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Water Resources Data for North Dakota

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WATER YEAR 1979

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

CALENDAR FOR WATER YEAR 1979

1978

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1979

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Water Resources Data for North Dakota

U.S. GEOLOGICAL SURVEY WATER-DATA REPORT ND-79-1

WATER YEAR 1979

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

UNITED STATES DEPARTMENT OF THE INTERIOR

CECIL D. ANDRUS, Secretary

GEOLOGICAL SURVEY

Dr. H. William Menard, Director

For information on the water program in North Dakota write to
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U.S. Geological Survey
821 East Interstate Avenue
Bismarck, North Dakota 58501

1980

PREFACE

This report was prepared by the U.S. Geological Survey in cooperation with the State of North Dakota and with other agencies, by personnel of the North Dakota district of the Water Resources Division under the supervision of L. Grady Moore, District Chief, and Alfred Clebsch, Jr., Regional Hydrologist, Central Region.

This report is one of a series issued State by State under the general direction of Philip Cohen, Chief Hydrologist, and Robert J. Dingman, Acting Assistant Chief Hydrologist for Scientific Publications and Data Management.

50272-101

REPORT DOCUMENTATION PAGE	1. REPORT NO. USGS/WRD/HD-80/039	2.	3. Recipient's Accession No.

4. Title and Subtitle
Water Resources Data for North Dakota, Water Year 1979

5. Report Date
May 1980

6.

7. Author(s)

8. Performing Organization Rept. No.
USGS-WDR-ND-79-1

9. Performing Organization Name and Address
U.S. Geological Survey, Water Resources Division
821 East Interstate Avenue
Bismarck, North Dakota 58501

10. Project/Task/Work Unit No.

11. Contract(C) or Grant(G) No.
(C)
(G)

12. Sponsoring Organization Name and Address
U.S. Geological Survey, Water Resources Division
821 East Interstate Avenue
Bismarck, North Dakota 58501

13. Type of Report & Period Covered
Annual - Oct. 1, 1978 to Sept. 30, 1979

14.

15. Supplementary Notes
Prepared in cooperation with the State of North Dakota and with other agencies.

16. Abstract (Limit: 200 words)

Water resources data for the 1979 water year for North Dakota consist of records of stage, discharge, and water quality of streams; stage, contents, and water quality of lakes and reservoirs; and water levels and water quality of ground water. This report contains discharge records for 148 gaging stations; stage only records for 16 gaging stations; stage and contents for 12 lakes and reservoirs; water quality for 99 gaging stations, 44 lakes, 78 wells and water levels for 32 observation wells. Additional water data were collected at various sites, not involved in the systematic data collection program, and are published as miscellaneous measurements. These data represent that part of the National Water Data System operated by the U.S. Geological Survey and cooperating State and Federal agencies in North Dakota.

17. Document Analysis a. Descriptors
*North Dakota, *Hydrologic data, *Surface water, *Ground water, *Water quality, Flow rate, Gaging stations, Lakes, Reservoirs, Chemical analyses, Sediments, Water temperatures, Sampling sites, Water levels, Water analyses.

b. Identifiers/Open-Ended Terms

c. COSATI Field/Group

18. Availability Statement	19. Security Class (This Report)	21. No. of Pages
No restriction on distribution. This report may be purchased from: National Technical Information Service Springfield, VA 22161	Unclassified	784
	20. Security Class (This Page) Unclassified	22. Price

(See ANSI-Z39.18) *See Instructions on Reverse*

OPTIONAL FORM 272 (4-77)
(Formerly NTIS-35)
Department of Commerce

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[*Letter after station name designates type of data: (d) discharge, (c) chemical, (b) biological, (m) microbiological, (t) water temperature, (s) sediment*]

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WATER RESOURCES DATA FOR NORTH DAKOTA, 1979

INTRODUCTION

Water-resources data for the 1979 water year for North Dakota consist of records of stage, discharge, and water quality of streams; stage, contents, and water quality of lakes and reservoirs; and water levels and water quality of ground water. This report contains discharge records for 148 gaging stations; stage only records for 16 gaging stations; stage and contents for 12 lakes and reservoirs; water quality for 99 gaging stations, 44 lakes, 78 wells, and water levels for 32 observation wells. Additional water data were collected at various sites, not involved in the systematic data collection program, and are published as miscellaneous measurements. These data represent that part of the National Water Data System operated by the U.S. Geological Survey and cooperating State and Federal agencies in North Dakota.

Records of discharge or stage of streams, and contents or stage of lakes and reservoirs were first published in a series of U.S. Geological Survey water-supply papers entitled, "Surface Water Supply of the United States." Through September 30, 1960, these water-supply papers were in an annual series and then in a 5-year series for 1961-65 and 1966-70. Records of chemical quality, water temperatures, and suspended sediment were published from 1941 to 1970 in an annual series of water-supply papers entitled, "Quality of Surface Waters of the United States." Records of ground-water levels were published from 1935 to 1974 in a series of water-supply papers entitled, "Ground-Water Levels in the United States." Water-supply papers may be consulted in the libraries of the principal cities in the United States or may be purchased from Branch of Distribution, U.S. Geological Survey, 1200 South Eads Street, Arlington, VA 22202.

For water years 1961 through 1974, streamflow data were released by the Geological Survey in annual reports on a State-boundary basis. Water-quality records for water years 1964 through 1974 were similarly released either in separate reports or in conjunction with streamflow records.

Beginning with the 1975 water year, water data for streamflow, water quality, and ground water are published in official Survey reports on a State-boundary basis. These official Survey reports carry an identification number consisting of the two-letter State abbreviation, the last two digits of the water year, and the volume number. For example, this volume is identified as "U.S. Geological Survey Water-Data Report ND-79-1". For archiving and general distribution, the reports for water years 1971-74 are also identified as water-data reports. These water-data reports are for sale, in paper copy or in microfiche by the National Technical Information Service, U.S. Department of Commerce, Springfield, VA 22161.

Additional information, including current prices, for ordering specific reports may be obtained from the district chief at the address given on the back of the title page or by telephoning (701) 255-4011, ext. 601.

COOPERATION

The U.S. Geological Survey and organizations of the State of North Dakota have had cooperative agreements for the systematic collection of streamflow records since 1903, for ground-water levels since 1937, and for water-quality records since 1946. Organizations that assisted in collecting data through cooperative agreement with the Survey are:

North Dakota State Water Commission
Vernon Fahy, Chief Engineer.

North Dakota State Health Department
Gene Christianson, Acting Administrator

Oliver County Board of Commissioners
John Weber, 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
Bureau of Land Management, U.S. Department of the Interior
Bureau of Reclamation, U.S. Department of the Interior
Fish and Wildlife Service, U.S. Department of the Interior
Surveillance and Analysis Division, U.S. Environmental Protection Agency
Soil Conservation Service, U.S. Department of Agriculture
Other Federal agencies of the U.S. Department of Interior for the development of the Misssouri River basin.

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."

Some records have been collected and computed by contractors in accordance with U.S. Geological Survey specifications and under Geological Survey quality control.

ACKNOWLEDGMENT

North Dakota personnel who contributed significantly to the collection and/or preparation of water-resources data for publication in this report were:

Bismarck District Office

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Mary E. Berger	Thomas A. Gleich	Steven W. Norbeck
Beryl A. Binde	Norman D. Haffield	Joseph A. Smath
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HYDROLOGIC CONDITIONS

Streamflow was above normal in all but the northwestern corner of the State. An unusually cold, snowy, and long winter followed by a quick melt in mid-April resulted in peaks of record at many stations across the State. Extreme flooding occurred along the Red River of the North where peaks of this century were recorded at gaging stations at Halstad, Grand Forks, and Drayton.

Streamflow quickly returned to normal as precipitation was below normal in May and June. However, above normal precipitation in July and August resulted in above normal runoff across most of the State for the remainder of the year.

See figure 3 for a comparison of 1979 streamflow with the 1941-70 period for the Cannonball River at Breien and the Red River of the North at Grand Forks.

DEFINITION OF TERMS

Terms related to streamflow, water-quality, and other hydrologic data, as used in this report, are defined below. See also the table for converting inch-pound units to International System Units (SI) on the inside of the back cover.

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 about 326,000 gallons or 1,233 cubic meters.

Algae are mostly aquatic single-celled, colonial, or multicelled plants, containing chlorophyll and lacking roots, stems, and leaves.

Algal growth potential (AGP) is the maximum algal dry weight biomass that can be produced in a natural water sample under standardized laboratory conditions. The growth potential is the algal biomass present at stationary phase and is expressed as milligrams dry weight of algae produced per liter of sample.

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

Artesian means confined and is used to describe a well in which the water level stands above the top of the aquifer, tapped by the well. A flowing artesian well is one in which the water level is above the land surface.

Bacteria are microscopic unicellular organisms, typically spherical, rodlike, or spiral and threadlike in shape, often clumped into colonies. Some bacteria cause disease, others perform an essential role in nature in the recycling of materials; for example, by decomposing organic matter into a form available for reuse by plants.

Total coliform bacteria are a particular group of bacteria that are used as indicators of possible sewage pollution. They are characterized as aerobic or facultative anaerobic, gram-negative, nonspore-forming, rod-shaped bacteria which ferment lactose with gas formation within 48 hours at 35°C. In the laboratory these bacteria are defined as the organisms which produce colonies within 24 hours when incubated at 35°C ± 1.0°C on M-Endo medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

Fecal coliform bacteria are bacteria that are present in the intestines or feces of warm-blooded animals. They are often used as indicators of the sanitary quality of the water. In the laboratory they are defined as all organisms which produce blue colonies within 24 hours when incubated at 44.5° C ± 0.2°C on M-FC medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

Fecal streptococcal bacteria are bacteria found also in intestines of warm-blooded animals. Their presence in water is considered to verify fecal pollution. They are characterized as gram-positive, cocci bacteria which are capable of growth in brain-heart infusion broth. In the laboratory they are defined as all the organisms which produce red or pink colonies within 48 hours at 35°C ± 1.0°C on M-enterrococcus medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

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

Benthic organisms (invertebrates) are animals inhabiting the bottom of an aquatic environment. They include a number of different types of organisms, such as bacteria, fungi, insect larvae and nymphs, snails, clams, and crayfish. They are frequently used as indicators of environmental quality because many have restricted mobility during their aquatic life phase, as well as a relatively long lifespan which allows for response to prevailing and changing water-quality conditions. Many benthic organisms inhabit specific types of environments, which if changed, results in changes in the composition of the benthic community.

Biochemical oxygen demand (BOD) is a measure of the quantity of dissolved oxygen, in milligrams per liter, necessary for the decomposition of organic matter by microorganisms, such as bacteria.

Biomass is the amount of living matter present at any given time, expressed as the mass per unit area or volume of habitat.

Ash mass is the mass or amount of residue present after the residue from the dry mass determination has been ashed in a muffle furnace at a temperature of 500°C for 1 hour. The ash mass values of zooplankton and phytoplankton are expressed in grams per cubic meter (g/m^3), and periphyton and benthic organisms in grams per square meter (g/m^2).

Dry mass refers to the mass of residue present after drying in an oven at 60°C for zooplankton and 105°C for periphyton, until the mass remains unchanged. This mass represents the total organic matter, ash and sediment, in the sample. Dry mass values are expressed in the same units as ash mass.

Organic mass or volatile mass of the living substance is the difference between the dry mass and ash mass, and represents the actual mass of the living matter. The organic mass is expressed in the same units as for ash mass and dry mass.

Wet mass is the mass of living matter plus contained water.

Cells/volume refers to the number of cells of any organism which is counted by using a microscope and grid or counting cell. Many planktonic organisms are multicelled and are counted according to the number of contained cells per sample, usually milliliters (mL) or liters (L).

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

Chemical oxygen demand (COD) is a measure of the chemically oxidizable material in the water, and furnishes an approximation of the amount of organic and reducing material present. The determined value may correlate with natural water color or with carbonaceous organic pollution from sewage or industrial wastes.

Chlorophyll refers to the green pigments of plants. Chlorophyll a and b are the two most common pigments in plants.

Coliform organisms are a group of bacteria used as an indicator of the sanitary quality of the water. The number of coliform colonies per 100 milliliters is determined by the immediate incubation membrane filter method.

Color unit is produced by one milligram per liter of platinum in the form of the chloroplatinate ion. Color is expressed in units of the platinumcobalt scale.

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

Continuing-record station is a specified site which meets one or all conditions as listed:

1. When chemical samples are collected daily or monthly for 10 or more months during the water year.

2. When water temperature records include observations taken once or more times daily.

3. When sediment discharge records include those periods for which sediment loads are computed and are considered to be representative of the runoff for the water year.

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.

Control structure as used in this report is a structure on a stream or canal that is used to regulate the flow or stage of the stream or to prevent the intrusion of salt water.

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

Cubic foot per second (FT^3/S, ft^3/s) is the rate of dis-charge representing a volume of 1 cubic foot passing a given point during 1 second and is equivalent to approximately 7.48 gallons per second or 448.8 gallons per minute or 0.02832 cubic meters per second.

Discharge is the volume of water (or more broadly, volume of fluid plus suspended sediment), that passes a given point within a given period of time.

Mean discharge (MEAN) is the arithmetic mean of individual daily mean discharges during a specific period.

Instantaneous discharge is the discharge at a particular instant of time.

Dissolved refers to that material in a representative water sample which passes through a 0.45 micrometer membrane filter. This is a convenient operational definition used by Federal agencies that collect water data. Determinations of "dissolved" constituents are made on subsamples of the filtrate.

Diversity index is a numerical expression of evenness of distribution of aquatic organisms. The formula for diversity index is:

$$\bar{d} = - \sum_{i=1}^{s} \frac{n_i}{n} \log_2 \frac{n_i}{n}$$

Where n_i is the number of individuals per taxon, n is the total number of individuals, and s is the total number of taxa in the sample of the community. Diversity index values range from zero, when all the organisms in the sample are the same, to some positive number, when some or all of the organisms in the sample are different.

Drainage area of a stream at the specific 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 river above the specified point. Figures of drainage area given herein include all closed basins, or noncontributing areas, within the area unless otherwise noted.

Drainage basin is a part of the surface of the earth that is occupied by a drainage system, which consists of a surface stream or a body of impounded surface water together with all tributary surface streams and bodies of impounded surface water.

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 hydrologic data are obtained.

Hardness of water is a physical-chemical characteristic that is commonly recognized by the increased quantity of soap required to produce lather. It is attributable to the presence of alkaline earths (principally calcium and magnesium) and is expressed as equivalent calcium carbonate ($CaCO_3$).

Hydrologic unit is a geographic area representing part or all of a surface drainage basin or distinct hydrologic feature as delineated by the Office of Water Data Coordination on the State Hydrologic Unit Maps; each hydrologic unit is identified by an 8-digit number.

Metamorphic stage refers to the stage of development that an organism exhibits during its transformation from an immature form to an adult form. This developmental process exists for most insects, and the degree of difference from the immature stage to the adult form varies from relatively slight to pronounced, with many intermediates. Examples of metamorphic stages of insects are egg-larva-adult or egg-nymph-adult.

Methylene blue active substance (MBAS) is a measure of apparent detergents. This determination depends on the formation of a blue color when methylene blue dye reacts with synthetic detergent compounds.

Micrograms per gram (UG/G, µg/g) is a unit expressing the concentration of a chemical element as the mass (micrograms) of the element sorbed per unit mass (gram) of sediment.

Micrograms per liter (UG/L, µg/L) is a unit expressing the concentration of chemical constituents in solution as mass (micrograms) of solute per unit volume (liter) of water. One thousand micrograms per liter is equivalent to one milligram per liter.

Milligrams per liter (MG/L, mg/L) is a unit for expressing the concentration of chemical constituents in solution. Milligrams per liter represent the mass of solute per unit volume (liter) of water. Concentration of suspended sediment also is expressed in mg/L, and is based on the mass of sediment per liter of water-sediment mixture.

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

Organism is any living entity, such as an insect, phytoplankter, or zooplankter.

Cells/volume refers to the number of cells of any organism which is counted by using a microscope and grid or counting cell. Many planktonic organisms are multi-celled and are counted according to the number of contained cells per sample volume, usually milliliters (mL) or liters (L).

Organism count/area refers to the number of organisms collected and enumerated in a sample and adjusted to the number per area habitat, usually square meters (m^2), acres, or hectares. Periphyton, benthic organisms, and macrophytes are expressed in these terms.

Organism count/volume refers to the number of organisms collected and enumerated in a sample and adjusted to the number per sample volume, usually milliliters (mL) or liters (L). Numbers of planktonic organisms can be expressed in these terms.

Total organism count is the total number of organisms collected and enumerated in any particular sample.

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

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

Particle-size classification used in this report agrees with recommendations made by the American Geophysical Union Subcommittee on Sediment Terminology.

The classification is as follows:

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

The particle-size distributions given in this report are not necessarily representative of all particles in transport in the stream. Most of the organic material is removed and the sample is subjected to mechanical and chemical dispersion before analysis in distilled water. Chemical dispersion is not used for native water analysis.

Percent composition is a unit for expressing the ratio of a particular part of a sample or population to the total sample or population, in terms of types, numbers, mass, or volume.

Percent saturation is a comparison of the actual oxygen content of water to the saturation content of oxygen, expressed in terms of percent.

Periphyton is the assemblage of microorganisms attached to and growing upon solid surfaces. While primarily consisting of algae, they also include bacteria, fungi, protozoa, rotifers, and other small organisms. Periphyton is a useful indicator of water quality.

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

pH indicates the degree of acidity or alkalinity of water and is expressed in terms of pH units. The pH value of a solution is the negative logarithm of the concentration of hydrogen ions, in moles per liter. A pH of 7.0 indicates that the water is neither acid nor alkaline. pH readings progressively lower than 7.0 denote increasing acidity and those progressively higher than 7.0 denote increasing alkalinity. The pH of most natural surface waters ranges between 6 and 8.

Picocurie (PC, pCi) is one trillionth (1×10^{12}) of the amount of radioactivity represented by a curie $(Ci)_{10}$ A curie is the amount of radioactivity that yields 3.7×10^{10} radioactive disintegrations per second. A picocurie yields 2.22 dpm (disintegrations per minute).

Plankton is the community of suspended, floating, or weakly swimming organisms that live in the open water of lakes and rivers.

Phytoplankton is the plant part of the plankton. They are usually microscopic and their movement is subject to the water currents. Phytoplankton growth is dependent upon solar radiation and nutrient substances. Because they are able to incorporate as well as release materials to the surrounding water, the phytoplankton have a profound effect upon the quality of the water. They are the primary food producers in the aquatic environment, and are commonly known as algae.

Blue-green algae are a group of phytoplankton organisms having a blue pigment, in addition to the green pigment called chlorophyll. Blue-green algae often cause nuisance conditions in water.

Diatoms are the unicellular or colonial algae having a siliceous shell. Their concentrations are expressed as number of cells/mL of sample.

Green algae have chlorophyll pigments similar in color to those of higher green plants. Some forms produce algal mats or floating "moss" in lakes. Their concentrations are expressed as number of cells/mL of sample.

Zooplankton is the animal part of the plankton. Zooplankton are capable of extensive movements within the water column, and are often large enough to be seen with the unaided eye. Zooplankton are secondary consumers feeding upon bacteria, phytoplankton, and detritus. Because they are the grazers in the aquatic environment, the zooplankton are a vital part of the aquatic food web. The zooplankton community is dominated by small crustaceans and rotifers.

Polychlorinated biphenyls (PCBs) are industrial chemicals that are mixtures of chlorinated biphenyl compounds having various percentages of chlorine. They are similar in structure to organochlorine insecticides.

Primary productivity is a measure of the rate at which new organic matter is formed and accumulated through photosynthetic and chemosynthetic activity of producer organisms (chiefly green plants). The rate of primary production is estimated by measuring the amount of oxygen released (oxygen method) or the amount of carbon assimilated by the plants (carbon method).

Recoverable from bottom material is the amount of a given constituent that is in solution after a representative sample of bottom material has been digested by a method (usually using an acid or mixture of acids) that results in dissolution of only readily soluble substances. Complete dissolution of all bottom material is not achieved by the digestion treatment and thus the determination represents less than the total amount (that is, less than 95 percent) of the constituent in the sample. To achieve comparability of analytical data, equivalent digestion procedures would be required of all laboratories performing such analyses because different digestion procedures are likely to produce different analytical results.

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

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

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

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

Suspended-sediment discharge (tons/day) is the rate at which dry weight of sediment passes a section of a stream or is the quantity of sediment, as measured by dry weight or volume, that passes a section in a given time. It is computed by multiplying discharge times mg/L times 0.0027.

Suspended-sediment load is quantity of suspended sediment passing a section in a specified period.

Total sediment discharge (tons/day) is the sum of the suspended-sediment discharge and the bed-load discharge. It is the total quantity of sediment, as measured by dry weight or volume, that passes a section during a given time.

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

Sodium-adsorption-ratio (SAR) is the expression of relative activity of sodium ions in exchange reactions with soil and is an index of sodium or alkali hazard to the soil. Waters range in respect to sodium hazard from those which can be used for irrigation on almost all soils to those which are generally unsatisfactory for irrigation.

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

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

Stage is the height of a water surface above an established datum plane; also gage height.

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

Streamflow is the discharge that occurs in a natural channel. Although the term "discharge" can be applied to the flow of a canal, the word "streamflow" uniquely describes the discharge in a surface stream course. The term "streamflow" is more general than "runoff" as streamflow may be applied to discharge whether or not it is affected by diversion or regulation.

Substrate is the physical surface upon which an organism lived.

Natural substrate refers to any naturally occurring emersed or submersed solid surface, such as a rock or tree, upon which an organism lived.

Artificial substrate is a device which is purposely placed in a stream or lake for colonization of organisms. The artificial substrate simplifies the community structure by standardizing the substrate from which each sample is taken. Examples of artificial substrates are basket samplers (made of wire cages filled with clean streamside rocks) and multiplate samplers (made of hardboard) for benthic organism collection, and polyethylene strips for periphyton collection.

Surface area of a lake is that area outlined on the latest U.S.G.S. topographic map as the boundary of the lake and measured by a planimeter in acres. In localities not covered by topographic maps, the areas are computed from the best maps available at the time planimetered. All areas shown are those for the stage when the planimetered map was made.

Surficial bed material is that part (0.1 to 0.2 ft) of the bed material that is sampled using U.S. Series Bed-Material Samplers.

Suspended, recoverable is the amount of a given constituent that is in solution after the part of a representative water-suspended sediment sample that is retained on a 0.45 µm membrane filter has been digested by a method (usually using a dilute acid solution) that results in dissolution of only readily soluble substances. Complete dissolution of all the particulate matter is not achieved by the digestion treatment and thus the determination represents something less than the "total" amount (that is, less than 95 percent) of the constituent present in the sample. To achieve comparability of analytical data, equivalent digestion procedures would be required of all laboratories performing such analyses because different digestion procedures are likely to produce different analytical results.

Determinations of "suspended, recoverable" constituents are made either by analyzing portions of the material collected on the filter or, more commonly, by difference, based on determinations of (1) dissolved and (2) total recoverable concentrations of the constituent.

Suspended, total is the total amount of a given constituent in the part of a representative water-suspended sediment sample that is retained on a 0.45 µm membrane filter. This term is used only when the analytical procedure assures measurement of at least 95 percent of the constituent determined. A knowledge of the expected form of the constituent in the sample, as well as the analytical methodology used, is required to determine when the results should be reported as "suspended, total."

Determinations of suspended, total constituents are made either by analyzing portions of the material collected on the filter or, more commonly, by difference, based on determinations of (1) dissolved and (2) total concentrations of the constituent.

Taxonomy is the division of biology concerned with the classification and naming of organisms. The classification of organisms is based upon a hierarchical scheme beginning with Kingdom and ending with Species at the base. The higher the classification level, the fewer features the organisms have in common. For example, the taxonomy of a particular mayfly, Hexagenia limbata, is the following:

Kingdom	Animal
Phylum	Arthropoda
Class	Insecta
Order	Ephemeroptera
Family	Ephemeridae
Genus	Hexageria
Species	Hexagenia limbata

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

Time-weighted average is computed by multiplying the number of days in the sampling period by the concentrations of individual constituents for the corresponding period and dividing the sum of the products by the total number of days. A time-weighted average represents the composition of water that would be contained in a vessel or reservoir that had received equal quantities of water from the stream each day for the year.

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

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

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

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

Total, recoverable is the amount of a given constituent that is in solution after a representative water-suspended sediment sample has been digested by a method (usually using a dilute acid solution) that results in dissolution of only readily soluble substances. Complete dissolution of all particulate matter is not achieved by the digestion treatment, and thus the determination represents something less than the "total" amount (that is, less than 95 percent) of the constituent present in the dissolved and suspended phases of the sample. To achieve comparability of analytical data, equivalent digestion procedures would be required of all laboratories performing such analyses because different digestion procedures are likely to produce different analytical results.

Water year in Geological Survey reports dealing with surface-water supply is the 12-month period, October 1 through September 30. The water year is designated by the calendar year in which it ends and which includes 9 of the 12 months. Thus, the year ending September 30, 1979, is called the "1979 water year."

Weighted average is used in this report to indicate discharge-weighted average. It is computed by multiplying the discharge for a sampling period by the concentrations of individual constituents for the corresponding period and dividing the sum of the products by the sum of the discharges. A discharge-weighted average approximates the composition of water that would be found in a reservoir containing all the water passing a given location during the water year after thorough mixing in the reservoir.

WRD is used as an abbreviation for "Water-Resources Data" in REVISED RECORDS paragraph to refer to State annual basic-data reports published before 1975.

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

DOWNSTREAM ORDER AND STATION NUMBER

Since October 1, 1950, the order of listing hydrologic-station records in Survey reports is in a downstream direction along the main stream. All stations on a tributary entering upstream from a main-stream station are listed before that station. A station on a tributary that enters between two main-stream stations is listed between them. A similar order is followed in

listing stations on first rank, second rank, and other ranks of tributaries. The rank of any tributary on which a station is situated with respect to the stream to which it is immediately tributary is indicated by an indentation in a list of stations in the front of the report. Each indentation represents one rank. This downstream order and system of indentation show which stations are on tributaries between any two stations and the rank of the tributary on which each station is situated.

As an added means of identification, each hydrologic 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 other stations; therefore, the station number for a partial-record station indicates downstream-order position in a list made up of both types of stations. Gaps are left in the series of numbers to allow for new stations that may be established; hence, the numbers are not consecutive. The complete 8-digit number for each station such as 05051700, which appears just to the left of the station name, includes the 2-digit part number "05" plus the 6-digit downstream order number "051700".

NUMBERING SYSTEM FOR WELLS AND MISCELLANEOUS SITES

The 8-digit downstream order station numbers are not assigned to wells and miscellaneous sites where only random water-quality samples or discharge measurements are taken.

The well and miscellaneous site numbering system of the U.S. Geological Survey is based on the grid system of latitude and longitude. The system provides the geographic location of the well or miscellaneous site and a unique number for each site. The number consists of 15 digits. The first 6 digits denote the degrees, minutes, and seconds of latitude, the next 7 digits denote degrees, minutes, and seconds of longitude, and the last 2 digits (assigned sequentially) identify the wells or other sites within a 1-second grid. See figure 1.

In order to compare data for wells in other publications, such as the county ground-water studies, the wells in this report are also numbered according to a system based on the location in the public land classification of the U.S. Bureau of Land Management. The system is illustrated in figure 2. The first numeral denotes the township north of a base line, the second numeral denotes the range west of the fifth principal meridian, and the third numeral denotes the section in which the well is located. The letters A, B, C, and D designate, respectively, the northeast, northwest, southwest, and southeast quarter section, quarter-quarter section, and quarter-quarter-quarter section (10-acre or 4-hectare tract). For example, well 139-049-15ADC is in the SW¼SE¼NE¼ sec. 15, T. 139 N., R. 049 W. Consecutive terminal numerals are added if more than one well is recorded within a 10-acre tract.

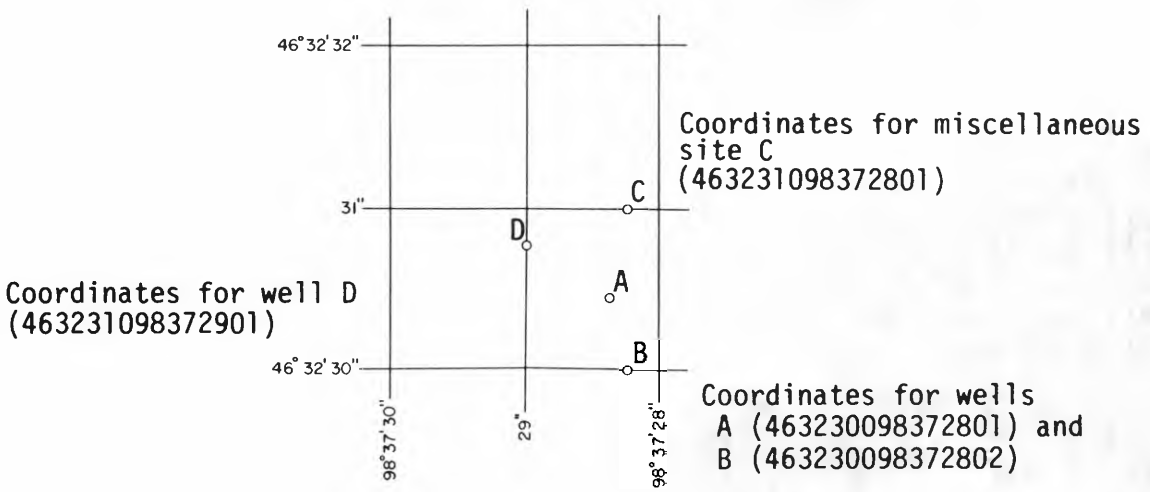

FIGURE 1--System for numbering wells and miscellaneous sites (latitude and longitude)

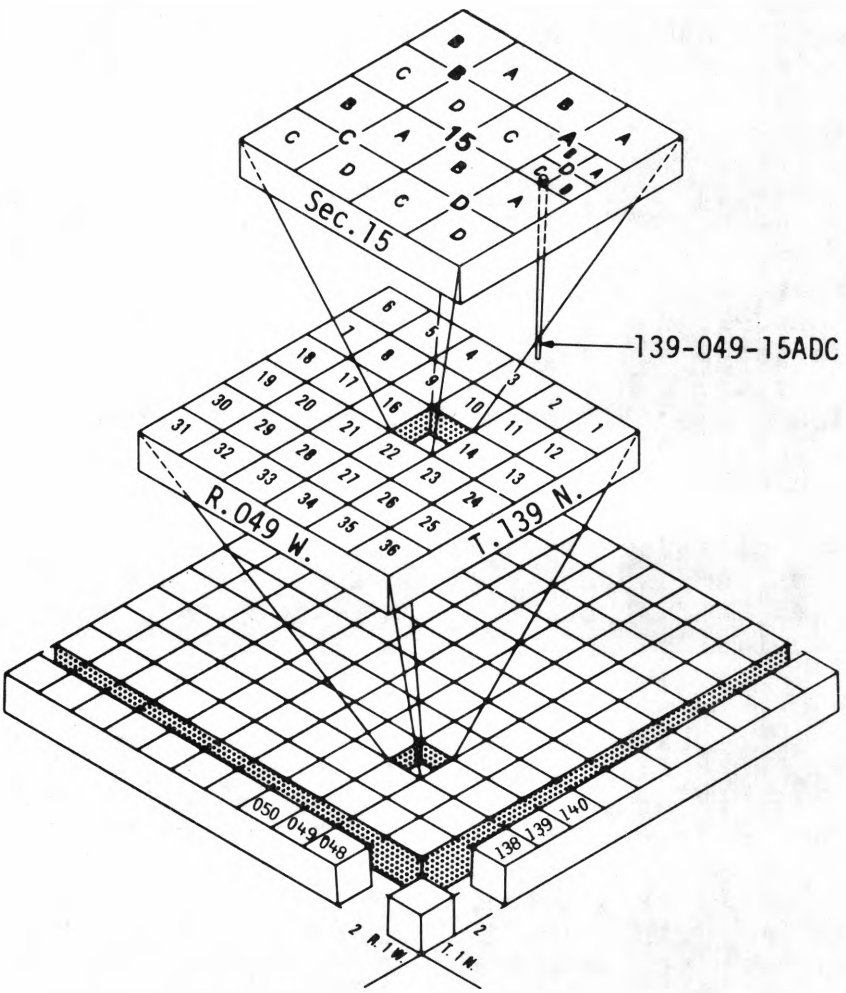

FIGURE 2--System for numbering wells and miscellaneous sites (township and range)

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.

National stream-quality accounting network (NASQAN) is a data collection network designed by the U.S. Geological Survey to meet many of the information demands of agencies or groups involved in national or regional water-quality planning and management. Both accounting and broad-scale monitoring objectives have been incorporated into the network design. Areal configuration of the network is based on river-basin accounting units (identified by 8-digit hydrologic-unit numbers) designated by the Office of Water Data Coordination in consultation with the Water Resources Council. Primary objectives of the network are (1) to depict areal variability of streamflow and water-quality conditions nationwide on a year-by-year basis and (2) to detect and assess long-term changes in streamflow and stream quality.

Pesticide program is a network of regularly sampled water-quality stations where samples are collected to determine the concentration and distribution of pesticides in streams where potential contamination could result from the application of the commonly used insecticides and herbicides. Operation of the network is a Federal interagency activity.

Radiochemical program is a network of regularly sampled water-quality stations where samples are collected to be analyzed for radioisotopes. The streams that are sampled represent major drainage basins in the conterminous United States.

EXPLANATION OF STAGE AND WATER-DISCHARGE RECORDS

Collection and computation of data

The base data collected at gaging stations consist of records of stage and measurements of discharge of streams or canals, and stage, surface area, and contents of lakes or reservoirs. In addition, observations of factors affecting the stage-discharge relation or the stage-capacity relation, weather records, and other information are used to supplement base data in determining the daily flow or volume of water in storage. Records of stage are obtained from either direct readings on a nonrecording gage or from a water-stage recorder that gives either a continuous graph of the fluctuations or a tape punched at selected time intervals. Measurements of discharge are made with a current meter, using the general methods adopted by the Geological Survey. These methods are described in standard text books, in Water-Supply Paper 888, and in U.S. Geological Survey Techniques of Water Resources Investigations, book 3, chapter A6.

For stream-gaging stations, rating tables giving the discharge for any stage are prepared from stage-discharge relation curves. If extensions to the rating curves are necessary to express discharge greater than measured, 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), step-backwater techniques, velocity-area studies, and logarithmic plotting. The daily mean discharge is computed from gage heights and rating tables, then the monthly and yearly mean discharge are computed from the daily figures. 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 computed 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 the backwater from reservoirs, tributary streams, or other sources. This necessitates the use of the slope method in which the slope or fall in a reach of the stream is a factor in computing discharge. 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 computing 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 gage-height record and occasional winter discharge measurements. Consideration is 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. 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 surveys 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, prior and subsequent records, discharge measurements, weather records, and comparison with records for other stations in the same or nearby basins. Likewise daily contents may be estimated on the basis of operator's log, prior and subsequent records, inflow-outflow studies, and other information.

The data in this report generally comprise a description of the station and tabulations of daily and monthly figures. For gaging stations on streams 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.

The description of the gaging station gives the location, drainage area, period of record, notations of revisions of previously published records, type and history of gages, general remarks, average discharge, and extremes of discharge or contents. 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."

Previously published streamflow 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 "REVISED RECORDS" has been added to the description of all stations for which revised records have been published. Listed therein are all the reports in which revisions have been published, each followed by the water years for which figures are revised in that report. In listing the water years only one number is given; for instance, 1965 stands for the water year October 1, 1964, to September 30, 1965. If no daily, monthly, or annual figures of discharge are affected by the revision, the fact is brought out by notations after the year dates as follows: "(M)" means that only the instantaneous maximum discharge was revised; "(m)" that only the instantaneous minimum was revised; and "(P)" that only peak discharges were revised. If the drainage area has been revised, the report in which the revised figure was first

published is given. It should be noted that for all stations for which cubic feet per second per square mile and runoff in inches are published, a revision of the drainage area necessitates corresponding revision of all figures based on the drainage area. Revised figures of cubic feet per second per square mile and runoff in inches resulting from a revision of the drainage area only are usually not published in the annual series of reports.

The type of gage currently in use; the datum of the present gage referred to National Geodetic Vertical Datum; and a condensed history of the types, locations, and datums of previous gages used during the period of record are given under "GAGE." National Geodetic Vertical Datum is explained in "DEFINITION OF TERMS" on page 9.

Information pertaining to the accuracy of the discharge records and to conditions which affect the natural flow of the gaging station 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 given under "REMARKS."

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 stations that have 10 or more complete years of record, if the median differs from the average by more than 10 percent. Under "EXTREMES" are given first, the extremes for the period of record, second, information available outside the period of record, and last, those for the current year. Unless otherwise qualified, the maximum discharge (or contents) is the instantaneous maximum corresponding to the crest stage obtained by use of a water-stage recorder (graphic or digital), a crest-stage gage, or a nonrecording gage read at the time of the crest. If the maximum gage height did not occur on the same day as the maximum discharge (or contents), it is given separately. Similarly, the minimum is the instantaneous minimum unless otherwise qualified. For some stations peak discharges are listed with "EXTREMES FOR THE CURRENT YEAR"; if they are, all independent peaks, including the maximum for the year, above the selected base with the time of occurrence and corresponding gage heights are published in tabular format. The base discharge, which is given in the table heading, is selected so that an average of about three peaks a year will be presented. Peak discharges are not published for any canals, ditches, drains, or for any stream for which the peaks are subject to substantial control by man. Time of day is expressed in 24-hour local standard time; for example, 12:30 a.m. is 0030, 1:30 p.m. is 1330. The minimums for these stations are published in a separate paragraph following the table of peaks.

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

The daily table for stream-gaging stations gives the mean discharge for each day and is followed by monthly and yearly summaries. In the monthly summary below the daily table, the line headed "TOTAL" gives the sum of the daily figures. The line headed "MEAN" gives the average flow in cubic feet per second during the month. The lines headed "MAX" and "MIN" give the maximum and minimum daily discharges, respectively, for the month. Discharge for the month also 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 for cubic feet per second per square mile and runoff in inches are omitted if there is extensive regulation or diversion, if the drainage area includes large noncontributing areas, or if the average annual rainfall over the drainage basin is usually less than 20 inches. In the yearly summary below the monthly summary, the figures shown are the appropriate daily discharges for the calendar and water years.

Footnotes to the table of daily discharge are introduced by the word "NOTE." Footnotes are used to indicate periods 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 site are indicated only if they are a month or more in length and the accuracy of the records is affected. Days on which the stage-discharge relation is affected by ice are not indicated. The methods used in computing discharge for various unusual conditions have been explained in preceding paragraphs.

For most gaging stations on lakes and reservoirs the data presented comprise a description of the station and a monthly summary table of stage and contents. For some reservoirs a table showing daily contents or stage is given. A skeleton table of capacity at given stages is published for all reservoirs for which records are published on a daily basis, but is not published for reservoirs for which only monthly data are given.

Data collected at partial-record stations follow the information for continuous record sites. Data for partial-record discharge stations are presented in two tables. The first is a table of annual maximum stage and discharge at crest-stage stations and the second is a table of both low flow and high flow measurements. The tables of partial-record stations are followed by a listing of discharge measurements made at sites other than

continuous-record or partial-record stations. Occasionally, a series of discharge measurements are made within a short time period to investigate the seepage gains or losses along a reach of a stream or to determine the low-flow characteristics of an area. Such measurements are also given in special tables following the tables of partial-record stations.

Accuracy of field data and computed results

The accuracy of streamflow 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 interpretations of records.

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

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

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

Other data available

Information of a more detailed nature than that published for most of the gaging stations such as observations of water temperatures, discharge measurements, gage-height records, and rating tables is on file in the district office. Also most gaging-station records are available in computer-usable form and many statistical analyses have been made.

Information on the availability of unpublished data or statistical analyses may be obtained from the district office.

Records of discharge collected by agencies other than the Geological Survey

The National Water Data Exchange, Water Resources Division, U.S. Geological Survey, National Center, Reston, Va. 22092, maintains an index of all discharge measurement sites in the State. Information on records available at specific sites can be obtained upon request.

EXPLANATION OF WATER-QUALITY RECORDS

Collection and examination of data

Surface-water samples for analyses usually are collected at or near gaging stations. The quality-of-water records are given immediately following the discharge records at these stations.

The descriptive heading for water-quality records gives the period of record for all water-quality data; the period of daily record for parameters that are measured on a daily basis (specific conductance, water temperature or sediment discharge) extremes for the period of daily record; extremes for the current year; and general remarks.

For ground-water records, no descriptive statements are given; however, the well number, depth of well, date of sampling and/or other pertinent data are given in the table containing the chemical analyses of the ground water.

Water analysis

Most methods for collecting and analyzing water samples are described in the U.S. Geological Survey Techniques of Water-Resources Investigations listed on a following page.

One sample can define adequately the water quality at a given time if the mixture of solutes throughout the stream cross section is homogeneous. However, the concentration of solutes at different locations in the cross section may vary widely with different rates of water discharge, depending on the source of material and the turbulence and mixing of the stream. Some streams must be sampled through several vertical sections to obtain a representative sample needed for an accurate mean concentration and for use in calculating load.

