75	53.08	54.51	58.78		55.61	55.25	55.39	53.73	52.65	54.00	
11	52.67	53.05	54.58	58.72		55.50	55.55	55.46	53.63	52.72	54.53	
12	52.73	53.06	54.55	58.58		55.67	55.57	55.29	53.18	53.25	54.17	
13	52.27	53.09	54.48	58.48		55.46	55.58	55.31	52.93	53.45	53.77	
14	52.55	53.07	54.51	58.49		55.62	55.48	55.34	52.83	53.33	53.71	
15	52.38	53.01	54.53	58.45		55.48	55.42	55.03	54.78	53.43	54.52	
16	52.44	53.04	55.03	58.24		55.53	55.33	55.37	55.56	53.29	54.28	
17	52.40	53.25	54.75	58.26		55.62	55.12	55.43	55.48	53.35	54.89	
18	52.32	53.95	54.65	58.13		55.48	55.48	55.44	55.42	53.38	54.59	
19	52.51	54.45	54.88	58.03		55.18	55.47	55.21	54.82	53.25	54.08	
20	52.43	54.57	55.02			55.05	55.44	55.18	53.53	53.42	53.38	
21	52.47	54.61	56.84			54.93	55.39	54.92	52.82	53.71	53.22	
22	52.43	54.67	55.99			54.52	55.43	54.03	52.80	53.91	54.05	
23	52.42	54.66	55.12			54.43	55.43	55.11	52.79	53.55	54.28	
24	52.42	54.61	58.33			54.40	55.01	54.98	52.81	53.73	54.57	
25	52.33	54.42	58.75			54.30	55.22	54.98	52.70	54.02	54.44	
26	52.37	54.54	58.42			54.36	55.38	54.50	52.87	54.84	54.91	
27	52.77		58.42			54.77	55.39	54.23	52.78	55.05	55.07	
28	53.01		58.46		58.49	55.67	55.38	54.12	52.87	55.09	54.42	
29	53.08		58.47		------	56.28	55.38	53.67	52.83	55.38	53.82	51.42
30	53.07		58.36		------	56.21	55.35	53.82	52.79	54.93	53.82	51.46
31	53.08	------	58.31		------	56.09	------	53.78	------	54.18	53.55	------
MEAN	52.71		55.71			55.66	55.45	54.98	53.75	53.55	54.36	
MAX	53.50		58.75			58.34	56.12	55.46	55.56	55.38	55.27	
MIN	52.27		54.34			54.30	55.01	53.67	52.70	52.59	53.22	

06341000 Missouri River at Washburn, N. Dak.

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1961 TO SEPTEMBER 1962

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	51.48	56.17	54.32	59.88	59.98	59.41	55.42	54.96	56.72	52.48	52.08	51.88
2	51.36	55.95	54.46	59.81	59.85	59.65	55.62	54.47	55.99	52.11	52.42	51.84
3	51.41	56.45	54.45	59.69	59.90	59.64	55.08	54.77	55.85	52.14	52.87	51.88
4	51.41	56.40	54.33	59.72	59.99	59.53	55.32	54.61	55.60	52.82	53.39	51.75
5	51.43	56.48	54.50	59.48	59.34	59.50	55.16	54.32	57.15	52.14	53.82	51.28
6	51.41	56.38	54.31	59.63	59.30	59.74	55.16	54.34	57.39	51.92	52.98	51.40
7	51.37	56.78	54.62	59.72	59.76	59.75	55.63	54.12	57.58	54.00	53.13	51.16
8	51.38	57.04	54.46	59.28	59.84	59.80	55.97	54.05	57.09	53.81	53.47	51.48
9	51.40	57.06	54.36	58.73	59.81	59.70	56.08	54.58	56.73	53.09	53.78	51.35
10	51.54	56.82	54.70	59.62	59.82	59.60	56.29	55.30	57.08	54.62	53.64	51.31
11	52.62	56.78	55.07	59.71	59.88	59.78	56.28	55.63	56.33	55.03	53.36	51.38
12	53.31	56.79	57.58	59.73	59.78	59.64	56.41	55.64	57.46	55.02	52.82	51.42
13	53.43	56.79	58.22	59.88	59.70	59.65	56.08	55.93	57.58	55.00	52.30	52.16
14	53.61	56.99	58.33	59.79	59.71	59.76	55.38	55.78	57.53	53.01	52.40	51.67
15	53.57	56.97	58.34	59.32	59.83	59.97	55.40	56.16	57.39	51.79	51.92	51.62
16	54.35	57.04	58.66	59.61	59.62	59.83	54.92	56.39	57.32	51.12	51.70	51.39
17	55.56	57.08	58.74	59.63	59.54	59.45	55.87	56.24	56.86	55.34	51.58	51.40
18	56.00	57.16	58.63	59.64	59.84	59.19	55.78	55.37	56.25	54.52	51.75	51.50
19	56.18	57.21	58.48	59.75	59.53	58.04	55.83	56.17	55.19	54.38	51.46	51.44
20	56.28	56.87	58.74	59.78	59.62	58.03	55.96	56.17	53.65	54.81	51.53	51.36
21	56.50	56.76	59.11	60.02	59.37	57.90	56.07	55.99	52.87	54.60	51.54	51.34
22	56.39	56.46	59.29	59.70	59.44	56.98	56.12	56.27	52.77	54.46	52.28	51.33
23	56.16	56.18	59.61	59.85	59.46	56.66	55.31	56.48	53.33	54.51	52.53	51.55
24	56.49	54.72	59.96	59.98	59.46	56.43	55.11	56.44	52.78	55.02	52.30	51.80
25	56.45	55.38	59.88	59.96	59.80	56.15	54.99	56.48	52.70	54.60	51.82	53.40
26	56.58	55.60	59.58	60.08	59.34	55.74	55.17	56.59	53.98	54.01	51.90	53.59
27	56.33	54.80	59.82	59.86	59.40	55.54	55.08	56.54	52.88	54.51	51.90	53.72
28	56.23	54.60	59.70	59.97	59.40	55.74	55.34	56.44	53.29	53.50	52.10	53.51
29	56.32	54.50	59.74	59.84	------	55.42	55.45	56.63	53.39	52.44	52.08	53.52
30	55.80	54.59	59.98	60.06	------	55.45	54.34	56.69	52.80	53.11	52.14	52.25
31	56.31	------	59.95	59.90	------	55.60	------	56.98	------	53.80	52.15	------
MEAN	54.15	56.29	57.48	59.73	59.65	58.30	55.55	55.69	55.45	53.67	52.42	51.89
MAX	56.58	57.21	59.98	60.08	59.99	59.97	56.41	56.98	57.58	55.34	53.82	53.72
MIN	51.36	54.50	54.31	58.73	59.30	55.42	54.34	54.05	52.70	51.12	51.46	51.16

WTR YR 1962 MEAN 55.84 MAX 60.08 MIN 51.12

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1962 TO SEPTEMBER 1963

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	51.50	51.69	53.21	60.34	58.26	59.01	52.96	52.45	52.79	53.49	53.70	51.28
2	52.41	51.39	53.47	60.21	58.04	58.07	52.92	51.89	53.25	52.95	53.66	51.29
3	51.93	51.40	53.41	59.99	58.24	57.39	52.84	51.89	53.94	53.35	53.43	51.23
4	52.75	51.50	54.06	59.66	58.14	56.94	52.76	52.05	55.02	53.77	53.42	51.26
5	52.94	52.48	53.73	59.45	58.17	56.85	52.81	51.65	54.97	53.82	53.54	51.25
6	52.31	51.65	53.57	59.39	58.06	56.46	52.66	51.72	54.91	54.14	53.43	51.20
7	52.06	51.43	53.44	59.17	58.11	56.25	51.97	52.40	54.70	53.65	53.47	51.14
8	51.66	51.81	53.49	58.49	58.00	56.21	51.97	52.46	55.04	53.20	53.44	51.13
9	52.57	51.72	53.77	57.74	58.01	56.09	53.08	52.07	55.25	53.43	53.53	51.17
10	52.29	51.37	53.39	58.46	58.25	56.03	54.02	52.46	55.33	53.33	53.35	51.28
11	52.64	51.27	53.97	58.19	58.20	55.76	54.46	52.31	55.27	53.27	52.87	51.12
12	53.30	51.23	54.15	58.11	58.45	55.97	53.55		54.22	52.97	52.69	51.17
13	53.10	51.26	54.12	58.94	58.48	55.78	52.29		53.53	53.17	52.77	51.21
14	51.99	51.31	54.07	59.07	58.49	56.02	51.85		53.27	53.55	52.71	51.40
15	51.51	51.56	53.95		58.36	55.92	51.62		53.45	54.37	52.57	52.60
16	52.06	51.40	53.96		58.63	55.88	53.08		53.69	54.84	51.59	52.51
17	51.77	51.78	53.92		58.68	55.86	54.36	52.77	54.95	55.53	51.54	53.19
18	51.72	51.62	53.98		58.84	55.32	55.67	52.28	55.44	55.97	51.56	53.13
19	51.50	51.45	53.93		58.96	55.31	55.89	51.51	55.12	55.97	51.55	53.10
20	51.56	52.70	54.23		58.56	55.28	55.94	51.81	55.46	55.57	51.49	53.16
21	51.42	52.68	53.97		58.26	55.15	55.86	53.24	54.07	56.48	51.44	53.09
22	51.36	52.64	54.04		58.85	55.37	55.70	52.97	53.63	56.24	51.47	53.70
23	51.32	52.48	54.47		58.95	54.96	55.64	52.57	53.39	56.57	51.39	52.67
24	51.48	52.60	54.81		58.72	54.86	55.97	52.15	53.12	56.67	51.31	53.36
25	51.92	52.64	55.45		58.66	54.87	56.47	51.73	54.65	55.37	51.33	53.30
26	51.54	52.61	55.77		58.99	54.88	56.70	51.52	55.31	54.93	51.34	53.31
27	51.36	52.65	56.28		59.29	54.75	55.96	51.60	55.32	54.22	51.30	53.23
28	51.33	52.72	56.91		59.35	54.52	54.07	52.69	55.09	54.61	51.23	53.23
29	51.37	53.17	57.86		------	54.12	52.37	52.22	54.67	53.55	51.20	53.13
30	51.71	53.25	59.58		------	53.05	53.50	51.97	53.95	53.99	51.20	53.42
31	51.41	------	59.63	58.32	------	52.87	------	51.57	------	53.86	51.22	------
MEAN	51.93	51.98	54.66		58.50	55.67	53.96		54.43	54.41	52.28	52.24
MAX	53.30	53.25	59.63		59.35	59.01	56.70		55.46	56.67	53.70	53.70
MIN	51.32	51.23	53.21		58.00	52.87	51.62		52.79	52.95	51.20	51.12

MISSOURI RIVER MAIN STEM

06341000 Missouri River at Washburn, N. Dak.

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	53.12	52.58		59.61	61.14	56.71	53.92	54.54	52.38	54.11	53.58	53.10
2	53.09	52.99		59.25	60.33	56.80	53.91	54.85	52.40	53.66	53.40	53.64
3	53.22	52.70			59.24	56.65	53.90	54.45	52.36	53.54	53.07	53.64
4	53.19	52.42			58.70	56.58	53.91	54.62	52.36	53.45	53.71	53.98
5	53.14	52.49			58.23	56.66	53.90	54.54	52.56	53.52	53.50	54.01
6	53.13	52.50			58.05	56.27	53.90	54.92	52.80	53.48	53.29	53.84
7	53.11	52.47			57.92	55.96	55.20	55.17	53.28	53.50	53.38	53.10
8	53.29	52.47			57.70	56.04	55.90	55.06	54.05	53.58	53.33	53.24
9	53.23	52.53		59.20	57.50	56.32	55.88	55.12	54.90	53.49	53.38	54.43
10	53.23	52.55		61.03	57.18	56.43	55.96	55.06	53.91	53.46	53.10	54.61
11	53.13	52.77		62.76	57.10	56.63	55.80	54.99	53.96		53.31	54.70
12	52.57	53.40		62.53	56.83	56.67	55.33	55.06	53.90		53.08	55.02
13	52.49	54.10		62.54	56.80	56.62	55.28	55.07	54.69		53.19	55.03
14	52.59	54.26		62.58	56.62	56.22	55.38	55.06	54.62		53.28	54.55
15	52.50	54.06		62.35	56.66	56.17	55.33	55.08	54.42		53.21	55.02
16	52.45	54.12		62.21	56.58	56.08	55.28	55.06	54.82		53.36	55.11
17	52.59	54.10		61.66	56.47	56.16	55.25	54.93	56.52	53.38	52.95	55.02
18	52.48	53.52		61.20	56.37	56.06		54.70	56.77	53.30	53.27	55.10
19	52.40	54.30		61.02	56.44	55.77		54.35	56.98	53.38	53.40	55.20
20	52.45	54.56		60.39	56.46	55.72		53.75	57.14	53.32	53.38	55.35
21	52.45	55.15		59.55	56.53	55.91		52.66	56.33	53.32	53.22	54.49
22	52.45	55.43		59.04	56.31	56.12		52.63	56.07	53.28	53.05	55.18
23	52.46	55.54		60.08	56.22	55.63		52.54	56.72	53.06	53.10	55.15
24	52.46	55.72		62.08	56.22	53.82		52.50	56.70	53.33	52.93	55.20
25	52.44	55.32		62.26	56.30	54.41		52.52	56.71	53.37	53.01	55.13
26	52.40	55.94		62.40	56.68	54.21		52.38	56.60	53.33	53.04	55.18
27	52.83	56.01		62.08	56.91	54.01		52.78	56.68	53.20	53.15	55.26
28	52.49			62.22	56.85	53.84		52.15	56.04	53.89	52.96	54.59
29	52.52			62.18	56.73	53.98		52.45	55.37	54.00	53.19	55.28
30	52.62			62.32	------	53.62		52.40	55.03	52.93	53.08	55.35
31	52.53	------		61.90	------	53.90	------	52.42	------	53.31	53.17	------
MEAN	52.74				57.28	55.68		53.99	54.90		53.23	54.62
MAX	53.29				61.14	56.80		55.17	57.14		53.71	55.35
MIN	52.40				56.22	53.62		52.15	52.36		52.93	53.10

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1964 TO SEPTEMBER 1965

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15.25	14.35	14.89					13.21	15.88	15.59	13.76	12.67
2	15.29	13.78	15.12				18.20	13.70	16.04	15.62	14.07	12.48
3	14.99	15.06	15.14				17.77	13.32	15.94	15.57	15.16	12.87
4	14.57	15.40	15.10				17.10	13.69	15.94	15.54	16.45	12.33
5	13.98	15.12	15.18				17.08	14.86	16.46	15.58	16.09	12.39
6	14.90	15.24	14.98				17.02	14.72	16.90	15.56	15.59	12.45
7	14.53	15.24	14.94				16.96	14.08	16.78	15.76	14.56	12.35
8	14.32	15.16	15.56				17.12	13.45	16.75	16.28	13.43	12.43
9	14.38	15.51	15.69				17.15	13.48	16.77	16.13	13.18	12.42
10	14.45	15.38	15.73				16.85	13.24	16.80	16.48	13.19	12.60
11	14.59	15.39	15.76				16.52	14.76	16.78	16.62	13.26	12.44
12	14.41	15.31	15.71				17.01	14.31	16.79	16.54	12.67	12.40
13	15.03	15.34	15.80				17.07	14.88	16.81	16.55	12.58	12.35
14	14.45	15.31	15.94				16.93		16.44	15.98	12.40	12.37
15	13.94	15.30					16.97		16.33	15.91	12.42	12.39
16	12.82	15.50					16.92		16.84	15.24	12.28	12.37
17	11.87	15.42					16.06		16.89	14.88	12.50	12.50
18	11.60	15.74					15.66		17.22	14.71	12.51	11.88
19	11.90	16.23					15.46		17.13	14.24	12.55	12.43
20	13.83	16.55					15.42		16.92	14.82	12.56	12.67
21	14.20	16.92					16.14		16.53	15.04	12.55	13.08
22	14.20	16.99					16.49	17.17	15.69	15.22	12.99	13.48
23	14.31	16.90					16.47	16.92	13.92	15.26	12.18	13.74
24	14.36	17.41					16.04	16.40	13.88	15.12	12.58	14.02
25	14.31	17.21					15.10	16.21	13.85	13.55	12.58	14.70
26	14.01	17.21					15.06	16.06	14.52	13.95	12.68	14.94
27	14.27	16.89					15.02	16.22	15.60	13.39	12.74	14.74
28	14.36	15.32					14.76	16.46	14.31	13.22	12.65	14.77
29	14.20	15.24			------		14.26	16.58	14.59	13.19	13.16	14.89
30	14.19	15.11			------		13.75	16.05	15.66	13.17	12.06	15.36
31	14.27	------			------		------	14.93	------	13.27	12.50	------
MEAN	14.12	15.72							16.03	15.10	13.22	13.08
MAX	15.29	17.41							17.22	16.62	16.45	15.36
MIN	11.60	13.78							13.85	13.17	12.06	11.88

06341000 Missouri River at Washburn, N. Dak.

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1965 TO SEPTEMBER 1966

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15.97	16.87	16.79	14.56	21.04	19.39	11.97	11.47	12.08	13.06	14.09	14.37
2	15.90	16.72	16.55	14.78	21.25	19.32	11.80	11.39	12.24	13.03	13.94	14.37
3	15.50	17.04	15.90	15.51	21.09	19.85	11.93	11.36	11.77	13.38	14.03	14.18
4	15.19	17.56	16.62	16.39	21.09	19.65	11.49	11.38	11.67	13.26	13.95	14.26
5	16.62	17.70	16.49	19.52	21.05	19.62	11.90	11.36	11.83	13.18	13.93	13.89
6	16.96	17.66	16.72	20.28	21.00	20.66	11.82	11.34	11.61	13.46	13.69	13.99
7	17.15	17.44	17.28	20.90	20.78	20.49	12.28	11.39	11.70	13.72	13.34	14.02
8	17.24	17.14	17.21	20.98	20.66	20.68	11.49	11.41	11.90	13.88	13.61	14.04
9	17.34	17.54	16.68	21.11	20.53	20.93	11.62	11.44	11.98	13.93	13.63	13.95
10	16.88	17.75	16.88	20.86	20.26	20.77	11.80	11.32	12.03	14.09	13.64	13.86
11	16.28	17.55	16.50	21.42	20.41	19.18	11.64	11.45	11.93	13.53	13.32	13.67
12	17.16	17.54	15.44	21.28	20.15	17.70	11.70	11.33	11.80	13.73	13.35	13.20
13	16.99	17.24	15.90	21.30	20.13	16.90	11.66	11.35	11.92	13.93	13.37	13.48
14	16.86	17.63	17.01	20.97	19.83	16.39	11.71	11.38	11.83	13.85	14.51	13.64
15	17.01	17.40	17.37	20.66	19.94	14.98	11.57	11.53	11.81	13.90	14.27	13.54
16	17.02	17.43	17.36	20.46	20.00	14.97	11.49	11.67	12.25	13.78	14.45	13.63
17	16.73	17.65	17.32	20.68	19.92	14.68	11.47	11.66	11.98	14.06	14.27	13.50
18	16.12	17.56	17.44	20.76	19.63	14.61	11.49	11.83	12.22	13.85	14.16	13.65
19	17.00	17.64	17.38	20.85	19.84	14.33	11.49	11.92	12.29	13.82	14.32	13.22
20	16.86	17.29	17.18	20.40	19.88	13.94	11.49	11.90	12.27	13.86	14.34	13.41
21	17.08	17.32	17.25	20.68	19.84	13.90	11.44		12.26	13.86	14.81	13.57
22	16.92	17.02	17.26	20.83	20.11	15.04	11.49		12.35	13.85	14.04	13.43
23	17.14	17.32	17.41	20.92	19.81	14.48	11.43		12.36	13.88	14.59	12.89
24	16.87	17.46	17.42	20.91	19.58	14.63	11.41		12.61	13.81	14.48	13.03
25	16.38	17.53	16.70	21.07	19.57	14.57	11.37		14.44	13.94	14.43	12.90
26	17.09	17.26	15.56	21.05	19.51	14.17	11.52	11.85	13.80	14.01	14.43	12.55
27	17.04	17.41	15.86	21.05	19.20	13.27	11.47	11.88	13.23	13.91	14.37	12.94
28	17.38	17.46	16.24	21.19	19.17	12.41	11.43	11.83	13.01	13.98	14.44	13.06
29	17.26	17.39	16.11	21.07	------	12.03	11.37	11.86	13.19	13.85	14.15	13.00
30	17.21	17.14	15.79	21.10	------	12.23	11.32	11.79	13.12	13.97	14.65	12.96
31	17.17	------	15.59	21.13	------	12.18	------	11.81	------	13.98	14.49	------
MEAN	16.78	17.39	16.68	20.15	20.19	16.39	11.60		12.32	13.75	14.10	13.54
MAX	17.38	17.75	17.44	21.42	21.25	20.93	12.28		14.44	14.09	14.81	14.37
MIN	15.19	16.72	15.44	14.56	19.17	12.03	11.32		11.61	13.03	13.32	12.55

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1966 TO SEPTEMBER 1967

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13.02	14.65	15.70	14.50	20.71	20.52	16.29	12.09	13.65	15.21	17.45	
2	13.11	14.64	14.80	14.39	20.86	19.26	16.68	12.10	13.74	15.02	17.41	
3	12.98	14.62	14.75	14.70	20.97	18.20	15.70	11.91	13.69	14.60	17.36	
4	13.68	14.60	14.77	14.85	20.98	18.11	14.42	12.36	13.34	15.18	17.38	
5	14.20	14.60	14.63	15.71	19.47	17.79	14.34	12.05	13.03	14.58	17.43	15.91
6	13.94	14.60	14.63	16.50	19.58	17.47	14.94	11.48	13.60	15.40	17.44	
7	14.45	14.64	14.63	19.38	20.15	18.30	14.66	11.75	13.63	15.50	17.48	
8	14.47	14.62	14.79	21.17	20.15	19.83	13.26	11.70	14.45	15.24	17.51	
9	14.30	14.68	14.79	21.26	20.48	18.18	12.72	12.29	15.18	14.87	17.53	16.95
10	14.00	14.72	15.03	21.19	20.30	17.34	13.40	12.53	15.69	15.11	17.58	16.45
11	14.37	15.43	15.41	21.46	19.92	17.57	15.14	12.29	16.21	16.08		16.13
12	14.49	16.08	14.76	20.86	19.89	17.66	16.18	11.94	16.31	16.11		16.55
13	14.49	15.78	15.11	20.27	20.00	17.47	16.12	11.59	16.77	16.00		16.59
14	14.46	15.17	15.07	19.87	20.15	17.70	14.83	11.80	16.96	16.14		16.60
15	14.86	15.77	14.86	20.21	22.13	17.31	14.21	11.43	16.25	17.18		16.54
16	14.64	15.66	15.08	20.28	22.13	17.21	12.18	11.57	16.51	17.39		16.56
17	14.97	15.82	15.21	20.16	21.72	17.21	12.21	11.74	16.73	17.25		15.79
18	15.60	15.69	15.43	20.68	21.88	16.94	13.56	11.95	16.58	17.43	17.55	14.48
19	16.07	15.88	15.54	21.19	22.00	16.42	13.31	11.36	16.94	17.33		13.08
20	15.95	15.60	15.46	21.23	21.95	14.93	13.63	11.38	16.89	17.44		12.96
21	15.77	15.66	15.49	21.63	22.08	14.23	14.31	11.36	16.84	17.50	17.63	12.96
22	15.88	15.53	15.74	21.61	21.98	13.93	14.40	11.35	16.69	17.39		13.12
23	15.49	15.69	15.27	21.00	21.62	14.84	13.16	11.29	16.63	17.45		13.82
24	14.34	15.71	14.71		21.70	14.89	12.48	11.16	16.06	17.45		14.49
25	14.23	15.54	15.08		22.01	14.98	12.56	11.62	15.21	17.46		15.03
26	14.14	15.76	15.39		22.00	15.01	12.50	11.69	14.74	17.44		16.17
27	14.32	15.84	15.51	21.31	21.81	14.04	12.48	11.82	15.93	17.40		16.35
28	14.25	15.74	15.79	20.97	21.12	14.40	12.47	11.72	16.06	17.45	17.22	16.49
29	14.55	16.26	14.83	20.79	------	14.31	12.09	11.13	15.67	17.39		16.51
30	14.70	16.40	14.64	20.61	------	15.98	12.23	11.46	15.68	17.43		16.59
31	14.64	------	14.64	20.70	------	16.38	------	11.61	------	17.41		------
MEAN	14.53	15.38	15.08		21.06	16.72	13.88	11.73	15.52	16.48		
MAX	16.07	16.40	15.79		22.13	20.52	16.68	12.53	16.96	17.50		
MIN	12.98	14.60	14.63		19.47	13.93	12.09	11.13	13.03	14.58		

MISSOURI RIVER MAIN STEM

06341000 Missouri River at Washburn, N. Dak.

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16.18	16.52	16.55	22.00	19.85	19.98	11.20	12.77	13.35	12.37	14.12	
2	15.57	16.53	16.46	21.99	19.04		12.49	13.05	13.02	12.22	14.18	13.63
3	16.43	16.20	16.24	22.01		20.20	14.69	12.68	12.75	12.40	14.06	
4	16.50	16.17	16.06	22.00	19.89	19.68	14.79	13.17	13.60	12.70	14.69	
5	16.45	15.75	16.95	22.00	19.47	19.12	14.86	14.25	13.48	12.73	13.38	
6	16.19	14.77	16.90		19.81	18.19	14.93	13.89	13.86	12.87	14.32	
7	16.13	15.88	16.15	21.21	19.79	16.88	14.94	13.82	13.23		14.58	
8	16.12		16.84	21.32	19.63	15.57	15.41	13.86	13.33		13.92	
9	16.25			21.13	19.70		15.27	13.86	12.87		13.37	
10	16.65			21.35		15.24	15.03	13.88	13.51		13.18	
11	16.54		16.59	21.20	19.75	15.15	15.04	14.06	13.66		13.38	
12	16.43			21.18	19.05	15.21	14.58	14.06	14.76		12.36	
13	16.47	14.01			19.65	15.01	14.56	14.14	13.29		13.80	
14	16.50	14.70	17.06	20.99	19.65	14.99	14.94	13.88	13.93		13.52	
15	16.03	14.88	15.13	21.18	19.75	14.78	15.37	14.04	13.77		13.49	
16	15.35	14.94		20.82	19.81		14.89	14.07	13.46		14.01	
17	16.20	15.18	14.36	20.96		14.67	15.00	14.04	13.13		13.38	14.45
18	16.24	15.24	14.06	20.67	19.87	13.92	15.18	14.28	13.77	13.61	13.54	14.18
19	16.22	14.52	14.63	20.74	19.58	13.01	15.27	14.14	13.16	13.70	12.27	14.10
20	16.22	13.81	14.66		20.47	12.27	15.21	13.91	12.93	14.05	13.90	14.54
21	16.07	14.95	14.58	20.54	20.21	12.10	14.62	14.15	12.88	14.00		15.30
22	15.97	15.14	15.42	20.20	20.13	11.21	13.75	14.16	13.08	13.90		15.67
23	15.13	15.86		19.98	20.18		13.76	14.04	12.14	14.01		15.70
24	15.94	16.49	20.11	20.18		11.29	13.79	13.98	12.08	14.08		15.94
25	16.03	16.53	21.20	20.29	20.09	11.11	14.35	14.34	12.33	12.82		15.75
26	16.00	16.39	20.97	20.08	19.77	10.62	12.89	14.66	12.34	13.08		16.03
27	16.21	16.39	20.83		19.75	11.74	12.95	13.62	13.15	13.55		16.52
28	15.97	16.30	21.12	19.81	19.82	10.65	13.00	14.45	14.25	13.43		16.91
29	16.63	16.50	21.28	19.04	19.93	11.29	12.95	14.66	13.84	13.08		17.03
30	16.12	16.60		19.92	------	11.07	12.96	14.17	13.86	13.54		16.61
31	16.47	------	22.00	20.05	------	11.07	------	13.72	------	13.90		------
MEAN	16.17						14.29	13.93	13.29			
MAX	16.65						15.41	14.66	14.76			
MIN	15.13						11.20	12.68	12.08			

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	17.00	14.34	16.31	19.59			15.06	16.16	14.17	12.81	15.96	15.94
2	16.73	14.88	15.75	19.53			15.10	16.18	14.39	13.75	15.94	15.60
3	16.64	14.70	16.04	20.40		16.50	15.24	16.11	14.47	13.42	15.75	16.14
4	17.08	14.20	15.81	20.16		17.11	15.61		14.32	13.12	15.35	16.00
5	16.95	15.15	16.01			17.12	16.07	16.78	14.38	12.80	15.69	15.95
6	16.75	14.91	16.56			17.12	16.68	16.00	14.35	13.35	15.56	16.03
7	16.14	14.95	16.92			16.58	16.67	15.28	14.37	13.09	15.54	15.80
8	16.76	14.84	17.18			16.63	16.97	15.36	14.24	13.66	15.34	15.65
9	16.66	14.60	17.18			16.80	16.67	15.38	13.88	14.19	15.34	15.76
10	16.71	14.28	17.03			16.59	16.06	15.47	13.97	15.11	15.37	15.44
11	16.90	14.01	17.02			16.91	15.39	14.78	14.11	15.22	15.08	15.56
12	16.62	15.13	16.97			16.75	14.60	14.71	13.92	15.26	15.54	15.48
13	16.88	15.22	15.89			16.86	14.48	14.69	13.76	15.13	15.78	14.92
14	16.77	15.17	14.41			16.93	14.44	14.47	14.69	14.56	15.62	14.94
15	16.58	15.08	14.48	20.31		16.94	14.38	14.35	13.43	15.60	15.75	14.95
16	16.65	15.17	14.28			17.87	14.16	14.28	12.54	15.97	15.75	15.24
17	16.97	14.97	14.34			16.55	14.39	14.19	12.86	16.03	15.76	14.86
18	16.84	14.67	14.33			16.81	14.93	14.09	12.31	16.25	15.74	14.94
19	16.63	15.23	14.28			16.47	15.09	13.59	12.47	17.07	15.67	14.91
20	16.02	15.38	14.18			15.98	15.73	14.08	12.68	16.47	15.74	14.75
21	15.62	14.97	14.17			15.53	15.14	14.25	12.45	15.95	15.77	14.68
22	16.03	15.24	14.07			15.22	15.66	14.03	12.46	15.99	15.79	14.43
23	16.06	15.20	14.37			15.26	15.42	13.90	12.16	15.37	15.85	14.13
24	16.13	15.25	14.55			15.10	15.96	13.88	13.47	16.07	15.86	14.35
25	16.33	15.03	15.23			15.18	15.95	13.95	13.15	16.82	15.86	14.40
26	16.41	15.82	16.50			15.38	15.58	13.59	13.19	16.98	15.86	14.40
27	15.40	15.81	16.54			15.22	16.01	14.35	12.92	16.32	15.86	14.18
28	14.72	15.65	16.28			15.18	15.76	14.35	12.85	16.29	15.88	14.01
29	14.88	14.75	17.49		------	15.02	15.84	14.22	12.83	16.79	16.31	13.96
30	14.82	15.69	18.26	20.53	------	15.23	16.18	15.01	12.77	16.42	16.35	14.02
31	14.53	------	18.97		------	14.98	------	14.46	------	15.88	16.29	------
MEAN	16.30	15.01	15.85				15.51		13.45	15.22	15.74	15.05
MAX	17.08	15.82	18.97				16.97		14.69	17.07	16.35	16.14
MIN	14.53	14.01	14.07				14.16		12.16	12.80	15.08	13.96

06341000 Missouri River at Washburn, N. Dak.

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1969 TO SEPTEMBER 1970

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14.36	15.21	13.42	13.44	20.02			16.87	14.21	15.00	15.16	14.78
2	14.19	15.30	13.82	13.79	19.08			16.42	14.75	14.96	15.05	14.34
3	13.89	15.36	14.20	14.24	19.46			13.52	14.90	15.45	14.70	13.95
4	14.41	15.95	14.75	15.14	19.66			13.50	15.12	15.14	15.12	14.16
5	14.64	16.07	15.43	18.05	20.07			14.66	15.52	15.20	15.10	13.75
6	14.49	15.91	15.83	19.22	20.23		12.57	15.40	15.64	15.04	14.68	13.85
7	15.08	15.85	16.21	19.48	19.69		12.63	14.80	15.75	15.24	14.57	13.70
8	15.59	16.07	16.21	19.75	19.51		13.03	14.16	15.45	15.25	14.90	13.60
9	15.59	15.63	16.38	20.04	19.44		13.32	14.08	15.16	15.15	14.81	13.65
10	15.52	15.71	16.71	20.27	19.61	15.10	12.39	13.68	14.76	15.02	14.78	13.80
11	15.56	15.43	16.86	20.04	19.65		12.11	13.75	14.75	15.14	15.20	13.81
12	15.45	15.49	17.02	19.74	19.55		13.05	15.22	14.80	15.18	15.16	13.65
13	14.88	15.33	17.05	19.83	19.25		13.31	16.12	15.25	14.88	15.20	13.91
14	15.58	15.32	17.12	19.86	19.33		14.88	16.01	15.37	14.77	15.20	13.69
15	15.49	15.50	17.12	19.84	19.37		15.38	15.93	15.48	14.82	15.14	13.74
16	15.76	15.35	17.13	19.92	19.18	13.28	15.69	16.16	15.41	15.14	15.14	13.89
17	15.51	14.77	16.99		19.07		15.60	15.46	15.47	15.17	15.17	14.05
18	15.21	15.54	17.14		18.57	13.23	15.60	14.52	15.21	15.32	15.11	14.18
19	14.64	15.60	17.12		18.48	12.37	15.42	15.47	15.55	15.27	14.95	14.17
20	14.06	15.71	16.38	20.38	18.70	12.34	15.40	15.74	16.17	13.78	15.00	13.95
21	14.36	15.10	15.81	20.44	19.11	12.05	15.65	15.94	16.20	14.85	15.19	13.95
22	14.36	14.87	16.14	20.51	18.93	12.38	15.72	16.02	15.90	15.39	15.10	14.28
23	14.44	14.21	16.05	20.59	18.54	12.00	15.55	16.30	15.72	15.00	15.14	14.10
24	14.88	14.17	15.84	20.69	18.10	12.43	15.35	16.16	15.52	14.76	15.18	14.47
25	14.03	14.24	14.31	20.75	17.66	12.28	15.73	16.16	15.32	14.96	14.94	14.37
26	14.12	13.85	14.17	20.64	16.92	12.25	15.92	16.49	15.03	15.50	15.27	14.60
27	14.30	14.02	14.13	20.45	16.22	12.45	15.88	16.73	15.13	15.05	15.62	14.43
28	14.50	13.87	13.94	20.38	15.95		16.53	16.39	15.08	14.69	16.11	14.46
29	14.66	13.63	14.24	20.37	------		16.66	16.10	14.70	14.39	15.35	14.60
30	14.90	13.72	14.29	20.45	------		16.57	16.06	15.08	14.46	14.98	14.62
31	15.20	------	13.97	20.40	------		------	15.44	------	15.09	15.28	------
MEAN	14.83	15.09	15.67		18.91			15.46	15.28	15.00	15.11	14.08
MAX	15.76	16.07	17.14		20.23			16.87	16.20	15.50	16.11	14.78
MIN	13.89	13.63	13.42		15.95			13.50	14.21	13.78	14.57	13.60

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14.50	15.30	15.47		22.36		15.65		16.40	16.70	14.97	14.30
2	14.38	15.07	15.26		22.46		15.32		16.31	16.67	15.08	14.23
3	14.44	15.44	15.85		22.51		15.31	16.67	16.23	16.89	14.94	14.17
4	14.44	15.85	15.50		22.25		15.33		16.53	16.76	14.69	14.14
5	14.17	16.08	15.58		22.31		15.15	16.35	16.66	16.77	14.78	13.96
6	14.79	15.90	15.74		22.07		14.93	16.55	16.66	16.70	14.77	13.50
7	14.79	15.98	15.60		22.01		15.13	16.56	16.63	16.68	14.67	14.12
8	14.82	15.31	13.94		21.72		15.50	16.62	16.71	16.75	14.68	14.22
9	15.21	14.67	15.56		22.22		14.84	16.64	16.63	16.77	14.83	14.03
10	15.21	15.10	14.56		22.28		16.67	16.64	16.66	16.76	14.43	14.05
11	14.90	14.82	14.67		22.11	15.65	15.91	16.67	16.11	16.75	14.77	14.09
12	13.69	14.80	14.68		21.78	15.34	15.20	16.66	16.28	16.79	14.76	14.31
13	15.08	14.76	14.70		21.16		15.24	16.65	15.89	16.69	14.81	14.22
14	15.37	14.92	14.68		20.93		15.00	16.65	15.39	16.70	14.67	14.03
15	15.51	15.03	14.80	21.46	20.26		16.25	16.68	15.73	16.72	14.83	14.19
16	15.48	14.85	14.47	21.72	20.28		16.17	16.73	15.75	16.71	14.65	14.11
17	14.87	15.06	13.48	21.74	19.71		15.55	16.72	16.32	16.72	14.64	14.18
18	14.96	14.97	13.68	21.71	19.45	15.67	16.58	16.72	16.45	16.72	14.39	14.09
19	14.29	14.98	13.72	21.82	18.78		16.24	16.73	16.72	16.68	14.38	13.83
20	14.75	14.80	13.96	21.74	18.49		16.02	16.73	16.66	16.73	15.03	13.76
21	14.72	15.24		21.92	18.04		16.25	16.77	16.59	16.54	14.68	14.20
22	14.82	15.66		22.00	17.53	15.42	15.32	16.78	16.80	16.32	14.73	14.19
23	14.96	15.76		22.25	17.72		15.41	16.75	16.83	16.16	14.42	14.20
24	15.56	15.72		22.23	17.75		16.18	16.74	16.92	15.77	14.53	14.21
25	15.35	15.60		22.08	17.63		15.42	16.40	16.91	15.73	14.61	14.25
26	15.36	15.68		22.40	17.87		14.90	16.37	16.83	15.83	14.76	14.09
27	15.48	15.70		22.44	16.65		15.34	16.41	16.77	15.43	14.67	13.71
28	15.83	15.70		22.49	17.09	14.85	15.29	16.25	16.90	15.38	14.66	14.30
29	15.82	15.63		22.53	------		14.87	16.45	16.92	15.18	14.94	14.16
30	15.77	15.38		22.29	------		15.34	16.38	16.76	15.20	14.30	14.12
31	15.81	------		21.50	------		------	15.88	------	15.13	14.33	------
MEAN	15.00	15.33			20.19		15.54		16.50	16.37	14.69	14.10
MAX	15.83	16.08			22.51		16.67		16.92	16.89	15.08	14.31
MIN	13.69	14.67			16.65		14.84		15.39	15.13	14.30	13.50

MISSOURI RIVER MAIN STEM

06341000 Missouri River at Washburn, N. Dak.

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14.11	13.17	14.85		20.44	19.19	16.45	16.59	16.71	16.29	14.37	13.38
2	14.29	14.31	15.00		20.28	19.41	16.55	16.55	16.71	15.78	14.39	13.13
3	13.93	14.10	15.62	20.80	20.93	19.12	16.42	16.57	16.72	15.57	14.32	13.23
4	13.68	14.19	15.40	19.77	21.75	19.19	16.41	16.64	16.73	15.69	14.37	13.28
5	14.17	14.20	14.93	20.05	19.02	19.51	16.37	16.69	16.69	15.66	14.39	13.36
6	14.25	14.10	15.21	20.39	19.83	19.58	16.37	16.63	16.72	15.57	13.95	13.24
7	14.19	13.85	15.47	20.30	19.17	19.38	16.37	16.48	16.75	15.48	13.97	13.45
8	14.17	13.81	15.46	20.21	19.44	19.15	16.34	16.51	16.66	15.25	13.81	13.31
9	14.25	14.29	15.60	20.29	19.74	19.53	16.25	16.57	16.69	14.71	14.04	13.50
10	14.02	14.29	15.54	20.22	19.63	19.45	15.24	16.56	16.78	14.87	13.92	13.68
11	13.60	14.29	15.45	20.12	19.56	19.62	15.20	16.59	16.77	14.51	14.01	13.43
12	14.21	14.28	15.26	19.72	19.53	19.05	16.19	16.55	16.74	14.48	13.88	13.52
13	14.14	14.30	13.47	19.88	19.61	14.87	16.38	16.52	16.73	14.44	13.98	13.51
14	14.22	14.05	13.71	19.16	19.28	12.48	16.39	16.49	16.77	14.43	13.87	13.57
15	14.18	13.80	13.53	19.56	19.57	12.32	16.41	16.47	16.74	14.41	14.01	13.45
16	14.18	14.51	13.88	19.90	19.43	12.59	16.40	16.57	16.77	14.20	13.96	13.42
17	14.14	14.66	13.74	20.20	19.60	13.27	16.44	16.63	16.75	14.56	14.36	13.33
18	13.39	14.49	14.07	20.07	19.44	12.59	16.42	16.68	16.54	14.40	14.27	13.44
19	14.35	14.57	13.97	19.58	19.57	11.67	16.43	16.64	16.64	14.43	13.88	13.50
20	14.55	14.74	13.26	19.53	19.47	11.47	16.44	16.65	16.87	14.36	14.12	13.19
21	14.64	14.64	13.49	19.37	19.21	14.54	16.45	16.65	16.97	14.31	14.32	13.24
22	14.17	14.73	13.70	19.22	18.80	15.06	16.44	16.67	16.94	14.51	14.50	13.31
23	14.26	14.55	14.34	19.57	19.07	15.35	16.41	16.64	16.64	14.38	13.86	13.32
24	13.99	14.71	13.03	19.07	19.33	15.95	16.42	16.58	16.06	14.35	13.65	13.43
25	13.84	14.78	16.69	19.17	19.39	16.35	16.47	16.68	15.75	14.45	13.44	13.17
26	14.24	14.68	19.59	19.57	19.16	16.34	16.47	16.74	16.12	14.39	13.46	13.33
27	14.24	14.73	19.46	19.70	19.65	16.20	16.48	16.73	16.27	14.36	13.29	13.33
28	14.28	14.77	19.64	19.87	19.57	16.16	16.50	16.71	16.29	14.42	13.24	13.27
29	14.30	14.76	19.48	19.19	19.78	16.14	16.51	16.70	16.34	14.40	13.16	13.30
30	14.48	14.65	19.30	19.93	------	16.29	16.56	16.70	16.31	14.43	13.50	13.26
31	14.20	------			------	16.40	------	16.71	------	14.39	13.23	------
MEAN	14.15	14.37			19.63	16.39	16.34	16.62	16.61	14.76	13.92	13.36
MAX	14.64	14.78			21.75	19.62	16.56	16.74	16.97	16.29	14.50	13.68
MIN	13.39	13.17			18.80	11.47	15.20	16.47	15.75	14.20	13.16	13.13

06341400 Turtle Creek near Turtle Lake, N. Dak.

LOCATION.--Lat 47°27'30", long 100°55'15", on north line of sec.19, T.146 N., R.80 W., McLean County, on downstream end of twin culverts on State Highway 200, 2.5 miles downstream from Lake Ordway, and 4 miles southwest of Turtle Lake.

DRAINAGE AREA.--310 sq mi, approximately, of which about 195 sq mi is probably noncontributing.

PERIOD OF RECORD.--October 1956 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,805 ft (from topographic map).

AVERAGE DISCHARGE.--16 years, 0.51 cfs (369 acre-ft per year). Median of yearly mean discharges, 0.4 cfs (290 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 410 cfs June 13 (gage height, 5.13 ft); no flow for several months. Period of record: Maximum discharge, 410 cfs June 13, 1972 (gage height, 5.13 ft); maximum gage height, 6.2 ft Mar. 2, 1967 from floodmark, backwater from snow; no flow most of time each year.

REMARKS.--Records fair except those for the winter period, which are poor. Records of chemical analyses for water year 1972 are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	.13	.01		0	0	7.8	1.8	3.0	2.2	1.4	.01
2	.62	.12	.01		0	0	7.6	1.7	2.5	2.0	1.4	.01
3	.27	.10	0		0	0	7.4	1.7	2.1	2.0	1.4	0
4	.58	.10	0		0	0	7.0	1.6	1.9	1.9	1.1	0
5	.46	.10	0		0	0	6.8	1.5	1.6	1.7	1.0	0
6	.27	.08	0		0	.50	6.8	1.4	1.5	1.5	1.4	0
7	.17	.08	0		0	1.0	5.2	1.3	1.4	1.3	1.1	0
8	.12	.06	0		0	2.0	4.8	1.3	1.1	1.2	1.1	0
9	.09	.05	0		0	2.0	4.8	1.1	1.1	1.0	.97	0
10	.07	.04	0		0	5.0	4.6	1.1	.92	.97	.87	0
11	.05	.04	0		0	18	4.6	1.1	.78	.78	.78	0
12	.04	.03	0		0	19	4.8	1.7	.70	1.0	.62	0
13	.03	.03	0		.10	20	5.0	1.7	84	.92	.58	0
14	.03	.02	0		.20	32	4.4	1.4	32	.92	.27	0
15	.03	.02	0		.10	44	4.1	1.2	7.6	.82	.15	0
16	.02	.02	0		.05	28	4.0	1.2	2.7	.74	.13	0
17	.21	.70	0		.02	20	4.3	.97	1.5	.70	.12	0
18	2.0	.50	0		.01	10	4.4	.78	1.4	.58	.34	0
19	2.9	.20	0		.01	6.0	4.3	.66	1.4	1.5	.34	0
20	1.8	.10	0		.30	4.0	4.1	.74	1.7	1.8	.21	0
21	.62	.10	0		.20	3.3	3.8	.66	1.8	1.8	.27	0
22	.58	.08	0		.05	3.1	3.7	.87	2.9	1.8	.34	0
23	.50	.06	0		0	3.3	3.6	.78	2.4	1.7	.27	0
24	.46	.06	0		0	3.0	3.1	.70	2.9	1.5	.21	0
25	.38	.04	0		0	3.1	2.5	.66	2.7	1.7	.18	0
26	.30	.03	0		0	6.3	2.2	2.1	2.6	2.1	.14	0
27	.24	.02	0		0	18	2.3	4.8	2.6	2.0	.11	0
28	.21	.01	0		0	14	2.2	2.9	2.6	1.8	.07	0
29	.18	.01	0		0	8.2	2.0	4.0	2.7	1.7	.06	0
30	.15	.01	0		------	8.0	1.9	5.7	2.5	1.5	.03	0
31	.14	------	0		------	8.0	------	3.7	------	1.5	.02	------
TOTAL	13.52	2.94	.02	0	1.04	289.80	134.1	52.82	176.60	44.63	16.98	.02
MEAN	.44	.098	.0006	0	.036	9.35	4.47	1.70	5.89	1.44	.55	.0007
MAX	2.9	.70	.01	0	.30	44	7.8	5.7	84	2.2	1.4	.01
MIN	0	.01	0	0	0	0	1.9	.66	.70	.58	.02	0
AC-FT	27	5.8	.04	0	2.1	575	266	105	350	89	34	.04

CAL YR 1971 TOTAL 285.98 MEAN .78 MAX 11 MIN 0 AC-FT 567
WTR YR 1972 TOTAL 732.47 MEAN 2.00 MAX 84 MIN 0 AC-FT 1,450

PEAK DISCHARGE (BASE, 10 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
3-15	--	--	90	6-13	1500	5.13	410
3-27	1600	4.27	20				

06341800 Painted Woods Creek near Wilton, N. Dak.

LOCATION.--Lat 47°16'30", long 100°47'30", in SW¼SW¼ sec.23, T.144 N., R.80 W., McLean County, on right bank 600 ft upstream from county highway bridge, 7 miles upstream from Yanktonai Creek, and 8 miles north of Wilton.