Chemical-quality data published in this report are considered to be the most representative values available for the stations listed. The values reported represent water-quality conditions at the time of sampling as much as possible, consistent with available sampling techniques and methods of analysis. In the case where an apparent inconsistency exists between a reported pH value and the relative abundance of carbon dioxide species (carbonate and bicarbonate), the inconsistency is the result of a slight uptake of carbon dioxide from the air by the sample between measurement of pH in the field and determination of carbonate and bicarbonate in the laboratory.

For chemical-quality stations equipped with digital monitors, the records consist of daily maximum and minimum values for each constituent measured and are based upon hourly punches beginning at 0100 hours and ending at 2400 hours for the day of record. More detailed records (hourly values) may be obtained from the district office.

Results of some laboratory chemical or biological analyses may not be available at the time of publication of this report. Those analyses that are expected to be made available at a later date are footnoted in the tables and may be requested from the district office files.

Water temperature

Water temperatures are measured at most of the water-quality stations. In addition, water temperatures are taken at time of discharge measurements for water-discharge stations. For stations where water temperatures are taken manually once or twice daily, the water temperatures are taken at about the same time each day. Large streams have a small diel temperature change; shallow streams may have a daily range of several degrees and may follow closely the changes in air temperature. Some streams may be affected by waste-heat discharges.

At stations where recording instruments are used, maximum and minimum temperatures for each day are published.

Sediment

Suspended-sediment concentrations are determined from samples collected by using depth-integrating samplers. Samples usually are obtained at several verticals in the cross section, or a single sample may be obtained at a fixed point and a coefficient applied to determine the mean concentration in the cross sections.

During periods of rapidly changing flow or rapidly changing concentration, samples may have been collected more frequently (twice daily or, in some instances, hourly). The published sediment discharges for days of rapidly changing flow or concentration were computed by the subdivided day method (time-discharge weighted average). Therefore, for those days when the published sediment discharge value differs from the value computed as the product of discharge times mean concentration times 0.0027, the reader can assume that the sediment discharge for that day was computed by the subdivided day method. For periods when no samples were collected, daily loads of suspended sediment were estimated on the basis of water discharge, sediment concentrations observed immediately before and after the periods, and suspended-sediment loads for other periods of similar discharge.

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

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

Parameter codes

In most of the column headings of this report the names of the constituents or properties for which data are given are followed by five-digit codes which appear in parentheses. These codes, called parameter codes, are identical to those introduced or approved by the U.S. Environmental Protection Agency and are widely used by federal and state agencies. The codes indicate, to one having a key, more precisely than the verbal column headings can the constituents or properties being reported. Data listed under a given code in this report should be comparable to those listed under the same code by other agencies.

EXPLANATION OF GROUND-WATER LEVEL RECORDS

Collection of data

Only ground-water level data from a basic network of observation wells are published herein. This basic network contains observation wells so located that the most significant data are obtained from the fewest wells in the most important aquifers.

Each well is identified by means of (1) a 15-digit number that is based on latitude and longitude and (2) a local number that is provided for local needs. See figures 1 and 2.

Measurements are made in many types of wells, under varying conditions of access and at different temperatures, hence, neither the method of measurement nor the equipment can be standardized. At each observation well, however, the equipment and techniques used are those that will ensure that measurements at each well are consistent.

Water-level measurements in this report are given in feet with reference to land-surface datum (lsd). Land-surface datum is a datum plane that is approximately at land surface at each well. If known, the altitude of the land-surface datum is given in the well description. The height of the measuring point (MP) above or below land-surface datum is given in each well description. Water levels in wells equipped with recording gages are reported for every fifth day and the end of each month (eom).

Water levels are reported to as many significant figures as can be justified by the local conditions. For example, in a measurement of a depth to water of several hundred feet, the error in determining the absolute value of the total depth to water may be a few tenths of a foot, whereas the error in determining the net change of water level between successive measurements may be only a hundredth or a few hundredths of a foot. For lesser depths to water the accuracy is greater. Accordingly, most measurements are reported to a hundredth of a foot, but some are given only to a tenth of a foot or a larger unit.

Thirty-four manuals by the U.S. Geological Survey have been published to date in the series on techniques describing procedures for planning and executing specialized work in water-resources investigations. The material is grouped under major subject headings called books and is further divided into sections and chapters. For example, Section A of Book 3 (Applications of Hydraulics) is on surface water. The chapter, the unit of publication, is limited to a narrow field of subject matter. This format permits flexibility in revision and publication as the need arises. The reports listed below are for sale by the U.S. Geological Survey, Branch of Distribution, 1200 South Eads Street, Arlington, VA 22202 (authorized agent of the Superintendent of Documents, Government Printing Office).

NOTE: When ordering any of these publications, please give the title, book number, chapter number, and "U.S. Geological Survey Techniques of Water-Resources Investigations".

1-D1. *Water temperature--influential factors, field measurement, and data presentation,* by H. H. Stevens, Jr., J. F. Ficke, and G. F. Smoot: USGS--TWRI Book 1, Chapter D1. 1975. 65 pages.
1-D2. *Guidelines for collection and field analysis of ground-water samples for selected unstable constituents,* by W. W. Wood: USGS--TWRI Book 1, Chapter D2. 1976. 24 pages.
2-D1. *Application of surface geophysics to ground-water investigations,* by A. A. R. Zohdy, G. P. Eaton, and D. R. Mabey: USGS--TWRI Book 2, Chapter D1. 1974. 116 pages.
2-E1. *Application of borehole geophysics to water-resources investigations,* by W. S. Keys and L. M. MacCary: USGS--TWRI Book 2, Chapter E1. 1971. 126 pages.
3-A1. *General field and office procedures for indirect discharge measurements,* by M. A. Benson and Tate Dalrymple: USGS--TWRI Book 3, Chapter A1. 1967. 30 pages.
3-A2. *Measurement of peak discharge by the slope-area method,* by Tate Dalrymple and M. A. Benson: USGS--TWRI Book 3, Chapter A2. 1967. 12 pages.
3-A3. *Measurement of peak discharge at culverts by indirect methods,* by G. L. Bodhaine: USGS--TWRI Book 3, Chapter A3. 1968. 60 pages.
3-A4. *Measurement of peak discharge at width contractions by indirect methods,* by H. F. Matthai: USGS--TWRI Book 3, Chapter A4. 1967. 44 pages.
3-A5. *Measurement of peak discharge at dams by indirect methods,* by Harry Hulsing: USGS--TWRI Book 3, Chapter A5. 1967. 29 pages.
3-A6. *General procedure for gaging streams,* by R. W. Carter and Jacob Davidian: USGS--TWRI Book 3, Chapter A6. 1968. 13 pages.
3-A7. *Stage measurements at gaging stations,* by T. J. Buchanan and W. P. Somers: USGS--TWRI Book 3, Chapter A7. 1968. 28 pages.
3-A8. *Discharge measurements at gaging stations,* by T. J. Buchanan and W. P. Somers: USGS--TWRI Book 3, Chapter A8. 1969. 65 pages.
3-A11. *Measurement of discharge by moving-boat method,* by G. F. Smoot and C. E. Novak: USGS--TWRI Book 3, Chapter A11. 1969. 22 pages.
3-B1. *Aquifer-test design, observation, and data analysis,* by R. W. Stallman: USGS--TWRI Book 3, Chapter B1. 1971. 26 pages.
3-B2. *Introduction to ground-water hydraulics, a programed text for self-instruction,* by G. D. Bennett: USGS--TWRI Book 3, Chapter B2. 1976. 172 pages.
3-C1. *Fluvial sediment concepts,* by H. P. Guy: USGS--TWRI Book 3, Chapter C1. 1970. 55 pages.
3-C2. *Field methods for measurement of fluvial sediment,* by H. P. Guy and V. W. Norman: USGS--TWRI Book 3, Chapter C2. 1970. 59 pages.
3-C3. *Computation of fluvial-sediment discharge,* by George Porterfield: USGS--TWRI Book 3, Chapter C3. 1972. 66 pages.
4-A1. *Some statistical tools in hydrology,* by H. C. Riggs: USGS--TWRI Book 4, Chapter A1. 1968. 39 pages.
4-A2. *Frequency curves,* by H. C. Riggs: USGS--TWRI Book 4, Chapter A2. 1968. 15 pages.
4-B1. *Low-flow investigations,* by H. C. Riggs: USGS--TWRI Book 4, Chapter B1. 1972. 18 pages.
4-B2. *Storage analyses for water supply,* by H. C. Riggs and C. H. Hardison: USGS--TWRI Book 4, Chapter B2. 1973. 20 pages.
4-B3. *Regional analyses of streamflow characteristics,* by H. C. Riggs: USGS--TWRI Book 4, Chapter B3. 1973. 15 pages.
4-D1. *Computation of rate and volume of stream depletion by wells,* by C. T. Jenkins: USGS--TWRI Book 4, Chapter D1. 1970. 17 pages.
5-A1. *Methods for determination of inorganic substances in water and fluvial sediments,* by M. W. Skougstad and others, editors: USGS--TWRI Book 5, Chapter A1. 1979. 626 pages.
5-A2. *Determination of minor elements in water by emission spectroscopy,* by P. R. Barnett and E. C. Mallory, Jr.: USGS--TWRI Book 5, Chapter A2. 1971. 31 pages.
5-A3. *Methods for analysis of organic substances in water,* by D. F. Goerlitz and Eugene Brown: USGS--TWRI Book 5, Chapter A3. 1972. 40 pages.
5-A4. *Methods for collection and analysis of aquatic biological and microbiological samples,* edited by P. E. Greeson, T. A. Ehlke, G. A. Irwin, B. W. Lium, and K. V. Slack: USGS--TWRI Book 5, Chapter A4. 1977. 332 pages.
5-A5. *Methods for determination of radioactive substances in water and fluvial sediments,* by L. L. Thatcher, V. J. Janzer, and K. W. Edwards: USGS--TWRI Book 5, Chapter A5. 1977. 95 pages.
5-C1. *Laboratory theory and methods for sediment analysis,* by H. P. Guy: USGS--TWRI Book 5, Chapter C1. 1969. 58 pages.
7-C1. *Finite difference model for aquifer simulation in two dimensions with results of numerical experiments,* by P. C. Trescott, G. F. Pinder, and S. P. Larson: USGS--TWRI Book 7, Chapter C1. 1976. 116 pages.
7-C2. *Computer model of two-dimensional solute transport and dispersion in ground water,* by L. F. Konikow and J. D. Bredehoeft: USGS--TWRI Book 7, Chapter C2. 1978. 90 pages.
8-A1. *Methods of measuring water levels in deep wells,* by M. S. Garber and F. C. Koopman: USGS--TWRI Book 8, Chapter A1. 1968. 23 pages.
8-B2. *Calibration and maintenance of vertical-axis type current meters,* by G. F. Smoot and C. E. Novak: USGS--TWRI Book 8, Chapter B2. 1968. 15 pages.

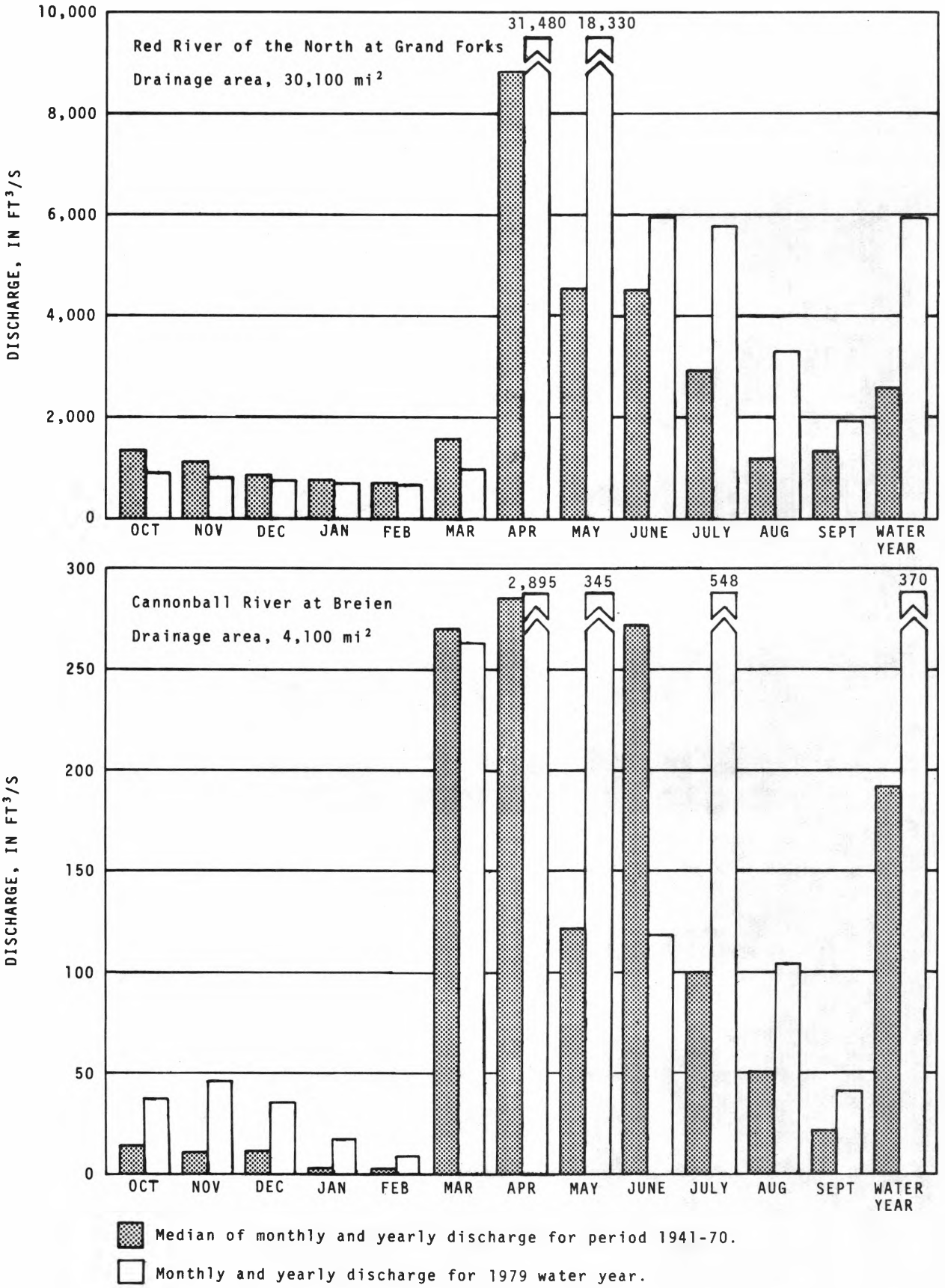

FIGURE 3.--Discharge during 1979 water year compared with median discharge for period 1941-70 for two representative gaging stations.

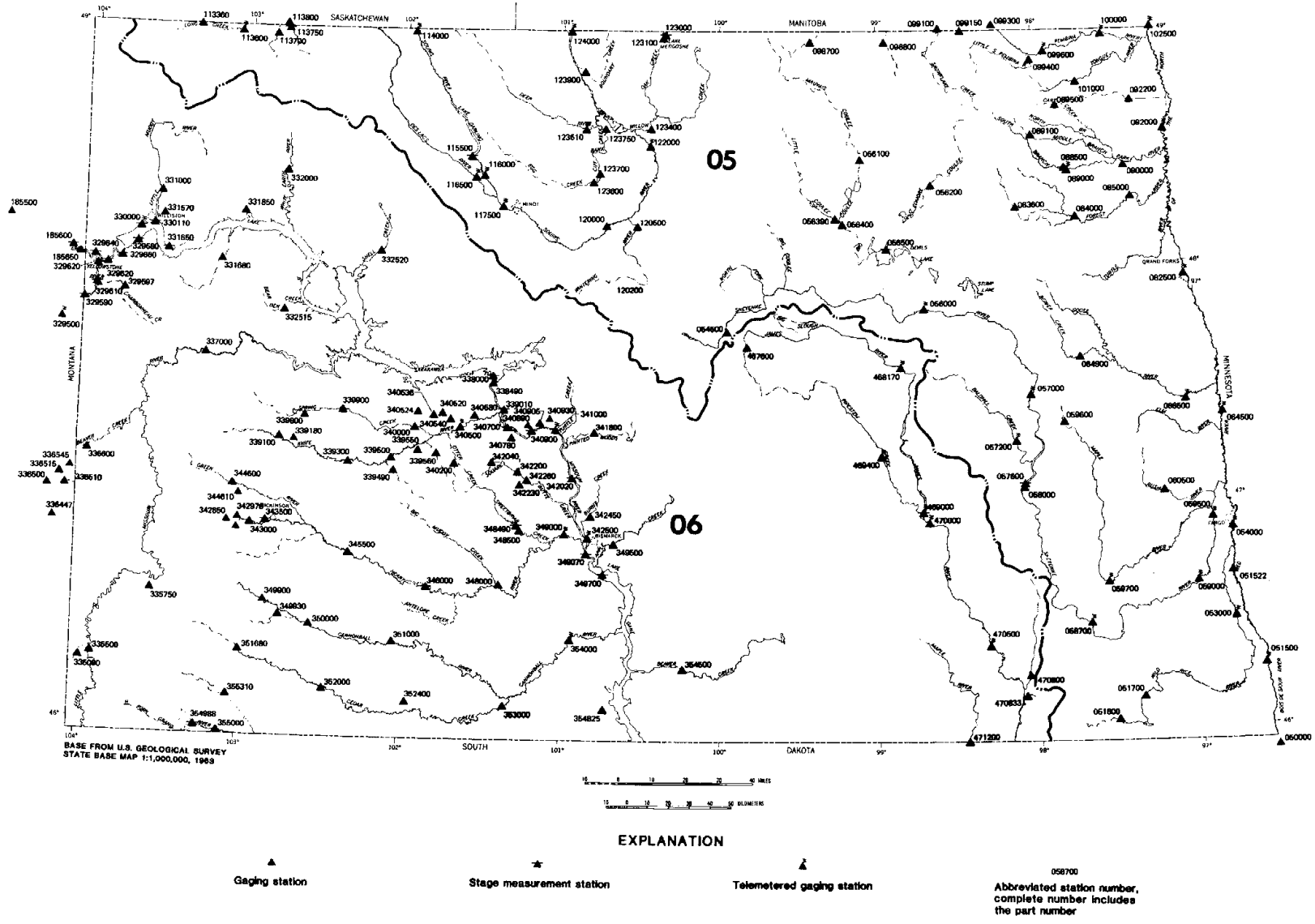

FIGURE 4--Locations of lake, crest-stage and stream gaging stations.

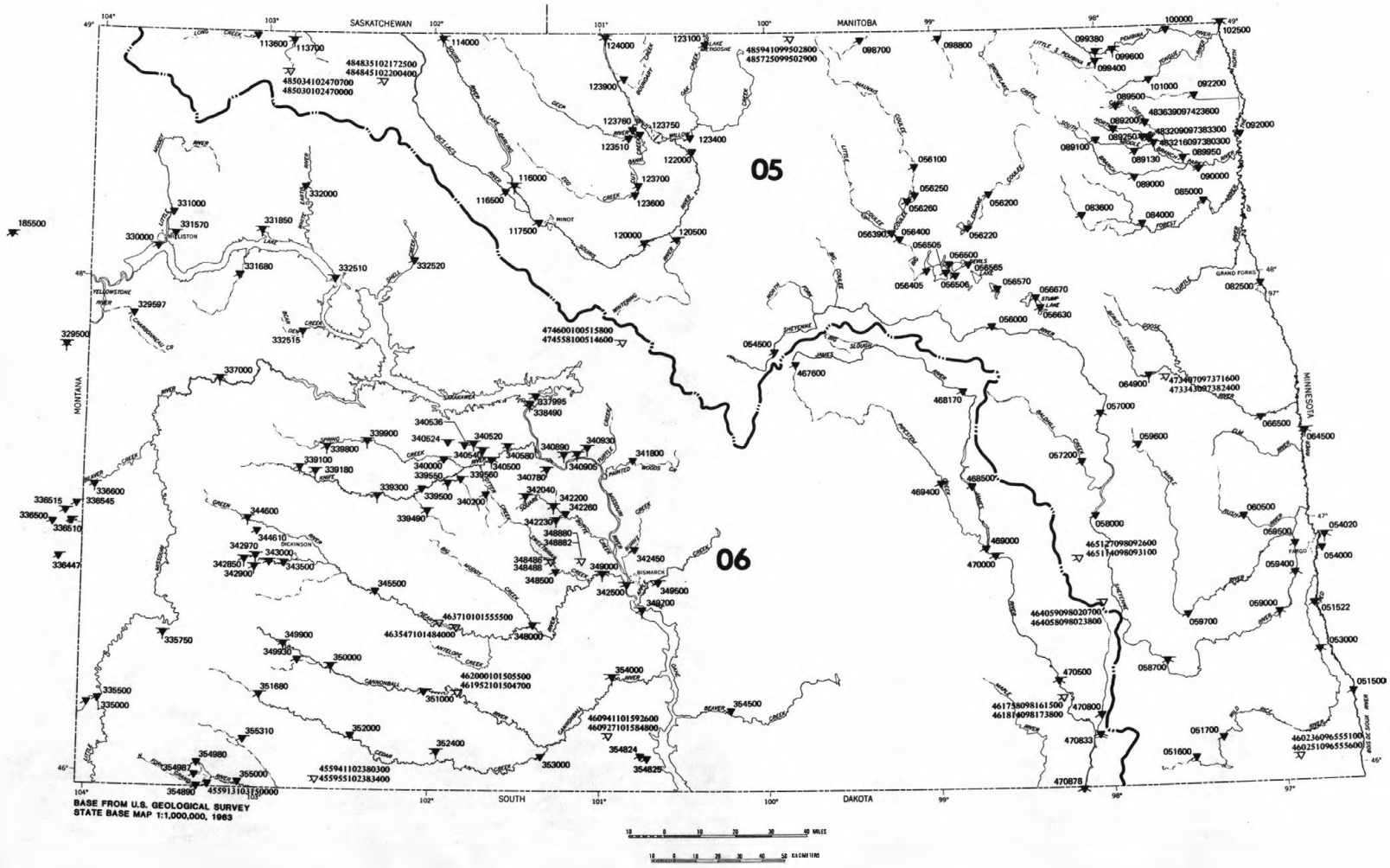

FIGURE 5--Locations of water-quality stations.

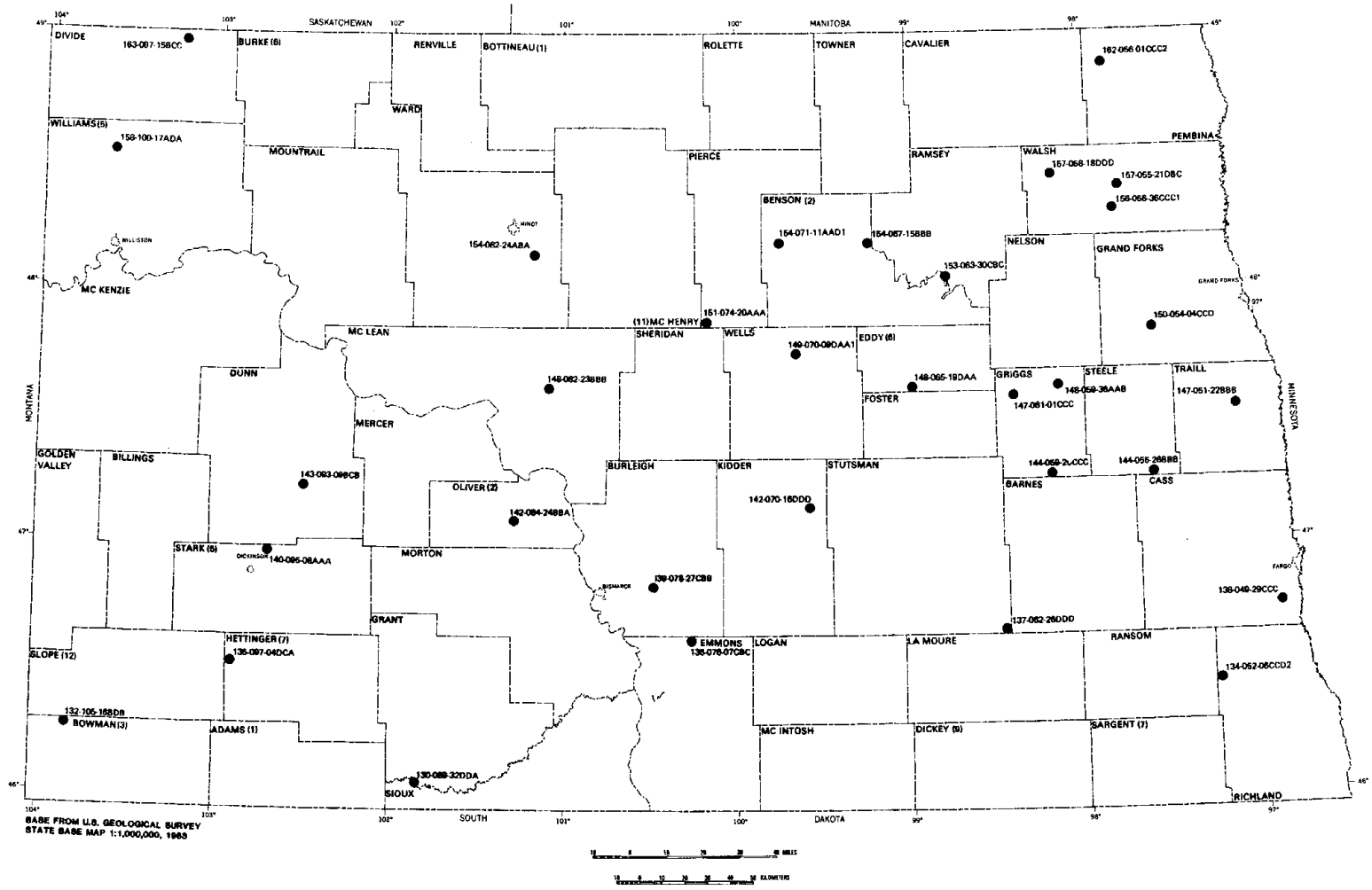

FIGURE 6--Locations of ground-water observation wells.

05050000 BOIS DE SIOUX RIVER NEAR WHITE ROCK, SD

LOCATION.--Lat 45°51'45", long 96°34'25", in SW¼SW¼ sec.27, T.128 N., R.47 W., Roberts County, Hydrologic Unit 09020101, on Sisseton Indian Reservation, on left bank just downstream from Big Slough Outlet, 300 ft (91 m) downstream from White Rock Dam, 4 mi (6 km) south of White Rock, and 5 mi (8 km) northwest of Wheaton, MN.

DRAINAGE AREA.--1,160 mi^2 (3,000 km^2), approximately.

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

GAGE.--Water-stage recorder. Datum of gage is 960.00 ft (292.608 m), adjustment of 1912 (levels by Corps of Engineers). Prior to Jan. 14, 1943, nonrecording gage at same site at datum 0.11 ft (0.034 m) lower. Jan. 15, 1943, to Sept. 30, 1963, water-stage recorder at same site at datum 0.11 ft (0.034 m) lower.

REMARKS.--Records fair. Flow regulated by Lake Traverse-Bois de Sioux Flood Control and Water Conservation project, available capacity for flood control, 137,000 acre-ft (169 hm^3).

AVERAGE DISCHARGE.--38 years, 81.6 ft^3/s (2.311 m^3/s), 59,120 acre-ft/yr (72.9 hm^3/yr); median of yearly mean discharges, 54.0 ft^3/s (1.529 m^3/s), 39,120 acre-ft/yr (48.3 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,770 ft^3/s (107 m^3/s), occurred during period Apr. 19-21, 1969, gage height, 15.07 ft (4.593 m), from floodmark; no flow at times in most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,030 ft^3/s (29.2 m^3/s) May 4, gage height, 10.15 ft (3.094 m); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.4	2.4	2.0	1.3	.09	.00	4.2	857	863	716	119	39
2	2.1	2.0	2.0	1.2	.02	.00	9.0	917	858	722	119	38
3	2.4	1.8	2.0	1.1	.00	.00	12	992	854	756	120	37
4	3.4	3.8	2.0	.94	.00	.00	15	1020	850	746	119	36
5	1.7	1.6	2.0	.87	.00	.00	18	1010	812	728	116	35
6	2.0	1.7	2.0	.80	.00	.00	20	1010	824	715	111	35
7	2.6	1.7	2.0	.76	.00	.00	23	1000	817	700	114	22
8	5.8	1.6	2.0	.70	.00	.00	26	997	808	679	113	.48
9	3.2	.92	2.0	.65	.00	.00	29	995	806	468	114	.00
10	4.2	.85	2.0	.64	.00	.00	33	990	801	150	114	.00
11	4.5	.96	2.0	.64	.00	.00	47	985	754	120	113	.00
12	3.4	1.4	2.0	.64	.00	.00	60	975	733	119	112	.05
13	3.4	2.6	2.0	.63	.00	.00	68	967	727	169	114	.00
14	3.9	2.1	2.0	.63	.00	.00	72	959	723	225	114	.00
15	2.8	2.1	2.0	.63	.00	.01	80	949	610	228	112	.00
16	4.8	2.1	2.0	.63	.00	.03	88	930	506	222	109	.00
17	4.1	2.1	2.1	.63	.00	.08	99	940	501	218	109	.00
18	2.7	2.1	2.1	.63	.00	.20	110	936	421	214	111	.00
19	3.7	2.1	2.1	.62	.00	.29	120	929	348	212	111	.00
20	4.1	2.1	2.1	.62	.00	.50	180	925	395	211	111	.00
21	3.2	2.0	2.1	.62	.00	.80	240	918	492	210	110	.00
22	2.0	2.0	2.1	.61	.00	1.5	260	917	590	209	112	.00
23	5.3	2.0	2.0	.58	.00	2.0	332	909	644	213	112	.00
24	4.8	2.0	1.9	.52	.00	2.2	485	902	694	216	110	.00
25	1.8	2.0	1.8	.47	.00	2.4	612	893	729	163	110	.00
26	2.7	2.0	1.7	.42	.00	2.6	746	890	754	121	111	.00
27	2.4	2.0	1.6	.37	.00	2.8	770	882	745	123	88	.00
28	2.9	2.0	1.6	.32	.00	3.0	757	874	742	126	50	.00
29	5.0	2.0	1.5	.27	---	3.1	758	871	736	137	42	.00
30	2.9	2.0	1.5	.22	---	3.3	773	873	729	139	40	.00
31	2.4	---	1.4	.18	---	3.7	---	864	---	128	38	---
TOTAL	103.6	58.03	59.6	19.84	.11	28.51	6846.2	29076	20866	10103	3198	242.53
MEAN	3.34	1.93	1.92	.64	.004	.92	228	938	696	326	103	8.08
MAX	5.8	3.8	2.1	1.3	.09	3.7	773	1020	863	756	120	39
MIN	1.7	.85	1.4	.18	.00	.00	4.2	857	348	119	38	.00
AC-FT	205	115	118	39	.2	57	13580	57670	41390	20040	6340	481

CAL YR 1978 TOTAL 73715.83 MEAN 202 MAX 923 MIN .00 AC-FT 146200
WTR YR 1979 TOTAL 70601.42 MEAN 193 MAX 1020 MIN .00 AC-FT 140000

05051500 RED RIVER OF THE NORTH AT WAHPETON, ND

LOCATION.--Lat 46°15'55", long 96°35'40", in NE¼ sec.8, T.132 N., R.47 W., Richland County, Hydrologic Unit 09020104, on left bank in Wahpeton, 800 ft (240 m) downstream from confluence of Bois de Sioux and Otter Tail Rivers, and at mile 548.6 (882.7 km).

DRAINAGE AREA.--4,010 mi^2 (10,390 km^2), approximately.

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

GAGE.--Water-stage recorder and concrete and wooden dam. Datum of gage is 942.97 ft (287.417 m) National Geodetic Vertical Datum of 1929. Prior to Aug. 6, 1943, U.S. Weather Bureau nonrecording gage 800 ft (240 m) upstream, converted to present datum. Aug. 6, 1943, to Oct. 27, 1950, nonrecording gage at present site and datum.

REMARKS.--Records good. Flow regulated by Orwell Reservoir, capacity, 14,100 acre-ft (17.4 hm^3) at elevation 1,070 ft (326.136 m) National Geodetic Vertical Datum of 1929, adjustment of 1912; Lake Traverse, capacity, 137,000 acre-ft (169 hm^3), available for flood control; numerous other controlled lakes and ponds, and several powerplants.

AVERAGE DISCHARGE.--36 years (1943-79), 538 ft^3/s (15.24 m^3/s), 389,800 acre-ft/yr (481 hm^3/yr); median of yearly mean discharges, 500 ft^3/s (14.2 m^3/s), 362,000 acre-ft/yr (446 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,200 ft^3/s (261 m^3/s) Apr. 10, 1969, gage height, 16.34 ft (4.980 m); minimum daily, 1.7 ft^3/s (0.048 m^3/s) Aug. 28 to Sept. 5, 9, 10, 1976; minimum observed gage height, 0.63 ft (0.192 m) Aug. 29, 1976.

EXTREMES OUTSIDE PERIOD OF RECORD.--A stage of 17.0 ft (5.182 m), discharge, 10,500 ft^3/s (297 m^3/s) occurred in the spring of 1897 and has not been exceeded since.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 7,050 ft^3/s (200 m^3/s) Apr. 14, gage height, 15.44 ft (4.706 m), backwater from ice; minimum, 85 ft^3/s (2.41 m^3/s) Oct. 11, gage height, 3.16 ft (0.963 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	213	136	120	105	100	160	620	1930	1900	1740	980	742
2	206	134	120	105	100	180	660	1880	1880	1700	980	742
3	205	134	120	105	100	230	600	1930	1840	1720	975	742
4	204	136	120	105	100	240	1000	2050	1820	1800	973	734
5	200	126	120	105	100	250	1500	2150	1810	1800	959	714
6	203	125	120	105	102	250	1450	2160	1790	1740	942	678
7	179	121	120	105	105	250	1360	2150	1760	1720	912	674
8	113	109	120	105	105	250	1380	2120	1740	1690	861	662
9	91	108	120	105	105	250	1500	2090	1720	1670	834	642
10	90	119	120	105	105	260	2000	2040	1700	1520	808	634
11	88	114	120	105	108	270	2800	2050	1680	1080	805	626
12	90	126	120	105	110	270	4140	2050	1600	985	799	622
13	94	114	120	105	112	250	6230	2040	1600	1060	813	614
14	97	103	120	105	105	250	7000	1980	1570	1100	807	610
15	100	102	120	105	100	240	6830	1950	1540	1120	804	610
16	103	100	120	105	100	240	6180	1940	1470	1120	796	602
17	99	100	120	105	100	260	5560	1940	1390	1080	769	594
18	126	100	120	105	100	270	5510	1930	1350	975	761	578
19	117	100	120	105	100	280	6040	1930	1330	940	758	546
20	134	100	105	105	100	270	5980	1920	1630	935	764	538
21	155	109	105	105	100	250	5250	1920	2380	935	772	542
22	158	120	105	105	100	360	4480	1920	2560	935	781	542
23	164	125	105	105	100	360	3580	1920	2290	980	782	538
24	157	125	105	105	100	400	2670	1920	1990	1010	746	514
25	148	125	105	103	100	450	2200	1920	1830	980	762	486
26	151	125	105	103	100	480	2040	1910	1750	980	774	502
27	145	125	105	102	100	520	2040	1910	1730	922	778	490
28	144	125	105	100	120	560	2010	1910	1720	898	790	498
29	145	125	105	100	---	580	1970	1910	1740	890	786	506
30	134	125	105	100	---	580	1960	1910	1780	935	754	506
31	140	---	105	100	---	600	---	1910	---	940	754	---
TOTAL	4393	3536	3540	3228	2877	10060	97340	61290	52890	37900	25577	18028
MEAN	142	118	114	104	103	325	3245	1977	1763	1223	825	601
MAX	213	136	120	105	120	600	7000	2160	2560	1800	980	742
MIN	88	100	105	100	100	160	620	1880	1330	890	746	486
AC-FT	8710	7010	7020	6400	5710	19950	193100	121600	104900	75170	50730	35760

CAL YR 1978 TOTAL 314959.6 MEAN 863 MAX 6190 MIN 9.6 AC-FT 624700
WTR YR 1979 TOTAL 320659.0 MEAN 879 MAX 7000 MIN 88 AC-FT 636000

05051522 RED RIVER OF THE NORTH AT HICKSON, ND

LOCATION.--Lat 46°39'35", long 96°47'44", in SW¼ sec.19, T.137 N., R.48 W., Clay County, MN, Hydrologic Unit 09020104, on right bank 60 ft (18 m) downstream from bridge on township road, and 1 mi (2 km) southeast of Hickson, ND.

DRAINAGE AREA.--4,300 mi^2 (11,100 km^2), approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1975 to current year.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 877.06 ft (267.3 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair. Flow regulated by Orwell Reservoir, capacity, 14,100 acre-ft (17.4 hm^3) at elevation 1,070 ft (326.136 m) National Geodetic Vertical Datum of 1929, adjustment of 1912; Lake Traverse, capacity, 137,000 acre-ft (169 hm^3), available for flood control; numerous other controlled lakes and ponds; and several powerplants.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,600 ft^3/s (272 m^3/s) Apr. 18, 1979, gage height, 33.03 ft (10.068 m); no flow Oct. 26, 1976 to Jan. 9, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 9,600 ft^3/s (272 m^3/s) Apr. 18, gage height, 33.03 ft (10.068 m); minimum daily, 97 ft^3/s (2.75 m^3/s) Oct. 12, 13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	222	130	125	105	100	120	580	2270	1870	1780	1110	760
2	220	128	122	105	100	160	590	2160	1860	1770	1060	752
3	208	128	120	105	100	230	610	2070	1850	1750	1060	744
4	204	128	120	105	100	230	730	1960	1830	1750	1040	748
5	200	125	120	105	100	220	1000	2040	1800	1770	1040	740
6	196	124	120	105	100	230	1250	2130	1790	1810	1030	732
7	192	124	120	105	100	240	1530	2210	1760	1790	988	696
8	200	124	120	105	102	240	1520	2230	1730	1750	964	684
9	188	124	120	105	105	250	1390	2220	1710	1720	916	684
10	136	124	120	105	105	250	1350	2180	1710	1690	888	660
11	108	124	120	105	105	250	1670	2130	1700	1600	852	652
12	97	120	120	105	105	260	2390	2080	1680	1360	845	632
13	97	120	120	105	108	270	3360	2060	1650	1240	840	620
14	100	115	120	105	110	250	4450	2040	1590	1110	832	616
15	100	110	120	105	110	250	5830	2010	1550	1120	832	616
16	108	105	120	105	105	255	7420	1980	1520	1140	824	616
17	104	102	120	105	100	260	9000	1960	1480	1140	818	620
18	108	100	120	105	100	260	9550	1950	1400	1130	796	600
19	120	100	120	105	100	270	9160	1940	1360	1030	772	584
20	124	100	120	105	100	280	8610	1940	1360	992	768	564
21	132	100	120	105	100	300	7980	1920	1430	980	764	544
22	128	110	105	105	100	320	7720	1910	1910	980	788	540
23	140	120	105	105	100	380	6380	1910	2380	980	868	540
24	144	122	105	105	100	420	5640	1910	2470	1030	900	540
25	144	125	105	105	100	440	4750	1900	2270	1080	832	540
26	144	125	105	105	100	450	4030	1890	2010	1080	780	496
27	140	125	105	104	100	460	3240	1880	1830	1060	764	496
28	136	125	105	103	100	500	2750	1870	1770	996	788	492
29	136	125	105	102	---	540	2540	1880	1760	1000	792	492
30	128	125	105	100	---	580	2380	1890	1760	1010	788	492
31	132	---	105	100	---	580	---	1880	---	1140	776	---
TOTAL	4536	3557	3577	3239	2855	9745	119400	62400	52790	40778	27135	18492
MEAN	146	119	115	104	102	314	3980	2013	1760	1315	875	616
MAX	222	130	125	105	110	580	9550	2270	2470	1810	1110	760
MIN	97	100	105	100	100	120	580	1870	1360	980	764	492
AC-FT	9000	7060	7090	6420	5660	19330	236800	123800	104700	80880	53820	36680

CAL YR 1978 TOTAL 331482 MEAN 908 MAX 8920 MIN 37 AC-FT 657500
WTR YR 1979 TOTAL 348504 MEAN 955 MAX 9550 MIN 97 AC-FT 691300

05051522 RED RIVER OF THE NORTH NEAR HICKSON, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1975 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1975 to current year.
WATER TEMPERATURES: October 1975 to current year.

REMARKS.--No record Sept. 1-30.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,900 micromhos Jan. 27, 1977; minimum daily, 190 micromhos Mar. 28, 1978.
WATER TEMPERATURES: Maximum daily, 30°C July 23, 1977; minimum daily, 0.0°C on many days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 800 micromhos Feb. 26; minimum daily, 220 micromhos Apr. 12.
WATER TEMPERATURES: Maximum observed, 26.5°C July 12, 21, 24; minimum daily, 0.0°C on many days during winter months.

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE (DEG C) (00010)	COLOR (PLAT-INUM-COBALT UNITS) (00080)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)
OCT											
26...	1230	143	541	8.3	7.5	20	7.0	9.1	270	--	51
DEC											
01...	1445	125	750	8.1	.0	6	2.0	6.8	300	43	57
19...	1200	121	620	8.0	.0	7	1.9	11.6	300	31	58
JAN											
25...	1600	107	690	7.8	.5	3	3.0	10.4	370	57	71
MAR											
09...	1245	250	610	7.7	.5	24	2.6	.6	290	23	58
23...	1030	320	520	8.0	.5	12	3.5	8.8	260	33	54
APR											
16...	1745	7840	350	--	1.0	--	--	--	--	--	--
20...	1400	6580	390	7.6	6.5	90	66	11.4	170	93	41
22...	2015	6890	445	--	10.0	--	--	--	--	--	--
26...	1340	3840	520	--	10.5	--	--	--	--	--	--
MAY											
02...	1745	2110	600	--	8.0	--	--	--	--	--	--
JUN											
07...	1030	1770	580	8.3	19.0	20	35	6.6	270	100	55
28...	1930	1770	--	--	22.5	--	--	--	--	--	--
29...	1950	1780	620	8.2	22.5	35	42	6.6	280	96	53
AUG											
01...	1015	1170	405	8.2	23.5	320	2.0	6.4	220	51	44
SEP											
05...	1240	741	413	8.4	22.5	20	56	7.6	<200	7	36

DATE	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)
OCT											
26...	35	14	10	.4	5.2	230	59	7.9	.2	3.0	332
DEC											
01...	39	16	10	.4	5.7	260	56	9.5	.2	6.0	366
19...	38	15	10	.4	5.2	270	58	9.2	.1	7.9	377
JAN											
25...	46	17	9	.4	5.5	310	54	12	.2	19	408
MAR											
09...	36	16	10	.4	6.0	270	46	9.7	.2	18	368
23...	31	16	11	.4	5.2	230	40	15	.2	16	313
APR											
16...	--	--	--	--	--	--	--	--	--	--	--
20...	16	7.6	9	.3	6.3	76	90	4.8	.2	14	249
22...	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--
MAY											
02...	--	--	--	--	--	--	--	--	--	--	--
JUN											
07...	33	19	13	.5	6.8	170	130	9.4	.2	5.1	396
28...	--	--	--	--	--	--	--	--	--	--	--
29...	35	21	14	.6	6.3	180	140	9.4	.2	14	415
AUG											
01...	27	11	17	.3	4.7	170	59	5.5	.2	17	287
SEP											
05...	26	9.0	9	.3	3.8	190	33	5.0	.2	9.0	251

05051522 RED RIVER OF THE NORTH NEAR HICKSON, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)	SOLIDS, DISSOLVED (TONS PER DAY) (70302)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, TOTAL (MG/L AS N) (00600)	NITROGEN, TOTAL (MG/L AS NO3) (71887)	PHOSPHORUS, TOTAL (MG/L AS P) (00665)
OCT											
26...	--	.45	128	.01	.00	.01	.78	.79	.80	3.5	.10
DEC											
01...	--	.50	124	.02	.20	.01	.67	.68	.70	3.1	.05
19...	354	.51	123	.04	.04	.01	.70	.71	.75	3.3	.07
JAN											
25...	413	.55	118	.34	.34	.66	.74	1.4	1.7	7.7	.19
MAR											
09...	352	.50	248	.01	.02	.30	1.0	1.3	1.3	5.8	.15
23...	319	.43	270	.60	.64	.49	.71	1.2	1.8	8.0	.22
APR											
16...	--	--	--	--	--	--	--	--	--	--	--
20...	236	.34	5770	2.3	2.2	.27	1.1	1.4	3.7	16	.39
JUN											
07...	361	.54	1890	.47	.07	.05	1.2	1.2	1.7	7.4	.18
28...	--	--	--	--	--	--	--	--	--	--	--
29...	388	.56	1990	.25	.27	.03	1.2	1.2	1.5	6.4	.31
AUG											
01...	272	.39	907	.25	.24	.03	1.5	1.5	1.8	7.7	.16
SEP											
05...	237	.34	502	.03	.02	.02	.98	1.0	1.0	4.6	.14

DATE	PHOSPHATE, TOTAL (MG/L AS PO4) (00650)	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS, ORTHO, TOTAL (MG/L AS P) (70507)	PHOSPHORUS, HYDROLYZABLE TOTAL (MG/L AS P) (00669)	PHOSPHORUS, ORGANIC TOTAL (MG/L AS P) (00670)	ALUMINUM, DISSOLVED (UG/L AS AL) (01106)	ARSENIC DISSOLVED (UG/L AS AS) (01000)	BARIUM, DISSOLVED (UG/L AS BA) (01005)	BORON, DISSOLVED (UG/L AS B) (01020)	CADMIUM DISSOLVED (UG/L AS CD) (01025)
OCT										
26...	--	.05	.06	.01	.03	20	3	80	100	--
DEC										
01...	--	.11	.06	.00	.02	--	--	--	110	--
19...	--	.05	.03	.01	.03	--	--	--	120	--
JAN										
25...	--	.17	.17	.02	.00	--	--	--	90	--
MAR										
09...	--	.03	.04	--	--	--	--	--	110	--
23...	--	.19	.18	.02	.02	--	--	--	90	--
APR										
16...	--	--	--	--	--	--	--	--	--	--
20...	1.2	.28	.27	.09	.03	0	5	40	80	<1
22...	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--
MAY										
02...	--	--	--	--	--	--	--	--	--	--
JUN										
07...	.18	.08	.06	.04	.08	--	--	--	100	--
28...	--	--	--	--	--	--	--	--	--	--
29...	.37	.13	.12	.12	.07	--	--	--	100	--
AUG										
01...	.43	.15	.14	.01	.01	--	--	--	70	--
SEP										
05...	.18	.09	.06	.04	.04	0	3	80	70	<1

DATE	CHROMIUM, DISSOLVED (UG/L AS CR) (01030)	COBALT, DISSOLVED (UG/L AS CO) (01035)	COPPER, DISSOLVED (UG/L AS CU) (01040)	IRON, DISSOLVED (UG/L AS FE) (01046)	LEAD, DISSOLVED (UG/L AS PB) (01049)	LITHIUM DISSOLVED (UG/L AS LI) (01130)	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	MERCURY DISSOLVED (UG/L AS HG) (71890)	MOLYBDENUM, DISSOLVED (UG/L AS MO) (01060)	NICKEL, DISSOLVED (UG/L AS NI) (01065)	SELENIUM, DISSOLVED (UG/L AS SE) (01145)
OCT											
26...	30	<1	2	20	--	20	6	.0	3	3	0
APR											
20...	0	<3	5	40	0	20	30	11	<10	11	1
JUN											
07...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
AUG											
01...	--	--	--	--	--	--	--	--	--	--	--
SEP											
05...	0	<3	2	<10	0	10	2	.1	<10	2	0

05051522 RED RIVER OF THE NORTH NEAR HICKSON, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)	VANA-DIUM, DIS-SOLVED (UG/L AS V) (01085)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C) (00689)	CYANIDE TOTAL (MG/L AS CN) (00720)	PHENOLS (UG/L) (32730)	PCB, TOTAL (UG/L) (39516)	ALDRIN, TOTAL (UG/L) (39330)	CHLOR-DANE, TOTAL (UG/L) (39350)	DDD, TOTAL (UG/L) (39360)
OCT											
26...	190	.0	<3	8.9	.9	.00	0	.0	.00	.0	.00
DEC											
01...	--	--	--	9.8	--	--	7	--	--	--	--
19...	--	--	--	8.6	.6	--	1	--	--	--	--
JAN											
25...	--	--	--	8.3	--	--	1	--	--	--	--
MAR											
09...	--	--	--	8.8	2.0	--	6	--	--	--	--
23...	--	--	--	9.6	1.1	--	3	--	--	--	--
APR											
20...	170	4.0	10	11	3.1	.00	2	.0	.00	.0	.00
JUN											
07...	--	--	--	13	2.0	--	3	.0	.00	.0	.00
29...	--	--	--	14	--	--	1	--	--	--	--
AUG											
01...	--	--	--	14	5.4	--	0	--	--	--	--
SEP											
05...	<10	<1.0	140	8.1	1.6	.00	3	.0	.00	.0	.00

DATE	DDE, TOTAL (UG/L) (39365)	DOT, TOTAL (UG/L) (39570)	DI-AZINON, TOTAL (UG/L) (39570)	DI-ELDRIN TOTAL (UG/L) (39380)	ENDO-SULFAN, TOTAL (UG/L) (39388)	ENDRIN, TOTAL (UG/L) (39390)	ETHION, TOTAL (UG/L) (39398)	HEPTA-CHLOR, TOTAL (UG/L) (39410)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L) (39420)	LINDANE TOTAL (UG/L) (39340)	MALA-THION, TOTAL (UG/L) (39530)
OCT											
26...	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
APR											
20...	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
JUN											
07...	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29...	--	--	--	--	--	--	--	--	--	--	--
AUG											
01...	--	--	--	--	--	--	--	--	--	--	--
SEP											
05...	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

DATE	METH-OXY-CHLOR, TOTAL (UG/L) (39480)	METHYL PARA-THION, TOTAL (UG/L) (39600)	METHYL TRI-THION, TOTAL (UG/L) (39790)	NAPH-THA-LENES, POLY-CHLOR, TOTAL (UG/L) (39250)	MIREX, TOTAL (UG/L) (39755)	PARA-THION, TOTAL (UG/L) (39540)	PER-THANE TOTAL (UG/L) (39034)	TOX-APHENE, TOTAL (UG/L) (39400)	TOTAL TRI-THION (UG/L) (39786)	2,4-D, TOTAL (UG/L) (39730)	2,4,5-T TOTAL (UG/L) (39740)
OCT											
26...	--	.00	.00	.00	.00	.00	.00	0	.00	.02	.00
DEC											
01...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
JAN											
25...	--	--	--	--	--	--	--	--	--	--	--
MAR											
09...	--	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--
APR											
20...	--	.00	.00	--	.00	.00	.00	0	.00	.08	.00
26...	--	--	--	--	--	--	--	--	--	--	--
JUN											
07...	--	.00	.00	--	.00	.00	.00	0	.00	.06	.00
28...	--	--	--	--	--	--	--	--	--	--	--
AUG											
01...	--	--	--	--	--	--	--	--	--	.15	.00
SEP											
05...	.00	.00	.00	--	.00	.00	.00	0	.00	.00	.00

05051522 RED RIVER OF THE NORTH NEAR HICKSON, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	SILVEX, TOTAL (UG/L) (39760)	SEDIMENT, SUSPENDED (MG/L) (80154)	SEDIMENT DISCHARGE, SUSPENDED (T/DAY) (80155)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70338)	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70340)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SED. SUSP. SIEVE DIAM. % FINER THAN .125 MM (70332)	SED. SUSP. SIEVE DIAM. % FINER THAN .250 MM (70333)	SED. SUSP. SIEVE DIAM. % FINER THAN .500 MM (70334)	SED. SUSP. SIEVE DIAM. % FINER THAN 1.00 MM (70335)	SED. SUSP. SIEVE DIAM. % FINER THAN 2.00 MM (70336)
OCT											
26...	.00	22	8.5	--	--	--	--	--	--	--	--
DEC											
01...	--	8	2.7	--	--	--	--	--	--	--	--
19...	--	6	2.0	--	--	--	--	--	--	--	--
JAN											
25...	--	3	.87	--	--	--	--	--	--	--	--
MAR											
09...	--	4	2.7	--	--	--	--	--	--	--	--
23...	--	4	3.5	--	--	--	--	--	--	--	--
APR											
20...	.00	108	2500	87	98	100	--	--	--	--	--
26...	--	105	1090	66	91	94	95	98	98	99	100
JUN											
07...	.00	124	593	--	--	--	--	--	--	--	--
28...	--	139	664	--	--	--	--	--	--	--	--
AUG											
01...	.00	271	856	--	--	--	--	--	--	--	--
SEP											
05...	.00	110	220	--	--	--	--	--	--	--	--

DATE	BED MAT. SIEVE DIAM. % FINER THAN .062 MM (80164)	BED MAT. SIEVE DIAM. % FINER THAN .125 MM (80165)	BED MAT. SIEVE DIAM. % FINER THAN .250 MM (80166)	BED MAT. SIEVE DIAM. % FINER THAN .500 MM (80167)	BED MAT. SIEVE DIAM. % FINER THAN 1.00 MM (80168)	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM (80169)	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM (80170)	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM (80171)	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM (80172)	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM (80173)
OCT										
26...	--	--	--	--	--	--	--	--	--	--
DEC										
01...	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--
JAN										
25...	--	--	--	--	--	--	--	--	--	--
MAR										
09...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
APR										
20...	68	69	72	74	74	80	84	89	93	100
26...	27	28	29	38	47	65	82	92	100	--
JUN										
07...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
AUG										
01...	--	--	--	--	--	--	--	--	--	--
SEP										
05...	--	--	--	--	--	--	--	--	--	--

05051522 RED RIVER OF THE NORTH NEAR HICKSON, ND--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	540	600	610	640	710	---	520	530	---	440	
2	470	540	500	600	600	700	480	510	570	600	470	
3	470	560	---	650	690	660	500	500	---	600	470	
4	480	540	540	675	---	---	500	540	580	600	470	
5	450	---	580	650	650	650	560	500	590	590	---	
6	460	550	580	670	660	650	480	---	600	580	470	
7	500	560	625	---	620	650	430	480	590	600	470	
8	---	550	650	725	625	610	---	500	600	---	470	
9	500	540	650	700	650	610	445	520	590	600	470	
10	500	540	---	700	650	580	400	520	---	610	480	
11	500	480	625	650	---	---	460	490	625	600	470	
12	480	---	625	700	675	600	220	540	600	600	---	
13	490	550	650	700	700	590	340	---	560	550	480	
14	480	560	610	---	675	560	320	540	625	500	480	
15	---	590	650	685	700	570	---	530	625	---	470	
16	520	600	630	680	720	560	320	520	630	490	475	
17	560	560	---	650	675	520	320	520	---	500	460	
18	600	520	620	700	---	---	350	520	620	500	470	
19	600	---	625	700	700	550	360	520	600	500	---	
20	560	560	600	690	675	520	380	---	580	550	480	
21	550	580	600	---	600	540	390	520	570	530	480	
22	---	560	590	700	650	520	---	510	560	---	470	
23	550	650	590	700	650	520	450	520	420	510	455	
24	560	700	---	690	620	490	480	520	---	500	450	
25	550	650	580	690	---	---	490	510	540	500	450	
26	540	---	590	670	800	460	500	520	---	500	---	
27	540	625	610	660	790	500	540	---	600	500	480	
28	520	660	600	---	725	500	560	525	600	500	480	
29	---	650	600	650	---	500	---	540	620	---	480	
30	520	625	650	650	---	480	550	540	625	490	470	
31	540	---	---	650	---	500	---	550	---	470	460	
MEAN	519	578	607	674	673	567	432	519	586	541	469	

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	7.0	.5	.5	.5	.5	---	8.0	17.0	---	23.5	
2	14.5	7.0	.5	.5	.5	.5	.0	8.5	17.0	24.5	24.5	
3	13.0	7.5	---	.5	.0	.5	.0	9.5	---	24.0	24.5	
4	13.0	7.0	.5	.5	---	---	1.0	9.0	18.5	24.5	25.0	
5	12.0	---	.5	.5	.5	.5	.5	9.0	20.0	24.5	---	
6	11.5	6.0	.5	.5	.5	.5	.0	---	19.0	23.5	25.0	
7	11.5	6.0	.5	---	.5	.5	.5	11.0	18.0	22.5	25.0	
8	---	7.0	.5	1.0	.5	1.0	---	10.0	19.0	---	26.0	
9	12.0	6.0	.5	.5	.5	.0	3.0	9.0	17.5	23.5	25.5	
10	12.0	4.0	---	.5	.0	.0	1.0	8.5	---	25.5	24.5	
11	12.0	2.0	.5	.5	---	---	3.0	8.5	19.5	26.0	23.5	
12	11.0	---	.5	.5	.0	.5	3.0	8.5	20.5	26.5	---	
13	10.0	1.0	1.5	.5	.5	.0	1.0	---	21.5	26.0	21.0	
14	10.0	1.0	.5	---	.5	.5	2.5	11.5	23.5	25.5	20.5	
15	---	1.5	.5	.5	.5	.5	---	12.5	23.0	---	20.5	
16	9.0	.5	.5	.5	.5	.5	2.5	15.5	22.5	24.0	19.0	
17	8.5	.5	---	.5	.5	.0	6.0	15.5	---	24.0	20.5	
18	8.5	1.0	.5	.5	---	---	9.5	15.5	21.5	24.0	21.5	
19	9.5	---	.5	.5	.5	.5	5.5	14.5	20.0	25.0	---	
20	10.0	1.0	.5	.5	.5	1.0	8.0	---	20.0	26.0	22.0	
21	10.0	.5	.5	---	.5	1.0	9.0	14.5	19.0	26.5	22.0	
22	---	.0	.5	.5	.5	1.0	---	14.0	18.0	---	22.0	
23	8.0	.5	.5	.5	.5	.0	11.0	15.0	17.5	26.0	20.0	
24	9.0	1.0	---	.5	.5	.0	10.0	16.0	---	26.5	20.0	
25	8.0	.5	.5	.5	---	---	10.0	16.0	20.5	26.0	20.0	
26	8.0	---	.0	.5	.5	.0	9.0	16.5	---	25.0	---	
27	8.0	.5	.0	.5	.5	.0	8.5	---	22.5	24.5	20.5	
28	7.0	.5	.0	---	.5	.0	8.0	20.0	22.5	25.0	21.0	
29	---	.5	.5	.5	---	.5	---	19.5	23.0	---	21.0	
30	7.0	.5	.5	.5	---	.5	8.0	17.5	24.0	23.0	21.0	
31	7.0	---	---	.5	---	1.0	---	17.5	---	23.0	22.5	
MEAN	10.0	2.5	.5	.5	.5	.5	5.0	13.0	20.0	25.0	22.5	

05051600 WILD RICE RIVER NEAR RUTLAND, ND

LOCATION.--Lat 46°01'20", long 97°30'40", in SE¼SE¼ sec.36, T.130 N., R.55 W., Sargent County, Hydrologic Unit 09020105, on right bank 1,000 ft (305 m) upstream from bridge on county highway, 2 mi (3 km) south of Rutland, and 10 mi (16 km) upstream from Lake Tewaukon.

DRAINAGE AREA.--546 mi^2 (1,410 km^2), of which about 250 mi^2 (648 km^2) is probably noncontributing.

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

REVISED RECORDS.--WSP 1728: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,197.73 ft (365.068 m) National Geodetic Vertical Datum of 1929. Prior to Dec. 11, 1960, nonrecording gage at same site and datum.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--20 years, 9.44 ft^3/s (0.267 m^3/s), 6,840 acre-ft/yr (8.43 hm^3/yr); median of yearly mean discharges, 5.6 ft^3/s (0.16 m^3/s), 4,100 acre-ft/yr (5.1 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,270 ft^3/s (36.0 m^3/s) Apr. 8, 1969, gage height, 8.77 ft (2.673 m), backwater from ice; maximum gage height, 8.78 ft (2.676 m) Apr. 8, 1969, backwater from ice; no flow for several months each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 365 ft^3/s (10.3 m^3/s) Apr. 21, gage height, 5.39 ft (1.643 m), only peak above base of 30 ft^3/s (0.85 m^3/s); no flow for several months.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	58	7.5	2.8	2.2	.77
2	.00	.00	.00	.00	.00	.00	.00	51	6.6	2.5	1.7	.73
3	.00	.00	.00	.00	.00	.00	.00	45	5.7	2.2	1.7	.62
4	.00	.00	.00	.00	.00	.00	.00	40	5.1	2.0	4.0	.42
5	.00	.00	.00	.00	.00	.00	.00	36	4.7	1.8	7.9	.31
6	.00	.00	.00	.00	.00	.00	.00	33	4.6	1.6	7.5	.22
7	.00	.00	.00	.00	.00	.00	.00	32	4.1	1.5	4.9	.24
8	.00	.00	.00	.00	.00	.00	1.0	31	3.6	1.2	3.8	.28
9	.00	.00	.00	.00	.00	.00	3.0	30	3.6	1.2	3.1	.24
10	.00	.00	.00	.00	.00	.00	5.0	25	3.3	1.0	2.4	.22
11	.00	.00	.00	.00	.00	.00	8.0	23	6.6	1.0	2.1	.23
12	.00	.00	.00	.00	.00	.00	20	22	4.9	1.0	1.7	.26
13	.00	.00	.00	.00	.00	.00	80	20	4.5	1.5	1.4	1.1
14	.00	.00	.00	.00	.00	.00	140	19	4.2	1.8	1.2	1.2
15	.00	.00	.00	.00	.00	.00	150	17	3.7	1.5	.88	.60
16	.00	.00	.00	.00	.00	.00	219	16	2.8	1.0	.69	.38
17	.00	.00	.00	.00	.00	.00	218	16	2.2	.93	.57	.18
18	.00	.00	.00	.00	.00	.00	219	15	2.1	.84	.41	.03
19	.00	.00	.00	.00	.00	.00	220	11	2.0	.67	.30	.01
20	.00	.00	.00	.00	.00	.00	301	9.7	4.0	.53	.41	.00
21	.00	.00	.00	.00	.00	.00	357	8.8	7.3	.34	.69	.00
22	.00	.00	.00	.00	.00	.00	314	8.6	6.6	.25	1.0	.00
23	.00	.00	.00	.00	.00	.00	250	8.6	5.5	.56	1.1	.00
24	.00	.00	.00	.00	.00	.00	204	8.7	4.5	1.0	.95	.00
25	.00	.00	.00	.00	.00	.00	159	8.3	4.0	2.4	.69	.00
26	.00	.00	.00	.00	.00	.00	135	8.2	3.5	3.5	.50	.00
27	.00	.00	.00	.00	.00	.00	112	7.6	3.0	3.2	.37	.00
28	.00	.00	.00	.00	.00	.00	94	7.4	3.0	3.3	.48	.00
29	.00	.00	.00	.00	---	.00	79	7.4	3.2	2.9	.56	.00
30	.00	.00	.00	.00	---	.00	67	7.7	3.0	2.5	.97	.00
31	.00	---	.00	.00	---	.00	---	8.5	---	2.2	.90	---
TOTAL	.00	.00	.00	.00	.00	.00	3341.00	657.5	132.6	50.54	56.95	8.04
MEAN	.000	.000	.000	.000	.000	.000	111	20.6	4.42	1.63	1.84	.27
MAX	.00	.00	.00	.00	.00	.00	357	58	7.5	3.3	7.9	1.2
MIN	.00	.00	.00	.00	.00	.00	.00	7.4	2.1	.25	.36	.00
AC-FT	.00	.00	.00	.00	.00	.00	6630	1260	263	100	113	16

CAL YR 1978 TOTAL 7459.37 MEAN 20.4 MAX 460 MIN .00 AC-FT 14800
WTR YR 1979 TOTAL 4227.41 MEAN 11.6 MAX 357 MIN .00 AC-FT 8390

05051700 WILD RICE RIVER NEAR CAYUGA, ND

LOCATION.--Lat 46°07'30", long 97°21'40", on line between secs.29 and 30, T.131 N., R.53 W., Sargent County, Hydrologic Unit 09020105, on left bank 20 ft (6 m) downstream from county highway bridge, 1.2 mi (1.9 km) downstream from Shortfoot Creek, 2.5 mi (4.0 km) downstream from Crooked Creek, and 3.5 mi (5.6 km) northeast of Cayuga.

DRAINAGE AREA.--955 mi^2 (2,473 km^2), of which about 390 mi^2 (1,010 km^2) is probably noncontributing.

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

REVISED RECORDS.--WSP 1728: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,095.64 ft (333.951 m) National Geodetic Vertical Datum of 1929, levels by Bureau of Reclamation. Prior to Oct. 9, 1957, nonrecording gage 0.8 mi (1.3 km) upstream at different datum.

REMARKS.--Records good except those for the winter period, which are fair. Some regulation by Fish and Wildlife Service reservoirs, of which Lake Tewaukon is the largest. Small diversions for irrigation.

AVERAGE DISCHARGE.--23 years, 19.2 ft^3/s (0.544 m^3/s), 13,910 acre-ft/yr (17.2 hm^3/yr); median of yearly mean discharges 9.6 ft^3/s (0.27 m^3/s), 7,000 acre-ft/yr (8.6 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,710 ft^3/s (48.4 m^3/s) Apr. 12, 1969, gage height, 9.32 ft (2.841 m); maximum gage height, 10.90 ft (3.322 m), Apr. 7, 1969, backwater from ice; no flow at times each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 600 ft^3/s (17.0 m^3/s) Apr. 12, gage height, 7.29 ft (2.222 m), backwater from ice; no flow for several months.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.22	.00	.00	.00	.00	.00	2.0	277	24	30	18	.07
2	.17	.00	.00	.00	.00	.00	2.0	253	18	31	14	.05
3	.16	.00	.00	.00	.00	.00	2.0	221	15	32	11	.02
4	.16	.00	.00	.00	.00	.00	3.0	200	14	36	10	.00
5	.19	.00	.00	.00	.00	.00	7.0	188	12	35	8.7	.00
6	.19	.00	.00	.00	.00	.00	5.0	176	9.2	32	7.8	.00
7	.17	.00	.00	.00	.00	.00	5.0	163	7.4	31	8.3	.00
8	.14	.00	.00	.00	.00	.00	190	141	5.9	30	7.8	.00
9	.11	.00	.00	.00	.00	.00	150	129	6.3	28	6.3	.00
10	.10	.00	.00	.00	.00	.00	100	118	5.9	27	5.9	.00
11	.08	.00	.00	.00	.00	.00	190	107	5.0	20	5.6	.00
12	.06	.00	.00	.00	.00	.00	380	98	4.6	18	5.0	.00
13	.04	.00	.00	.00	.00	.00	540	90	4.2	22	4.0	.00
14	.04	.00	.00	.00	.00	.00	470	82	3.5	21	3.0	.00
15	.03	.00	.00	.00	.00	.00	260	74	3.0	19	2.6	.00
16	.02	.00	.00	.00	.00	.00	251	68	2.8	15	2.0	.00
17	.01	.00	.00	.00	.00	.00	233	63	2.8	12	1.8	.00
18	.00	.00	.00	.00	.00	.00	280	61	2.8	9.2	1.6	.00
19	.00	.00	.00	.00	.00	.01	307	52	4.0	7.4	1.0	.00
20	.00	.00	.00	.00	.00	.04	397	47	9.2	5.6	.75	.00
21	.00	.00	.00	.00	.00	.10	440	43	7.1	4.6	.75	.00
22	.00	.00	.00	.00	.00	.10	469	37	6.6	3.6	.75	.00
23	.00	.00	.00	.00	.00	.10	476	37	12	9.0	.60	.00
24	.00	.00	.00	.00	.00	4.0	474	37	31	30	.46	.00
25	.00	.00	.00	.00	.00	10	462	38	39	34	.35	.00
26	.00	.00	.00	.00	.00	3.0	445	39	44	43	.22	.00
27	.00	.00	.00	.00	.00	3.0	414	38	46	39	.12	.00
28	.00	.00	.00	.00	.00	2.0	378	33	44	31	.14	.00
29	.00	.00	.00	.00	---	1.0	337	31	39	28	.17	.00
30	.00	.00	.00	.00	---	1.0	298	33	31	26	.15	.00
31	.00	---	.00	.00	---	2.0	---	28	---	21	.10	---
TOTAL	1.89	.00	.00	.00	.00	26.35	7967.0	3002	459.3	730.4	128.96	.14
MEAN	.061	.000	.000	.000	.000	.85	266	96.8	15.3	23.6	4.16	.005
MAX	.22	.00	.00	.00	.00	10	540	277	46	43	18	.07
MIN	.00	.00	.00	.00	.00	.00	2.0	28	2.8	3.6	.10	.00
AC-FT	3.7	.00	.00	.00	.00	52	15800	5950	911	1450	256	.3

CAL YR 1978 TOTAL 16670.22 MEAN 45.7 MAX 464 MIN .00 AC-FT 33070
WTR YR 1979 TOTAL 12316.04 MEAN 33.7 MAX 540 MIN .00 AC-FT 24430

05053000 WILD RICE RIVER NEAR ABERCROMBIE, ND

LOCATION.--Lat 46°28'05", long 96°47'00", in NE¼NE¼ sec.36, T.135 N., R.49 W., Richland County, Hydrologic Unit 09020105, on right bank 420 ft (130 m) upstream from bridge on county highway, 0.75 mi (1.2 km) upstream from rubble masonry dam which serves as control, 3.2 mi (5 km) northwest of Abercrombie, and 7 mi (11 km) downstream from Antelope Creek.

DRAINAGE AREA.--2,080 mi² (5,390 km²), of which about 590 mi² (1,530 km²) is probably noncontributing.

WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WSP 1388: 1939, 1941(M). WSP 1728: Drainage area.

GAGE.--Water-stage recorder and masonry control. Datum of gage is 907.94 ft (276.740 m) National Geodetic Vertical Datum of 1929. Prior to Dec. 7, 1939, nonrecording gage at site 420 ft (130 m) downstream at datum 5.0 ft (1.52 m) lower. Dec. 7, 1939, to Nov. 24, 1952, nonrecording gage at site 0.75 mi (1.2 km) downstream at present datum.

REMARKS.--Records good, except those for the winter period, which are fair. Some regulation by Fish and Wildlife Service reservoirs, of which Lake Tawaukon is the largest. Some small diversions for irrigation.

AVERAGE DISCHARGE.--47 years, 76.0 ft³/s (2.152 m³/s), 55,060 acre-ft/yr (67.9 hm³/yr); median of yearly mean discharges, 32 ft³/s (0.91 m³/s), 23,200 acre-ft/yr (29 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,540 ft³/s (270 m³/s) Apr. 11, 1969, gage height, 24.58 ft (7.492 m); no flow at times most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in spring of 1897 reached a stage of 27.5 ft (8.38 m) present site and datum, from floodmarks pointed out by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 300 ft³/s (8.50 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Apr. 15	1945	*6,000	170	[a]22.39	6.824	July 30	1700	425	12.0	4.18	1.274

Minimum daily discharge, 0.13 ft³/s (0.004 m³/s) Sept. 27-30.

a - Backwater from ice.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18	1.6	3.8	1.7	.50	.50	4.0	860	65	42	207	9.0
2	15	1.6	3.3	1.5	.50	.50	5.0	819	63	38	126	8.3
3	13	1.6	3.1	1.3	.50	.50	5.0	760	62	38	104	7.7
4	11	1.4	2.8	1.2	.50	.50	6.0	703	60	48	83	6.4
5	9.2	1.4	2.6	1.2	.50	.50	10	649	56	34	81	5.8
6	6.8	1.2	2.6	.98	.50	.50	15	642	55	28	74	5.2
7	4.8	1.0	2.6	.92	.50	.50	10	600	52	23	63	4.6
8	4.4	1.0	2.5	.81	.50	.50	50	546	49	19	55	3.5
9	4.0	1.2	2.2	.68	.50	.50	75	509	48	17	48	3.1
10	4.0	1.6	2.2	.68	.50	.50	150	484	44	16	40	2.2
11	4.5	4.0	2.2	.60	.50	.50	680	455	40	13	35	2.2
12	6.5	5.5	2.2	.55	.50	.50	1550	422	39	9.0	32	1.8
13	6.4	5.5	2.2	.55	.50	.50	3060	388	36	12	30	1.6
14	6.0	5.4	2.2	.55	.50	.50	5000	362	34	13	25	1.2
15	4.9	5.4	2.2	.50	.50	.50	5900	330	32	14	20	1.2
16	5.6	5.4	2.2	.50	.50	.50	5800	312	30	14	17	1.2
17	2.5	6.0	2.2	.50	.50	.60	5590	295	28	14	15	.92
18	2.2	6.0	2.1	.50	.50	.65	4790	265	25	15	13	.79
19	2.0	6.0	2.1	.50	.50	.70	4400	230	26	17	9.7	.58
20	3.3	6.0	2.1	.50	.50	.70	3740	211	27	18	8.3	.48
21	2.7	6.0	2.0	.50	.50	.70	3220	186	25	16	6.4	.32
22	2.2	5.6	2.0	.50	.50	.70	2760	169	21	17	54	.24
23	2.0	5.6	2.0	.50	.50	.70	2370	158	16	26	83	.18
24	3.1	5.6	2.0	.50	.50	.70	1950	148	16	29	32	.18
25	2.2	5.6	2.0	.50	.50	.70	1590	134	32	73	20	.18
26	2.2	5.6	2.0	.50	.50	.70	1280	124	55	250	15	.18
27	2.2	5.2	2.0	.50	.50	.70	1090	109	58	195	14	.13
28	2.2	5.0	2.0	.50	.50	.70	996	97	55	142	14	.13
29	2.2	4.6	2.0	.50	---	.70	945	91	54	122	13	.13
30	2.2	4.3	2.0	.50	---	1.0	902	83	49	355	11	.13
31	1.8	---	2.0	.50	---	2.0	---	71	---	313	18	---
TOTAL	156.1	122.7	71.4	21.72	14.00	19.95	57945.0	11220	1254	1982.0	1566.4	69.57
MEAN	5.10	4.09	2.30	.70	.50	.64	1931	362	41.8	63.9	44.1	2.32
MAX	18	6.0	3.8	1.7	.50	2.0	5900	860	65	355	207	9.0
MIN	1.8	1.0	2.0	.50	.50	.50	4.0	71	16	9.0	6.4	.13
AC-FT	310	243	142	43	28	40	114900	22250	2490	3930	2710	138

CAL YR 1978 TOTAL 64970.80 MEAN 178 MAX 4850 MIN 1.0 AC-FT 128900
WTR YR 1979 TOTAL 74242.64 MEAN 203 MAX 5900 MIN .13 AC-FT 147300

05053000 WILD RICE RIVER NEAR ABERCROMBIE, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1955-56, 1967 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1966 to current year.
WATER TEMPERATURES: October 1966 to current year.

REMARKS.--Daily observations are made at the gaging station. Samples for chemical analyses are collected at the control 0.25 mi (0.40 km) downstream. The daily specific conductance record is considered fair.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 3,840 micromhos Mar. 7, 1972; minimum daily, 50 micromhos Mar. 24, 1978.
WATER TEMPERATURES: Maximum daily, 29.5°C Aug. 7, 1973; minimum daily, 0.0°C on many days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,800 micromhos July 22; minimum daily, 120 micromhos Apr. 15.
WATER TEMPERATURES: Maximum daily, 27.5°C July 22; minimum daily, 0.0°C on many days during winter months.

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE (DEG C) (00010)	COLOR (PLAT-INUM-COBALT UNITS) (00080)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)
OCT											
18...	1155	2.0	975	7.8	7.0	30	370	--	84	38	64
NOV											
16...	1445	5.4	1150	7.9	2.0	50	390	--	90	41	76
DEC											
20...	1555	2.1	1950	7.0	.0	35	820	370	190	83	150
JAN											
25...	1200	E.50	2850	7.8	.0	75	1100	400	250	110	240
FEB											
13...	1540	.54	2820	7.3	.0	56	1200	460	280	120	220
MAR											
22...	1425	.70	2850	7.3	2.5	80	1300	460	290	130	250
APR											
11...	1200	665	435	--	.0	--	--	--	--	--	--
14...	1510	4970	195	--	.5	--	--	--	--	--	--
19...	1735	4240	320	7.4	9.5	60	120	50	31	11	9.6
25...	1600	1530	500	--	11.0	--	--	--	--	--	--
MAY											
02...	1815	809	650	--	9.0	--	--	--	--	--	--
09...	1840	483	760	8.1	9.5	40	330	150	76	34	37
JUN											
20...	1545	27	1250	8.5	19.5	75	560	370	120	64	90
JUL											
16...	1420	15	1300	8.1	25.5	50	460	120	96	53	88
26...	1220	280	300	--	19.5	--	--	--	--	--	--
AUG											
23...	1805	58	600	7.8	19.5	--	200	46	44	21	40
SEP											
20...	0650	.37	1120	8.4	14.0	40	450	120	100	48	85

DATE	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)
OCT											
18...	27	1.5	14	210	270	30	.2	17	661	--	.90
NOV											
16...	28	1.7	17	240	310	29	.2	23	760	--	1.03
DEC											
20...	28	2.3	23	450	600	64	.3	27	1460	1410	1.99
JAN											
25...	32	3.2	25	680	740	120	.4	43	2050	1940	2.79
FEB											
13...	28	2.8	24	730	780	110	.4	47	2020	2020	2.75
MAR											
22...	30	3.1	25	800	840	100	.5	51	2180	2170	2.96
APR											
19...	14	.4	8.4	73	57	5.6	.1	12	203	185	.28
25...	--	--	--	--	--	--	--	--	--	--	--
MAY											
02...	--	--	--	--	--	--	--	--	--	--	--
09...	19	.9	12	160	210	16	.2	11	523	506	.71
JUN											
20...	25	1.7	15	--	350	31	.3	13	922	798	1.25
JUL											
16...	43	1.8	13	340	340	32	.3	22	942	849	1.28
26...	--	--	--	--	--	--	--	--	--	--	--
AUG											
23...	42	1.2	9.8	150	160	16	.2	17	404	401	.55
SEP											
20...	28	1.7	15	330	290	30	.3	25	796	791	1.08

E - Estimated

05053000 WILD RICE RIVER NEAR ABERCROMBIE, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BORON, DIS-SOLVED (UG/L AS B) (01020)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)
OCT											
18...	3.57	.00	.19	0	6	90	290	2	0	6	3
NOV											
16...	11.1	.00	.37	--	--	--	320	--	--	--	--
DEC											
20...	8.28	.02	.38	--	--	--	400	--	--	--	--
JAN											
25...	2.77	.02	1.3	--	--	--	530	--	--	--	--
FEB											
13...	2.95	.02	1.6	--	--	--	550	--	--	--	--
MAR											
22...	4.12	.00	2.0	--	--	--	530	--	--	--	--
APR											
11...	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--
19...	2320	1.4	.27	10	3	40	90	<1	0	<3	8
25...	--	--	--	--	--	--	--	--	--	--	--
MAY											
02...	--	--	--	--	--	--	--	--	--	--	--
09...	682	.14	.12	--	--	--	840	--	--	--	--
JUN											
20...	67.2	--	.15	--	--	--	280	--	--	--	--
JUL											
16...	38.2	.00	.35	--	--	--	290	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--
AUG											
23...	63.3	.65	.45	--	--	--	190	--	--	--	--
SEP											
20...	.80	.08	.42	10	13	100	330	<1	10	<3	1

DATE	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)	VANA-DIUM, DIS-SOLVED (UG/L AS V) (01085)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)
OCT											
18...	10	5	60	360	.0	2	3	0	380	.0	8
NOV											
16...	--	--	--	--	--	--	--	--	--	--	--
DEC											
20...	--	--	--	--	--	--	--	--	--	--	--
JAN											
25...	--	--	--	--	--	--	--	--	--	--	--
FEB											
13...	--	--	--	--	--	--	--	--	--	--	--
MAR											
22...	--	--	--	--	--	--	--	--	--	--	--
APR											
11...	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--
19...	110	0	10	90	0.0	<10	9	0	130	4.2	30
25...	--	--	--	--	--	--	--	--	--	--	--
MAY											
02...	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--
JUN											
20...	--	--	--	--	--	--	--	--	--	--	--
JUL											
16...	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--
AUG											
23...	--	--	--	--	--	--	--	--	--	--	--
SEP											
20...	10	0	80	240	.0	<10	4	0	500	2.0	9

05053000 WILD RICE RIVER NEAR ABERCROMBIE, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	SEDIMENT, SUSPENDED (MG/L) (80154)	SEDIMENT DISCHARGE, SUSPENDED (T/DAY) (80155)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70338)	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70340)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SED. SUSP. SIEVE DIAM. % FINER THAN .125 MM (70332)	SED. SUSP. SIEVE DIAM. % FINER THAN .250 MM (70333)	SED. SUSP. SIEVE DIAM. % FINER THAN .500 MM (70334)	SED. SUSP. SIEVE DIAM. % FINER THAN 1.00 MM (70335)	SED. SUSP. SIEVE DIAM. % FINER THAN 2.00 MM (70336)
OCT										
18...	20	.11	--	--	--	--	--	--	--	--
NOV										
16...	18	.26	--	--	--	--	--	--	--	--
DEC										
20...	16	.09	--	--	--	--	--	--	--	--
JAN										
25...	88	--	--	--	--	--	--	--	--	--
FEB										
13...	106	.15	--	--	--	--	--	--	--	--
MAR										
22...	131	.25	--	--	--	--	--	--	--	--
APR										
11...	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--
19...	144	1650	59	71	77	78	80	88	98	100
25...	173	715	72	99	100	--	--	--	--	--
MAY										
02...	--	--	--	--	--	--	--	--	--	--
09...	150	196	--	--	--	--	--	--	--	--
JUN										
20...	18	1.3	--	--	--	--	--	--	--	--
JUL										
16...	27	1.1	--	--	--	--	--	--	--	--
26...	540	408	89	100	--	--	--	--	--	--
AUG										
23...	66	10	--	--	--	--	--	--	--	--
SEP										
20...	85	.08	--	--	--	--	--	--	--	--