DRAINAGE AREA.--427 sq mi, approximately, of which about 310 sq mi is probably noncontributing.

PERIOD OF RECORD.--October 1957 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,760 ft (from topographic map).

AVERAGE DISCHARGE.--15 years, 7.60 cfs (5,510 acre-ft per year); median of yearly mean discharges, 5.6 cfs (4,100 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 495 cfs Mar. 13 (gage height, 7.02 ft, backwater from ice); no flow Jan. 27, Jan. 29 to Feb. 23.
Period of record: Maximum discharge, 1,800 cfs Apr. 9, 1969 (gage height, 8.12 ft, backwater from ice); maximum gage height, 8.67 ft Mar. 15, 1966 (backwater from ice); no flow for many days each year.

REMARKS.--Records good. Several peaks above base experienced during the summer due to aquifer dewatering for the McClusky Canal. Records of chemical analyses for the 1972 water year are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	37	21	1.2	.21	0	.67	24	8.5	44	41	25	36
2	43	12	1.2	.27	0	.98	22	8.3	45	30	39	38
3	32	31	1.2	.27	0	1.5	22	7.9	44	16	41	36
4	15	47	1.1	.16	0	1.8	23	7.3	42	9.3	40	18
5	7.5	38	1.1	.06	0	2.3	23	6.5	39	6.4	41	8.9
6	18	22	1.1	.16	0	4.4	24	6.0	34	3.4	42	23
7	11	32	1.1	.18	0	10	23	5.4	35	2.8	22	39
8	5.5	21	.89	.16	0	10	24	5.0	37	2.6	11	39
9	12	11	.80	.14	0	11	31	4.7	47	1.9	33	37
10	32	7.9	.99	.14	0	20	30	4.7	43	1.4	39	36
11	18	6.2	.80	.14	0	97	25	6.1	45	1.4	42	37
12	8.2	5.2	.80	.12	0	188	25	7.7	48	.99	40	29
13	4.5	4.8	.71	.12	0	335	59	8.0	51	.92	36	26
14	2.7	4.6	.80	.05	0	367	98	7.2	52	4.6	19	35
15	1.8	4.4	.80	.04	0	386	54	6.7	49	4.6	9.0	37
16	1.3	4.0	.71	.04	0	351	43	6.3	47	8.0	29	37
17	1.1	3.8	.56	.03	0	301	35	28	46	18	19	36
18	19	3.4	.56	.05	0	263	27	36	53	8.4	14	17
19	19	2.9	.63	.04	0	187	22	41	53	22	7.2	9.0
20	8.4	3.5	.63	.03	0	118	19	43	45	29	4.6	5.4
21	5.1	3.5	.63	.03	0	84	17	39	37	16	3.4	3.2
22	23	3.1	.50	.03	0	63	15	39	42	8.9	2.5	2.6
23	36	2.6	.56	.02	0	48	13	40	43	5.9	1.9	1.9
24	35	2.2	.50	.03	.02	38	12	40	47	3.5	13	1.5
25	19	2.0	.39	.01	.04	30	12	40	38	2.6	38	1.6
26	10	1.8	.27	.02	.10	24	11	51	20	7.6	40	1.8
27	30	1.6	.27	0	.19	11	9.9	46	14	37	39	8.6
28	39	1.5	.24	.01	.34	21	9.3	47	11	40	40	39
29	39	1.3	.24	0	.48	22	8.7	48	9.9	40	39	42
30	43	1.2	.21	0	------	22	8.4	44	30	37	38	39
31	31	------	.21	0	------	23	------	42	------	18	37	------
TOTAL	607.1	306.5	21.70	2.56	1.17	3,041.65	769.3	730.3	1,190.9	429.21	844.6	720.5
MEAN	19.6	10.2	.70	.083	.040	98.1	25.6	23.6	39.7	13.8	27.2	24.0
MAX	43	47	1.2	.27	.48	386	98	51	53	41	42	42
MIN	1.1	1.2	.21	0	0	.67	8.4	4.7	9.9	.92	1.9	1.5
AC-FT	1,200	608	43	5.1	2.3	6,030	1,530	1,450	2,360	851	1,680	1,430

CAL YR 1971 TOTAL 6,253.72 MEAN 17.1 MAX 216 MIN 0 AC-FT 12,400
WTR YR 1972 TOTAL 8,665.49 MEAN 23.7 MAX 386 MIN 0 AC-FT 17,190

PEAK DISCHARGE (BASE, 30 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
3-13	--	--	495	4-13	2315	5.59	155

06342020 Missouri River at Price, N. Dak.

LOCATION.--Lat 47°04'47", long 100°55'55", in NW¼ sec.34, T.142 N., R.81 W., on right bank, 0.5 mile south of Price at mile 1,338.

DRAINAGE AREA.--185,000 sq mi, approximately.

PERIOD OF RECORD.--November 1959 to September 1960.

GAGE.--Water-stage recorder. Datum of gage is 1,620.00 ft above mean sea level (levels by Corps of Engineers). Prior to Sept. 30, 1964, at datum 20 ft lower.

EXTREMES.--Current year: Maximum daily gage height recorded, 29.18 ft Jan. 17; minimum daily recorded, 20.73 ft Aug. 29.
Period of record: Maximum daily gage height recorded, 30.12 ft Jan. 22, 1967; minimum daily recorded, 17.76 ft Mar. 31, 1968.

REMARKS.--Records good. Stage regulated by Lake Sakakawea (see station 06338000).

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1959 TO SEPTEMBER 1960

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1			41.66		45.76	44.92	44.47	39.87	39.13	39.85	40.17	40.08
2			41.64		45.85	44.78	43.68	40.03	39.06	40.06	40.40	39.97
3					45.79	44.95	42.36	40.22	39.05	40.05	40.67	40.00
4		40.66			45.76	44.86	41.55	40.31	39.02	40.03	40.39	40.18
5		41.74	41.65		45.53	44.85	41.86	40.27	38.97	40.02	40.41	40.00
6		42.12	41.58		45.62	44.90	41.86	40.72	39.00	40.00	40.51	39.92
7		42.25	41.25		45.54	44.76	41.70	41.98	39.06	40.07	40.49	39.88
8		42.26	41.42		45.18	44.94	41.46	42.54	39.07	40.22	40.48	39.97
9		42.24	41.65		45.19	44.92	41.11	42.24	39.09	40.27	40.50	40.19
10		42.16	41.73		45.09	44.84	40.93	42.00	39.12	40.20	40.50	40.29
11		42.17	41.81		45.18	44.74	39.99	41.90	39.02	40.07	40.51	40.29
12		42.18	41.82		45.43	44.77	40.92	41.72	39.27	40.12	40.50	40.29
13		42.19	41.84		45.42	44.77	41.17	41.55	39.28	40.21	40.50	40.28
14		42.36	41.65		45.35	44.56	41.11	40.84	38.94	40.05	40.49	40.57
15		42.51	41.66		45.35	44.55	41.02	39.90	38.98	40.06	40.48	41.02
16		42.15	41.56		45.59	44.91	41.17	39.61	39.17	40.02	40.87	40.95
17		43.25	41.51		45.93	44.99	41.75	39.66	39.10	39.98	41.10	40.92
18		45.96	41.68		45.90	45.05	40.20	39.72		39.99	41.02	41.01
19		45.63	42.32		45.58	44.99	40.77	39.64		40.05	41.01	40.98
20		44.42	43.02		45.94	44.62	40.32	39.98		40.10	41.01	40.94
21		43.18	43.53		46.19	44.16	39.43	41.30		40.03	41.00	40.97
22		42.09	44.02		46.17	45.47	38.81	41.66		40.05	40.97	40.97
23		40.95	44.95		46.19	46.47	38.97	41.46		40.03	41.19	40.97
24		41.20	47.16		46.14	47.08	38.97	41.29		40.04	41.23	41.04
25		41.44	48.73		46.07	47.01	38.60	41.32		40.07	41.33	41.17
26		41.70	48.00		46.03	47.15	39.18	40.67		39.83	41.34	41.15
27		41.38			46.00	47.47	38.73	40.04		39.72	40.88	40.93
28		42.25			45.96	46.75	38.40	39.37		39.95	40.72	40.92
29		43.36		46.10	45.74	46.78	38.48	39.26		40.18	40.63	40.91
30		42.19		46.05	------	46.09	39.37	39.19		40.00	40.62	40.69
31		------		45.96	------	45.73	------	39.16	------	40.05	40.52	------
MEAN					45.71	45.38	40.61	40.63		40.04	40.72	40.58
MAX					46.19	47.47	44.47	42.54		40.27	41.34	41.17
MIN					45.09	44.16	38.40	39.16		39.72	40.17	39.88

MISSOURI RIVER MAIN STEM

06342020 Missouri River at Price, N. Dak.

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1960 TO SEPTEMBER 1961

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	40.38	40.08	41.87	46.48	45.11	45.51	43.28	42.42	41.79	40.35	42.13	40.94
2	40.24	40.04	41.55	46.78	45.04	45.58	43.25	42.68	41.93	40.35	42.49	40.48
3	39.95	39.98	41.45	47.18	45.08	45.60	42.74	42.82	41.93	40.35	42.38	40.25
4	40.10	39.87	41.55	47.31	45.10	45.72	42.63	42.82	41.76	40.40	42.61	40.17
5	40.09	39.87	41.57	46.23	45.24	45.80	42.67	42.84	41.48	40.36	42.71	40.21
6	40.02	39.89	41.37	47.10	45.33	45.73	42.62	42.88	41.59	40.09	42.17	39.74
7	39.83	39.96	41.65	46.97	45.27	45.66	42.70	42.77	41.68	40.18	41.94	39.99
8	39.78	39.94	41.70	46.87	45.18	45.73	42.70	42.44	41.49	40.15	42.00	39.85
9	39.72	39.77	42.20	46.74	45.23	45.62	42.68	42.72	41.33	40.05	41.36	39.83
10	39.69	39.93	41.72	46.63	45.25	45.22	42.41	42.83	41.16	39.99	41.38	39.90
11	39.65		41.69	46.57	45.18	44.28	42.65	42.85	41.05	40.02	42.84	39.68
12	39.64		42.00	46.46	45.24	43.89	42.77	42.73	40.63	40.45	41.60	39.73
13	39.35		42.28	46.32	45.06	43.49	42.82	42.72	40.32	40.72	41.30	39.95
14	39.41		41.69	46.27	45.12	43.07	42.68	42.73	40.16	40.70	40.96	39.78
15	39.39		41.05	40.23	45.17	42.77	42.62	42.44	41.57	40.75	41.78	39.68
16	39.39		42.03	46.06	45.18	42.77	42.62	42.68	42.69	40.70	41.60	39.67
17	39.36		42.88	45.99	44.96	42.77	42.33	42.79	42.78	40.61	42.17	39.44
18	39.25		43.51	45.87	45.14	42.66	42.66	42.81	42.75	40.72	42.10	39.47
19	39.33		44.04	45.74	45.09	42.33	42.78	42.63	42.34	40.66	41.81	39.42
20	39.49		46.86	45.61	44.83	42.19	42.68	42.59	41.36	40.70	40.92	39.32
21	39.33		46.55	45.23	44.92	42.16	42.67	42.43	40.25	41.02	40.60	39.22
22	39.45		46.20	45.31	44.94	41.70	42.73	41.41	40.08	41.20	41.22	39.00
23	39.32		46.56	45.31	45.01	41.58	42.76	42.21	40.04	41.15	41.60	39.07
24	39.32		47.16	45.11	44.88	41.60	42.46	42.38	40.03	40.91	41.87	39.13
25	39.29		47.33	45.00	45.29	41.60	42.41	42.35	40.02	41.37	41.79	38.90
26	39.28		47.07	45.10	45.46	41.53	42.67	41.99	40.02	41.85	42.24	38.97
27	39.52		46.83	45.20	45.18	41.70	42.67	41.65	40.04	42.38	42.60	38.83
28	39.90		46.77	45.23	45.38	42.58	42.73	41.47	40.09	42.45	41.91	38.75
29	40.01		46.82	45.25	------	43.24	42.70	41.12	40.05	42.57	41.55	38.70
30	40.03	41.73	46.68	45.21	------	43.31	42.73	41.07	40.05	42.70	41.24	38.76
31	40.00	------	46.58	45.12	------	43.25	------	40.96	------	41.65	41.10	------
MEAN	39.66		43.85	45.82	45.14	43.57	42.69	42.36	41.08	40.89	41.81	39.56
MAX	40.38		47.33	47.31	45.46	45.80	43.28	42.88	42.78	42.70	42.84	40.94
MIN	39.25		41.05	40.23	44.83	41.53	42.33	40.96	40.02	39.99	40.60	38.70

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1961 TO SEPTEMBER 1962

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	38.68	43.65	41.16	46.66		46.10	42.80	41.95	43.76	39.54	39.64	38.85
2	38.70	43.11	41.13	46.64		46.16	42.80	41.54	43.08	39.20	39.30	38.75
3	38.63	43.68	41.20	46.58		46.26	42.60	42.68	43.18	39.09	39.78	38.70
4	38.63	43.77	41.10	46.41		46.19	42.48	41.65	43.52	39.64	40.23	38.70
5	38.72	43.85	41.24	46.28		46.07	42.44	41.43	43.91	39.19	40.92	38.26
6	38.69	43.67	41.09	46.17		46.27	42.44	41.28	44.34	39.55	40.20	38.12
7	38.66	43.84	41.23	46.18		46.34	42.65	41.17	44.55	40.77	40.21	38.18
8	38.62	44.11	41.59		45.96	46.38	43.24	41.12	44.35	40.97	40.34	38.04
9	38.68	44.26	41.94		46.02	46.33	43.22	41.37	43.69	40.07	40.85	38.27
10	38.66	44.11	42.46		46.04	46.23	43.57	42.13	44.25	41.16	40.77	38.03
11	39.57	43.91	45.38		46.14	46.32	43.47	42.59	43.47	41.98	40.65	38.13
12	40.39	43.88	45.27		46.07	46.24	43.54	42.75	44.32	41.98	40.09	38.12
13	40.62	43.87	45.26		46.07	46.17	43.32	42.84	44.78	42.11	39.33	38.79
14	40.87	44.06	45.47		46.07	46.25	42.60	42.86	44.67	40.65	39.59	38.67
15	40.95	44.07	45.46		46.19	46.45	42.35	42.97	44.54	39.26	39.00	38.49
16	41.20	44.09	45.68		46.15	46.41	41.84	43.31	44.43	38.77	38.77	38.23
17	42.48	44.13	46.05		46.09	46.06	42.62	43.32	44.17	41.64	38.45	38.17
18	43.02	44.14	45.95	45.48	46.21	45.95	43.17	42.65	43.46	41.83	38.57	38.25
19	43.43	44.16	45.84	45.49	46.23	45.31	42.76	42.87	42.77	41.54	38.42	38.26
20	43.54	43.89	45.76	45.53	46.20	45.48	42.91	43.21	40.98	41.78	38.34	38.16
21	43.73	43.64	46.16	45.70	46.16	45.73	43.00	43.02	40.02	41.95	38.40	38.11
22	43.75	43.37	46.38	45.67	46.08	45.96	43.09	43.20	39.72	41.71	39.03	38.10
23	43.45	43.15	46.59	45.56	46.02	46.18	42.50	43.35	40.23	41.58	39.44	38.23
24	43.77	41.82	46.86	45.70	46.14	46.42	42.01	43.43	39.74	42.07	39.34	38.25
25	43.77	41.93	46.90	45.75	46.26	46.78	41.89	43.38	39.70	42.22	38.84	40.08
26	44.06	42.25	46.75	45.86	46.13	46.72	42.11	43.51	40.67	41.38	38.80	40.58
27	43.87	41.67	46.68	45.83	45.99	45.48	41.94	43.50	40.15	41.59	38.68	40.76
28	43.70	41.40	46.64	45.75	46.08	44.07	42.19	43.41	39.97	41.12	39.05	40.74
29	43.81	41.25	46.65	45.77	------	43.07	42.48	43.53	40.42	39.97	39.02	40.80
30	43.32	41.29	46.75		------	42.79	42.44	43.58	39.98	39.17	39.01	39.78
31	43.64	------	46.83		------	42.88	------	43.75	------	40.68	39.15	------
MEAN	41.41	43.33	44.63			45.78	42.68	42.69	42.56	40.78	39.43	38.75
MAX	44.06	44.26	46.90			46.78	43.57	43.75	44.78	42.22	40.92	40.80
MIN	38.62	41.25	41.09			42.79	41.84	41.12	39.70	38.77	38.34	38.03

06342020 Missouri River at Price, N. Dak.

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1962 TO SEPTEMBER 1963

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	38.50	38.56		46.98	46.16	47.09	39.80	39.43	39.07	40.48	40.57	38.07
2	39.08	38.40		47.15	45.94	47.06	40.06	38.67	39.88	40.28	40.53	38.07
3	38.98	38.25		46.89	45.97	46.86	39.72	38.53	40.14	40.15	40.26	38.06
4	39.30	38.36		46.94	46.04	46.63	39.76	38.75	41.67	40.60	40.25	38.06
5	39.94	38.30		46.77	45.99	46.92	40.85	38.29	41.71	40.44	40.30	38.06
6	39.64	38.57		46.72	45.90	47.00	39.79	38.14	41.91	40.08	40.33	38.03
7	39.09	38.34		46.64	45.88	47.13	39.16	38.94	41.51	40.80	40.38	38.03
8	38.54	38.57		46.61	45.83	47.00	38.95	38.96	41.86	40.09	40.39	38.03
9	39.47	38.70		46.38	45.94	46.85	38.95	38.66	42.01	40.39	40.35	38.03
10	39.29	38.33		45.34	46.07	46.45	40.66	38.87	42.33	40.14	40.32	38.21
11	39.47	38.16		45.05	45.97	45.65	41.25	38.92	42.34	40.10	39.76	38.00
12	40.19	38.07		45.20	46.25	45.35	40.92	38.75	41.51	39.77	39.50	38.03
13	40.40	38.07	41.80	45.77	46.32	44.66	39.61	38.20	40.61	39.97	39.63	38.02
14	39.29	38.08	41.50	46.40	46.39	44.62	39.06	39.54	40.30	40.13	39.53	38.15
15	38.39	38.34	41.27	46.62	46.34	44.35	38.51	39.83	40.16	40.96	39.47	39.18
16	39.05	38.21	41.26	46.99	46.45	43.34	39.67	39.03	40.44	41.77	38.63	39.41
17	38.72	38.70	41.18	47.10	46.63	44.18	40.79	39.37	41.41	42.18	38.31	39.97
18	38.75	38.56	41.23	47.10	46.63	44.67	42.34	39.13	42.36	43.01	38.29	40.14
19	38.43	38.21	41.18	46.98	46.81	43.35	42.68	38.28	42.01	43.07	38.30	40.09
20	38.49	39.24	41.38	46.75	46.60	42.54	42.65	38.17	42.30	43.44	38.18	40.14
21	38.39	39.76	41.39	46.97	46.19	42.41	42.64	39.72		43.68	38.14	40.15
22	38.28	39.72	41.31	47.40	46.70	42.43	42.60	39.76		43.34	38.15	40.35
23	38.26	39.51	41.52	47.41	46.04	42.11	42.79	39.34		43.64	38.13	40.15
24	38.25	39.56	41.96	47.59	46.84	41.84	42.54	38.99		43.81	38.09	40.19
25	38.85	39.66	42.59	47.86	46.57	41.85	43.31	38.48		42.91	38.12	40.32
26	38.55	39.66	45.76	47.74	46.73	41.86	43.25	38.23		42.20	38.16	40.28
27	38.31	39.65	46.91	47.45	46.84	41.76	42.96	38.03		41.43	38.17	40.27
28	38.21	39.70	47.25	47.00	46.97	41.50	41.28	39.13	42.25	41.42	38.12	40.23
29	38.17		46.53	46.78	------	41.17	39.36	38.99	41.80	42.46	38.05	40.22
30	38.55		45.92	46.53	------	40.33	40.14	38.73	41.00	40.75	38.05	40.35
31	38.32	------	46.16	46.29	------	39.85	------	38.14	------	40.60	38.08	------
MEAN	38.88			46.75	46.32	44.16	40.87	38.84		41.42	39.11	39.14
MAX	40.40			47.86	46.97	47.13	43.31	39.83		43.81	40.57	40.35
MIN	38.17			45.05	45.83	39.85	38.51	38.03		39.77	38.05	38.00

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	40.32	39.72	43.50	47.20	47.23	44.86	41.05	41.69	39.44	41.40	40.59	40.22
2	40.22	40.01	43.45	47.08	47.25	44.35	41.02	41.86	39.48	40.77	40.37	40.52
3	40.25	39.87	43.61	46.86	47.10	44.09	41.02	41.78	39.43	40.63	40.04	40.86
4	40.35	39.70	43.63	46.60	47.09	43.81	40.98	41.66	39.43	40.47	40.67	40.92
5	40.29	39.59	43.54	46.57	47.02	43.80	41.04	41.79	39.49	40.49	40.59	41.19
6	40.29	39.66	43.54	46.45	47.11	43.48	40.99	42.19	39.85	40.49	40.31	41.16
7	40.17	39.63	43.47	46.42	47.00	42.99	41.74	42.43	40.33	40.46	40.33	40.42
8	40.27	39.67	43.48	46.40	46.93	42.95	42.84	42.31	40.87	40.55	40.34	40.26
9	40.34	39.55	43.61	46.02	46.95	43.14	42.99	42.35	42.07	40.51	40.37	41.27
10	40.25	39.65	43.46	46.00	46.93	43.39	43.04	42.26	41.40	40.43	40.19	41.81
11	40.31	39.93	42.93	46.54	46.92	43.57	43.03	42.18	41.18	40.29	40.30	41.85
12	39.90	40.38	42.73	46.01	47.03	43.69	42.61	42.21	41.18	40.29	40.14	42.19
13	39.69	41.13	42.82	46.30	47.17	43.65	42.40	42.22	41.79	40.15	40.19	42.31
14	39.70	41.61	43.78	46.81	47.31	43.33	42.49	42.21	41.93	40.37	40.28	41.88
15	39.65	41.42	48.57	46.96	47.35	43.25	42.49	42.22	41.59	40.41	40.30	42.16
16	39.60	41.44		46.99	47.13	43.17	42.45	42.19	42.73	40.44	40.32	42.37
17	39.73	41.32		47.03	46.47	43.25	42.41	42.14	43.51	40.37	40.11	42.34
18	39.70	41.07		46.74	45.98	43.30	42.43	41.82	43.89	40.29	40.22	42.39
19	39.67	41.29		46.76	45.47	42.91	42.42	41.56	43.92	40.31	40.37	42.43
20	39.63	41.86	47.40	46.65	45.40	42.75	42.52	41.08	44.13	40.16	40.61	42.58
21	39.64	42.30	47.15	46.71	45.36	42.81	42.11	39.90	43.61	40.30	40.15	42.07
22	39.60	42.77	47.61	46.58	45.08	43.11	41.53	39.65	43.08	40.27	40.24	42.30
23	39.57	42.86	47.85	46.24	46.71	42.75	41.17	39.58	43.68	40.14	40.13	42.38
24	39.62	43.13	48.04	45.65	49.24	41.37	41.13	39.54	43.78	40.21	40.02	42.37
25	39.63	42.73	47.78	46.23	49.55	41.31	41.12	39.56	43.74	40.32	40.16	42.29
26	39.67	43.17	47.56	46.64	49.42	41.34	41.27	39.47	43.68	40.28	40.07	42.31
27	39.72	43.41	46.98	46.73	49.90	41.21	41.09	39.68	43.78	40.17	40.15	42.38
28	39.88	43.48	46.74	46.84	48.96	41.08	41.07	39.33	43.31	40.57	40.20	41.82
29	39.72	43.40	46.99	47.05	46.47	41.18	41.59	39.45	42.54	41.03	40.10	42.18
30	39.90	43.44	46.92	47.20	------	41.06	41.60	39.47	42.27	40.33	40.30	42.46
31	39.76	------	47.09	47.39	------	41.00	------	39.44	------	40.15	40.18	------
MEAN	39.90	41.31		46.63	47.16	42.84	41.85	41.14	42.04	40.42	40.27	41.79
MAX	40.35	43.48		47.39	49.90	44.86	43.04	42.43	44.13	41.40	40.67	42.58
MIN	39.57	39.55		45.65	45.08	41.00	40.98	39.33	39.43	40.14	40.02	40.22

06342020 Missouri River at Price, N. Dak.

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1964 TO SEPTEMBER 1965

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22.47	21.41	22.02	28.37	28.09	27.93	28.15	19.90	22.94	22.87	20.73	19.38
2	22.48	20.85	21.92	28.23	28.18	27.85	28.02	20.26	23.24	22.90	20.95	19.33
3	22.28	21.94	22.09	28.29	28.11	28.00	28.33	19.92	23.16	22.86	22.11	19.45
4	21.90	22.37	22.27	28.22	28.13	27.96	28.34	20.14	23.29	22.85	23.55	19.37
5	21.23	22.39	23.35	28.19	28.13	27.93	28.17	21.38	23.56	22.84	23.68	19.09
6	21.87	22.35	24.05	28.17	28.08	28.01	27.96	21.56	24.09	22.90	23.15	19.18
7	21.89	22.41	23.30	28.21	28.22	28.07	26.94	21.14	24.09	22.96	22.31	19.15
8	21.50	22.40	22.99	28.22	28.16	27.83	25.87	20.43	24.06	23.50	20.91	19.17
9	21.51	21.69	22.94	28.15	28.19	27.82	25.30	20.42	24.09	23.63	20.29	19.18
10	21.56	22.31	22.81	28.14	28.11	27.84	24.43	20.17	24.11	23.72	20.41	19.23
11	21.69	22.48	22.82	28.15	28.13	27.93	23.85	21.36	24.16		20.34	19.31
12	21.55	22.48	22.77	28.00	28.03	27.97	24.01	21.27	24.17		20.06	19.27
13	22.15	22.48	23.08	28.15	28.05	27.99	24.32	21.81	24.20		19.60	19.10
14	21.76	22.44	25.63	28.14	27.97	28.03	24.10	21.58	24.06		19.44	19.24
15	21.40	22.47	27.52	28.13	27.89	27.87	24.04	21.54	23.77		19.38	19.20
16	20.26	22.52	27.46	28.14	28.05	27.88	23.94	22.61	24.04		19.34	19.19
17	18.86	22.68	26.67	28.21	28.12	27.56	23.19	21.97	24.32		19.44	19.29
18	18.42	22.66	27.50	28.13	28.03	26.75	22.52	23.22	24.54		19.49	19.75
19	18.36	23.29	28.67	28.28	27.98	26.89	22.28	23.87	24.57		19.53	19.36
20	20.30	23.64	28.82	28.20	27.96	27.42	22.22	24.13	24.39	21.99	19.49	19.35
21	21.16	24.03	28.62	28.23	27.39	27.74	22.82	23.95	24.00	22.23	19.53	19.84
22	21.32	24.17	28.63	28.16	27.39	27.70	23.35	24.11	23.53	22.45	19.68	20.24
23	21.40	23.88	28.55	28.27	27.94	27.78	23.22	24.04	21.49	22.55	19.43	20.51
24	21.40	24.39	28.37	28.28	28.05	27.88	23.04	23.45	21.03	22.52	19.43	20.88
25	21.39	24.31	28.43	28.11	28.08	27.86	21.93	23.27	20.94	21.13	19.47	21.55
26	21.19	24.27	28.44	28.05	28.05	27.95	21.76	23.09	21.30	21.03	19.54	21.95
27	21.28	23.92	28.41	28.13	28.05	27.95	21.72	23.09	22.75	20.47	19.58	21.96
28	21.41	22.71	28.32	28.17	28.13	27.98	21.56	23.32	21.76	20.25	19.47	21.90
29	21.37	22.03	28.30	28.21	------	28.03	20.96	23.45	21.52	20.28	19.76	22.07
30	21.28	22.21	28.27	28.24	------	28.05	20.54	23.28	22.67	20.23	19.33	22.24
31	21.32	------	28.33	28.19	------	28.14	------	22.20	------	20.21	19.24	------
MEAN	21.22	22.77	25.85	28.19	28.02	27.83	24.23	22.13	23.33		20.28	19.96
MAX	22.48	24.39	28.82	28.37	28.22	28.14	28.34	24.13	24.57		23.68	22.24
MIN	18.36	20.85	21.92	28.00	27.39	26.75	20.54	19.90	20.94		19.24	19.09

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1965 TO SEPTEMBER 1966

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23.20	24.05	23.67	22.19	28.06	26.60	18.96		19.21	20.61	21.67	21.94
2	23.25	23.85	23.44	23.15	28.18	26.52	18.94		19.76	20.56	21.74	21.83
3	23.03	23.94	22.99	26.18	28.20	26.32	18.95		19.15	20.80	21.64	21.86
4	22.39	24.59	23.10	26.24	28.16	25.28	18.45	18.45	19.05	20.84	21.66	21.62
5	23.48	24.87	23.56	25.89	28.14	25.35	18.82	18.48	19.13	20.77	21.62	21.47
6	24.28	24.80	23.26	26.09	28.12	26.46	18.85	18.47	19.02	20.92	21.46	21.40
7	24.16	24.70	24.08	27.10	27.86	26.96	18.98	18.50	19.02	21.28	21.10	21.44
8	24.34	24.17	24.11	27.55	27.84	27.08	18.73	18.51	19.13	21.47	21.08	21.42
9	24.45	24.48	23.64	27.72	27.78	27.46	18.51	18.56	19.23	21.53	21.35	21.38
10	24.26	24.73	23.61	27.56	27.50	27.52	18.66	18.56		21.64	21.35	21.28
11	23.35	24.62	23.52	28.05	27.63	27.13	18.61	18.56		21.38	21.02	21.13
12	24.17	24.51	22.49	28.12	27.54	26.98	18.62	18.55		21.28	20.92	20.52
13	24.20	24.27	22.24	28.12	27.42	27.12	18.61	18.53		21.48	20.96	20.72
14	24.05	24.49	23.57	27.94	27.24	27.51	18.54	18.58		21.53	21.44	20.89
15	24.02	24.28	24.01	27.60	27.31	26.20	18.48	18.66		21.46	22.17	20.91
16	24.25	24.34	23.99	27.37	27.44	24.10	18.40	18.83		21.42	22.06	20.88
17	23.92	24.61	23.82		27.51	22.82	18.38	18.91	19.57	21.54	22.12	20.88
18	23.13	24.54	23.81	27.56	27.16	22.13	18.36	19.00	19.45	21.53	21.86	20.92
19	23.97	24.61	23.82	27.64	27.32	21.68	18.39	19.06	19.65	21.44	21.87	20.42
20	23.93	24.41	23.67	27.46	27.35	21.16	18.42	19.09	19.70	21.42	22.00	20.64
21	24.14	24.33	23.66	27.32	27.31	20.85		19.17	19.69	21.50	22.10	20.82
22	24.01	23.90	23.64	27.64	27.59	21.81		19.10	19.73		22.35	20.76
23	24.19	24.31	23.73	27.73	27.39	21.87		18.89				20.28
24	24.16	24.37	23.78	27.77	27.15	21.67		18.85			22.15	20.20
25	23.34	24.51	23.55	27.91	27.09	21.56		18.93			22.03	20.11
26	24.07	24.38	22.62	27.96	27.16	21.37		18.98			22.00	19.71
27	24.07	24.32	22.76	27.97	26.79	20.43		19.10			21.96	20.15
28	24.41	24.38	22.96	28.08	26.38	19.39		19.06			21.94	20.30
29	24.49	24.24	23.51	28.04	------	19.03		19.03			21.78	20.27
30	24.30	24.10	23.02	28.02	------	19.13		19.02	20.70	21.55	22.02	20.27
31	24.34	------	23.07	28.10	------	19.06	------	19.04	------	21.65	22.07	------
MEAN	23.91	24.39	23.44		27.52	23.82						20.88
MAX	24.49	24.87	24.11		28.20	27.52						21.94
MIN	22.39	23.85	22.24		26.38	19.03						19.71

06342020 Missouri River at Price, N. Dak.

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1966 TO SEPTEMBER 1967

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20.21	22.01	23.79	24.74	29.33	30.00	23.16	19.25	20.47	23.05	25.00	23.75
2	20.34	22.02	22.77	24.22	29.52	29.92	23.60	19.31	21.32	22.69	24.97	23.70
3	20.16	22.03	22.92	24.64	29.69	29.37	22.98	19.07	21.21	22.21	24.85	23.43
4	20.84	22.00	23.30	25.80	30.06	29.46	21.73	19.38	21.22	22.66	24.85	22.73
5	21.41	21.99	21.10	27.50	29.25	29.50	21.34	19.39	20.27	22.32	24.85	22.96
6	21.37	22.00	21.97	29.43	28.72	29.22	21.95	18.67	21.00	22.74	24.82	23.39
7	21.73	22.03	21.94	29.11	29.50	28.12	21.84	18.72	21.21	23.10	24.82	23.54
8	21.93	22.03	21.94	29.63	29.30	28.99	20.80	18.79	21.54	23.02	24.78	23.63
9	21.83	22.07	22.00	30.04	29.77	29.45	19.94	19.31	22.46	22.67	24.77	23.98
10	21.42	22.12	22.13	29.85	29.72	29.15	20.17	19.65	22.91	22.23	24.77	24.09
11	21.75	22.62	23.90	29.83	29.41	28.88	21.60	19.73	23.64	23.34	24.78	23.23
12	21.88	23.46	25.74	29.79	29.32	28.76	21.06	19.24	23.65	23.78	24.77	23.67
13	21.97	23.47	26.12	29.81	29.48	28.60	20.62	18.74	24.21	23.70	24.77	
14	21.97	22.74	25.24	29.60	29.49	28.54	21.71	18.75	24.32	23.66	24.75	
15	22.13	23.10	23.77	29.56	28.61	28.61	21.44	18.69	23.86	24.49	24.78	
16	22.26	23.21	22.88	29.37	28.92	28.50	19.78	18.60	23.87	24.92	24.82	
17	22.36	23.29	22.66	28.58	28.93	28.32	18.98	18.84	24.09	24.85	24.83	
18	22.85	23.27	22.83	28.85	28.98	28.11	20.53	19.21	24.18	24.88	24.81	
19	23.54	23.37	22.99	29.60	29.32	26.61	20.84	18.67	24.11	24.91	24.47	
20	23.59	23.31	23.10	29.77	29.48	24.37	20.82	18.48	24.50	24.89	24.82	
21	23.41	23.10	23.04	29.97	29.58	22.80	21.47	18.50	24.30	24.80	24.87	19.74
22	23.32	23.14	23.22	30.12	29.68	21.76	21.78	18.48	24.28	24.90	24.92	19.78
23	23.28	23.14	22.62	29.77	29.45	21.98	20.83	18.46	24.23	24.96	24.94	20.18
24	22.11	23.18	22.82	29.52	29.33	22.07	20.32	18.38	23.91	25.00	24.87	21.20
25	21.58	23.06	23.08	29.61	29.79	22.06	20.01	18.58	23.20	25.01	24.67	21.55
26	21.46	23.22	23.30	29.60	29.96	22.20	20.03	18.94	22.34	24.98	24.74	23.11
27	21.55	23.33	23.66	29.80	29.97	21.18	19.97	18.93	23.08	24.96	24.78	23.39
28	21.64	23.15	24.80	29.79	29.88	21.27	19.87	19.31	23.73	25.05	24.33	23.68
29	21.68	23.57	25.55	29.47	------	21.19	19.45	18.43	23.53	25.04	24.44	23.76
30	22.06	23.88	25.48	29.23	------	22.49	19.45	18.54	23.27	25.05	23.56	23.87
31	22.03	------	25.22	29.44	------	23.26	------	18.66	------	25.04	23.14	------
MEAN	21.92	22.83	23.42	28.90	29.44	26.28	20.94	18.89	23.00	24.03	24.69	
MAX	23.59	23.88	26.12	30.12	30.06	30.00	23.60	19.73	24.50	25.05	25.00	
MIN	20.16	21.99	21.10	24.22	28.61	21.18	18.98	18.38	20.27	22.21	23.14	

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23.66	23.95	23.70	27.62	26.69	27.12	17.86	20.25	20.61	19.48	21.47	20.98
2	23.04	23.99	23.64	27.83	26.66	27.27	18.62	20.44	20.24	19.32	21.72	20.85
3	23.54	23.80	23.50	27.93	26.62	27.41	21.22		19.70	19.28	21.63	20.61
4	23.84	23.52	23.03	27.92	26.64	27.40	21.71		20.46	19.96	21.90	20.84
5	23.77	23.51	23.92	27.86	26.25	27.92	21.66		20.72	20.00	21.25	21.00
6	23.58	21.78	24.10	28.00	26.46		21.96		21.06	20.07	21.47	20.96
7	23.53	22.94	23.38	28.17	26.58	27.72	21.86		20.64	20.14	21.79	20.91
8	23.41	23.07	23.85	28.07	26.46	27.36	22.34		20.43	20.13	21.96	20.89
9	23.62	22.89	24.10	28.15	26.49	26.13	22.37		20.23	20.10	20.63	20.85
10	23.93	22.89	24.09	28.25	26.40	24.34	22.19		20.47	20.26	20.41	20.98
11	23.99	22.70	23.72	28.14	26.46	23.56	22.17		21.64	20.23	20.68	20.73
12	23.88	22.37	23.98	28.14	25.95	23.54	21.95		22.29	20.32	19.57	21.00
13	23.90	20.91	24.05	28.11	26.39	23.17	21.75		21.83	20.07	20.70	21.02
14	23.92	21.73	24.03	28.14	26.46	22.91	22.23		21.37	19.95	20.97	21.29
15	23.74	22.02	22.65	27.99		22.66	22.56		21.35	20.05	19.70	21.36
16	22.55	22.18	21.70	27.98		22.52	22.44			20.54	21.17	21.40
17	23.40	22.38	21.57	27.93		22.36	22.37			21.02	20.95	21.99
18	23.58	22.64	21.48	27.82		21.57	22.46		20.99	21.16	20.78	21.53
19	23.60	22.14	21.78	27.76		21.26	22.69		20.67	21.00	19.54	21.40
20	23.60	20.91	21.91	27.69		20.06	22.66		20.03	21.42	20.68	21.57
21	23.55	22.00	22.66	27.45	27.19	20.11	22.26	21.50	19.92	21.52	21.63	22.55
22	23.50	22.34	26.09	27.12	27.10	19.03	21.40	21.59	20.20	21.21	21.96	23.10
23	22.46	22.86	26.66	27.06	27.03	18.36	21.22	21.47	19.28	21.48	22.95	23.10
24	22.57	23.60	27.37	27.07	27.13	18.07	21.34	21.34	18.87	21.52	23.25	23.34
25	23.33	23.83	26.78	27.21	27.10	18.16	21.91	21.62	19.32	20.78	23.11	23.31
26	23.33	23.67	26.31	27.06	26.56	17.94	20.90	21.95	19.25	19.84	22.89	23.31
27	23.65	23.62	26.63	26.91	26.86	17.96	20.46	21.13	19.92	20.95	23.00	24.04
28	23.55	23.57	27.02	26.69	26.90	17.88	20.44	21.63	21.40		22.78	24.36
29	23.92	23.62	27.48	26.29	26.05	17.83	20.42	22.00	21.42		22.07	24.62
30	23.87	23.78	27.52	26.69	------	17.94	20.37	21.78	20.38		21.45	24.24
31	23.92	------	27.24	26.77	------	17.76	------	21.09	------	21.38	21.16	------
MEAN	23.54	22.84	24.39	27.61			21.53				21.46	21.94
MAX	23.99	23.99	27.52	28.25			22.69				23.25	24.62
MIN	22.46	20.91	21.48	26.29			17.86				19.54	20.61

06342020 Missouri River at Price, N. Dak.

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	24.43	21.37	23.37	27.35	28.30			23.38	21.65	20.21	23.72	23.81
2	24.40	21.91	23.02	27.66	28.29		22.29	23.36	21.73	20.90	23.76	23.50
3	24.19	21.88	23.23	27.55	28.11		22.36	23.35	22.01	21.07	23.63	23.64
4	24.39	21.20	23.06	27.60	28.21		22.71	22.70	21.89	20.71	23.06	23.82
5	24.51	22.20	23.07	27.90	28.03		23.20	22.75	21.90	20.32	23.50	23.73
6	24.25	22.27	23.54	27.88	28.02		23.95	23.33	21.90	20.66	23.44	23.66
7	23.60		23.96	27.81	28.23		24.26	22.57	21.93	20.63	23.40	23.62
8	24.05		24.26	27.83	28.10		24.38	22.53	21.89	21.13	23.32	23.33
9	24.12		23.98	27.56	28.09		24.23	22.60	21.50	21.60	23.27	23.51
10	24.12		23.90	28.06	27.77		23.69	22.57	21.60	22.67	23.35	23.20
11	24.29		23.89	28.20	28.02	25.85	23.06	22.01	21.68	22.86	23.11	23.29
12	24.04		23.70	28.13	28.01		22.07	21.80	21.60	22.95	23.31	23.12
13	24.29	22.38	22.91	28.16	27.80		21.77	21.93	21.33	22.91	23.68	22.73
14	24.15	22.40	21.65	28.22	27.85		21.61	21.62	21.88	22.31	23.57	22.56
15	24.10	22.20	22.62	28.43	27.90		21.65	21.52	21.46	23.11	23.61	22.52
16	23.98	22.28	22.31	28.42	27.90	25.05	21.37	21.51	20.08	23.73	23.65	23.00
17	24.18	22.18	21.09	28.36	27.75	24.18	21.50	21.45	20.33	23.84	23.63	
18	24.30	21.50	21.09	28.37	27.95	24.22	21.99	21.34	19.63	23.92	23.63	
19	24.09	22.20	21.09	28.28	28.25		22.34	20.81	19.75	24.77	23.58	
20	23.51	22.43	21.05	28.38	28.02		22.82	21.28	20.12	24.54	23.60	
21	22.80	22.03	21.09	28.40			22.37	21.41	19.89	23.72	23.63	
22	23.25	23.23	21.10	28.33			22.87	21.40	19.85	23.95	23.63	
23	23.31	22.24	21.97	28.21		22.35	22.60	21.18	19.37	23.20	23.68	21.52
24	23.38	22.14	23.78	28.01		22.27	23.14	21.19	20.72	23.72	23.70	21.81
25	23.61	21.97	27.88	27.98		22.30	23.21	21.25	20.73	24.41	23.70	21.87
26	23.62	22.81	28.50	28.40		22.58	22.74	20.78	20.75	24.83	23.69	21.91
27	22.92	22.94	29.10	28.39			23.10	21.53	20.55	24.32	23.69	21.72
28	21.79	22.99	27.66	28.29			22.98	21.64	20.32	23.94	23.68	21.48
29	21.98	21.84	27.00	28.25	------		22.97	21.51	20.19	24.50	23.95	21.38
30	21.96	22.56	25.97	28.26	------		23.32	22.31		24.44	24.18	21.57
31	21.68	------	26.41	28.25	------		------	22.00	------	23.76	24.15	------
MEAN	23.65		23.78	28.09				21.96		22.89	23.60	
MAX	24.51		29.10	28.43				23.38		24.83	24.18	
MIN	21.68		21.05	27.35				20.78		20.21	23.06	

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1969 TO SEPTEMBER 1970

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21.80	22.86	20.88	21.10	28.10	25.88	21.20	23.80			22.57	22.51
2	21.74	22.91	21.04	22.25	27.18	25.45	20.90	23.82		22.73	22.45	22.02
3	21.41	22.95	21.49	25.84	27.16	25.86	20.38	21.50	22.37	22.84	22.15	21.40
4	21.80	23.50	22.10	27.00	27.54	26.55	20.63	20.59	22.50	22.77	22.35	21.55
5	22.35	23.72	22.86	26.92	27.92	26.64	20.68	22.04	22.82	22.70	22.52	21.30
6	22.10	23.71	23.41	26.65	28.19	26.68	19.91	22.50	23.10	22.58	22.10	21.13
7	22.60	23.52	23.83	27.15	27.84	26.48	19.78	22.62	23.22	22.61	21.91	21.17
8	23.01	23.73	23.86	27.90	27.55	25.91	19.95	21.49	23.10	22.76	22.12	20.96
9	23.32	23.44	24.02	28.45	27.35	25.28	20.28	21.80	22.74	22.75	22.36	21.11
10	23.25	23.30	24.34	28.50	27.49	25.32	19.70	21.26	22.35	22.51	22.04	21.20
11	23.23	23.07	24.57	28.30	27.65	25.37	18.96	21.02	22.15	22.52	22.52	21.25
12	23.26	23.06	24.70	28.00	27.64	25.37	19.50	22.31	22.21	22.64	22.53	21.19
13	22.57	22.99	24.78	27.85	27.42	25.20	20.10	23.30	22.52	22.40	22.58	21.19
14	23.19	22.93	24.80	27.73	27.40	25.10	21.40	23.53	22.91	22.30	22.64	21.24
15	23.20	23.11	24.81	27.39	27.50	24.02	22.05	23.38	23.04	22.13	22.50	21.16
16	23.42	23.10	24.80	27.45	27.25	22.80	22.38	23.66	22.85	22.36	22.53	21.28
17	23.22	22.48	24.65	27.42	27.22	22.00	22.41	23.30	23.01	22.47	22.53	21.57
18	23.01	22.99	24.67	27.62	26.88	20.95	22.40	22.25	22.86	22.63	22.56	21.58
19	22.38	23.24	24.71	27.70	26.69	19.74	22.40	22.89		22.71	22.41	21.74
20	21.55	23.46	24.17	27.96	26.75	19.23	22.18	23.37		21.05	22.31	21.60
21	21.83	23.01	23.37	28.10	27.29	18.90	22.47	23.57		22.10	22.59	21.32
22	21.80	22.44	23.41	28.20	27.15	18.92	22.58	23.68		22.34	22.56	21.81
23	22.01	22.04	23.59	28.41	26.70	18.67	22.53	23.88		22.70	22.62	21.66
24	22.20	21.46	23.55	28.65	26.50	19.01	22.39	23.90		22.10	22.63	21.86
25	21.63	21.69	21.56	28.65	26.56	18.92	22.50	23.68		22.14	22.51	21.98
26	21.61	21.35	21.20	28.58	26.48	18.80	22.82	24.05		22.64	22.59	22.09
27	21.68	21.39	21.60	28.38	26.25	18.90	22.77			22.62	23.06	22.09
28	21.88	21.34	21.80	28.31	26.23	19.38	23.27			22.04	23.51	21.88
29	23.37	21.04	21.97	28.15	------	20.20	23.67			21.70	23.40	22.15
30	22.44	21.00	22.48	28.28	------	20.56	23.64			21.60	22.62	22.11
31	22.71	------	22.31	28.30	------	20.92	------		------	22.28	22.62	------
MEAN	22.44	22.69	23.27	27.46	27.21	22.68	21.53				22.53	21.57
MAX	23.42	23.73	24.81	28.65	28.19	26.68	23.67				23.51	22.51
MIN	21.41	21.00	20.88	21.10	26.23	18.67	18.96				21.91	20.96