DATE	BED MAT. SIEVE DIAM. % FINER THAN .062 MM (80164)	BED MAT. SIEVE DIAM. % FINER THAN .125 MM (80165)	BED MAT. SIEVE DIAM. % FINER THAN .250 MM (80166)	BED MAT. SIEVE DIAM. % FINER THAN .500 MM (80167)	BED MAT. SIEVE DIAM. % FINER THAN 1.00 MM (80168)	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM (80169)	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM (80170)	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM (80171)	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM (80172)	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM (80173)
OCT										
18...	--	--	--	--	--	--	--	--	--	--
NOV										
16...	--	--	--	--	--	--	--	--	--	--
DEC										
20...	--	--	--	--	--	--	--	--	--	--
JAN										
25...	--	--	--	--	--	--	--	--	--	--
FEB										
13...	--	--	--	--	--	--	--	--	--	--
MAR										
22...	--	--	--	--	--	--	--	--	--	--
APR										
11...	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--
19...	12	13	13	15	21	33	49	70	95	100
25...	44	45	47	49	51	65	76	84	97	100
MAY										
02...	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--
JUN										
20...	--	--	--	--	--	--	--	--	--	--
JUL										
16...	--	--	--	--	--	--	--	--	--	--
26...	75	77	79	81	84	86	90	92	95	100
AUG										
23...	--	--	--	--	--	--	--	--	--	--
SEP										
20...	--	--	--	--	--	--	--	--	--	--

05053000 WILD RICE RIVER NEAR ABERCROMBIE, ND--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	980	820	900	1240	1500	1450	650	500	1150	1350	580	1080
2	950	800	950	1320	1500	1480	730	540	1250	1320	700	1100
3	870	800	930	1300	1500	1300	800	540	1230	1400	850	1080
4	850	760	960	1280	1480	1400	840	540	1250	1500	950	1150
5	800	780	950	1280	1500	1350	700	560	1260	1600	1000	1200
6	800	760	950	1250	1500	1400	520	580	1300	1500	1000	1120
7	800	750	1000	1340	1480	1380	480	600	1270	1250	1020	1100
8	830	770	1000	1360	1500	1400	440	600	1210	1450	1080	1150
9	850	750	1000	1300	1500	1600	380	620	1210	1500	1180	1180
10	880	770	1050	1400	1500	1600	360	600	1240	1500	1200	1120
11	880	670	1080	1480	1500	1650	270	620	1300	1500	1150	1100
12	850	690	1100	1450	1500	1650	220	650	1320	1500	1120	1150
13	850	720	1080	1480	1460	1650	140	720	1400	1550	1080	1120
14	850	700	1150	1480	1500	1600	130	750	1500	1530	1060	1060
15	820	740	1100	1400	1400	1620	120	800	1480	1460	1080	1100
16	820	720	1100	1470	1360	1680	150	850	1420	1460	1080	1180
17	800	780	1140	1400	1400	1680	180	900	1420	1500	1100	1150
18	800	820	1160	1400	1400	1680	220	900	1400	1500	1180	1100
19	850	820	1150	---	1500	670	250	900	1300	1580	1180	1100
20	940	850	1080	---	1500	600	280	940	1260	1580	1200	1100
21	900	870	1150	---	1480	480	330	950	1280	1740	1200	1150
22	850	870	1150	---	1480	420	360	950	1260	1800	1200	1050
23	820	850	1170	---	1500	380	360	970	1240	1780	680	1100
24	850	900	1200	---	1400	380	400	1000	1300	1500	500	1180
25	820	900	1100	1500	1460	400	400	1040	1400	1580	640	1150
26	850	880	1180	1520	1440	460	430	1080	1400	300	650	1100
27	830	860	1200	1500	1500	580	460	1100	1500	500	700	1180
28	800	860	1200	1500	1500	640	450	1180	1500	580	780	1100
29	820	850	1300	1500	---	650	500	1200	1400	950	880	1120
30	830	900	1320	1480	---	740	500	1160	1300	400	980	1120
31	850	---	1280	1480	---	780	---	1100	---	420	1050	---
MEAN	848	800	1100	1400	1470	1120	402	821	1330	1330	969	1120

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13.5	7.0	.0	.0	.0	.0	.0	7.0	16.0	24.0	21.0	22.0
2	13.5	7.5	.0	.0	.0	.0	.5	8.0	19.0	22.5	22.5	21.5
3	12.0	7.0	.5	.0	.0	.0	.0	8.0	18.5	23.0	23.0	20.0
4	12.0	6.0	1.0	.0	.0	.0	.0	8.0	19.5	23.5	23.0	21.5
5	10.5	6.5	.5	.0	.0	.0	.5	8.0	19.0	23.5	22.0	24.0
6	10.5	6.0	.5	.0	.0	.5	.0	8.0	19.5	23.0	23.0	18.5
7	10.0	5.5	.5	.0	.0	.0	.0	10.0	18.5	21.0	24.0	18.0
8	10.5	6.0	.5	.0	.0	.5	.5	9.0	17.0	22.0	24.0	19.0
9	11.0	5.5	.0	.0	.0	.0	1.0	9.0	16.5	24.0	24.0	20.0
10	11.0	4.0	.0	.0	.0	.0	1.5	7.0	17.0	27.0	22.0	18.0
11	11.0	1.0	.5	.0	.0	.0	.5	6.5	19.0	25.0	21.5	17.0
12	9.5	1.5	1.0	.0	.0	.0	.5	7.5	19.0	24.5	20.5	18.0
13	9.5	4.0	.5	.0	.0	.0	.5	10.5	21.0	26.0	19.0	17.0
14	10.0	1.0	1.0	.0	.0	.0	1.5	10.5	24.5	25.5	18.0	15.0
15	8.0	2.5	1.0	.0	.0	.0	1.5	12.0	22.5	23.0	18.5	16.0
16	7.5	1.5	.5	.0	.0	1.0	2.0	14.0	21.5	22.0	18.0	23.0
17	7.0	2.0	.5	.0	.0	1.0	5.5	15.0	21.0	22.5	19.0	17.0
18	7.0	1.0	.0	.0	.0	1.0	9.0	15.0	20.0	22.0	21.5	15.5
19	7.5	1.0	.0	---	.0	2.0	10.0	14.0	18.5	23.5	21.0	15.5
20	10.0	.5	.0	---	.0	2.0	9.0	14.0	18.0	23.5	21.0	15.0
21	10.0	.5	.5	---	.0	2.0	10.5	14.0	18.5	26.0	20.5	17.0
22	9.0	.5	.0	---	.0	1.5	10.5	15.0	18.0	27.5	21.0	13.5
23	7.0	.5	.0	---	.0	.0	10.0	14.0	17.0	25.5	18.5	14.5
24	8.0	1.0	.0	---	.0	.0	12.0	15.5	18.0	24.0	18.0	17.0
25	7.0	.5	.5	.0	.0	.0	10.5	16.0	20.0	24.5	18.5	17.0
26	8.0	.0	.0	.5	.0	.0	9.5	17.0	21.5	19.0	18.5	15.5
27	7.0	.0	.0	.0	.0	.0	9.0	18.0	23.5	20.5	19.0	17.5
28	6.0	.0	.0	.0	.0	.0	9.0	19.5	22.5	22.0	19.0	14.5
29	7.0	.0	.0	.0	---	.5	7.5	20.0	22.0	22.0	20.0	15.0
30	7.0	.0	.0	.0	---	.5	7.0	17.5	23.0	18.0	20.0	14.0
31	8.0	---	.0	.0	---	.0	---	15.0	---	18.5	21.5	---
MEAN	9.0	2.5	.5	.0	.0	.5	4.5	12.5	19.5	23.0	20.5	17.5

05054000 RED RIVER OF THE NORTH AT FARGO, ND

LOCATION.--Lat 46°51'40", long 96°47'00", in NW¼NE¼ sec.18, T.139 N., R.48 W., Cass County, Hydrologic Unit 09020104, at city waterplant on 4th St. S. in Fargo, 25 mi (40 km) upstream from mouth of Sheyenne River, and at mile 453.0 (728.9 km).

DRAINAGE AREA.--6,800 mi^2 (17,600 km^2), 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.

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

GAGE.--Water-stage recorder and concrete control. Datum of gage is 861.8 ft (262.68 m) National Geodetic Vertical Datum of 1929. Oct. 1, 1960, to Sept. 30, 1962, water-stage recorder at present site at datum 5.6 ft (1.71 m) higher. See WSP 1728 or 1913 for history of changes prior to Oct. 1, 1960.

REMARKS.--Records good. Flow regulated by Orwell Reservoir, capacity, 14,100 acre-ft (17.4 hm^3) at elevation 1,070 ft (326.136 m) National Geodetic Vertical Datum of 1929, adjustment of 1912; Lake Traverse, capacity, 137,000 acre-ft (169 hm^3), 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 diversions to cities of Fargo and Moorhead and from Sheyenne River.

AVERAGE DISCHARGE (UNADJUSTED).--78 years, 559 ft^3/s (15.83 m^3/s), 405,000 acre-ft/yr (499 hm^3/yr); median of yearly mean discharges, 440 ft^3/s (12.5 m^3/s), 319,000 acre-ft/yr (390 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 25,300 ft^3/s (716 m^3/s) Apr. 15, 1969, gage height, 37.34 ft (11.381 m); no flow for many days in each year for period 1932-41, Sept. 30, Oct. 1, 2, 1970, Oct. 10-19, 1976.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Apr. 7, 1897 reached a stage of 39.1 ft (11.92 m) present datum, discharge, 25,000 ft^3/s (708 m^3/s) at site 1.5 mi (2.4 km) downstream.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 17,300 ft^3/s (490 m^3/s) Apr. 19, gage height, 34.93 ft (10.647 m); minimum daily, 75 ft^3/s (2.12 m^3/s) Nov. 18-22; minimum gage height, 13.54 ft (4.127 m) Nov. 17.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	275	144	110	100	90	90	575	3520	2080	1920	1620	819
2	255	140	105	100	90	110	555	3290	2070	1940	1570	799
3	247	140	100	100	90	160	570	3180	2070	1910	1440	780
4	240	140	100	100	90	240	670	3140	2040	1890	1330	760
5	226	136	100	100	95	240	860	3140	2010	1900	1250	750
6	222	132	100	100	100	240	1200	3150	1990	1920	1210	738
7	217	132	100	100	100	230	1500	3150	1960	1910	1160	721
8	215	128	100	100	95	240	1600	3160	1930	1890	1140	688
9	207	118	100	100	95	240	1600	3090	1900	1850	1090	682
10	182	121	100	100	100	250	1610	2920	1910	1830	1030	677
11	136	121	100	100	105	250	1750	2780	1890	1790	973	679
12	108	121	100	100	105	250	2500	2660	1880	1640	948	653
13	101	114	100	100	100	260	3850	2570	1850	1320	913	639
14	97	108	100	100	90	250	5500	2500	1820	1180	901	627
15	94	101	100	100	90	250	7730	2440	1770	1200	892	623
16	97	85	100	100	90	250	10600	2390	1730	1220	877	621
17	94	76	100	100	90	250	13800	2350	1710	1240	881	618
18	94	75	100	100	90	240	16500	2300	1660	1240	862	613
19	91	75	100	100	90	240	17200	2270	1640	1190	833	604
20	94	75	100	100	90	140	16800	2240	1610	1100	801	595
21	108	75	100	100	90	140	15900	2200	1610	1040	808	578
22	114	75	100	100	90	175	14700	2180	1820	1020	820	561
23	118	90	100	100	90	205	13300	2170	2220	1100	862	562
24	136	95	100	100	90	275	12100	2160	2420	1090	979	552
25	140	100	100	95	90	340	10500	2160	2370	1130	987	555
26	148	110	100	90	90	360	8900	2150	2190	1200	900	543
27	148	110	100	90	90	360	6900	2140	2020	1280	839	515
28	148	110	100	90	90	390	5400	2110	2070	1390	852	497
29	152	110	100	90	---	450	4450	2120	1960	1320	863	497
30	144	110	100	90	---	550	3910	2140	1930	1260	865	500
31	144	---	100	90	---	580	---	2100	---	1370	857	---
TOTAL	4792	3267	3115	3035	2605	8245	203030	79870	58130	45280	31373	19046
MEAN	155	109	100	97.9	93.0	266	6768	2576	1938	1461	1012	635
MAX	275	144	110	100	105	580	17200	3520	2420	1940	1620	819
MIN	91	75	100	90	90	90	555	2100	1610	1020	801	497
AC-FT	9500	6480	6180	6020	5170	16350	402700	158400	115300	89810	62230	37780
(+)	964	959	1026	1028	1144	1124	1024	1060	1208	1220	1180	1260
MEAN*	171	125	117	115	114	284	6785	2593	1958	1481	1031	656
AC-FT*	10460	7440	7210	7050	6310	17470	403700	159500	116500	91030	63410	39040

		OBSERVED					ADJUSTED	
CAL YR 1978	TOTAL	435241	MEAN 1192	MAX 17000	MIN 27	AC-FT 863300	MEAN 1210	AC-FT 875660
WTR YR 1979	TOTAL	461788	MEAN 1265	MAX 17200	MIN 75	AC-FT 916000	MEAN 1283	AC-FT 929120

+ Diversions in acre-feet to cities of Fargo and Moorhead.
* Adjusted for diversions to cities of Fargo and Moorhead.

05054020 RED RIVER OF THE NORTH BELOW FARGO, ND
(National stream-quality accounting network station)
(Radiochemical station)

LOCATION.--Lat 46°55'50", long 96°47'05", in SW¼NE¼ sec.19, T.140 N., R.48 W., Cass County, Hydrologic Unit 09020104, at bridge on county highway 2 mi (3.2 km) north of North Dakota State University campus in Fargo, and 12 mi (19 km) above mouth of Sheyenne River.

DRAINAGE AREA.--6,820 mi^2 (17,660 km^2), approximately.

PERIOD OF RECORD.--Water years 1969 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1973 to September 1974, October 1975 to March 1978, July 1978 to current year.
WATER TEMPERATURES: October 1973 to September 1974, October 1975 to March 1978, July 1978 to current year.

REMARKS.--Fragmentary records of specific conductance and temperature for October 1974 to September 1975 are available in the Bismarck District office. Records of discharge are given for station 05054000 Red River of the North at Fargo, N. Dak., and are unadjusted for treated sewage inflow between sites. Water-quality monitor discontinued March 1978. Daily measurements of specific conductance and temperature resumed by observer July 1978.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 1,220 micromhos Nov. 7, 1976; minimum, 206 micromhos July 4, 1977.
WATER TEMPERATURES: Maximum, 31.5°C July 19, 1977; minimum, 0.0°C on many days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 965 micromhos Oct. 1; minimum daily, 225 micromhos Apr. 15.
WATER TEMPERATURES: Maximum daily, 25.5°C July 13, 20-22, 25, 26; minimum daily, 0.0°C on many days during winter months.

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE (DEG C) (00010)	COLOR (PLAT-INUM-COBALT UNITS) (00080)	OXYGEN, DIS-SOLVED (MG/L) (00300)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)
OCT												
24...	1700	136	608	8.2	9.0	10	--	260	--	48	35	23
NOV												
30...	1115	110	687	8.0	.0	8	10.0	300	--	55	39	26
DEC												
21...	1130	100	705	7.8	.0	6	--	330	52	62	43	27
JAN												
25...	0730	90	835	8.1	.0	8	--	350	45	64	45	28
FEB												
20...	1440	90	720	7.9	.0	11	--	330	37	65	40	28
MAR												
08...	1710	238	800	7.6	.0	7	--	350	19	69	43	28
APR												
19...	1115	17300	290	7.8	5.5	120	--	120	58	30	11	6.8
27...	1315	7100	490	7.9	11.0	--	--	--	--	--	--	--
JUN												
09...	1130	723	430	--	25.0	--	--	--	--	--	--	--
JUL												
02...	1430	1950	650	7.9	23.5	25	--	280	93	54	36	23
AUG												
01...	1745	1690	--	--	--	40	--	230	53	47	28	16
SEP												
06...	1130	723	430	8.2	21.0	20	--	210	16	38	27	11

DATE	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)
OCT											
24...	15	.6	9.5	220	62	16	.2	4.7	360	--	.49
NOV											
30...	16	.7	6.8	260	89	15	.2	5.4	421	--	.57
DEC											
21...	15	.6	7.1	280	100	16	.3	8.5	441	433	.60
JAN											
25...	15	.7	8.4	300	92	21	.3	15	490	456	.67
FEB											
20...	15	.7	9.3	290	69	21	.3	19	440	429	.60
MAR											
08...	14	.7	12	330	67	15	.3	19	461	452	.63
APR											
19...	10	.3	6.2	62	53	4.4	.2	11	183	170	.25
27...	--	--	--	--	--	--	--	--	--	--	--
JUN											
09...	--	--	--	--	--	--	--	--	--	--	--
JUL											
02...	26	.6	7.1	190	170	15	.2	14	436	435	.59
AUG											
01...	13	.5	5.3	180	69	7.5	.2	18	318	301	.43
SEP											
06...	10	.3	4.3	190	44	5.7	.2	16	273	261	.37

05054020 RED RIVER OF THE NORTH BELOW FARGO, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BORON, DIS-SOLVED (UG/L AS B) (01020)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)
OCT											
24...	132	.15	.23	10	3	100	120	<1	0	<1	4
NOV											
30...	125	.10	.30	--	--	--	140	--	--	--	--
DEC											
21...	119	.13	.29	--	--	--	130	--	--	--	--
JAN											
25...	119	.39	.39	--	--	--	370	--	--	--	--
FEB											
20...	107	.61	.45	--	--	--	140	--	--	--	--
MAR											
08...	296	.04	.08	--	--	--	160	--	--	--	--
APR											
19...	8550	2.3	.27	10	4	30	70	<1	0	<3	5
27...	--	--	--	0	4	80	--	2	0	<3	4
JUN											
09...	--	--	--	--	--	--	--	--	--	--	--
JUL											
02...	2300	.22	.16	--	--	--	100	--	--	--	--
AUG											
01...	1450	.41	.18	--	--	--	110	--	--	--	--
SEP											
06...	533	.06	.01	0	4	100	90	<1	0	<3	2

DATE	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)	VANA-DIUM, DIS-SOLVED (UG/L AS V) (01085)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)
OCT											
24...	<10	7	20	30	.0	1	4	0	190	.0	<3
NOV											
30...	--	--	--	--	--	--	--	--	--	--	--
DEC											
21...	--	--	--	--	--	--	--	--	--	--	--
JAN											
25...	--	--	--	--	--	--	--	--	--	--	--
FEB											
20...	--	--	--	--	--	--	--	--	--	--	--
MAR											
08...	--	--	--	--	--	--	--	--	--	--	--
APR											
19...	50	0	20	40	0.0	13	8	0	110	4.0	10
27...	50	1	20	30	.0	<10	6	0	230	--	10
JUN											
09...	--	--	--	--	--	--	--	--	--	--	--
JUL											
02...	--	--	--	--	--	--	--	--	--	--	--
AUG											
01...	--	--	--	--	--	--	--	--	--	--	--
SEP											
06...	<10	0	20	3	.0	<10	3	0	160	--	6

05054020 RED RIVER OF THE NORTH BELOW FARGO, ND--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	965	610	680	650	705	690	460	460	585	640	515	490
2	870	565	670	670	700	690	510	455	580	630	570	495
3	640	560	670	665	720	700	480	470	585	630	540	490
4	575	580	680	640	750	705	495	600	605	630	535	495
5	640	560	680	650	745	700	495	610	580	620	485	470
6	640	585	700	670	725	785	460	610	620	620	505	445
7	630	580	705	670	720	830	505	585	600	610	510	440
8	705	580	750	645	740	725	525	535	625	620	510	430
9	640	560	765	650	650	650	505	550	600	610	495	445
10	610	565	760	650	670	640	525	550	625	630	535	440
11	595	560	750	670	670	645	525	560	620	630	505	490
12	605	580	740	665	625	670	485	570	640	630	520	480
13	620	560	710	665	640	695	305	570	645	635	520	450
14	590	560	670	650	650	580	240	580	635	620	515	470
15	595	580	660	670	650	565	225	595	640	600	530	470
16	605	585	655	670	660	540	270	580	650	585	520	460
17	595	560	660	805	670	540	260	575	640	505	525	435
18	600	580	640	740	640	620	355	570	640	505	505	430
19	650	560	635	740	670	530	285	580	645	525	530	420
20	625	560	630	750	670	530	285	570	645	540	510	380
21	620	610	675	725	675	550	295	570	630	540	500	380
22	605	615	705	790	670	590	280	565	610	560	495	370
23	620	600	700	745	660	595	285	590	590	550	500	380
24	640	610	670	745	670	560	275	560	560	550	505	380
25	595	605	670	760	650	575	305	565	455	555	500	390
26	590	610	740	740	650	575	335	590	490	540	525	400
27	600	605	660	725	670	580	370	595	555	530	530	420
28	590	650	680	780	690	530	345	570	580	525	505	410
29	650	635	640	695	---	510	380	570	580	640	500	415
30	665	685	660	725	---	480	430	565	650	505	520	405
31	630	---	670	700	---	450	---	580	---	515	495	---
MEAN	639	589	686	700	679	614	383	564	604	581	515	436

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14.0	8.5	.5	.0	.0	1.0	.0	8.0	17.0	22.5	24.0	22.0
2	13.5	8.0	.5	.0	.0	1.0	.0	8.0	18.0	23.0	24.0	22.0
3	13.5	8.5	.5	.0	.0	1.0	.0	7.5	18.5	23.0	24.0	23.0
4	13.5	8.5	.0	.0	.0	1.0	.0	7.5	19.0	23.5	24.0	23.5
5	12.5	9.0	.0	.0	.0	1.0	.0	8.0	18.5	23.5	24.0	23.0
6	11.5	7.0	.0	.0	.0	.0	.0	8.0	18.5	24.5	24.0	22.0
7	11.5	7.5	.0	.0	.0	.0	.0	9.0	18.0	23.5	24.5	21.5
8	12.0	7.5	.0	.0	.0	.0	.0	10.0	18.0	24.5	24.0	21.0
9	12.0	7.0	.0	.0	.0	.0	.0	9.0	18.5	25.0	24.0	21.0
10	12.0	7.0	.0	.0	.0	.0	.0	8.0	19.0	25.0	23.5	20.5
11	12.0	5.0	.0	.0	.0	.0	.0	8.0	19.0	25.0	23.0	20.5
12	11.0	4.5	.0	.0	.0	.0	1.0	9.0	19.5	25.0	23.0	19.5
13	10.5	4.0	.0	.0	.0	.0	1.0	9.5	19.5	25.5	22.5	19.0
14	10.0	3.5	.0	.0	.0	.0	1.0	11.0	21.0	25.0	21.0	19.0
15	9.5	3.5	.0	.0	.0	.0	1.5	11.5	22.0	24.5	20.5	20.0
16	8.0	2.0	.0	.0	.0	.0	1.0	14.0	21.5	24.5	20.0	19.5
17	8.5	1.0	.0	.0	.0	.0	1.0	14.0	21.5	24.5	19.0	19.5
18	9.5	1.0	.0	.0	.0	.0	1.5	14.0	21.0	25.0	19.5	17.5
19	10.5	1.0	.0	.0	.0	.0	2.0	14.0	21.0	25.0	20.0	17.0
20	10.0	1.0	.0	.0	1.0	.0	2.5	14.5	20.0	25.5	21.0	16.5
21	10.5	1.0	.0	.0	1.0	.0	4.5	14.5	19.5	25.5	21.5	16.0
22	10.0	1.0	.0	.0	1.0	.0	7.5	14.5	19.0	25.5	21.5	16.5
23	10.0	1.0	.0	.0	1.0	.0	9.5	14.5	18.0	25.0	21.0	17.0
24	9.5	.5	.0	.0	1.0	.0	11.5	15.0	17.5	25.0	20.0	17.0
25	8.0	.5	.0	.0	1.0	.0	10.5	15.0	18.0	25.5	21.0	17.0
26	8.0	.5	.0	.0	1.0	.0	8.5	15.5	19.0	25.5	20.0	17.5
27	8.0	.5	.0	.0	1.0	.0	8.5	17.5	20.5	25.0	19.5	17.0
28	8.5	.5	.0	.0	1.0	1.0	8.5	18.0	21.5	25.0	20.0	16.5
29	8.5	.5	.0	.0	---	1.0	8.0	19.0	21.5	24.5	20.0	16.0
30	8.5	.5	.0	.0	---	1.0	8.0	17.0	22.5	24.0	21.0	16.5
31	9.0	---	.0	.0	---	1.0	---	17.5	---	23.5	21.5	---
MEAN	10.5	3.5	.0	.0	.5	.5	3.5	12.5	19.5	24.5	22.0	19.0

05054500 SHEYENNE RIVER ABOVE HARVEY, ND

LOCATION.--Lat 47°42'10", long 99°56'55", in SW¼SE¼ sec.24, T.149 N., R.73 W., Wells County, Hydrologic Unit 09020202, on right bank just downstream from county road, and 4.5 mi (7.2 km) south of Harvey.

DRAINAGE AREA.--424 mi^2 (1,098 km^2), of which about 270 mi^2 (700 km^2) is probably noncontributing.

WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WSP 1728: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,547.30 ft (471.617 m) National Geodetic Vertical Datum of 1929.

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

AVERAGE DISCHARGE.--24 years, 6.28 ft^3/s (0.178 m^3/s), 4,550 acre-ft/yr (5.61 hm^3/yr); median of yearly mean discharges, 4.6 ft^3/s (0.13 m^3/s), 3,330 acre-ft/yr (4.1 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,000 ft^3/s (28.3 m^3/s) Apr. 20, 1979, gage height, 9.45 ft (2.880 m); maximum gage height, 10.30 ft (3.139 m) Apr. 1, 1971, backwater from ice; no flow at times most years.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 25 ft^3/s (0.71 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Apr. 20	0900	*1,000	28.3	9.45	2.880	June 25	1000	27	0.76	6.35	1.935

Minimum daily discharge, 0.20 ft^3/s (0.006 m^3/s) Jan. 2-13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.93	1.3	1.7	.30	.40	.30	1.1	75	9.9	13	13	2.0
2	.94	1.2	1.6	.20	.40	.30	1.0	73	9.6	12	12	1.8
3	.96	1.3	1.5	.20	.40	.30	.95	75	8.0	18	11	1.6
4	1.1	1.2	1.5	.20	.40	.30	.90	75	7.2	15	11	1.3
5	1.4	1.1	1.4	.20	.40	.30	.90	73	6.4	11	10	.96
6	1.2	1.3	1.4	.20	.40	.30	.90	73	5.9	11	9.9	.91
7	1.0	1.2	1.3	.20	.40	.30	.90	72	5.2	16	9.6	.81
8	.91	1.1	1.2	.20	.40	.30	1.0	69	4.4	14	9.0	.91
9	.96	1.0	1.2	.20	.40	.30	1.1	64	4.6	11	7.3	1.1
10	1.3	1.0	1.1	.20	.40	.30	1.3	62	5.3	8.5	6.3	1.3
11	1.4	1.1	1.2	.20	.40	.30	1.6	63	5.1	6.6	5.1	1.6
12	.96	1.3	1.5	.20	.40	.35	1.8	63	4.5	5.5	4.4	1.3
13	.96	1.4	1.3	.20	.40	.40	2.0	59	3.8	4.7	4.0	1.1
14	1.1	1.3	1.3	.30	.40	.45	3.0	56	3.4	4.2	3.1	1.2
15	.96	1.2	1.3	.30	.40	.50	5.0	50	3.2	3.7	2.2	1.2
16	1.1	1.1	1.2	.30	.40	.55	10	41	2.5	3.8	2.1	1.1
17	1.3	1.1	1.1	.30	.40	.65	13	31	1.9	11	1.8	1.6
18	1.1	1.1	1.0	.30	.40	.75	19	25	1.4	19	1.5	1.4
19	1.2	1.0	.90	.40	.40	.85	250	25	1.7	23	1.3	1.4
20	1.3	1.0	.80	.40	.30	.90	690	26	5.3	23	.96	.96
21	1.4	1.0	.80	.40	.30	.95	338	23	8.0	21	.86	.86
22	1.3	.90	.80	.40	.30	1.0	196	19	7.3	19	.91	.76
23	1.3	.90	.70	.40	.30	1.1	147	16	14	19	.91	.71
24	1.6	1.2	.70	.40	.30	1.2	98	14	24	18	1.0	.76
25	1.4	1.5	.70	.40	.30	1.2	70	12	27	17	.96	.67
26	1.1	1.7	.60	.40	.30	1.2	69	11	25	15	.91	.59
27	1.4	1.6	.50	.40	.30	1.2	73	10	22	16	1.1	.63
28	1.4	2.0	.50	.40	.30	1.2	77	9.7	20	16	3.8	.56
29	1.4	1.9	.40	.40	---	1.2	78	9.3	18	15	3.5	.59
30	1.5	1.8	.40	.40	---	1.2	78	9.8	15	16	2.9	.76
31	1.5	---	.30	.40	---	1.2	---	9.2	---	15	2.4	---
TOTAL	37.38	37.80	31.70	9.40	10.30	21.55	2229.45	1293.0	279.6	421.0	144.81	32.44
MEAN	1.21	1.26	1.02	.30	.37	.69	74.3	41.7	9.32	13.6	4.67	1.08
MAX	1.6	2.0	1.7	.40	.40	1.2	690	75	27	23	13	2.0
MIN	.91	.90	.30	.20	.30	.30	.90	9.2	1.4	3.7	.86	.56
AC-FT	74	75	63	19	20	42	4420	2560	555	835	287	64

CAL YR 1978 TOTAL 2150.92 MEAN 5.89 MAX 140 MIN .07 AC-FT 4270
WTR YR 1979 TOTAL 4548.23 MEAN 12.5 MAX 690 MIN .20 AC-FT 9020

05054500 SHEYENNE RIVER ABOVE HARVEY, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1974 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE (DEG C) (00010)	COLOR (PLAT-INUM-COBALT UNITS) (00080)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)
OCT											
06...	1300	1.2	1335	8.5	7.0	70	130	0	29	14	290
NOV											
01...	1350	1.5	1490	8.4	5.5	60	150	0	30	17	310
29...	1430	2.0	1700	7.7	.0	50	190	0	39	22	370
JAN											
02...	1740	.19	1595	7.8	.0	35	170	0	36	19	350
FEB											
02...	1310	.38	1350	7.7	.0	38	130	0	29	15	310
26...	1815	.32	1250	7.8	.0	24	130	0	30	13	290
APR											
18...	1300	19	610	--	1.0	--	--	--	--	--	--
20...	1940	500	235	7.4	2.0	80	58	0	13	6.3	24
22...	0950	215	370	--	5.0	--	--	--	--	--	--
25...	1900	63	690	--	7.0	--	--	--	--	--	--
30...	1630	78	740	8.2	9.5	60	180	0	31	26	110
JUN											
04...	1350	7.1	1520	8.6	21.0	90	260	0	46	36	280
JUL											
02...	1540	11	1570	8.3	26.0	80	300	0	39	49	250
03...	0820	20	1220	--	21.0	--	--	--	--	--	--
AUG											
07...	1545	9.7	1380	7.8	22.5	120	320	0	43	51	240
SEP											
04...	1230	1.4	1350	8.4	21.5	60	170	0	28	25	240

DATE	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)
OCT											
06...	82	11	6.9	550	180	16	.4	27	893	--	1.21
NOV											
01...	81	11	7.6	620	220	20	.3	28	1010	--	1.37
29...	80	12	9.5	690	250	26	.3	46	1180	--	1.60
JAN											
02...	81	12	8.9	670	230	21	.3	52	1110	1120	1.51
FEB											
02...	82	12	7.1	600	180	19	.3	47	992	969	1.35
26...	82	11	5.1	530	170	19	.3	46	882	893	1.20
APR											
18...	--	--	--	--	--	--	--	--	--	--	--
20...	44	1.4	6.9	58	37	2.2	.1	6.7	152	140	.21
22...	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--
30...	55	3.5	7.8	230	170	10	.2	15	530	509	.72
JUN											
04...	69	7.5	9.3	560	280	25	.3	16	1030	1030	1.40
JUL											
02...	63	6.3	15	520	300	21	.3	14	1020	1000	1.39
03...	--	--	--	--	--	--	--	--	--	--	--
AUG											
07...	61	5.9	16	530	270	26	.3	8.4	965	974	1.31
SEP											
04...	74	7.9	11	580	200	22	.4	12	901	888	1.23

05054500 SHEYENNE RIVER ABOVE HARVEY, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BORON, DIS-SOLVED (UG/L AS B) (01020)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)
OCT											
06...	2.89	.00	.08	10	2	0	770	0	0	0	2
NOV											
01...	4.17	.02	.09	--	--	--	910	--	--	--	--
29...	6.37	.01	.36	--	--	--	910	--	--	--	--
JAN											
02...	.57	.10	.48	--	--	--	850	--	--	--	--
FEB											
02...	1.02	.02	.42	--	--	--	780	--	--	--	--
26...	.76	.01	.39	--	--	--	710	--	--	--	--
APR											
18...	--	--	--	--	--	--	--	--	--	--	--
20...	205	2.0	.22	10	1	20	110	<1	0	<3	2
22...	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--
30...	112	.01	.14	--	--	--	500	--	--	--	--
JUN											
04...	19.7	.00	.01	--	--	--	810	--	--	--	--
JUL											
02...	31.4	.00	.23	--	--	--	860	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--
AUG											
07...	25.3	.01	.08	--	--	--	860	--	--	--	--
SEP											
04...	3.41	.01	.42	--	--	--	870	--	--	--	--

DATE	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)	VANA-DIUM, DIS-SOLVED (UG/L AS V) (01085)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)
OCT											
06...	60	0	140	20	.0	1	0	0	220	.0	0
NOV											
01...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
JAN											
02...	--	--	--	--	--	--	--	--	--	--	--
FEB											
02...	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--
APR											
18...	--	--	--	--	--	--	--	--	--	--	--
20...	60	0	10	60	.2	<10	0	0	50	2.6	<3
22...	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
JUN											
04...	--	--	--	--	--	--	--	--	--	--	--
JUL											
02...	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--
AUG											
07...	--	--	--	--	--	--	--	--	--	--	--
SEP											
04...	--	--	--	--	--	--	--	--	--	--	--

05056000 SHEYENNE RIVER NEAR WARWICK, ND

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, Hydrologic Unit 09020203, on left bank on downstream side of county highway bridge, and 3.3 mi (5.3 km) south of Warwick.

DRAINAGE AREA.--2,070 mi² (5,360 km²), approximately, of which about 1,310 mi² (3,390 km²) is probably non-contributing - includes 227 mi² (588 km²) in closed basins.

WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WSP 1438: 1952(M). WSP 1728: Drainage area.

GAGE.--Water-stage recorder and rubble masonry control. Altitude of gage is 1,370 ft (418 m), by barometer.

REMARKS.--Records fair. Records include flow of spring which enters below gage and just above control. Discharge measurements of spring inflow made during the water year are listed below:

Date	Discharge (ft³/s)	Discharge (m³/s)	Date	Discharge (ft³/s)	Discharge (m³/s)	Date	Discharge (ft³/s)	Discharge (m³/s)
Oct. 13	1.26	0.036	Feb. 14	0.56	0.016	June 8	1.13	0.032
Nov. 16	.94	.027	Mar. 14	1.17	.033	July 19	1.00	.028
Dec. 13	.63	.018	Apr. 18	5.68	.161	Aug. 23	1.10	.031
Jan. 9	.78	.022	Apr. 24	3.50	.099	Sept.19	1.07	.030
			May 21	.84	.024			

AVERAGE DISCHARGE.--30 years, 52.7 ft³/s (1.492 m³/s), 38,200 acre-ft/yr (47.1 hm³/yr); median of yearly mean discharges, 50 ft³/s (1.42 m³/s), 36,200 acre-ft/yr (45 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,660 ft³/s (132 m³/s) Apr. 14, 1969, gage height, 7.51 ft (2.289 m); maximum gage height, 7.83 ft (2.387 m) Apr. 18, 1956; no flow Aug. 7 to Sept. 1, Sept. 3-9, 1961.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 200 ft³/s (5.66 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Apr. 25	1400	*2,600	73.6	7.34	2.237	July 8	1200	445	12.6	3.58	1.091

Minimum daily discharge, 0.64 ft³/s (0.018 m³/s) Oct. 1-3.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.64	4.5	4.5	6.2	5.4	4.5	7.0	1040	91	68	85	28
2	.64	4.1	4.1	6.0	5.4	4.5	7.0	756	91	58	64	24
3	.64	10	3.8	6.0	5.4	4.5	7.0	588	85	82	54	20
4	.80	10	3.8	6.0	5.4	4.5	7.0	505	76	118	48	18
5	.96	12	3.5	7.0	5.4	4.5	7.0	455	68	174	46	16
6	1.1	12	3.2	7.8	5.0	4.7	7.0	415	58	347	40	14
7	1.3	12	3.2	7.8	5.0	4.7	7.0	378	54	425	50	12
8	1.1	12	3.2	7.8	4.6	5.0	7.5	351	46	445	66	10
9	1.1	12	3.0	7.7	4.6	5.5	7.5	351	38	415	76	9.0
10	1.3	12	2.9	7.7	4.6	5.5	8.0	324	30	328	78	8.0
11	1.5	13	2.9	7.7	4.6	5.5	8.5	306	22	246	78	7.0
12	1.1	14	2.9	7.7	4.6	5.5	9.5	302	18	169	78	6.5
13	.96	15	2.9	7.1	4.6	5.5	10	286	15	116	72	6.0
14	1.3	15	2.7	7.1	4.6	6.0	10	270	8.6	100	70	5.5
15	1.5	15	2.5	7.1	4.6	6.0	13	246	7.6	89	68	5.0
16	1.6	14	2.5	7.1	4.6	6.0	13	222	4.7	70	62	4.5
17	1.6	11	2.5	6.8	4.6	6.0	15	202	4.2	54	56	4.0
18	1.8	9.0	2.5	6.6	4.6	6.0	22	186	3.5	38	54	4.0
19	2.4	8.4	4.0	6.8	4.6	6.5	118	186	5.4	32	52	3.8
20	3.6	7.2	4.5	6.8	4.6	6.5	250	166	20	26	46	3.8
21	4.5	6.0	5.5	6.8	4.6	6.5	1120	166	52	20	42	3.3
22	4.5	5.0	6.0	6.8	4.6	6.5	1850	160	117	16	38	3.3
23	5.0	4.5	6.0	6.8	4.6	6.5	2070	168	140	13	36	3.8
24	4.5	4.5	6.0	6.8	4.6	6.2	2310	152	110	9.5	38	3.8
25	4.1	4.5	5.5	6.8	4.5	6.0	2550	140	98	7.6	34	3.0
26	4.1	4.5	5.5	6.2	4.5	6.0	2520	125	91	6.8	32	3.3
27	6.0	4.5	5.5	6.2	4.5	6.5	2330	118	87	6.8	32	3.8
28	6.5	4.5	6.6	6.2	4.5	7.0	2180	108	91	6.1	28	4.7
29	6.5	4.5	6.0	5.6	---	7.0	1970	100	78	14	28	5.4
30	6.5	4.5	6.2	5.6	---	7.0	1590	91	76	54	30	5.4
31	5.5	---	6.3	5.8	---	7.0	---	91	---	85	30	---
TOTAL	84.84	269.2	136.2	219.8	133.2	179.6	21039.0	8956	1685.8	3640.8	1611	248.9
MEAN	2.74	8.97	4.39	7.09	4.76	5.79	701	289	56.2	117	52.0	8.30
MAX	6.5	15	8.3	8.2	5.4	7.0	2550	1040	140	445	85	28
MIN	.64	4.1	2.5	5.6	4.5	4.5	7.0	91	5.3	6.1	28	3.0
AC-FT	168	534	270	436	264	356	41730	17760	3340	7220	3200	494

CAL YR 1978 TOTAL 14090.96 MEAN 38.6 MAX 1400 MIN .48 AC-FT 27950
WTR YR 1979 TOTAL 38204.34 MEAN 105 MAX 2550 MIN .64 AC-FT 75780

05056000 SHEYENNE RIVER NEAR WARWICK, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1951 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: January 1951 to current year.
WATER TEMPERATURES: January 1951 to September 1962, October 1963 to September 1964, October 1965 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,940 micromhos Feb. 1, 1955; minimum daily, 165 micromhos Mar. 17, 1975.
WATER TEMPERATURES: Maximum daily, 30.5°C July 1, 1974; minimum daily, 0.0°C on many days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,180 micromhos Jan. 8; minimum daily, 220 micromhos Apr. 21.
WATER TEMPERATURES: Maximum daily, 29.0°C July 24; minimum observed, 0.0°C on several days.