06342020 Missouri River at Price, N. Dak.

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22.17	23.10	22.80	27.23	26.73	26.06	22.70	24.19	23.85	24.17	22.40	21.95
2	22.01	22.53	22.66	27.06	27.19	26.25	22.53	24.28	24.00	24.18	22.49	21.88
3	22.00	22.90	23.20	27.07	27.25	25.90	22.51	24.35	23.76	24.32	22.47	21.81
4	22.08	23.18	23.06	26.77	26.97	26.00	22.53	24.20	23.97	24.32	22.60	21.76
5	21.68	23.75		26.76	26.95	26.30	22.43	24.12	24.19	24.22	22.77	21.82
6	22.23	23.57		26.99	26.91	26.24	22.30	24.26	24.18	24.27	22.52	21.03
7	22.35	23.55		27.23	26.68	26.07	22.47	24.27	24.25	24.11	22.23	21.58
8	22.36	23.28		27.23	26.34	25.73	22.80	24.36	24.17	24.20	22.24	21.87
9	22.61	22.14		27.36	26.57	25.73	23.70	24.42	24.21	24.24	22.31	21.72
10	22.87	22.56		27.36	26.90	25.85	23.95	24.39	24.27	24.24	22.07	21.70
11	22.74	22.38		27.25	27.04	25.43	23.80	24.41	23.75	24.21	22.25	21.73
12	21.28	22.28		27.15	26.95	24.61	23.82	24.45	23.73	24.30	22.36	21.91
13	22.42	22.28		27.17	26.34	23.77	23.34	24.46	23.52	24.21	22.34	21.93
14	22.90	22.32		27.36	26.21	23.40	23.59	24.44	23.28	24.19	22.28	21.76
15	23.11	22.58		27.32	25.95	23.46	23.96	24.46	23.18	24.20	22.41	21.78
16	23.16	22.39		27.17	26.12	23.14	23.86	24.50	23.20	24.19	22.21	21.89
17	22.68	22.53		27.02	26.25	22.92	23.95	24.49	23.63	24.20	22.23	21.87
18	22.60	22.58		27.06	26.16	22.92	24.09	24.47	23.94	24.22	22.06	21.86
19	21.90	22.55		27.04	26.10	22.87	23.95	24.51	24.18	24.19	21.91	21.74
20	22.41	22.39		26.94	25.85	22.81	23.82	24.53	24.22	24.18	22.52	21.27
21	22.13	22.62		27.14	25.93	22.72	23.97	24.57	24.20	24.09	22.37	21.87
22	22.41			27.24	25.56	22.65	23.95	24.58	24.30	23.74	22.44	21.98
23	22.38	23.25		27.36	25.93	22.63	24.10	24.56	24.40	23.68	21.99	21.91
24	23.13	23.35		27.60	26.05	22.46	24.15	24.50	24.52	23.26	22.18	21.93
25	23.10	23.19		27.49	26.18	22.40	24.07	24.33	24.47	23.17	22.24	21.94
26	22.90	23.19		27.48	26.16	22.47	24.12	24.09	24.45	23.23	22.36	21.95
27	23.09	23.19		27.45	25.96	22.50	24.13	24.21	24.29	22.95	22.39	21.31
28	23.31	23.22		27.35	26.02	22.38	23.90	24.12	24.37	22.82	22.35	21.88
29	23.54	23.16		27.60	------	22.45	24.17	24.06	24.43	22.61	22.54	21.93
30	23.39	22.90	27.07	27.25	------	22.99	24.13	24.18	24.40	22.60	22.02	21.78
31	23.39	------	27.07	26.49	------	22.86	------	23.70	------	22.60	21.94	------
MEAN	22.59			27.19	26.40	24.00	23.56	24.34	24.04	23.84	22.31	21.78
MAX	23.54			27.60	27.25	26.30	24.17	24.58	24.52	24.32	22.77	21.98
MIN	21.28			26.49	25.56	22.38	22.30	23.70	23.18	22.60	21.91	21.03

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21.81	20.94	22.42	27.86	28.62	28.28	23.86	23.99	24.11	23.67	22.05	20.96
2	22.00	21.78	22.59	27.67	28.84	28.29	23.86	23.97	24.11	23.35	22.04	20.83
3	21.83	21.95	23.09	27.92	28.85	28.22	23.77	23.96	24.12	22.81	22.00	20.82
4	21.20	21.89	23.21	27.85	29.09	28.32	23.79	24.01	24.15	23.10	21.99	20.82
5	21.77	21.96	22.81	28.04	28.77	28.39	23.81	24.05	24.13	22.88	22.07	20.90
6	21.93	21.83	22.58	28.43	28.75	28.43	23.84	23.95	24.12	23.04	21.81	20.90
7	21.89	21.71	23.08	28.52	28.52	28.32	23.91	23.86	24.19	22.85	21.58	20.95
8	21.86	21.34	23.10	28.62	28.51	28.05	23.92	23.74	24.13	22.75	21.52	20.89
9	21.93	21.93	23.23	28.68	28.57	28.49	23.90	23.78	24.04	22.22	21.65	21.13
10	21.89	22.01	23.28	28.56	28.65	28.28	23.12	23.80	24.21	22.14	21.57	21.26
11	21.18	22.00	23.21	28.59	28.61	28.64	22.66	23.87	24.23	22.01	21.65	21.12
12	21.77	22.00	23.32	28.31	28.55	28.69	23.38	23.88	24.17	21.92	21.59	21.19
13	21.90	21.98	21.62	28.35	28.47	26.30	23.90	23.86	24.06	21.88	21.63	21.25
14	21.90	21.90	21.28	28.09	28.15	26.35	23.96	23.89	24.19	21.90	21.49	21.19
15	21.90	21.37	21.88	28.42	28.32	27.46	23.98	23.82	24.20	21.87	21.65	21.05
16	21.92	22.00	21.77	28.86	28.23	28.04	23.99	23.95	24.21	21.75	21.66	20.81
17	21.97	22.38	21.65	29.18	28.20	27.37	23.99	24.02	24.23	21.88	21.53	21.06
18	21.14	22.19	22.30	29.16	28.13	25.15	23.99	24.10	24.15	21.97	22.11	21.15
19	21.90	22.22	23.23	28.76	28.44	23.21	24.00	24.12	23.99	21.90	21.59	20.76
20	22.23	22.38	23.28	28.67	28.17	21.86	24.01	24.07	24.29	21.90	21.80	21.07
21	22.42	22.34	23.61	28.61	27.83	21.77	24.02	24.07	24.43	21.75	21.88	
22	22.05	22.38	24.55	28.64	27.69	22.09	23.99	24.10	24.42	22.03	22.17	
23	21.98	22.23	26.46	28.68	27.94	22.53	23.96	24.10	24.21	21.96	21.79	
24	21.91	22.36	26.22	28.39	28.23	23.22	23.95	23.99	23.60	21.86	21.35	
25	21.47	22.42	26.13	28.45	28.47	23.71	24.00	24.07	23.22	21.92	21.18	
26	21.93	22.36	26.48	28.69	28.57	23.71	23.99	24.17	23.24	21.98	21.06	
27	21.99	22.38	26.92	28.79	28.52	23.62	23.97	24.14	23.65	21.89	21.01	
28	22.02	22.40	27.37	28.77	28.47	23.52	23.99	24.11	23.66	21.98	20.83	
29	22.09	22.39	27.66	28.97	28.61	23.48	23.97	24.09	23.68	21.99	20.73	
30	22.20	22.40	27.65	28.65	------	23.66	23.98	24.19	23.68	22.03	21.13	
31	22.18	------	27.76	28.24	------	23.84	------	24.11	------	21.94	20.83	------
MEAN	21.88	22.05	23.99	28.50	28.44	25.85	23.85	23.99	24.03	22.23	21.59	
MAX	22.42	22.42	27.76	29.18	29.09	28.69	24.02	24.19	24.43	23.67	22.17	
MIN	21.14	20.94	21.28	27.67	27.69	21.77	22.66	23.74	23.22	21.75	20.73	

06342100 Square Butte Creek tributary No. 2 near Center, N. Dak.

LOCATION.--Lat 47°06'40", long 101°15'05", in NE¼NE¼ sec.24, T.142 N., R.84 W., Oliver County, on right bank 60 ft upstream from county highway bridge, 2.1 miles southeast of Center.

DRAINAGE AREA.--13.0 sq mi.

PERIOD OF RECORD.--December 1954 to April 1965 (annual maximum only), May 1965 to current year.

GAGE.--Water-stage recorder. Prior to May 1965, crest-stage gage only at site 1,000 ft upstream at datum 1.48 ft higher.

AVERAGE DISCHARGE.--7 years, 1.24 cfs (898 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 270 cfs Mar. 13 (gage height, 8.24 ft, backwater from ice); maximum gage height, 8.30 ft Mar. 11 (backwater from ice); no flow on many days.
Period of record: Maximum discharge, 2,500 cfs July 16, 1957 (gage height, 7.98 ft, site and datum then in use); no flow for several months each year.

REMARKS.--Records poor. Flow regulated by Soil Conservation Service dam 1.5 miles upstream since August 1972 (capacity 1,225 acre-ft). Records of chemical analyses for the 1972 water year are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.13	.25	.16			0	.87	1.7	.25	1.1	.01	0
2	1.0	.35	.16			0	.58	.95	.25	1.2	.02	0
3	.40	.30	.16			0	.51	.79	.20	1.7	.02	0
4	.30	.25	.16			0	.40	.58	.20	1.7	.01	0
5	.16	.30	.16			0	2.5	.51	.20	1.7	.01	0
6	.13	.20	.16			0	14	.51	.20	1.2	.01	0
7	.13	.13	.16			0	6.8	.40	.20	.79	.02	.05
8	.16	.13	.16			0	1.0	.35	.20	.95	.01	.05
9	.16	.30	.13			0	1.1	.40	.16	1.2	.01	.03
10	.16	.30	.07			1.7	.95	.40	.20	.79	0	.02
11	.16	.30	.07			89	.58	.58	.20	.45	0	.02
12	.20	.35	.05			44	1.5	.87	.20	.95	0	.01
13	.20	.35	.05			113	3.2	.65	.16	.58	0	.02
14	.20	.35	.05			108	1.0	.51	.16	.30	0	.03
15	.20	.30	.05			88	.79	.45	.16	.02	0	.01
16	.20	.30	.05			14	.87	.35	.20	.05	0	0
17	.20	.30	0			49	.79	.30	.16	.05	.19	0
18	.87	.30	0			17	.65	.30	1.8	.02	3.3	0
19	.40	.30	0			9.7	.65	.51	.79	1.1	.05	0
20	.30	.45	.02			4.3	.72	.58	.40	.45	.05	0
21	.25	.25	.01			3.2	.65	.58	.25	.51	.20	0
22	.25	.25	.02			1.6	.58	.87	.72	.72	.07	0
23	.25	.25	.01			1.0	.58	.58	1.6	.87	.05	0
24	.25	.16	.01			1.1	.58	.51	2.1	.87	.03	0
25	.25	.13	0			.58	.51	.40	.25	.25	.03	0
26	.25	.16	0			.45	.51	15	.72	.10	.03	0
27	.25	.16	0			.45	.51	2.7	1.4	.16	.02	0
28	.25	.16	0			.45	.51	.58	1.4	.01	.02	0
29	.20	.16	0			.51	.45	.58	1.3	.01	.03	0
30	.20	.16	0		------	.51	.45	.45	1.2	.01	.01	0
31	.25	------	0		------	.65	------	.35	------	.01	0	------
TOTAL	8.31	7.65	1.87	0	0	548.20	44.79	34.29	17.23	19.82	4.20	.24
MEAN	.27	.26	.060	0	0	17.7	1.49	1.11	.57	.64	.14	.008
MAX	1.0	.45	.16	0	0	113	14	15	2.1	1.7	3.3	.05
MIN	.13	.13	0	0	0	0	.40	.30	.16	.01	0	0
AC-FT	16	15	3.7	0	0	1,090	89	68	34	39	8.3	.5

CAL YR 1971 TOTAL 533.46 MEAN 1.46 MAX 60 MIN 0 AC-FT 1,060
WTR YR 1972 TOTAL 686.60 MEAN 1.88 MAX 113 MIN 0 AC-FT 1,360

PEAK DISCHARGE (BASE, 50 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
3-11	--	--	210	3-17	--	--	124
3-13	--	--	270				

06342260 Square Butte Creek below Center, N. Dak.

LOCATION.--Lat 47°03'25", long 101°11'35", in SE¼ sec.4, T.141 N., R.83 W., Oliver County, on right bank at southeast corner of farmyard, 6 miles southeast of Center.

DRAINAGE AREA.--146 sq mi.

PERIOD OF RECORD.--May 1965 to current year.

GAGE.--Water-stage recorder.

AVERAGE DISCHARGE.--7 years, 15.6 cfs (11,300 acre-ft per year).

EXTREME.--Current year: Maximum discharge, 1,600 cfs Mar. 14 (gage height, 9.0 ft, backwater from ice); minimum daily discharge, 1.2 cfs July 18 (gage height, 1.07 ft).
Period of record: Maximum discharge, 9,700 cfs June 24, 1966 (gage height, 14.35 ft); no flow Feb. 14-26, 1966.

REMARKS.--Records poor. Flow regulated by Nelson Lake 1.5 miles upstream beginning Aug. 24, 1967 (capacity, 5,000 acre-ft). Records of chemical analyses for water year 1972 are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.9	1.5	1.4	1.8	1.9	2.4	4.0	4.3	1.9	1.7	1.8	1.5
2	3.0	1.5	1.5	1.8	1.9	2.4	4.0	5.9	1.8	1.7	1.7	1.6
3	1.9	1.5	1.5	1.8	2.0	2.4	4.5	27	1.7	1.9	3.2	1.6
4	1.6	1.5	1.5	1.8	2.0	2.4	4.5	50	1.7	1.9	3.4	1.6
5	1.5	1.5	1.5	1.8	2.0	2.4	4.5	2.0	1.7	1.7	3.3	1.6
6	1.6	1.5	1.5	1.8	2.0	2.5	5.0	1.8	1.7	1.6	3.3	1.7
7	1.5	1.5	1.5	1.8	2.1	2.5	61	1.7	1.7	1.6	3.2	1.8
8	1.6	1.5	1.6	1.9	2.1	3.0	73	1.7	1.7	1.7	3.2	1.6
9	1.5	1.5	1.6	1.8	2.1	5.0	38	1.7	1.7	1.6	3.0	1.7
10	1.5	1.5	1.6	1.8	2.1	9.1	4.5	1.7	1.7	1.6	2.9	1.7
11	1.6	1.5	1.6	1.8	2.2	96	2.3	2.0	1.7	1.4	3.0	1.6
12	1.7	1.5	1.6	1.8	2.2	797	29	1.8	1.8	1.5	2.9	1.7
13	1.6	1.5	1.6	1.8	2.2	700	69	1.8	1.7	1.5	2.7	1.7
14	1.6	1.5	1.6	1.8	2.2	1,200	70	1.7	1.7	1.5	2.5	1.6
15	1.5	1.5	1.7	1.8	2.3	750	36	1.7	1.7	1.5	2.3	2.0
16	1.7	1.5	1.7	1.8	2.3	350	6.5	1.7	1.7	1.5	2.5	2.0
17	1.7	1.4	1.7	1.8	2.3	450	5.9	1.7	1.7	1.3	2.9	2.1
18	2.3	1.4	1.7	1.8	2.3	150	5.8	1.7	2.7	1.2	2.9	2.0
19	1.6	1.4	1.7	1.8	2.4	60	4.5	2.1	59	2.5	1.9	2.0
20	1.5	1.4	1.7	1.8	2.4	55	1.7	2.0	42	1.7	1.8	2.0
21	1.6	1.4	1.7	1.8	2.4	10	1.7	1.7	5.3	1.8	2.0	2.0
22	1.5	1.4	1.8	1.8	2.4	5.0	1.7	5.0	2.3	2.4	1.6	2.2
23	1.5	1.4	1.8	1.8	2.4	41	1.7	32	2.3	2.0	1.6	2.3
24	1.5	1.4	1.8	1.8	2.4	43	1.7	18	6.6	2.2	1.6	2.4
25	1.5	1.4	1.8	1.8	2.4	26	1.6	6.5	50	2.5	1.7	2.5
26	1.5	1.4	1.8	1.8	2.4	5.3	16	407	21	2.6	1.6	2.6
27	1.5	1.4	1.8	1.8	2.4	22	9.3	152	2.3	2.9	1.5	2.3
28	1.5	1.4	1.8	1.8	2.4	57	1.8	57	2.1	2.7	1.5	2.2
29	1.5	1.4	1.8	1.9	2.4	11	1.7	26	1.9	2.4	1.4	2.1
30	1.5	1.4	1.8	1.9	------	4.0	1.7	5.6	1.7	2.2	1.6	2.2
31	1.5	------	1.8	1.9	------	4.0	------	2.0	------	2.0	1.5	------
TOTAL	51.0	43.6	51.5	56.1	64.6	4,870.4	472.6	829.8	228.5	58.3	72.0	57.9
MEAN	1.65	1.45	1.66	1.81	2.23	157	15.8	26.7	7.62	1.88	2.32	1.93
MAX	3.0	1.5	1.8	1.9	2.4	1,200	73	407	59	2.9	3.4	2.6
MIN	1.5	1.4	1.4	1.8	1.9	2.4	1.6	1.7	1.7	1.2	1.4	1.5
AC-FT	101	86	102	111	128	9,660	937	1,640	453	116	143	115

CAL YR 1971 TOTAL 6,143.25 MEAN 16.8 MAX 1,250 MIN .50 AC-FT 12,190
WTR YR 1972 TOTAL 6,855.30 MEAN 18.7 MAX 1,200 MIN 1.2 AC-FT 13,600

06342450 Burnt Creek near Bismarck, N. Dak.

LOCATION.--Lat 46°54'54", long 100°48'48", in SW¼NW¼SW¼ sec.29, T.140 N., R.80 W., Burleigh County, on left bank on upstream side of county highway bridge, 7 miles northwest of Bismarck.

DRAINAGE AREA.--108 sq mi.

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

GAGE.--Water-stage recorder.

AVERAGE DISCHARGE.--5 years, 10.2 cfs (7,300 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 1,360 cfs Mar. 12 (gage height, 13.50 ft, backwater from ice); maximum gage height, 13.60 ft Mar. 14 (backwater from ice); no flow for several months.
Period of record: Maximum discharge, 3,000 cfs Apr. 8, 1969 (gage height, 14.80 ft); no flow for several days each year.

REMARKS.--Records poor. Records of chemical analyses for water year 1972 are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	1.2	.54	.01		0	5.1	5.5	5.0	.15		
2	0	1.2	.38	.01		0	5.1	5.9	4.0	.08		
3	0	1.2	.30	0		0	5.1	6.3	3.6	.05		
4	0	1.2	.26	0		0	5.2	6.3	3.2	.05		
5	0	1.4	.22	0		0	9.9	5.5	3.0	.03		
6	0	1.5	.18	0		0	38	4.7	2.8	.03		
7	0	1.2	.16	0		.10	66	4.2	2.6	.02		
8	0	1.1	.16	0		.50	45	3.8	2.4	.02		
9	0	.96	.16	0		2.0	36	3.5	2.2	.01		
10	0	.90	.16	0		5.0	26	3.6	2.1	.01		
11	0	.86	.15	0		250	20	5.3	2.0	0		
12	0	.86	.13	0		620	98	8.2	1.9	0		
13	0	.93	.13	0		420	215	8.9	1.8	0		
14	0	1.1	.13	0		660	81	7.0	1.6	0		
15	0	1.1	.11	0		450	27	5.5	1.4	0		
16	0	1.2	.11	0		310	17	4.4	1.2	0		
17	0	1.4	.11	0		230	12	3.9	1.0	0		
18	1.0	1.4	.10	0		203	9.1	3.4	.82	0		
19	5.8	1.4	.10	0		85	7.3	3.3	.66	.05		
20	11	1.4	.10	0		52	6.8	3.3	.52	.10		
21	5.6	1.4	.10	0		31	6.2	2.9	.47	.10		
22	2.4	1.8	.10	0		20	6.1	5.0	.38	.03		
23	1.4	1.6	.08	0		11	6.1	4.0	.32	.01		
24	1.0	1.4	.08	0		9.1	6.1	3.0	.32	0		
25	.82	1.1	.05	0		7.3	6.0	3.0	.30	0		
26	.74	.96	.03	0		6.7	5.5	14	.30	0		
27	.54	.93	.02	0		6.1	5.1	22	.30	0		
28	.66	.82	.02	0		6.4	5.1	17	.28	0		
29	.70	.70	.01	0		5.5	5.2	10	.28	0		
30	.86	.62	.01	0	------	5.2	5.4	7.4	.26	0		
31	1.1	------	.01	0	------	5.2	------	5.5	------	0		------
TOTAL	33.62	34.84	4.20	.02	0	3,401.10	791.4	196.3	47.01	.74	0	0
MEAN	1.08	1.16	.14	.0006	0	110	26.4	6.33	1.57	.024	0	0
MAX	11	1.8	.54	.01	0	660	215	22	5.0	.15	0	0
MIN	0	.62	.01	0	0	0	5.1	2.9	.26	0	0	0
AC-FT	67	69	8.3	.04	0	6,750	1,570	389	93	1.5	0	0

CAL YR 1971 TOTAL 3,395.73 MEAN 9.30 MAX 260 MIN 0 AC-FT 6,740
WTR YR 1972 TOTAL 4,509.23 MEAN 12.3 MAX 660 MIN 0 AC-FT 8,940

PEAK DISCHARGE (BASE, 20 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
3-12	--	--	1,360	4- 7	1630	5.27	80
3-14	--	--	1,300	4-13	0500	8.15	293
3-16	--	--	603	5-26	1200	3.97	26
3-18	0100	8.78	362				

06342500 Missouri River at Bismarck, N. Dak.

LOCATION.--Lat 46°48'51", long 100°49'12", in SE¼NW¼SE¼ sec.31, T.139 N., R.80 W., Burleigh County, on left bank 40 ft upstream from Bismarck city waterplant, 2,100 ft downstream from Burlington Northern Railway bridge, 1.6 miles northwest of Bismarck Post Office, 3.5 miles upstream from Heart River and at mile 1,314.5.

DRAINAGE AREA.--186,400 sq mi, approximately.

PERIOD OF RECORD.--October to November 1927, April 1928 to current year. See WSP 1729 or 1917 for history of data prior to April 1928.

GAGE.--Water-stage recorder. Datum of gage is 1,618.38 ft above mean sea level. See WSP 1729 or 1917 for history of changes prior to Sept. 30, 1937.

AVERAGE DISCHARGE.--44 years (1928-72), 21,690 cfs (15,710,000 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 44,500 cfs May 27 (gage height, 10.91 ft); maximum gage height, 14.21 ft Mar. 17 (backwater from ice); minimum discharge, 14,800 cfs Dec. 22 (gage height, 11.59 ft, backwater from ice); minimum gage height, 5.94 ft Aug. 30.
Period of record: Maximum discharge, 500,000 cfs Apr. 6, 1952 (gage height, 27.90 ft); minimum, about 1,800 cfs Jan. 3, 1940; minimum gage height, 1.35 ft Sept. 4, 1934, present site and datum.
Maximum stage known, 31.6 ft Mar. 31, 1881 (ice jam), present site and datum.

REMARKS.--Records good. Many diversions from tributaries. Flow regulated by Lake Sakakawea 75.4 miles upstream (see station 06338000). Records of chemical analyses, water temperatures, and suspended sediment loads for the water year 1972 are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26,300	23,800	29,000	26,400	29,200	33,600	40,900	41,000	40,900	38,200	29,600	22,100
2	27,400	23,200	30,100	26,100	32,200	32,000	41,400	40,900	41,000	37,400	29,700	22,300
3	27,400	26,900	31,900	26,300	32,200	32,600	41,400	41,100	41,100	33,400	29,600	21,500
4	24,000	26,200	34,800	26,700	33,000	32,000	41,200	41,600	41,000	33,600	29,300	21,800
5	24,900	26,900	33,200	26,400	33,900	33,500	41,100	42,400	41,000	32,500	29,700	22,200
6	26,500	26,600	30,500	28,100	31,800	33,900	41,200	42,100	40,700	33,800	29,800	22,600
7	27,000	25,900	33,100	30,200	31,900	34,300	41,300	41,800	41,200	32,800	27,300	21,900
8	26,600	23,500	33,700	31,000	31,000	30,900	41,500	40,600	41,200	32,800	27,000	22,900
9	26,600	25,100	32,200	31,800	29,800	32,300	41,200	41,000	40,700	30,700	26,400	22,700
10	26,900	26,800	31,300	31,800	30,800	32,300	38,300	41,200	41,400	28,400	26,800	23,000
11	24,100	26,800	29,000	32,300	30,400	33,000	33,300	41,500	42,300	29,200	26,500	23,800
12	24,300	26,800	28,300	32,100	30,300	35,900	35,700	41,500	42,200	27,700	26,500	23,800
13	26,600	26,700	23,800	30,800	29,700	32,900	40,200	41,200	42,200	27,700	25,900	23,400
14	26,400	26,800	20,000	30,000	28,600	25,900	41,300	41,100	42,100	27,900	25,900	23,800
15	26,600	24,200	19,000	29,300	28,600	32,400	41,400	40,800	42,000	27,800	25,600	23,800
16	26,700	25,000	19,000	32,200	29,600	34,200	41,000	41,200	41,800	27,900	26,100	23,200
17	26,800	28,500	18,000	35,900	29,100	34,100	40,900	42,000	41,600	27,200	26,300	22,900
18	25,000	28,700	18,000	37,500	28,500	34,000	40,800	42,600	41,700	29,300	28,400	22,500
19	24,200	28,200	18,000	36,100	30,000	34,000	40,600	43,100	39,800	28,800	26,800	23,200
20	27,500	28,800	18,000	34,200	30,700	34,000	40,700	43,100	41,200	28,800	25,900	22,900
21	29,100	29,200	17,600	33,500	29,200	34,000	40,900	43,300	43,400	27,800	26,500	21,900
22	28,700	29,000	15,700	33,200	27,000	31,000	40,700	43,800	44,000	28,900	27,900	22,100
23	26,600	28,900	16,200	33,400	27,100	32,000	40,700	43,500	43,500	29,300	28,100	22,400
24	27,000	28,700	19,400	32,500	28,500	35,500	40,200	42,700	40,700	28,400	24,700	22,500
25	24,400	29,200	16,200	30,600	30,600	39,500	40,100	42,500	36,900	28,500	23,800	22,300
26	25,200	29,400	17,200	30,800	31,900	40,300	40,800	43,500	35,100	29,300	22,500	22,300
27	26,900	29,000	19,000	32,200	32,500	39,300	40,600	44,100	37,900	28,700	22,700	22,500
28	26,900	29,300	21,500	31,600	32,700	38,700	40,600	43,200	38,500	29,200	21,800	22,500
29	27,500	29,500	24,100	32,600	33,600	38,300	40,400	42,100	38,400	29,300	21,600	22,300
30	27,700	29,600	25,200	32,100	------	38,600	40,600	41,300	38,400	29,400	22,200	22,500
31	28,200	------	25,600	30,100	------	40,500	------	41,100	------	29,200	22,300	------
TOTAL	820,000	817,200	748,600	967,800	884,400	1,065.5M	1,211.0M	1,302.9M	1,223.9M	933,900	813,200	679,600
MEAN	26,450	27,240	24,150	31,220	30,500	34,370	40,370	42,030	40,800	30,130	26,230	22,650
MAX	29,100	29,600	34,800	37,500	33,900	40,500	41,500	44,100	44,000	38,200	29,800	23,800
MIN	24,000	23,200	15,700	26,100	27,000	25,900	33,300	40,600	35,100	27,200	21,600	21,500
AC-FT	1,626M	1,621M	1,485M	1,920M	1,754M	2,113M	2,402M	2,584M	2,428M	1,852M	1,613M	1,348M

CAL YR 1971 TOTAL 11,479,800 MEAN 31,450 MAX 42,400 MIN 15,700 AC-FT 22,770,000
WTR YR 1972 TOTAL 11,468,000 MEAN 31,330 MAX 44,100 MIN 15,700 AC-FT 22,750,000

M - Expressed in thousands

06343500 Edward Arthur Patterson Lake near Dickinson, N. Dak.

LOCATION.--Lat 46°52'11", long 102°49'37", in NE¼NW¼SW¼ sec.8, T.139 N., R.96 W., Stark County, at left edge of spillway, 2 miles southwest of Dickinson.

DRAINAGE AREA.--400 sq mi, approximately.

PERIOD OF RECORD.--May 1950 to current year. Prior to October 1958, published as Dickinson Reservoir near Dickinson.

GAGE.--Water-stage recorder. Datum of gage is 2,400.00 ft above mean sea level (levels by Bureau of Reclamation); gage readings have been reduced to elevations above mean sea level. Prior to Jan. 4, 1961, nonrecording gage at same site and datum.

EXTREMES.--Current year: Maximum contents, 10,318 acre-ft Mar. 14 (elevation, 2,420.12 ft); minimum, 5,346 acre-ft Oct. 1 (elevation, 2,414.70 ft).
Period of record: Maximum contents, 11,180 acre-ft May 9, 1970 (elevation, 2,420.81 ft); minimum since initial filling of reservoir, 2,950 acre-ft Mar. 16, 1962 (elevation, 2,410.41 ft).

REMARKS.--Reservoir is formed by earthfill dam; storage began May 23, 1950; dam completed Aug. 9, 1950. Total capacity is 24,600 acre-ft at maximum pool (elevation, 2,428.9 ft). Dead storage is 1,000 acre-ft below lowest point of outlet (elevation, 2,404.0 ft). Conservation storage is 5,600 acre-ft between elevation, 2,404.0 and 2,416.5 ft (crest of spillway). Figures given herein represent total contents based on capacity table dated Jan. 1, 1965. The reservoir is for flood control, irrigation, and municipal supply.

MONTHEND ELEVATION AND CONTENTS AT 2400, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30	2,414.70	5,346	
Oct. 31	2,416.56	6,725	+1,379
Nov. 30	2,416.35	6,553	-172
Dec. 31	2,416.39	6,585	+32
CAL YR 1971	--	--	+1,195
Jan. 31	2,416.42	6,610	+25
Feb. 29	2,416.52	6,692	+82
Mar. 31	2,416.60	6,757	+65
Apr. 30	2,416.60	6,757	0
May 31	2,416.85	6,962	+205
June 30	2,416.68	6,823	-139
July 31	2,416.56	6,725	-98
Aug. 31	2,416.30	6,512	-213
Sept. 30	2,416.06	6,315	-197
WTR YR 1972	--	--	+969

06344000 Heart River below Dickinson Dam, near Dickinson, N. Dak.

LOCATION.--Lat 46°51'43", long 102°48'58", in SE¼SW¼SE¼ sec.8, T.139 N., R.96 W., Stark County, on left bank 1 mile downstream from Dickinson Dam and 1.8 miles southwest of Dickinson.

DRAINAGE AREA.--404 sq mi, approximately.

PERIOD OF RECORD.--October 1951 to September 1972 (discontinued).

GAGE.--Water-stage recorder. Datum of gage is 2,377.92 ft above mean sea level.

AVERAGE DISCHARGES.--21 years, 28.1 cfs (20,360 acre-ft per year); median of yearly mean discharges, 18 cfs (13,000 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 5,510 cfs Mar. 14 (gage height, 14.91 ft); minimum, 0.18 cfs Jan. 4; minimum gage height, 1.33 ft July 12, 13, 21.
Period of record: Maximum discharge, 6,970 cfs May 9, 1970 (gage height, 15.85 ft); no flow at times in some years.
Flood in April 1950 reached a stage of 14.5 ft from floodmarks.

REMARKS.--Records good except those for the winter period, which are fair. Flow regulated by Edward Arthur Patterson Lake 1 mile upstream (see station 06343500). Some diversions above station by city of Dickinson and for irrigation. Records of chemical analyses for the water year 1972 are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.37	6.0	.37	.19	.31	1.2	18	113	77	17	3.7	.91
2	.76	16	.34	.30	.31	1.2	18	512	50	13	1.5	.56
3	.64	6.6	.32	.19	.31	1.4	17	658	24	9.1	1.2	.33
4	.58	6.8	.33	.18	.30	1.3	15	358	21	6.5	1.9	.21
5	.25	30	.31	.25	.31	1.2	18	174	18	3.4	2.5	.34
6	.88	11	.31	.30	.30	1.6	92	85	16	2.3	2.8	.50
7	1.3	4.6	.36	.30	.31	2.0	223	55	12	1.6	2.7	.46
8	8.9	3.5	.32	.34	.31	2.0	184	42	8.7	1.6	2.6	.36
9	4.5	3.0	.31	.32	.31	2.6	125	38	8.0	1.4	2.9	.40
10	3.8	2.8	.33	.31	.30	10	88	39	12	1.3	3.0	.49
11	3.9	2.6	.28	.32	.31	386	63	76	20	1.1	3.3	.63
12	9.4	2.5	.26	.33	.31	2,000	56	347	51	.96	3.5	.88
13	3.5	2.3	.27	.31	.31	4,950	54	699	45	1.1	3.6	1.1
14	5.2	2.1	.28	.30	.32	4,800	54	395	23	2.6	4.0	1.3
15	2.0	1.9	.30	.26	.31	3,050	51	181	19	2.2	4.7	1.4
16	1.7	1.8	.26	.28	.33	1,540	43	94	16	1.5	7.5	1.7
17	1.6	1.9	.24	.28	.37	700	38	58	13	1.4	9.5	4.4
18	7.5	1.7	.26	.30	.32	389	31	38	21	1.4	505	4.2
19	15	1.6	.27	.28	.34	250	25	28	17	1.6	423	5.0
20	5.9	1.5	.27	.30	.38	178	21	29	10	1.2	195	8.0
21	5.2	1.3	.24	.30	.51	123	16	63	6.8	1.1	86	7.8
22	5.7	1.2	.24	.31	.61	91	17	79	4.7	9.8	55	7.8
23	5.4	1.1	.25	.30	.83	66	16	63	3.4	9.5	42	4.4
24	5.0	.95	.24	.33	.80	58	9.0	42	11	4.1	30	5.8
25	5.2	.83	.22	.31	.82	46	11	26	19	2.9	19	6.3
26	5.2	.81	.23	.30	.87	48	7.3	188	80	3.1	15	5.8
27	11	.70	.24	.30	.95	45	8.7	227	84	3.1	10	5.6
28	7.3	.64	.22	.31	1.1	32	8.5	174	50	3.8	5.3	11
29	5.2	.58	.22	.31	1.2	25	8.0	204	33	4.1	3.8	4.7
30	5.3	.50	.19	.31	------	22	13	160	23	3.3	2.7	5.5
31	8.4	------	.19	.31	------	19	------	114	------	2.5	2.1	------
TOTAL	146.58	118.81	8.47	9.03	14.06	18,842.5	1,348.5	5,359	796.6	119.56	1,454.8	97.87
MEAN	4.73	3.96	.27	.29	.48	608	45.0	173	26.6	3.86	46.9	3.26
MAX	15	30	.37	.34	1.2	4,950	223	699	84	17	505	11
MIN	.25	.50	.19	.18	.30	1.2	7.3	26	3.4	.96	1.2	.21
AC-FT	291	236	17	18	28	37,370	2,670	10,630	1,580	237	2,890	194

CAL YR 1971 TOTAL 18,671.43 MEAN 51.2 MAX 1,160 MIN .18 AC-FT 37,030
WTR YR 1972 TOTAL 28,315.78 MEAN 77.4 MAX 4,950 MIN .18 AC-FT 56,160

06344600 Green River near New Hradec, N. Dak.

LOCATION.--Lat 47°01'40", long 103°03'10", Billings County, on left bank below county highway bridge on line between secs.13 and 14, T.141 N., R.98 W., 8 miles west of New Hradec.

DRAINAGE AREA.--152 sq mi, approximately.

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

GAGE.--Water-stage recorder.

AVERAGE DISCHARGE.--8 years, 19.6 cfs (14,200 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 3,180 cfs Mar. 13 (gage height, 16.63 ft); minimum, 0.12 cfs July 13 (gage height, 2.89 ft).
Period of record: Maximum discharge, 4,120 cfs May 9, 1970 (gage height, 16.88 ft); maximum gage height, 16.93 ft July 5, 1964; no flow at times.

REMARKS.--Records good except those for the winter period, which are fair. Records of chemical analyses for the water year 1972 are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.93	1.8	1.7	.76	.80	.6	6.0	123	3.1	3.6	3.0	.67
2	29	2.0	1.6	.76	.80	.6	6.8	499	2.2	2.5	2.0	.81
3	270	2.0	1.4	.76	.80	.5	8.4	126	1.6	3.1	1.6	1.1
4	82	2.1	1.4	.76	.80	.5	9.4	40	1.2	3.2	1.4	1.1
5	24	1.6	1.3	.76	.80	.5	11	23	.98	2.9	1.3	.99
6	14	1.4	1.3	.76	.80	1.2	79	19	.88	2.9	1.3	.85
7	11	1.5	1.3	.78	.80	1.3	57	15	2.3	1.7	1.5	.74
8	8.2	1.6	1.2	.80	.80	1.4	29	12	2.7	.78	1.4	.89
9	6.3	1.5	1.2	.82	.78	1.6	17	10	3.0	.93	1.4	.78
10	4.7	1.5	1.1	.84	.78	28	13	9.0	3.0	1.7	1.2	.74
11	3.7	1.9	1.1	.84	.78	349	12	33	3.1	1.3	.87	.70
12	3.2	2.2	1.0	.84	.78	1,950	14	315	3.0	.77	.66	.66
13	2.9	2.0	1.0	.84	.80	2,700	65	89	3.6	.56	.58	.62
14	2.3	1.8	.98	.84	.82	2,420	33	37	3.2	.72	.55	.60
15	1.8	1.8	.98	.84	.82	1,150	19	22	2.7	.99	.48	.58
16	1.7	1.8	.96	.84	.84	659	15	17	2.4	.69	.49	.58
17	1.8	1.9	.94	.84	.86	331	11	13	2.0	.50	.60	.58
18	2.1	2.1	.92	.84	.88	149	8.4	10	2.4	.58	27	.58
19	2.4	2.2	.90	.84	.90	79	7.0	2.9	83	1.4	12	.55
20	3.2	2.8	.90	.84	.92	46	6.2	2.5	28	9.8	7.0	.71
21	3.7	3.7	.88	.82	.92	30	5.7	2.3	16	14	18	.77
22	5.0	4.0	.86	.82	.90	23	5.4	2.2	11	8.7	20	.66
23	5.2	4.7	.86	.82	.86	17	5.0	1.9	7.4	7.2	20	.63
24	4.7	4.1	.84	.82	.84	15	5.0	1.7	6.2	5.3	13	.71
25	3.9	3.2	.84	.82	.80	12	4.1	1.7	5.4	4.2	7.2	.81
26	2.9	2.6	.82	.82	.76	11	3.0	6.0	5.7	3.2	4.6	1.0
27	2.5	2.3	.82	.82	.74	9.4	3.0	5.0	6.8	2.2	2.8	1.2
28	2.1	2.0	.80	.80	.72	8.0	2.7	17	7.4	2.9	2.0	1.2
29	1.9	1.9	.80	.80	.70	7.0	2.7	12	6.0	4.0	1.5	1.3
30	1.8	1.7	.78	.80	------	6.4	2.7	6.8	4.8	3.7	1.1	1.3
31	1.8	------	.78	.80	------	6.2	------	5.4	------	4.0	.80	------
TOTAL	510.73	67.7	32.26	25.14	23.60	10,014.2	466.5	1,479.4	231.06	100.02	157.33	24.41
MEAN	16.5	2.26	1.04	.81	.81	323	15.6	47.7	7.70	3.23	5.08	.81
MAX	270	4.7	1.7	.84	.92	2,700	79	499	83	14	27	1.3
MIN	.93	1.4	.78	.76	.70	.50	2.7	1.7	.88	.50	.48	.55
AC-FT	1,010	134	64	50	47	19,860	925	2,930	458	198	312	48

CAL YR 1971 TOTAL 7,803.19 MEAN 21.4 MAX 790 MIN 0 AC-FT 15,480
WTR YR 1972 TOTAL 13,132.35 MEAN 35.9 MAX 2,700 MIN .48 AC-FT 26,050

PEAK DISCHARGE (BASE, 100 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
10- 3	0545	8.60	394	5- 2	0245	10.32	663
3-13	0200	16.63	3,180	5-12	0745	9.15	499
4- 6	1100	6.67	171	6-19	0430	6.33	145
4-13	1315	6.44	150				

06345000 Green River near Gladstone, N. Dak.

LOCATION.--Lat 46°53'40", long 102°37'25", in SW¼ sec.36, T.140 N., R.95 W., Stark County, on right bank 0.5 mile upstream from county highway bridge, 3.5 miles northwest of Gladstone, 4.5 miles upstream from mouth, and 8 miles downstream from Russian Spring Creek.

DRAINAGE AREA.--356 sq mi.

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

GAGE.--Water-stage recorder. Datum of gage is 2,311.55 ft above mean sea level. See WSP 1729 or 1917 for history of changes prior to June 27, 1953.

AVERAGE DISCHARGE.--27 years, 35.9 cfs (26,010 acre-ft per year); median of yearly mean discharges, 37 cfs (26,800 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 5,330 cfs Mar. 14 (gage height, 16.55 ft); minimum daily, 4.6 cfs Oct. 1; minimum gage height, 1.05 ft Sept. 20.
Period of record: Maximum discharge, 5,330 cfs Mar. 14, 1972 (gage height, 16.55 ft); maximum gage height, 18.3 ft Apr. 15, 1950 (from floodmark, site and datum then in use); no flow at times in some years.

REMARKS.--Records good except those for the winter period, which are fair. A few diversions above station for irrigation of hay meadows and washing of sand and gravel. Records of chemical analyses for the water year 1972 are published in Part 2 of this report.

REVISIONS (WATER YEARS).--WSP 1917: 1954(M).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.6	9.0	7.0	5.2	6.2	6.5	25	134	36	15	13	11
2	17	9.0	7.2	5.2	6.3	6.3	25	474	30	14	12	10
3	27	9.3	7.2	5.2	6.5	6.1	24	503	27	14	13	9.3
4	111	9.6	7.3	5.2	6.6	6.0	23	268	23	13	14	8.8
5	190	8.0	7.3	5.2	6.7	6.0	27	133	22	11	13	8.5
6	99	8.0	7.3	5.2	6.8	7.0	67	86	20	9.6	13	7.2
7	58	8.0	7.3	5.2	7.0	9.0	100	64	17	8.5	13	8.2
8	35	8.0	7.3	5.2	7.3	12	165	49	16	8.5	11	7.5
9	24	8.3	7.3	5.2	7.7	11	119	44	16	8.0	11	7.5
10	20	8.8	7.3	5.2	7.9	40	79	43	16	7.2	9.9	8.0
11	15	8.5	7.3	5.1	8.2	400	57	75	18	7.0	9.3	7.5
12	12	8.8	7.3	5.1	8.5	1,000	55	125	19	6.8	10	6.3
13	11	8.8	7.3	5.1	8.7	2,800	139	298	36	6.5	10	6.8
14	9.9	9.0	7.3	5.1	9.1	4,770	130	210	28	5.8	9.9	6.5
15	9.0	9.0	7.3	5.1	9.6	3,520	133	260	32	5.8	9.3	6.3
16	9.6	9.0	7.1	5.1	10	2,380	81	79	24	5.6	8.2	6.3
17	10	9.0	7.0	5.0	10	1,230	54	59	20	6.5	13	6.0
18	12	9.0	7.0	5.0	11	625	39	41	23	6.3	94	6.0
19	17	9.0	7.0	5.0	11	346	32	40	21	33	177	5.3
20	11	9.0	7.0	5.0	11	209	27	30	17	38	96	4.9
21	9.6	9.0	6.7	5.0	10	150	25	27	26	32	81	5.1
22	9.3	9.0	6.5	5.0	9.7	113	25	30	58	36	52	5.1
23	9.0	8.8	6.2	5.0	9.1	87	23	26	38	35	39	4.9
24	9.6	8.5	5.9	5.0	8.4	70	20	23	37	33	35	4.9
25	9.9	8.2	5.7	5.0	8.0	56	20	21	27	29	34	6.5
26	10	7.8	5.6	5.0	7.5	47	19	32	26	23	31	7.2
27	11	7.6	5.4	5.0	7.1	40	20	29	42	20	26	7.0
28	10	7.2	5.3	5.1	6.9	36	20	62	32	18	20	7.2
29	9.0	7.2	5.2	5.3	6.7	33	19	42	20	16	17	7.7
30	9.0	7.0	5.2	5.6	------	29	22	41	16	15	15	7.5
31	10	------	5.2	5.9	------	27	------	49	------	13	12	------
TOTAL	808.5	257.3	207.0	159.5	239.5	18,076.9	1,614	3,397	783	500.1	921.6	211.0
MEAN	26.1	8.58	6.68	5.15	8.26	583	53.8	110	26.1	16.1	29.7	7.03
MAX	190	9.0	7.3	5.9	11	4,770	165	503	58	38	177	11
MIN	4.6	7.0	5.2	5.0	6.2	6.0	19	21	16	5.6	8.2	4.9
AC-FT	1,600	510	411	316	475	35,860	3,200	6,740	1,550	992	1,830	419

CAL YR 1971 TOTAL 18,692.5 MEAN 51.2 MAX 900 MIN 1.4 AC-FT 37,080
WTR YR 1972 TOTAL 27,175.4 MEAN 74.2 MAX 4,770 MIN 4.6 AC-FT 53,900

PEAK DISCHARGE (BASE, 500 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
3-14	1100	16.55	5,330	5- 3	1100	5.34	582

06345500 Heart River near Richardton, N. Dak.

LOCATION.--Lat 46°44'46", long 102°18'27", in NE¼ sec.29, T.138 N., R.92 W., Stark County, on right bank 5 ft upstream from bridge on State Highway 8, 0.5 mile downstream from Plum Creek, and 9.5 miles south of Richardton.

DRAINAGE AREA.--1,240 sq mi, approximately.

PERIOD OF RECORD.--May 1903 to September 1922, April 1943 to current year. Monthly discharge only for some periods, published in WSP 1309.

GAGE.--Water-stage recorder. Datum of gage is 2,153.67 ft above mean sea level. May 18, 1903, to Sept. 30, 1922, nonrecording gage at 3 sites in 1-mile reach below present site at different datums. Apr. 14, 1943, to July 7, 1947, nonrecording gage at present site and datum.