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE (DEG C) (00010)	COLOR (PLAT-INUM-COBALT UNITS) (00080)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)
OCT											
13...	1530	1.3	530	8.1	7.0	20	230	--	59	20	25
NOV											
16...	1230	13	840	8.3	1.5	30	220	0	41	28	91
DEC											
13...	1425	2.9	700	7.8	.0	25	250	0	56	27	69
JAN											
11...	1730	7.7	950	7.6	.0	50	340	0	69	41	99
FEB											
14...	1015	4.6	1000	7.8	.0	23	430	0	100	44	76
MAR											
15...	1040	6.1	820	7.5	.0	7	350	7	86	32	46
APR											
18...	1630	26	660	--	2.5	--	--	--	--	--	--
24...	1115	2230	265	7.7	3.5	50	75	12	17	8.0	16
MAY											
01...	1815	980	370	--	8.0	--	--	--	--	--	--
21...	1555	180	900	8.2	13.5	55	270	0	57	31	100
JUN											
08...	1320	42	1060	8.5	18.0	50	330	0	69	39	120
JUL											
19...	1255	4.7	805	8.7	16.0	--	--	--	--	--	--
19...	1745	30	670	8.4	26.0	60	200	0	42	23	55
AUG											
23...	1200	35	1050	8.5	20.0	--	270	0	51	35	130
SEP											
19...	1255	4.7	805	8.7	16.0	40	240	0	46	30	100

DATE	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)
OCT											
13...	19	.7	3.0	230	48	3.9	.1	22	307	--	.42
NOV											
16...	47	2.7	6.4	320	110	14	.2	10	535	--	.73
DEC											
13...	37	1.9	6.7	310	95	12	.2	21	477	476	.65
JAN											
11...	38	2.3	11	420	130	18	.2	19	689	641	.94
FEB											
14...	27	1.6	9.9	460	91	17	.2	25	639	640	.87
MAR											
15...	22	1.1	7.3	340	76	13	.2	30	479	496	.65
APR											
18...	--	--	--	--	--	--	--	--	--	--	--
24...	29	.8	6.7	63	35	4.3	.1	9.1	166	140	.23
MAY											
01...	--	--	--	--	--	--	--	--	--	--	--
21...	44	2.6	9.5	280	170	14	.2	19	601	569	.82
JUN											
08...	--	2.9	--	370	180	16	.2	21	705	668	.96
JUL											
19...	--	--	--	--	--	--	--	--	--	--	--
19...	36	1.7	8.3	250	110	10	.2	22	437	421	.59
AUG											
23...	67	3.4	10	410	190	18	.2	14	719	695	.98
SEP											
19...	46	2.8	10	320	150	12	.2	9.6	547	551	.74

05056000 SHEYENNE RIVER NEAR WARWICK, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	SOLIDS, DIS- SOLVED (TONS PER DAY) (70302)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P) (00666)	ALUM- INUM, DIS- SOLVED (UG/L AS AL) (01106)	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	BORON, DIS- SOLVED (UG/L AS B) (01020)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	COBALT, DIS- SOLVED (UG/L AS CO) (01035)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)
OCT											
13...	1.08	.06	.05	--	--	--	60	--	--	--	--
NOV											
16...	18.8	.10	.09	10	5	70	150	<1	0	<3	2
DEC											
13...	3.73	.67	.10	--	--	--	140	--	--	--	--
JAN											
11...	14.3	.16	.23	--	--	--	220	--	--	--	--
FEB											
14...	7.94	.07	.36	--	--	--	190	--	--	--	--
MAR											
15...	7.89	.31	.23	--	--	--	110	--	--	--	--
APR											
18...	--	--	--	--	--	--	--	--	--	--	--
24...	999	1.3	.27	0	2	30	40	<1	0	<3	0
MAY											
01...	--	--	--	--	--	--	--	--	--	--	--
21...	292	.00	.12	--	--	--	170	--	--	--	--
JUN											
08...	79.9	.00	.22	--	--	--	230	--	--	--	--
JUL											
19...	--	--	--	--	--	--	--	--	--	--	--
19...	35.4	--	.37	--	--	--	140	--	--	--	--
AUG											
23...	67.9	.02	.34	--	--	--	320	--	--	--	--
SEP											
19...	6.94	.00	.19	0	6	60	280	<1	10	<3	1

DATE	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	LITHIUM DIS- SOLVED (UG/L AS LI) (01130)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	MERCURY DIS- SOLVED (UG/L AS HG) (71890)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO) (01060)	NICKEL, DIS- SOLVED (UG/L AS NI) (01065)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	STRON- TIUM, DIS- SOLVED (UG/L AS SR) (01080)	VANA- DIUM, DIS- SOLVED (UG/L AS V) (01085)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)
OCT											
13...	--	--	--	--	--	--	--	--	--	--	--
NOV											
16...	10	--	70	30	.0	0	2	1	170	.0	<3
DEC											
13...	--	--	--	--	--	--	--	--	--	--	--
JAN											
11...	--	--	--	--	--	--	--	--	--	--	--
FEB											
14...	--	--	--	--	--	--	--	--	--	--	--
MAR											
15...	--	--	--	--	--	--	--	--	--	--	--
APR											
18...	--	--	--	--	--	--	--	--	--	--	--
24...	120	0	10	110	2.9	<10	0	0	70	--	<3
MAY											
01...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
JUN											
08...	--	--	--	--	--	--	--	--	--	--	--
JUL											
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
AUG											
23...	--	--	--	--	--	--	--	--	--	--	--
SEP											
19...	50	0	80	20	.3	<10	3	0	230	1.0	<3

05056000 SHEYENNE RIVER NEAR WARWICK, ND--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	480	650	660	900	930	880	690	460	---	1040	775	1000
2	475	640	640	920	970	895	---	500	850	1030	700	970
3	460	635	780	955	940	890	720	510	860	1080	680	950
4	445	740	640	940	930	850	700	515	880	940	650	900
5	440	795	595	890	905	---	710	565	910	---	650	900
6	430	625	610	980	---	830	685	560	960	---	685	900
7	455	700	780	1020	920	800	695	---	990	800	660	900
8	490	660	585	1180	945	820	680	625	1000	790	700	900
9	460	750	600	1120	970	840	660	640	1010	720	600	900
10	470	795	580	1090	955	---	630	660	1030	650	700	850
11	505	---	530	1030	---	810	645	665	1070	630	800	850
12	515	690	520	995	945	780	630	700	1110	---	850	800
13	495	720	540	---	900	725	600	710	1140	660	900	800
14	480	800	545	1040	860	715	550	745	---	665	800	820
15	490	795	530	980	830	740	570	780	1110	665	950	860
16	480	845	565	1070	835	710	---	770	1070	---	1000	750
17	480	830	680	1050	---	700	610	775	1070	620	1000	700
18	475	800	685	---	---	680	640	780	1050	600	---	800
19	500	750	700	1010	850	650	400	840	---	570	1010	850
20	595	770	680	1020	880	630	260	855	970	---	800	770
21	610	780	---	1010	870	635	220	885	945	620	900	820
22	590	655	775	1040	865	635	245	890	910	---	1010	750
23	600	690	900	1020	900	600	245	900	---	---	1000	750
24	650	680	830	1000	880	670	265	850	---	600	1000	610
25	640	620	845	950	865	---	270	---	890	700	1050	750
26	650	595	935	970	825	640	305	870	890	700	1030	800
27	700	680	915	---	835	615	420	---	920	660	1030	650
28	---	640	---	995	855	700	420	940	940	760	850	700
29	745	660	920	855	---	705	410	845	---	700	1020	600
30	760	615	900	910	---	700	430	810	1010	675	950	720
31	720	---	1000	960	---	685	---	---	---	680	1040	---
MEAN	543	711	706	996	894	733	511	728	983	732	860	811

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13.5	10.0	2.0	1.0	1.0	1.5	2.0	10.0	---	24.0	24.5	22.0
2	11.5	13.0	1.0	1.0	1.0	1.0	---	10.0	16.5	23.5	24.5	22.0
3	10.5	7.0	1.5	1.0	1.0	2.0	2.0	9.0	15.5	24.5	24.5	23.0
4	10.0	7.5	1.0	1.0	1.0	3.5	2.5	11.5	16.5	23.0	23.5	23.0
5	9.5	7.0	1.0	1.5	1.0	---	2.5	10.0	17.0	---	23.0	22.0
6	8.5	5.5	1.0	1.0	---	1.0	3.5	9.5	18.5	---	24.5	20.0
7	11.0	6.0	.5	1.0	1.0	1.0	3.5	---	19.0	22.5	24.5	20.0
8	10.5	8.0	1.0	1.0	1.0	1.0	3.0	9.0	20.5	24.0	24.5	22.0
9	11.5	5.5	1.5	1.0	1.0	1.0	3.5	8.0	21.0	24.5	23.5	20.5
10	12.0	5.0	1.0	1.0	1.0	---	3.0	8.5	22.0	25.5	23.5	18.0
11	11.5	---	1.5	1.0	---	1.0	3.0	8.5	21.0	25.0	23.0	18.0
12	8.5	1.5	1.5	1.0	1.5	1.5	3.5	11.0	22.5	---	22.0	15.5
13	7.5	3.5	1.5	---	1.5	1.0	3.0	11.5	24.0	25.5	21.0	15.5
14	7.5	2.5	2.0	1.0	1.0	1.0	4.0	12.5	---	24.5	20.0	16.5
15	8.0	1.5	1.5	1.0	1.0	1.0	4.0	15.5	23.0	24.0	20.0	21.5
16	8.5	3.0	2.0	1.0	1.0	1.5	---	18.0	22.5	---	19.0	20.0
17	9.5	1.5	2.0	1.0	---	2.0	4.5	17.5	23.0	23.0	22.0	15.5
18	9.0	3.0	1.5	---	---	2.5	5.5	18.0	23.0	23.5	---	17.0
19	12.0	2.0	2.5	1.5	1.5	3.5	4.5	15.5	---	24.0	24.5	17.0
20	12.5	2.0	2.0	2.0	1.0	3.0	5.0	16.0	23.0	---	23.0	10.5
21	11.5	2.0	---	1.5	1.0	3.0	5.0	14.5	21.0	25.0	22.0	18.0
22	11.0	3.0	2.0	1.0	1.0	4.0	5.5	15.0	19.5	---	22.0	15.0
23	8.0	1.5	1.0	1.5	1.0	2.0	5.0	14.5	---	---	20.0	17.0
24	12.5	1.5	1.5	1.0	1.0	3.0	5.5	18.0	---	29.0	21.0	15.0
25	10.0	1.0	1.5	1.0	1.0	---	5.0	---	22.0	26.5	22.5	17.0
26	9.5	1.0	1.5	1.0	1.0	3.0	7.0	18.0	23.0	26.0	22.0	17.0
27	9.0	1.0	1.0	---	1.0	2.5	6.5	---	22.5	24.5	22.0	15.5
28	---	1.0	---	1.0	1.0	2.5	9.5	22.0	23.0	26.0	23.5	16.0
29	7.5	1.0	1.5	1.0	---	3.0	8.0	20.0	---	26.0	22.0	14.0
30	7.0	1.0	1.0	1.0	---	3.0	8.5	18.0	23.5	23.0	21.5	15.0
31	8.0	---	1.0	1.0	---	3.0	---	---	---	24.0	23.5	---
MEAN	10.0	4.0	1.5	1.0	1.0	2.0	4.5	13.5	21.0	24.5	22.5	18.0

05056100 MAUVAIS COULEE NEAR CANDO, ND

LOCATION.--Lat 48°26'53", long 99°06'08", in SE¼NE¼SE¼ sec.1, T.157 N., R.66 W., Towner County, Hydrologic Unit 09020201, on left bank 0.3 mi (0.5 km) upstream from highway bridge, about 4 mi (6 km) upstream from West Fork, 5.5 mi (8.8 km) southeast of Cando, and 7 mi (11 km) northeast of Maza.

DRAINAGE AREA.--387 mi^2 (1,000 km^2), of which about 10 mi^2 (26 km^2) is probably noncontributing.

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

GAGE.--Water-stage recorder. Altitude of gage is 1,445 ft (440.4 m), from topographic map. Prior to July 2, 1957, nonrecording gage at present site and datum.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--23 years, 19.9 ft^3/s (0.564 m^3/s), 14,420 acre-ft/yr (17.8 hm^3/yr); median of yearly mean discharges, 13 ft^3/s (0.37 m^3/s), 9,400 acre-ft/yr (12 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,660 ft^3/s (75.3 m^3/s) Apr. 25, 1979, gage height, 11.18 ft (3.408 m); no flow at times each year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 16, 1954, reached a stage of 9.83 ft (2.996 m), and flood of Apr. 20, 1956, reached a stage of 10.71 ft (3.264 m), from floodmarks set by local resident.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 25 ft^3/s (0.71 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Apr. 25	1230	*2,660	75.3	11.18	3.408	June 18	2015	30	0.85	2.95	0.899

No flow for several months.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.02	.01	.02	.00	.00	.00	.00	1060	39	23	4.5	.12
2	.03	.01	.02	.00	.00	.00	.00	882	37	23	4.0	.12
3	.02	.01	.02	.00	.00	.00	.00	689	34	23	3.5	.10
4	.03	.01	.02	.00	.00	.00	.00	609	33	22	3.2	.10
5	.03	.01	.02	.00	.00	.00	.00	512	32	22	3.0	.10
6	.02	.01	.02	.00	.00	.00	.00	415	31	22	1.5	.10
7	.01	.01	.02	.00	.00	.00	.00	343	30	21	.62	.10
8	.01	.01	.02	.00	.00	.00	.00	297	30	21	.30	.10
9	.01	.01	.02	.00	.00	.00	.00	249	29	21	.16	.10
10	.01	.01	.02	.00	.00	.00	.00	217	29	20	.12	.10
11	.02	.01	.02	.00	.00	.00	.00	204	28	20	.34	.08
12	.01	.01	.02	.00	.00	.00	.00	191	27	20	.26	.08
13	.01	.03	.02	.00	.00	.00	.00	176	26	19	.09	.08
14	.02	.05	.02	.00	.00	.00	.00	151	25	18	.07	.08
15	.03	.05	.02	.00	.00	.00	.00	130	24	17	.34	.05
16	.03	.03	.02	.00	.00	.00	.00	117	24	17	.50	.05
17	.03	.02	.02	.00	.00	.00	.00	105	22	17	.38	.05
18	.03	.02	.02	.00	.00	.00	.00	96	26	17	.38	.05
19	.03	.02	.02	.00	.00	.00	.00	89	27	16	.30	.04
20	.03	.02	.01	.00	.00	.00	50	86	25	15	.16	.03
21	.02	.02	.01	.00	.00	.00	250	80	25	14	.16	.02
22	.01	.02	.01	.00	.00	.00	500	72	25	12	.20	.02
23	.01	.02	.01	.00	.00	.00	770	64	25	12	.20	.02
24	.01	.02	.01	.00	.00	.00	1380	58	25	11	.20	.02
25	.01	.02	.01	.00	.00	.00	2580	52	24	10	.20	.02
26	.01	.02	.01	.00	.00	.00	2350	50	24	9.0	.18	.01
27	.01	.02	.01	.00	.00	.00	1980	49	24	8.0	.18	.01
28	.01	.02	.01	.00	.00	.00	1680	45	24	7.0	.15	.01
29	.01	.02	.01	.00	---	.00	1450	42	24	6.0	.15	.01
30	.01	.02	.01	.00	---	.00	1230	41	24	5.5	.15	.01
31	.01	---	.00	.00	---	.00	---	40	---	5.0	.15	---
TOTAL	.55	.56	.49	.00	.00	.00	14220.00	7211	822	493.5	25.64	1.78
MEAN	.018	.019	.016	.000	.000	.000	474	233	27.4	15.9	.83	.059
MAX	.03	.05	.02	.00	.00	.00	2580	1060	39	23	4.5	.12
MIN	.01	.01	.00	.00	.00	.00	.00	40	22	5.0	.07	.01
AC-FT	1.1	1.1	1.0	.00	.00	.00	28210	14300	1630	979	51	3.5

CAL YR 1978 TOTAL 2740.77 MEAN 7.51 MAX 280 MIN .00 AC-FT 5440
WTR YR 1979 TOTAL 22775.52 MEAN 62.4 MAX 2580 MIN .00 AC-FT 45180

05056200 EDMORE COULEE NEAR EDMORE, ND

LOCATION.--Lat 48°20'14", long 98°39'33", in NW¼ sec.17, T.156 N., R.62 W., Ramsey County, Hydrologic Unit 09020201, on right bank 50 ft (15 m) upstream from bridge on county highway, 11 mi (18 km) southwest of Edmore, and about 13 mi (21 km) upstream from Sweetwater Lake.

DRAINAGE AREA.--382 mi^2 (989 km^2), of which about 100 mi^2 (259 km^2) is probably noncontributing.

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

REVISED RECORDS.--WSP 1728: Drainage area.

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

REMARKS.--Records fair.

AVERAGE DISCHARGE.--22 years (1957-79), 14.3 ft^3/s (0.405 m^3/s), 10,360 acre-ft/yr (12.8 hm^3/yr); median of yearly mean discharges, 9.8 ft^3/s (0.28 m^3/s), 7,100 acre-ft/yr (8.8 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,110 ft^3 (31.4 m^3/s) Apr. 25, 1979, gage height, 7.31 ft (2.228 m); no flow for several months each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,110 ft^3/s (31.4 m^3/s) Apr. 25, gage height, 7.31 ft (2.228 m), only peak above base of 50 ft^3/s (1.42 m^3/s); no flow for many months.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	469	4.2	4.2	15	.00
2	.00	.00	.00	.00	.00	.00	.00	399	4.5	4.0	15	.00
3	.00	.00	.00	.00	.00	.00	.00	375	4.8	4.0	12	.00
4	.00	.00	.00	.00	.00	.00	.00	366	4.5	4.2	9.0	.00
5	.00	.00	.00	.00	.00	.00	.00	339	4.8	4.5	6.0	.00
6	.00	.00	.00	.00	.00	.00	.00	295	5.1	4.5	4.0	.00
7	.00	.00	.00	.00	.00	.00	.00	253	4.8	4.5	3.5	.00
8	.00	.00	.00	.00	.00	.00	.00	208	4.8	4.5	3.0	.00
9	.00	.00	.00	.00	.00	.00	.00	186	4.8	4.8	2.8	.00
10	.00	.00	.00	.00	.00	.00	.00	178	4.8	5.0	2.5	.00
11	.00	.00	.00	.00	.00	.00	.00	157	4.8	5.0	2.0	.00
12	.00	.00	.00	.00	.00	.00	.00	146	4.8	5.0	1.8	.00
13	.00	.00	.00	.00	.00	.00	.00	141	4.5	4.8	1.6	.00
14	.00	.00	.00	.00	.00	.00	.00	138	4.5	4.8	1.5	.00
15	.00	.00	.00	.00	.00	.00	.00	119	4.2	4.8	1.2	.00
16	.00	.00	.00	.00	.00	.00	.00	103	3.7	4.8	.80	.00
17	.00	.00	.00	.00	.00	.00	.00	80	3.7	4.8	.50	.00
18	.00	.00	.00	.00	.00	.00	.00	55	3.4	4.8	.20	.00
19	.00	.00	.00	.00	.00	.00	10	47	3.4	4.8	.10	.00
20	.00	.00	.00	.00	.00	.00	200	38	6.2	4.8	.05	.00
21	.00	.00	.00	.00	.00	.00	500	29	5.4	4.8	.00	.00
22	.00	.00	.00	.00	.00	.00	826	22	5.0	4.8	.00	.00
23	.00	.00	.00	.00	.00	.00	900	16	4.5	4.8	.00	.00
24	.00	.00	.00	.00	.00	.00	1000	11	4.2	4.8	.00	.00
25	.00	.00	.00	.00	.00	.00	1090	9.8	6.0	8.8	.00	.00
26	.00	.00	.00	.00	.00	.00	1080	7.4	5.5	9.0	.00	.00
27	.00	.00	.00	.00	.00	.00	930	5.4	5.0	5.0	.00	.00
28	.00	.00	.00	.00	.00	.00	910	5.1	4.5	2.3	.00	.00
29	.00	.00	.00	.00	---	.00	700	5.1	4.5	3.7	.00	.00
30	.00	.00	.00	.00	---	.00	560	4.8	4.5	8.8	.00	.00
31	.00	---	.00	.00	---	.00	---	4.8	---	12	.00	---
TOTAL	.00	.00	.00	.00	.00	.00	8708.00	4212.4	139.4	161.4	82.55	.00
MEAN	.000	.000	.000	.000	.000	.000	290	136	4.65	5.21	2.66	.000
MAX	.00	.00	.00	.00	.00	.00	1090	469	6.2	12	15	.00
MIN	.00	.00	.00	.00	.00	.00	.00	4.8	3.4	2.3	.00	.00
AC-FT	.00	.00	.00	.00	.00	.00	17270	8360	276	320	164	.00

CAL YR 1978 TOTAL 5667.28 MEAN 15.5 MAX 615 MIN .00 AC-FT 11240
WTR YR 1979 TOTAL 13303.75 MEAN 36.4 MAX 1090 MIN .00 AC-FT 26390

05056390 LITTLE COULEE NEAR BRINSMADE, ND

LOCATION.--Lat 48°11'15", long 99°14'34", in SW¼ sec.2, T.154 N., R.67 W., Benson County, Hydrologic Unit 09020201, on right bank 100 ft (30 m) downstream from bridge on township road, 0.5 mi (0.8 km) downstream from Silver Lake, and 4 mi (6 km) east of Brinsmade.

DRAINAGE AREA.--350 mi^2 (906 km^2), of which 160 mi^2 (414 km^2) is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1975 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,435 ft (437 m), from topographic map.

REMARKS.--Records good.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 375 ft^3/s (10.6 m^3/s) May 4-6, 1979, gage height, 10.33 ft (3.149 m); maximum gage height, 10.43 ft (3.179 m) May 1, 1979, backwater from ice; no flow for several months each year.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 375 ft^3/s (10.6 m^3/s) May 4-6, gage height, 10.33 ft (3.149 m); maximum gage height, 10.43 ft (3.179 m) May 1, backwater from ice; no flow for many months.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	350	118	50	17	3.0
2	.00	.00	.00	.00	.00	.00	.00	360	112	45	16	2.9
3	.00	.00	.00	.00	.00	.00	.00	370	111	40	15	2.6
4	.00	.00	.00	.00	.00	.00	.00	375	109	47	15	2.3
5	.00	.00	.00	.00	.00	.00	.00	375	105	41	14	2.0
6	.00	.00	.00	.00	.00	.00	.00	375	97	36	12	1.4
7	.00	.00	.00	.00	.00	.00	.00	348	92	32	12	.94
8	.00	.00	.00	.00	.00	.00	.00	304	90	30	11	.73
9	.00	.00	.00	.00	.00	.00	.00	304	87	27	10	.61
10	.00	.00	.00	.00	.00	.00	.00	300	82	26	8.7	.37
11	.00	.00	.00	.00	.00	.00	.00	277	79	27	7.9	.14
12	.00	.00	.00	.00	.00	.00	.00	250	75	28	8.0	.05
13	.00	.00	.00	.00	.00	.00	.00	235	68	29	8.1	.00
14	.00	.00	.00	.00	.00	.00	.00	226	62	30	6.8	.00
15	.00	.00	.00	.00	.00	.00	.00	218	58	27	6.3	.00
16	.00	.00	.00	.00	.00	.00	.00	206	56	26	6.0	.00
17	.00	.00	.00	.00	.00	.00	.00	182	49	26	5.7	.00
18	.00	.00	.00	.00	.00	.00	.00	169	47	26	5.5	.00
19	.00	.00	.00	.00	.00	.00	.00	177	46	25	5.2	.00
20	.00	.00	.00	.00	.00	.00	10	172	45	25	4.8	.00
21	.00	.00	.00	.00	.00	.00	15	163	45	25	4.4	.00
22	.00	.00	.00	.00	.00	.00	42	159	44	23	4.1	.00
23	.00	.00	.00	.00	.00	.00	327	156	43	21	3.7	.00
24	.00	.00	.00	.00	.00	.00	332	150	40	20	3.1	.00
25	.00	.00	.00	.00	.00	.00	336	144	40	19	2.8	.00
26	.00	.00	.00	.00	.00	.00	336	143	40	17	2.8	.00
27	.00	.00	.00	.00	.00	.00	336	142	45	18	2.8	.00
28	.00	.00	.00	.00	.00	.00	340	139	50	19	3.3	.00
29	.00	.00	.00	.00	---	.00	340	132	53	18	3.4	.00
30	.00	.00	.00	.00	---	.00	344	130	55	22	3.4	.00
31	.00	---	.00	.00	---	.00	---	125	---	19	3.1	---
TOTAL	.00	.00	.00	.00	.00	.00	2758.00	7156	2043	864	231.9	17.04
MEAN	.000	.000	.000	.000	.000	.000	91.9	231	68.1	27.9	7.48	.57
MAX	.00	.00	.00	.00	.00	.00	344	375	118	50	17	3.0
MIN	.00	.00	.00	.00	.00	.00	.00	125	40	17	2.8	.00
AC-FT	.00	.00	.00	.00	.00	.00	5470	14190	4050	1710	460	34

CAL YR 1978 TOTAL 14.42 MEAN .040 MAX 1.9 MIN .00 AC-FT 29
WTR YR 1979 TOTAL 13069.94 MEAN 35.8 MAX 375 MIN .00 AC-FT 25920

05056390 LITTLE COULEE NEAR BRINSMADE, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1975 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1975 to September 1976, October 1977 to current year.
WATER TEMPERATURES: October 1975 to September 1976, October 1977 to current year.

REMARKS.--No flow Oct. 1 to Apr. 19 and Sept. 13-30.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 2,010 micromhos May 12, 1978; minimum daily, 220 micromhos Apr. 6, 1978.
WATER TEMPERATURES: Maximum daily, 30.0°C June 15, 1979; minimum daily, 0.5°C Apr. 3, 1978.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 800 micromhos Sept. 12; minimum daily, 280 micromhos Apr. 23.
WATER TEMPERATURES: Maximum daily, 30.0°C June 15; minimum daily, 5.0°C on several days.

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE (DEG C) (00010)	COLOR (PLAT-INUM-COBALT UNITS) (00080)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)
APR											
22...	1730	49	275	8.0	4.0	65	84	41	20	8.3	8.7
23...	1500	327	240	7.8	3.0	--	--	--	--	--	--
MAY											
01...	1130	377	380	--	4.5	--	--	--	--	--	--
05...	1340	363	389	--	5.0	--	--	--	--	--	--
16...	1400	210	640	8.3	10.5	40	200	66	39	24	51
JUN											
05...	1515	102	495	8.9	20.0	40	180	48	40	19	30
JUL											
18...	1615	25	610	7.7	24.0	30	210	7	45	23	38
AUG											
21...	1635	4.2	670	7.9	21.0	--	240	8	54	25	43

DATE	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)
APR											
22...	17	.4	9.1	43	44	3.6	.1	9.6	168	144	.23
MAY											
16...	34	1.6	13	130	140	21	.2	9.6	385	382	.52
JUN											
05...	36	1.1	12	130	86	15	.2	3.0	316	283	.43
JUL											
18...	27	1.2	14	200	88	14	.2	20	381	363	.52
AUG											
21...	38	1.2	15	230	130	19	.2	26	458	452	.62

DATE	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BORON, DIS-SOLVED (UG/L AS B) (01020)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)
APR											
22...	22.2	5.4	.35	--	--	--	40	--	--	--	--
23...	--	--	--	30	2	20	--	<1	0	<3	0
MAY											
16...	218	1.3	.18	--	--	--	90	--	--	--	--
JUN											
05...	87.0	.00	.13	--	--	--	100	--	--	--	--
JUL											
18...	25.7	.16	.27	--	--	--	90	--	--	--	--
AUG											
21...	5.19	.16	.23	0	4	60	150	<1	0	<3	1

DATE	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)	VANA-DIUM, DIS-SOLVED (UG/L AS V) (01085)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)
APR											
22...	--	--	--	--	--	--	--	--	--	--	--
23...	70	0	8	20	.3	<10	3	0	60	--	<3
AUG											
21...	20	0	40	70	.5	<10	5	0	240	<1.0	<3

05056390 LITTLE COULEE NEAR BRINSMADE, ND--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1							---	300	460	510	600	700
2							---	380	460	520	600	725
3							---	360	505	530	600	725
4							---	355	480	580	600	750
5							---	355	460	520	600	740
6							---	460	475	540	625	740
7							---	465	470	538	615	750
8							---	560	500	560	630	780
9							---	580	480	550	625	780
10							---	550	500	540	625	780
11							---	570	520	550	675	750
12							---	560	510	550	660	800
13							---	550	500	550	650	---
14							---	490	---	560	650	---
15							---	560	550	560	650	---
16							---	600	500	580	660	---
17							---	550	500	560	700	---
18							---	470	500	565	700	---
19							---	550	500	580	700	---
20							---	550	500	600	700	---
21							---	500	500	600	700	---
22							300	510	500	600	725	---
23							280	440	500	600	700	---
24							320	460	500	600	700	---
25							340	480	520	600	700	---
26							320	470	470	600	700	---
27							350	445	510	600	700	---
28							305	449	520	600	700	---
29							340	462	520	600	700	---
30							355	460	530	610	700	---
31							---	460	---	600	700	---
MEAN							323	482	498	569	664	752

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1							---	11.0	18.0	---	26.0	22.0
2							---	7.0	20.0	27.0	24.0	20.0
3							---	10.0	25.0	25.0	25.0	21.0
4							---	9.0	24.0	26.0	23.0	23.0
5							---	6.0	22.0	26.0	22.0	20.0
6							---	6.0	21.0	23.0	25.0	16.0
7							---	7.0	20.0	28.0	24.0	15.0
8							---	9.0	23.0	29.0	24.0	18.0
9							---	5.0	20.0	29.0	22.0	19.0
10							---	7.0	21.0	28.0	21.0	16.0
11							---	7.0	28.0	28.0	23.0	20.0
12							---	9.0	28.0	28.0	22.0	15.0
13							---	14.0	26.5	26.0	19.0	---
14							---	11.0	28.0	26.0	18.0	---
15							---	13.0	30.0	23.0	19.0	---
16							---	21.0	26.0	25.0	21.0	---
17							---	16.0	25.0	26.0	22.0	---
18							---	16.0	24.5	26.0	23.0	---
19							---	11.0	24.0	25.0	23.0	---
20							---	16.0	19.0	26.0	22.0	---
21							---	15.0	22.0	27.0	22.0	---
22							9.0	14.0	21.0	29.0	21.0	---
23							5.0	20.0	21.0	27.0	17.0	---
24							6.0	20.0	23.0	28.0	19.0	---
25							5.0	17.0	23.0	26.0	20.0	---
26							7.0	20.0	25.0	24.0	20.0	---
27							5.5	23.0	25.0	24.0	20.0	---
28							7.5	21.0	25.0	26.0	22.0	---
29							5.0	18.0	26.0	25.0	21.0	---
30							7.0	18.0	28.0	23.0	19.0	---
31							---	21.0	---	24.0	23.0	---
MEAN							6.5	13.5	23.5	26.0	21.5	19.0

05056400 BIG COULEE NEAR CHURCHS FERRY, ND

LOCATION.--Lat 48°10'40", long 99°13'15", in NW¼NW¼ sec.12, T.154 N., R.67 W., Benson County, Hydrologic Unit 09020201, on right bank on downstream side of bridge on U.S. Highway 281, 1 mi (1.6 km) downstream from Little Coulee, and 6 mi (10 km) south of Churchs Ferry.

DRAINAGE AREA.--2,510 mi^2 (6,500 km^2), approximately, of which about 690 mi^2 (1,790 km^2) is probably non-contributing.

WATER-DISCHARGE RECORDS

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 (436.672 m) National Geodetic Vertical Datum of 1929. 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 mi (0.2 km) upstream at datum 0.70 ft (0.213 km) higher.

REMARKS.--Records good. Flow affected by many lakes on the mainstem and tributaries.

AVERAGE DISCHARGE.--29 years, 44.1 ft^3/s (1.249 m^3/s), 31,950 acre-ft/yr (39.4 hm^3/yr); median of yearly mean discharges, 11 ft^3/s (0.31 m^3/s), 8,000 acre-ft/yr (9.9 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,420 ft^3/s (40.2 m^3/s) May 6, 1979, gage height, 7.59 ft (2.313 m); no flow at times each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,420 ft^3/s (40.4 m^3/s) May 6, gage height, 7.59 ft (2.313 m); no flow for several days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.2	.92	2.5	.00	.00	.00	.00	1330	968	570	287	88
2	2.7	.88	2.5	.00	.00	.00	.00	1340	936	555	275	88
3	2.4	.84	2.5	.00	.00	.00	.00	1370	936	582	275	78
4	3.3	.65	2.5	.00	.00	.00	.00	1380	932	562	270	65
5	3.8	.60	2.5	.00	.00	.00	.00	1400	920	543	263	58
6	3.6	.55	2.5	.00	.00	.00	.00	1400	870	524	249	57
7	3.8	.50	2.5	.00	.00	.00	.00	1380	840	504	240	50
8	3.2	.50	2.5	.00	.00	.00	.00	1320	834	495	231	44
9	2.5	.45	2.5	.00	.00	.00	.00	1330	828	488	220	44
10	2.2	.35	2.5	.00	.00	.00	.00	1330	807	480	221	47
11	2.2	.35	2.5	.00	.00	.00	.00	1310	798	467	207	39
12	1.8	.30	2.5	.00	.00	.00	.00	1280	783	454	200	37
13	3.1	.25	2.5	.00	.00	.00	.00	1260	744	443	202	38
14	2.8	.25	2.5	.00	.00	.00	.00	1260	708	421	199	36
15	2.5	.20	2.2	.00	.00	.00	.00	1240	717	411	185	33
16	2.5	.20	2.0	.00	.00	.00	.00	1230	702	411	171	32
17	2.5	1.0	1.8	.00	.00	.00	.00	1170	690	399	169	29
18	2.0	3.0	1.5	.00	.00	.00	.00	1130	669	390	171	34
19	2.0	3.0	1.2	.00	.00	.00	.00	1160	648	386	169	27
20	2.0	3.0	1.0	.00	.00	.00	10	1150	732	378	166	25
21	1.9	3.0	.80	.00	.00	.00	20	1140	720	367	160	27
22	1.3	3.0	.60	.00	.00	.00	45	1120	696	367	157	25
23	2.4	3.0	.50	.00	.00	.00	340	1110	678	350	158	23
24	2.1	3.0	.30	.00	.00	.00	332	1100	654	348	145	22
25	1.6	3.0	.10	.00	.00	.00	336	1060	624	341	134	21
26	2.1	3.0	.05	.00	.00	.00	480	1050	618	336	120	21
27	2.4	3.0	.02	.00	.00	.00	560	1060	606	325	111	18
28	1.8	3.0	.00	.00	.00	.00	1070	1040	598	315	110	25
29	1.6	2.8	.00	.00	---	.00	1180	1020	592	311	109	15
30	1.2	2.8	.00	.00	---	.00	1260	1040	582	321	104	17
31	1.0	---	.00	.00	---	.00	---	1020	---	308	95	---
TOTAL	72.4	47.39	47.07	.00	.00	.00	5633.00	37530	22430	13152	5773	1163
MEAN	2.34	1.58	1.52	.000	.000	.000	188	1211	748	424	186	38.8
MAX	3.8	3.0	2.5	.00	.00	.00	1260	1400	968	582	287	88
MIN	1.0	.20	.00	.00	.00	.00	.00	1020	582	308	95	15
AC-FT	144	94	93	.00	.00	.00	11170	74440	44490	26090	11450	2310

CAL YR 1978 TOTAL 12532.06 MEAN 34.3 MAX 148 MIN .00 AC-FT 24860
WTR YR 1979 TOTAL 85847.86 MEAN 235 MAX 1400 MIN .00 AC-FT 170300

05056400 BIG COULEE NEAR CHURCHS FERRY, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1954 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE (DEG C) (00010)	COLOR (PLAT-INUM-COBALT UNITS) (00080)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)
OCT											
12...	1350	1.4	1050	8.4	5.5	40	380	79	76	46	81
NOV											
15...	1400	.24	1500	8.7	1.0	40	490	76	97	59	120
DEC											
14...	1000	2.5	2100	8.0	.0	80	860	260	180	100	160
APR											
23...	1045	365	315	7.8	1.5	50	95	41	22	9.8	13
MAY											
01...	1345	1260	395	--	5.5	--	--	--	--	--	--
05...	1145	1400	360	--	4.5	--	--	--	--	--	--
15...	1510	1290	365	8.8	10.5	45	160	62	36	16	20
JUN											
05...	1115	877	435	9.0	16.0	50	170	55	42	17	21
JUL											
19...	1325	380	540	8.0	23.0	80	200	39	45	21	31
AUG											
21...	1310	169	620	8.7	21.0	100	230	21	53	24	37
SEP											
18...	1350	35	740	8.3	18.0	60	300	72	68	32	48

DATE	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)
OCT											
12...	30	1.8	28	300	250	28	.3	25	746	--	1.01
NOV											
15...	33	2.4	33	410	360	48	.3	18	1020	--	1.39
DEC											
14...	27	2.4	65	600	460	59	.3	58	1480	1450	2.01
APR											
23...	21	.6	9.2	54	54	6.2	.2	11	196	172	.27
MAY											
01...	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--
15...	21	.7	9.3	94	89	8.9	.1	11	257	254	.35
JUN											
05...	19	.7	11	120	83	8.5	.1	2.9	274	258	.37
JUL											
19...	34	1.0	13	160	110	10	.2	20	365	350	.50
AUG											
21...	35	1.1	14	210	130	13	.2	29	443	427	.60
SEP											
18...	35	1.2	19	230	160	17	.2	35	515	521	.70

RED RIVER OF THE NORTH BASIN

05056400 BIG COULEE NEAR CHURCHS FERRY, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BORON, DIS-SOLVED (UG/L AS B) (01020)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)
OCT											
12...	2.82	.26	.32	--	--	--	170	--	--	--	--
NOV											
15...	.66	.07	.19	20	7	70	90	<1	0	<3	5
DEC											
14...	9.99	2.5	1.1	--	--	--	280	--	--	--	--
APR											
23...	193	3.1	.33	30	4	30	60	<1	0	<3	2
MAY											
01...	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--
15...	895	1.6	.11	--	--	--	40	--	--	--	--
JUN											
05...	649	.13	.06	--	--	--	60	--	--	--	--
JUL											
19...	374	.77	.34	--	--	--	80	--	--	--	--
AUG											
21...	202	.11	.41	--	--	--	120	--	--	--	--
SEP											
18...	48.7	.72	.40	0	10	100	140	<1	0	<3	2

DATE	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)	VANA-DIUM, DIS-SOLVED (UG/L AS V) (01085)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)
OCT											
12...	--	--	--	--	--	--	--	--	--	--	--
NOV											
15...	10	--	90	200	.1	9	4	1	380	.0	<3
DEC											
14...	--	--	--	--	--	--	--	--	--	--	--
APR											
23...	90	0	10	60	.3	<10	3	1	80	1.6	<3
MAY											
01...	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
JUN											
05...	--	--	--	--	--	--	--	--	--	--	--
JUL											
19...	--	--	--	--	--	--	--	--	--	--	--
AUG											
21...	--	--	--	--	--	--	--	--	--	--	--
SEP											
18...	30	0	40	50	.6	<10	5	1	260	2.0	30

05056405 BIG COULEE AT GRAHAMS ISLAND INLET NEAR FT. TOTTEN, ND

LOCATION.--Lat 48°02'25", long 99°02'50", in SW¼ sec.29, T.153 N., R.65 W., Ramsey County, Hydrologic Unit 09020201, at bridge on county highway, 5 mi (8 km) northwest of Ft. Totten.

PERIOD OF RECORD.--Water years 1955 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE (DEG C) (00010)	COLOR (PLAT-INUM-COBALT UNITS) (00080)	HARD-NESS (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)
OCT											
18...	1430	718	3450	9.0	6.5	60	720	75	130	510	58
MAY											
17...	1720	--	608	88.0	13.5	--	--	--	--	--	--

DATE	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)
OCT											
18...	8.3	72	420	1200	230	.2	17	2440	3.32	4730	.00
MAY											
17...	--	--	--	--	--	--	--	--	--	--	--

DATE	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BORON, DIS-SOLVED (UG/L AS B) (01020)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, DIS-SOLVED (UG/L AS FE) (01046)
OCT										
18...	.22	20	12	0	550	0	0	0	5	80
MAY										
17...	--	--	--	--	--	--	--	--	--	--

DATE	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)	VANA-DIUM, DIS-SOLVED (UG/L AS V) (01085)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)
OCT										
18...	0	250	0	.0	2	2	0	410	.0	20
MAY										
17...	--	--	--	--	--	--	--	--	--	--

05056500 DEVILS LAKE NEAR DEVILS LAKE, ND

LOCATION.--Lat 48°04'00", long 98°56'07", in SW¼ sec.18, T.153 N., R.64 W., Ramsey County, Hydrologic Unit 09020201, at Lakewood, on east bank of Creel Bay, 4.5 mi (7.2 km) southwest of city of Devils Lake. Creel Bay, which is 0.5 mi (0.8 km) wide, is an arm of Devils Lake and extends 2 mi (3 km) to the north of the lake.

DRAINAGE AREA.--3,130 mi^2 (8,110 km^2), approximately, of which about 1,000 mi^2 (2,600 km^2) 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.

REVISED RECORDS.--WSP 1913: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,400.00 ft (426.72 m) National Geodetic Vertical Datum of 1929; gage readings have been reduced to elevations NGVD. 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.

REMARKS.--Elevation at gage frequently affected by wind.

EXTREMES FOR PERIOD OF RECORD.--Maximum elevation observed, 1,438.40 ft (438.424 m) in 1867, present datum; minimum observed, 1,400.87 ft (426.985 m) Oct. 24, 1940.

EXTREMES OUTSIDE PERIOD OF RECORD.--The lake level was about elevation 1,446 ft (441 m) 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.

EXTREMES FOR CURRENT YEAR.--Maximum elevation, 1,426.95 ft (434.934 m) July 4, 12; minimum, 1,421.95 (433.410 m) Nov. 10.

MONTHEND ELEVATION, IN FEET, AT 2400, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

Oct. 31	1,422.19	Jan. 31	1,422.13	Apr. 30	1,423.98	July 31	1,426.59
Nov. 30	1,422.10	Feb. 28	1,422.28	May 31	1,426.38	Aug. 31	1,426.51
Dec. 31	*1,422.10	Mar. 31	1,422.45	June 30	1,426.87	Sept.30	1,426.11

* Estimated

05057000 SHEYENNE RIVER NEAR COOPERSTOWN, ND

LOCATION.--Lat 47°26'01", long 98°01'43", in NE¼NE¼SE¼ sec.27, T.146 N., R.58 W., Griggs County, Hydrologic Unit 09020203, on right bank 150 ft (46 m) downstream from county bridge, and 5 mi (8 km) east of Cooperstown.

DRAINAGE AREA.--6,470 mi^2 (16,760 km^2), approximately, of which about 5,200 mi^2 (13,470 km^2) is probably noncontributing, includes 3,800 mi^2 (9,840 km^2) in closed basins.

WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WSP 1728: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,271.04 ft (387.413 m) National Geodetic Vertical Datum of 1929, Corps of Engineers benchmark. Prior to Aug. 3, 1950, nonrecording gage at site 150 ft (45.7 m) upstream at same datum.

REMARKS.--Records good.

AVERAGE DISCHARGE.--35 years, 105 ft^3/s (2.974 m^3/s), 76,070 acre-ft/yr (93.8 hm^3/yr); median of yearly mean discharges, 84 ft^3/s (2.38 m^3/s) 60,900 acre-ft/yr (75 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,830 ft^3/s (222 m^3/s) Apr. 17, 1950, gage height, 18.69 ft (5.697 m); no flow at times.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 200 ft^3/s (5.66 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Apr. 20	1900	*4,680	133	17.87	5.447	July 15	1500	387	11.0	7.72	2.353
Apr. 29	1100	3,920	111	17.57	5.355						

Minimum discharge, 2.5 ft^3/s (0.071 m^3/s) Oct. 7.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.2	6.5	9.1	7.0	7.0	5.5	8.0	3090	222	177	89	44
2	5.4	6.5	9.1	6.6	7.0	5.5	8.0	2840	208	165	92	43
3	4.5	6.8	9.1	6.4	7.0	5.5	8.8	2590	192	175	90	41
4	3.5	8.2	9.0	6.4	7.0	5.5	11	2390	174	175	96	38
5	3.5	10	8.9	6.4	7.0	5.5	10	2200	164	177	100	37
6	2.9	12	8.8	6.4	7.0	5.5	10	1980	150	171	97	36
7	2.7	11	8.7	6.4	7.0	5.5	10	1710	148	164	92	33
8	3.3	10	8.6	6.4	7.0	5.5	10	1530	141	163	84	31
9	3.7	9.7	8.5	6.6	7.0	5.5	10	1120	130	165	75	28
10	3.7	9.1	8.4	6.6	7.0	5.5	11	962	119	181	68	28
11	4.9	9.0	8.3	6.8	6.9	5.5	13	839	111	228	62	27
12	6.0	9.0	8.2	6.8	6.9	5.5	14	730	104	273	58	25
13	4.9	9.2	8.1	6.8	6.9	5.5	14	650	99	332	58	23
14	4.5	9.2	8.0	6.8	6.7	5.5	15	597	93	371	59	20
15	3.1	9.5	8.0	6.8	6.7	5.5	20	549	86	385	64	19
16	2.6	9.5	8.0	7.0	6.5	5.7	50	509	81	378	67	19
17	2.9	9.5	8.0	7.0	6.3	5.9	90	480	76	341	70	17
18	4.5	9.5	8.0	7.0	6.3	5.9	1500	453	71	289	72	15
19	5.4	9.5	8.0	7.0	6.3	6.0	2800	430	72	234	71	15
20	5.2	9.4	8.0	7.0	6.1	6.2	4350	408	79	193	67	14
21	5.2	9.3	7.9	7.0	6.1	6.2	3950	388	80	160	65	13
22	4.3	9.2	7.8	7.0	6.0	6.2	2920	367	81	140	65	12
23	5.2	9.2	7.8	7.0	5.9	6.2	2760	353	90	120	61	11
24	6.2	9.2	7.8	7.0	5.8	6.3	2900	336	115	102	57	11
25	4.9	9.1	7.8	7.0	5.7	6.3	2740	317	126	91	56	9.7
26	3.9	9.1	7.8	7.0	5.7	6.3	2460	301	128	82	56	8.5
27	4.9	9.1	7.7	7.0	5.7	6.3	2440	287	145	73	55	6.5
28	5.7	9.1	7.6	7.0	5.6	8.0	3140	272	172	69	56	5.7
29	6.0	9.1	7.6	7.0	---	8.0	3880	256	182	70	52	7.1
30	6.2	9.1	7.6	7.0	---	8.0	3510	249	183	74	47	6.5
31	6.2	---	7.5	7.0	---	8.0	---	238	---	79	45	---
TOTAL	142.1	274.6	253.7	211.2	182.1	188.0	39662.8	29421	3826	5797	2146	644.0
MEAN	4.58	9.15	8.18	6.81	6.50	6.06	1322	949	128	187	69.2	21.5
MAX	6.2	12	9.1	7.0	7.0	8.0	4350	3090	222	385	100	44
MIN	2.6	6.5	7.5	6.4	5.6	5.5	8.0	238	71	69	45	5.7
AC-FT	282	545	503	419	361	373	78670	58360	7590	11500	4260	1280

CAL YR 1978 TOTAL 31826.0 MEAN 87.2 MAX 1440 MIN 2.6 AC-FT 63130
WTR YR 1979 TOTAL 82748.5 MEAN 227 MAX 4350 MIN 2.6 AC-FT 164100

05057000 SHEYENNE RIVER NEAR COOPERSTOWN, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1960, 1967 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1966 to current year.
WATER TEMPERATURES: October 1966 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 2,170 micromhos Mar. 18, 1967; minimum daily, 180 micromhos Apr. 18, 1979.
WATER TEMPERATURES: Maximum daily, 28.5°C July 18, 1977; minimum daily, 0.0°C on many days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,200 micromhos Jan. 7; minimum daily, 180 micromhos Apr. 18.
WATER TEMPERATURES: Maximum daily, 26.0°C July 22, 24; minimum daily, 0.0°C on many days during winter months.

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE (DEG C) (00010)	COLOR (PLAT-INUM-COBALT UNITS) (00080)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L) (00310)	COLI-FORM, TOTAL, IMMED. (COLS. PER 100 ML) (31501)	COLI-FORM, 0.7 UM-MF (COLS./ 100 ML) (31625)
OCT											
04...	1545	2.6	745	8.4	12.0	25	--	--	--	--	--
31...	1100	6.6	840	7.4	4.5	15	--	--	--	--	--
DEC											
01...	1225	9.1	1010	7.3	.0	8	--	--	--	--	--
JAN											
04...	1200	6.4	1200	8.0	.0	5	--	--	--	--	--
FEB											
05...	1530	7.1	1110	7.4	.0	11	--	--	--	--	--
MAR											
06...	1340	5.5	1100	7.8	.5	13	4.4	4.4	1.4	K7	--
14...	1400	5.0	965	7.6	.5	11	3.3	--	1.4	K4	K4
20...	1645	5.5	1000	7.7	.5	14	5.6	3.4	1.2	K1	K5
27...	1240	6.3	960	7.7	.5	20	3.1	3.6	1.5	28	54
APR											
03...	1300	8.0	960	7.9	.5	10	3.4	4.6	2.8	K7	K3
12...	1620	13	900	7.7	.5	15	6.6	3.8	.7	K3	K2
17...	1500	65	650	7.8	.5	80	14	8.0	9.1	250	470
20...	1455	4420	220	--	7.0	--	--	--	--	--	--
24...	1010	2860	260	8.4	5.0	55	28	--	2.4	--	--
MAY											
01...	1430	3210	315	7.7	7.5	55	11	6.0	2.3	K5	K2
09...	1245	1130	520	8.6	7.5	50	24	11.0	2.2	K20	K30
15...	1330	552	650	8.7	11.5	40	21	10.8	2.8	K20	K22
22...	1300	357	--	--	--	60	--	8.4	1.7	K55	K30
31...	1110	237	850	8.3	15.0	45	8.8	7.2	1.7	300	110
JUN											
01...	1230	220	--	--	--	--	--	--	3.1	--	--
05...	1020	163	960	8.3	18.0	35	11	7.0	2.1	K200	K180
12...	1210	105	850	8.5	20.0	45	9.8	--	2.7	K650	K110
20...	1630	82	980	7.8	19.0	30	12	7.5	1.7	6100	870
26...	1300	133	820	8.2	21.0	--	8.5	8.0	1.7	--	--
AUG											
02...	1130	94	729	8.2	22.5	55	8.2	6.9	1.6	>600	130
29...	0925	53	740	8.4	20.0	40	9.1	7.8	--	775	200
SEP											
24...	1410	11	940	8.4	14.0	--	3.8	8.8	--	83	K15

K - Results based on colony count outside the acceptable range (non-ideal colony count).

05057000 SHEYENNE RIVER NEAR COOPERSTOWN, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARDNESS (MG/L AS CACO3) (00900)	HARDNESS, NONCARBONATE (MG/L CACO3) (00902)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM ADSORPTION RATIO (00931)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	ALKALINITY (MG/L AS CACO3) (00410)	SULFATE DISSOLVED (MG/L AS SO4) (00945)
OCT											
04...	--	260	--	62	25	47	28	1.3	9.2	210	140
31...	--	300	88	73	28	66	32	1.7	8.7	210	210
DEC											
01...	--	370	0	85	38	94	35	2.1	9.2	390	140
JAN											
04...	--	380	0	88	38	110	38	2.5	9.8	420	180
FEB											
05...	--	370	0	85	39	100	36	2.3	8.7	420	150
MAR											
06...	K19	360	0	87	34	96	36	2.2	7.8	370	170
14...	K25	370	0	91	35	92	34	2.1	7.2	390	140
20...	K15	380	0	95	35	94	34	2.1	7.7	400	150
27...	K3700	360	0	87	34	85	34	2.0	7.7	370	130
APR											
03...	440	330	0	76	33	83	35	2.0	7.8	380	120
12...	--	330	0	73	35	86	36	2.1	7.2	380	120
17...	>8000	230	0	57	21	53	32	1.5	11	230	99
20...	--	--	--	--	--	--	--	--	--	--	--
24...	--	79	15	19	7.6	16	29	.8	6.0	64	41
MAY											
01...	100	110	24	26	10	18	25	.8	7.4	82	52
09...	K220	170	20	40	17	37	31	1.2	7.6	150	100
15...	K200	210	13	54	19	57	36	1.7	8.2	200	130
22...	K50	280	31	63	30	75	36	1.9	--	--	--
31...	1200	310	5	71	31	93	39	2.3	9.1	300	180
JUN											
01...	--	--	--	--	--	--	--	--	--	--	--
05...	39	290	0	63	31	84	52	2.1	8.2	330	180
12...	176	350	0	79	36	100	38	2.3	8.8	360	190
20...	450	340	0	76	36	100	52	2.4	8.7	360	180
26...	--	320	0	68	36	97	39	2.4	8.4	360	180
AUG											
02...	420	230	0	52	25	62	49	1.8	8.8	260	110
29...	410	260	0	57	28	72	51	2.0	8.3	310	120
SEP											
24...	K7	300	0	64	33	110	44	2.8	10	360	180

DATE	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)	SOLIDS, DISSOLVED (TONS PER DAY) (70302)	NITROGEN, NITRATE TOTAL (MG/L AS N) (00620)	NITROGEN, NITRATE DISSOLVED (MG/L AS N) (00618)	NITROGEN, NITRATE DISSOLVED (MG/L AS NO3) (71851)
OCT										
04...	17	.2	22	491	--	.67	3.45	--	--	--
31...	25	.2	22	535	--	.73	9.53	--	--	--
DEC										
01...	21	.2	21	687	--	.93	16.9	--	--	--
JAN										
04...	26	.2	23	778	728	1.06	13.4	--	--	--
FEB										
05...	17	.3	24	700	677	.95	13.4	--	--	--
MAR										
06...	18	.3	25	671	666	.91	9.96	.09	.09	.40
14...	18	.2	26	652	650	.89	8.80	.10	.09	.40
20...	17	.2	26	637	672	.87	9.46	.05	.06	.27
27...	23	.2	26	624	623	.85	10.6	.14	.11	.49
APR										
03...	13	.2	27	615	591	.84	13.3	.05	.05	.22
12...	17	.2	28	614	601	.84	22.4	.08	.11	.49
17...	13	.2	18	410	417	.56	72.3	.48	.53	2.3
20...	--	--	--	--	--	--	--	--	--	--
24...	4.2	.1	12	176	150	.24	1360	1.1	--	--
MAY										
01...	4.6	.1	10	191	183	.26	1660	1.2	1.1	4.6
09...	7.3	.2	11	331	311	.45	1010	.00	.02	.09
15...	10	.2	11	450	410	.61	671	.00	.00	.00
22...	14	--	--	--	528	.73	--	.00	.02	.09
31...	14	.2	20	582	600	.79	372	.03	.05	.22
JUN										
01...	--	--	--	--	--	--	--	--	--	--
05...	15	.2	22	650	602	.88	286	.02	.00	.00
12...	15	.2	23	678	669	.92	192	.00	.00	.00
20...	16	.3	23	652	658	.89	144	.11	.09	.40
26...	14	.2	23	664	644	.90	238	.12	.10	.44
AUG										
02...	10	.2	25	471	450	.64	120	.16	.18	.80
29...	14	.2	21	512	507	.70	73.3	.00	.01	.04
SEP										
24...	17	.2	17	--	649	3.28	19.3	--	--	--

K - Results based on colony count outside the acceptable range (non-ideal colony count).

05057000 SHEYENNE RIVER NEAR COOPERSTOWN, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	NITRO-GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS NO2) (71856)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS NH4) (71846)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)
OCT										
04...	--	--	--	--	.11	--	--	--	--	--
31...	--	--	--	--	.01	--	--	--	--	--
DEC										
01...	--	--	--	--	.12	--	--	--	--	--
JAN										
04...	--	--	--	--	.05	--	--	--	--	--
FEB										
05...	--	--	--	--	.04	--	--	--	--	--
MAR										
06...	.00	.00	.00	.09	.09	.63	.60	.77	.57	.40
14...	.02	.01	.03	.12	.10	.65	.58	.75	.34	.52
20...	.02	.00	.03	.07	.07	.67	.62	.79	.43	.39
27...	.02	.02	.07	.16	.13	.76	.70	.90	.44	.40
APR										
03...	.02	.00	.03	.07	.06	.63	.57	.73	.47	.24
12...	.00	.01	.03	.08	.12	.51	.33	.43	.41	.54
17...	.08	.03	.10	.56	.56	.82	.74	.95	1.3	1.1
20...	--	--	--	--	--	--	--	--	--	--
24...	.14	--	--	1.2	1.3	.16	--	--	.94	--
MAY										
01...	.14	.05	.16	1.3	1.1	.11	.06	.08	.75	.64
09...	.02	.00	.00	.02	.02	.01	.01	.01	1.4	.59
15...	.00	.01	.03	.00	.00	.01	.00	.00	1.2	.67
22...	--	.00	.03	--	--	--	.00	.00	1.1	.91
31...	.02	.01	.03	.05	.06	.08	.00	.00	1.0	.86
JUN										
01...	--	--	--	--	--	--	--	--	--	--
05...	.00	.00	.00	.02	.00	.04	.00	.00	1.1	.77
12...	.04	.00	.00	.03	.00	.02	.03	.04	.78	.70
20...	.02	.01	.03	.13	.10	.07	.03	.04	--	.00
26...	.02	.01	.03	.14	.11	.04	.00	.00	.91	.97
AUG										
02...	.00	.01	.03	.16	.19	.00	.01	.01	1.2	1.1
29...	.02	.00	.00	.01	.01	.17	.01	.01	1.2	.98
SEP										
24...	--	--	--	--	--	--	--	--	--	--

DATE	NITRO-GEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, NH4 + ORG. SUSP. TOTAL (MG/L AS N) (00624)	NITRO-GEN, AMMONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, DIS-SOLVED (MG/L AS N) (00602)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHATE, TOTAL (MG/L AS PO4) (00650)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, ORTHO, TOTAL (MG/L AS P) (70507)
OCT										
04...	--	--	--	--	--	--	--	--	.17	--
31...	--	--	--	--	--	--	--	--	.19	--
DEC										
01...	--	--	--	--	--	--	--	--	.12	--
JAN										
04...	--	--	--	--	--	--	--	--	.15	--
FEB										
05...	--	--	--	--	--	--	--	--	.16	--
MAR										
06...	1.2	--	1.0	1.3	1.1	5.7	.20	--	.17	.17
14...	.99	--	1.1	1.1	1.2	4.9	.19	--	.17	.18
20...	1.1	--	1.0	1.2	1.1	5.2	.22	--	.18	.18
27...	1.2	--	1.1	1.4	1.2	6.0	.26	--	.24	.22
APR										
03...	1.1	--	.81	1.2	.87	5.2	.22	--	.20	.22
12...	.92	.05	.87	1.0	.99	4.4	.23	.71	.20	.19
17...	2.1	.30	1.8	2.7	2.4	12	.57	1.7	.45	.43
20...	--	--	--	--	--	--	--	--	--	--
24...	1.1	--	--	2.3	--	10	.34	1.0	.27	.28
MAY										
01...	.86	.16	.70	2.2	1.8	9.6	.24	.74	.18	.18
09...	1.4	.80	.60	1.4	.62	6.3	.16	.03	.04	.01
15...	1.2	.53	.67	1.2	.67	5.3	.13	.40	.02	.01
22...	--	.19	--	1.1	.94	5.0	--	.25	--	--
31...	1.1	.24	.86	1.2	.92	5.1	.22	.67	.18	.16
JUN										
01...	--	--	--	--	--	--	--	--	--	--
05...	1.1	.33	.77	1.1	.77	5.0	.25	.46	.18	.15
12...	.80	.07	.73	.83	.73	3.7	.22	.37	.16	.12
20...	--	--	.02	--	.12	--	.24	.49	.20	.16
26...	.95	.00	.97	1.1	1.1	4.8	.22	.46	.19	.15
AUG										
02...	1.2	.10	1.1	1.4	1.3	6.0	.31	.55	.21	.18
29...	1.4	.41	.99	1.4	1.0	6.2	.21	.49	.17	.16
SEP										
24...	--	--	--	--	--	--	--	--	--	--

05057000 SHEYENNE RIVER NEAR COOPERSTOWN, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)	PHOS-PHORUS, HYDRO-LYZABLE TOTAL (MG/L AS P) (00669)	PHOS-PHORUS, HYDRO-LYZABLE DIS. (MG/L AS P) (00672)	PHOS-PHORUS, ORGANIC TOTAL (MG/L AS P) (00670)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BORON, DIS-SOLVED (UG/L AS B) (01020)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)
OCT										
04...	--	--	--	--	--	0	3	0	150	0
31...	--	--	--	--	--	--	--	--	170	--
DEC										
01...	--	--	--	--	--	--	--	--	190	--
JAN										
04...	--	--	--	--	--	--	--	--	190	--
FEB										
05...	--	--	--	--	--	--	--	--	160	--
MAR										
06...	.09	.28	--	--	--	--	--	--	180	--
14...	.13	.40	--	--	--	--	--	--	170	--
20...	.16	.49	.02	.02	.02	--	--	--	160	--
27...	.18	.55	.04	.05	.00	--	--	--	180	--
APR										
03...	.17	.52	.00	.18	.01	--	--	--	160	--
12...	.15	.46	.02	.06	.02	--	--	--	160	--
17...	.37	1.1	.10	.11	.04	--	--	--	130	--
20...	--	--	--	--	--	--	--	--	--	--
24...	--	--	.00	--	.12	20	2	10	60	<1
MAY										
01...	.16	.49	.03	.00	.03	--	--	--	40	--
09...	.02	.06	--	--	--	--	--	--	890	--
15...	.02	.06	.06	.00	.06	--	--	--	90	--
22...	--	.21	.03	.00	.04	--	--	--	100	--
31...	.13	.40	.03	.02	.03	--	--	--	160	--
JUN										
01...	--	--	--	--	--	--	--	--	--	--
05...	.08	.25	.02	.03	.08	--	--	--	160	--
12...	.10	.31	.09	.04	.01	--	--	--	410	--
20...	.19	.58	.00	.01	.24	--	--	--	0	--
26...	.11	.34	.03	.09	.04	--	--	--	200	--
AUG										
02...	.23	.71	.12	.03	.01	--	--	--	180	--
29...	.14	.43	.06	.03	.00	--	--	--	200	--
SEP										
24...	--	--	--	--	--	0	5	70	260	<1

DATE	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MANGA-NESE, SUS-PENDED RECOV. (UG/L AS MN) (01054)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
OCT										
04...	0	0	4	--	30	4	60	--	--	360
MAR										
06...	--	--	--	270	50	--	--	3600	200	3400
14...	--	--	--	230	10	--	--	3900	0	4000
20...	--	--	--	230	30	--	--	4500	100	4400
27...	--	--	--	220	50	--	--	5000	0	5000
APR										
03...	--	--	--	200	30	--	--	5000	4500	520
12...	--	--	--	390	20	--	--	4100	0	4100
17...	--	--	--	1100	80	--	--	2600	400	2200
24...	0	<3	4	--	130	0	10	--	--	100
MAY										
01...	--	--	--	770	80	--	--	120	80	40
09...	--	--	--	990	10	--	--	360	300	60
15...	--	--	--	530	0	--	--	350	270	80
22...	--	--	--	200	30	--	--	480	380	--
31...	--	--	--	310	20	--	--	500	360	140
JUN										
05...	--	--	--	360	0	--	--	430	330	100
12...	--	--	--	370	10	--	--	570	220	350
20...	--	--	--	420	20	--	--	800	180	620
26...	--	--	--	450	90	--	--	460	160	300
AUG										
02...	--	--	--	640	10	--	--	360	350	10
29...	--	--	--	380	10	--	--	330	270	60
SEP										
24...	10	<3	1	240	<10	0	80	520	150	370

05057000 SHEYENNE RIVER NEAR COOPERSTOWN, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)	VANA-DIUM, DIS-SOLVED (UG/L AS V) (01085)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C) (00689)	CYANIDE TOTAL (MG/L AS CN) (00720)
OCT										
04...	.0	1	0	0	340	.0	10	--	--	.00
MAR										
06...	--	--	--	--	--	--	--	7.7	.7	--
14...	--	--	--	--	--	--	--	6.7	.4	--
20...	--	--	--	--	--	--	--	10	.5	--
27...	--	--	--	--	--	--	--	7.3	1.3	--
APR										
03...	--	--	--	--	--	--	--	12	--	--
12...	--	--	--	--	--	--	--	7.6	4.8	--
17...	--	--	--	--	--	--	--	20	1.8	--
24...	.0	<10	2	3	90	--	4	--	--	--
MAY										
01...	--	--	--	--	--	--	--	8.9	1.4	--
09...	--	--	--	--	--	--	--	19	8.9	--
15...	--	--	--	--	--	--	--	11	--	--
22...	--	--	--	--	--	--	--	14	--	--
31...	--	--	--	--	--	--	--	15	2.1	--
JUN										
05...	--	--	--	--	--	--	--	16	1.3	--
12...	--	--	--	--	--	--	--	34	2.8	--
20...	--	--	--	--	--	--	--	11	1.5	--
26...	--	--	--	--	--	--	--	15	.6	--
AUG										
02...	--	--	--	--	--	--	--	11	.4	--
29...	--	--	--	--	--	--	--	25	1.2	--
SEP										
24...	.6	<10	5	0	320	1.0	6	--	--	.00

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	720	---	900	1150	1050	1050	930	---	925	900	780	850
2	660	---	1110	1100	1030	960	910	340	925	980	775	850
3	660	880	---	1100	1010	---	910	440	940	---	770	---
4	740	850	1000	1150	---	---	905	405	940	---	---	880
5	750	875	1050	1150	1070	1060	900	435	940	910	740	890
6	730	840	1050	---	1070	1100	900	440	---	900	720	900
7	710	880	845	1200	900	1020	890	---	---	880	720	900
8	690	810	1000	1100	1020	1010	870	---	940	---	740	900
9	740	---	1070	950	1070	1010	875	---	950	880	690	910
10	---	890	1070	1090	1060	1000	850	---	980	---	670	---
11	730	900	1140	1120	1070	1000	---	---	---	930	650	935
12	730	900	1080	1070	1080	---	870	585	---	950	630	935
13	730	---	1120	1120	1090	980	---	600	---	900	610	940
14	730	930	1110	1100	1080	965	830	630	990	850	730	940
15	730	930	1110	1100	1060	1000	445	650	970	810	770	940
16	700	940	1110	1070	1070	---	---	---	1050	800	---	950
17	---	945	1110	1050	1080	1000	435	680	1040	880	780	950
18	715	950	1070	1050	1070	900	180	710	1000	---	810	920
19	---	960	1000	960	1070	---	210	650	---	775	---	950
20	735	---	1100	1040	1070	970	185	750	950	---	770	940
21	735	1000	1100	1090	---	900	200	800	950	790	730	930
22	740	950	850	950	---	850	235	800	940	800	720	945
23	740	950	980	1100	1060	970	240	800	980	800	775	---
24	730	950	1100	---	1080	940	280	750	990	800	780	920
25	---	970	---	1100	1070	950	265	800	1000	820	---	940
26	760	1000	1090	1050	1040	---	275	835	980	800	740	950
27	760	990	1120	1060	---	940	285	---	970	800	740	---
28	760	940	1170	1040	1060	950	280	900	890	830	745	940
29	830	960	1170	1040	---	940	280	870	880	800	755	---
30	840	800	---	1050	---	940	295	---	950	800	790	890
31	840	---	---	1040	---	930	---	880	---	825	840	---
MEAN	738	920	1060	1080	1060	973	546	670	961	848	740	920

05057000 SHEYENNE RIVER NEAR COOPERSTOWN, ND--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13.5	---	.0	.0	.0	.0	.0	---	16.0	21.5	23.0	22.0
2	12.5	---	.0	.0	.0	.0	.0	7.5	15.0	23.0	23.0	21.0
3	11.5	6.5	---	.0	.0	---	.0	7.5	18.0	---	23.5	---
4	11.5	5.5	.0	.0	---	---	.0	7.5	17.0	---	---	22.0
5	11.5	5.5	.0	.0	.0	.5	.0	7.5	18.0	23.5	22.0	22.5
6	11.0	5.5	.0	---	.0	.5	.0	8.0	---	23.0	22.5	20.0
7	12.0	5.5	.0	.0	.0	.5	.5	9.0	---	22.0	22.5	19.0
8	11.0	5.5	.0	.0	.0	.5	.5	8.5	17.5	---	24.0	19.0
9	11.0	---	.0	.0	.0	.0	.5	7.0	16.5	24.0	23.0	20.5
10	---	3.5	.0	.0	.0	.0	.5	6.5	17.5	---	22.5	---
11	11.0	3.5	.0	.0	.0	.5	---	5.5	19.0	24.5	21.5	18.5
12	11.0	4.0	.0	.0	.0	---	.5	7.5	---	25.0	20.5	18.5
13	10.0	---	.0	.0	.0	.5	---	8.5	---	24.5	19.5	16.0
14	10.0	4.0	.0	.0	.0	.5	.5	10.0	23.5	24.0	18.5	15.5
15	9.5	3.5	.0	.0	.0	.5	1.0	12.0	23.0	23.5	18.5	16.0
16	9.5	3.0	.0	.0	.0	---	---	---	23.0	23.0	---	16.5
17	---	2.5	.0	.0	.0	---	1.0	15.0	20.0	23.0	19.5	16.5
18	9.0	.5	.0	.0	.0	---	1.0	15.0	20.0	---	21.0	16.0
19	---	.5	.0	.0	.0	---	1.0	15.0	---	24.5	---	16.0
20	9.5	---	.0	.0	.0	---	4.0	14.0	19.5	---	22.0	15.0
21	10.0	.5	.0	.0	---	---	3.0	13.5	17.5	25.0	21.5	15.0
22	9.0	2.5	.0	---	---	---	4.0	13.0	17.0	26.0	21.5	14.0
23	8.0	3.0	.0	.0	.0	.5	4.0	13.5	16.5	25.0	19.0	---
24	8.5	4.0	.0	---	.0	.5	5.0	15.5	17.5	26.0	19.0	14.0
25	---	4.5	---	.0	.0	.5	5.5	14.5	20.0	25.0	---	14.0
26	9.0	2.5	.0	.0	.0	.5	5.5	16.0	22.0	24.0	20.0	15.0
27	7.5	.0	.0	.0	---	.5	5.5	---	22.0	23.0	20.0	---
28	6.5	.0	.0	.0	.0	.5	6.5	19.0	21.5	23.0	21.0	15.5
29	6.5	.0	---	.0	---	.5	6.0	19.0	22.0	23.5	21.0	---
30	6.5	.0	---	.0	---	.5	6.5	---	21.5	23.0	21.0	14.0
31	6.5	---	---	.0	---	.5	---	16.0	---	23.0	23.0	---
MEAN	9.5	3.0	.0	.0	.0	.5	2.5	11.5	19.0	24.0	21.5	17.5

05057200 BALDHILL CREEK NEAR DAZEY, ND

LOCATION.--Lat 47°13'45", long 98°07'28", in NW¼SE¼SW¼ sec.2, T.143 N., R.59 W., Barnes County, Hydrologic Unit 09020203, on left bank 500 ft (150 km) upstream from bridge on county highway, 4.5 mi (7.2 km) northeast of Dazey, and 14 mi (23 km) upstream from mouth.

DRAINAGE AREA.--691 mi^2 (1,790 km^2), of which about 340 mi^2 (880 km^2) is probably noncontributing.

WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WSP 1728: Drainage area.

GAGE.--Water-stage recorder. Prior to Nov. 9, 1956, nonrecording gage 500 ft (150 m) downstream at same datum.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--23 years, 16.2 ft^3/s (0.459 m^3/s), 11,700 acre-ft/yr (14.4 hm^3/yr); median of yearly mean discharges, 12 ft^3/s (0.34 m^3/s), 8,700 acre-ft/yr (10.7 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, about 9,000 ft^3/s (255 m^3/s) Apr. 19, 1979, gage height, 17.78 ft (5.419 m), from floodmark; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, about 9,000 ft^3/s (255 m^3/s) Apr. 19, gage height, 17.78 ft (5.419 m), from floodmark, only peak above base of 60 ft^3/s (1.70 m^3/s); minimum daily, 0.10 ft^3/s (0.003 m^3/s) Jan. 20 to Mar. 4.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.87	2.1	1.0	.25	.10	.10	2.2	253	17	4.1	4.1	2.3
2	.92	2.1	.90	.23	.10	.10	2.2	228	18	4.1	2.8	2.1
3	1.0	2.1	.90	.23	.10	.10	2.2	199	22	4.5	2.8	1.8
4	1.3	2.1	.90	.20	.10	.10	2.2	180	19	4.6	3.2	1.6
5	1.4	2.1	.90	.20	.10	.12	2.2	169	16	4.3	2.8	1.2
6	1.4	2.1	.90	.20	.10	.13	2.2	162	15	3.7	2.7	1.2
7	1.4	2.1	.90	.20	.10	.12	2.2	151	15	2.8	2.7	.92
8	1.5	2.1	.90	.15	.10	.13	2.1	135	13	3.2	2.4	.87
9	1.6	2.1	.90	.15	.10	.13	2.1	119	11	3.0	2.2	.87
10	1.7	2.1	.85	.15	.10	.30	2.2	104	12	3.0	2.0	.92
11	2.0	1.8	.85	.15	.10	.50	2.2	95	10	2.7	1.7	1.1
12	2.0	1.8	.85	.13	.10	.80	2.3	87	8.0	2.5	1.7	1.2
13	2.0	1.8	.85	.13	.10	1.0	2.5	77	6.5	2.3	1.6	1.1
14	2.0	1.7	.85	.13	.10	1.2	11	67	5.0	2.4	1.6	.92
15	1.9	1.7	.80	.13	.10	1.3	63	58	4.5	2.4	1.4	.82
16	1.8	1.7	.80	.13	.10	1.4	130	50	3.0	2.7	1.4	.82
17	1.8	1.6	.80	.13	.10	1.5	182	44	2.8	2.7	1.4	.72
18	2.0	1.6	.80	.13	.10	1.5	1960	39	2.5	2.5	1.2	.63
19	2.0	1.6	.80	.13	.10	1.6	4500	39	3.0	2.3	1.3	.55
20	2.0	1.6	.80	.10	.10	1.6	3500	39	11	2.4	1.3	.55
21	2.0	1.4	.80	.10	.10	1.6	2450	36	13	2.1	1.2	.55
22	2.0	1.4	.80	.10	.10	1.7	1740	30	10	1.8	1.2	.55
23	2.0	1.4	.75	.10	.10	1.9	1170	25	9.6	1.6	1.2	.51
24	2.1	1.3	.70	.10	.10	2.5	946	22	8.4	1.7	1.2	.47
25	2.0	1.3	.65	.10	.10	3.0	768	20	7.5	1.7	1.1	.47
26	2.0	1.3	.60	.10	.10	3.0	635	19	6.0	2.0	1.2	.47
27	2.0	1.3	.55	.10	.10	3.0	499	18	4.6	2.1	1.2	.51
28	2.0	1.2	.45	.10	.10	2.8	403	15	4.3	2.1	2.2	.55
29	2.0	1.2	.40	.10	---	2.5	342	17	4.6	2.0	2.5	.59
30	2.1	1.2	.35	.10	---	2.3	284	25	4.3	3.0	2.5	.59
31	2.1	---	.30	.10	---	2.2	---	20	---	4.1	2.7	---
TOTAL	54.89	50.9	23.60	4.55	2.80	40.23	19611.8	2542	286.6	86.2	60.5	27.45
MEAN	1.77	1.70	.76	.14	.10	1.30	654	82.0	9.55	2.78	1.95	.92
MAX	2.1	2.1	1.0	.25	.10	3.0	4500	253	22	4.6	4.1	2.3
MIN	.87	1.2	.30	.10	.10	.10	2.1	15	2.5	1.6	1.1	.47
AC-FT	109	101	47	8.6	5.6	80	38900	5040	568	171	120	54

CAL YR 1978 TOTAL 5068.01 MEAN 13.9 MAX 500 MIN .15 AC-FT 10050
WTR YR 1979 TOTAL 22791.32 MEAN 62.4 MAX 4500 MIN .10 AC-FT 45210

05057200 BALDHILL CREEK NEAR DAZEY, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1955-56, 1972 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE (DEG C) (00010)	COLOR (PLAT-INUM-COBALT UNITS) (00080)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L) (00310)	COLI-FORM, TOTAL, IMMED. (COLS. PER 100 ML) (31501)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)
OCT											
04...	1225	1.2	990	8.0	11.0	--	--	--	--	--	--
30...	1420	2.1	940	8.0	5.5	--	--	--	--	--	--
DEC											
01...	1450	1.1	1240	7.6	.0	--	--	--	--	--	--
JAN											
03...	1415	.23	1400	7.7	.5	--	--	--	--	--	--
MAR											
06...	1410	.13	1500	--	.5	--	--	--	--	--	--
21...	1030	1.6	925	7.8	.5	22	2.1	2.8	2.4	<8	K9
APR											
04...	0915	2.2	1100	--	.0	--	--	--	--	--	--
17...	0830	50	275	7.6	.5	70	17	11.2	4.6	K20	38
21...	1820	2350	210	8.0	7.0	80	56	9.6	--	--	--
24...	1245	943	285	7.9	7.5	55	63	--	2.3	--	--
27...	1550	511	340	7.9	7.5	40	14	7.4	2.0	K3	K5
MAY											
01...	1900	247	425	8.1	8.5	50	4.5	10.0	2.0	K2	K10
JUN											
05...	1425	16	840	8.4	19.0	30	2.0	8.0	1.9	K210	K160
20...	1010	12	890	8.2	18.5	25	3.0	7.3	1.4	K8300	570
JUL											
31...	1250	4.5	939	8.2	24.0	30	2.6	7.3	3.5	4000	320
AUG											
29...	1610	2.8	1010	8.3	22.5	20	4.5	12.0	1.6	K85	K2800
SEP											
25...	1355	.48	880	8.3	18.0	25	3.4	9.6	3.6	K10	<100

DATE	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE (MG/L AS HCO3) (00440)
OCT										
04...	--	330	13	72	36	96	38	2.3	7.8	384
30...	--	340	44	71	40	80	33	1.9	6.5	363
DEC										
01...	--	490	74	110	52	96	30	1.9	7.2	506
JAN										
03...	--	540	52	120	58	110	30	2.1	7.8	593
MAR										
06...	--	--	--	--	--	--	--	--	--	--
21...	K105	400	52	100	37	68	26	1.5	7.6	--
APR										
04...	--	--	--	--	--	--	--	--	--	--
17...	5500	120	45	33	9.7	7.5	11	.3	6.0	--
21...	--	88	31	23	7.3	6.0	12	.3	6.1	--
24...	--	100	32	26	9.7	10	16	.4	7.0	--
27...	130	130	50	31	12	11	15	.4	7.3	--
MAY										
01...	68	180	66	44	16	17	17	.6	7.9	--
JUN										
05...	40	340	85	82	34	53	24	1.2	9.6	--
20...	650	370	85	82	39	65	27	1.5	9.3	--
JUL										
31...	260	410	110	88	46	68	26	1.5	10	--
AUG										
29...	73	340	28	71	39	96	53	2.3	8.7	--
SEP										
25...	K15	360	68	71	44	68	29	1.6	10	--

K - Results based on colony count outside the acceptable range (non-ideal colony count).