AVERAGE DISCHARGE.--48 years, 104 cfs (75,350 acre-ft per year); median of yearly mean discharges, 97 cfs (70,300 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 12,300 cfs Mar. 15 (gage height, 24.91 ft; minimum daily, 7.0 cfs Jan. 6-18; minimum gage height, 5.05 ft Sept. 21, 22.
Period of record: Maximum discharge, 23,400 cfs Apr. 16, 1950 (gage height, 28.05 ft, from high-water mark in gage well; no flow at times in some years.
Flood of July 5, 1938, reached a stage of about 26 ft, from information by local resident (discharge, 16,000 cfs); flood of Mar. 25, 1943, reached a stage of 24.2 ft, from floodmarks (discharge, 11,700 cfs).

REMARKS.--Records good except those for the winter period, which are fair. Flow regulated by Edward Arthur Patterson Lake 59 miles upstream (see station 06343500). Records of chemical analyses for water year 1972 are published in Part 2 of this report.

REVISIONS (WATER YEARS).--WSP 1209: Drainage area. WSP 1239: 1906, 1918(M), 1947(M).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	23	22	8.0	13	16	113	210	238	116	34	42
2	18	22	22	8.0	13	15	109	960	196	86	33	38
3	22	22	20	8.0	13	13	106	1,330	162	77	31	36
4	32	22	20	8.0	13	12	102	1,140	141	67	31	34
5	42	16	19	8.0	13	11	104	560	153	59	34	33
6	93	16	19	7.0	13	13	175	335	120	52	32	32
7	57	20	18	7.0	13	140	228	227	99	48	31	31
8	42	22	17	7.0	13	170	515	188	87	44	32	30
9	34	24	16	7.0	13	180	419	167	84	41	31	29
10	29	22	16	7.0	13	260	289	163	83	39	29	28
11	26	22	15	7.0	13	2,900	212	370	75	37	28	28
12	25	22	13	7.0	13	5,700	190	417	110	37	27	28
13	25	22	12	7.0	13	7,400	237	728	516	36	26	28
14	22	22	12	7.0	13	10,500	255	1,070	242	34	25	27
15	20	22	12	7.0	13	10,600	217	572	196	33	24	26
16	19	22	12	7.0	14	7,300	196	333	137	32	24	26
17	19	21	12	7.0	14	4,630	150	228	108	31	25	26
18	20	20	12	7.0	14	1,760	123	187	2,570	31	28	26
19	20	22	11	8.0	15	1,020	117	407	1,540	93	357	25
20	22	22	10	8.0	23	653	98	210	562	240	632	25
21	23	22	10	8.0	45	488	88	439	225	138	339	25
22	21	22	10	9.0	50	361	83	366	145	83	225	26
23	20	22	10	10	45	283	78	265	145	107	148	26
24	20	22	9.0	10	40	231	75	205	421	82	108	27
25	20	22	8.0	10	35	200	71	174	445	67	92	28
26	20	22	8.0	10	30	183	66	282	287	54	84	31
27	20	22	8.0	10	25	166	66	650	189	48	75	32
28	20	22	8.0	10	19	157	66	472	217	42	67	32
29	20	22	8.0	11	19	141	64	462	190	40	61	32
30	20	22	8.0	12	------	128	66	357	146	37	55	30
31	16	------	8.0	13	------	120	------	293	------	36	49	------
TOTAL	821	646	405.0	260.0	583	55,751	4,678	13,767	9,829	1,967	2,817	887
MEAN	26.5	21.5	13.1	8.39	20.1	1,798	156	444	328	63.5	90.9	29.6
MAX	93	24	22	13	50	10,600	515	1,330	2,570	240	632	42
MIN	14	16	8.0	7.0	13	11	64	163	75	31	24	25
AC-FT	1,630	1,280	803	516	1,160	110,600	9,280	27,310	19,500	3,900	5,590	1,760

CAL YR 1971 TOTAL 58,392.2 MEAN 160 MAX 2,800 MIN 2.5 AC-FT 115,800
WTR YR 1972 TOTAL 92,411.0 MEAN 252 MAX 10,600 MIN 7.0 AC-FT 183,300

PEAK DISCHARGE (BASE, 1,500 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
3-15	0200	24.91	12,300	6-18	0800	15.20	3,770
5-21	1930	11.90	1,780				

06346000 Lake Tschida near Glen Ullin, N. Dak.

LOCATION.--Lat 46°35'48", long 101°48'34", in SW¼NE¼ sec.13, T.136 N., R.89 W., Grant County, 10 miles upstream from Heart Butte Creek, 14 miles north of Elgin.

DRAINAGE AREA.--1,710 sq mi, approximately.

PERIOD OF RECORD.--August 1949 to current year. Prior to October 1957, published as Heart Butte Reservoir near Glen Ullin.

GAGE.--Nonrecording gage. Datum of gage is at mean sea level (levels by Bureau of Reclamation).

EXTREMES.--Current year: Maximum contents, 139,375 acre-ft Mar. 18 (elevation, 2,079.88 ft); minimum, 59,892 acre-ft Oct. 1 (elevation, 2,059.56 ft).
Period of record: Maximum contents, 174,000 acre-ft Apr. 9, 1952 (elevation, 2,086.23 ft); minimum since first reaching spillway level, 40,840 acre-ft Mar. 6, 1962 (elevation, 2,052.5 ft).

REMARKS.--Reservoir is formed by earthfill dam; storage began Sept. 29, 1949; dam completed Dec. 9, 1949. Total capacity is 430,000 acre-ft at maximum pool (elevation, 2,118.2 ft). Dead storage is 6,750 acre-ft below lowest point of outlet (elevation, 2,030.0 ft). Active conservation storage is 69,030 acre-ft between elevation 2,030.0 and 2,064.5 ft (crest of spillway). Figures given herein represent total contents. Controlled releases are through 4 by 5 ft slide gate. The spillway is uncontrolled "glory hole" type and discharges through a conduit 14 ft in diameter. The reservoir is for flood control, irrigation, and incidental water supply.

COOPERATION.--Record of elevations and contents furnished by Bureau of Reclamation.

MONTHEND ELEVATION AND CONTENTS, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30	2,059.56	59,892	
Oct. 31	2,059.97	61,135	+1,243
Nov. 30	2,060.15	61,692	+557
Dec. 31	2,059.95	61,074	-618
CAL YR 1971	--	--	+2,333
Jan. 31	2,059.76	60,499	-575
Feb. 29	2,060.12	61,599	+1,100
Mar. 31	2,066.55	82,909	+21,310
Apr. 30	2,065.35	78,699	-4,210
May 31	2,066.35	82,199	+3,500
June 30	2,066.03	81,063	-1,136
July 31	2,064.46	75,649	-5,414
Aug. 31	2,063.90	73,754	-1,895
Sept. 30	2,062.40	68,811	-4,943
WTR YR 1972	--	--	+8,919

06346500 Heart River below Heart Butte Dam, near Glen Ullin, N. Dak.

LOCATION.--Lat 46°35'50", long 101°48'05", in NE¼ sec.13, T.136 N., R.89 W., Grant County, on right bank 0.5 mile downstream from Heart Butte Dam, 10 miles upstream from Heart Butte Creek, 14 miles south of Glen Ullin, and 14 miles north of Elgin.

DRAINAGE AREA.--1,710 sq mi, approximately.

PERIOD OF RECORD.--April 1943 to September 1972 (discontinued). Published as "near Glen Ullin" prior to October 1948.

GAGE.--Water-stage recorder. Datum of gage is 1,998.87 ft above mean sea level (levels by Corps of Engineers). Prior to Aug. 24, 1943, nonrecording gage, and Aug. 24, 1943, to May 31, 1947, water-stage recorder at site 4 miles upstream at different datum.

AVERAGE DISCHARGE.--29 years, 142 cfs (102,900 acre-ft per year); median of yearly mean discharges, 136 cfs (98,500 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 3,850 cfs Mar. 17 (gage height, 7.28 ft); minimum, 0.67 cfs Sept. 24 (gage height, 1.13 ft).
Period of record: Maximum discharge, 25,000 cfs Mar. 24, 1947 (gage height, 21.5 ft, site and datum then in use, from floodmark, backwater from ice); maximum discharge since September 1949 when dam was completed, 4,100 cfs Apr. 9, 1952 (gage height, 6.99 ft); maximum gage height, 7.55 ft Apr. 17, 1950, backwater from ice; no flow at times.
Flood of Mar. 25, 1943, reached a stage of 18.77 ft, former site and datum (discharge, 20,000 cfs, by slope-area measurement).

REMARKS.--Records good. Flow completely regulated by Lake Tschida 0.5 mile upstream (see station 06346000). Records of chemical analyses for 1972 water year are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	48	7.8	34	26	20	20	620	236	515	360	156	136
2	48	7.8	34	26	20	20	520	384	475	312	156	136
3	45	7.8	34	26	20	20	436	550	424	268	156	136
4	45	7.8	26	26	20	20	376	740	396	236	156	132
5	45	11	21	26	20	20	328	854	475	200	156	132
6	45	13	21	26	20	21	304	770	450	188	156	132
7	45	7.8	21	26	20	26	320	660	404	172	156	132
8	45	7.8	21	28	20	29	364	580	356	164	156	132
9	45	7.8	21	26	20	31	445	515	300	148	142	132
10	45	7.8	21	26	20	33	500	450	256	140	148	132
11	45	7.8	21	26	20	33	500	450	252	124	148	136
12	23	7.8	21	26	20	192	505	535	256	120	148	136
13	7.8	7.8	21	26	20	1,970	625	580	252	111	152	99
14	7.8	7.8	21	17	20	3,280	665	640	308	156	152	85
15	7.8	7.8	23	9.7	20	3,530	635	746	320	164	152	85
16	7.8	7.8	26	9.7	20	3,750	575	715	304	144	152	85
17	7.8	7.8	26	9.7	23	3,830	525	620	284	132	152	85
18	7.8	7.8	26	9.2	20	3,820	465	550	866	117	148	85
19	7.8	7.8	26	9.2	20	3,750	412	655	2,620	114	148	85
20	7.8	25	26	18	20	3,670	360	725	2,420	108	126	35
21	7.8	36	26	24	21	3,580	316	625	1,870	111	136	.78
22	7.8	36	26	24	20	3,470	288	752	1,370	172	136	.78
23	8.2	34	26	24	20	3,380	260	848	974	184	136	.78
24	8.2	34	26	18	20	3,270	216	730	770	176	136	.78
25	8.8	34	26	11	20	3,160	180	615	746	172	136	.78
26	8.8	34	26	13	20	3,050	180	570	705	168	136	.78
27	8.8	34	26	18	20	2,250	172	540	610	164	136	.78
28	8.8	34	26	18	20	1,380	156	570	535	160	136	.78
29	8.8	34	26	18	20	1,170	140	580	475	160	136	.78
30	8.2	34	26	18	------	926	148	575	424	160	136	.78
31	7.8	------	26	18	------	740	------	545	------	156	136	------
TOTAL	678.4	525.6	777	626.5	584	54,441	11,536	18,905	20,412	5,261	4,512	2,255.80
MEAN	21.9	17.5	25.1	20.2	20.1	1,756	385	610	680	170	146	75.2
MAX	48	36	34	28	23	3,830	665	854	2,620	360	156	136
MIN	7.8	7.8	21	9.2	20	20	140	236	252	108	126	.78
AC-FT	1,350	1,040	1,540	1,240	1,160	108,000	22,880	37,500	40,490	10,440	8,950	4,470

CAL YR 1971 TOTAL 75,310.80 MEAN 206 MAX 2,200 MIN 6.4 AC-FT 149,400
WTR YR 1972 TOTAL 120,514.30 MEAN 329 MAX 3,830 MIN .78 AC-FT 239,000

06347000 Antelope Creek near Carson, N. Dak.

LOCATION.--Lat 46°31'50", long 101°38'25", in NW¼NE¼ sec.8, T.135 N., R.87 W., Grant County, on right bank 800 ft upstream from county highway bridge, 4 miles upstream from mouth and 8 miles northwest of Carson.

DRAINAGE AREA.--221 sq mi.

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

GAGE.--Water-stage recorder. Altitude of gage is 1,974 ft (by barometer). Prior to June 23, 1958, wire-weight gage at site 800 ft downstream at same datum.

AVERAGE DISCHARGE.--24 years, 16.1 cfs (11,660 acre-ft per year); median of yearly mean discharges, 10 cfs (7,200 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 3,680 cfs May 25 (gage height, 16.42 ft); maximum gage height, 17.4 ft Mar. 11 (backwater from ice); minimum discharge, 0.50 cfs Sept. 21 (gage height, 3.49 ft).
Period of record: Maximum discharge, 11,100 cfs Apr. 16, 1950 (gage height, 17.95 ft, former site, from floodmark), from rating curve extended above 1,100 cfs on basis of slope-area measurement of peak flow; no flow at times.
Flood of Mar. 25, 1943 at 17.1 ft (7,650 cfs), was the highest between 1943 and 1950.

REMARKS.--Records fair except those for the winter period, which are poor. Records of chemical analyses for 1972 water year are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.5	2.8	4.0	3.6	2.0	2.0	16	38	34	9.0	3.6	2.3
2	6.8	2.8	4.0	3.5	1.9	2.0	15	34	27	8.1	3.5	2.2
3	4.6	2.8	3.9	3.5	1.8	2.0	14	32	23	7.9	3.4	2.1
4	3.1	2.7	3.9	3.4	1.7	2.0	13	44	21	8.4	3.2	1.9
5	2.4	2.7	3.8	3.4	1.6	5.0	12	39	26	8.1	4.7	1.8
6	2.2	2.6	3.9	3.3	1.5	18	11	26	30	7.8	7.3	2.0
7	2.3	2.6	3.6	3.3	1.4	10	12	21	46	7.1	4.9	2.0
8	1.9	2.6	4.6	3.2	1.3	9.0	150	18	34	7.8	4.4	2.0
9	1.7	2.6	4.3	3.2	1.2	8.0	150	18	25	8.1	3.9	2.1
10	1.7	2.6	4.5	3.1	1.0	50	150	18	20	6.5	3.8	2.6
11	1.6	2.7	4.5	3.1	1.0	500	150	31	19	5.3	3.5	2.4
12	1.6	2.8	4.5	3.0	1.0	1,450	110	64	87	5.6	3.3	2.2
13	1.5	3.0	4.5	3.0	1.0	950	80	89	893	5.3	2.9	2.2
14	1.6	3.4	4.5	3.0	1.0	700	60	60	219	4.8	2.8	2.1
15	1.6	3.6	4.4	2.9	1.2	430	45	46	84	4.6	2.7	1.6
16	2.1	3.8	4.4	2.9	1.6	280	35	34	48	4.5	2.7	1.6
17	2.5	4.4	4.3	2.8	1.8	160	30	26	32	4.5	17	1.4
18	5.2	7.5	4.3	2.8	2.0	120	25	21	32	4.2	29	1.3
19	5.7	4.8	4.2	2.7	10	85	22	21	26	4.9	16	1.3
20	4.2	5.9	4.2	2.7	12	60	19	19	22	5.1	12	1.2
21	3.6	8.3	4.1	2.6	10	50	17	18	19	5.0	16	.96
22	3.3	7.8	4.1	2.6	8.0	40	15	19	17	5.9	15	1.1
23	3.3	11	4.0	2.5	7.0	35	14	20	16	5.6	25	1.2
24	3.0	7.9	4.0	2.5	6.0	30	13	73	14	4.8	19	1.9
25	2.8	5.1	3.9	2.4	5.6	25	12	493	14	4.3	15	2.3
26	2.7	4.8	3.9	2.4	5.0	20	12	835	14	4.2	11	3.3
27	2.7	4.6	3.8	2.4	4.0	18	11	233	13	4.1	7.7	3.5
28	2.3	4.5	3.8	2.3	3.0	16	11	103	12	4.0	5.7	3.4
29	2.3	4.8	3.7	2.2	2.0	14	10	76	11	3.8	4.1	3.5
30	2.6	4.2	3.7	2.1	------	13	10	57	9.9	3.5	3.5	3.4
31	3.4	------	3.6	2.0	------	17	------	43	------	3.6	2.8	------
TOTAL	87.8	131.7	126.9	88.4	98.6	5,121.0	1,244	2,669	1,887.9	176.4	259.4	62.86
MEAN	2.83	4.39	4.09	2.85	3.40	165	41.5	86.1	62.9	5.69	8.37	2.10
MAX	6.8	11	4.6	3.6	12	1,450	150	835	893	9.0	29	3.5
MIN	1.5	2.6	3.6	2.0	1.0	2.0	10	18	9.9	3.5	2.7	.96
AC-FT	174	261	252	175	196	10,160	2,470	5,290	3,740	350	515	125

CAL YR 1971 TOTAL 10,028.45 MEAN 27.5 MAX 859 MIN .01 AC-FT 19,890
WTR YR 1972 TOTAL 11,953.96 MEAN 32.7 MAX 1,450 MIN .96 AC-FT 23,710

PEAK DISCHARGE (BASE, 200 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
3-11	2400	--	--	5-25	1900	16.42	3,680
5-12	2130	6.25	210	6-13	0715	13.20	1,590

06348000 Heart River near Lark, N. Dak.

LOCATION.--Lat 46°36'37", long 101°22'54", in NW¼NW¼SW¼ sec.9, T.136, N., R.85 W., Grant County, on right bank 20 ft downstream from bridge on State Highway 31, 1 mile downstream from Big Muddy Creek, and 10 miles north of Lark.

DRAINAGE AREA.--2,750 sq mi, approximately.

PERIOD OF RECORD.--June 1946 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,802.83 ft above mean sea level (levels by Corps of Engineers). Prior to Nov. 16, 1948, nonrecording gage at same site and datum.

AVERAGE DISCHARGE.--26 years, 220 cfs (159,400 acre-ft per year); median of yearly mean discharges, 170 cfs (123,000 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 7,300 cfs Mar. 14 (gage height, 14.53 ft, backwater from ice); minimum daily, 10 cfs Jan. 18-20; minimum gage height, 2.29 ft Sept. 30.
Period of record: Maximum discharge, 29,200 cfs Apr. 17, 1950 (gage height, 20.70 ft), from rating curve extended above 11,000 cfs on basis of contracted-opening measurement of peak flow; no flow Jan. 16 to Mar. 4, 1950, Jan. 17-26, 1962.

REMARKS.--Records fair except those for the winter period, which are poor. Flow regulated by Lake Tschida 45 miles upstream (see station 06346000). Records of chemical analyses for the water year 1972 are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	59	22	44	30	25	32	736	362	641	435	158	157
2	86	23	47	30	25	33	620	1,140	575	385	133	157
3	88	20	46	30	25	35	532	1,480	509	342	141	154
4	75	20	46	25	25	31	460	1,130	445	308	143	153
5	65	15	45	25	25	30	403	1,160	455	280	147	154
6	61	21	45	25	25	34	412	1,170	506	252	178	154
7	60	27	45	25	25	46	486	996	465	234	172	154
8	59	27	45	25	25	99	626	830	425	214	160	155
9	58	27	45	25	25	293	706	704	370	195	147	153
10	58	23	45	25	25	563	673	603	314	186	135	152
11	58	19	44	25	25	3,000	630	588	280	165	146	152
12	58	20	44	20	25	5,170	633	797	308	153	142	154
13	57	19	44	15	30	5,410	1,590	1,120	768	141	135	155
14	42	19	44	15	35	6,500	2,240	1,040	772	136	142	135
15	28	18	44	15	40	6,000	1,400	989	440	142	148	109
16	27	18	43	12	45	5,500	937	1,020	378	177	146	107
17	26	19	43	12	45	5,100	714	899	344	170	148	106
18	33	19	43	10	45	4,700	599	745	348	158	337	106
19	34	22	42	10	45	4,300	524	632	1,310	148	247	105
20	38	21	42	10	45	3,900	461	869	2,560	141	298	103
21	30	22	41	12	40	3,680	413	1,110	2,400	128	215	100
22	27	26	41	15	40	3,480	376	970	1,890	112	192	53
23	26	36	40	15	40	3,340	346	1,080	1,370	142	182	31
24	25	37	40	15	42	3,200	320	1,130	1,020	188	180	24
25	24	52	35	15	43	3,060	282	1,180	848	174	174	21
26	24	36	35	15	44	2,970	246	3,760	808	154	172	22
27	23	32	35	15	42	2,600	244	1,490	746	153	167	21
28	21	31	35	17	51	1,890	235	1,020	652	147	163	21
29	21	29	35	21	40	1,440	220	928	560	139	159	21
30	20	39	35	24	------	1,200	209	808	495	138	158	19
31	21	------	30	25	------	984	------	718	------	163	156	------
TOTAL	1,332	759	1,288	598	1,012	78,620	18,273	32,468	23,002	6,000	5,321	3,108
MEAN	43.0	25.3	41.5	19.3	34.9	2,536	609	1,047	767	194	172	104
MAX	88	52	47	30	51	6,500	2,240	3,760	2,560	435	337	157
MIN	20	15	30	10	25	30	209	362	280	112	133	19
AC-FT	2,640	1,510	2,550	1,190	2,010	155,900	36,240	64,400	45,620	11,900	10,550	6,160

CAL YR 1971 TOTAL 108,813 MEAN 298 MAX 3,100 MIN 10 AC-FT 215,800
WTR YR 1972 TOTAL 171,781 MEAN 469 MAX 6,500 MIN 10 AC-FT 340,700

06348490 Sweetbriar Reservoir near Judson, N. Dak.

LOCATION.--Lat 46°51'55", long 101°15'35", in SE¼SE¼ sec.10, T.139 N., R.84 W., Morton County, on south shore of reservoir 700 ft west of spillway and 2.5 miles northeast of Judson.

DRAINAGE AREA.--152 sq mi.

PERIOD OF RECORD.--July 1965 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,900.00 ft above mean sea level; gage readings have been reduced to elevations above mean sea level.

EXTREMES.--Current year: Maximum contents, 4,135 acre-ft Mar. 14 (elevation, 1,942.50 ft); minimum, 2,785 acre-ft Oct. 1 (elevation, 1,938.02 ft).
Period of record: Maximum contents, 5,215 acre-ft Apr. 7, 1969 (elevation, 1,944.97 ft); minimum since initial filling of reservoir, 2,699 acre-ft Dec. 29, 1966 (elevation, 1,937.69 ft).

REMARKS.--Reservoir is formed by an earth-fill dam on Interstate 94; storage began April 1964. Capacity at spillway elevation, 1,940.00 ft is 3,320 acre-ft. Controlled releases are through a 12-inch pipe. The spillway is an uncontrolled drop-inlet type. Figures herein represent total contents based on capacity table dated June 13, 1967. The reservoir is for recreation.

MONTHEND ELEVATION AND CONTENTS, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30	1,938.03	2,788	
Oct. 31	1,938.30	2,858	+70
Nov. 30	*1,938.48	2,905	+47
Dec. 31	*1,938.66	2,952	+47
CAL YR 1970	--	--	-2
Jan. 31	*1,938.78	2,983	+31
Feb. 29	*1,939.00	3,040	+57
Mar. 31	*1,940.10	3,350	+310
Apr. 30	*1,940.10	3,350	0
May 31	1,940.16	3,368	+18
June 30	1,940.04	3,332	-36
July 31	1,939.71	3,239	-93
Aug. 31	1,939.33	3,132	-107
Sept. 30	1,938.86	3,004	-128
WTR YR 1972	--	--	+216

* Estimated.

06348500 Sweetbriar Creek near Judson, N. Dak.

LOCATION.--Lat 46°51'06", long 101°15'10", in SW¼ sec.14, T.139 N., R.84 W., Morton County, on right bank 80 ft downstream from bridge on county highway, 2 miles northeast of Judson, and 16 miles upstream from mouth.

DRAINAGE AREA.--157 sq mi.

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

GAGE.--Water-stage recorder. Datum of gage is 1,886.42 ft above mean sea level. Prior to July 20, 1955, non-recording gage 80 ft upstream at same datum.

AVERAGE DISCHARGE.--21 years, 11.1 cfs (8,040 acre-ft per year); median of yearly mean discharges, 9.3 cfs (6,700 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 1,410 cfs Mar. 14 (gage height, 7.71 ft); minimum, 0.03 cfs Jan. 16, Sept. 11; minimum gage height, 1.43 ft Jan. 16.
Period of record: Maximum discharge, 4,200 cfs Apr. 7, 1969 (gage height, 11.28 ft); no flow at times. Maximum stage known, 12.5 ft Apr. 17, 1950, from floodmarks at present site (discharge, 5,910 cfs from rating curve extended above 2,000 cfs on basis of contracted-opening measurement of peak flow).

REMARKS.--Records good. Flow regulated by Sweetbriar Reservoir 2 miles upstream (see station 06348490). Records of chemical analyses for water year 1972 are published in Part 2 of this report.

REVISIONS (WATER YEARS).--WSP 1439: 1955(M).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.4	.51	.37	.15	.15	.24	4.9	10	12	1.4	.21	.24
2	1.4	.45	.37	.15	.18	.24	4.9	9.7	8.5	.72	.27	.27
3	.55	.41	.37	.15	.24	.27	4.1	13	5.7	.41	.27	.21
4	.37	.37	.37	.09	.27	.27	4.1	13	3.6	.24	.27	.11
5	.37	.30	.33	.09	.27	.24	4.7	16	3.6	.24	.27	.11
6	.33	.24	.33	.24	.27	2.0	23	9.0	2.1	.21	.30	.11
7	.33	.41	.33	.21	.27	2.8	103	5.9	1.5	.24	.30	.15
8	.27	.41	.30	.18	.27	1.4	83	5.7	1.3	.27	.37	.15
9	.33	.37	.30	.21	.27	.80	49	5.5	1.1	.27	.30	.15
10	.51	.37	.30	.24	.27	8.7	32	5.3	.45	.27	.30	.10
11	.51	.33	.24	.21	.27	43	25	7.7	.51	.37	.30	.04
12	.65	.37	.27	.21	.27	686	131	9.0	10	.51	.30	.07
13	.51	.33	.27	.24	.27	867	769	11	11	.30	.27	.07
14	.45	.37	.30	.13	.33	1,230	229	9.0	8.7	.37	.21	.07
15	.41	.27	.30	.06	.27	871	79	12	4.5	.41	.24	.08
16	.45	.33	.27	.11	.27	505	41	10	3.0	.30	.24	.10
17	.41	.41	.21	.33	.30	387	27	7.4	2.0	.27	.30	.13
18	.51	.37	.27	.24	.30	502	20	5.7	3.9	.27	.45	.15
19	.33	.37	.27	.24	.27	192	14	6.1	135	.45	.30	.21
20	.30	.41	.24	.27	.45	90	11	5.7	82	.45	.27	.24
21	.30	.33	.18	.24	.65	51	9.4	4.5	38	.33	.33	.15
22	.33	.33	.18	.24	.45	34	9.0	4.1	21	.41	.37	.24
23	.33	.37	.18	.24	.33	27	11	1.4	11	.33	.33	.41
24	.33	.33	.21	.27	.27	20	5.9	1.0	9.7	.30	.27	.58
25	.33	.37	.18	.27	.27	16	4.9	1.9	6.6	.27	.30	.72
26	.33	.37	.21	.27	.27	17	5.1	47	5.5	.24	.30	1.0
27	.37	.37	.18	.24	.27	18	4.9	193	3.7	.21	.27	.90
28	.33	.41	.18	.18	.27	12	4.7	92	3.1	.21	.27	1.0
29	.33	.37	.21	.13	.27	7.1	4.5	45	2.0	.24	.27	1.0
30	.37	.37	.18	.18	------	6.1	4.7	26	1.1	.21	.27	1.0
31	.45	------	.15	.13	------	5.7	------	17	------	.21	.27	------
TOTAL	14.29	11.12	8.05	6.14	8.51	5,603.86	1,722.8	609.6	402.16	10.93	8.99	9.76
MEAN	.46	.37	.26	.20	.29	181	57.4	19.7	13.4	.35	.29	.33
MAX	1.4	.51	.37	.33	.65	1,230	769	193	135	1.4	.45	1.0
MIN	.27	.24	.15	.06	.15	.24	4.1	1.0	.45	.21	.21	.04
AC-FT	28	22	16	12	17	11,120	3,420	1,210	798	22	18	19

CAL YR 1971 TOTAL 4,115.00 MEAN 11.3 MAX 466 MIN .05 AC-FT 8,160
WTR YR 1972 TOTAL 8,416.21 MEAN 23.0 MAX 1,230 MIN .04 AC-FT 16,690

06349000 Heart River near Mandan, N. Dak.

LOCATION.--Lat 46°50'02", long 100°58'27", in NW¼NE¼ sec.25, T.139 N., R.82 W., Morton County, on left bank near downstream wingwall of bridge on county highway, 3 miles west of Mandan and 4 miles downstream from Sweetbriar Creek.

DRAINAGE AREA.--3,310 sq mi, approximately.

PERIOD OF RECORD.--April to September 1924, March 1928 to June 1933, August 1937 to current year. Published as "at Sunny" 1924, 1928-33.

GAGE.--Water-stage recorder. Datum of gage is 1,638.70 ft above mean sea level, and 1,623.03 ft above Burlington Northern Railway datum. See WSP 1729 to 1917 for history of changes prior to June 30, 1958.

AVERAGE DISCHARGE.--39 years (1928-32, 1937-72), 258 cfs (186,900 acre-ft per year); median of yearly mean discharges, 191 cfs (138,000 acre-ft per year).

EXTREME.--Current year: Maximum discharge, 9,500 cfs Mar. 14 (gage height, 24.05 ft, backwater from ice); minimum daily, 10 cfs Feb. 9 to Mar. 7.
Period of record: Maximum discharge, about 30,500 cfs Apr. 19, 1950 (gage height, 23.64 ft); maximum gage height, 25.75 ft Apr. 4, 1952 (ice jam); no flow for many days in some years.

REMARKS.--Records fair except those for the winter period, which are poor. Flow regulated by Lake Tschida 105 miles upstream (see station 06346000). Some diversions above station. Records of chemical analyses, water temperatures, and suspended sediment loads for the water year 1972 are published in Part 2 of this report.

REVISIONS (WATER YEARS).--WSP 926: 1938. WSP 1209: Drainage area. WSP 1239: 1924, 1928-29, 1948.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	67	32	51	25	20	10	030	390	918	726	148	155
2	92	29	49	25	20	10	896	442	819	638	165	160
3	95	27	47	25	20	10	800	1,090	734	566	158	168
4	97	24	45	25	20	10	700	1,430	642	502	146	173
5	95	23	43	25	18	10	650	1,110	554	446	158	170
6	92	22	41	25	16	10	594	1,160	502	394	175	170
7	74	21	40	25	14	10	646	1,170	582	356	181	170
8	70	20	38	25	12	12	754	1,010	554	328	199	170
9	68	19	36	25	10	12	828	864	530	297	187	170
10	66	19	35	25	10	14	900	746	422	259	170	170
11	66	18	34	25	10	500	855	670	349	226	158	163
12	66	18	33	25	10	3,000	1,010	626	297	208	150	163
13	64	18	32	25	10	8,150	1,640	865	286	178	153	170
14	66	18	31	25	10	8,250	2,350	1,040	575	160	144	163
15	67	18	30	25	10	7,350	2,210	1,490	1,040	146	144	158
16	66	18	29	25	10	6,400	1,550	1,610	526	142	148	134
17	55	18	28	25	10	6,140	1,240	1,300	414	165	150	115
18	54	19	27	25	10	5,740	1,010	1,010	378	178	190	111
19	49	20	26	25	10	4,980	869	900	390	178	160	109
20	46	21	25	25	10	4,420	754	850	1,470	170	150	106
21	45	26	24	25	10	3,970	682	930	2,840	146	259	102
22	46	36	24	25	10	3,690	630	980	2,700	138	253	104
23	46	34	23	25	10	3,490	582	1,090	2,320	132	211	102
24	42	34	22	25	10	3,400	546	1,170	1,850	115	211	85
25	40	46	22	22	10	3,250	514	1,210	1,400	168	202	66
26	38	53	22	20	10	3,160	462	1,860	1,170	184	196	60
27	37	54	21	18	10	3,070	422	2,890	1,110	170	187	54
28	35	54	21	16	10	2,620	406	1,770	1,050	163	175	55
29	35	53	20	16	10	2,060	394	1,400	932	158	173	48
30	37	52	20	16	------	1,620	374	1,220	810	155	163	47
31	35	------	20	18	------	1,270	------	1,020	------	146	158	------
TOTAL	1,841	864	959	726	350	96,638	26,298	35,313	28,164	7,938	5,422	3,791
MEAN	59.4	28.8	30.9	23.4	12.1	2,795	877	1,139	939	256	175	126
MAX	97	54	51	25	20	8,250	2,350	2,890	2,840	726	259	173
MIN	35	18	20	16	10	10	374	390	286	115	144	47
AC-FT	3,650	1,710	1,900	1,440	694	171,800	52,160	70,040	55,860	15,750	10,750	7,520

CAL YR 1971 TOTAL 133,828.8 MEAN 367 MAX 4,000 MIN 5.0 AC-FT 265,400
WTR YR 1972 TOTAL 198,304.0 MEAN 542 MAX 8,250 MIN 10 AC-FT 393,300

06349070 Missouri River below Mandan, N. Dak.

LOCATION.--Lat 46°44'32", long 100°49'54", at midsection of west half sec.30, T.138 N., R.80 W., on right bank 1 mile south of Fort Lincoln State Park and 6 miles southeast of Mandan at mile 1,308.

DRAINAGE AREA.--189,800 sq mi, approximately.

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

GAGE.--Water-stage recorder. Datum of gage is 1,600.00 ft above mean sea level (Corps of Engineers bench mark).

EXTREMES.--Current year: Maximum daily gage height recorded, 29.71 ft Mar. 17; minimum daily recorded, 21.95 ft Nov. 2.
Period of record: Maximum daily gage height recorded, 29.71 ft Mar. 17, 1972; minimum daily recorded, 17.40 ft Apr. 1, 1968.

REMARKS.--Records good. Stage regulated by Lake Sakakawea (see station 06338000).

GAGE HEIGHT, IN FEET, FOR THE PERIOD SEPTEMBER 15-30, 1966

Sept. 15, 1966...	20.10	Sept. 19, 1966...	19.86	Sept. 23, 1966...	19.75	Sept. 27, 1966...	19.05
16.....	19.96	20.....	19.71	24.....	19.31	28.....	19.32
17.....	20.05	21.....	19.82	25.....	19.34	29.....	19.40
18.....	19.92	22.....	19.94	26.....	19.18	30.....	19.40

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1966 TO SEPTEMBER 1967

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19.32	21.03	22.91	26.64	27.45	27.81	22.25	18.62	18.13	21.76	23.47	22.65
2	19.42	21.06	22.15	26.48	27.46	28.18	22.50	18.36	19.62	21.36	23.42	23.20
3	19.46	21.09	21.62	26.24	27.62	28.21	22.17	18.04	19.85	21.02	23.30	22.88
4	19.56	21.02	22.69	26.21	27.91	27.92	21.09	18.14	19.91	20.96	23.26	
5	20.12	21.01	24.24	26.13	28.06	28.03	20.26	18.32	19.45	21.10	23.34	
6	20.54	21.08	24.40	26.06	27.07	27.93	20.63	17.95	19.50	20.98	23.30	
7	20.51	21.09	24.40	25.71	27.11	27.23	20.69	17.76	19.90	21.50	23.30	
8	20.84	21.12	24.64	25.90	27.36	26.65	20.20	18.52	20.04		23.34	22.87
9	20.86	21.11	25.58	26.83	27.57	27.65	19.11	19.25	20.87	21.35	23.32	23.02
10	20.74	21.22	25.56	27.26	27.82	28.03	18.70	19.59	21.40	21.00	23.34	23.36
11	20.62	21.37	25.22	27.29	27.70	28.11	19.74	19.58	22.08	21.42	23.41	22.82
12	20.80	22.08	25.97	27.54	27.46	27.95	20.11	19.25	22.30	22.16	23.42	22.76
13	20.94	22.47	26.60	27.58	27.42	27.86	19.46	18.84	22.75	22.26	23.52	23.07
14	20.98	22.08	27.04	27.55	27.58	27.51	20.15	18.56	22.97	22.20	23.60	23.07
15	20.94	21.85	27.10	27.48	27.23	27.59	20.60	18.55	22.82	22.58	23.62	23.12
16	21.24	22.14	26.96	27.56	26.75	27.49	19.63	18.27	22.50	23.46	23.74	23.09
17	21.16	22.18	27.08	26.91	27.03	27.39	18.31	18.24	22.65	23.55	23.79	22.98
18	21.45	22.27	26.87	26.50	26.85	27.27	18.87	18.34	22.81	23.50	23.79	22.00
19	22.07	22.26	26.24	27.05	27.09	27.06	19.72	18.39	22.73	23.58	23.64	20.70
20	22.46	22.32	25.09	27.57	27.37	26.39	19.68	17.91	23.20	23.49	23.71	19.80
21	22.38	22.12	23.88	27.77	27.49	25.25	20.06	17.82	23.01	23.67	23.89	19.50
22	22.23	22.16	24.27		27.63	24.49	20.54	17.73	23.02	23.62	23.86	19.39
23	22.34	21.86	26.59		27.60	24.80	20.13	17.67	22.99	23.55	23.90	19.52
24	21.78	22.02	26.45		27.31	25.43	19.47	17.58	22.77	23.57	23.92	20.44
25	20.84	22.11	26.24	27.74	27.41	23.85	18.86	17.51	22.15	23.58	23.76	20.80
26	20.61	22.10	26.08	27.78	27.73	22.73	18.81	17.78	21.30	23.57	23.74	21.90
27	20.52	22.19	25.85	27.77	27.87	21.82	18.72	17.87	21.27	23.53	23.88	22.57
28	20.66	22.15	25.84	28.04	27.88	21.21	18.67	18.10	22.16	23.57	23.68	22.90
29	20.60	22.28	26.40	27.76	------	21.04	18.51	17.85	22.28	23.56	23.60	23.02
30	20.92	22.66	26.69	27.50	------	21.41	18.47	17.46	21.92	23.57	23.44	23.06
31	21.07	------	26.62	27.41	------	22.37	------	17.56	------	23.55	22.67	------
MEAN	20.90	21.78	25.40		27.46	26.02	19.87	18.24	21.61		23.55	
MAX	22.46	22.66	27.10		28.06	28.21	22.50	19.59	23.20		23.92	
MIN	19.32	21.01	21.62		26.75	21.04	18.31	17.46	18.13		22.67	

06349070 Missouri River below Mandan, N. Dak.

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23.05	23.22	23.34	26.60	26.52	26.60	17.40	19.61	20.25	19.31	20.49	
2	22.62	23.40	23.28	26.98	26.44	26.64	17.61	19.57	19.96	19.08	20.73	
3	22.45	23.40	23.18	27.12	26.42	26.80	19.90	19.70	19.53	18.78	20.82	
4	23.01	23.05	22.62	27.23	26.40	26.83	21.26	19.48	19.47	19.25	20.77	20.30
5	23.05	23.11	23.00	27.16	26.28	27.12	21.07	20.18		19.35	21.10	20.46
6	23.02	22.00	23.61	27.21	26.09	27.42	21.50	20.86		19.36	20.18	20.55
7	22.95	22.01	23.15	27.48	26.26	27.44	21.53	20.80	20.30	19.57		20.48
8	22.72	22.59	23.00	27.45	26.28	27.27	21.88	20.80	19.82	19.51		20.49
9	22.71	22.43	23.41	27.50	26.21	26.65	22.17	20.77	19.88	19.40		20.38
10	22.88	22.43	23.64	27.53	26.19	26.36	22.00	20.71	19.78	19.57		20.60
11	23.21	22.21	23.39	27.55	26.13	25.75	21.74	20.80	20.44	19.48		20.44
12	23.20	22.09	23.51	27.55	25.97	25.64	21.68	20.82	21.41	19.66		20.39
13	23.11	21.12	23.71	27.66	25.73	25.68	21.23	20.80	21.38	19.43	19.34	20.63
14	23.15	20.92	23.90	27.60	26.03	25.58	21.39	20.80	20.91	19.32	20.29	20.68
15	23.15	21.29	23.43	27.51	26.09	25.80	21.69	20.74	20.71	19.27	20.17	20.85
16	22.35	21.59	22.34	27.56	26.21	25.15	21.97	20.77	20.50	19.60	20.20	20.77
17	22.40	21.68	21.50	27.47	26.15	23.12	21.76	20.78	20.08	19.95	20.56	21.07
18	22.75	21.95	21.43	27.50	25.96	21.57	21.75	20.82	20.05	20.27	20.10	21.22
19	22.78	21.78	22.03	27.37	26.12	21.00	22.01	20.96	20.39	20.16	19.92	21.05
20	22.83	20.82	25.14	27.37	26.34	20.08	22.16	20.81	19.77	20.34	19.31	20.99
21	22.83	20.99	25.64	27.20	26.78	19.84	21.97	20.67	19.56	20.64	20.72	21.56
22	22.77	21.52	25.31	26.91	26.73	19.19	21.22	20.77	19.56	20.53	21.09	22.30
23	22.34	21.90	25.38	26.79	26.64	18.40	20.56	20.01	19.54	20.56	21.69	22.60
24	22.19	22.68	26.07	26.69	26.76	18.00	20.55	20.65	18.87	20.64	22.68	22.70
25	22.60	23.22	26.55	26.76	26.67	17.81	20.78	20.67	18.84	20.57	22.40	22.94
26	22.73	23.22	25.97	26.80	26.40	17.84	20.64	20.96	18.93	19.42	22.50	22.73
27	22.72	23.20	25.71	26.72	26.21	17.59	19.88	21.01	19.12	19.91	22.26	23.19
28	22.77	23.18	25.98	26.50	26.39	17.53	19.70	20.50	20.10	20.11	22.35	23.59
29	22.91	23.09	26.41	26.28	26.43	17.44	19.70	21.04	20.81	19.98	22.02	23.96
30	23.20	23.24	26.73	26.16	------	17.57	19.65	21.20	20.31	19.77		23.90
31	23.08	------	26.72	26.49	------	17.41	------	20.74	------	20.29		------
MEAN	22.82	22.31	24.16	27.12	26.30	22.81	20.95	20.61		19.78		
MAX	23.21	23.40	26.73	27.66	26.78	27.44	22.17	21.20		20.64		
MIN	22.19	20.82	21.43	26.16	25.73	17.41	17.40	19.48		18.78		

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	23.78	21.51	22.60				22.04	23.59	21.78	20.02	23.35	23.59
2	23.99	21.53	22.91				22.09	23.59	21.60	20.16	23.40	23.29
3	23.81	21.85	22.80				22.51	23.59	21.63	20.82	23.38	23.00
4	23.77	21.49	22.89				23.49	23.30	21.73	20.61	23.04	23.45
5	24.07	21.61	22.77				24.70	22.83	21.65	20.62	23.00	23.40
6	24.92	22.11	23.03				25.46	23.42	21.62	20.47	23.15	23.33
7	23.51	22.03	23.46				26.30	23.22	21.61	20.84	23.04	23.41
8	23.36	21.99	23.78				26.37	22.80	21.64	20.75	23.04	23.15
9	23.69	21.90	23.98				25.95	22.86	21.43	21.30	22.80	23.15
10	23.69	21.59	23.80				25.46	22.72	21.28	22.08	22.85	23.17
11	23.77	21.01	23.85				24.71	22.60	21.29	22.66	22.82	22.95
12	23.74	21.34	23.90				23.64	22.22	21.42	22.74	22.62	22.94
13	23.76	22.07	23.68				23.79	22.20	21.22	22.72	23.06	22.86
14	23.80	22.12	22.55				22.44	22.00	21.22	22.44	23.12	22.38
15	23.79	22.05					22.27	21.82	21.60	22.24	23.05	22.44
16	23.65	22.08					22.00	21.75	20.59	22.73	23.10	22.57
17	23.70	22.08					21.80	21.70	20.16	23.39	23.15	22.65
18	23.94	21.65					22.04	21.53	20.00	23.58	23.16	22.34
19	23.88	21.80					22.47	21.33	19.74	24.12	23.12	22.42
20	23.61	22.09					22.59	21.28	19.91	24.66	23.11	22.28
21	22.89	22.05					22.75	21.44	19.94	23.75	23.16	22.12
22	22.87	21.92					22.78	21.56	19.69	23.54	23.20	21.86
23	23.09	22.08					22.84	21.38	19.62	23.20	23.21	21.71
24	23.15	21.97				22.39	23.12	21.24	19.84	23.02	23.27	21.49
25	23.32	21.95				22.23	23.35	21.28	20.56	23.52	23.28	21.60
26	23.46	22.20				22.27	23.21	21.18	20.27	24.26	23.28	21.68
27	23.34	22.51				22.41	23.14	21.27	20.36	24.30	23.27	21.68
28	22.34	22.68				22.29	23.29	21.58	20.10	23.73	23.30	21.35
29	21.99	22.18			------	22.25	23.18	21.60	20.10	23.83	23.35	21.24
30	22.00	21.89			------	22.25	23.31	21.82	20.00	24.20	23.70	21.25
31	21.82	------			------	22.17	------	22.16	------	23.70	23.78	------
MEAN	23.44	21.91					23.44	22.16	20.79	22.58	23.17	22.49
MAX	24.92	22.68					26.37	23.59	21.78	24.66	23.78	23.59
MIN	21.82	21.01					21.80	21.18	19.62	20.02	22.62	21.24

06349070 Missouri River below Mandan, N. Dak.

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1969 TO SEPTEMBER 1970

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21.37		20.95	27.68	27.62	25.90	21.17	24.72	23.28	23.18	22.91	22.90
2	21.63		20.80	26.30	27.18	25.49	21.96	24.79	22.72	23.03	23.00	22.50
3	21.44		21.17	25.81	26.42	25.32	21.67	23.72	22.89	23.09	22.88	21.96
4	21.24		21.61	26.01	26.51	25.93	21.36	21.83	23.08	23.31	22.65	21.80
5	21.71		22.22	26.15	26.74	26.34	21.63	21.43	23.28	23.14	22.92	21.76
6	21.83	23.46	22.83	25.92	27.13	26.50	21.28	22.89	23.67	23.19	22.83	21.45
7		23.30		25.84	27.26	26.47	20.78	23.61	23.78	23.06	22.50	21.59
8		23.26		26.11	26.87	25.23	20.95	22.78	23.86	23.19	22.41	21.34
9		23.37	23.58	26.70	26.59	25.67	21.25	23.28	23.58	23.20	22.75	21.41
10		23.02	23.73	27.23	26.51	25.35	21.08	24.00	23.27	23.08	22.52	21.35
11		22.97	24.03	27.55	26.73	25.36	20.26	23.86	22.89	22.97	22.71	21.40
12		22.83	24.18	27.61	26.82	25.39	20.19	23.54	22.88	23.09	22.84	21.34
13			24.30	27.34	26.80	25.43	20.78	24.22	22.97	23.11	22.92	21.28
14			24.30	27.30	26.58	25.37	21.46	24.75	23.36	22.89	22.97	21.43
15			24.30	27.31	26.61	25.27	22.47	24.72	23.56	22.76	22.89	21.31
16			24.36	27.31	26.56	24.87	22.95	24.78	23.50	22.84	22.84	21.32
17			24.31	27.32	26.39	24.39	23.15	24.78	23.48	23.00	22.86	21.51
18			24.26	27.24	26.30	24.17	23.20	24.06	23.58	23.05	22.90	21.53
19			24.35	27.40	25.98	23.98	23.28	23.76	23.40	23.13	22.82	21.71
20			24.19	27.49	25.83	23.38	23.02	24.31	23.78	22.57	22.69	21.65
21	21.58		23.60	27.65	26.09	23.25	23.12	24.58	24.29	22.24	22.80	21.35
22	21.67	22.47	23.39	27.74	26.46	22.85	23.28	24.69	24.29	22.63	22.87	
23	21.72	22.24	23.79	27.81	26.26	22.52	23.32	24.76	24.09	23.23	22.83	
24	21.78	21.49	24.08	27.88	25.97	21.98	23.20	24.85	23.87	22.91	22.84	21.71
25		21.53	23.70	27.98	25.93	21.43	23.14	24.56	23.73	22.63	22.85	21.93
26		21.51	23.01	28.00	26.05	20.69	23.48	24.66	23.47	22.83	22.70	21.92
27		21.25	23.69	27.93	26.00	20.32	23.78	24.79	23.16	23.23	23.00	22.07
28		21.34	25.50	27.76	25.95	20.45	24.23	24.87	23.24	22.84	23.35	21.90
29		21.12	27.33	27.62	------	21.11	24.66	24.59	23.01	22.63	23.73	22.00
30		20.97	27.37	27.60	------	21.82	24.68	24.38	22.89	22.25	23.03	22.07
31		------	27.70	27.67	------	21.85	------	24.16	------	22.51	22.70	------
MEAN				27.20	26.51	24.00	22.36	24.09	23.43	22.93	22.86	
MAX				28.00	27.62	26.50	24.68	24.87	24.29	23.31	23.73	
MIN				25.81	25.83	20.32	20.19	21.43	22.72	22.24	22.41	

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22.08	23.62	23.27		27.66	25.61	24.67	25.47	24.77	25.63	23.76	22.93
2	22.05	23.02	23.22		27.33	24.91	24.44	25.52	25.00	25.55	23.65	22.88
3	21.94	23.00	23.30		27.30		24.24	25.59	24.84	25.55	23.71	22.82
4	22.00	23.15	23.60		27.30		24.18	25.54	24.83	25.65	23.75	22.75
5	21.89	23.60	23.62		27.12	26.45	24.04	25.32	25.02	25.59	23.78	22.84
6	21.91	23.80	23.90		27.06	26.54	23.90	25.34	25.10	25.59	23.84	22.38
7	22.27	23.71	24.76		26.96	26.46	23.85	25.45	25.17	25.51	23.48	22.23
8	22.36	23.75	24.20		26.72	26.22	24.02	25.46	25.18	25.50	23.36	22.64
9	22.44	22.98	23.00		26.57	26.13	24.60	25.54	25.22	25.57	23.35	22.69
10	22.75	22.70	23.52		26.83	26.40	25.15	25.58	25.17	25.57	23.39	
11	22.85	22.84	23.18		27.05	26.86	24.94	25.60	24.92	25.56	23.16	
12	21.99	22.67	23.90		27.14	27.11	25.03	25.64	24.77	25.58	23.41	
13	21.98	22.63	24.01	27.20	26.85	27.26	24.71	25.62	24.87	25.57	23.40	
14	22.71	22.60	23.38	27.19	26.44	27.51	24.54	25.63	24.49	25.52	23.41	
15	22.98	22.78	23.48	27.35	26.27	27.68	24.94	25.64	24.27	25.48	23.33	
16	23.07	22.81	24.84	27.30	26.18	27.94	25.05	25.66	24.42	25.47	23.40	
17	22.92	22.78	25.10	27.10	26.30	27.80	25.05	25.72	24.62	25.46	23.31	
18	22.56	22.88	24.75	27.06	26.38	27.03	25.26	25.69	24.98	25.47	23.30	
19	22.23	22.85	26.07	27.06	26.39	26.12	25.22	25.73	25.20	25.49	23.05	
20	22.27	22.86	25.73	26.99	26.35	25.33	25.15	25.72	25.42	25.44	23.11	
21	22.33	22.79	25.53	27.00	26.17	24.87	25.23	25.72	25.43	25.46	23.53	
22	22.34	23.19	25.38	27.19	26.12	24.69	25.24	25.78	25.39	25.20	23.39	
23	22.40	23.60	25.79	27.32		24.58	25.34	25.81	25.63	25.03	23.22	
24	22.82	23.72	25.82	27.48	26.13	24.46	25.45	25.76	25.79	24.83	23.10	22.72
25	23.13	23.60	26.01	27.62	26.47	24.24	25.42	25.69	25.83	24.51	23.16	22.65
26	23.00	23.49		27.57	26.32	24.22		25.38	25.84	24.48	23.24	22.72
27	23.08	23.55		27.57	26.06	24.18		25.36	25.72	24.52	23.38	22.41
28	23.18	23.54		27.50	25.64	24.13	25.38	25.34	25.72	24.15	23.31	22.36
29	23.59	23.58		27.54	------	24.08	25.45	25.20	25.81	24.05	23.35	22.69
30	23.62	23.50	26.60	27.65	------	24.55	25.52	25.28	25.81	23.82	23.35	22.61
31	23.62	------		27.65	------	24.84	------	25.07	------	23.86	22.93	------
MEAN	22.59	23.19						25.54	25.17	25.18	23.38	
MAX	23.62	23.80						25.81	25.84	25.65	23.84	
MIN	21.89	22.60						25.07	24.27	23.82	22.93	

06349070 Missouri River below Mandan, N. Dak.

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22.60	22.31	23.02	27.37	26.12	27.11	25.46	25.05	25.72	25.22	23.23	22.16
2	22.79	21.95	23.09	27.29	26.51	26.89	25.47	25.04	25.73	25.13	23.26	22.17
3	22.80	22.65	23.45	27.23	26.52	26.98	25.40	25.12	25.75	24.63	23.22	22.02
4	22.30	22.57	23.87	27.23	26.64	26.84	25.37	25.24	25.73	24.59	23.20	22.05
5	22.34	22.58	23.67	27.07	26.80	27.00	25.38	25.35	25.73	24.48	23.24	22.10
6	22.63	22.60	23.26	27.26	26.50	27.01	25.36	25.35	25.67	24.55	23.25	22.17
7	22.69	22.51	23.58	27.54	26.49	27.21	25.35	25.33	25.70	24.43	22.90	22.05
8	22.64	22.14	23.72	27.60	26.45	26.92	25.37	25.22	25.71	24.36	22.88	22.21
9	22.64	22.32	23.80	27.67		27.15	25.37	25.26	25.62	24.08	22.79	22.15
10	22.70	22.65	23.94	27.65		27.37	25.09	25.25	25.67	23.68	22.86	22.23
11	22.28	22.69	23.82	27.57		27.63	24.40	25.29	25.77	23.69	22.82	22.36
12	22.22	22.70	24.13	27.46		28.50	24.59	25.29	25.75	23.43	22.85	22.34
13	22.62	22.68	23.54	27.17		28.70	25.27	25.28	25.71	23.37	22.79	22.30
14	22.60	22.68	23.01	26.81		27.92	25.49	25.31	25.67	23.32	22.80	22.33
15	22.63	22.31	23.92	26.55		29.01	25.54	25.34	25.79		22.78	22.36
16	22.65	22.33	25.84	26.88		29.48	25.41	25.35	25.73		22.87	22.26
17	22.66	22.90	26.95			29.71	25.35	25.55	25.72		22.89	22.22
18	22.45	22.96	26.63			29.50	25.25		25.74		23.24	22.18
19	22.14	22.87	27.33			28.22	25.23		25.49		23.08	22.29
20	22.74	22.98	27.37			27.22	25.16		25.65		22.92	22.25
21	22.99	23.08	26.77			25.94	25.15		26.03		23.05	22.12
22	22.99	23.02	26.27			24.66	25.06		26.14		23.26	22.12
23	22.64	23.03	26.06			24.42	25.05	25.76	26.06		23.10	22.13
24	22.69	22.98	26.62		26.50	24.82	24.98	25.65	25.71		22.82	22.05
25	22.31	23.08	26.05	26.40	26.72	25.39	24.93	25.65	25.14		22.66	22.07
26	22.35	23.11	25.90	26.35	26.92	25.65	24.95	25.83	24.79		22.42	22.01
27	22.64	23.07	26.14	26.55	27.00	25.61	24.87	26.06	25.10		22.39	22.05
28	22.66	23.10	26.57	26.45	26.99	25.43	24.86	25.93	25.24	23.20	22.23	22.03
29	22.77	23.12	27.04	26.60	27.07	25.28	24.87	25.80	25.24	22.24	22.16	22.01
30	22.79	23.14	27.25	26.56	------	25.27	24.91	25.74	25.26	23.23	22.20	22.02
31	22.86	------	27.29	26.28	------	25.43	------	25.71	------	23.21	22.23	------
MEAN	22.61	22.74	25.16			26.91	25.16		25.63		22.85	22.16
MAX	22.99	23.14	27.37			29.71	25.54		26.14		23.26	22.36
MIN	22.14	21.95	23.01			24.42	24.40		24.79		22.16	22.01

06349500 Apple Creek near Menoken, N. Dak.

LOCATION.--Lat 46°47'40", long 100°39'25", in NW¼NE¼ sec.9, T.138 N., R.79 W., Burleigh County, on left bank 75 ft downstream from bridge on county highway, 4 miles upstream from Hay Creek, 6.3 miles west of Menoken, and 6.4 miles east of Bismarck.

DRAINAGE AREA.--1,680 sq mi, approximately, of which about 500 sq mi is probably noncontributing.

PERIOD OF RECORD.--March to June 1905, October 1945 to current year. Published as "near Bismarck" 1905.

GAGE.--Water-stage recorder. Datum of gage is 1,638.61 ft above mean sea level. See WSP 1729 or 1917 for history of changes prior to Sept. 30, 1953.

AVERAGE DISCHARGE.--27 years, 36.7 cfs (26,590 acre-ft per year); median of yearly mean discharges, 22 cfs (15,900 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 1,400 cfs Mar. 17 (gage height, 15.31 ft, backwater from ice); minimum, 0.06 cfs Aug. 31 (gage height, 0.44 ft).
Period of record: Maximum discharge, 6,750 cfs Apr. 18, 1950 (gage height, 17.07 ft); no flow at times in some years.

REMARKS.--Records good. Records of chemical analyses for water year 1972 are published in Part 2 of this report.

REVISIONS.--WSP 1209: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.12	1.5	2.4	1.8	1.6	1.9	96	53	22	4.9	1.2	.20
2	1.2	1.5	2.4	1.8	1.6	1.9	95	51	21	4.4	.91	.18
3	1.1	1.5	2.4	1.8	1.6	2.0	93	50	22	4.3	.91	.13
4	.71	1.5	2.4	1.8	1.6	2.0	85	58	23	4.2	1.1	.12
5	1.4	1.9	2.3	1.7	1.6	2.0	87	52	19	4.0	1.1	.12
6	4.1	1.4	2.2	1.7	1.6	2.1	97	48	17	3.5	1.1	.12
7	3.0	.84	2.2	1.7	1.6	2.5	125	44	15	3.2	1.2	.12
8	1.1	.31	2.2	1.7	1.6	2.8	146	40	14	3.5	1.3	.13
9	.56	1.2	2.1	1.7	1.6	3.0	159	39	13	3.6	1.3	.13
10	.37	2.1	2.1	1.7	1.6	5.0	158	39	11	3.4	1.2	.12
11	.31	1.8	2.1	1.7	1.6	30	156	42	11	3.1	.77	.12
12	.25	1.6	2.1	1.7	1.7	300	159	44	11	2.7	.54	.12
13	.20	1.7	2.0	1.7	1.7	350	283	43	11	2.7	.49	.12
14	.19	1.7	2.0	1.7	1.8	600	327	41	11	2.3	.49	.12
15	.19	1.8	2.0	1.7	1.8	850	354	40	11	2.2	.31	.12
16	.19	2.0	2.0	1.6	1.8	1,100	279	41	10	1.8	.19	.12
17	.15	2.9	2.0	1.6	1.8	1,350	182	41	10	1.5	.23	.12
18	.56	3.4	1.9	1.6	1.8	1,250	139	36	10	1.3	.39	.12
19	.83	3.6	1.9	1.6	1.8	950	113	37	10	1.5	.84	.12
20	.55	3.7	1.9	1.6	1.8	700	99	35	10	1.7	1.1	.12
21	.67	3.4	1.9	1.6	1.8	450	91	31	9.3	1.7	.98	.12
22	1.1	3.2	1.9	1.6	1.8	299	85	28	8.5	2.0	1.1	.12
23	1.5	2.8	1.9	1.6	1.8	237	78	26	7.8	2.1	1.1	.13
24	2.1	2.7	1.9	1.6	1.8	205	69	25	7.8	2.1	.88	.12
25	1.9	2.6	1.9	1.6	1.8	181	62	23	7.7	1.8	.77	.17
26	1.7	2.6	1.9	1.6	1.8	161	62	40	7.2	1.7	.72	.13
27	1.3	2.6	1.8	1.6	1.8	138	63	32	6.6	1.5	.61	.15
28	1.2	2.5	1.8	1.6	1.8	110	58	30	6.5	1.5	.48	.12
29	1.1	2.5	1.8	1.6	1.8	117	54	27	6.3	1.6	.43	.12
30	1.2	2.5	1.8	1.6	------	110	51	27	5.4	1.4	.34	.12
31	1.5	------	1.8	1.6	------	102	------	24	------	1.2	.19	------
TOTAL	32.35	65.35	63.0	51.5	49.8	9,615.2	3,905	1,187	355.1	78.4	24.27	3.87
MEAN	1.04	2.18	2.03	1.66	1.72	310	130	38.3	11.8	2.53	.78	.13
MAX	4.1	3.7	2.4	1.8	1.8	1,350	354	58	23	4.9	1.3	.20
MIN	.12	.31	1.8	1.6	1.6	1.9	51	23	5.4	1.2	.19	.12
AC-FT	64	130	125	102	99	19,070	7,750	2,350	704	156	48	7.7

CAL YR 1971 TOTAL 6,019.03 MEAN 16.5 MAX 490 MIN .06 AC-FT 11,940
WTR YR 1972 TOTAL 15,430.84 MEAN 42.2 MAX 1,350 MIN .12 AC-FT 30,610

PEAK DISCHARGE (BASE, 200 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
3-17	--	--	1,400	4-14	2145	8.69	361

06349700 Missouri River near Schmidt, N. Dak.

LOCATION.--Lat 46°39'22", long 100°44'18", sec.26, T.137 N., R.80 W., on right bank 2 miles southeast of railroad siding in Schmidt and 13 miles southeast of Mandan at mile 1,298.

DRAINAGE AREA.--191,700 sq mi, approximately.

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

GAGE.--Water-stage recorder. Datum of gage is 1,600.00 ft above mean sea level.

EXTREMES.--Current year: Maximum daily gage height recorded, 22.00 ft Mar. 17; minimum daily recorded, 14.23 ft Nov. 2.
Period of record: Maximum daily gage height recorded, 22.13 ft Dec. 17, 1971; minimum daily recorded, 7.92 ft May 30, 1967.

REMARKS.--Records good. Stage regulated by Lake Sakakawea (see station 06338000). Records of water temperatures for the water years 1967-72 are published in Part 2 of this report.

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1965 TO SEPTEMBER 1966

Sept. 15, 1966...	11.04	Sept. 19, 1966...	10.95	Sept. 23, 1966...	10.84	Sept. 27, 1966...	10.00
16.....	10.99	20.....	10.65	24.....	10.33	28.....	10.31
17.....	11.01	21.....	10.82	25.....	10.34	29.....	10.43
18.....	10.91	22.....	10.96	26.....	10.22	30.....	10.41

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1966 TO SEPTEMBER 1967

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10.34	12.18	14.09	16.31	17.75	19.09	13.83		8.50	13.21	15.50	14.25
2	10.37	12.14	13.55	16.20	17.79	19.43	14.18		10.22	12.80	15.49	14.90
3	10.45	12.18	14.80	15.97	17.93	19.64	14.09		10.79	12.50	15.45	14.61
4	10.42	12.14	17.33	15.85	18.16	19.32	12.21		10.83	12.20	15.40	14.23
5	11.00	12.10	17.89	15.79	18.50	19.39			10.49	12.57	15.42	13.78
6	11.51	12.15	18.02	15.75	17.76	19.36			10.13	12.23	15.50	14.20
7	11.45	12.18	17.67	15.47	17.44	18.88			10.68	12.88	15.50	14.45
8	11.80	12.21	17.53	15.50	17.82	18.02			10.86	13.05	15.58	14.60
9	11.91	12.21	17.12	16.19	17.95	18.80			11.60	12.86	15.58	14.72
10	11.80	12.28	16.38	16.87	18.28	19.38			12.47	12.45	15.55	15.11
11	11.52	12.37	15.85	17.04	18.31	19.55			13.18	12.70	15.58	14.66
12	11.78	13.06	16.37	17.18	18.11	19.46			13.63	13.68	15.60	14.36
13	11.92	13.67	17.22	17.38	18.00	19.37		9.96	14.03	13.90	15.61	14.72
14	12.01	13.45	17.85	17.37	18.17	19.12		9.44	14.37	13.83	15.60	14.84
15	11.93	13.01	18.13	17.32	18.10	19.10	11.62	9.40	14.37	14.10	15.61	14.84
16	12.22	13.37	18.06	17.36	17.49	19.05	11.59	9.02	13.92	15.09	15.66	14.74
17	12.21	13.41	18.11	17.10	17.72	18.94	9.40	8.92	14.13	15.38	15.72	14.70
18	12.41	13.53	18.11	16.52	17.73	18.87		9.05	14.35	15.30	15.75	13.82
19	13.06	13.49	18.06	16.78	17.87	18.69	10.94	9.18	14.35	15.40	15.58	12.31
20	13.64	13.59	18.02	17.47	18.18	18.18	11.00	8.60	14.78	15.37	15.52	11.08
21	13.64	13.36	17.83	17.78	18.39	17.00		8.40	14.68	15.50	15.75	10.85
22	13.45	13.30	17.00	18.12	18.58	16.22		8.30	14.64	15.50	15.83	10.78
23	13.50	13.16	16.02	18.36	18.67	16.22		8.26	14.55	15.40	15.86	10.85
24	13.12	13.17	15.70	18.09	18.45	17.43		8.16	14.31	15.45	15.88	11.70
25	12.08	13.19	15.77	17.93	18.44	18.07		8.06	13.68	15.37	15.68	12.34
26	11.73	13.12	15.57	17.94	18.82	16.65		8.34	12.77	15.45	15.62	13.24
27	11.58	13.26	15.44	17.93	19.01	14.42		8.51	12.45	15.45	15.75	14.14
28	11.71	13.32	15.30	18.15	19.08	12.89		8.62	13.45	15.49	15.55	14.49
29	11.69	13.44	15.75	18.09	------	12.63		8.63	13.70	15.50	15.33	14.72
30	11.97	13.81	16.25	17.80	------	12.66		7.92	13.38	15.49	15.22	14.80
31	12.24	------	16.29	17.68	------	13.75	------	8.10	------	15.50	14.35	------
MEAN	11.95	12.93	16.68	17.07	18.16	17.73			12.84	14.25	15.55	13.76
MAX	13.64	13.81	18.13	18.36	19.08	19.64			14.78	15.50	15.88	15.11
MIN	10.34	12.10	13.55	15.47	17.44	12.63			8.50	12.20	14.35	10.78

MISSOURI RIVER MAIN STEM

06349700 Missouri River near Schmidt, N. Dak.

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14.80	15.12	15.36	18.53	17.91	18.47	11.10	12.34	12.65	11.65	12.55	12.54
2	14.43	15.21	15.34	18.77	17.86	18.56	11.12	12.20	12.31	11.18	12.80	12.39
3	14.07	15.24	15.26	18.98	17.82	18.75	12.48	12.29	11.88	10.90	12.91	12.30
4	14.62	14.97	14.79	19.08	17.80	18.86	14.10	12.06	11.62	11.15	12.88	12.11
5	14.78	14.87	14.89	19.03	17.76	19.02	14.15	12.80	12.34	11.42	13.28	12.32
6	14.80	14.04	15.69	18.97	17.52	19.38	14.30	13.48	12.40	11.41	12.38	12.43
7	14.69	13.57	15.54	19.14	17.69	19.49	14.30	13.21	12.72	11.59	12.83	12.39
8	14.52	14.25	15.11	19.22	17.76	19.45	14.48	13.16	12.23	11.58	13.31	12.40
9	14.44	14.26	15.54	19.20	17.70	18.97	14.81	13.16	12.19	11.49	12.71	12.26
10	14.55	14.14	15.88	19.21	17.67	18.69	14.77	13.14	12.03	11.64	11.91	12.44
11	14.91	14.03	15.69	19.21	17.61	18.19	14.46	13.18	12.54	11.60	11.78	12.38
12	14.96	13.85	15.65	19.17	17.56	17.93	14.34	13.33	13.59	11.67	11.73	12.18
13	14.86	13.02	15.98	19.17	17.27	17.98	13.89	13.40	13.80	11.51	10.97	12.52
14	14.87	12.49	16.37	19.14	17.50	17.87	13.94	13.29	13.32	11.38	12.20	12.54
15	14.87	13.03	16.60	19.08	17.61	17.54	14.30	13.16	13.01	11.30	12.25	12.77
16	14.14	13.29	15.77	19.04	17.78	17.88	14.56	13.14	12.84	11.58	12.18	12.81
17	13.80	13.45	15.38	18.96	17.79	17.75	14.32	13.22	12.42	11.93	12.60	13.22
18	14.38	13.71	15.47	18.93	17.59	15.95	14.32	13.21	12.18	12.39	12.20	13.34
19	14.50	13.70	17.10	18.82	17.74	14.65	14.56	13.41	12.54	12.34	12.00	12.98
20	14.51	12.81	18.16	18.79	17.92	14.15	14.68	13.36	12.00	12.41	11.01	12.85
21	14.56	12.50	17.57	18.69	18.40	14.10	14.56	13.19	11.61	12.76	12.37	13.33
22	14.40	13.21	17.19	18.42	18.42	13.35	13.81	13.23	11.64	12.79	13.12	14.19
23	14.15	13.61	17.10	18.22	18.39	12.30	13.18	13.24	11.70	12.64	13.75	14.59
24	13.64	14.47	17.67	18.13	18.46	11.80	13.18	13.11	11.05	12.78	14.80	14.64
25	14.31	15.22	18.58	18.16	18.46	11.60	13.35	13.04	10.90	12.75	14.50	14.82
26	14.52	15.33	18.35	18.11	18.37	11.68	13.40	13.31	11.11	11.42	14.55	14.66
27	14.58	15.23	17.75	18.08	18.09	11.39	12.63	13.49	11.30	11.67	14.29	14.92
28	14.70	15.31	17.91	18.02	18.22	11.32	12.47	12.89	12.09	12.14	14.39	15.35
29	14.75	15.21	18.30	17.80	18.33	11.28	12.46	13.33	12.99	12.00	14.09	15.62
30	15.16	15.29	18.67	17.57	------	11.30	12.41	13.60	12.64	11.70	13.27	15.62
31	15.00	------	18.74	17.82	------	11.11	------	13.20	------	12.17	12.85	------
MEAN	14.56	14.15	16.56	18.69	17.90	15.84	13.68	13.10	12.25	11.84	12.85	13.30
MAX	15.16	15.33	18.74	19.22	18.46	19.49	14.81	13.60	13.80	12.79	14.80	15.62
MIN	13.64	12.49	14.79	17.57	17.27	11.11	11.10	12.06	10.90	10.90	10.97	12.11

WTR YR 1968 MEAN 14.56 MAX 19.49 MIN 10.90

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	15.45	13.63	14.74			19.37			16.33		16.82	16.16
2	15.66	13.52	15.06			19.45			16.53	14.78	16.86	15.89
3	15.54	13.87	15.04			19.30			16.72	15.25	17.04	15.62
4	15.43	13.67	15.17			19.24			16.64	14.88	16.81	15.98
5	15.69	13.48	15.05			19.68			16.54	14.95	16.62	15.89
6	15.65	14.11	15.21			19.88			16.39	15.08	16.61	15.82
7	15.31	14.14	15.64			19.92			16.37	15.36	16.45	15.81
8	15.03	14.13	16.04			19.73		17.19	16.26	15.06	16.48	15.62
9	15.38	14.07	16.27			19.61		17.31	16.34	15.30	16.26	15.45
10	15.45	13.75	16.19			19.68		17.15	16.11	15.71	16.25	
11	15.47	13.24	16.24			19.69		17.18	16.07	16.14	16.19	
12	15.52	13.24				19.91		17.08	15.93	16.20	16.04	
13	15.44	14.02		18.63	18.85	19.96		17.03	16.01	16.05	16.03	
14	15.55	14.27		18.67	18.84			17.10	15.93	15.96	16.21	
15	15.54	14.29		18.84	18.84			16.85	16.12	15.69	16.09	
16	15.41	14.29		18.92	18.94			16.60	15.63	16.19	16.12	
17	15.41	14.34		18.85	18.99			16.92	15.35	16.48	16.05	
18	15.62	13.97		18.74	18.96			16.92	15.33	16.69	16.05	
19	15.60	13.86			19.02			16.62	15.06	17.01	16.02	
20	15.40	14.24			19.29			16.74	15.13	17.63	15.97	
21	14.84	14.30			19.41			16.87	15.22	17.13	15.98	
22	14.72	14.10			19.37			16.83	14.94	16.71	15.99	
23	14.96	14.20			19.37			16.85	14.96	16.60	15.96	14.05
24	15.04	14.14			19.08			16.73	14.86	16.38	15.98	
25	15.15	14.12			19.15			16.82	15.47	16.79	15.98	13.78
26	15.31	14.23			19.13			16.76	15.40	17.30	15.96	
27	15.23	14.74	16.95		19.21			16.68	15.13	17.35	15.94	
28	14.43	14.91			19.30			16.72		17.15	15.90	
29	13.96	14.56		18.73	------			16.73		17.15	15.92	
30	14.01	14.03			------			16.90		17.39	16.13	
31	13.92	------			------		------	16.71	------	17.12	16.24	------
MEAN	15.20	14.05									16.22	
MAX	15.69	14.91									17.04	
MIN	13.92	13.24									15.90	

06349700 Missouri River near Schmidt, N. Dak.

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1969 TO SEPTEMBER 1970

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		14.65	13.10	19.42	20.57	18.75				16.23	15.63	15.39
2		14.80	12.89	18.60	20.37	18.41				16.14	15.73	15.07
3		14.85	13.20	17.92	19.69	18.03	14.45		15.86	16.03	15.62	14.43
4		14.99	13.64	18.02	19.54	18.39	13.60		16.05	16.31	15.38	14.08
5		15.44	14.21	18.21	19.70		13.58		16.22	16.26	15.58	14.18
6		15.64	14.91	18.15	20.00		13.28		16.51	16.22	15.60	13.76
7		15.60	15.47	18.08	20.24		12.71		16.70	16.06	15.20	13.89
8		15.53	15.74	18.28	20.00		12.73	15.30	16.88	16.13	15.01	13.78
9		15.63	15.78	18.80	19.72		13.05	15.35	16.58	16.21	15.31	13.74
10		15.38	15.91	19.38	19.54		13.08	16.18	16.28	16.09	15.21	13.76
11		15.28	16.23	19.72	19.67		12.33	16.22	15.95	15.91	15.28	13.83
12		15.15	16.43	19.96	19.79		12.31	15.75	15.94	15.97	15.53	13.78
13		15.21	16.59	19.80	19.82		12.57	16.25	16.03	16.05	15.54	13.73
14		14.99	16.66	19.75	19.67		13.13	16.92	16.35	15.83	15.60	13.93
15		14.97	16.71	19.80	19.63		14.19	16.94	16.62	15.68	15.59	13.82
16	15.06	15.07	16.75	19.83	19.64		14.85	16.98	16.64	15.69	15.52	13.81
17	15.20	14.90	16.74	19.89	19.42		15.15	17.06	16.58	15.85	15.55	13.96
18	15.07	14.58	16.70	19.93	19.33		15.24	16.50	16.61	15.94	15.53	14.11
19	14.74	15.04	16.81	20.09	18.96		15.35		16.62	15.96	15.42	14.25
20	14.09	15.24	16.78	20.19	18.80		15.27		16.72	15.77	15.28	14.26
21	13.59	15.29	16.16	20.39	19.02		15.15		17.23	15.30	15.32	14.01
22	13.72	14.81	15.84	20.51	19.29		15.34		17.41	15.75	15.42	14.11
23	13.78	14.47	16.32	20.60	19.10		15.41		17.21	16.10	15.40	14.41
24	13.88	13.80	17.65	20.69	18.75				16.94	15.93	15.44	14.29
25	14.11	13.62	18.48	20.79	18.77				16.93	15.57	15.46	14.57
26	13.61	13.63	18.48	20.84	18.93				16.70	15.61	15.28	14.59
27	13.56	13.35	19.21	20.82	18.88		15.87		16.55	16.00	15.43	14.72
28	13.71	13.41	19.00	20.70	18.76		16.29		16.44	15.79	15.81	14.61
29	13.99	13.30	19.00	20.60	------		16.92		16.31	15.47	16.26	14.58
30	14.20	13.09	18.89	20.51	------		17.07		16.14	15.02	15.79	14.71
31	14.35	------	19.10	20.58	------		------		------	15.13	15.24	------
MEAN		14.72	16.43	19.70	19.49					15.87	15.48	14.21
MAX		15.64	19.21	20.84	20.57					16.31	16.26	15.39
MIN		13.09	12.89	17.92	18.75					15.02	15.01	13.73

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14.68	15.80	15.54	20.61			17.78		18.76	19.09	17.31	15.71
2	14.71	15.35	15.52	20.73			17.64		18.98	19.09	17.19	15.63
3	14.56	15.10	15.48	20.68			17.45		18.88	19.11	17.25	15.55
4	14.59	15.26	15.89	20.60			17.39	18.88	18.89	19.02	17.26	15.47
5	14.52	15.63	15.91	20.30			17.33	18.72	19.10	19.08	17.28	15.56
6	14.38	15.91	17.21	20.34			17.23	18.73	19.05	19.06	17.26	15.28
7	14.83	15.89	19.90	20.58			17.13	18.81	19.01	19.07	17.05	14.91
8	14.94	15.92	20.47	20.71			17.15	18.97	18.99	18.89	16.84	15.30
9	14.97	15.42	18.90	20.79			17.59	19.10	19.18	19.02	16.69	15.46
10	15.24	15.82	18.82	20.90			18.18	19.07	19.06	18.98	16.60	15.30
11	15.38	15.06	19.03	20.91			18.03	19.00	18.88	19.05	16.47	15.29
12	14.85	14.97	20.39	20.80	20.48		18.14	19.16	18.69	19.01	16.61	15.28
13	14.21	14.89	20.93	20.73	20.37			19.16	18.70	18.91	16.54	15.48
14	15.04	14.83	19.66	20.74	19.88			19.16	18.51	18.94	16.53	15.38
15	15.46	14.97	19.67	20.87	19.65			19.17	18.32	18.86	16.53	15.24
16	15.62	15.09	21.80	20.79	19.49			19.30	18.34	18.84	16.56	15.35
17		14.96	22.13	20.60	19.56			19.26	18.42	18.86	16.38	15.33
18		15.11	21.15	20.54	19.59			19.13	18.69	18.82	16.29	15.34
19		15.13	19.95	20.53	19.58			19.13	18.88	18.75	16.08	15.28
20		15.12	19.01	20.53	19.55			19.20	18.94	18.75	16.08	14.98
21		15.04	18.87	20.47	19.31			19.25	19.06	18.76	16.42	14.89
22	14.74	15.35	18.68	20.67	19.30			19.30	18.98	18.63	16.27	15.26
23	14.80	15.86	19.00	20.77	19.32			19.11	19.17	18.42	16.16	15.31
24	15.07	16.48	19.30	20.96				19.19	19.26	18.43	15.93	15.27
25	15.54	16.39	19.40					19.28	19.29	18.00	15.99	15.28
26	15.46	15.96	19.78					19.19	19.38	17.88	16.04	15.28
27	15.48	15.83	20.07			17.97		19.27	19.13	17.99	16.14	15.07
28	15.61	15.84	20.40			17.54		19.38	19.09	17.68	16.09	14.80
29	15.93	15.86	20.34		------	17.24		19.08	19.17	17.59	16.09	15.21
30	15.88	15.82	20.24		------	17.51		19.03	19.17	17.44	16.15	15.16
31	15.82	------	20.47		------	17.85	------	18.99	------	17.46	15.72	------
MEAN		15.49	19.16						18.93	18.63	16.51	15.29
MAX		16.48	22.13						19.38	19.11	17.31	15.71
MIN		14.83	15.48						18.32	17.44	15.72	14.80

06349700 Missouri River near Schmidt, N. Dak.

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15.12	14.94	15.23	20.21	19.27	19.67	17.71	17.73	18.53	18.85	17.19	15.19
2	15.31	14.23	15.31	20.23	19.54	19.46	17.73	17.68	18.76	19.12	17.10	15.28
3	15.31	14.93	15.50	20.15	19.64	19.50	17.67	17.72	18.68	18.83	17.10	15.11
4	14.93	14.99	15.86	20.21	19.68	19.40	17.62	17.61	18.61	18.69	17.11	15.07
5	14.69	14.90	15.80	20.13	19.85	19.50	17.60	17.93	18.60	18.70	17.06	15.14
6	15.04	14.99	15.41	20.26	19.64	19.54	17.59	17.92	18.83	18.66	16.97	15.19
7	15.13	14.94	15.51	20.53	19.58	19.66	17.63	17.94	18.89	18.55	16.75	15.03
8	15.11	14.59	15.68	20.65	19.46	19.36	17.66	17.75	18.91	18.41	16.64	15.19
9	15.14	14.58	15.97	20.75	19.35	19.48	17.63	17.86	18.86	18.34	16.64	15.15
10	15.09	14.93	16.29	20.78	19.45	19.75	17.42	17.89	19.00	17.98	16.73	15.17
11	14.89	15.04	16.29	20.76	19.50	19.91	16.67	17.84	19.15	17.86	16.49	15.21
12	14.58	15.07	16.70	20.72	19.51	20.70	16.78	17.96	19.00	17.59	16.60	15.17
13	15.03	15.05	17.50	20.49	19.48	21.22	17.34	17.80	19.01	17.65	16.47	15.17
14	15.06	15.04	18.19	20.23	19.29	20.56	17.74	17.90	18.94	17.49	16.43	15.13
15	15.12	14.77	19.97	19.86	19.21	21.15	17.83	17.77	19.03	17.47	16.35	15.15
16	15.15	14.60	19.93	20.04	19.33	21.68	17.78	17.85	19.05	17.49	16.30	15.03
17	15.15	15.13	19.65	20.40	19.26	22.00	17.73	17.93	19.15	17.34	16.26	14.93
18	15.07	15.31	19.08	20.67	19.17	21.91	17.63	18.25	19.14	17.45	16.53	14.82
19	14.49	15.22	19.63	20.62	19.26	21.15	17.56	18.24	18.96	17.66	16.44	14.88
20	15.13	15.29	19.94	20.35	19.33	20.57	17.52	18.04	19.00	17.41	16.19	14.87
21	15.42	15.39	19.54	20.18	19.16	20.32	17.54	18.23		17.36	16.25	14.63
22	15.48	15.37	18.97	20.06	18.97	19.83	17.40	18.28		17.27	16.39	14.65
23	15.14	15.35	18.73	20.04	18.88	17.99	17.49	18.30		17.40	16.52	14.66
24	15.12	15.25	19.19	20.00	19.08	17.40	17.46	18.27		17.27	16.07	14.70
25	14.83	15.33	18.98	19.70	19.34	17.60	17.53	18.29		17.36	15.79	14.63
26	14.71	15.36	18.60	19.59	19.53	17.94	17.56	18.52	18.80	17.32	15.57	14.54
27	15.02	15.32	18.83	19.71	19.63	17.98	17.53	18.59	19.00	17.25	15.54	14.65
28	15.12	15.33	19.23	19.71	19.62	17.87	17.59	18.69	19.18	17.30	15.38	14.51
29	15.20	15.34	19.71	19.73	19.60	17.67	17.51	18.56	18.91	17.31	15.31	14.49
30	15.21	15.34	20.02	19.77	------	17.57	17.63	18.61	19.24	17.21	15.28	14.49
31	15.30	------	20.12	19.53	------	17.55	------	18.60	------	17.13	15.31	------
MEAN	15.07	15.06	17.91	20.20	19.40	19.54	17.54	18.08		17.80	16.35	14.93
MAX	15.48	15.39	20.12	20.78	19.85	22.00	17.83	18.69		19.12	17.19	15.28
MIN	14.49	14.23	15.23	19.53	18.88	17.40	16.67	17.61		17.13	15.28	14.49

06350000 Cannonball River at Regent, N. Dak.

LOCATION.--Lat 46°25'36", long 102°33'05", in NE¼NE¼ sec.13, T.134 N., R.95 W., Hettinger County, on right bank 400 ft upstream from bridge on county highway 0.3 mile north of Regent.

DRAINAGE AREA.--580 sq mi, approximately.

PERIOD OF RECORD.--September 1950 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,422.90 ft above mean sea level.

AVERAGE DISCHARGE.--22 years, 45.6 cfs (33,040 acre-ft per year); median of yearly mean discharges, 26 cfs (18,800 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 7,430 cfs Mar. 12 (gage height, 19.49 ft, from floodmark, backwater from ice); minimum, 4.5 cfs Jan. 26 to Feb. 12.
Period of record: Maximum discharge, 7,430 cfs Mar. 12, 1972 (gage height, 19.49 ft, from floodmark, backwater from ice); no flow at times.
Maximum stage known since 1914, 26.1 ft Apr. 16, 1950, from floodmarks (discharge, 20,300 cfs, on basis of slope-area measurement at site 4 miles downstream.

REMARKS.--Records good except those for the winter period, which are poor. Records of chemical analyses for the water year 1972 are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.7	14	16	11	4.5	12	51	601	164	85	13	15
2	15	15	14	11	4.5	10	49	1,410	126	63	12	14
3	74	14	14	11	4.5	10	46	966	99	51	13	13
4	152	14	13	10	4.5	10	44	550	79	43	12	13
5	232	13	13	9.0	4.5	10	48	278	63	37	10	13
6	182	16	13	9.0	4.5	12	170	190	53	32	11	12
7	118	15	13	9.0	4.5	15	444	133	47	30	11	12
8	79	14	13	9.0	4.5	15	485	109	43	27	10	11
9	53	13	13	9.0	4.5	25	328	108	38	24	9.5	10
10	40	13	13	9.0	4.5	300	256	125	35	22	8.9	10
11	32	14	13	9.0	4.5	1,800	182	580	34	20	8.2	9.9
12	26	15	13	9.0	4.5	4,300	142	1,270	31	21	7.7	9.9
13	23	15	13	8.0	5.0	4,500	186	1,260	30	20	7.7	9.9
14	20	14	13	7.0	5.0	4,410	156	595	32	19	7.4	8.9
15	19	14	13	6.0	5.0	2,420	115	286	30	19	6.9	8.2
16	18	13	13	5.0	5.0	1,100	91	174	31	18	6.9	8.2
17	18	13	13	5.0	5.0	702	79	129	35	22	54	8.2
18	19	12	13	5.0	5.0	428	68	101	32	22	956	8.0
19	21	15	13	5.0	5.0	320	58	84	30	20	688	7.7
20	21	16	13	5.0	5.0	248	51	129	128	18	682	8.0
21	20	17	12	5.0	5.0	201	48	609	106	18	290	8.0
22	19	17	12	5.0	5.0	166	44	550	67	18	150	8.0
23	18	17	12	5.0	5.0	141	42	310	54	18	99	8.0
24	18	17	12	5.0	5.0	121	38	166	55	17	66	8.2
25	19	17	12	5.0	5.0	105	36	123	943	16	48	8.5
26	18	18	12	4.5	5.0	97	35	1,960	1,150	16	38	9.2
27	17	18	11	4.5	15	88	35	1,090	550	18	30	9.5
28	16	18	11	4.5	15	75	36	923	278	16	26	10
29	15	16	11	4.5	14	67	35	785	158	16	21	10
30	14	17	11	4.5	------	62	38	368	115	15	19	9.9
31	12	------	11	4.5	------	55	------	242	------	14	16	------
TOTAL	1,355.7	454	392	213.0	168.0	21,825	3,436	16,204	4,636	795	3,338.2	299.2
MEAN	43.7	15.1	12.6	6.87	5.79	704	115	523	155	25.6	108	9.97
MAX	232	18	16	11	15	4,500	485	1,960	1,150	85	956	15
MIN	7.7	12	11	4.5	4.5	10	35	84	30	14	6.9	7.7
AC-FT	2,690	901	778	422	333	43,290	6,820	32,140	9,200	1,580	6,620	593

CAL YR 1971 TOTAL 54,813.4 MEAN 150 MAX 2,400 MIN 3.5 AC-FT 108,700
WTR YR 1972 TOTAL 53,116.1 MEAN 145 MAX 4,500 MIN 4.5 AC-FT 105,400

PEAK DISCHARGE (BASE, 400 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
3-12	--	--	7,430	5-26	1000	12.90	3,340
4- 8	0400	5.71	552	5-28	2100	9.19	1,730
5- 1	0100	9.18	1,730	6-25	1900	8.42	1,440
5-13	1300	8.41	1,440	8-18	0800	7.70	1,170
5-21	0200	6.56	813				

06351000 Cannonball River below Bentley, N. Dak.

LOCATION.--Lat 46°21'30", long 102°02'30", in SW¼SW¼ Sec.6, T.133 N., R.90 W., Grant County, on left bank a quarter of a mile downstream from Thirty Mile Creek, 2 miles northeast of Bentley.

DRAINAGE AREA.--1,140 sq mi, approximately.

PERIOD OF RECORD.--April 1943 to current year. Published as "near New Leipzig" 1943 to June 1952. Records published for both sites October 1951 to June 1952.

GAGE.--Water-stage recorder at present site and datum since Oct. 1, 1951. Datum of gage is 2,252.09 ft above mean sea level. Prior to Nov. 7, 1947, nonrecording gage and Nov. 7, 1947, to June 16, 1952, water-stage recorder, at site 8 miles downstream at different datum.

AVERAGE DISCHARGE.--29 years, 89.7 cfs (64,990 acre-ft per year); median of yearly mean discharges, 69 cfs (50,000 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 9,200 cfs Mar. 13 (gage height, 20.05 ft); minimum, 9.0 cfs Jan. 26 to Feb. 11, Feb. 21 to Mar. 8.
Period of record: Maximum discharge, 51,800 cfs Apr. 17, 1950 (gage height, 34.0 ft, from floodmark in well, site and datum then in use) from rating curve extended above 12,000 cfs on basis of slope-area measurement at gage height 26.9 ft and slope-area and contracted-opening measurements at gage height 34.0 ft; no flow at times.
Maximum stage known since at least 1889 that of Apr. 17, 1950. Flood of Mar. 25 and 26, 1943, reached a stage of 26.9 ft, site and datum then in use (discharge 15,000 cfs by slope-area measurement).

REMARKS.--Records good except those for the winter period, which are fair. Some diversions and some storage in small lakes above the station. Records of chemical analyses for the water year 1972 are published in Part 2 of this report.

REVISIONS.--WSP 1729: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	21	16	10	9.0	9.0	112	476	450	159	25	31
2	19	21	16	10	9.0	9.0	105	2,010	322	129	24	28
3	21	21	16	10	9.0	9.0	100	2,200	249	115	22	25
4	22	21	16	10	9.0	9.0	95	1,360	201	99	21	23
5	84	21	16	10	9.0	9.0	94	925	169	85	20	22
6	149	21	16	10	9.0	9.0	136	535	145	72	19	20
7	203	21	16	10	9.0	9.0	326	352	128	64	19	19
8	148	22	16	10	9.0	10	862	255	116	57	18	18
9	110	22	15	10	9.0	90	787	216	97	50	18	18
10	85	22	14	10	9.0	140	598	206	93	44	17	17
11	65	22	13	10	9.0	1,400	430	592	84	41	16	17
12	53	22	12	10	9.0	3,700	398	1,870	83	38	15	16
13	45	21	12	10	10	8,030	949	2,030	105	36	17	16
14	39	21	12	10	10	8,020	615	1,510	76	34	16	15
15	36	21	12	10	10	6,310	412	814	68	34	14	15
16	34	20	11	10	10	3,810	286	460	66	33	15	15
17	31	19	11	10	10	1,860	216	312	61	32	16	15
18	32	18	11	10	10	1,160	172	242	60	31	22	15
19	31	17	11	10	10	802	146	200	64	36	164	14
20	30	17	11	10	10	585	128	169	58	41	427	13
21	30	17	11	10	9.0	452	116	184	54	36	690	13
22	30	17	10	10	9.0	338	106	1,400	141	37	362	13
23	30	17	10	10	9.0	288	97	1,080	118	39	218	12
24	30	17	10	10	9.0	243	91	793	96	37	154	12
25	28	17	10	10	9.0	216	84	456	88	34	116	14
26	27	17	10	9.0	9.0	198	80	620	334	30	91	16
27	26	16	10	9.0	9.0	177	80	1,690	929	29	72	16
28	25	16	10	9.0	9.0	158	78	1,570	565	30	58	16
29	24	16	10	9.0	9.0	144	76	1,530	313	30	49	16
30	23	16	10	9.0	------	131	82	1,390	214	28	42	16
31	22	------	10	9.0	------	119	------	697	------	26	34	------
TOTAL	1,545	577	384	304.0	269.0	38,444.0	7,857	28,144	5,547	1,586	2,811	516
MEAN	49.8	19.2	12.4	9.81	9.28	1,240	262	908	185	51.2	90.7	17.2
MAX	203	22	16	10	10	8,030	949	2,200	929	159	690	31
MIN	13	16	10	9.0	9.0	9.0	76	169	54	26	14	12
AC-FT	3,060	1,140	762	603	534	76,250	15,580	55,820	11,000	3,150	5,580	1,020

CAL YR 1971 TOTAL 67,123.4 MEAN 184 MAX 3,200 MIN 6.3 AC-FT 133,100
WTR YR 1972 TOTAL 87,984.0 MEAN 240 MAX 8,030 MIN 9.0 AC-FT 174,500

PEAK DISCHARGE (BASE, 500 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
3-13	1430	20.05	9,200	5-22	1045	8.87	1,740
4- 8	0800	6.79	907	5-27	1415	10.01	2,200
4-13	1115	7.34	1,090	6-27	0500	7.08	991
5- 3	0030	10.22	2,650	8-21	0430	6.43	790
5-13	0030	9.80	2,320				

06351680 White Butte Fork Cedar Creek near Scranton, N. Dak.

LOCATION.--Lat 46°19'20", long 102°59'45", in NW¼ sec.21, T.133 N., R.98 W., Slope County, on left bank 1,200 ft downstream from county highway bridge and 13 miles northeast of Scranton.

DRAINAGE AREA.--42.9 sq mi.

PERIOD OF RECORD.--March 1965 to current year.

GAGE.--Water-stage recorder.