05057200 BALDHILL CREEK NEAR DAZEY, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	CAR-BONATE (MG/L AS CO3) (00445)	ALKA-LINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)
OCT										
04...	0	315	6.1	180	28	.2	15	634	625	.86
30...	0	298	5.8	190	24	.2	4.5	639	595	.87
DEC										
01...	0	415	20	210	29	.2	32	803	786	1.09
JAN										
03...	0	486	19	250	37	.2	43	922	920	1.25
MAR										
06...	--	--	--	--	--	--	--	--	--	--
21...	--	350	--	170	21	.2	30	637	649	.87
APR										
04...	--	--	--	--	--	--	--	--	--	--
17...	--	77	--	45	2.9	.2	8.8	170	165	.23
21...	--	57	--	34	2.1	.1	8.0	138	126	.19
24...	--	73	--	54	3.5	.1	13	194	173	.26
27...	--	77	--	64	4.1	.1	15	213	193	.29
MAY										
01...	--	110	--	97	6.3	.1	14	277	271	.38
JUN										
05...	--	260	--	170	14	.2	15	550	534	.75
20...	--	280	--	200	16	.2	13	607	593	.83
JUL										
31...	--	300	--	230	19	.2	27	651	669	.89
AUG										
29...	--	310	--	220	44	.2	25	680	691	.92
SEP										
25...	--	290	--	220	18	.2	23	618	629	.84

DATE	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NITRATE TOTAL (MG/L AS N) (00620)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS NO3) (71851)	NITRO-GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS NO2) (71856)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)
OCT										
04...	2.05	--	--	--	--	--	--	--	--	--
30...	3.62	--	--	--	--	--	--	--	--	--
DEC										
01...	2.38	--	--	--	--	--	--	--	--	--
JAN										
03...	.57	--	--	--	--	--	--	--	--	--
MAR										
06...	--	--	--	--	--	--	--	--	--	--
21...	2.75	.11	.18	.80	.08	.04	.13	.19	.22	.81
APR										
04...	--	--	--	--	--	--	--	--	--	--
17...	22.9	.98	1.0	4.6	.12	.06	.20	1.1	1.1	.25
21...	876	.94	1.1	4.6	.16	.05	.16	1.1	1.1	.23
24...	--	.96	1.1	5.0	.14	.06	.20	1.1	1.2	.19
27...	294	.75	.80	3.5	.10	.04	.13	.85	.84	.08
MAY										
01...	185	.36	.43	1.9	.04	.02	.07	.42	.45	.07
JUN										
05...	23.8	.02	.00	.00	.00	.00	.00	.02	.00	.10
20...	19.7	.00	--	--	.02	--	--	.02	.05	.06
JUL										
31...	7.91	.00	.00	.00	.02	.00	.00	.01	.00	.00
AUG										
29...	5.14	.00	.00	.00	.02	.01	.03	.02	.01	.02
SEP										
25...	.80	.01	.00	.00	.00	.00	.00	.01	.00	.07

05057200 BALDHILL CREEK NEAR DAZEY, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS NH4) (71846)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, NH4 + ORG. SUSP. TOTAL (MG/L AS N) (00624)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, DIS-SOLVED (MG/L AS N) (00602)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)
OCT										
04...	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--
DEC										
01...	--	--	--	--	--	--	--	--	--	--
JAN										
03...	--	--	--	--	--	--	--	--	--	--
MAR										
06...	--	--	--	--	--	--	--	--	--	--
21...	.75	.97	1.1	.35	1.9	--	1.1	2.1	1.3	9.3
APR										
04...	--	--	--	--	--	--	--	--	--	--
17...	.09	.12	.74	.87	.99	.03	.96	2.1	2.1	9.3
21...	.26	.33	2.1	.40	2.3	1.6	.66	3.4	1.8	15
24...	.14	.18	1.7	.73	1.9	1.0	.87	3.0	2.1	13
27...	.06	.08	.82	.54	.90	.30	.60	1.8	1.4	7.7
MAY										
01...	.03	.04	.78	.57	.85	.25	.60	1.3	1.1	5.6
JUN										
05...	.00	.00	.74	.78	.84	.06	.78	.86	.78	3.8
20...	--	--	.67	--	.73	.31	.42	.75	.47	3.3
JUL										
31...	.03	.04	1.4	.79	1.4	.58	.82	1.4	.82	6.2
AUG										
29...	.01	.01	1.5	.87	1.5	.62	.88	1.5	.89	6.7
SEP										
25...	.01	.01	1.2	.72	1.3	.57	.73	1.3	.73	5.8

DATE	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHATE, TOTAL (MG/L AS PO4) (00650)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, ORTHO, TOTAL (MG/L AS P) (70507)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)	PHOS-PHORUS, HYDRO-LYZABLE TOTAL (MG/L AS P) (00669)	PHOS-PHORUS, HYDRO-LYZABLE DIS. (MG/L AS P) (00672)	PHOS-PHORUS, ORGANIC TOTAL (MG/L AS P) (00670)	BORON, DIS-SOLVED (UG/L AS B) (01020)
OCT										
04...	--	--	--	--	--	--	--	--	--	380
30...	--	--	--	--	--	--	--	--	--	130
DEC										
01...	--	--	--	--	--	--	--	--	--	160
JAN										
03...	--	--	--	--	--	--	--	--	--	220
MAR										
06...	--	--	--	--	--	--	--	--	--	--
21...	.14	--	.12	.12	.11	.34	--	--	--	190
APR										
04...	--	--	--	--	--	--	--	--	--	--
17...	.29	.67	.23	.22	.20	.61	.03	.04	.04	60
21...	.36	1.1	.16	.17	.15	.46	.17	.00	.02	40
24...	.28	.86	.15	.18	.13	.40	.00	.00	.13	60
27...	.20	.61	.16	.15	.09	.28	.01	.04	.04	50
MAY										
01...	.16	.49	.12	.11	.08	.25	.05	.03	.00	60
JUN										
05...	.10	.18	.07	.06	.01	.03	.00	.00	.07	130
20...	.06	.12	.05	.04	--	--	.00	--	.05	170
JUL										
31...	.17	.21	.20	.07	.04	.12	.07	.05	.03	210
AUG										
29...	.07	.06	.03	.02	.02	.06	.05	.00	.00	280
SEP										
25...	.08	.03	.02	.01	.03	.09	.07	.00	.00	250

05057200 BALDHILL CREEK NEAR DAZEY, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MANGA-NESE, SUS-PENDED RECOV. (UG/L AS MN) (01054)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C) (00689)
OCT							
04...	--	220	--	--	280	--	--
30...	--	120	--	--	140	--	--
DEC							
01...	--	40	--	--	280	--	--
JAN							
03...	--	160	--	--	1400	--	--
MAR							
21...	260	70	2100	0	2200	7.1	.7
APR							
17...	1400	110	320	120	200	12	1.6
21...	4700	140	780	670	110	10	11
24...	3700	80	540	430	110	--	--
27...	900	50	200	80	120	9.9	1.9
MAY							
01...	360	50	200	40	160	8.6	4.1
JUN							
05...	130	20	190	110	80	13	.8
20...	180	10	270	130	140	14	.9
JUL							
31...	120	20	820	500	320	12	.8
AUG							
29...	250	10	540	380	160	16	.5
SEP							
25...	230	<10	910	840	70	10	1.9

05057500 LAKE ASHTABULA AT BALDHILL DAM, ND

LOCATION.--Lat 47°02'00", long 98°05'00", in NW¼ sec.18, T.141 N., R.58 W., Barnes County, Hydrologic Unit 09020203, at Baldhill Dam on Sheyenne River, and 8 mi (13 km) northwest of Valley City.

DRAINAGE AREA.--7,470 mi^2 (19,300 km^2), approximately, of which about 5,560 mi^2 (14,400 km^2) is probably noncontributing, including 3,800 mi^2 (9,800 km^2) in closed basins.

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

REVISED RECORDS.--WSP 1238: 1950(M). WSP 1728: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929.

REMARKS.--Reservoir is formed by an earth-fill dam, 1,650 ft (503 m) long; storage began on July 30, 1949; dam completed September 1949. Usable capacity, 69,100 acre-ft (85.2 hm^3) between invert of outlet conduit, elevation, 1,238.0 ft (377.34 m), and normal pool level, elevation, 1,266.0 ft (385.8 m). Dead storage below elevation 1,238.0 ft (377.34 m), 1,500 acre-ft (1.85 hm^3). Maximum pool elevation, 1,273.2 ft (388.07 m), capacity, 116,500 acre-ft (144 hm^3). Low flows are controlled by 2 sluice gates 3 ft (0.914 m) in diameter. The spillway crest is 120 ft (36.6 m) long at elevation 1,252.0 ft (381.61 m), surmounted by 3 taintor gates, each 15 ft (4.572 m) high and 40 ft (12.192 m) long. The reservoir is operated for flood control and to increase low-water flow.

COOPERATION.--Records furnished by Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 91,400 acre-ft (113 hm^3) May 14, 1950, elevation, 1,269.46 ft (386.931 m); minimum since reservoir first reached spillway level, 6,660 acre-ft (8.21 hm^3) Aug. 11-14, 1950, elevation, 1,245.13 ft (379.516 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 85,510 acre-ft (105 hm^3) Apr. 23, elevation, 1,268.55 ft (386.654 m); minimum, 35,730 acre-ft (44.1 hm^3) Apr. 15, elevation, 1,258.45 ft (383.576 m).

MONTHEND ELEVATION AND CONTENTS AT 0800, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30	1,264.94	64,550	--
Oct. 31	1,264.11	58,330	-6,220
Nov. 30	1,263.81	56,930	-1,400
Dec. 31	1,263.53	56,090	-840
CAL YR 1978	--	--	+930
Jan. 31	1,263.21	55,130	-960
Feb. 28	1,262.71	53,200	-1,930
Mar. 31	1,260.60	43,900	-9,300
Apr. 30	1,267.17	77,290	+33,390
May 31	1,266.16	71,510	-5,780
June 30	1,266.01	70,660	-850
July 31	1,265.98	70,490	-170
Aug. 31	1,266.03	70,770	+280
Sept. 30	1,265.58	68,250	-2,520
WTR YR 1979	--	--	+3,700

05058000 SHEYENNE RIVER BELOW BALDHILL DAM, ND

LOCATION.--Lat 47°01'50", long 98°05'50", in NW¼ sec.18, T.141 N., R.58 W., Barnes County, Hydrologic Unit 09020204, on right bank 600 ft (180 m) downstream from Baldhill Dam, 8 mi (13 km) northwest of Valley City, and at mile 270.5 (435.2 km).

DRAINAGE AREA.--7,470 mi^2 (19,350 km^2), approximately, of which about 5,560 mi^2 (14,400 km^2) is probably noncontributing, including 3,800 mi^2 (9,840 km^2) in closed basins.

WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WSP 1728: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1,200.00 ft (365.760 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good, Flow completely regulated by Lake Ashtabula (station 05057500). Records 1955 to 1972 include releases at Baldhill Dam to the fish-rearing ponds of the Fish and Wildlife Service. Small diversions are still made but not published.

AVERAGE DISCHARGE (UNADJUSTED).--30 years, 123 ft^3/s (3.483 m^3/s), 89,110 acre-ft/yr (110 hm^3/yr); median of yearly mean discharges, 92 ft^3/s (2.61 m^3/s), 66,700 acre-ft/yr (82 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,740 ft^3/s (134 m^3/s) Apr. 24, 1979, gage height, 36.26 ft (11.052 m); no flow at times in 1950, 1952-53, 1970.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,740 ft^3/s (134 m^3/s) Apr. 24, gage height, 36.26 ft (11.052 m); minimum, 0.10 ft^3/s (0.003 m^3/s) Oct. 3 as the result of regulation.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	61	74	44	27	53	87	559	5940	286	87	89	44
2	59	75	45	27	53	86	555	5650	214	78	64	45
3	4.4	73	46	27	53	85	557	5490	214	78	60	45
4	27	72	48	27	54	85	546	5300	208	78	60	45
5	72	72	48	27	54	85	543	5100	202	76	60	45
6	72	67	46	27	55	93	551	2800	210	78	59	45
7	72	59	52	27	55	122	559	2440	214	78	59	35
8	72	54	52	27	55	114	537	2020	210	78	59	27
9	72	49	45	27	55	122	557	1830	198	76	59	27
10	71	46	45	27	55	120	557	1630	198	76	59	26
11	71	46	45	26	55	112	537	1420	198	76	58	26
12	71	46	45	25	55	114	557	736	202	75	57	27
13	71	46	45	25	55	114	574	817	202	74	56	27
14	71	46	45	25	55	116	417	690	202	75	56	24
15	71	46	45	25	55	115	430	690	198	76	52	22
16	71	46	45	25	55	110	430	782	202	76	47	22
17	71	46	45	25	55	110	434	672	198	92	47	21
18	71	46	45	26	55	109	460	715	174	101	46	21
19	71	46	27	26	55	140	897	715	96	149	46	24
20	71	45	11	26	55	160	2020	704	80	349	46	23
21	71	44	15	26	55	163	3540	694	80	423	46	23
22	71	44	29	26	55	195	4480	611	78	423	46	23
23	71	44	29	26	55	282	4690	541	76	380	46	22
24	71	44	27	26	55	513	4710	473	76	302	46	22
25	71	44	27	26	55	307	4710	473	78	276	46	22
26	71	44	27	37	56	521	4700	468	78	223	45	20
27	71	44	27	53	70	515	4700	452	80	152	44	21
28	72	44	27	53	85	510	4650	438	80	107	44	20
29	72	44	27	53	---	299	4240	368	85	107	44	20
30	74	44	27	53	---	320	4090	324	87	107	44	20
31	76	---	27	53	---	337	---	330	---	105	44	---
TOTAL	2063.4	1540	1121	956	1578	5359	53887	41715	4702	4531	1634	834
MEAN	66.6	51.3	36.2	30.8	56.4	173	1796	1346	157	146	52.7	27.8
MAX	76	75	48	53	85	337	4710	3940	286	423	89	45
MIN	4.4	44	11	25	53	85	337	324	76	74	44	20
AC-FT	4090	3050	2230	1900	3130	10630	106900	82740	9330	8990	3240	1650

CAL YR 1978	TOTAL	42787.4	MEAN 117	MAX 1360	MIN 4.4	AC-FT	84870	
WTR YR 1979	TOTAL	119919.4	MEAN 329	MAX 4710	MIN 4.4	AC-FT	237900	

05058000 SHEYENNE RIVER BELOW BALDHILL DAM, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1958-65, 1972 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE (DEG C) (00010)	COLOR (PLAT-INUM-COBALT UNITS) (00080)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L) (00310)	COLI-FORM, TOTAL, IMMED. (COLS. PER 100 ML) (31501)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)
OCT											
04...	0935	8.5	495	9.1	13.0	--	--	--	--	--	--
30...	1715	76	500	--	7.5	--	--	--	--	--	--
DEC											
14...	1330	44	600	--	3.5	--	--	--	--	--	--
JAN											
03...	1700	26	710	--	3.0	--	--	--	--	--	--
FEB											
06...	1215	54	810	--	4.0	--	--	--	--	--	--
MAR											
13...	1250	121	810	--	4.0	--	--	--	--	--	--
21...	1610	165	750	8.2	4.0	19	1.9	10.8	2.0	<20	<10
APR											
24...	1545	4730	290	8.1	3.5	--	51	--	2.2	--	--
MAY											
03...	1925	3470	285	--	3.0	--	--	--	--	--	--
JUN											
06...	0825	204	400	8.8	16.0	40	2.5	6.0	1.2	K26	K75
21...	1630	79	415	9.0	19.5	55	4.0	9.8	3.0	4100	K17
JUL											
31...	1630	105	489	8.9	24.0	40	2.4	8.2	1.7	>2100	K5
AUG											
01...	0910	105	491	--	23.0	--	--	--	--	--	--
30...	1115	43	500	9.0	21.5	30	4.6	9.4	3.7	K30	93
SEP											
26...	1115	22	535	9.0	17.0	25	1.7	9.6	.9	72	K7

DATE	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE (MG/L AS HCO3) (00440)
OCT										
04...	--	160	0	32	19	46	37	1.6	7.2	206
30...	--	--	--	--	--	--	--	--	--	--
DEC										
14...	--	--	--	--	--	--	--	--	--	--
JAN										
03...	--	--	--	--	--	--	--	--	--	--
FEB										
06...	--	--	--	--	--	--	--	--	--	--
MAR										
13...	--	--	--	--	--	--	--	--	--	--
21...	<5	260	0	55	29	73	37	2.0	11	--
APR										
24...	--	96	10	22	10	20	30	.9	6.0	--
MAY										
03...	--	--	--	--	--	--	--	--	--	--
JUN										
06...	K20	140	28	34	13	27	28	1.0	8.4	--
21...	K9	150	20	37	14	31	40	1.1	8.0	--
JUL										
31...	84	180	19	42	18	42	44	1.4	8.6	--
AUG										
01...	--	--	--	--	--	--	--	--	--	--
30...	K3100	180	7	41	18	41	44	1.3	8.8	--
SEP										
26...	160	180	16	39	19	46	35	1.5	8.1	--

K - Results based on colony count outside the acceptable range (non-ideal colony count).

05058000 SHEYENNE RIVER BELOW BALDHILL DAM, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	CARBONATE (MG/L AS CO3) (00445)	ALKALINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DISSOLVED (MG/L AS CO2) (00405)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)
OCT										
04...	0	169	.3	86	9.7	.1	1.7	313	303	.43
30...	--	--	--	--	--	--	--	--	--	--
DEC										
14...	--	--	--	--	--	--	--	--	--	--
JAN										
03...	--	--	--	--	--	--	--	--	--	--
FEB										
06...	--	--	--	--	--	--	--	--	--	--
MAR										
13...	--	--	--	--	--	--	--	--	--	--
21...	--	260	--	130	15	.2	13	478	486	.65
APR										
24...	--	86	--	48	4.7	.1	8.4	196	176	.27
MAY										
03...	--	--	--	--	--	--	--	--	--	--
JUN										
06...	--	110	--	66	5.7	.1	4.2	232	225	.32
21...	--	130	--	87	6.4	.1	1.2	261	264	.36
JUL										
31...	--	160	--	130	7.9	.1	3.7	322	349	.44
AUG										
01...	--	--	--	--	--	--	--	--	--	--
30...	--	170	--	120	8.6	.1	6.6	343	347	.47
SEP										
26...	--	160	--	110	8.3	.2	12	370	339	.50

DATE	SOLIDS, DISSOLVED (TONS PER DAY) (70302)	NITROGEN, NITRATE TOTAL (MG/L AS N) (00620)	NITROGEN, NITRATE DISSOLVED (MG/L AS N) (00618)	NITROGEN, NITRATE DISSOLVED (MG/L AS NO3) (71851)	NITROGEN, NITRITE TOTAL (MG/L AS N) (00615)	NITROGEN, NITRITE DISSOLVED (MG/L AS N) (00613)	NITROGEN, NITRITE DISSOLVED (MG/L AS NO2) (71856)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, AMMONIA TOTAL (MG/L AS N) (00610)
OCT										
04...	5.24	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--
DEC										
14...	--	--	--	--	--	--	--	--	--	--
JAN										
03...	--	--	--	--	--	--	--	--	--	--
FEB										
06...	--	--	--	--	--	--	--	--	--	--
MAR										
13...	--	--	--	--	--	--	--	--	--	--
21...	213	.13	.17	.75	.06	.02	.07	.19	.19	.89
APR										
24...	2500	.63	.73	3.2	.14	.05	.16	.77	.78	.51
MAY										
03...	--	--	--	--	--	--	--	--	--	--
JUN										
06...	128	.22	.16	.71	.06	.02	.07	.28	.18	.08
21...	55.7	.09	.10	.44	.06	.01	.03	.15	.11	.09
JUL										
31...	91.3	.00	.00	.00	.02	.01	.03	.02	.00	.00
AUG										
01...	--	--	--	--	--	--	--	--	--	--
30...	39.8	.00	.01	.04	.02	.00	.00	.01	.01	.24
SEP										
26...	22.0	.08	.02	.09	.02	.01	.03	.10	.03	.10

05058000 SHEYENNE RIVER BELOW BALDHILL DAM, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN, AMMONIA DISSOLVED (MG/L AS NH4) (71846)	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N) (00607)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, NH4 + ORG. SUSP. TOTAL (MG/L AS N) (00624)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITROGEN, TOTAL (MG/L AS N) (00600)	NITROGEN, DISSOLVED (MG/L AS N) (00602)	NITROGEN, TOTAL (MG/L AS NO3) (71887)
MAR										
13...	--	--	--	--	--	--	--	--	--	--
21...	.86	1.1	1.2	1.0	2.1	--	1.9	2.3	2.1	10
APR										
24...	.42	.54	.99	.68	1.5	.40	1.1	2.3	1.9	10
MAY										
03...	--	--	--	--	--	--	--	--	--	--
JUN										
06...	.00	.00	.65	.68	.73	.05	.68	1.0	.86	4.5
21...	.00	.00	--	.01	--	--	.01	--	.12	--
JUL										
31...	.09	.12	.94	.67	.94	.18	.76	.96	.76	4.3
AUG										
01...	--	--	--	--	--	--	--	--	--	--
30...	.08	.10	1.9	1.0	2.1	1.0	1.1	2.1	1.1	9.3
SEP										
26...	.00	.00	.77	.01	.87	.86	.01	.97	.04	4.3

DATE	PHOSPHORUS, TOTAL (MG/L AS P) (00665)	PHOSPHATE, TOTAL (MG/L AS PO4) (00650)	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS, ORTHO. TOTAL (MG/L AS P) (70507)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P) (00671)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4) (00660)	PHOSPHORUS, HYDROLYZABLE TOTAL (MG/L AS P) (00669)	PHOSPHORUS, HYDROLYZABLE DIS. (MG/L AS P) (00672)	PHOSPHORUS, ORGANIC TOTAL (MG/L AS P) (00670)	BORON, DISSOLVED (UG/L AS B) (01020)
OCT										
04...	--	--	--	--	--	--	--	--	--	220
MAR										
13...	--	--	--	--	--	--	--	--	--	--
21...	.21	--	.21	.18	.19	.58	.01	.00	.02	190
APR										
24...	.21	.64	.09	.17	.06	.18	.00	.00	.11	70
MAY										
03...	--	--	--	--	--	--	--	--	--	--
JUN										
06...	.11	.21	.08	.07	.00	.00	.00	.02	.07	70
21...	.11	.21	.07	.07	.08	.25	.16	.00	.00	0
JUL										
31...	.18	.37	.26	.12	.12	.37	.06	.04	.00	90
AUG										
01...	--	--	--	--	--	--	--	--	--	--
30...	.22	.43	.16	.14	.13	.40	.07	.02	.01	120
SEP										
26...	.16	.46	.15	.15	.19	.58	--	--	--	130

DATE	IRON, TOTAL RECOVERABLE (UG/L AS FE) (01045)	IRON, DISSOLVED (UG/L AS FE) (01046)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN) (01055)	MANGANESE, SUSPENDED RECOV. (UG/L AS MN) (01054)	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	CARBON, ORGANIC DISSOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUSPENDED TOTAL (MG/L AS C) (00689)
OCT							
04...	--	20	--	--	80	--	--
MAR							
21...	120	60	910	0	930	14	.5
APR							
24...	--	30	--	--	330	--	--
JUN							
06...	60	0	90	40	50	10	.7
21...	160	50	350	70	280	13	1.4
JUL							
31...	150	10	180	160	20	9.6	.5
AUG							
30...	80	10	220	70	150	15	3.9
SEP							
26...	100	10	190	140	50	12	.4

05058700 SHEYENNE RIVER AT LISBON, ND

LOCATION.--Lat 46°26'49", long 97°40'44", on line between secs.1 and 2, T.134 N., R.56 W., Ransom County, Hydrologic Unit 09020204, on left bank 150 ft (46 m) downstream from dam at State Fish Hatchery at north edge of city of Lisbon, 3 mi (5 km) upstream from Timber Coulee, and at mile 162.1 (260.8 km).

DRAINAGE AREA.--8,190 mi^2 (21,210 km^2), approximately, of which about 5,700 mi^2 (14,800 km^2) is probably noncontributing, including 3,800 mi^2 (9,840 km^2) in closed basins.

WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WSP 1728: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,066.46 ft (325.057 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Flow regulated by Lake Ashtabula (station 05057500) 108.5 mi (174.6 km) upstream.

AVERAGE DISCHARGE.--23 years, 156 ft^3/s (4.418 m^3/s), 113,000 acre-ft/yr (139 hm^3/yr); median of yearly mean discharges, 160 ft^3/s (4.53 m^3/s), 116,000 acre-ft/yr (143 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,270 ft^3/s (149 m^3/s) July 1, 1975, gage height, 19.04 ft (5.803 m); no flow Sept. 19-21, Oct. 23, 24, 1956, Aug. 16, 1961.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,880 ft^3/s (138 m^3/s) May 2, gage height, 17.58 ft (5.358 m); minimum daily, 13 ft^3/s (0.37 m^3/s) Dec. 19, 20.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	61	61	37	27	42	70	290	4840	585	64	141	60
2	59	114	37	27	42	75	290	4660	549	83	132	59
3	57	118	37	27	45	75	330	4770	540	97	129	52
4	57	79	37	27	50	80	345	4600	296	97	127	50
5	59	72	37	27	52	80	350	4420	241	95	117	49
6	59	66	37	27	52	80	350	4250	231	93	102	49
7	57	59	37	27	52	85	375	4070	231	93	81	48
8	48	66	34	27	55	85	480	3900	229	93	68	48
9	57	68	30	27	57	90	457	3630	226	93	66	49
10	51	66	27	27	57	100	447	3270	226	93	64	50
11	50	52	20	27	57	110	518	2710	219	91	66	57
12	55	55	16	27	57	110	1090	2300	212	93	66	55
13	57	66	15	27	59	145	1100	1880	207	91	64	49
14	57	52	15	26	59	148	1330	1070	200	93	64	42
15	57	42	15	26	60	176	1600	847	195	93	60	40
16	59	52	14	26	60	209	1800	908	193	97	60	36
17	61	50	14	27	60	250	1850	908	188	95	62	34
18	61	40	14	27	60	300	1900	864	185	89	62	31
19	59	37	13	30	60	350	2400	785	193	89	62	30
20	59	37	15	32	60	352	2620	752	257	91	60	28
21	64	37	15	34	60	363	2070	737	275	95	60	25
22	66	37	20	36	60	386	2000	724	202	125	57	20
23	66	37	26	37	60	384	2480	701	165	282	55	18
24	64	37	25	37	60	334	2940	659	144	411	54	17
25	59	37	25	37	61	352	3320	592	134	430	54	22
26	64	40	25	37	62	355	3600	455	129	411	52	24
27	61	42	25	37	62	370	3850	440	117	300	52	25
28	59	42	25	40	62	375	4150	457	100	205	62	25
29	61	40	25	40	---	370	4430	449	83	168	77	24
30	61	37	25	42	---	360	4690	442	77	254	68	22
31	61	---	26	42	---	350	---	428	---	178	60	---
TOTAL	1780	1658	761	984	1583	8975	53632	61858	6223	4702	2304	1138
MEAN	57.7	54.6	24.5	31.1	56.5	225	1788	1969	207	152	74.3	37.9
MAX	66	118	37	42	62	386	4690	4860	585	430	141	60
MIN	51	37	13	26	42	70	290	428	77	64	52	17
AC-FT	3530	3290	1510	1950	3140	17800	106400	122700	12340	9330	4570	2260

CAL YR 1978 TOTAL 57909 MEAN 159 MAX 1390 MIN 13 AC-FT 114900
WTR YR 1979 TOTAL 145366 MEAN 399 MAX 4860 MIN 13 AC-FT 288400

05058700 SHEYENNE RIVER AT LISBON, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1956 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: August 1956 to current year.
WATER TEMPERATURES: August 1956 to current year.
SUSPENDED-SEDIMENT DISCHARGE: August 1976 to September 1979 (discontinued).

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,450 micromhos Jan. 30, 1962; minimum daily, 243 micromhos Apr. 2, 1960.
WATER TEMPERATURES: Maximum daily, 32.0°C Aug. 23, 1959; minimum daily, 0.0°C on many days during winter months.
SEDIMENT CONCENTRATIONS: Maximum daily mean, 1,840 mg/L May 5, 1977; minimum daily mean, 6 mg/L Feb. 14, 15, 1977.
SEDIMENT LOADS: Maximum daily, 5,750 tons (5,220 megagrams) Apr. 19, 1979; minimum daily, 0.23 tons (0.21 megagrams) Sept. 10, 1977.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum observed, 1,150 micromhos Jan. 10, minimum daily, 270 micromhos May 4.
WATER TEMPERATURES: Maximum daily, 26.5°C Aug. 6; minimum daily, 0.0°C on many days during winter months.
SEDIMENT CONCENTRATIONS: Maximum daily mean, 901 mg/L Apr. 18; minimum daily mean, 7 mg/L Jan. 16, 17.
SEDIMENT LOADS: Maximum daily, 5,750 tons (5,220 megagrams) Apr. 19; minimum daily, 0.28 tons (0.25 megagrams) Dec. 19, 20.

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE (DEG C) (00010)	COLOR (PLAT-INUM-COBALT UNITS) (00080)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)
OCT											
19...	1040	63	715	7.9	7.0	10	240	--	53	25	63
NOV											
15...	1030	44	750	8.3	.0	20	230	--	51	26	61
DEC											
19...	0900	13	1075	8.0	1.0	8	340	36	75	36	100
21...	1000	14	1010	7.9	.0	--	--	--	--	--	--
JAN											
23...	1245	36	1010	8.4	.5	12	310	38	69	33	99
FEB											
14...	1135	58	950	7.4	.0	12	300	38	70	30	85
MAR											
21...	1100	351	710	7.8	.5	65	230	27	53	23	59
APR											
12...	0930	1110	420	8.0	1.0	120	140	7	30	15	31
16...	1410	1780	400	7.9	1.5	120	140	26	36	11	26
20...	1220	2690	460	--	6.5	--	--	--	--	--	--
25...	1040	3280	495	--	7.0	--	--	--	--	--	--
28...	0945	4100	360	--	6.0	--	--	--	--	--	--
29...	1045	4450	345	--	5.0	--	--	--	--	--	--
30...	1355	4810	330	--	6.0	--	--	--	--	--	--
MAY											
01...	1025	4840	320	--	5.5	--	--	--	--	--	--
03...	1430	4840	305	--	6.0	--	--	--	--	--	--
15...	1600	825	580	7.8	11.5	30	200	64	52	18	36
JUN											
19...	1645	195	660	8.4	20.0	50	240	78	59	22	46
JUL											
18...	0955	89	745	7.9	22.5	20	230	54	54	24	52
AUG											
22...	1205	58	740	8.2	22.0	30	240	50	58	23	55
SEP											
18...	1320	30	650	8.4	17.0	15	260	68	62	25	61

05058700 SHEYENNE RIVER AT LISBON, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)
OCT											
19...	36	1.8	9.7	210	140	27	.2	8.1	442	--	.60
NOV											
15...	35	1.7	9.9	200	120	28	.2	4.5	451	--	.61
DEC											
19...	38	2.4	13	300	210	48	.3	5.8	651	670	.89
21...	--	--	--	--	--	--	--	--	--	--	--
JAN											
23...	40	2.5	12	270	210	49	.3	13	656	651	.89
FEB											
14...	37	2.1	11	260	170	30	.2	18	577	575	.78
MAR											
21...	33	1.7	22	200	130	20	.2	15	435	448	.59
APR											
12...	31	1.2	8.7	130	71	9.4	.2	10	288	258	.39
16...	28	1.0	6.8	110	64	8.2	.2	8.2	220	232	.30
20...	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
MAY											
01...	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--
15...	27	1.1	8.3	140	110	16	.2	13	360	341	.49
JUN											
19...	29	1.3	8.6	160	150	20	.2	4.8	407	407	.55
JUL											
18...	43	1.5	10	180	170	25	.2	16	470	462	.64
AUG											
22...	43	1.5	9.1	190	180	26	.2	11	481	478	.65
SEP											
18...	33	1.7	10	190	180	26	.2	9.7	474	489	.64

DATE	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BORON, DIS-SOLVED (UG/L AS B) (01020)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)
OCT										
19...	75.2	.01	.09	20	2	70	170	1	0	2
NOV										
15...	53.6	.17	.07	--	--	--	180	--	--	--
DEC										
19...	22.9	.24	.07	--	--	--	280	--	--	--
21...	--	--	--	--	--	--	--	--	--	--
JAN										
23...	63.8	.63	.18	--	--	--	240	--	--	--
FEB										
14...	90.4	.88	.15	--	--	--	220	--	--	--
MAR										
21...	412	1.3	.36	--	--	--	170	--	--	--
APR										
12...	863	1.1	.27	--	--	--	150	--	--	--
16...	1060	1.0	.16	40	2	400	110	0	0	0
20...	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--
MAY										
01...	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--
15...	802	.82	.11	--	--	--	80	--	--	--
JUN										
19...	214	.00	.03	--	--	--	140	--	--	--
JUL										
18...	113	.51	.05	--	--	--	170	--	--	--
AUG										
22...	75.3	.19	.04	--	--	--	160	--	--	--
SEP										
18...	38.4	.02	.05	0	2	100	170	<1	10	<3

05058700 SHEYENNE RIVER AT LISBON, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)
OCT										
19...	3	20	0	50	120	.0	1	3	0	290
NOV										
15...	--	--	--	--	--	--	--	--	--	--
DEC										
19...	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--
JAN										
23...	--	--	--	--	--	--	--	--	--	--
FEB										
14...	--	--	--	--	--	--	--	--	--	--
MAR										
21...	--	--	--	--	--	--	--	--	--	--
APR										
12...	--	--	--	--	--	--	--	--	--	--
16...	3	170	0	9	210	.0	0	2	0	230
20...	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--
MAY										
01...	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--
JUN										
19...	--	--	--	--	--	--	--	--	--	--
JUL										
18...	--	--	--	--	--	--	--	--	--	--
AUG										
22...	--	--	--	--	--	--	--	--	--	--
SEP										
18...	1	<10	0	50	190	.0	<10	5	1	340

DATE	VANA-DIUM, DIS-SOLVED (UG/L AS V) (01085)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70338)	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70340)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SED. SUSP. SIEVE DIAM. % FINER THAN .125 MM (70332)	SED. SUSP. SIEVE DIAM. % FINER THAN .250 MM (70333)	SED. SUSP. SIEVE DIAM. % FINER THAN .500 MM (70334)
OCT										
19...	.0	7	20	3.4	--	--	--	--	--	--
NOV										
15...	--	--	15	1.8	--	--	--	--	--	--
DEC										
19...	--	--	8	.28	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--
JAN										
23...	--	--	14	1.4	--	--	--	--	--	--
FEB										
14...	--	--	14	2.2	--	--	--	--	--	--
MAR										
21...	--	--	--	--	--	--	--	--	--	--
APR										
12...	--	--	168	503	--	--	--	--	--	--
16...	.8	140	521	2500	--	--	--	--	--	--
20...	--	--	730	5300	64	90	99	100	--	--
25...	--	--	509	4510	59	89	99	100	--	--
28...	--	--	410	4540	64	89	98	99	99	100
29...	--	--	--	--	--	--	--	--	--	--
30...	--	--	324	4210	64	89	97	98	99	100
MAY										
01...	--	--	--	--	--	--	--	--	--	--
03...	--	--	196	2560	69	90	100	--	--	--
15...	--	--	108	241	--	--	--	--	--	--
JUN										
19...	--	--	51	27	--	--	--	--	--	--
JUL										
18...	--	--	48	12	--	--	--	--	--	--
AUG										
22...	--	--	34	5.3	--	--	--	--	--	--
SEP										
18...	1.0	10	30	2.4	--	--	--	--	--	--

05058700 SHEYENNE RIVER AT LISBON, ND--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	795	700	---	---	890	825	705	280	540	750	590	745
2	780	680	880	1100	940	810	700	280	550	790	600	750
3	750	700	---	---	900	895	695	275	560	820	620	750
4	725	710	---	---	925	850	680	270	560	825	645	750
5	715	690	---	---	895	800	685	280	590	845	650	740
6	700	700	925	1100	925	820	675	280	600	850	645	720
7	715	695	---	---	890	830	670	290	640	855	650	725
8	740	690	---	---	900	825	600	295	650	825	660	745
9	725	670	910	1020	940	850	570	310	670	840	670	750
10	715	660	---	1150	900	830	580	340	700	850	695	725
11	700	670	---	1020	900	825	490	370	680	860	700	740
12	700	670	950	1020	910	800	385	400	650	850	710	765
13	700	665	---	1040	890	825	420	425	690	795	720	755
14	710	680	---	1020	850	840	420	495	670	775	715	750
15	695	---	---	1050	875	610	330	550	650	775	740	750
16	700	---	960	1060	900	450	340	525	670	760	730	745
17	700	---	---	1000	875	700	325	500	650	740	750	750
18	705	690	---	1000	825	300	350	495	670	725	750	750
19	700	---	1000	990	825	---	370	500	680	725	745	775
20	695	---	---	970	815	---	380	510	660	750	750	775
21	690	725	---	990	800	645	410	530	650	745	750	780
22	700	---	---	1000	800	600	495	520	615	720	760	790
23	700	---	1050	1020	825	595	460	510	625	650	765	770
24	710	---	---	990	810	600	430	520	645	600	770	775
25	700	825	---	1000	820	625	420	530	660	575	770	775
26	695	---	1000	950	825	640	400	540	640	525	765	790
27	690	---	---	950	830	665	325	580	650	530	760	800
28	690	875	---	910	810	675	330	570	660	550	755	800
29	680	---	---	900	---	685	310	550	640	565	725	800
30	700	---	1030	925	---	700	300	540	700	540	740	810
31	690	---	---	940	---	690	---	550	---	570	750	---
MEAN	710	705	967	1000	868	717	475	439	641	728	711	762

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14.0	7.0	---	---	.0	.0	.5	5.5	14.0	23.0	24.0	22.0
2	14.0	6.5	.5	.0	.0	.0	1.0	6.0	13.0	25.0	24.5	22.5
3	13.0	8.0	---	---	.0	.0	1.0	4.5	20.0	24.0	24.0	23.0
4	12.5	7.5	---	---	.0	.0	.5	6.0	18.0	25.0	24.0	24.0
5	12.0	7.5	---	---	.0	.5	.5	6.5	18.0	24.5	23.5	24.0
6	11.0	6.0	.5	.0	.0	.5	1.0	5.5	19.5	23.0	26.5	21.5
7	11.5	5.5	---	---	.0	.0	2.0	8.0	18.0	23.0	25.5	21.0
8	11.0	6.5	---	---	.0	.0	1.0	6.5	16.5	22.5	24.5	20.0
9	12.0	5.0	.5	.5	.0	.0	1.0	5.5	17.0	24.5	26.0	20.0
10	12.5	2.5	---	.0	.0	.0	1.0	5.5	19.0	25.0	24.5	19.5
11	11.5	1.5	---	.0	.0	1.0	1.0	6.0	20.0	25.5	24.0	19.0
12	11.0	2.0	.5	.0	.0	.5	1.0	7.5	21.0	26.0	23.0	18.5
13	10.5	1.5	---	.0	.0	.0	1.0	10.0	22.0	26.0	22.0	18.0
14	11.0	1.5	---	.0	.0	.0	1.0	10.0	21.0	26.0	20.5	19.0
15	9.0	---	---	.0	.0	.5	1.5	11.5	24.0	24.5	20.5	19.5
16	9.5	---	1.0	.0	.0	.5	2.0	15.0	22.0	24.0	21.0	18.5
17	8.5	---	---	.0	.0	.5	2.0	13.5	22.0	25.0	21.5	18.0
18	8.5	1.0	---	.0	.5	.5	3.5	12.5	21.0	24.5	20.5	18.0
19	9.5	---	1.0	.5	.5	---	3.5	13.5	20.0	24.0	20.5	17.0
20	10.0	---	---	.5	.0	---	4.5	13.0	19.0	25.5	21.5	16.5
21	10.0	.5	---	.5	.0	1.0	7.5	11.0	19.0	26.0	22.0	16.5
22	9.0	---	---	.0	.5	1.0	8.0	12.0	18.0	25.5	22.5	16.0
23	9.5	---	.5	.0	.0	.5	7.0	11.0	18.5	25.5	21.0	16.0
24	10.5	---	---	.0	.0	1.0	7.0	15.0	20.0	26.0	22.0	17.5
25	10.0	1.0	---	.5	.0	1.0	5.5	16.5	21.0	25.0	21.0	18.0
26	8.5	---	1.0	.5	.0	.5	6.0	16.0	20.0	24.5	20.5	19.0
27	7.5	---	---	.0	.0	.5	7.5	16.0	22.0	24.0	22.0	18.5
28	7.0	.5	---	.0	.0	.5	6.0	19.0	21.0	25.0	21.0	16.5
29	7.5	---	---	.0	---	1.0	6.0	19.5	21.0	24.0	22.0	16.0
30	8.0	---	.0	.0	---	.5	6.0	16.0	24.5	24.0	22.5	16.5
31	7.0	---	---	.0	---	1.0	---	15.5	---	23.0	23.0	---
MEAN	10.0	4.0	.5	.0	.0	.5	3.0	11.0	19.5	24.5	22.5	19.0

05058700 SHEYENNE RIVER AT LISBON, ND--Continued

SUSPENDED-SEDIMENT, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DAY	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	37	6.1	15	2.5	9	.90	26	1.9	16	1.8	10	1.9
2	35	5.6	16	4.9	10	1.0	24	1.7	16	1.8	12	2.4
3	33	5.1	25	8.0	9	.90	23	1.7	17	2.1	12	2.4
4	31	4.8	25	5.3	9	.90	23	1.7	19	2.6	12	2.6
5	29	4.6	25	4.9	9	.90	26	1.9	17	2.4	12	2.6
6	26	4.1	25	4.5	9	.90	26	1.9	16	2.2	12	2.6
7	21	3.2	25	4.0	10	1.0	26	1.9	16	2.2	12	2.8
8	20	2.6	25	4.5	10	.92	22	1.6	17	2.5	12	2.8
9	18	1.8	25	4.6	10	.81	17	1.2	16	2.5	12	2.9
10	18	1.5	25	4.5	10	.73	15	1.1	14	2.2	14	3.8
11	31	4.2	22	3.1	10	.54	14	1.0	15	2.3	17	5.0
12	31	4.6	22	3.3	10	.43	14	1.0	15	2.3	23	7.3
13	29	4.5	21	3.7	10	.41	14	1.0	16	2.5	26	10
14	26	4.0	16	2.2	10	.41	12	.84	16	2.5	24	9.6
15	25	3.8	14	1.6	9	.36	8	.56	16	2.6	24	11
16	24	3.8	14	2.0	8	.30	7	.49	14	2.3	23	13
17	23	3.8	13	1.8	8	.30	7	.51	13	2.1	17	11
18	22	3.6	12	1.3	8	.30	8	.58	12	1.9	14	11
19	21	3.3	12	1.2	8	.28	15	1.2	9	1.5	21	20
20	22	3.5	12	1.2	8	.28	15	1.3	9	1.5	24	23
21	22	3.6	12	1.2	9	.36	14	1.3	9	1.5	26	25
22	21	3.9	12	1.2	21	1.1	13	1.3	9	1.5	35	36
23	21	3.7	12	1.2	29	2.0	13	1.3	9	1.5	30	31
24	20	3.5	12	1.2	31	2.1	13	1.3	9	1.5	32	29
25	20	3.2	12	1.2	31	2.1	13	1.3	9	1.5	23	22
26	20	3.5	12	1.3	31	2.1	13	1.3	9	1.5	26	25
27	18	3.0	10	1.1	29	2.0	13	1.3	9	1.5	31	31
28	17	2.7	10	1.1	26	1.8	13	1.4	9	1.5	34	34
29	16	2.6	10	1.1	26	1.8	21	2.3	---	---	30	30
30	17	2.8	10	1.0	26	1.8	20	2.3	---	---	24	23
31	16	2.6	---	---	26	1.8	16	1.8	---	---	23	22
TOTAL	---	113.8	---	80.7	---	31.53	---	41.98	---	55.8	---	455.7

DAY	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	19	15	281	3670	37	38	41	7.1	75	29	26	4.2
2	15	12	230	3020	33	31	43	9.6	75	27	26	4.1
3	20	18	208	2680	30	28	44	12	75	26	26	3.7
4	22	20	188	2330	38	30	44	12	73	25	29	3.9
5	24	23	167	1990	43	28	44	11	63	20	31	4.1
6	21	20	160	1840	45	28	48	12	55	15	35	4.6
7	30	30	147	1620	45	28	47	12	48	10	36	4.7
8	48	62	144	1500	42	26	46	12	48	8.8	35	4.5
9	39	46	122	1200	34	21	42	11	47	8.4	35	4.6
10	37	45	120	1060	30	18	39	9.8	46	7.9	36	4.9
11	63	88	120	878	30	18	41	10	47	8.4	36	5.5
12	135	397	118	733	30	17	43	11	46	8.2	36	5.3
13	100	297	112	569	30	17	46	11	46	7.9	34	4.5
14	160	575	105	303	30	16	45	11	46	7.9	28	3.2
15	445	2160	105	240	30	16	49	12	44	7.1	26	2.8
16	513	2490	118	289	30	16	49	13	41	6.6	28	2.7
17	614	3070	130	319	30	15	49	13	40	6.7	31	2.8
18	901	4620	116	271	30	15	47	11	39	6.5	30	2.5
19	887	5750	97	206	43	22	45	11	38	6.4	30	2.4
20	734	5190	96	195	54	37	43	11	38	6.2	34	2.6
21	477	2670	96	191	55	41	44	11	38	6.2	32	2.2
22	441	2380	96	188	52	28	53	18	38	5.8	30	1.6
23	501	3350	95	180	50	22	60	46	37	5.5	26	1.3
24	527	4180	55	98	45	17	80	89	36	5.2	19	.87
25	517	4630	46	74	42	15	106	123	36	5.2	19	1.1
26	450	4370	48	56	42	15	102	113	35	4.9	20	1.3
27	406	4220	53	63	38	12	89	72	34	4.8	23	1.6
28	440	4930	49	60	37	10	86	48	34	5.7	28	1.9
29	396	4740	38	46	48	11	83	42	35	7.3	32	2.1
30	352	4460	42	50	43	8.9	143	98	32	5.9	29	1.7
31	---	---	40	46	---	---	85	41	28	4.5	---	---
TOTAL	---	64858	---	25965	---	644.9	---	923.5	---	310.0	---	93.27

TOTAL LOAD FOR YEAR: 93574.18 TONS.