AVERAGE DISCHARGE.--7 years, 5.87 cfs (4,250 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 535 cfs Mar. 12 (gage height, 7.41 ft, backwater from ice); no flow Sept. 21-23.
Period of record: Maximum discharge, 645 cfs May 8, 1970 (gage height, 7.20 ft); maximum gage height, 7.76 ft May 8, 1967; no flow for many days each year.

REMARKS.--Records fair. Records of chemical analyses for water year 1972 are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.34	1.5	1.2	.07	.30	.20	4.2	35	5.0	3.2	.70	.40
2	4.5	1.6	1.1	.21	.20	.20	4.8	114	4.0	2.5	.55	.30
3	5.3	1.6	1.0	.24	.20	.20	6.7	64	3.4	2.1	.51	.30
4	75	1.7	1.0	.15	.20	.25	8.6	23	2.9	1.7	.55	.30
5	30	1.8	1.1	.02	.20	.25	12	14	2.5	1.4	.51	.30
6	11	.60	1.0	.02	.20	.30	19	11	2.3	1.1	.39	.20
7	5.4	1.4	.98	.05	.20	.40	30	8.6	2.0	.98	.39	.20
8	3.5	1.7	.92	.18	.20	.40	17	7.9	1.6	.98	.39	.20
9	2.4	1.5	.86	.51	.20	.40	17	28	1.6	1.0	.35	.20
10	2.1	1.4	.80	.55	.20	50	22	51	1.4	.86	.30	.20
11	1.5	1.3	.75	.51	.20	200	12	134	1.5	1.0	.30	.12
12	1.3	1.3	.31	.51	.20	460	9.0	185	1.3	2.8	.20	.27
13	1.0	1.3	.12	.51	.20	340	9.3	51	1.2	1.5	.20	.24
14	.86	1.4	.07	.40	.20	105	10	23	.92	1.1	.20	.21
15	.70	1.3	.12	.20	.20	115	7.4	13	.86	2.6	.10	.15
16	.75	1.3	.35	.20	.20	90	5.2	8.1	.70	2.4	.10	.12
17	.98	1.3	.55	.30	.30	75	4.2	6.3	.65	1.6	.50	.07
18	1.1	1.3	.60	.40	.30	46	3.2	5.0	.60	1.4	.50	.04
19	1.5	1.4	.60	.40	.30	32	2.8	4.6	.80	1.3	20	.03
20	1.9	1.5	.65	.40	.20	28	2.6	27	1.2	1.2	50	.02
21	3.2	1.5	.65	.40	.20	23	2.5	12	1.3	1.1	15	0
22	2.9	1.9	.70	.40	.20	16	2.4	6.7	.86	1.6	5.0	0
23	3.4	2.3	.70	.30	.20	11	2.5	5.4	.80	1.8	2.0	0
24	3.1	1.8	.70	.30	.20	9.0	2.3	4.6	4.2	1.2	1.5	.01
25	2.5	1.6	.70	.30	.20	7.0	2.3	4.0	20	.98	1.0	.02
26	2.3	1.4	.43	.30	.20	5.0	2.4	37	20	.98	.80	.31
27	2.0	1.2	.27	.30	.20	5.0	2.8	31	18	1.3	.60	.35
28	1.5	1.2	.27	.30	.20	5.0	2.9	27	7.8	1.3	.60	.27
29	1.4	1.1	.24	.30	.20	5.0	3.1	32	6.0	1.1	.50	.21
30	1.5	1.2	.24	.30	------	5.0	3.8	15	4.4	.98	.50	.15
31	1.5	------	.09	.30	------	4.6	------	7.4	------	.92	.40	------
TOTAL	176.43	43.40	19.07	9.33	6.20	1,639.20	234.0	995.6	119.79	45.98	104.64	5.19
MEAN	5.69	1.45	.62	.30	.21	52.9	7.80	32.1	3.99	1.48	3.38	.17
MAX	75	2.3	1.2	.55	.30	460	30	185	20	3.2	50	.40
MIN	.34	.60	.07	.02	.20	.20	2.3	4.0	.60	.86	.10	0
AC-FT	350	86	38	19	12	3,250	464	1,970	238	91	208	10

CAL YR 1971 TOTAL 4,545.74 MEAN 12.5 MAX 475 MIN 0 AC-FT 9,020
WTR YR 1972 TOTAL 3,398.83 MEAN 9.29 MAX 460 MIN 0 AC-FT 6,740

PEAK DISCHARGE (BASE, 50 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
10- 4	1000	4.51	107	5-12	0100	5.86	274
3-12	--	--	535	5-26	1800	4.10	72
5- 2	0600	5.01	161	8-20	Unknown	Unknown	50

06352000 Cedar Creek near Haynes, N. Dak.

LOCATION.--Lat 46°09'15", long 102°28'25", in W½ sec.20, T.131 N., R.94 W., Adams County, on left bank 30 ft downstream from bridge on State Highway 8 and 12.5 miles north of Haynes.

DRAINAGE AREA.--553 sq mi.

PERIOD OF RECORD.--October 1950 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,472.90 ft above mean sea level (North Dakota Highway Department benchmark). Prior to May 20, 1951, nonrecording gage on former bridge 400 ft upstream at same datum.

AVERAGE DISCHARGE.--22 years, 33.6 cfs (24,340 acre-ft per year); median of yearly mean discharges, 28 cfs (20,300 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 6,000 cfs Mar. 13 (gage height, 20.27 ft); minimum daily, 3.7 cfs Sept. 22.
Period of record: Maximum discharge, 7,870 cfs Apr. 7, 1952 (gage height, 21.25 ft); no flow at times in some years.
Flood of Apr. 17, 1950 reached a stage of about 23 ft (discharge, 26,900 cfs, by slope-area measurement at site 9 miles upstream).

REMARKS.--Records good except those for the winter period, which are fair. Records of chemical analyses for the water year 1972 are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	31	15	10	7.0	5.0	5.0	48	57	218	135	19	11
2	34	13	10	7.0	5.0	5.0	46	627	152	93	18	10
3	52	13	10	6.0	5.0	5.0	46	744	111	66	17	9.1
4	71	13	10	6.0	5.0	5.0	45	575	82	47	17	8.1
5	53	10	10	5.0	5.0	5.0	45	405	67	35	16	7.5
6	46	10	10	5.0	5.0	6.0	63	313	55	29	14	6.7
7	57	10	10	6.0	5.0	8.0	114	266	47	25	13	6.5
8	69	10	10	6.5	5.0	10	195	208	41	23	12	6.0
9	55	11	10	6.5	5.0	50	206	169	42	22	11	5.7
10	43	12	9.0	6.5	5.0	150	187	138	37	21	11	5.3
11	31	10	9.0	6.5	5.0	700	158	272	34	21	10	4.9
12	24	9.0	9.0	6.5	5.0	2,400	149	918	30	23	9.3	4.3
13	19	8.3	9.0	6.0	5.0	4,250	143	1,140	27	155	8.5	4.4
14	15	9.0	9.0	5.0	5.0	5,120	130	1,050	24	101	7.9	4.4
15	13	11	9.0	5.0	5.0	3,700	111	467	22	52	7.6	3.9
16	15	11	9.0	6.0	5.0	1,720	100	250	21	32	7.3	4.0
17	13	11	9.0	6.0	5.0	907	87	163	19	29	7.3	3.9
18	15	11	8.0	6.0	5.0	631	71	116	18	25	7.7	4.3
19	17	11	8.0	6.0	5.0	456	61	87	17	26	11	4.7
20	17	11	8.0	6.0	5.0	300	53	72	16	24	23	4.0
21	19	11	8.0	6.0	5.0	197	46	68	16	22	105	3.8
22	24	11	8.0	6.0	5.0	177	42	233	17	23	189	3.7
23	17	11	8.0	6.0	5.0	138	38	177	16	38	130	4.1
24	13	11	8.0	6.0	5.0	110	34	111	18	54	85	4.3
25	14	11	7.0	5.0	5.0	91	31	78	17	56	57	4.8
26	17	11	7.0	5.0	5.0	81	29	1,230	147	39	36	5.6
27	18	11	7.0	5.0	5.0	79	27	1,470	333	31	25	5.8
28	17	11	7.0	5.0	5.0	68	27	886	183	25	20	6.1
29	17	10	7.0	5.0	5.0	64	27	1,370	128	21	17	6.4
30	18	10	7.0	5.0	------	58	30	472	154	21	15	6.8
31	18	------	7.0	5.0	------	53	------	321	------	22	13	------
TOTAL	882	327.3	267.0	179.5	145.0	21,549.0	2,389	14,453	2,109	1,336	939.6	170.1
MEAN	28.5	10.9	8.61	5.79	5.00	695	79.6	466	70.3	43.1	30.3	5.67
MAX	71	15	10	7.0	5.0	5,120	206	1,470	333	155	189	11
MIN	13	8.3	7.0	5.0	5.0	5.0	27	57	16	21	7.3	3.7
AC-FT	1,750	649	530	356	288	42,740	4,740	28,670	4,180	2,650	1,860	337

CAL YR 1971 TOTAL 38,290.2 MEAN 105 MAX 2,260 MIN 1.4 AC-FT 75,950
WTR YR 1972 TOTAL 44,746.5 MEAN 122 MAX 5,120 MIN 3.7 AC-FT 88,750

PEAK DISCHARGE (BASE, 400 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
3-13	2100	20.27	6,000	5-26	2015	17.16	2,550
5- 3	1145	11.38	792	5-29	0300	16.62	2,230
5-14	0015	14.02	1,260	6-26	2300	9.70	478

06352500 Cedar Creek near Pretty Rock, N. Dak.

LOCATION.--Lat 46°01'55", long 101°49'55", in S½ sec.33, T.130 N., R.89 W., Grant County, on left bank on downstream side of county highway bridge, 7 miles north of Keldron, S. Dak., 10.5 miles south of abandoned townsite of Pretty Rock, and 15 miles downstream from Timber Creek.

DRAINAGE AREA.--1,340 sq mi, approximately.

PERIOD OF RECORD.--April 1943 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,155.17 ft above mean sea level (levels by Corps of Engineers). Prior to Oct. 17, 1947, nonrecording gage at same site and datum.

AVERAGE DISCHARGE.--29 years, 74.6 cfs (54,050 acre-ft per year); median of yearly mean discharges, 52 cfs (37,700 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 6,030 cfs May 26 (gage height, 16.29 ft); minimum daily, 5.5 cfs Sept. 20.
Period of record: Maximum discharge, 48,000 cfs Apr. 17, 1950 (gage height, 26.5 ft, from floodmark in gage house), from rating curve extended above 7,800 cfs on basis of slope-area measurement of peak flow; no flow at times.
Flood of Mar. 24, 1943, reached a stage of 21.8 ft, from floodmarks (discharge, 14,300 cfs).

REMARKS.--Records good. Records of chemical analyses for the water year 1972 are published in Part 2 of this report.

REVISION (WATER YEARS).--WSP 1146: 1944, 1947. WSP 1209: Drainage area. WSP 1389: 1951.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.6	16	16	10	8.0	11	102	90	777	162	38	34
2	7.9	16	16	10	7.8	12	94	314	563	131	35	28
3	9.0	16	17	10	7.6	13	91	622	432	147	32	25
4	9.1	15	17	10	7.4	13	87	892	351	116	33	23
5	10	15	17	10	7.0	14	82	983	309	89	34	20
6	10	15	17	10	6.8	15	82	805	237	74	29	17
7	27	14	17	10	6.6	15	86	598	201	64	27	16
8	40	14	16	10	6.4	16	93	443	168	55	26	14
9	32	15	15	10	6.4	16	131	399	141	51	25	13
10	32	16	14	10	6.2	41	222	336	120	41	24	12
11	48	16	13	10	6.0	304	260	321	110	39	22	11
12	47	17	12	10	6.0	3,100	254	570	104	65	20	10
13	38	17	11	10	5.8	3,480	225	986	315	44	18	9.8
14	33	17	10	10	5.8	4,450	200	1,230	399	36	17	9.0
15	29	17	10	9.8	5.8	4,120	192	1,260	183	34	16	8.1
16	26	17	10	9.6	5.8	4,900	171	1,050	115	73	15	7.5
17	24	16	10	9.4	5.8	3,970	148	580	94	91	52	7.1
18	25	16	10	9.4	6.2	2,000	131	381	88	65	228	6.7
19	23	15	10	9.2	6.6	1,050	118	288	79	154	63	6.0
20	22	15	10	9.0	7.0	760	104	225	72	184	70	5.5
21	20	15	10	9.0	7.4	588	91	178	66	117	73	5.6
22	18	16	10	9.0	7.8	441	82	615	62	78	65	7.6
23	18	16	10	8.8	8.2	360	75	479	58	66	47	9.6
24	19	16	10	8.8	8.6	311	68	435	55	55	63	9.8
25	18	16	10	8.6	9.0	258	61	369	53	48	143	10
26	21	16	10	8.6	9.4	225	58	4,010	51	44	113	10
27	23	16	10	8.4	10	195	56	1,940	48	55	88	11
28	20	16	10	8.4	11	161	56	1,420	49	65	73	11
29	17	16	10	8.2	11	140	54	1,780	183	60	60	11
30	16	16	10	8.2	------	125	54	1,400	237	52	49	11
31	16	------	10	8.0	------	111	------	1,430	------	44	40	------
TOTAL	704.6	474	378	290.4	213.4	31,215	3,528	26,429	5,720	2,399	1,638	379.3
MEAN	22.7	15.8	12.2	9.37	7.36	1,007	118	853	191	77.4	52.8	12.6
MAX	48	17	17	10	11	4,900	260	4,010	777	184	228	34
MIN	6.6	14	10	8.0	5.8	11	54	90	48	34	15	5.5
AC-FT	1,400	940	750	576	423	61,910	7,000	52,420	11,350	4,760	3,250	752

CAL YR 1971 TOTAL 61,176.0 MEAN 168 MAX 2,110 MIN 1.6 AC-FT 121,300
WTR YR 1972 TOTAL 73,368.7 MEAN 200 MAX 4,900 MIN 5.5 AC-FT 145,500

PEAK DISCHARGE (BASE, 500 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
3-16	--	--	5,060	5-22	0845	6.14	878
5- 5	1645	6.56	1,040	5-26	1600	16.29	6,030
5-15	1815	7.30	1,290	5-29	0145	9.66	2,170

06353000 Cedar Creek near Raleigh, N. Dak.

LOCATION.--Lat 46°05'30", long 101°20'00", in NE¼SE¼ sec.8, T.130 N., R.85 W., Grant County, on left bank at upstream side of bridge on N. D. Highway 31, 6 miles upstream from mouth, and 19 miles south of Raleigh.

DRAINAGE AREA.--1,750 sq mi, approximately.

PERIOD OF RECORD.--April to September 1939, March 1962 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,881.23 ft above mean sea level. Prior to June 6, 1962, non-recording gage at same site and datum, and June 6, 1962, to Sept. 7, 1972, at site 1 mile upstream at datum 9.58 ft higher.

AVERAGE DISCHARGE.--10 years (1962-72) 106 cfs (76,800 acre-ft per year); median of yearly mean discharges, 88 cfs (63,800 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 4,890 cfs Mar. 15 (gage height, 11.6 ft from plotted graph), site and datum in use after Sept. 7, 1972; minimum, 3.5 cfs Feb. 10-13.
Period of record: Maximum discharge, 6,000 cfs Mar. 15, 1966 (gage height, 12.32 ft, backwater from ice); no flow at times in most years.
Maximum stage known since 1950, about 18 ft Apr. 18, 1950 (discharge 45,000 cfs, on basis of slope-area measurement 5 miles upstream).

REMARKS.--Records good. Records of chemical analyses for water year 1972 are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.2	17	18	10	6.7	7.0	215	1,250	1,340	234	69	53
2	19	17	18	9.5	6.7	6.0	190	727	764	196	56	43
3	14	18	17	9.5	6.5	6.0	178	418	599	156	50	36
4	9.8	18	16	9.0	6.0	5.0	165	676	487	151	45	30
5	7.4	16	16	9.0	5.5	5.0	157	1,000	526	154	42	27
6	6.7	16	16	9.0	5.0	6.0	165	1,020	389	132	42	25
7	6.5	17	16	9.0	4.5	9.2	170	834	276	108	42	24
8	6.2	17	16	8.5	4.0	21	180	640	224	92	40	23
9	5.6	17	16	8.5	4.0	19	190	523	187	78	37	22
10	16	17	16	8.5	3.5	19	200	478	162	70	35	21
11	33	15	15	8.5	3.5	460	205	696	146	68	34	20
12	28	15	15	8.5	3.5	2,000	200	620	140	72	33	19
13	38	15	15	8.5	3.5	3,200	196	644	139	55	31	18
14	47	15	16	8.0	4.0	4,280	192	1,040	171	74	30	17
15	42	16	16	8.0	5.0	4,750	188	1,330	403	61	29	16
16	38	16	16	8.0	6.0	4,110	184	1,380	224	51	28	15
17	36	17	16	8.0	7.0	3,970	180	1,130	151	46	26	14
18	57	17	16	8.0	8.0	3,380	178	696	125	80	100	13
19	50	19	16	8.0	9.0	2,200	165	505	129	122	270	13
20	31	20	16	8.0	12	1,500	149	394	105	97	250	12
21	26	17	16	8.0	14	852	140	316	90	199	230	10
22	23	19	17	8.0	16	800	126	319	83	167	210	9.5
23	20	17	17	8.0	12	740	115	803	82	139	200	8.5
24	19	17	15	8.0	10	700	105	660	78	105	185	8.0
25	17	16	13	7.9	9.5	600	94	571	74	82	178	8.0
26	17	16	11	7.8	9.0	500	90	1,970	70	71	160	8.5
27	17	16	11	7.6	8.5	450	86	3,600	68	138	142	10
28	16	16	10	7.4	8.0	400	83	2,220	65	95	120	9.5
29	17	16	10	7.1	7.0	360	79	1,540	59	78	97	8.5
30	18	17	10	7.0	------	300	81	1,700	59	79	81	8.5
31	18	------	10	6.9	------	240	------	1,380	------	115	66	------
TOTAL	704.4	502	462	255.7	207.9	35,895.2	4,646	31,080	7,415	3,365	2,958	550.0
MEAN	22.7	16.7	14.9	8.25	7.17	1,158	155	1,003	247	109	95.4	18.3
MAX	57	20	18	10	16	4,750	215	3,600	1,340	234	270	53
MIN	5.2	15	10	6.9	3.5	5.0	79	316	59	46	26	8.0
AC-FT	1,400	996	916	507	412	71,200	9,220	61,650	14,710	6,670	5,870	1,090

CAL YR 1971 TOTAL 74,394.3 MEAN 204 MAX 2,880 MIN 1.2 AC-FT 147,600
WTR YR 1972 TOTAL 88,041.2 MEAN 241 MAX 4,750 MIN 3.5 AC-FT 174,600

PEAK DISCHARGE (BASE, 700 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
3-15	2300	[a]/11.6	4,890	5-16	1545	6.12	1,400
5- 1	1930	7.20	2,140	5-23	1100	5.48	1,100
5- 5	1030	5.51	1,060	5-27	2000	9.55	4,410
5-11	1700	5.06	852	5-30	0230	7.05	2,020

[a]/ Site and datum in use after Sept. 7, 1972.

06354000 Cannonball River at Breien, N. Dak.

LOCATION.--Lat 46°22'33", long 100°56'03", in sec.36, T.134 N., R.82 W., Sioux County, on right bank 600 ft upstream from bridge on State Highway 6, 950 ft downstream from Louise Creek, and 0.5 mile south of Breien.

DRAINAGE AREA.--4,100 sq mi, approximately.

PERIOD OF RECORD.--August 1934 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,676.54 ft above mean sea level.

AVERAGE DISCHARGE.--38 years, 247 cfs (179,000 acre-ft per year); median of yearly mean discharges, 190 cfs (138,000 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 19,400 cfs Mar. 16 (gage height, 14.4 ft from plotted graph); minimum, 14 cfs Feb. 8-13.
Period of record: Maximum discharge, 94,800 cfs Apr. 19, 1950 (gage height, 22.30 ft, from floodmarks), from rating curve extended above 16,000 cfs on basis of slope-area and contracted-opening of peak flow; no flow at times in some years.

REMARKS.--Records good except those for the winter period, which are poor. Some storage in several small lakes above station. Records of chemical analyses and suspended sediment loads for the water year 1972 are published in Part 2 of this report.

REVISIONS (WATER YEARS).--WSP 786: 1934. WSP 1146: 1943. WSP 1279: 1936-37(M), 1947(M). WSP 1509: 1955(M).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16	45	40	30	16	20	441	1,430	3,020	607	162	162
2	87	50	40	28	16	20	454	2,830	2,010	522	140	145
3	126	50	40	28	16	20	450	1,350	1,320	472	132	125
4	70	50	40	26	16	20	401	2,090	1,060	393	118	114
5	41	50	40	26	16	20	369	2,810	1,110	344	116	102
6	28	29	40	26	16	25	385	2,310	1,160	323	123	92
7	22	32	40	24	16	30	385	1,760	908	306	111	85
8	29	39	35	24	14	36	417	1,210	710	288	104	75
9	20	50	35	24	14	80	458	962	612	278	98	70
10	114	55	35	22	14	70	852	864	548	270	90	65
11	167	66	35	22	14	800	952	1,270	499	240	82	60
12	162	63	35	20	14	6,000	974	1,640	463	220	78	56
13	146	57	35	20	14	10,200	1,030	1,400	468	200	73	53
14	126	66	35	19	18	15,800	869	2,440	463	175	69	48
15	124	59	30	19	21	18,700	1,130	2,820	512	150	62	47
16	119	53	30	19	20	18,100	902	2,750	640	140	58	44
17	137	55	30	19	22	12,900	720	2,330	530	135	64	43
18	209	48	30	19	22	8,590	602	1,540	437	140	99	42
19	214	48	30	18	20	5,080	526	1,040	405	145	62	40
20	142	45	30	18	20	2,870	468	825	381	180	66	38
21	111	40	30	18	22	1,920	421	755	358	212	221	35
22	82	40	30	18	24	1,450	393	640	326	206	198	34
23	74	40	30	17	24	1,230	365	625	323	210	497	31
24	66	40	30	17	22	1,090	344	1,620	330	215	558	32
25	59	45	30	17	22	940	320	3,530	344	185	405	33
26	53	45	30	16	20	830	302	5,980	354	162	326	34
27	50	45	30	16	20	725	284	6,780	369	148	302	34
28	48	45	30	16	20	640	278	5,270	381	174	288	34
29	46	40	25	16	20	571	267	3,590	490	188	248	34
30	33	40	30	16	------	504	260	3,480	750	148	215	34
31	32	------	30	16	------	468	------	3,150	------	148	188	------
TOTAL	2,753	1,430	1,030	634	533	109,749	16,019	71,091	21,281	7,524	5,353	1,841
MEAN	88.8	47.7	33.2	20.5	18.4	3,540	534	2,293	709	243	173	61.4
MAX	214	66	40	30	24	18,700	1,130	6,780	3,020	607	558	162
MIN	16	29	25	16	14	20	260	625	323	135	58	31
AC-FT	5,460	2,840	2,040	1,260	1,060	217,700	31,770	141,000	42,210	14,920	10,620	3,650

CAL YR 1971 TOTAL 177,700 MEAN 487 MAX 6,890 MIN 10 AC-FT 352,500
WTR YR 1972 TOTAL 239,238 MEAN 654 MAX 18,700 MIN 14 AC-FT 474,500

PEAK DISCHARGE (BASE, 1,000 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
3-16	0100	14.4	19,400	5-15	0500	5.44	2,840
4-15	1300	3.51	1,250	5-27	0200	10.55	9,690
5- 2	0500	6.11	3,460	6- 5	1100	3.57	1,380
5- 5	1400	6.09	3,440				

BEAVER CREEK BASIN

06354500 Beaver Creek at Linton, N. Dak.

LOCATION.--Lat 46°15'27", long 100°13'58", on line between secs.17 and 18, T.132 N., R.76 W., Emmons County, on left bank 60 ft downstream from bridge on U.S. Highway 83, 0.7 mile south of railway station in Linton, and 1 mile upstream from Spring Creek.

DRAINAGE AREA.--717 sq mi, of which about 100 sq mi is probably noncontributing.

PERIOD OF RECORD.--August 1949 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,690.55 ft above mean sea level. Prior to June 18, 1958, non-recording gage at site 60 ft upstream at same datum.

AVERAGE DISCHARGE.--23 years, 43.8 cfs (31,730 acre-ft per year); median of yearly mean discharges, 27 cfs (19,600 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 3,400 cfs Mar. 18 (gage height, 16.63 ft, backwater from ice); minimum daily, 0.10 cfs Aug. 16.
Period of record: Maximum discharge, 9,800 cfs Apr. 8, 1952 (gage height, 17.50 ft); no flow at times in some years.

REMARKS.--Records good except those for the winter period, which are fair. Records of chemical analyses for water year 1972 are published in Part 2 of this report.

REVISIONS (WATER YEARS).--WSP 1209: Drainage area. WSP 1239: 1950(M).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.85	2.6	2.5	1.4	1.9	1.3	124	41	19	3.8	.99	1.9
2	2.8	2.8	2.5	1.4	1.9	1.3	115	42	20	3.4	.85	1.8
3	13	2.8	2.4	1.4	1.9	1.2	107	42	19	3.2	.78	1.7
4	5.4	2.8	2.3	1.4	1.9	1.2	99	45	18	3.0	.66	1.6
5	3.0	2.8	2.3	1.4	1.9	1.2	92	53	17	2.7	.56	1.4
6	2.7	2.8	2.2	1.5	1.9	1.6	88	60	16	2.7	.46	.78
7	2.7	2.7	2.1	1.6	1.8	1.5	84	64	15	2.5	.51	.38
8	2.8	2.7	2.0	1.8	1.8	1.6	79	74	14	2.5	.51	.38
9	1.8	2.7	2.0	1.8	1.8	1.6	80	64	13	2.5	.38	.42
10	1.9	2.7	2.0	1.9	1.8	2.0	78	53	12	2.6	.38	.42
11	1.8	2.7	1.9	1.8	1.8	2.1	74	48	12	2.4	.42	.51
12	1.8	2.7	1.8	1.7	1.8	2.0	77	47	11	2.3	.34	.34
13	1.9	2.6	1.7	1.6	1.7	42	82	48	13	2.2	.26	.20
14	2.3	2.6	1.6	1.5	1.7	240	85	49	12	2.1	.19	.15
15	1.7	2.6	1.5	1.4	1.7	970	92	52	9.4	1.9	.12	.12
16	1.6	2.6	1.5	1.6	1.7	2,200	79	49	7.6	1.8	.10	.11
17	1.9	2.8	1.5	2.0	1.7	2,670	67	48	7.2	1.8	.22	.11
18	2.4	3.0	1.5	2.2	1.7	2,840	59	48	6.9	1.8	1.3	.11
19	3.1	5.0	1.5	2.4	1.6	1,650	52	42	6.5	1.8	3.7	.11
20	3.2	3.8	1.5	2.2	1.6	865	49	36	5.9	1.8	2.8	.11
21	3.1	4.3	1.4	2.2	1.6	506	47	30	5.6	1.8	2.1	.11
22	2.8	9.9	1.4	2.2	1.6	421	45	25	5.4	1.7	1.8	.11
23	2.8	8.8	1.4	2.2	1.5	348	44	23	5.4	1.7	1.5	.11
24	2.8	6.2	1.4	2.2	1.5	298	42	23	5.4	1.7	17	.11
25	2.8	2.8	1.4	2.2	1.4	260	40	23	4.9	1.4	18	.15
26	2.6	2.7	1.3	2.1	1.4	228	39	23	4.7	1.4	13	.20
27	2.8	2.6	1.3	2.1	1.4	198	37	23	4.5	1.2	6.9	.15
28	2.6	2.6	1.3	2.0	1.4	163	38	23	4.3	1.1	4.2	.20
29	2.6	2.6	1.3	2.0	1.3	145	37	23	4.7	1.1	3.2	.15
30	2.6	2.5	1.3	1.9	------	128	37	22	4.5	.99	2.8	.11
31	3.0	------	1.4	1.9	------	128	------	22	------	.99	3.3	------
TOTAL	88.85	102.8	53.2	57.0	48.7	14,318.6	2,068	1,265	303.9	63.88	89.33	14.05
MEAN	2.87	3.43	1.72	1.84	1.68	462	68.9	40.8	10.1	2.06	2.88	.47
MAX	13	9.9	2.5	2.4	1.9	2,840	124	74	20	3.8	18	1.9
MIN	.85	2.5	1.3	1.4	1.3	1.2	37	22	4.3	.99	.10	.11
AC-FT	176	204	106	113	97	28,400	4,100	2,510	603	127	177	28

CAL YR 1971 TOTAL 15,704.23 MEAN 43.0 MAX 1,090 MIN 0 AC-FT 31,150
WTR YR 1972 TOTAL 18,473.31 MEAN 50.5 MAX 2,840 MIN .10 AC-FT 36,640

PEAK DISCHARGE (BASE, 500 CFS).--MAR. 18 (3,400 CFS).

06354860 Spring Creek near Herreid, S. Dak.

LOCATION.--Lat 45°48'52", long 100°06'28", in SW¼ sec.13, T.127 N., R.77 W., Campbell County, on left bank 0.5 mile upstream from county highway bridge, 2.4 miles southwest of Herreid and 13.2 miles upstream from high-water line of Lake Oahe.

DRAINAGE AREA.--440 sq mi, approximately, of which about 220 sq mi is probably noncontributing.

PERIOD OF RECORD.--October 1962 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,653.80 ft above mean sea level.

AVERAGE DISCHARGE.--10 years, 11.6 cfs (8,400 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 1,110 cfs Mar. 17 (gage height, 11.42 ft); no flow for many days. Period of record: Maximum discharge, 1,160 cfs Mar. 17, 1966 (gage height, 11.60 ft); no flow for several months each year.

REMARKS.--Records fair.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 24 to Nov. 22; stage-discharge relation affected by ice Mar. 14-16)

3.0	0	3.4	.90	4.4	16	7.0	171
3.1	.03	3.5	1.6	4.8	28	8.0	301
3.2	.10	3.7	3.8	5.2	46	9.0	483
3.3	.40	3.9	6.8	6.0	88	11.5	1,130

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.60	.05	.56	.60	.96	.84	50	59	9.4	.90		
2	1.1	.04	.48	.66	1.0	.90	47	137	9.0	.78		
3	.90	.03	.52	.60	.96	.90	41	172	8.3	.72		
4	.84	.03	.56	.66	.90	.84	39	67	7.1	.56		
5	.60	0	.52	.56	.90	.78	37	63	6.9	.44		
6	.48	0	.48	.60	.84	.78	36	53	5.8	.40		
7	.37	0	.56	.72	.84	.90	35	48	5.1	.40		
8	.31	0	.56	.72	.84	.96	32	45	5.1	.48		
9	.31	.02	.48	.72	.84	.96	34	44	4.5	.44		
10	.40	0	.44	.78	.84	1.1	32	40	3.5	.44		
11	.40	0	.44	.72	.84	1.7	32	42	3.1	.40		
12	.34	.01	.44	.78	.96	1.7	37	41	3.1	.34		
13	.37	.02	.48	.84	.90	1.7	36	37	3.1	.28		
14	.34	.04	.50	.85	.84	20	33	35	2.1	.13		
15	.44	.08	.50	.85	.84	200	30	33	1.6	.10		
16	.52	.34	.55	.90	.90	770	28	31	1.5	.07		
17	.66	.60	.55	1.5	.90	1,060	27	29	1.4	.05		
18	.60	.56	.60	1.5	.90	989	24	25	1.6	.04		
19	.44	.56	.60	1.3	.84	861	23	22	2.7	.02		
20	.52	.66	.65	1.1	.84	596	23	20	2.8	.02		
21	.48	.60	.72	1.1	.96	339	23	18	2.7	.02		
22	.37	.56	.72	1.0	1.0	227	21	17	2.6	.03		
23	.34	.52	.78	1.0	.96	168	20	16	2.6	.03		
24	.22	.48	.78	1.0	.96	135	18	15	2.5	.01		
25	.13	.52	.66	1.0	.90	114	16	14	2.5	0		
26	.10	.56	.60	1.0	.90	96	18	15	2.4	0		
27	.07	.56	.60	.95	.90	82	19	14	2.3	0		
28	.06	.66	.66	.95	.90	68	18	14	2.1	0		
29	.05	.60	.60	.95	.90	60	16	13	1.6	0		
30	.05	.56	.66	.95	------	55	16	11	1.2	0		
31	.05	------	.56	.95	------	53	------	9.6	------	0		------
TOTAL	12.46	8.66	17.81	27.81	26.06	5,897.06	861	1,199.6	110.2	7.10	0	0
MEAN	.40	.29	.57	.90	.90	190	28.7	38.7	3.67	.23	0	0
MAX	1.1	.66	.78	1.5	1.0	1,060	50	172	9.4	.90	0	0
MIN	.05	0	.44	.56	.84	.78	16	9.6	1.2	0	0	0
AC-FT	25	17	35	55	52	11,700	1,710	2,380	219	14	0	0

CAL YR 1971 TOTAL 7,963.12 MEAN 21.8 MAX 855 MIN 0 AC-FT 15,790
WTR YR 1972 TOTAL 8,167.76 MEAN 22.3 MAX 1,060 MIN 0 AC-FT 16,200

PEAK DISCHARGE (BASE, 40 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
3-17	0100	11.42	1,110	5-11	2000	5.26	48
5- 2	0500	6.96	167				

06354988 Bowman-Haley Lake near Haley, N. Dak.

LOCATION.--Lat 45°59'06", long 103°14'43", in NE¼ sec.24, T.129 N., R.101 W., Bowman County, at dam on North Fork Grand River 6 miles west of Haley.

DRAINAGE AREA.--446 sq mi, approximately.

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

GAGE.--Water-stage recorder. Datum of gage is at mean sea level.

EXTREMES.--Current year: Maximum contents, 27,133 acre-ft Mar. 13 (elevation, 2,758.50 ft); minimum, 17,920 acre-ft Oct. 1 (elevation, 2,753.69 ft).
Period of record: Maximum contents, 27,133 acre-ft Mar. 13, 1972 (elevation, 2,758.50 ft); minimum since first reaching spillway level, 17,363 acre-ft Dec. 3, 1969 (elevation, 2,753.34 ft).

REMARKS.--Reservoir is formed by a rolled earth-fill dam; storage began Aug. 22, 1966; dam completed April 1967. Total capacity is 93,000 acre-ft at maximum pool (elevation, 2,777.0 ft). Dead storage is 4,280 acre-ft below lowest point of outlet (elevation, 2,740.0 ft). Normal operating storage is 20,100 acre-ft at elevation 2,755.0 ft (crest of spillway). Figures given herein represent total contents. Controlled releases are through a 30-inch or 8-inch gate valve. The spillway is uncontrolled "glory hole" type and discharges through a conduit 9 ft in diameter. The reservoir is for flood control, irrigation, and incidental water supply.

COOPERATION.--Records of elevations and contents furnished by Corps of Engineers from capacity table dated August 1966. Elevations affected by wind.

MONTHEND ELEVATION AND CONTENTS AT 2400, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30	2,753.69	17,920	
Oct. 31	2,754.46	19,200	+1,280
Nov. 30	2,754.54	19,340	+140
Dec. 31	2,754.68	19,570	+230
CAL YR 1971	--	--	+1,220
Jan. 31	2,754.85	19,870	+300
Feb. 29	2,755.87	21,720	+1,850
Mar. 31	2,755.39	20,840	-880
Apr. 30	2,755.04	20,200	-640
May 31	2,755.56	21,150	+950
June 30	2,755.74	21,480	+330
July 31	2,755.20	20,490	-990
Aug. 31	2,755.55	21,130	+640
Sept. 30	2,754.26	18,860	-2,270
WTR YR 1972	--	--	+940

06355000 North Fork Grand River at Haley, N. Dak.

LOCATION.--Lat 45°57'39", long 103°07'09", at southwest corner of sec.30, T.129 N., R.99 W., Bowman County, on left bank 10 ft downstream from county highway bridge, 300 ft south of post office at Haley, and 1 mile north of South Dakota state line.

DRAINAGE AREA.--509 sq mi.

PERIOD OF RECORD.--May 1908 to September 1917, October 1945 to current year. Monthly discharge only for some periods, published in WSP 1309.

GAGE.--Water-stage recorder. Datum of gage is 2,658.60 ft above mean sea level. Oct. 23, 1945, to June 18, 1951, nonrecording gage on downstream side of bridge near left abutment at present datum. See WSP 1729 or 1917 for history of changes prior to Oct. 23, 1945.

AVERAGE DISCHARGE.--36 years, 30.1 cfs (21,810 acre-ft per year); median of yearly mean discharges, 22 cfs (15,900 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 1,550 cfs Mar. 12 (gage height, 11.62 ft, backwater from ice); no flow Sept. 5; minimum gage height, 4.30 ft Aug. 24.
Period of record: Maximum discharge, 14,100 cfs Apr. 7, 1952 (gage height, 17.03 ft), from rating curve extended above 4,500 cfs on basis of discharge measurement at gage height 15.09 ft, half of which was indirect measurement of flow over roadway outside of main channel; maximum gage height, 17.10 ft Apr. 15, 1950; no flow at times.

REMARKS.--Records fair. Flow regulated by Bowman-Haley Lake 14 miles upstream (see station 06354988). Records of chemical analyses for the water year 1972 are published in Part 2 of this report.

REVISIONS (WATER YEARS).--WSP 1239: 1908-10, 1913-15(M), 1917(M).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.2	2.9	1.7	1.5	.80	291	70	41	96	140	22	.74
2	3.0	3.0	1.7	1.5	.80	359	65	46	87	116	21	.47
3	2.8	3.1	1.6	1.5	.80	345	62	40	76	95	19	.14
4	2.0	3.9	1.6	1.4	.80	303	58	48	66	78	17	.05
5	1.7	2.4	1.5	1.6	.80	248	56	62	60	66	16	.07
6	1.4	2.0	1.5	1.6	.80	239	55	66	52	56	16	.11
7	1.2	3.0	1.5	1.6	.80	260	54	63	46	49	17	.49
8	1.3	3.5	1.5	1.6	.80	269	52	62	42	47	12	.50
9	.84	2.8	1.5	1.6	.80	299	51	64	37	40	9.4	.46
10	1.3	2.5	1.5	1.6	.80	456	49	68	33	35	8.0	.44
11	1.6	2.4	1.4	1.6	.80	780	48	88	33	29	6.4	.83
12	1.3	2.3	1.4	1.6	.90	1,290	46	242	30	25	5.3	1.2
13	1.4	2.2	1.4	1.5	1.0	1,490	49	413	28	21	4.0	1.2
14	2.9	2.2	1.4	1.0	1.2	1,450	46	397	28	20	3.2	1.1
15	2.4	2.1	1.4	1.0	1.3	1,170	45	338	23	19	2.1	.59
16	2.5	2.1	1.4	1.1	1.4	957	43	272	16	15	1.9	.89
17	2.4	2.1	1.4	1.2	1.4	756	41	216	14	13	2.0	.84
18	3.0	2.0	1.4	1.2	1.5	594	40	175	13	13	1.4	.64
19	3.1	2.0	1.5	1.1	1.7	475	38	142	13	11	1.2	1.0
20	4.3	2.0	1.5	1.0	3.0	387	37	150	13	11	.71	.85
21	2.9	1.9	1.5	1.0	3.5	318	36	262	9.5	8.6	1.7	1.6
22	2.9	1.8	1.5	1.0	3.0	264	36	248	8.8	11	2.0	2.7
23	2.3	1.8	1.5	1.0	3.0	219	36	202	9.0	19	1.1	1.9
24	2.1	1.7	1.5	.90	63	182	34	165	8.6	14	.62	1.7
25	2.1	1.7	1.5	.90	118	152	28	136	9.2	14	.38	2.3
26	2.0	1.7	1.4	.90	146	136	30	174	14	18	.39	2.9
27	2.2	1.7	1.4	.90	121	125	28	156	47	23	.17	3.0
28	2.4	1.7	1.4	.90	132	108	28	146	119	25	.11	2.9
29	3.6	1.7	1.4	.90	199	95	26	131	162	24	.09	2.5
30	3.3	1.7	1.4	.90	------	85	28	116	162	24	.06	2.4
31	2.9	------	1.5	.80	------	77	------	104	------	23	.40	------
TOTAL	70.34	67.9	45.8	37.90	810.70	14,179	1,315	4,833	1,355.1	1,102.6	192.63	36.51
MEAN	2.27	2.26	1.48	1.22	28.0	457	43.8	156	45.2	35.6	6.21	1.22
MAX	4.3	3.9	1.7	1.6	199	1,490	70	413	162	140	22	3.0
MIN	.84	1.7	1.4	.80	.80	77	26	40	8.6	8.6	.06	.05
AC-FT	140	135	91	75	1,610	28,120	2,610	9,590	2,690	2,190	382	72

CAL YR 1971 TOTAL 23,653.93 MEAN 64.8 MAX 1,180 MIN .28 AC-FT 46,920
WTR YR 1972 TOTAL 24,046.48 MEAN 65.7 MAX 1,490 MIN .05 AC-FT 47,700

06355500 North Fork Grand River near White Butte, S. Dak.

LOCATION.--Lat 45°48'10", long 102°21'45", in NE¼NE¼ sec.10, T.21 N., R.14 E., Perkins County, on left bank 100 ft upstream from highway bridge, 0.2 mile upstream from nearest tributary and 9.8 miles south of White Butte.

DRAINAGE AREA.--1,190 sq mi, approximately.

PERIOD OF RECORD.--October 1945 to current year. Monthly discharge only for some periods, published in WSP 1309.

GAGE.--Water-stage recorder. Altitude of gage is 2,275 ft (by barometer). Prior to Aug. 29, 1947, and Apr. 17, 1950, to June 11, 1951, nonrecording gage, and Aug. 29, 1947, to Apr. 16, 1950, water-stage recorder all at site 100 ft downstream at same datum.

AVERAGE DISCHARGE.--27 years, 58.9 cfs (42,670 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 3,300 cfs occurred during period Mar. 7-14; maximum gage height, 9.58 ft in gage well probably occurred Mar. 10 (backwater from ice); minimum daily discharge, 1.0 cfs Jan. 27.
Period of record: Maximum discharge, 30,900 cfs Apr. 16, 1950 (gage height, 20.0 ft, from floodmarks), from rating curve extended above 19,000 cfs on basis of slope-area measurement of peak flow; no flow at times.

REMARKS.--Records good except those for winter periods, which are poor. Flow regulated by Bowman-Haley Lake (capacity, 93,000 acre-ft), 71 miles upstream, beginning August 1966.

REVISIONS (WATER YEARS).--WSP 1279: 1947, 1950.

Rating tables (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 3-27; stage-discharge relation affected by ice Oct. 28 to Mar. 13)

Oct. 1 to May 26

2.1	8.6	4.0	347
2.4	28	5.0	685
2.7	54	6.0	1,170
3.0	98	8.0	3,060
3.5	205		

May 27 to Sept. 30

1.6	3.8	3.0	140
1.8	7.5	3.5	244
2.0	12	4.0	374
2.1	15	5.0	685
2.2	21	6.0	1,170
2.5	57	7.0	1,960

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	9.0	8.5	7.5	3.0	75	133	74	286	101	127	12
2	21	8.8	8.0	7.0	3.0	75	131	123	237	151	99	11
3	36	8.5	7.5	7.0	3.0	80	123	168	207	153	80	9.8
4	26	8.5	7.5	7.0	2.5	80	113	198	183	142	64	8.2
5	21	7.0	7.0	7.5	2.0	100	106	164	165	127	54	6.9
6	17	6.0	7.0	8.0	2.0	200	100	131	146	112	46	5.9
7	17	6.0	6.5	7.5	2.0	300	98	117	130	98	37	5.9
8	15	7.0	6.0	8.0	2.0	250	95	133	121	88	27	6.3
9	13	7.5	6.0	8.0	2.5	1,000	91	144	107	77	25	6.1
10	13	8.5	7.0	7.5	3.0	3,000	90	141	98	68	23	5.3
11	13	8.5	6.5	7.0	3.5	2,900	91	177	91	60	19	6.5
12	13	9.0	6.0	7.0	4.0	2,600	91	265	83	54	17	6.3
13	14	9.5	6.0	6.0	4.5	2,500	90	460	75	43	15	6.3
14	14	9.5	6.0	5.0	5.0	2,300	86	512	68	39	13	5.9
15	15	9.5	6.5	5.0	5.0	2,180	83	443	62	35	10	5.4
16	17	9.0	6.5	6.0	6.0	1,630	80	364	56	29	14	5.3
17	17	8.0	6.5	7.0	7.0	1,470	78	295	53	26	25	5.1
18	22	7.5	7.0	6.0	7.0	1,020	74	242	49	19	20	4.8
19	23	7.0	7.5	5.0	8.0	819	68	207	46	21	14	4.4
20	26	8.0	7.5	5.0	9.0	664	65	182	39	16	15	4.4
21	27	8.0	7.0	6.0	10	543	63	161	38	15	15	4.1
22	26	8.5	6.5	6.0	12	449	60	194	37	15	15	3.9
23	26	8.0	6.0	5.0	15	370	57	224	35	15	22	3.8
24	24	8.0	5.5	3.0	12	314	54	227	32	12	56	3.8
25	22	8.0	5.0	2.0	10	277	52	222	32	11	47	4.6
26	22	8.0	5.0	1.5	10	250	54	575	33	11	41	4.8
27	22	8.0	5.0	1.0	20	222	56	1,320	49	15	33	4.8
28	18	7.5	6.0	1.5	70	200	52	523	35	17	25	5.3
29	15	7.0	6.0	3.0	75	182	52	542	27	24	19	5.4
30	12	7.0	6.5	4.0	------	161	56	647	27	20	16	5.7
31	10	------	7.0	3.5	------	146	------	386	------	88	14	------
TOTAL	599	240.3	202.5	170.5	318.0	26,357	2,442	9,561	2,647	1,702	1,047	178.0
MEAN	19.0	8.01	6.53	5.50	11.0	850	81.4	308	88.2	54.9	33.8	5.93
MAX	36	9.5	8.5	8.0	75	3,000	133	1,320	286	153	127	12
MIN	10	6.0	5.0	1.0	2.0	75	52	74	27	11	10	3.8
AC-FT	1,170	477	402	338	631	52,280	4,840	18,960	5,250	3,380	2,080	353

CAL YR 1971 TOTAL 40,619.00 MEAN 111 MAX 1,900 MIN 0 AC-FT 80,570
WTR YR 1972 TOTAL 45,454.30 MEAN 124 MAX 3,000 MIN 1.0 AC-FT 90,160

06439980 Lake Oahe near Pierre, S. Dak.

LOCATION.--Lat 44°27'30", long 100°23'29", in NE¼ sec.1, T.111 N., R.80 W., 5th principal meridian, Hughes County, in Pier A of Control Tower No. 1 of powerhouse intake structure on dam on Missouri River, 6 miles northwest of Pierre, 7.1 miles upstream from Bad River, and at mile 1,072.3.

DRAINAGE AREA.--243,500 sq mi, approximately.

PERIOD OF RECORD.--August 1958 to current year. Prior to October 1967, published as Oahe Reservoir near Pierre.

GAGE.--Water-stage recorder. Datum of gage is at mean sea level. Prior to Jan. 14, 1959, nonrecording gages at various locations upstream from outlet works, Jan. 14, 1959, to Sept. 30, 1962, recorder in Tower No. 1 of outlet works, all at same datum.

EXTREMES.--Current year: Maximum contents, 21,996,000 acre-ft July 5 (elevation, 1,616.0 ft, affected by wind); minimum, 17,370,000 acre-ft Jan. 5 (elevation, 1,601.1 ft, affected by wind).
Period of record: Maximum contents, 22,397,000 acre-ft May 31, 1970 (elevation, 1,616.7 ft, affected minimum since initial filling, 16,984,000 acre-ft Sept. 24, 26, 1967 (elevation, 1,599.2 ft).

REMARKS.--Reservoir is formed by an earthfill dam; storage began in August 1958. Maximum capacity, 23,630,000 acre-ft below elevation 1,620.0 ft (top of spillway gates). Normal maximum, 22,530,000 acre-ft below 1,617.0 ft, of which about 2,390,000 acre-ft is designated for flood control. Inactive storage, 5,538,000 acre-ft below elevation 1,540.0 ft. Dead storage, 2,000 acre-ft below elevation 1,425.0 ft (invert of lowest outlet tunnel). Figures given herein represent elevations at powerhouse intake structure and total contents adjusted for wind effect.
The spillway consists of a gated chute with flat crest at elevation 1,596.5 ft, 8 gates, 50 by 23.5 ft each; design capacity, 300,000 cfs. The outlet works consist of 7 turbines with a generating capacity of 85,000 kilowatts each. Water is used for flood control, navigation, power, and incidental uses.

COOPERATION.--Elevation and contents furnished by Corps of Engineers.

MONTHEND ELEVATION AND CONTENTS AT 2400 HOURS, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30	1,607.2	19,236,000	--
Oct. 31	1,604.9	18,548,000	-688,000
Nov. 30	1,602.2	17,736,000	-812,000
Dec. 31	1,601.2	17,449,000	-287,000
CAL YR 1971	--	--	-962,000
Jan. 31	1,602.4	17,657,000	+310,000
Feb. 29	1,603.9	18,094,000	+437,000
Mar. 31	1,609.0	19,710,000	+1,616,000
Apr. 30	1,609.8	19,899,000	+189,000
May 31	1,614.4	21,479,000	+1,580,000
June 30	1,615.8	21,981,000	+502,000
July 31	1,614.4	21,496,000	-485,000
Aug. 31	1,610.9	20,341,000	-1,155,000
Sept. 30	1,606.4	18,848,000	-1,493,000
WTR YR 1972	--	--	-388,000

NOTE.--Area-capacity table revised Jan. 1, 1972.

06467600 James River near Manfred, N. Dak.

LOCATION.--Lat 47°38'40", long 99°49'40", near midpoint of north line sec.15, T.148 N., R.72 W., Wells County, on left upstream wingwall of bridge on county highway, 5 miles southwest of Manfred.

DRAINAGE AREA.--253 sq mi, of which about 197 sq mi is probably noncontributing.

PERIOD OF RECORD.--October 1954 to August 1957 (annual maximum only), September 1957 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,605.73 ft above mean sea level. Prior to Sept. 16, 1957, crest-stage gage only on downstream side of bridge at same datum.

AVERAGE DISCHARGE.--15 years (1957-72), 2.58 cfs (1,870 acre-ft per year); median of yearly mean discharges, 1.8 cfs (1,300 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 177 cfs Mar. 13 (gage height, 4.20 ft); no flow for several months. Period of record: Maximum discharge, 900 cfs Apr. 10, 1969 (gage height, 7.70 ft); no flow for many days in each year.

REMARKS.--Records good. Records of chemical analyses for the 1972 water year are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	.09	.05	.01		0	2.0	1.9	.90	.08	.02	
2	.06	.09	.05	.01		0	2.2	1.8	.80	.07	.05	
3	.06	.09	.05	.01		0	1.9	1.7	1.0	.07	.04	
4	.05	.09	.05	0		0	1.5	1.8	.80	.06	.02	
5	.05	.09	.05	0		0	1.6	1.8	.60	.06	.02	
6	.05	.08	.04	0		0	2.5	1.7	.46	.05	.06	
7	.05	.07	.04	0		0	2.8	1.6	.42	.05	.06	
8	.05	.07	.03	0		0	2.7	1.5	.38	.03	.05	
9	.05	.08	.03	0		0	3.0	1.5	.29	.02	.05	
10	.05	.09	.03	0		0	5.0	1.9	.14	0	.05	
11	.05	.10	.03	0		0	5.0	2.1	.10	0	.05	
12	.05	.10	.03	0		1.0	8.0	1.9	.24	0	.02	
13	.05	.10	.03	0		75	10	1.8	.58	0	.01	
14	.05	.10	.02	0		111	20	1.6	.74	0	0	
15	.05	.10	.02	0		104	25	1.5	.70	0	0	
16	.06	.10	.02	0		70	20	1.2	.58	0	0	
17	.06	.09	.01	0		65	19	1.2	.54	0	0	
18	.10	.09	.01	0		44	13	1.2	.70	0	0	
19	.07	.09	.01	0		40	9.4	1.6	.74	.04	0	
20	.06	.09	.01	0		31	7.3	1.9	.62	.04	0	
21	.09	.08	.01	0		28	5.6	2.3	.54	.02	0	
22	.12	.08	.01	0		21	4.6	2.5	.50	.04	0	
23	.10	.08	.01	0		15	4.1	2.5	.46	.09	0	
24	.10	.07	.01	0		9.6	3.8	2.5	.29	.06	0	
25	.09	.07	.01	0		7.0	3.6	2.6	.26	.06	0	
26	.09	.07	.01	0		5.1	3.3	2.4	.20	.07	0	
27	.08	.07	.01	0		4.3	3.1	2.0	.16	.06	0	
28	.07	.06	.01	0		3.1	2.5	1.8	.14	.06	0	
29	.07	.05	.01	0		2.7	2.3	1.5	.10	.05	0	
30	.07	.05	.01	0	------	2.6	2.1	1.2	.08	.04	0	
31	.09	------	.01	0	------	2.0	------	1.0	------	.03	0	------
TOTAL	2.04	2.48	.72	.03	0	641.4	196.9	55.5	14.06	1.15	.50	0
MEAN	.066	.083	.023	.001	0	20.7	6.56	1.79	.47	.037	.016	0
MAX	.12	.10	.05	.01	0	111	25	2.6	1.0	.09	.06	0
MIN	0	.05	.01	0	0	0	1.5	1.0	.08	0	0	0
AC-FT	4.1	4.9	1.4	.06	0	1,270	391	110	28	2.3	1.0	0

CAL YR 1971 TOTAL 1,523.48 MEAN 4.17 MAX 280 MIN 0 AC-FT 3,020
WTR YR 1972 TOTAL 914.78 MEAN 2.50 MAX 111 MIN 0 AC-FT 1,810

PEAK DISCHARGE (BASE, 30 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
3-13	2000	4.20	177	3-16	1700	3.66	100

06467900 Big Slough at Hamberg, N. Dak.

LOCATION.--Lat 47°45'20", long 99°30'42", on line between secs.4 and 5, T.149 N., R.69 W., Wells County, on right bank 30 ft upstream from bridge on State Highway 30 and 0.5 mile south of Hamberg.

DRAINAGE AREA.--60 sq mi, approximately, of which about 18 sq mi is probably noncontributing.

PERIOD OF RECORD.--September 1957 to September 1968, October 1969 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,532.71 ft above mean sea level.

AVERAGE DISCHARGE.--14 years, 1.30 cfs (940 acre-ft per year); median of yearly mean discharges, 0.2 cfs (140 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 23 cfs Mar. 21 (gage height, 3.52 ft); no flow for several months.
Period of record: Maximum discharge, 170 cfs July 22, 1965; maximum gage height, 5.46 ft July 23, 1965; no flow for long periods each year.
Flood of 1969 reached a stage of about 5.7 ft according to local residents.

REMARKS.--Records fair. Records of chemical analyses for water year 1972 are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1						0	3.3	1.5	4.4	.08		
2						0	2.4	1.4	4.0	.08		
3						0	2.0	1.2	3.5	.07		
4						0	2.0	1.0	2.7	.06		
5						0	2.0	1.0	2.2	.06		
6						0	2.2	.93	1.4	.06		
7						0	2.0	.81	1.0	.05		
8						0	1.8	.76	.81	.04		
9						0	1.6	.71	.58	.02		
10						0	1.4	.62	.43	.02		
11						0	1.5	.62	.38	.02		
12						0	1.6	.81	.34	.01		
13						1.0	1.8	.81	.43	.01		
14						5.0	1.8	.71	.40	0		
15						11	1.8	.71	.28	0		
16						13	1.5	.66	.24	0		
17						15	1.5	.55	.21	0		
18						17	1.5	.46	.24	0		
19						19	1.5	.40	.28	0		
20						21	1.5	.40	.26	0		
21						22	1.4	.38	.23	0		
22						18	1.5	.49	.20	0		
23						13	1.8	2.4	.17	0		
24						12	1.6	4.2	.16	0		
25						9.6	1.5	6.0	.16	0		
26						8.3	1.5	6.2	.15	.02		
27						7.1	1.6	6.4	.14	.02		
28						6.6	1.6	6.0	.12	.02		
29						5.8	1.5	6.0	.11	.02		
30					------	4.8	1.5	5.4	.08	.01		
31		------			------	4.0	------	5.8	------	0		------
TOTAL	0	0	0	0	0	213.2	52.2	65.33	25.60	.67	0	0
MEAN	0	0	0	0	0	6.88	1.74	2.11	.85	.022	0	0
MAX	0	0	0	0	0	22	3.3	6.4	4.4	.08	0	0
MIN	0	0	0	0	0	0	1.4	.38	.08	0	0	0
AC-FT	0	0	0	0	0	423	104	130	51	1.3	0	0

CAL YR 1971 TOTAL 871.87 MEAN 2.39 MAX 55 MIN 0 AC-FT 1,730
WTR YR 1972 TOTAL 357.00 MEAN .98 MAX 22 MIN 0 AC-FT 708

PEAK DISCHARGE (BASE, 20 CFS).--MARCH 21 (0200), 23 cfs (3.52 ft).

06468170 James River near Grace City, N. Dak.

LOCATION.--Lat 47°33'29", long 98°51'45", in NW¼NW¼NW¼ sec.17, T.147 N., R.64 W., Foster County, on left bank on downstream side of county highway bridge and 2.5 miles northwest of Grace City.

DRAINAGE AREA.--1,060 sq mi, approximately, of which about 650 sq mi is probably noncontributing.

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

GAGE.--Water-stage recorder. Altitude of gage is 1,460 ft (from topographic map).

EXTREMES.--Current year: Maximum discharge, 425 cfs Mar. 25 (gage height, 8.15 ft, backwater from ice); no flow Jan. 14 to Mar. 9.
Period of record: Maximum discharge, 3,100 cfs Apr. 13, 1969 (gage height, 12.00 ft); no flow at times.

REMARKS.--Records fair. Records of chemical analyses for water year 1972 are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.50	1.6	.80	.05		0	82	23	56	2.4	.57	.08
2	1.3	1.6	.75	.05		0	84	22	46	2.2	.70	.08
3	1.9	1.4	.75	.04		0	92	20	39	2.2	.51	.08
4	2.1	1.3	.75	.02		0	70	20	33	2.0	.46	.06
5	1.8	1.1	.70	.01		0	69	19	26	1.8	.36	.06
6	1.7	1.8	.70	.01		0	64	17	23	1.6	.41	.08
7	1.6	1.3	.70	.01		0	72	17	20	1.5	.41	.10
8	1.3	1.4	.65	.01		0	70	15	17	1.3	.41	.10
9	1.2	1.3	.60	.01		0	70	15	15	1.1	.41	.08
10	.98	1.3	.60	.01		5.0	70	13	13	.93	.63	.06
11	.86	1.3	.45	.01		37	69	14	10	.77	.70	.04
12	.80	1.3	.27	.01		55	72	12	9.1	.70	.63	.10
13	.86	1.3	.23	.01		62	83	11	8.6	.63	.57	.23
14	.86	1.3	.23	0		66	108	12	6.8	.51	.51	.27
15	.75	1.3	.23	0		72	115	11	6.4	.46	.46	.31
16	.70	1.3	.23	0		70	105	10	6.2	.41	.36	.27
17	.98	1.3	.23	0		86	100	9.5	6.0	.41	.31	.23
18	1.3	1.2	.27	0		122	93	9.2	5.8	.36	.23	.19
19	1.6	1.2	.45	0		139	88	7.0	5.4	.46	.19	.16
20	1.4	.98	.40	0		158	84	7.0	5.2	.51	.16	.16
21	1.5	1.1	.40	0		181	76	7.8	4.8	.51	.31	.10
22	1.5	1.1	.35	0		192	68	7.6	4.5	.51	.31	.10
23	1.5	1.1	.35	0		206	61	6.5	4.4	.51	.23	.10
24	1.5	1.0	.40	0		186	55	8.9	3.9	.46	.16	.12
25	1.5	1.0	.27	0		212	49	58	3.8	.70	.16	.12
26	1.5	.98	.17	0		175	41	113	3.7	1.2	.14	.14
27	1.4	.92	.10	0		182	37	100	3.4	1.2	.12	.16
28	1.2	.92	.05	0		151	32	88	3.1	1.2	.10	.27
29	1.2	.92	.02	0		93	30	79	2.8	1.1	.08	.27
30	1.2	.86	.01	0	------	81	26	73	2.5	.85	.10	.27
31	1.6	------	.03	0	------	79	------	67	------	.70	.12	------
TOTAL	40.09	36.48	12.14	.25	0	2,610.0	2,135	892.5	394.4	31.19	10.82	4.39
MEAN	1.29	1.22	.39	.008	0	84.2	71.2	28.8	13.1	1.01	.35	.15
MAX	2.1	1.8	.80	.05	0	212	115	113	56	2.4	.70	.31
MIN	.50	.86	.01	0	0	0	26	6.5	2.5	.36	.08	.04
AC-FT	80	72	24	.5	0	5,180	4,230	1,770	782	62	21	8.7

CAL YR 1971 TOTAL 12,010.54 MEAN 32.9 MAX 850 MIN 0 AC-FT 23,820
WTR YR 1972 TOTAL 6,167.26 MEAN 16.9 MAX 212 MIN 0 AC-FT 12,230

PEAK DISCHARGE (BASE, 200 CFS).--MAR. 25, 425 CFS.

06469000 Jamestown Reservoir near Jamestown, N. Dak.

LOCATION.--Lat 46°55'50", long 98°42'23", in SE¼NW¼ sec.24, T.140 N., R.64 W., Stutsman County, on left bank in control house below Jamestown Dam on James River, 1.7 miles north of Jamestown Post Office, and 3.3 miles upstream from Pipestem Creek.

DRAINAGE AREA.--1,760 sq mi, approximately, of which about 1,010 sq mi is probably noncontributing.

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

GAGE.--Water-stage recorder. Datum of gage is 1,400.00 ft above mean sea level; gage readings have been reduced to elevations above mean sea level. June 22, 1959 to June 3, 1971 at site 0.2 mile upstream at same datum. Prior to June 22, 1959, nonrecording gages at different locations.

EXTREMES.--Current year: Maximum contents, 39,400 acre-ft May 17 (elevation, 1,434.10 ft); minimum observed, 27,990 acre-ft Mar. 5-10 (elevation, 1,429.35 ft).
Period of record: Maximum contents, 103,100 acre-ft May 1, 1969 (elevation, 1,443.60).

REMARKS.--Reservoir is formed by earth-fill dam, completed Oct. 1, 1953. Closure made May 7, 1953, and filling of dead storage started. Gates initially closed Feb. 8, 1954. Usable capacity, 229,470 acre-ft between elevations 1,400 ft (sill of outlet) and 1,454 ft (crest of spillway). Dead storage below elevation 1,400 ft, 820 acre-ft. Maximum design pool, 389,000 acre-ft (elevation, 1,464.6 ft). Figures given herein represent total contents based on capacity table dated Oct. 1, 1965. Reservoir is used for flood control and municipal supply. Records of chemical analyses for the water year 1972 are published in Part 2 of this report.

MONTHEND ELEVATION AND CONTENTS AT 2400, WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30	1,430.96	31,420	
Oct. 31	1,429.80	28,910	-2,510
Nov. 30	1,429.53	28,360	-550
Dec. 31	1,429.45	28,190	-170
CAL YR 1971	--	--	-1,850
Jan. 31	1,429.42	28,130	-60
Feb. 29	1,429.39	28,070	-60
Mar. 31	1,430.99	31,490	+3,420
Apr. 30	1,433.25	37,060	+5,570
May 31	1,433.77	38,470	+1,410
June 30	1,432.64	35,470	-3,000
July 31	1,432.14	34,210	-1,260
Aug. 31	1,431.42	32,500	-1,710
Sept. 30	1,430.20	29,760	-2,740
WTR YR 1972	--	--	-1,660

06469500 Pipestem Creek near Buchanan, N. Dak.

LOCATION.--Lat 47°03'59", long 98°55'07", on north line sec.4, T.141 N., R.65 W., Stutsman County, on left bank 30 ft downstream from bridge on counth highway and 4.5 miles west of Buchanan.

DRAINAGE AREA.--758 sq mi, of which about 460 sq mi is probably noncontributing.

PERIOD OF RECORD.--March 1950 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,467.01 ft above mean sea level. Prior to July 11, 1950, non-recording gage at same site and datum.

AVERAGE DISCHARGE.--22 years, 20.3 cfs (14,710 acre-ft per year); median of yearly mean discharges, 16 cfs (11,600 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 380 cfs Mar. 14 (gage height, 7.05 ft, from floodmark, backwater from ice); no flow Feb. 1 to Mar. 6, Sept. 21.
Period of record: Maximum discharge, 6,080 cfs Apr. 10, 1969 (gage height, 12.08 ft); no flow at times.

REMARKS.--Records fair except those for the winter period, which are poor. Records of chemical analyses for water year 1972 are published in Part 2 of this report.

REVISIONS.--WSP 1917: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.95	2.5	1.8	.25		0	48	35	12	1.9	.59	.68
2	4.1	2.4	1.9	.20		0	46	30	12	1.8	.42	.42
3	3.2	2.2	1.9	.15		0	42	28	12	1.4	.28	.35
4	2.5	2.0	1.9	.15		0	42	26	10	1.2	.22	.35
5	1.9	2.0	2.0	.15		0	37	24	9.6	1.2	2.4	.35
6	1.4	2.4	2.0	.15		0	39	22	8.8	1.8	3.2	.35
7	1.3	2.4	1.8	.20		5.0	57	20	8.0	1.4	1.3	.35
8	.95	1.6	1.8	.20		10	54	18	7.6	1.2	1.2	.42
9	.95	1.9	1.6	.20		10	70	17	7.3	1.0	.95	.50
10	.95	2.0	1.6	.15		50	83	16	6.6	.95	.85	.50
11	.85	2.2	1.6	.15		100	78	15	6.0	.77	.85	.35
12	.85	2.2	1.4	.20		150	92	14	5.4	.68	.77	.35
13	.95	2.4	1.4	.20		175	129	14	7.3	.68	.59	.42
14	.95	2.5	1.2	.15		340	138	14	5.7	.68	.50	.42
15	.95	2.5	1.2	.15		350	170	13	4.8	.59	.42	.42
16	.95	2.6	1.0	.10		290	144	12	4.6	.50	.59	.35
17	1.9	2.6	.80	.15		260	140	12	4.1	.35	1.0	.22
18	2.4	2.6	.70	.20		260	138	11	4.1	.28	3.6	.16
19	2.2	2.8	.60	.15		300	144	10	4.1	.42	3.0	.28
20	1.9	2.6	.60	.15		300	146	12	3.8	.50	2.2	.16
21	1.6	2.8	.60	.10		250	135	15	3.8	.50	2.5	0
22	1.6	2.5	.50	.10		185	111	20	3.0	.50	2.5	.05
23	1.6	2.2	.50	.08		155	96	22	2.8	.50	1.8	.05
24	1.6	2.0	.50	.06		130	85	24	2.6	.42	1.4	.05
25	1.8	2.0	.40	.04		110	75	26	2.6	.35	1.2	.05
26	1.8	1.9	.40	.04		92	65	35	2.5	1.3	.85	.05
27	1.3	1.9	.35	.02		83	56	25	2.2	2.5	.68	.22
28	1.2	1.9	.30	.02		76	50	20	2.0	2.5	.59	.16
29	1.2	1.8	.30	.01		74	45	17	1.9	1.8	.50	.05
30	1.6	1.8	.25	.01	------	60	40	15	1.6	1.0	.88	.10
31	3.0	------	.25	.01	------	51	------	13	------	.85	.85	------
TOTAL	50.40	67.2	33.15	3.89	0	3,866.0	2,595	595	168.8	31.52	38.68	8.18
MEAN	1.63	2.24	1.07	.13	0	125	86.5	19.2	5.63	1.02	1.25	.27
MAX	4.1	2.8	2.0	.25	0	350	170	35	12	2.5	3.6	.68
MIN	.85	1.6	.25	.01	0	0	37	10	1.6	.28	.22	0
AC-FT	100	133	66	7.7	0	7,670	5,150	1,180	335	63	77	16

CAL YR 1971 TOTAL 7,221.39 MEAN 19.8 MAX 652 MIN 0 AC-FT 14,320
WTR YR 1972 TOTAL 7,457.82 MEAN 20.4 MAX 350 MIN 0 AC-FT 14,790

PEAK DISCHARGE (BASE, 200 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
3-14	--	--	380	4-15	0900	5.92	279

06470000 James River at Jamestown, N. Dak.

LOCATION.--Lat 46°53'22", long 98°40'58", in NW¼NE¼ sec.6, T.139 N., R.63 W., Stutsman County, on left bank 100 ft upstream from Interstate 94 bridge at southeast corner of Jamestown and 3 miles downstream from Pipestem Creek.

DRAINAGE AREA.--2,820 sq mi, approximately, of which about 1,650 sq mi is probably noncontributing.

PERIOD OF RECORD.--June 1929 to September 1934, March to May 1935, August 1937 to September 1939, March 1943 to current year. Monthly discharge only for some periods, published in WSP 1309.

GAGE.--Water-stage recorder. Datum of gage is 1,373.27 ft above mean sea level. Oct. 1, 1949 to Sept. 30, 1965, at former bridge half a mile upstream at datum 2.00 ft higher. See WSP 1729 or 1917 for history of changes prior to Oct. 1, 1949.

AVERAGE DISCHARGE.--37 years (1928-34, 1937-39, 1943-72) 56.8 cfs (41,150 acre-ft per year); median of yearly mean discharges, 25 cfs (18,100 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 850 cfs Mar. 14 (gage height, 9.97 ft); minimum, 2.3 cfs Feb. 17; minimum gage height, 2.16 ft Dec. 24.
Period of record: Maximum discharge, 6,390 cfs May 13, 1950 (gage height, 15.82 ft, site and datum then in use; no flow at times in 1933.

REMARKS.--Records fair. Flow regulated by Arrowwood and Jim Lakes and Jamestown Reservoir (combined capacity, 246,000 acre-ft), the largest of which is Jamestown Reservoir, 6 miles upstream (see station 06469000). Records of chemical analyses for the water year 1972 are published in Part 2 of this report.

REVISIONS (WATER YEARS).--WSP 1239: 1938(M). WSP 1917: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	84	89	31	5.4	3.1	3.0	72	50	81	54	13	48
2	101	92	31	5.4	2.8	2.9	67	24	78	22	14	48
3	88	92	31	5.2	2.7	2.8	63	33	76	16	13	49
4	84	89	30	5.0	2.7	2.7	56	38	73	16	18	48
5	83	80	30	4.8	2.6	2.7	55	55	68	19	75	49
6	84	86	28	4.8	2.9	3.5	58	41	62	17	63	48
7	85	58	30	4.8	2.9	10	56	41	62	16	52	48
8	85	51	30	4.8	2.9	9.5	61	38	66	17	52	48
9	84	44	12	4.8	3.1	9.5	77	34	69	19	52	48
10	84	32	10	4.8	3.3	12	81	32	65	19	53	53
11	83	30	11	4.6	3.8	70	98	28	64	17	50	48
12	83	30	12	4.4	4.1	220	130	36	66	14	51	48
13	83	30	12	4.2	4.7	380	201	40	76	14	85	50
14	83	31	11	4.2	4.7	750	390	38	67	18	62	48
15	87	31	10	4.0	3.6	760	510	34	66	17	63	48
16	88	31	10	4.2	3.0	380	359	31	66	15	56	47
17	98	34	11	4.2	2.9	400	282	146	65	14	53	45
18	93	32	7.9	3.4	3.1	418	271	91	71	14	54	46
19	88	31	6.5	3.0	2.9	354	261	77	69	56	52	49
20	86	31	6.0	3.0	3.5	365	226	75	66	22	52	48
21	88	30	6.0	3.0	6.7	326	200	99	64	19	64	45
22	87	29	6.2	3.0	5.4	259	168	90	63	17	56	44
23	88	29	6.2	3.0	3.9	218	147	107	62	15	52	45
24	87	31	6.2	3.0	2.9	188	122	121	62	14	50	46
25	88	31	6.0	3.0	2.7	164	108	102	62	16	49	46
26	88	31	6.0	3.0	2.9	146	95	97	59	20	50	45
27	88	32	6.0	3.0	3.0	116	85	76	54	17	50	45
28	86	30	6.2	3.0	3.0	70	78	81	52	16	50	52
29	86	34	6.2	3.0	2.8	88	64	84	51	14	48	45
30	90	31	5.2	3.0	------	87	58	83	51	14	51	45
31	91	------	5.4	3.0	------	79	------	81	------	14	52	------
TOTAL	2,701	1,332	426.0	122.0	98.6	5,896.6	4,499	2,003	1,956	592	1,555	1,422
MEAN	87.1	44.4	13.7	3.94	3.40	190	150	64.6	65.2	19.1	50.2	47.4
MAX	101	92	31	5.4	6.7	760	510	146	81	56	85	53
MIN	83	29	5.2	3.0	2.6	2.7	55	24	51	14	13	44
AC-FT	5,360	2,640	845	242	196	11,700	8,920	3,970	3,880	1,170	3,080	2,820

CAL YR 1971 TOTAL 22,770.8 MEAN 62.4 MAX 429 MIN 2.5 AC-FT 45,170
WTR YR 1972 TOTAL 22,603.2 MEAN 61.8 MAX 760 MIN 2.6 AC-FT 44,830

06470500 James River at La Moure, N. Dak.

LOCATION.--Lat 46°21'20", long 98°18'15", at northeast corner of sec.11, T.133 N., R.61 W., La Moure County, on left bank 80 ft downstream from bridge on State Highway 13, 0.5 mile west of La Moure, and 12 miles upstream from Cottonwood Creek.

DRAINAGE AREA.--4,390 sq mi, approximately, of which about 2,600 sq mi is probably noncontributing.

PERIOD OF RECORD.--April to July 1903 (gage-height record only), April 1950 to current year. Gage-height records for 1902-11 are contained in reports of the U.S. Weather Bureau.

GAGE.--Water-stage recorder and rubble-masonry control. Datum of gage is 1,290.00 ft above mean sea level. See WSP 1729 or 1917 for history of changes prior to Apr. 19, 1950.

AVERAGE DISCHARGE.--22 years (1950-72), 84.8 cfs (61,440 acre-ft per year); median of yearly mean discharges, 56 cfs (40,600 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 1,900 cfs Mar. 18 (gage height, 12.57 ft, backwater from ice); no flow Sept. 22 (gage height, 6.97 ft, caused by wind).
Period of record: Maximum discharge, 6,800 cfs Apr. 14, 1969 (gage height, 16.17 ft); no flow at times. Prior to flood of Apr. 14, 1969, a long-time resident said that the flood of May 16, 1950 was the highest since 1881, with stage in either 1942 or 1943 being almost as high owing to large ice jam.

REMARKS.--Records fair. Flow regulated by Arrowwood and Jim Lakes, and Jamestown Reservoir (combined capacity, 246,000 acre-ft), the largest of which is Jamestown Reservoir, 85 miles upstream (see station 06469000). Records of chemical analyses and water temperatures for water year 1972 are published in Part 2 of this report.

REVISIONS.--WSP 1917: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	40	101	34	16	14	12	135	114	111	57	16	50
2	31	111	36	15	12	11	131	98	114	52	23	47
3	74	111	38	15	12	12	121	91	111	52	15	50
4	82	94	36	15	12	11	108	79	104	55	12	52
5	101	121	34	15	12	11	101	82	108	45	18	43
6	82	88	34	15	12	11	98	77	94	36	25	55
7	88	79	36	14	12	15	91	79	94	27	18	47
8	94	88	34	14	12	11	91	91	88	25	29	43
9	77	85	31	15	11	14	94	82	79	21	57	38
10	88	79	31	15	11	15	91	77	74	23	57	62
11	82	74	27	15	11	23	85	77	85	21	62	45
12	88	68	23	16	12	45	108	85	82	18	65	47
13	79	60	20	14	12	173	114	91	82	18	76	52
14	98	55	18	14	12	500	131	77	79	31	60	45
15	85	50	18	12	12	800	182	85	71	21	54	50
16	91	50	18	12	12	1,300	318	88	71	21	65	52
17	104	50	16	12	18	1,750	526	82	65	18	65	40
18	91	50	16	14	11	1,850	506	71	77	15	71	43
19	121	34	16	14	11	1,650	414	85	88	20	57	38
20	104	43	16	14	12	1,000	350	139	74	16	52	57
21	111	27	16	14	14	700	328	128	77	23	57	43
22	104	38	16	14	14	500	301	128	71	50	50	34
23	98	43	16	14	12	350	267	121	68	52	52	52
24	98	43	18	16	12	200	229	139	71	38	62	45
25	108	43	18	14	12	180	190	139	65	23	60	43
26	98	40	16	12	12	170	182	161	65	50	54	45
27	121	38	16	12	12	170	150	165	71	50	54	36
28	88	38	15	12	12	170	135	146	68	38	45	62
29	98	36	15	12	12	169	128	135	62	27	45	50
30	111	36	16	12	------	154	114	114	60	34	45	47
31	117	------	16	12	------	157	------	111	------	29	55	------
TOTAL	2,852	1,873	710	430	355	12,134	5,819	3,237	2,429	1,006	1,476	1,413
MEAN	92.0	62.4	22.9	13.9	12.2	391	194	104	81.0	32.5	47.6	47.1
MAX	121	121	38	16	18	1,850	526	165	114	57	76	62
MIN	31	27	15	12	11	11	85	71	60	15	12	34
AC-FT	5,660	3,720	1,410	853	704	24,070	11,540	6,420	4,820	2,000	2,930	2,800

CAL YR 1971 TOTAL 26,908.0 MEAN 73.7 MAX 491 MIN 5.5 AC-FT 53,370
WTR YR 1972 TOTAL 33,734.0 MEAN 92.2 MAX 1,850 MIN 11 AC-FT 66,910

06470833 Pilot drain at Oakes, N. Dak.

LOCATION.--Lat 46°07'30", long 98°05'49", in SW¼SE¼ sec.29, T.131 N., R.59 W., Dickey County, on left bank 1 mile south and 0.4 mile west of Oakes.

DRAINAGE AREA.--5.1 sq mi.

PERIOD OF RECORD.--October 1971 to current year.

GAGE.--Water-stage recorder.

EXTREMES.--Current year: Maximum discharge, 5.4 cfs Apr. 9, 10 (gage height, 2.04 ft); maximum gage height, 2.17 ft Sept. 10 (backwater from weeds); minimum discharge, 0.16 cfs Jan. 10 to Mar. 12; minimum gage height, 1.54 ft.

REMARKS.--Records good. Records of chemical analyses for water year 1972 are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.4	1.5	1.5	.32	.16	.16	2.1	3.8	4.2	3.4	2.8	3.8
2	1.4	1.5	1.3	.32	.16	.16	2.3	3.8	4.1	3.4	2.6	3.7
3	1.3	1.5	1.3	.32	.16	.16	2.5	3.8	4.0	3.2	2.6	3.5
4	1.3	1.7	1.5	.32	.16	.16	2.5	3.7	4.0	3.2	2.4	3.4
5	1.4	1.2	1.5	.32	.16	.16	2.5	3.7	3.9	3.2	2.4	3.5
6	1.4	1.2	1.5	.21	.16	.16	3.4	3.5	3.8	3.2	2.4	3.3
7	1.2	1.2	1.2	.21	.16	.16	4.5	3.5	3.8	3.2	2.4	3.2
8	1.3	1.2	1.2	.21	.16	.16	5.4	3.5	3.7	2.9	2.4	3.2
9	1.3	1.4	.98	.21	.16	.16	5.4	3.5	3.6	2.9	2.4	3.2
10	1.3	1.5	1.2	.16	.16	.16	5.1	3.5	3.6	2.9	2.4	3.0
11	1.3	1.5	1.2	.16	.16	.16	5.0	3.4	3.5	2.9	2.4	3.0
12	1.3	1.5	1.2	.16	.16	.16	5.0	3.4	3.4	2.4	2.4	3.0
13	1.3	1.3	1.1	.16	.16	.32	4.6	3.7	3.4	2.6	2.4	3.0
14	1.3	1.3	1.1	.16	.16	.58	4.6	3.8	3.3	2.2	2.5	2.8
15	1.3	1.3	1.1	.16	.16	.21	4.6	4.1	3.3	2.2	2.6	2.8
16	1.5	1.3	1.1	.16	.16	.58	4.4	4.1	3.4	2.2	2.6	2.8
17	2.0	1.3	1.1	.16	.16	.32	4.4	4.2	3.3	2.2	2.6	2.7
18	1.7	1.3	.73	.16	.16	.32	4.2	4.4	3.5	2.2	3.4	2.9
19	1.6	1.3	.73	.16	.16	.32	4.2	4.1	3.5	2.2	3.7	2.9
20	1.6	1.3	.89	.16	.16	.32	4.2	4.2	3.4	2.0	3.4	2.5
21	1.7	1.4	.73	.16	.16	.32	4.2	4.2	3.4	2.2	3.4	2.4
22	1.6	1.3	.73	.16	.16	.32	4.2	4.2	3.4	3.2	3.4	2.4
23	1.6	1.4	.73	.16	.16	.32	4.2	4.2	3.5	2.4	3.2	2.8
24	1.7	1.4	.73	.16	.16	.32	4.1	4.2	3.5	2.4	3.7	3.0
25	1.7	1.5	.58	.16	.16	.65	4.1	4.4	3.2	2.2	4.5	2.9
26	1.6	1.3	.58	.16	.16	.51	4.1	4.3	3.2	2.2	5.1	2.9
27	1.5	1.6	.44	.16	.16	.65	4.1	4.3	3.2	2.2	4.5	2.9
28	1.4	1.5	.44	.16	.16	.65	4.1	4.3	2.6	2.9	4.5	2.8
29	1.5	1.3	.32	.16	.16	1.2	4.1	4.3	3.4	3.0	4.2	2.8
30	1.5	1.5	.32	.16	------	1.5	3.8	4.3	3.4	3.0	4.2	2.6
31	1.5	------	.32	.16	------	1.5	------	4.2	------	2.9	4.1	------
TOTAL	45.5	41.5	29.35	5.96	4.64	12.83	121.9	122.6	105.5	83.2	97.6	89.7
MEAN	1.47	1.38	.95	.19	.16	.41	4.06	3.95	3.52	2.68	3.15	2.99
MAX	2.0	1.7	1.5	.32	.16	1.5	5.4	4.4	4.2	3.4	5.1	3.8
MIN	1.2	1.2	.32	.16	.16	.16	2.1	3.4	2.6	2.0	2.4	2.4
AC-FT	90	82	58	12	9.2	25	242	243	209	165	194	178

WTR YR 1972 TOTAL 760.28 MEAN 2.08 MAX 5.4 MIN .16 AC-FT 1,510

06471000 James River at Columbia, S. Dak.

LOCATION.--Lat 45°37'05", long 98°19'30", in NE¼NW¼ sec.29, T.125 N., R.62 W., Brown County, on left bank 10 ft downstream from highway bridge, 0.8 mile northwest of Columbia, 2.4 miles upstream from Chicago and North Western Transportation Co. bridge, 3.6 miles upstream from Elm River, and 9.4 miles downstream from Columbia Road Dam.

DRAINAGE AREA.--7,050 sq mi, approximately.

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

GAGE.--Water-stage recorder. Datum of gage is 1,275.01 ft above mean sea level. Prior to Oct. 5, 1957, nonrecording gage at same site and datum.

AVERAGE DISCHARGE.--27 years, 107 cfs (77,520 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 708 cfs Apr. 7 (gage height, 12.76 ft); maximum gage height, 13.82 ft Mar. 23 (backwater from Elm River); maximum reverse flow, 1,290 cfs Mar. 21 (backwater from Elm River).
Period of record: Maximum discharge, 5,420 cfs May 24, 1950 (gage height, 16.89 ft, from graph based on gage readings); maximum gage height, 17.09 ft Apr. 22, 1969; maximum daily reverse flow, 1,860 cfs Apr. 8, 1952 (backwater from Elm River).

REMARKS.--Records good except those for winter periods or periods of backwater from Elm River, which are poor. Flow regulated by Arrowwood and Jim Lakes, and Jamestown Reservoir (combined capacity, 246,000 acre-ft). Regulation by Jamestown Reservoir (capacity, 229,470 acre-ft). 168 miles upstream, since May 1953.

REVISIONS (WATER YEARS).--WRD S. Dak. 1970: 1962.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23	72	135	48		0	660	412	219	81	6.7	55
2	23	74	130	44		0	675	415	214	80	6.3	54
3	23	73	125	42		0	692	410	201	79	5.8	54
4	22	71	125	38		0	699	400	174	78	5.4	53
5	21	69	120	34		0	700	393	138	77	5.2	53
6	20	59	115	30		0	704	384	100	78	8.5	53
7	20	51	115	28		0	705	376	68	78	6.9	52
8	20	51	110	28		0	696	365	38	77	6.5	51
9	20	54	100	26		0	689	354	18	75	39	49
10	21	57	95	23		0	683	342	8.9	73	55	48
11	22	62	90	19		0	672	331	3.4	71	58	49
12	23	67	90	14		0	667	320	1.5	71	58	51
13	24	69	90	12		0	660	321	1.5	37	57	52
14	24	73	85	10		5.0	649	322	1.4	7.6	57	51
15	23	77	85	10		50	636	317	1.2	5.4	56	51
16	26	84	85	9.0		20	624	312	1.4	4.6	56	51
17	32	91	80	8.0		5.0	613	304	1.4	4.5	57	50
18	35	97	80	7.0		-90	604	297	1.3	4.5	57	51
19	33	99	80	6.0		-200	595	289	1.6	4.6	57	28
20	28	102	80	6.0		-450	580	281	35	4.5	56	5.2
21	26	106	80	5.0		-1,180	561	271	65	6.1	56	1.9
22	25	106	78	4.0		-550	545	263	77	6.3	57	1.4
23	26	114	75	3.0		85	528	255	82	7.3	58	1.3
24	25	123	70	2.0		350	510	248	84	4.8	57	1.3
25	24	124	65	1.0		450	485	240	85	4.8	56	1.3
26	23	127	65	.50		500	463	231	85	5.2	56	1.3
27	22	128	65	0		550	447	229	85	5.2	56	1.1
28	34	130	60	0		588	433	228	84	5.0	56	1.2
29	54	132	55	0		585	421	225	84	5.2	55	1.1
30	66	135	50	0	------	613	408	224	82	5.2	54	.95
31	67	------	50	0	------	640	------	223	------	6.1	56	------
TOTAL	875	2,677	2,728	457.50	0	1,971.0	18,004	9,562	2,041.6	1,051.9	1,331.3	974.05
MEAN	28.2	89.2	88.0	14.8	0	63.6	600	309	68.1	33.9	42.9	32.5
MAX	67	135	135	48	0	640	705	415	219	81	58	55
MIN	20	51	50	0	0	-1,180	408	223	1.2	4.5	5.2	.95
AC-FT	1,740	5,310	5,410	907	0	3,910	35,710	19,010	4,050	2,090	2,640	1,930

CAL YR 1971 TOTAL 19,004.72 MEAN 52.1 MAX 142 MIN 0 AC-FT 37,700
WTR YR 1972 TOTAL 41,693.35 MEAN 114 MAX 705 MIN -1,180 AC-FT 82,700

NOTE.--Backwater from Elm River Mar. 14-27.

06471200 Maple River at North Dakota-South Dakota State line

LOCATION.--Lat 45°56'20", long 98°27'08", in SW¼SE¼ sec.33, T.129 N., R.62 W., Dickey County, N. Dak., on left bank 0.4 mile upstream from State line, 7.8 miles northeast of Frederick, S. Dak., and 15.7 miles upstream from mouth.

DRAINAGE AREA.--750 sq mi, approximately, of which about 270 sq mi is probably noncontributing.

PERIOD OF RECORD.--June 1956 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,365 ft (from topographic map). Prior to June 14, 1962, non-recording gage at site 0.4 mile downstream at datum 0.94 ft lower.

AVERAGE DISCHARGE.--16 years, 19.9 cfs (14,420 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 2,200 cfs Mar. 18; maximum gage height, 11.44 ft Mar. 18 (backwater from ice); no flow for many days.
Period of record: Maximum discharge, 5,930 cfs Apr. 11, 1969 (gage height, 15.22 ft); maximum gage height, 16.05 ft Apr 11, 1969 (backwater from ice); no flow for long periods in each year.

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

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Stage-discharge relation affected by ice Dec. 19-24, Feb. 17 to Mar. 23;
shifting-control method used Mar. 24 to Apr. 2)

2.92	0	3.3	3.1	4.5	59
3.0	.14	3.4	4.9	5.0	114
3.1	.70	3.7	13	6.0	319
3.2	1.7	4.0	26		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1			0		0	.40	52	24	49	2.9	5.1	
2			0		0	.30	46	23	47	2.6	4.1	
3			0		0	.30	44	22	42	2.3	3.4	
4			0		0	.30	38	21	36	1.9	2.3	
5			0		0	.40	33	20	32	1.4	2.3	
6			0		0	.50	31	21	27	1.6	2.2	
7			0		0	.50	26	20	24	1.4	1.7	
8			0		0	.60	25	20	22	1.2	1.7	
9			0		0	.70	27	20	19	.87	.96	
10			0		0	.80	27	20	17	.63	.70	
11			0		0	1.0	26	21	15	1.2	.78	
12			0		0	2.5	25	24	14	4.1	.63	
13			0		0	4.0	26	31	13	1.6	.56	
14			0		0	5.0	26	33	11	1.8	.43	
15			0		0	7.0	27	34	10	2.1	.37	
16			0		0	50	30	34	8.8	1.9	.32	
17			0		.50	1,000	34	56	7.7	1.6	.32	
18			0		.60	2,000	41	63	7.2	1.1	.37	
19			.05		.70	1,700	41	55	7.0	.63	.32	
20			.10		.70	700	39	49	7.0	.70	.18	
21			.25		.60	400	39	40	6.5	.70	.18	
22			.30		.50	280	36	35	5.4	3.0	.14	
23			.15		.50	240	34	34	4.7	3.9	.09	
24			.05		.40	209	31	32	4.3	1.8	.07	
25			0		.40	163	26	31	4.1	1.6	.01	
26			0		.40	128	25	30	3.4	4.9	0	
27			0		.50	101	24	30	3.3	3.1	0	
28			0		.50	84	23	30	3.3	3.4	0	
29			0		.50	68	22	29	3.3	4.1	0	
30			0		------	60	21	35	3.1	5.6	0	
31		------	0		------	58	------	47	------	6.1	0	------
TOTAL	0	0	.90	0	6.80	7,265.30	945	984	457.1	71.73	29.23	0
MEAN	0	0	.029	0	.23	234	31.5	31.7	15.2	2.31	.94	0
MAX	0	0	.30	0	.70	2,000	52	63	49	6.1	5.1	0
MIN	0	0	0	0	0	.30	21	20	3.1	.63	0	0
AC-FT	0	0	1.8	0	13	14,410	1,870	1,950	907	142	58	0

CAL YR 1971 TOTAL 2,028.89 MEAN 5.56 MAX 120 MIN 0 AC-FT 4,020
WTR YR 1972 TOTAL 9,760.06 MEAN 26.7 MAX 2,000 MIN 0 AC-FT 19,360

PEAK DISCHARGE (BASE, 50 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
3-18	--	--	2,200	5-18	0400	4.57	67

06471500 Elm River at Westport, S. Dak.

LOCATION.--Lat 45°39'22", long 98°29'48", in SW¼NW¼ sec.12, T.125 N., R.64 W., Brown County, on right bank 12 ft downstream from highway bridge, 0.5 mile north of Westport, 0.7 mile upstream from Chicago, Milwaukee, St. Paul and Pacific Railroad bridge, 9.3 miles downstream from Willow Creek, and 30.4 miles upstream from mouth.

DRAINAGE AREA.--1,680 sq mi, approximately.

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

GAGE.--Water-stage recorder. Datum of gage is 1,309.3 ft above mean sea level. Prior to Aug. 6, 1951, and Apr. 8 to Sept. 9, 1952, nonrecording gage 12 ft upstream at same datum. Aug. 6, 1951, to Apr. 7, 1952, water-stage recorder at present site and datum.

AVERAGE DISCHARGE.--27 years, 48.6 cfs (35,210 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 4,000 cfs Mar. 19; maximum gage height, 15.86 ft Mar. 19 (backwater from ice); minimum daily discharge, 0.20 cfs Nov. 8.
Period of record: Maximum discharge, 12,600 cfs Apr. 10, 1969 (gage height, 22.11 ft); no flow for many days in most years prior to 1960.

REMARKS.--Records good except those for winter periods, which are poor. Flow regulated for Aberdeen municipal water supply by Elm Lake and other small reservoirs upstream (combined capacity, about 16,000 acre-ft).

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Stage-discharge relation affected by ice Feb. 2-12, Mar. 11-23, 28, 29)

4.0	0.10	4.4	5.8	4.8	31	6.0	215
4.1	.70	4.5	9.7	5.1	62	7.0	451
4.2	1.6	4.6	15	5.5	120	8.0	748
4.3	3.2						

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.2	.84	12	3.6	2.7	6.2	161	57	76	5.2	16	6.9
2	3.8	.70	12	3.6	10	5.8	151	66	79	4.1	12	7.3
3	3.6	.63	12	3.6	12	5.8	137	57	75	3.0	9.7	7.3
4	3.0	.49	12	3.6	12	6.2	120	67	68	2.7	8.5	8.1
5	2.0	.43	11	3.8	12	5.5	112	88	62	2.5	7.7	7.7
6	1.3	.25	11	3.8	11	5.8	106	100	56	3.0	11	6.5
7	1.1	.25	12	3.8	11	5.8	98	103	48	3.2	6.9	6.2
8	1.1	.20	12	3.6	11	5.5	88	118	45	3.0	5.5	6.5
9	.92	.35	11	3.2	10	5.2	82	120	40	2.8	4.3	6.9
10	.70	8.4	11	2.8	10	5.2	82	115	36	2.3	3.4	6.9
11	.56	10	5.2	2.7	10	5.5	81	110	31	1.9	3.0	6.2
12	.56	9.3	4.6	2.8	11	5.5	83	110	29	2.8	2.3	6.9
13	.56	8.9	4.3	3.0	12	6.0	82	118	28	3.0	1.9	6.5
14	.49	9.3	4.3	2.7	12	6.5	78	135	23	3.4	1.7	6.2
15	.43	9.3	4.3	2.0	10	30	78	161	20	4.6	1.5	5.8
16	.77	11	4.1	2.0	10	300	78	188	17	4.3	1.4	6.2
17	1.4	9.7	4.1	2.5	12	600	78	194	16	3.8	1.5	5.8
18	1.5	10	4.1	2.8	9.7	1,000	78	194	16	3.4	1.4	6.2
19	1.0	10	4.1	2.7	9.7	3,500	81	190	20	2.5	1.4	6.5
20	.77	10	4.1	2.5	10	3,000	83	161	16	2.5	1.2	6.2
21	.49	9.7	3.8	2.5	10	1,800	82	132	14	4.3	1.3	6.2
22	.49	11	3.8	2.5	8.1	1,000	78	118	11	4.9	1.6	6.9
23	.37	11	3.8	2.5	6.5	800	71	112	9.7	6.5	1.6	8.1
24	.37	11	3.6	3.4	5.5	659	67	100	8.9	3.8	1.6	8.1
25	.37	11	3.6	3.2	5.2	491	62	95	8.5	3.0	1.5	7.7
26	.43	11	3.6	2.7	5.2	398	54	89	7.7	11	1.4	7.7
27	.56	12	3.6	2.3	5.2	339	50	85	7.3	44	1.5	8.1
28	.37	13	3.6	2.3	5.2	260	46	81	6.5	39	1.5	8.1
29	.31	13	3.6	2.3	5.2	225	43	76	5.5	36	1.5	7.7
30	.84	13	3.6	2.3	------	207	42	74	4.9	27	1.5	7.3
31	.92	------	3.6	2.3	------	180	------	71	------	21	2.2	------
TOTAL	34.28	225.74	199.4	89.4	264.2	14,869.5	2,532	3,485	885.0	264.5	119.5	208.7
MEAN	1.11	7.52	6.43	2.88	9.11	480	84.4	112	29.5	8.53	3.85	6.96
MAX	3.8	13	12	3.8	12	3,500	161	194	79	44	16	8.1
MIN	.31	.20	3.6	2.0	2.7	5.2	42	57	4.9	1.9	1.2	5.8
AC-FT	68	448	396	177	524	29,490	5,020	6,910	1,760	525	237	414

CAL YR 1971 TOTAL 5,759.82 MEAN 15.8 MAX 233 MIN .20 AC-FT 11,420
WTR YR 1972 TOTAL 23,177.22 MEAN 63.3 MAX 3,500 MIN .20 AC-FT 45,970

PEAK DISCHARGE (BASE, 100 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
3-19	--	--	4,000	5-16	1800	5.97	209

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 usually made in time 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 prepared 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.

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 during water year 1972

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Annual maximum		
					Date	Gage height (feet)	Discharge (cfs)
		Red River of the North basin					
05051800	Grass Lake tributary near Lidgerwood, N. Dak.	Lat 46°04'45", long 97°11'40", at west line sec.15, T.130 N., R.52 W., Richland County, at culvert on county highway just off State Highway 11, 2 miles west of Lidgerwood.	0.61	1958-72	5- -72	3.92	34
05051900	Wild Rice River tributary near Mantador, N. Dak.	Lat 46°10'15", long 97°04'15", at east line sec.9, T.131 N., R.51 W., Richland County, at bridge on county highway 4.5 miles west of Mantador.	15.7	1958-72	3-15-72	[a]3.60	30
05052000	Wild Rice River near Mantador, N. Dak.	Lat 46°10'21", long 97°00'37", on south half of east line of sec.12, T.131 N., R.51 W., Richland County, at county highway bridge 1.5 miles west of Mantador.	1,360	[b]1944-50 1952-72	3- -72	7.10	345
05052500	Antelope Creek at Dwight, N. Dak.	Lat 46°18'52", long 96°44'13", SE¼ sec. 20, T.133 N., R.48 W., Richland County, at bridge on former U.S. Highway 81 about 0.5 mile north of Dwight.	294	[b]1944-49 1950-72	3-18-72	[a]13.90	1,650
05055200	Big Coulee near Maddock, N. Dak.	Lat 47°57'30", long 99°34'53", on north line sec.11, T.151 N., R.70 W., Benson County, at culvert on county highway, 3.5 miles southwest of Maddock.	140	[b]1957-67 1969-72	3- -72	9.30	292
05056020	Mauvais Coulee tributary near Bisbee, N. Dak.	Lat 48°31'00", long 99°23'10", in SE¼SE¼ sec.11, T.158 N., R.68 W., Towner County, at bridge on county highway, 7.5 miles south of Bisbee.	[c]8.92	1955-72	72	3.54	190
05056040	Mauvais Coulee tributary No.2 near Cando, N. Dak.	Lat 48°29'10", long 99°24'20", in SW¼SW¼ sec.23, T.158 N., R.68 W., Towner County, at culvert on State Highway 17, 9 miles west of Cando.	[c]17.1	1955-72	3- -72	3.04	130
05056060	Mauvais Coulee tributary No.3 near Cando, N. Dak.	Lat 48°27'20", long 99°12"40", in NW¼NW¼ sec.5, T.157 N., R.66 W., Towner County at bridge on U.S. Highway 281, 2.2 miles south of Cando.	[c]129	1955-72	3- -72	[a]5.71	200
05056080	Mauvais Coulee tributary No.4 near Bisbee, N. Dak.	Lat 48°29'10", long 99°26'50", in SW¼SW¼ sec.21, T.158 N., R.68 W., Towner County, at culvert on State Highway 17, 10 miles southwest of Bisbee.	[c]59.6	1955-72	72	4.10	200

a Backwater from ice or vegetation.
b Operated as a continuous-record station.
c Revised.

Annual maximum discharge at crest-stage partial-record stations during water year 1972--Continued

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Annual maximum		
					Date	Gage height (feet)	Discharge (cfs)
		Red River of the North basin--Continued					
05056300	Little Coulee at Leeds, N. Dak.	Lat 48°17'15", long 99°26'55", in center of sec.31, T.156 N., R.68 W., Benson County, at culverts on U.S. Highway 2, 0.2 mile west of Leeds.	280	[a]1956-67 1969-72	3- -72	7.0	[b]200
05056900	Sheyenne River tributary near Cooperstown, N. Dak.	Lat 47°27'25", long 98°00'25", at sec. corner 13-14-23-24, T.146 N., R.58 W., Griggs County, on county highway, 1.4 miles north of State Highway 7, and 5 miles east of Cooperstown.	15.2	1959-72	5-27-72	5.35	360
05056950	Sheyenne River tributary No. 2 near Cooperstown, N. Dak.	Lat 47°26'20", long 98°01'35", on east line sec.27, T.146 N., R.58 W., Griggs County, at culvert on county highway 0.1 mile south of State Highway 7, and 4 miles east of Cooperstown.	.08	1959-72	72	3.87	2.7
05059800	Swan Creek near Absaraka, N. Dak.	Lat 46°58'30", long 97°21'30", on north line sec.3, T.140 N., R.53 W., Cass County, at bridge on county highway 1.8 miles east of Absaraka.	32.9	1955-72	3-15-72	3.42	73
05059850	Swan Creek tributary near Ayr, N. Dak.	Lat 46°58'30", long 97°30'00", in NE¼ sec.4, T.140 N., R.54 W., Cass County, at culvert on county highway, 4.5 miles south of Ayr.	4.24	1955-72	3-14-72	[b]3.48	22
05059900	Swan Creek near Casselton, N. Dak.	Lat 46°55'00", long 97°15'30", in NW¼ sec.28, T.140 N., R.52 W., Cass County, at bridge on county highway, 2.6 miles northwest of Casselton.	56.6	1955-72	3- -72	6.95	390
05059950	Swan Creek tributary near Casselton, N. Dak.	Lat 46°53'10", long 97°12'40", near center sec.2, T.139 N., R.52 W., Cass County, at culverts on State Highway 18, 1 mile south of Casselton.	14.1	1955-72	3- -72	[b]5.49	50
05062200	Elm River near Kelso, N. Dak.	Lat 47°17'30", long 97°06'50", on west line sec.14, T.144 N., R.51 W., Traill County, on downstream side of county highway bridge, 5 miles southwest of Kelso, and 14 miles upstream from North Branch.	193	[a]1955-63 1964-72	4-14-72	10.60	635
05065700	Middle Branch Goose River near Finley, N. Dak.	Lat 47°33'25", long 97°45'00", in SE¼SE¼ sec.11, T.147 N., R.56 W., Steele County, at bridge on county highway, 4.5 miles northeast of Finley.	49.0	1965-72	5-26-72	8.48	950
05065800	Middle Branch Goose River tributary near Finley, N. Dak.	Lat 47°28'05", long 97°46'20", NW¼NW¼ sec.14, T.146 N., R.56 W., Steele County, on downstream left wingwall of bridge on county highway, 4.5 miles southeast of Finley.	26.3	1965-72	5-26-72	7.10	3,200
05082600	English Coulee tributary near Grand Forks, N. Dak.	Lat 47°55'05", long 97°10'40", in SE¼SE¼ sec.4, T.151 N., R.51 W., Grand Forks County, at bridge on county highway at Powell, 7 miles west of Grand Forks.	4.68	1955-72	4- -72	4.22	45
05082680	Saltwater Coulee tributary near Emerado, N. Dak.	Lat 47°53'00", long 97°21'55", on west line sec.19, T.151 N., R.52 W., Grand Forks County, at bridge on county highway, 2.5 miles south of Emerado.	22.0	1955-72	4- -72	5.54	240
05082700	Saltwater Coulee near Emerado, N. Dak.	Lat 47°55'55", long 97°15'40", in NW¼NW¼ sec.1, T.151 N., R.52 W., Grand Forks County, at bridge on county highway 0.1 mile south of U.S. Highway 2, and 5.5 miles east of Emerado.	110	1955-72	4- -72	6.57	530
05082900	Freshwater Coulee near Emerado, N. Dak.	Lat 47°56'00", long 97°14'00", in SW¼ sec.31, T.152 N., R.51 W., Grand Forks County, at bridge on U.S. Highway 2, 6.5 miles east of Emerado.	31.0	1955-72	3-16-72	[b]5.50	350

a Operated as a continuous-record station.
b Backwater from ice or vegetation.

Annual maximum discharge at crest-stage partial-record stations during water year 1972--Continued

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Annual maximum		
					Date	Gage height (feet)	Discharge (cfs)
		Red River of the North basin--Continued					
05083000	Turtle River at Manvel, N. Dak.	Lat 48°04'43", long 97°11'03", in SE¼ sec.10, T.153 N., R.51 W., Grand Forks County, at bridge on State Highway 33, 0.3 mile west of Manvel.	613	[a]1946-70 1971-72	4-11-72 3-19-72	14.38 [b]16.75	1,200 2,000
05089200	North Branch Park River at Gardar, N. Dak.	Lat 48°35'30", long 97°52'50", at west line sec.16, T.159 N., R.56 W., Pembina County, at bridge on county highway at northwest corner of Gardar.	34.7	1955-72	3-18-72	[b]3.15	175
05089700	Cart Creek at Crystal, N. Dak.	Lat 48°35'20", long 97°39'55", on east line sec.13, T.159 N., R.55 W., Pembina County, at bridge on county highway, 0.6 mile south of post office at Crystal.	74.0	1955-72	3-18-72	[b]8.40	600
05089800	Cart Creek tributary near Crystal, N. Dak.	Lat 48°34'35", long 97°41'15", on east line sec.23, T.159 N., R.55 W., Pembina County, at culvert on county highway, 1.6 miles southwest of Crystal.	3.77	1955-72	3- -72	4.03	52
05113450	Long Creek tributary No. 2 near Crosby, N. Dak.	Lat 48°57'29", long 103°18'57", on east line sec.7, T.163 N., R.97 W., Divide County, at culverts on county highway, 3.4 miles north of junction of State Highway 5 and 42 at Crosby.	6.69	1960-72	3-15-72	5.82	137
05113520	Long Creek tributary near Crosby, N. Dak.	Lat 48°50'11", long 103°19'19", on north line sec.30, T.162 N., R.97 W., Divide County, 0.5 mile west of State Highway 42, and 5 miles south of Crosby.	.35	1960-72	3-15-72	6.84	18
05116100	Souris River tributary near Burlington, N. Dak.	Lat 48°18'04", long 101°25'13", in SW¼ sec.25, T.156 N., R.83 W., Ward County, at culvert on county highway, 1.8 miles north of Burlington.	.13	1959-72	7- -72	8.50	30
05116200	Des Lacs River tributary near Donnybrook, N. Dak.	Lat 48°29'35", long 101°51'20", in NE¼ SW¼ sec.24, T.158 N., R.87 W., Ward County, at culvert on Minneapolis, St. Paul, Sault Ste. Marie Railroad, 1.8 miles southeast of Donnybrook.	3.82	1956-72	5-21-72	7.70	210
05116550	Fuller Coulee at Foxholm, N. Dak.	Lat 48°21'45", long 101°34'00", in NE¼SW¼ sec.2, T.156 N., R.85 W., Ward County, at culvert on U.S. Highway 52, 0.4 mile southeast of Foxholm.	12.8	1955-72	72	3.81	280
05117200	Souris River tributary No. 2 near Burlington, N. Dak.	Lat 48°15'17", long 101°22'48", in NW¼ NW¼ sec.17, T.155 N., R.83 W., Ward County, at culvert on county highway, 2.6 miles southeast of Burlington.	2.04	1960-72	3- -72	[b]4.26	30
05122500	Willow Creek at Dunseith, N. Dak.	Lat 48°49'12", long 100°03'45", in NE¼NW¼ sec.35, T.162 N., R.73 W., Rolette County, at bridge on county highway, 0.4 mile northwest of railway station in Dunseith.	142	[a]1953-70 1972	72	13.52	265
05123300	Oak Creek tributary near Bottineau, N. Dak.	Lat 48°49'14", long 100°24'38", 0.4 mile west of sec. corner 28, 29, 32, 33, T.162 N., R.75 W., Bottineau County, on State Highway 5, 1.5 miles east of Bottineau.	3.1	1955, 1959-72	72	9.92	100
05123350	Oak Creek tributary No. 5 near Bottineau, N. Dak.	Lat 48°49'14", long 100°20'42", on south line sec.26, T.162 N., R.75 W., Bottineau County, 1 mile north of State Highway 5, and 4.5 miles east of Bottineau.	.73	1959-72	6- -72	2.66	19
05123520	Egg Creek near Glenburn, N. Dak.	Lat 48°29'15", long 101°24'15", in SW¼ SW¼ sec.21, T.158 N., R.83 W., Renville County, at culvert on county highway, 8.5 miles west of Glenburn.	20.9	1955-72	3- -72	6.53	300

a Operated as a continuous-record station.
b Backwater from ice or vegetation.

Annual maximum discharge at crest-stage partial-record stations during water year 1972--Continued

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Annual maximum		
					Date	Gage height (feet)	Discharge (cfs)
		Red River of the North basin--Continued					
05123540	Egg Creek near Ruthville, N. Dak.	Lat 48°26'25", long 101°17'55", in SW¼ NW¼ sec.8, T.157 N., R.82 W., Ward County, at bridge on U.S. Highway 83, 4.7 miles north of Ruthville.	108.4	1955-72	3-16-72	[a]4.32	200
05123560	Egg Creek tributary near Deering, N. Dak.	Lat 48°22'15", long 101°09'10", in SE¼ sec.32, T.157 N., R.81 W., Ward County, at culvert on county highway, 5 miles southwest of Deering.	4.25	1955-72	3-15-72	3.06	7.2
05123580	Egg Creek near Deering, N. Dak.	Lat 48°20'35", long 101°07'20", in SE¼ SE¼ sec.7, T.156 N., R.81 W., Ward County, at culvert on county highway, 5 miles southwest of Deering.	132.0	1955-72	3-15-72	4.94	103
		Painted Woods Creek basin (upper)					
06329700	Painted Woods Creek tributary near Williston, N. Dak.	Lat 48°12'20", long 103°53'00", in SE¼ NE¼ sec.35, T.155 N., R.103 W., Williams County, at culvert on county highway 13 miles west of Williston.	.35	1955-72	72	7.11	110
06329800	Painted Woods Creek near Williston, N. Dak.	Lat 48°11'55", long 103°52'05", in NW¼ NE¼ sec.1, T.154 N., R.103 W., at bridge on county highway 12 miles west of Williston.	17.4	1955-72	3-15-72	6.4	1,000
06329900	Painted Woods Creek tributary No. 2 near Williston, N. Dak.	Lat 48°13'55", long 103°49'10", in SW¼ SW¼ sec.21, T.155 N., R.102 W., Williams County, at culvert on county highway, 10.5 miles northwest of Williston.	8.30	1955-72	3-15-72	7.96	276
		Sand Creek basin					
06330100	Sand Creek at Williston, N. Dak.	Lat 48°08'50", long 103°39'10", in NW¼ SE¼ sec.22, T.154 N., R.101 W., Williams County, at bridge on U.S. Highways 2 and 85, 1.5 miles west of post office at Williston.	38.2	1955-72	3-16-72	7.76	1,140
		White Earth River basin					
06331900	White Earth River tributary near Tioga, N. Dak.	Lat 48°21'20", long 102°54'20", on north line sec.9, T.156 N., R.95 W., Williams County, at culvert on county highway, 1 mile north of U.S. Highway 2, and 2 miles southeast of Tioga.	9.55	1960-72	3-14-72	6.52	280
06332150	White Earth River tributary near White Earth, N. Dak.	Lat 48°19'55", long 102°45'10", in south ½ sec.15, T.156 N., R.94 W., Mountrail County, at culvert on U.S. Highway 2, 3 miles south of White Earth.	--	1960-72	72	5.48	12
		Little Missouri River basin					
06335700	Deep Creek near Bowman, N. Dak.	Lat 46°13'55", long 103°22'05", in NW¼ NW¼ sec.30, T.132 N., R.101 W., Bowman County, at culvert on U.S. Highway 85, 3.8 miles north of Bowman.	.20	1955-72	72	5.11	20
06336100	Sheep Creek tributary near Medora, N. Dak.	Lat 46°54'00", long 103°26'53", in SE¼ NW¼SE¼ sec.29, T.140 N., R.101 W., Billings County, at culvert on Interstate Highway 94, 4.0 miles east of Medora.	.29	1955-72	72	8.12	8
06336200	Sheep Creek tributary No. 2 near Medora, N. Dak.	Lat 46°55'32", long 103°28'23", near center of sec.19, T.140 N., R.101 W., Billings County, at culvert on Theodore Roosevelt National Park highway, 3 miles east of Medora.	.42	1955-72	72	3.53	66

Annual maximum discharge at crest-stage partial-record stations during water year 1972--Continued

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Annual maximum		
					Date	Gage height (feet)	Discharge (cfs)
		Little Missouri River basin--Continued					
06336300	Little Missouri River tributary near Medora, N. Dak.	Lat 46°57'05", long 103°30'20", in SE¼ sec.11, T.140 N., R.102 W., Billings County, at culvert on Theodore Roosevelt National Park highway, 3 miles north of Medora.	0.32	1955-72	3-11-72	[a]4.01	1
06336400	Jules Creek near Medora, N. Dak.	Lat 46°59'39", long 103°29'13", in NW¼ sec.33, T.141 N., R.101 W., Billings County, at bridge on Theodore Roosevelt National Park highway, 6 miles north of Medora.	3.80	1955-72	72	7.75	460
06336980	Little Missouri River tributary near Watford City, N. Dak.	Lat 47°36'07", long 103°16'41", in NW¼ NE¼ sec.34, T.148 N., R.99 W., McKenzie County, at bridge on Theodore Roosevelt Park highway, 1.8 miles west of U.S. Highway 85 and 14 miles south of Watford City.	2.02	1960-72	72	4.44	170
06337100	Spring Creek near Watford City, N. Dak.	Lat 47°41'18", long 103°15'53", in NE¼ NE¼ sec.31, T.149 N., R.98 W., McKenzie County, at bridge on county highway, 1 mile east of U.S. Highway 85 and 8 miles south of Watford City.	22.7	1960-72	3-12-72	[a]8.18	250
		Douglas Creek basin					
06337600	East Branch Douglas Creek tributary near Garrison, N. Dak.	Lat 47°38'37", long 101°31'09", in SW¼ NE¼NW¼ sec.16, T.148 N., R.85 W., McLean County, at culvert on State Highway 37, 5 miles west of Garrison.	1.39	1957, 1959-72	72	6.02	33
		Snake Creek basin					
06337900	Snake Creek tributary near Garrison, N. Dak.	Lat 47°37'55", long 101°21'00", on south line sec.14, T.148 N., R.84 W., McLean County, at culvert on county highway, 1 mile south of State Highway 37 and 3 miles southeast of Garrison.	1.22	1959-72	72	4.53	53
		Knife River basin					
06340300	Otter Creek near Hannover, N. Dak.	Lat 47°06'40", long 101°35'55", in NE¼ NE¼ sec.20, T.142 N., R.86 W., Oliver County, on downstream left wingwall of county highway bridge, 8 miles west of Hannover.	42.9	1965-72	3-11-72	7.23	615
		Square Butte Creek basin					
06342050	Square Butte Creek at Center, N. Dak.	Lat 47°06'40", long 101°17'55", at sec. corner 14, 15, 22, 23, T.142 N., R.84 W., Oliver County, at bridge on State Highway 25, in Center.	56.8	1956-72	3-12-72	5.58	1,000
06342150	Square Butte Creek tributary near Center, N. Dak.	Lat 47°06'20", long 101°15'30", on south line sec.13, T.142 N., R.84 W., Oliver County, at culvert on State Highway 25, 1.7 miles east of Center.	.19	1955-72	3-11-72	[a]4.7	17
06342250	Square Butte Creek tributary No. 3 near Center, N. Dak.	Lat 47°06'20", long 101°10'35", in SE¼ sec.15, T.142 N., R.83 W., Oliver County, at culvert on State Highway 25, 6 miles east of Center.	1.68	1955-72	3- -72	5.02	67
		Burnt Creek basin					
06342300	Burnt Creek tributary near Baldwin, N. Dak.	Lat 47°01'25", long 100°47'30", 0.2 mile south of sec. corner 14, 15, 22, 23, T.141 N., R.80 W., Burleigh County, at culvert on U.S. Highway 83, 2 miles west of Baldwin.	2.98	1956-72	3-13-72	8.04	270

a Backwater from ice or vegetation.

Annual maximum discharge at crest-stage partial-record stations during water year 1972--Continued

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Annual maximum		
					Date	Gage height (feet)	Discharge (cfs)
		Burnt Creek basin--Continued					
06342350	Burnt Creek tributary No. 2 near Baldwin, N. Dak.	Lat 46°59'05", long 100°47'25", in SW¼SW¼ sec.35, T.141 N., R.80 W., Burleigh County, at culvert on U.S. Highway 83, 3.5 miles southwest of Baldwin.	2.12	1956-72	3-13-72	6.4	91
		Heart River basin					
06343000	Heart River near South Heart, N. Dak.	Lat 46°51'50", long 102°57'15", in SW¼ sec.8, T.139 N., R.97 W., Stark County, 2 miles east of South Heart.	315	[a]1947-70 1972	3- -72	21.65	5,200
06343200	Heart River tributary near South Heart, N. Dak.	Lat 46°52'35", long 102°55'10", in SE¼ sec.4, T.139 N., R.97 W., Stark County, at culvert on U.S. Highway 10, 3.5 miles northwest of South Heart.	.13	1955-72	72	9.73	13
06344200	Heart River tributary near Dickinson, N. Dak.	Lat 46°50'21", long 102°47'22", in NW¼ SW¼ sec.22, T.139 N., R.96 W., Stark County, at culverts on State Highway 22, 3 miles south of Dickinson.	1.72	1955-72	3-11-72	[b]4.69	30
06345100	Antelope Creek near Dickinson, N. Dak.	Lat 46°43'15", long 102°47'25", in NW¼ SW¼ sec.34, T.138 N., R.96 W., Stark County, at bridge on State Highway 22, 11 miles south of Dickinson.	69.2	1955-72	3-11-72	10.06	3,000
06345200	Antelope Creek tributary near New England, N. Dak.	Lat 46°40'05", long 102°47'25", in SW¼ NW¼ sec.22, T.137 N., R.96 W., Stark County, at culvert on State Highway 22, 9.5 miles northwest of New England.	13.0	1955-72	72	3.85	168
06345300	Antelope Creek tributary (site No. 2) near New England, N. Dak.	Lat 46°41'20", long 102°47'25", in SW¼ SW¼ sec.10, T.137 N., R.96 W., Stark County, at culvert on State Highway 22, 11 miles northwest of New England.	22.4	1955-72	3-11-72	5.39	700
06345700	Government Creek near Richardton, N. Dak.	Lat 46°48'15", long 102°18'35", in NE¼ NE¼ sec.5, T.138 N., R.92 W., Stark County, at bridge on county highway, 5.4 miles south of Richardton.	33.4	1950, 1955-72	6-18-72	13.70	3,480
06347200	Hailstone Creek near Blue Grass, N. Dak.	Lat 46°55'20", long 101°38'15", in SW¼ SW¼ sec.23, T.140 N., R.87 W., Morton County, on right wingwall of county highway bridge 3 miles southwest of Blue Grass.	38.7	1965-72	3-11-72	[b]10.7	500
06347500	Big Muddy Creek near Almont, N. Dak.	Lat 46°41'30", long 101°28'10", in SW¼ sec.7, T.137 N., R.85 W., Morton County, 3 miles southeast of Almont.	456	[a]1946-70 1971-72	3-16-71 3-13-72	[b]13.20 [b]21.10	600 2,500
		Apple Creek basin					
06349100	Dead Buffalo Lake tributary near Steele, N. Dak.	Lat 46°53'03", long 99°49'34", on east line sec.1, T.139 N., R.73 W., Kidder County, at culverts on county highway 1.3 miles north of U.S. Highway 10 and 4.5 miles northeast of Steele.	5.92	1960-72	3-31-72	2.87	16
06349200	West Branch Long Lake Creek near Hazelton, N. Dak.	Lat 46°29'10", long 100°09'20", on south line sec.19, T.135 N., R.75 W., Emmons County, at culverts on State Highway 34, 5.9 miles east of Hazelton.	16.5	1955-72	3-13-72	6.37	150
		Cannonball River basin					
06351650	Middle Fork Cedar Creek near Buffalo Springs, N. Dak.	Lat 46°15'55", long 103°13'30", in SW¼ SW¼ sec.8, T.132 N., R.100 W., Bowman County, on downstream right corner of bridge on county highway, 6.3 miles north of Buffalo Springs.	32.9	1965-72	3-11-72	7.25	229

a Operated as a continuous-record station.
b Backwater from ice or vegetation.

Annual maximum discharge at crest-stage partial-record stations during water year 1972--Continued

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Annual maximum		
					Date	Gage height (feet)	Discharge (cfs)
		Cannonball River basin--Continued					
06353600	Louise Creek tributary near Brisbane, N. Dak.	Lat 46°22'25", long 101°29'20", in SW¼ SW¼SW¼ sec.34, T.134 N., R.86 W., Grant County, at culvert on county highway 2 miles north of Brisbane.	.29	1955-72	5- -72	3.31	5.3
06353700	Louise Creek tributary near Lark, N. Dak.	Lat 46°26'30", long 101°25'00", at center of NW¼ sec.7, T.134 N., R.85 W., Grant County, at culvert on State Highway 21, 1.3 miles southwest of Lark.	.76	1956-72	5- -72	2.73	14
06353800	Louise Creek tributary No. 2 near Lark, N. Dak.	Lat 46°26'35", long 101°19'55", on south line sec.2, T.134 N., R.85 W., Grant County, at culvert on State Highway 21, 3.4 miles east of Lark.	7.70	1956-72	5- -72	2.99	350
06353900	Louise Creek above Flasher, N. Dak.	Lat 46°27'15", long 101°14'55", in SW¼ NE¼ sec.4, T.134 N., R.84 W., Grant County, at bridge on Burlington Northern Railway, 0.7 mile west of Flasher.	110	1955-72	3- -72	9.0	650
		Beaver Creek basin					
06354700	Spring Creek near Linton, N. Dak.	Lat 46°18'40", long 100°13'50", in NE¼ NE¼ sec.28, T.133 N., R.76 W., Emmons County, at bridge on county highway 3 miles north of Linton.	22.9	1955-72	3- -72	7.60	500
06354750	Sand Creek tributary near Hazelton, N. Dak.	Lat 46°25'50", long 100°17'50", in SE¼ SE¼ sec.12, T.134 N., R.77 W., Emmons County, at culvert on county highway 1.1 miles west of U.S. Highway 83 and 3.5 miles south of Hazelton.	2.96	1960-72	3- -72	5.13	30
06354800	Sand Creek near Temvik, N. Dak.	Lat 46°22'20", long 100°20'40", on north line sec.3, T.133 N., R.77 W., Emmons County, at bridge on county highway, 4.2 miles west of Temvik.	23.3	1955-72	3- -72	3.00	1,000
		Grand River basin					
06354885	North Fork Grand River tributary near Bowman, N. Dak.	Lat 45°59'20", long 103°28'55", on north line sec.19, T.129 N., R.102 W., Bowman County, on downstream wingwall of county highway bridge 14 miles south of Bowman.	36.7	1965-72	72	--	b
06354900	Spring Creek near Bowman, N. Dak.	Lat 46°07'30", long 103°24'35", in NW¼ SW¼ sec.35, T.131 N., R.102 W., Bowman County, at bridge on U.S. Highway 85, 4 miles south of Bowman.	51.2	1955-72	3-11-72	8.50	1,200
06354950	Spring Creek tributary near Bowman, N. Dak.	Lat 46°08'55", long 103°24'35", in SW¼ SW¼ sec.23, T.131 N., R.102 W., Bowman County, at bridge on U.S. Highway 85, 2.3 miles south of Bowman.	11.4	1955-72	3-12-72	[a]5.72	69
06354985	Alkali Creek near Bowman, N. Dak.	Lat 46°00'00", long 103°22'05", on west line sec.18, T.129 N., R.101 W., Bowman County, on right bank on downstream side of county highway bridge 12 miles south of Bowman.	58.1	1965-72	72	--	b
06355200	Buffalo Creek tributary near Buffalo Springs, N. Dak.	Lat 46°10'30", long 103°16'35", in NE¼ NW¼ sec.14, T.131 N., R.101 W., Bowman County, at culverts on U.S. Highway 12, 2 miles west of Buffalo Springs.	3.39	1955-72	3-11-72	[a]3.4	60
		James River basin					
06467650	James River tributary near Manfred, N. Dak.	Lat 47°38'50", long 99°54'20", in SW¼ sec.7, T.148 N., R.72 W., Wells County, at bridge on county highway, 8 miles southwest of Manfred.	90.2	1955-72	3- -72	3.98	64

a Backwater from ice or vegetation.
b Not determined.

Annual maximum discharge at crest-stage partial-record stations during water year 1972--Continued

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Annual maximum		
					Date	Gage height (feet)	Discharge (cfs)
		James River basin--Continued					
06467800	James River tributary No. 3 near Manfred, N. Dak.	Lat 48°38'40", long 99°45'30", in NE¼NE¼ sec.18, T.148 N., R.71 W., Wells County, at culvert on U.S. Highway 52, 3.5 miles south of Manfred.	23.5	1955-72	3- -72	[a]2.60	13
06468000	James River at New Rockford, N. Dak.	Lat 47°41'05", long 99°07'30", on east line sec.32, T.149 N., R.66 W., Eddy County, at bridge on U.S. Highway 281 at New Rockford.	714	[a]1951-69 1970-72	72	--	b
06469600	Minneapolis Flats Creek tributary near Eldridge, N. Dak.	Lat 46°53'25", long 98°55'30", on west line sec.5, T.139 N., R.65 W., Stutsman County, at culverts on county highway, 3.5 miles west of Eldridge.	9.91	1955-72	3-13-72	2.77	31
06470200	Beaver Creek tributary near Eldridge, N. Dak.	Lat 46°52'15", long 98°55'30", on east line sec.7, T.139 N., R.65 W., Stutsman County, at culvert on county highway 4 miles southwest of Eldridge.	.19	1955-72	72	1.91	4
06470300	Beaver Creek near Sydney, N. Dak.	Lat 46°45'00", long 98°47'50", in SW¼SW¼ sec.20, T.138 N., R.64 W., Stutsman County, at bridge on county highway 2 miles northwest of Sydney.	224	1955-72	3- -72	--	400
06470400	Buffalo Creek tributary near Sydney, N. Dak.	Lat 46°42'40", long 98°50'20", in SW¼NW¼ sec.1, T.137 N., R.65 W., Stutsman County, at bridge on county highway 3.5 miles southwest of Sydney.	23.7	1955-72	3- -72	2.99	80

a Operated as a continuous-record station.
b Not determined.

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 (*); measurements of peak flow by a dagger (†).

Discharge measurements made at miscellaneous sites during water year 1972

Stream	Tributary to	Location	Drainage area (sq mi)	Measured previously (water years)	Measurements	
					Date	Discharge (cfs)
		Red River of the North basin				
Antelope Creek	Wild Rice River	Lat 46°23'01", long 96°58'11", in SE¼SE¼ sec.28, T.134 N., R.50 W., Richland County, on county highway 8 miles west of Galchutt.	--	--	3-14-72 3-18-72 5-22-72	0 12.3 [a]3.0
Pitcairn Creek	Wild Rice River	Lat 46°27'24", long 96°47'03", in SW¼SE¼ sec.36, T.135 N., R.49 W., Richland County, at bridge on county highway 2 miles northwest of Abercrombie.	--	1971	3-14-72	0
Sweetwater Lake Outlet	Big Coulee	Lat 48°16'57", long 98°55'08", in SE¼SE¼ sec.31, T.156 N., R.64 W., Ramsey County, at bridge on county highway, 2 miles west of Webster.	--	1965-67 1969-70	4-25-72	135
Dry Lake Outlet	Big Coulee	Lat 48°19'23", long 99°00'19", in SW¼NW¼ NW¼ sec.22, T.156 N., R.65 W., Ramsey County, at bridge on county highway, 6.2 miles northwest of Webster.	--	1967,70	4-25-72	56.0
Big Coulee	Devils Lake	Lat 48°02'25", long 99°02'50", in NW¼SW¼ sec.29, T.153 N., R.65 W., Benson County, at culvert on county highway 9 miles east of Minnewaukan.	--	1966-68	10- 4-70 5-18-71 8-17-71 11-17-71 2-16-72 5-18-72 8-14-72	[ab]5 [b]338 [b]160 50.0 24.3 400 53.0
Sheyenne River	Red River of the North	Lat 46°30'49", long 97°29'19", on line sec.9 and 16, T.135 N., R.54 W., Ransom County, 900 ft above Soo Line R.R. bridge and 19 miles north of Milnor.	--	--	5- 4-72 8-11-72 8-29-72	273 31.6 33.1
Sheyenne River	Red River of the North	Lat 46°30'52", long 97°23'42", on line between sec.7 and 18, T.135 N., R. 53 W., Ransom County, at Larson bridge 9 miles northwest of McLeod.	--	--	5- 4-72 8-11-72 8-28-72	306 31.6 40.9
Sheyenne River	Red River of the North	Lat 46°31'27", long 97°18'49", in SE¼NW¼ sec.11, T.135 N., R.53 W., Ransom County, at bridge 1.5 miles northeast of the Owego Church and 9 miles northwest of McLeod.	--	--	8-11-72 8-29-72	38.6 46.8
Sheyenne River	Red River of the North	Lat 46°31'47", long 97°15'31", in SW¼SW¼ sec.5, T.135 N., R.52 W., Richland County, 1 mile east of the Ransom-Richland County line, and 10 miles northwest of McLeod.	--	--	8-11-72 8-29-72	46.9 55.4
Sheyenne River	Red River of the North	Lat 46°32'19", long 97°13'03", in SW¼NW¼ sec.3, T.135 N., R.52 W., Richland County, 0.2 mile north of Zion Church, and 8 miles south of Leonard.	-- --	-- --	5- 4-72 8-11-72 8-29-72	372 50.7 60.3
Sheyenne River	Red River of the North	Lat 46°32'49", long 97°10'35", on line between sec.35 and 36, T.136 N., R.52 W., Richland County, 12 miles west of Walcott.	--	--	8-11-72 8-29-72	55.9 63.1
Sheyenne River	Red River of the North	Lat 46°34'07", long 97°07'30", in NW¼NW¼ sec.29, T.136 N., R.51 W., Richland County, at bridge 0.1 mile southeast of Barrie Church and 8 miles southeast of Leonard.	--	--	8-29-72	63.4
Sheyenne River	Red River of the North	Lat 46°34'50", long 97°04'24", on line between sec. 22 and 23, T.136 N., R. 51 W., Richland County, at bridge 6 miles southwest of Kindred.	--	--	5- 4-72 8-11-72 8-29-72	382 58.3 63.6

a Estimated.
b Not previously published.

Discharge measurements made at miscellaneous sites during water year 1972--Continued

Stream	Tributary to	Location	Drainage area (sq mi)	Measured previously (water years)	Measurements	
					Date	Discharge (cfs)
		Red River of the North basin--Continued				
Sheyenne River	Red River of the North	Lat 46°36'09", long 97°01'55", in SW¼SW¼ sec.7, T.136 N., R.50 W., Richland County, 0.4 mile south of Gol Cemetery 4 miles south of Kindred.	--	--	8-29-72	71.6
Sheyenne River	Red River of the North	Lat 46°33'21", long 97°08'21", in NE¼NE¼ sec.31, T.136 N., R.51 W., Richland County, at N.D. Highway 18 bridge, 9 miles southeast of Leonard.	--	--	8-11-72	52.3
Sheyenne River Diversion	Red River of the North	Lat 46°48'14", long 96°53'58", in NW¼NW¼ sec.5, T.138 N., R.59 W., Cass County, near culverts on private road 3 miles north of Horace.	--	--	9-19-72	57.5
Maple River	Sheyenne River	Lat 46°49'05", long 97°07'25", on south line sec.33, T.139 N., R.51 W., Cass County, at bridge on county highway 1 mile northeast of Durbin.	--	1971	3-16-72 3-17-72	975 1,060
South Branch Maple River	Maple River	Lat 46°37'05", long 97°35'35", in SW¼SW¼ sec.3, T.136 N., R.55 W., Ransom County in Enderlin.	--	1971	3-14-72 3-17-72	39.4 [a]10
Lower Branch Rush River	Sheyenne River	Lat 46°56'31", long 96°59'17", in NE¼SE¼ sec.16, T.140 N., R.50 W., Cass County, at bridge on county highway 2 miles southeast of Prosper.	--	1965-67 1970-71	3-14-72 3-18-72 3-21-72	0 303 38.4
Sheyenne River	Red River of the North	Lat 47°00'04", long 96°53'42", in NW¼ SE¼NW¼ sec.28, T.141 N., R.49 W., Cass County, at bridge on U.S. Highway 81 about 1.6 miles northwest of Harwood.	--	1969	11- 3-70 4- 5-71 3-28-72 5-31-72 9-28-72	[b]74.1 [b]900 811 2,140 60.0
South Branch Park River	Park River	Lat 48°25'55", long 97°57'20", near center sec.11, T.157 N., R.57 W., Walsh County, at bridge on county highway 5 miles east of Adams.	--	--	3-18-72 3-24-72	458 80.7
Pembina River	Red River of the North	Lat 48°54'10", long 98°13'40", in SW¼NW¼ sec.29, T.163 N., R.57 W., Cavalier County, at bridge on county highway, 3 miles east of Vang.	--	1962, 1966, 70	10-13-71 12-16-71 3-21-72 4-13-72 5- 3-72 6-15-72 8-11-72	82.3 21.3 755 2,770 1,130 292 97
Des Lacs River	Souris River	Lat 48°40'35", long 102°05'36", in NE¼ NE¼NW¼ sec.19, T.160 N., R.88 W., Ward County, at bridge on county highway at Kenmare.	--	1968-71	3-16-72 3-23-72	183 [a]100
Gassman Coulee	Souris River	Lat 48°13'54", long 101°22'20", in NE¼ SW¼ sec.20, T.155 N., R.83 W., Ward County, at culvert on U.S. Highways 2 and 52, 2 miles west of Minot.	61	1969-71	3-15-72 4-11-72 5- 2-72 5-22-72	249 21 [a]1.4 42.1
Souris River	Red River of the North	Lat 48°14'23", long 101°17'30", in NE¼ NW¼NW¼ sec.24, T.155 N., R.83 W., Ward County, at bridge on Main Street in Minot.	--	1968-71	3-30-72 4- 6-72 4-12-72 4-20-72	1,760 2,000 2,380 1,630
Larson Coulee	Souris River	Lat 48°11'47", long 101°13'51", in NE¼ NE¼NE¼ sec.5, T.154 N., R.82 W., Ward County, at bridge on U.S. Highway 52, 4 miles southeast of Minot.	--	1971	3-15-72 4-14-72	196 20
Souris River	Red River of the North	Lat 48°09'11", long 101°09'00", on north line sec.24, T.154 N., R.82 W., Ward County, at bridge on county highway at Logan.	--	1971	4-11-72 4-14-72 4-20-72	2,420 2,200 1,750
Bonnes Coulee	Souris River	Lat 48°03'30", long 100°57'00", in NE¼ SW¼ sec.21, T.153 N., R.80 W., McHenry County, at culvert on U.S. Highway 52, half a mile west of Velva.	53	1962, 1965, 71	3-15-72 3-20-72 4-14-72 4-20-72	196 33.9 10.8 4.91
Souris River	Red River of the North	Lat 48°03'50", long 100°55'42", in NE¼ NE¼ sec.22, T.153 N., R.80 W., Ward County, at bridge on county highway in Velva.	--	1966-71	4- 5-72 4-14-72 4-20-72	1,880 2,590 1,990

a Estimated.
b Not previously published.

Discharge measurements made at miscellaneous sites during water year 1972--Continued

Stream	Tributary to	Location	Drainage area (sq mi)	Measured previously (water years)	Measurements	
					Date	Discharge (cfs)
		Red River of the North basin--Continued				
Souris River	Red River of the North	Lat 48°21'05", long 48°25'08", in SW¼NE¼ sec.10, T.156 N., R.76 W., McHenry County, at bridge on State Highway 14, 0.5 mile northwest of Towner.	--	1971	4- 5-72 4-14-72	1,990 2,040
Ox Creek	Willow Creek	Lat 48°35'58", long 100°08'44", on west line sec.13, T.159 N., R.74 W., Bottineau County, at bridge on county highway, 7 miles east of Willow City.	--	1969-71	3-16-72 4-18-72	245 215
Willow Creek	Souris River	Lat 48°36'33", long 100°17'44", in NW¼ SW¼ sec.12, T.159 N., R.75 W., Bottineau County, at bridge on State Highway 60 at Willow City.	--	1969-71	3-16-72 4-18-72	[a]24 441
Oak Creek	Willow Creek	Lat 48°45'53", long 100°28'02", in SW¼ SW¼ sec.13, T.161 N., R.76 W., Bottineau County, at bridge on county highway, 4 miles east of Bottineau.	--	1969-71	3-16-72 5- 4-72 6- 8-72	32.0 73.1 28.0
		Missouri River basin				
Missouri River	Mississippi River	Lat 47°59'00", long 103°59'00", in west half sec.15, T.152 N., R.104 W., Williams County, 1 mile west of Buford.	--	--	6-27-72	49,600
		Knife River basin				
Knife River	Missouri River	Lat 47°15'28", long 102°56'48", in SE¼ SW¼ sec.26, T.144 N., R.97 W., Dunn County, 0.5 mile below bridge on county highway 8 miles southwest of Manning.	--	--	9-18-72	0.07
Knife River	Missouri River	Lat 47°15'10", long 102°51'48", in SW¼ NW¼ sec.33, T.144 N., R.96 W., Dunn County, at culvert on county highway 5 miles northwest of Manning.	--	--	9-18-72	.32
Knife River	Missouri River	Lat 47°11'25", long 102°38'00", in NE¼ SE¼ sec.19, T.143 N., R.94 W., Dunn County, 300 ft above bridge on county highway southeast of Manning.	--	--	9-18-72	.04
Knife River	Missouri River	Lat 47°08'35", long 102°27'40", in SW¼ SW¼ sec.3, T.142 N., R.93 W., Dunn County, at bridge on county highway 6 miles west of Marshall.	--	--	9-18-72	2.35
Knife River	Missouri River	Lat 47°07'35", long 102°03'50", on south line sec.8, T.142 N., R.91 W., Dunn County, at bridge on county highway 5 miles east of Marshall.	--	--	9-18-72	4.01
Spring Creek	Knife River	Lat 47°22'25", long 102°53'00", in SW¼ SW¼ sec.14, T.145 N., R.96 W., Dunn County, at bridge on county highway 6 miles west of Killdeer.	--	--	9-19-72	.02
Spring Creek tributary	Spring Creek	Lat 47°22'55", long 102°44'10", in SW¼ NW¼ sec.13, T.145 N., R.95 W., Dunn County, 300 ft above mouth and 1 mile northeast of Killdeer.	--	--	9-19-72	.10
Spring Creek	Knife River	Lat 47°22'50", long 102°44'12", in NE¼ SE¼ sec.14, T.145 N., R.95 W., Dunn County, at bridge on county highway 1 mile north of Killdeer.	--	--	9-19-72	.34
Spring Creek	Knife River	Lat 47°20'50", long 102°35'00", in SW¼ SW¼ sec.30, T.145 N., R.93 W., 0.5 mile below bridge on county highway 1.5 miles east of Dunn Center.	--	--	9-19-72	20.7

Discharge measurements made at miscellaneous sites during water year 1972--Continued

Stream	Tributary to	Location	Drainage area (sq mi)	Measured previously (water years)	Measurements	
					Date	Discharge (cfs)
		Knife River basin--Continued				
Spring Creek	Knife River	Lat 47°21'30", long 102°27'45", in SE¼ SE¼ sec.24, T.145 N., R.93 W., Dunn County, at bridge on county highway at Werner.	--	--	9-19-72	3.28
Spring Creek	Knife River	Lat 47°21'20", long 102°19'30", in NE¼ NW¼ sec.30, T.145 N., R.91 W., Dunn County, at bridge on county highway at Halliday.	--	--	9-19-72	4.58
Spring Creek	Knife River	Lat 47°19'30", long 102°13'35", in NW¼ NW¼ sec.4, T.144 N., R.91 W., Dunn County, at bridge on county highway 1.5 miles northwest of Dodge.	--	--	9-19-72	7.10
		Square Butte Creek basin				
Square Butte Creek tributary No. 4	Square Butte Creek	Lat 47°03'56", long 101°14'05", on east line sec.6, T.141 N., R.83 W., Oliver County, at bridge on county highway, 4 miles southeast of Center.	--	1968-71	5-25-72 6-21-72 7-31-72 8-22-72	0.71 8.1 0 .05

INDEX

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