05059000 SHEYENNE RIVER NEAR KINDRED, ND

LOCATION.--Lat 46°37'35", long 97°00'05", in NE¼NW¼ sec.5, T.136 N., R.50 W., Richland County, Hydrologic Unit 09020204, on right bank 25 ft (8 m) downstream from Burlington Northern Railway bridge, 1.5 mi (2.4 km) southeast of Kindred, and at mile 68.1 (109.6 km).

DRAINAGE AREA.--8,800 mi² (22,800 km²), approximately, of which about 5,780 mi² (14,970 km²) is probably noncontributing, including 3,800 mi² (9,840 km²) in closed basins.

WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WSP 1728: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 925.55 ft (282.108 m) National Geodetic Vertical Datum of 1929. July 1949 to Sept. 30, 1962, nonrecording gage at same site and datum.

REMARKS.--Records good except those for the winter period, which are fair. Flow regulated to a large degree by Lake Ashtabula (station 05057500) 202 mi (325 km) upstream and several small reservoirs.

AVERAGE DISCHARGE.--30 years, 200 ft³/s (5.664 m³/s), 144,900 acre-ft/yr (179 hm³/yr); median of yearly mean discharges, 160 ft³/s (4.53 m³/s), 115,900 acre-ft/yr (143 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,690 ft³/s (133 m³/s) Apr. 15, 1969, gage height, 21.03 ft (6.410 m); maximum gage height, 21.66 ft (6.602 m) July 6, 1975; minimum daily discharge, 13 ft³/s (0.37 m³/s) Nov. 13, 1955, Aug. 22-24, 1959.

EXTREMES OUTSIDE PERIOD OF RECORD.--Spring flood in 1947 or 1948 reached a stage of 22.1 ft (6.74 m), from floodmarks, discharge about 3,600 ft³/s (102 m³/s).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,160 ft³/s (118 m³/s) May 7, gage height, 20.75 ft (6.325 m); maximum gage height, 21.01 ft (6.404 m) Apr. 19, backwater from ice; minimum daily discharge, 34 ft³/s (0.93 m³/s) Dec. 24.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	78	87	64	50	50	57	390	3620	590	210	282	110
2	78	87	68	50	50	58	390	3820	564	193	294	112
3	78	88	68	50	50	58	390	3960	535	186	252	106
4	80	88	66	45	50	62	390	4070	495	180	229	98
5	80	102	63	45	50	64	390	4130	471	178	218	96
6	81	142	62	45	50	65	390	4160	454	191	212	96
7	81	130	62	40	50	66	400	4160	408	189	203	89
8	81	110	62	40	50	68	470	4140	370	189	193	85
9	81	106	59	40	50	68	540	4110	357	187	182	85
10	82	102	56	40	50	72	620	4070	352	187	166	85
11	82	102	53	40	50	74	760	3980	345	187	160	85
12	81	120	50	35	50	70	940	3840	338	189	154	83
13	77	90	48	35	50	70	1020	3580	328	186	147	83
14	74	99	46	40	50	70	1120	3050	321	180	141	83
15	75	78	45	40	50	69	1440	2380	309	176	135	92
16	75	59	43	40	50	69	1790	1600	298	176	128	94
17	76	72	42	40	50	69	2460	1200	289	172	122	85
18	80	68	45	42	50	72	3280	1100	284	172	116	76
19	81	68	44	44	50	80	4000	1080	291	174	114	74
20	82	90	41	44	50	86	3990	1050	320	174	112	74
21	84	90	38	45	50	101	3840	979	340	168	112	74
22	84	86	37	45	50	150	3390	904	351	162	116	74
23	84	81	35	48	52	190	3050	861	374	164	114	72
24	84	71	34	50	54	283	2460	841	363	191	114	70
25	84	68	35	50	57	317	2230	819	309	218	108	61
26	87	57	35	50	57	321	2410	790	271	326	104	59
27	87	56	42	50	57	350	2670	743	248	386	104	59
28	87	55	45	50	57	374	2920	654	239	404	108	59
29	87	55	46	50	---	372	3170	599	235	392	106	59
30	87	58	46	50	---	388	3400	606	224	362	106	61
31	87	---	48	50	---	393	---	603	---	309	104	---
TOTAL	2527	2605	1530	1383	1434	4606	54510	71499	10673	6758	4756	2439
MEAN	81.5	86.8	49.4	44.6	51.2	149	1817	2306	356	218	153	81.3
MAX	87	142	68	50	57	393	4000	4160	590	404	294	112
MIN	74	55	34	35	50	57	390	599	224	162	104	59
AC-FT	5010	5170	3030	2740	2840	9140	108100	141800	21170	13400	9430	4840

CAL YR 1978 TOTAL 71216 MEAN 195 MAX 1400 MIN 26 AC-FT 141300
WTR YR 1979 TOTAL 164720 MEAN 451 MAX 4160 MIN 34 AC-FT 326700

05059000 SHEYENNE RIVER NEAR KINDRED, ND--Continued
National stream-quality accounting network station

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1974 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: August 1976 to current year.
WATER TEMPERATURES: November 1970 to September 1975, April 1976 to current year.
SUSPENDED-SEDIMENT DISCHARGE: August 1976 to current year.

INSTRUMENTATION.--Water-quality monitor since September 1976.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 1,280 micromhos Jan. 10, 1979; minimum, 303 micromhos Sept. 14, 1978.
WATER TEMPERATURES: Maximum, 30.5°C July 18, 19, 1977; minimum, 0.0°C on many days during winter months.
SEDIMENT CONCENTRATIONS: Maximum daily mean, 1,970 mg/L May 5, 1977; minimum daily mean, 6 mg/L on several days in 1977.
SEDIMENT LOADS: Maximum daily, 9,950 tons (9,030 metric tons) Apr. 19, 1979; minimum daily, 0.62 tons (0.56 metric ton) Oct. 24, 1976.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 1,280 micromhos Jan. 10; mimimum, 318 micromhos Apr. 18.
WATER TEMPERATURES: Maximum, 26.5°C July 22, 23; minimum, 0.0°C on many days during winter months.
SEDIMENT CONCENTRATIONS: Maximum daily mean, 921 mg/L Apr. 19; minimum daily mean, 8 mg/L on several days in December.
SEDIMENT LOADS: Maximum daily, 9,950 tons (9,030 metric tons) Apr. 19; minimum daily, 0.76 tons (0.69 metric ton) Dec. 23, 26.

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE (DEG C) (00010)	COLOR (PLAT-INUM-COBALT UNITS) (00080)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L) (00310)	COLI-FORM, TOTAL, IMMED. (COLS. PER 100 ML) (31501)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)
OCT												
25...	1130	83	810	8.4	7.5	11	3.9	10.1	2.0	3900	K53	700
NOV												
30...	1430	61	895	8.0	.0	6	3.1	6.4	.6	180	--	225
DEC												
20...	1300	41	950	7.3	.0	8	1.8	5.0	1.2	160	120	--
JAN												
24...	1220	51	1050	7.5	.0	7	4.4	4.0	1.2	390	--	480
FEB												
28...	1430	57	900	7.9	.0	38	5.5	5.6	.9	240	31	4229
MAR												
06...	1230	68	950	7.7	.5	11	4.4	4.2	1.2	100	K130	30
15...	1110	71	910	7.8	.5	19	4.5	--	1.3	--	K64	K61
APR												
05...	1030	388	720	7.9	.5	40	9.9	--	--	--	--	--
16...	1530	1840	330	8.4	2.0	120	110	--	--	--	--	--
24...	1020	2550	480	7.8	9.0	40	130	8.0	3.4	4200	3500	1400
28...	1130	2940	470	7.8	7.5	--	--	9.4	--	K29	200	2000
MAY												
02...	1045	3640	310	8.2	9.0	50	85	10.4	4.2	250	160	2100
05...	1400	4100	335	7.7	8.0	--	--	6.8	--	--	--	--
10...	1045	4060	330	8.1	6.5	50	69	10.6	4.1	950	170	K120
16...	1055	1610	480	8.1	12.0	30	96	9.6	5.0	K1500	K490	K300
23...	1335	861	560	8.0	13.0	70	--	7.4	2.2	1200	K160	K75
JUN												
01...	1230	591	650	8.2	15.0	20	42	7.0	--	580	K63	100
06...	1555	455	650	8.1	19.0	25	29	7.6	2.4	K110	K240	200
13...	1215	330	755	8.4	19.0	200	19	9.0	3.1	K75	K900	122
22...	1230	332	701	8.2	17.5	35	33	8.1	2.8	K400	130	K9
28...	1120	239	745	8.4	21.5	30	25	8.2	3.4	--	--	--
AUG												
01...	1300	276	586	8.0	22.5	25	56	7.3	1.5	>2600	3300	600
31...	0845	101	755	8.2	20.0	10	9.2	7.6	1.2	K420	210	180
SEP												
27...	0955	57	800	8.2	16.0	10	10	8.8	2.6	190	350	280

K - Results based on colony count outside the acceptable range (non-ideal colony count).

05059000 SHEYENNE RIVER NEAR KINDRED, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	HARDNESS (MG/L AS CACO3) (00900)	HARDNESS, NONCARBONATE (MG/L CACO3) (00902)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM ADSORPTION RATIO (00931)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	ALKALINITY (MG/L AS CACO3) (00410)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)
OCT												
25...	290	--	71	27	67	33	1.7	9.7	240	160	34	.2
NOV												
30...	320	71	79	30	74	33	1.8	9.1	250	160	35	.3
DEC												
20...	360	58	89	33	74	30	1.7	8.7	300	170	36	.2
JAN												
24...	350	55	86	34	89	35	2.1	10	300	200	51	.3
FEB												
28...	310	36	73	30	78	35	1.9	9.2	270	160	31	.3
MAR												
08...	300	79	72	29	81	36	2.0	10	220	190	34	.3
15...	330	62	82	31	80	34	1.9	9.4	270	170	35	.3
APR												
05...	230	7	48	26	62	36	1.8	11	220	140	18	.2
16...	120	18	28	11	19	25	.8	7.9	97	50	7.1	.1
24...	170	51	42	16	26	24	.9	8.9	120	95	12	.1
28...	--	--	--	--	--	--	--	--	140	--	--	--
MAY												
02...	130	37	34	12	21	24	.8	7.3	97	61	6.6	.1
05...	--	--	--	--	--	--	--	--	84	--	--	--
10...	120	40	31	11	18	31	.7	6.9	83	56	5.7	.1
16...	180	38	45	16	28	24	.9	8.3	140	84	9.9	.2
23...	220	50	55	20	37	26	1.1	--	170	110	15	--
JUN												
01...	250	69	65	21	44	27	1.2	8.2	180	140	20	.2
06...	240	64	63	21	42	26	1.2	8.3	180	120	17	.3
13...	290	73	76	25	9.5	9	.2	8.7	220	150	21	.2
22...	270	64	70	24	45	26	1.2	7.7	210	130	19	.2
28...	270	48	66	25	49	26	1.3	8.0	220	140	20	.2
AUG												
01...	220	32	56	20	40	27	1.2	8.8	190	120	13	.2
31...	300	59	77	26	50	35	1.3	7.7	240	160	33	.2
SEP												
27...	330	68	85	28	59	28	1.4	8.7	260	160	32	.5

DATE	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)	SOLIDS, DISSOLVED (TONS PER DAY) (70302)	NITROGEN, NITRATE TOTAL (MG/L AS N) (00620)	NITROGEN, NITRATE DISSOLVED (MG/L AS N) (00618)	NITROGEN, NITRATE DISSOLVED (MG/L AS NO3) (71851)	NITROGEN, NITRITE TOTAL (MG/L AS N) (00615)	NITROGEN, NITRITE DISSOLVED (MG/L AS N) (00613)	NITROGEN, NITRITE DISSOLVED (MG/L AS NO2) (71856)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N) (00630)
OCT												
25...	16	526	--	.72	118	.03	.01	.04	.01	.00	.00	.04
NOV												
30...	14	571	--	.78	94.0	11	.16	.71	.01	.01	.03	.12
DEC												
20...	17	612	610	.83	67.7	.01	.25	1.1	.01	.00	.00	.02
JAN												
24...	18	679	673	.92	93.5	.50	.62	2.7	.02	.01	.03	.52
FEB												
28...	20	603	569	.82	92.8	.88	.91	4.0	.02	.01	.03	.90
MAR												
08...	20	600	574	.82	--	.96	.98	4.3	.02	.02	.07	.98
15...	20	609	595	.83	117	.92	.93	4.1	.04	.01	.03	.96
APR												
05...	16	472	458	.64	494	.90	.88	3.9	.04	.02	.07	.94
16...	8.8	203	191	.28	1010	--	--	--	--	--	--	--
24...	11	295	284	.40	2030	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	.56	2.5	--	.06	.20	--
MAY												
02...	8.9	219	210	.30	2150	.76	.74	3.3	.10	.04	.13	.86
05...	--	--	--	--	--	--	.95	4.2	--	.05	.16	--
10...	10	200	189	.27	2190	.90	.95	4.2	.10	.04	.13	1.0
16...	13	307	293	.42	1330	.85	.78	3.5	.06	.04	.13	.91
23...	--	--	363	.53	844	.72	.69	3.1	--	.02	.07	--
JUN												
01...	10	433	418	.59	--	.20	.21	.93	.06	.01	.03	.26
06...	8.4	415	389	.56	510	.03	.06	.27	.02	.01	.03	.05
13...	10	489	433	.67	--	.01	.02	.09	.04	.01	.03	.05
22...	13	450	437	.61	403	.45	.44	1.9	.04	.03	.10	.49
28...	6.5	470	447	.64	--	.01	.00	.00	.00	.00	.00	.01
AUG												
01...	17	371	392	.50	276	.48	.49	2.2	.04	.02	.07	.52
31...	19	529	517	.72	144	.01	.00	.00	.00	.00	.00	.01
SEP												
27...	18	527	548	.72	81.1	--	--	--	--	--	--	.23

05059000 SHEYENNE RIVER NEAR KINDRED, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS NH4) (71846)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, NH4 + ORG. SUSP. TOTAL (MG/L AS N) (00624)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, DIS-SOLVED (MG/L AS N) (00602)
OCT											
25...	.01	.01	.00	.00	.85	.42	.86	--	.42	.90	--
NOV											
30...	.17	.01	.00	.00	.60	.48	.61	--	.48	.73	--
DEC											
20...	.25	.02	.04	.05	.62	.55	.64	--	.59	.66	--
JAN											
24...	.63	.14	.20	.26	.55	.51	.69	--	.71	1.2	1.3
FEB											
28...	.92	.15	.14	.18	1.6	.84	1.7	--	.98	2.6	1.9
MAR											
08...	1.0	.11	.12	.15	.99	.78	1.1	--	.90	2.1	1.9
15...	.94	.08	.09	.12	.77	.79	.85	--	.88	1.8	1.8
APR											
05...	.90	.41	.35	.45	1.1	.95	1.5	--	1.3	2.4	2.2
16...	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--
28...	.62	--	.42	.54	--	.78	2.3	1.1	1.2	--	1.8
MAY											
02...	.78	.45	.41	.53	1.5	.43	1.9	1.1	.84	2.8	1.6
05...	1.0	--	.33	.43	--	.57	1.0	.10	.90	--	1.9
10...	.99	.27	.20	.26	.93	.45	1.2	.55	.65	2.2	1.6
16...	.82	.15	.14	.18	1.3	.55	1.4	.71	.69	2.3	1.5
23...	--	--	.00	.00	1.0	.71	--	.39	--	1.9	1.4
JUN											
01...	.22	.09	.00	.00	1.0	.51	1.1	.59	.51	1.4	.73
06...	.07	.05	.00	.00	.95	.45	1.0	.55	.45	1.1	.52
13...	.03	.02	.01	.01	1.3	.43	1.3	.86	.44	1.4	.47
22...	.47	.01	.00	.00	.97	.01	.98	.97	.01	1.5	.48
28...	.00	.01	.00	.00	1.1	.20	1.1	.90	.20	1.1	.20
AUG											
01...	.51	.00	.03	.04	.94	.60	.94	.31	.63	1.5	1.1
31...	.00	.06	.00	.00	1.1	.44	1.2	.76	.44	1.2	.44
SEP											
27...	.01	--	--	--	--	--	--	--	--	--	--

DATE	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHATE, TOTAL (MG/L AS PO4) (00650)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, ORTHO, TOTAL (MG/L AS P) (70507)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)	PHOS-PHORUS, HYDRO-LYZABLE TOTAL (MG/L AS P) (00669)	PHOS-PHORUS, HYDRO-LYZABLE DIS. (MG/L AS P) (00672)	ALUM-INUM, TOTAL RECOV-ERABLE (UG/L AS AL) (01105)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)
OCT											
25...	4.0	.14	--	.11	.09	.07	.21	.03	.02	--	--
NOV											
30...	3.2	.09	--	.06	.08	.06	.18	.00	.00	--	--
DEC											
20...	2.9	.08	--	.05	.02	.02	.06	.00	.00	--	--
JAN											
24...	5.4	.37	--	.06	.09	.07	.21	.00	--	120	--
FEB											
28...	12	.12	--	.10	.11	.06	.18	.01	.02	--	--
MAR											
08...	9.2	.12	--	.11	.10	.05	.15	--	--	--	--
15...	8.0	.11	--	.09	.09	.07	.21	--	--	--	--
APR											
05...	11	.29	--	.22	.21	.20	.61	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	3700	--
24...	--	--	--	--	.08	--	--	.00	--	6700	--
28...	--	.29	.89	.05	--	--	--	--	--	6200	--
MAY											
02...	12	.43	.46	.05	.15	.03	.09	.00	.30	420	--
05...	--	.38	1.2	.09	--	--	--	--	--	440	--
10...	9.7	.38	1.2	.12	.21	.09	.28	--	--	1900	--
16...	10	.45	1.4	.10	.14	.09	.28	.28	.00	--	--
23...	8.2	--	.28	--	--	--	.25	.16	.01	--	--
JUN											
01...	6.0	.22	.67	.07	.08	.04	.12	.08	.02	--	--
06...	4.6	.21	.21	.07	.07	.03	.09	.03	.00	--	--
13...	6.0	.14	.09	.12	.03	.02	.06	.08	.02	--	--
22...	6.5	.21	.18	.05	.06	.07	.21	.25	.00	--	--
28...	4.9	.22	.06	.01	.02	.00	.00	.16	.01	--	--
AUG											
01...	6.5	.20	.31	.03	.10	.08	.25	.12	.02	1700	10
31...	5.4	.09	.18	.04	.06	.04	.12	.03	.00	--	--
SEP											
27...	--	.08	--	.02	--	--	--	--	--	340	--

05059000 SHEYENNE RIVER NEAR KINDRED, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC SUS-PENDED TOTAL (UG/L AS AS) (01001)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BARIUM, SUS-PENDED RECOV-ERABLE (UG/L AS BA) (01006)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE) (01012)	BORON, TOTAL RECOV-ERABLE (UG/L AS B) (01022)	BORON, DIS-SOLVED (UG/L AS B) (01020)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD) (01027)	CADMIUM SUS-PENDED RECOV-ERABLE (UG/L AS CD) (01026)
OCT											
25...	5	--	4	0	0	100	0	210	190	0	0
NOV											
30...	--	--	--	--	--	--	--	--	210	--	--
DEC											
20...	--	--	--	--	--	--	--	--	220	--	--
JAN											
24...	3	--	3	100	0	100	0	270	260	1	0
FEB											
28...	--	--	--	--	--	--	--	--	220	--	--
MAR											
08...	--	--	--	--	--	--	--	--	220	--	--
15...	--	--	--	--	--	--	--	--	220	--	--
APR											
05...	--	--	--	--	--	--	--	--	160	--	--
16...	4	--	4	100	100	0	0	160	100	--	--
24...	6	--	2	200	100	100	0	120	90	--	--
28...	7	--	2	200	100	100	0	140	--	--	--
MAY											
02...	4	--	3	200	100	100	0	100	80	--	--
05...	4	--	1	100	100	0	0	110	--	1	1
10...	4	--	4	100	0	100	0	90	220	1	1
16...	--	--	--	--	--	--	--	--	70	--	--
23...	--	--	--	--	--	--	--	--	80	--	--
JUN											
01...	--	--	--	--	--	--	--	--	110	--	--
06...	--	--	--	--	--	--	--	--	110	--	--
13...	--	--	--	--	--	--	--	--	220	--	--
22...	--	--	--	--	--	--	--	--	130	--	--
28...	--	--	--	--	--	--	--	--	130	--	--
AUG											
01...	6	--	6	100	0	100	0	140	110	1	0
31...	--	--	--	--	--	--	--	--	170	--	--
SEP											
27...	6	2	4	--	--	100	0	180	170	0	0

DATE	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	CHRO-MIUM, SUS-PENDED RECOV. (UG/L AS CR) (01031)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO) (01037)	COBALT, SUS-PENDED RECOV-ERABLE (UG/L AS CO) (01036)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	COPPER, SUS-PENDED RECOV-ERABLE (UG/L AS CU) (01041)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)
OCT											
25...	2	0	0	0	0	0	<1	5	3	2	320
NOV											
30...	--	--	--	--	--	--	--	--	--	--	430
DEC											
20...	--	--	--	--	--	--	--	--	--	--	330
JAN											
24...	<1	0	0	0	2	0	<3	3	1	2	340
FEB											
28...	--	--	--	--	--	--	--	--	--	--	370
MAR											
08...	--	--	--	--	--	--	--	--	--	--	400
15...	--	--	--	--	--	--	--	--	--	--	340
APR											
05...	--	--	--	--	--	--	--	--	--	--	390
16...	--	0	0	0	2	2	0	23	0	28	5700
24...	--	20	20	0	5	5	0	13	9	4	11000
28...	--	10	10	0	4	4	0	15	11	4	11000
MAY											
02...	--	20	20	0	8	8	0	30	25	5	7700
05...	0	10	10	0	6	2	4	18	14	4	7400
10...	0	20	20	0	7	7	0	3	0	18	5000
16...	--	--	--	--	--	--	--	--	--	--	5800
23...	--	--	--	--	--	--	--	--	--	--	3200
JUN											
01...	--	--	--	--	--	--	--	--	--	--	1800
06...	--	--	--	--	--	--	--	--	--	--	1800
13...	--	--	--	--	--	--	--	--	--	--	1200
22...	--	--	--	--	--	--	--	--	--	--	2000
28...	--	--	--	--	--	--	--	--	--	--	2100
AUG											
01...	<1	0	0	0	3	0	<3	10	2	8	2800
31...	--	--	--	--	--	--	--	--	--	--	700
SEP											
27...	<1	0	0	10	0	0	<3	7	6	1	580

05059000 SHEYENNE RIVER NEAR KINDRED, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	LEAD, SUS-PENDED RECOV-ERABLE (UG/L AS PB) (01050)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM TOTAL RECOV-ERABLE (UG/L AS LI) (01132)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MANGA-NESE, SUS-PENDED RECOV. (UG/L AS MN) (01054)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	MERCURY SUS-PENDED RECOV-ERABLE (UG/L AS HG) (71895)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)
OCT											
25...	20	9	4	5	40	140	90	50	.0	.0	.0
NOV											
30...	20	--	--	--	--	180	--	190	--	--	--
DEC											
20...	20	--	--	--	--	400	--	400	--	--	--
JAN											
24...	10	--	--	--	70	200	10	190	.0	.0	.0
FEB											
28...	30	--	--	--	--	160	60	100	--	--	--
MAR											
08...	20	--	--	--	--	150	20	130	--	--	--
15...	20	--	--	--	--	170	40	130	--	--	--
APR											
05...	40	--	--	--	--	150	60	90	--	--	--
16...	130	--	--	--	140	710	510	200	13	5.0	8.0
24...	50	--	--	--	30	2000	1900	70	15	4.0	11
28...	40	--	--	--	40	2200	2100	100	40	30	10
MAY											
02...	80	--	--	--	20	1600	1500	120	25	5.0	20
05...	100	17	17	0	30	1200	870	330	.4	.3	.1
10...	70	7	7	0	10	900	700	200	13	5.0	8.0
16...	30	--	--	--	--	1400	1200	170	--	--	--
23...	60	--	--	--	--	980	910	70	--	--	--
JUN											
01...	10	--	--	--	--	860	830	30	--	--	--
06...	0	--	--	--	--	770	730	40	--	--	--
13...	10	--	--	--	--	560	510	50	--	--	--
22...	10	--	--	--	--	720	690	30	--	--	--
28...	10	--	--	--	--	900	880	20	--	--	--
AUG											
01...	10	6	6	0	30	880	880	4	.1	.1	.0
31...	<10	--	--	--	--	340	250	90	--	--	--
SEP											
27...	<10	1	1	0	40	--	--	170	1.5	.3	1.2

DATE	MOLYB-DENUM, TOTAL RECOV-ERABLE (UG/L AS MO) (01062)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SELE-NIUM, SUS-PENDED TOTAL (UG/L AS SE) (01146)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	SILVER, SUS-PENDED RECOV-ERABLE (UG/L AS AG) (01076)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, SUS-PENDED RECOV-ERABLE (UG/L AS ZN) (01091)
OCT											
25...	0	--	10	0	0	0	0	0	0	20	20
NOV											
30...	--	--	--	--	--	--	--	--	--	--	--
DEC											
20...	--	--	--	--	--	--	--	--	--	--	--
JAN											
24...	1	--	5	0	0	0	0	0	0	10	7
FEB											
28...	--	--	--	--	--	--	--	--	--	--	--
MAR											
08...	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
APR											
05...	--	--	--	--	--	--	--	--	--	--	--
16...	0	--	24	1	1	0	0	0	0	50	0
24...	4	--	33	1	0	1	0	0	0	130	70
28...	5	--	33	1	1	0	0	0	0	200	130
MAY											
02...	4	--	23	1	1	0	0	0	0	260	160
05...	3	--	24	1	1	0	0	0	0	60	40
10...	1	--	22	1	0	1	0	0	0	110	10
16...	--	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--
JUN											
01...	--	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--
AUG											
01...	0	<10	12	1	1	0	0	0	0	20	20
31...	--	--	--	--	--	--	--	--	--	--	--
SEP											
27...	4	--	8	1	0	1	0	0	0	20	20

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C) (00689)	CYANIDE TOTAL (MG/L AS CN) (00720)	PCB, TOTAL (UG/L) (39516)	PCB, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39519)	ALDRIN, TOTAL (UG/L) (39330)	ALDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39333)	CHLOR-DANE, TOTAL (UG/L) (39350)	CHLOR-DANE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39351)	DDD, TOTAL (UG/L) (39360)
OCT											
25...	<3	6.3	.7	.00	--	--	--	--	--	--	--
NOV											
30...	--	11	--	--	--	--	--	--	--	--	--
DEC											
20...	--	4.7	.4	--	--	--	--	--	--	--	--
JAN											
24...	<3	7.7	.5	.00	--	--	--	--	--	--	--
FEB											
28...	--	9.6	.6	--	--	--	--	--	--	--	--
MAR											
08...	--	8.5	.6	--	--	--	--	--	--	--	--
15...	--	8.8	.4	--	--	--	--	--	--	--	--
APR											
05...	--	11	.8	--	--	--	--	--	--	--	--
16...	50	14	7.3	.00	--	--	--	--	--	--	--
24...	60	11	12	.00	--	--	--	--	--	--	--
28...	70	11	7.9	.01	--	--	--	--	--	--	--
MAY											
02...	100	11	4.5	.00	--	--	--	--	--	--	--
05...	20	--	--	.00	--	--	--	--	--	--	--
10...	100	6.9	4.4	.00	--	--	--	--	--	--	--
16...	--	8.1	--	--	--	--	--	--	--	--	--
23...	--	10	--	--	--	--	--	--	--	--	--
JUN											
01...	--	12	4.1	--	.0	0	.00	.0	.0	0	.00
06...	--	7.4	2.8	--	--	--	--	--	--	--	--
13...	--	8.5	3.8	--	--	--	--	--	--	--	--
22...	--	10	3.7	--	--	--	--	--	--	--	--
28...	--	13	1.0	--	--	--	--	--	--	--	--
AUG											
01...	<3	5.9	.8	.00	.0	0	.00	.0	.0	0	.00
31...	--	11	1.4	--	--	--	--	--	--	--	--
SEP											
27...	<3	5.4	1.2	--	--	--	--	--	--	--	--

DATE	DDD, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39363)	DDE, TOTAL (UG/L) (39365)	DDE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39368)	DDT, TOTAL (UG/L) (39370)	DDT, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39373)	DI-AZINON, TOTAL (UG/L) (39570)	DI-AZINON, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39571)	DI-ELDRIN TOTAL (UG/L) (39380)	DI-ELDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39383)	ENDO-SULFAN, TOTAL (UG/L) (39388)	ENDRIN, TOTAL (UG/L) (39390)
JUN											
01...	.3	.00	.0	.00	.0	.00	.0	.00	.0	.00	.00
06...	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--
AUG											
01...	.1	.00	.0	.00	.0	.00	.0	.00	.0	.00	.00
31...	--	--	--	--	--	--	--	--	--	--	--
SEP											
27...	--	--	--	--	--	--	--	--	--	--	--

DATE	ENDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39393)	ETHION, TOTAL (UG/L) (39398)	ETHION, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39399)	HEPTA-CHLOR, TOTAL (UG/L) (39410)	HEPTA-CHLOR, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39413)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L) (39420)	HEPTA-CHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG) (39423)	LINDANE TOTAL (UG/L) (39340)	LINDANE TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39343)	MALA-THION, TOTAL (UG/L) (39530)	MALA-THION, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39531)
JUN											
01...	.0	.00	.0	.00	.0	.00	.0	.00	.0	.00	.0
06...	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--
AUG											
01...	.0	.00	.0	.00	.0	.00	.0	.00	.0	.00	.0
31...	--	--	--	--	--	--	--	--	--	--	--
SEP											
27...	--	--	--	--	--	--	--	--	--	--	--

05059000 SHEYENNE RIVER NEAR KINDRED, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	METHYL PARATHION, TOTAL (UG/L) (39600)	METHYL PARATHION, TOT. IN BOTTOM MATL. (UG/KG) (39601)	METHYL TRITHION, TOTAL (UG/L) (39790)	METHYL TRITHION, TOT. IN BOTTOM MATL. (UG/KG) (39791)	MIREX, TOTAL (UG/L) (39755)	PARATHION, TOTAL (UG/L) (39540)	PARATHION, TOTAL IN BOTTOM MATERIAL (UG/KG) (39541)	PERTHANE TOTAL (UG/L) (39034)	TOXAPHENE, TOTAL (UG/L) (39400)	TOXAPHENE, TOTAL IN BOTTOM MATERIAL (UG/KG) (39403)	TOTAL TRITHION (UG/L) (39786)
JUN											
01...	.00	.0	.00	.0	.00	.00	.0	.00	0	0	.00
06...	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--
AUG											
01...	.00	.0	.00	.0	.00	.00	.0	.00	0	0	.00
31...	--	--	--	--	--	--	--	--	--	--	--
SEP											
27...	--	--	--	--	--	--	--	--	--	--	--

DATE	TRITHION, TOTAL IN BOTTOM MATERIAL (UG/KG) (39787)	2,4-D, TOTAL (UG/L) (39730)	2,4-D, TOTAL IN BOTTOM MATERIAL (UG/KG) (39731)	2,4,5-T TOTAL (UG/L) (39740)	2,4,5-T TOTAL IN BOTTOM MATERIAL (UG/KG) (39741)	SILVEX, TOTAL (UG/L) (39760)	SILVEX, TOTAL IN BOTTOM MATERIAL (UG/KG) (39761)	PHYTOPLANKTON, TOTAL (CELLS PER ML) (60050)	PERIPHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M (00573)	PERIPHYTON BIOMASS ASH WEIGHT G/SQ M (00572)
OCT										
25...	--	--	--	--	--	--	--	15000	--	--
NOV										
30...	--	--	--	--	--	--	--	--	--	--
DEC										
20...	--	--	--	--	--	--	--	--	--	--
JAN										
24...	--	--	--	--	--	--	--	--	.160	.080
FEB										
28...	--	--	--	--	--	--	--	--	--	--
MAR										
08...	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--
APR										
05...	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	2600	--	--
24...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
MAY										
02...	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	6900	--	--
JUN										
01...	.0	.07	0	.00	0	.00	.0	--	--	--
06...	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	7900	--	--
28...	--	--	--	--	--	--	--	--	--	--
AUG										
01...	.0	--	0	--	0	--	.0	2100	1.34	.950
31...	--	--	--	--	--	--	--	44000	--	--
SEP										
27...	--	--	--	--	--	--	--	33000	.310	.240

DATE	CHLOR-A PERIPHYTON CHROMOGRAPHIC FLUOROM (MG/M2) (70957)	CHLOR-B PERIPHYTON CHROMOGRAPHIC FLUOROM (MG/M2) (70958)	LENGTH OF EXPOSURE (DAYS) (00022)
JAN			
24...	.000	.000	34
AUG			
01...	5.02	.440	40
SEP			
27...	5.67	1.06	--

05059000 SHEYENNE RIVER NEAR KINDRED, ND--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	772	736	771	744	900	882	1140	1030	1020	1010	916	905
2	823	776	779	743	882	870	1170	1140	1020	1000	909	904
3	825	820	782	760	---	---	1180	1150	1010	999	908	897
4	820	785	786	763	---	---	1190	1160	1000	992	924	902
5	786	777	776	762	---	---	1190	1170	1000	991	929	912
6	811	792	877	770	---	---	1200	1180	996	984	934	922
7	830	713	881	876	---	---	1190	1180	983	971	939	916
8	842	831	880	869	---	---	1230	1190	981	963	950	932
9	843	832	874	857	---	---	1250	1220	980	962	946	934
10	844	833	862	856	---	---	1280	1250	973	967	948	930
11	851	840	855	844	---	---	1270	1230	972	960	950	938
12	852	835	860	838	---	---	1230	1200	971	959	946	928
13	836	831	875	848	---	---	1200	1170	970	952	936	930
14	832	816	886	869	---	---	1180	1160	968	950	926	908
15	823	813	903	885	---	---	1190	1160	955	943	910	904
16	819	804	896	878	---	---	1240	1180	948	942	914	902
17	830	820	883	860	---	---	1270	1240	941	935	912	906
18	831	816	865	854	---	---	1270	1250	934	923	910	898
19	849	833	869	853	---	---	1240	1190	927	911	897	858
20	856	834	880	857	950	950	1190	1160	920	909	856	834
21	846	824	891	867	951	945	1160	1130	919	908	832	817
22	830	816	908	890	945	939	1140	1100	913	907	830	818
23	818	808	907	895	946	935	1100	1060	911	900	876	818
24	814	809	900	888	941	935	1060	1050	910	894	815	791
25	820	796	899	881	954	942	1060	1050	909	893	784	735
26	800	786	892	874	960	954	1070	1050	908	897	728	685
27	799	771	897	873	973	955	1060	1050	907	896	675	643
28	807	798	902	884	980	968	1060	1050	900	895	640	620
29	801	774	907	883	986	974	1050	1030	---	---	628	618
30	777	764	900	894	999	981	1040	1020	---	---	631	625
31	781	754	---	---	1030	994	1030	1010	---	---	645	629
MONTH	856	713	908	743	1030	870	1280	1010	1020	893	950	618

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	653	646	396	383	661	647	740	729	595	586	814	791
2	675	653	374	368	663	648	731	720	598	579	832	812
3	699	680	362	352	654	639	722	711	601	591	830	820
4	715	699	349	344	653	645	724	707	604	594	825	814
5	720	712	343	335	655	647	715	698	607	597	851	817
6	725	717	333	331	653	650	706	695	614	595	835	820
7	730	722	338	330	668	661	697	686	617	607	833	823
8	723	711	337	334	680	669	683	663	620	610	831	817
9	703	657	335	331	700	688	679	660	627	613	825	815
10	654	629	332	330	708	696	671	652	635	625	828	823
11	626	566	386	345	724	708	672	658	638	628	826	817
12	541	478	374	360	736	728	659	645	636	627	830	820
13	495	443	407	389	792	740	656	646	639	635	828	818
14	421	409	433	420	795	766	652	638	647	638	822	807
15	391	375	458	446	790	770	649	639	650	641	810	786
16	351	322	494	473	791	774	641	626	658	649	818	790
17	338	322	530	492	780	764	637	623	657	648	817	802
18	336	318	560	528	765	754	629	615	669	651	815	805
19	337	332	571	559	749	743	626	611	676	667	813	799
20	362	353	569	563	733	727	627	608	684	675	812	797
21	393	376	564	555	717	711	623	609	687	683	810	796
22	429	411	565	556	707	696	625	606	695	690	813	804
23	459	446	576	560	709	704	621	617	702	698	812	797
24	504	477	584	575	717	706	618	604	706	697	815	801
25	523	489	592	586	726	709	619	605	713	704	813	799
26	517	504	598	588	734	717	616	606	721	708	823	802
27	494	484	603	586	742	725	612	608	725	720	821	796
28	475	465	611	601	750	739	609	599	732	723	826	805
29	455	427	630	616	747	730	606	601	740	731	821	800
30	418	405	643	636	743	727	602	593	751	743	820	800
31	---	---	648	641	---	---	599	584	797	746	---	---
MONTH	730	318	648	330	795	639	740	584	797	579	835	786

05059000 SHEYENNE RIVER NEAR KINDRED, ND--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	13.5	12.0	5.0	4.0	.0	.0	.0	.0	.0	.0	.0	.0
2	13.5	12.5	5.0	4.0	.0	.0	.0	.0	.0	.0	.0	.0
3	13.5	12.0	6.0	5.0	---	---	.0	.0	.0	.0	.0	.0
4	12.0	11.5	6.0	5.0	---	---	.0	.0	.0	.0	.5	.0
5	11.5	11.0	6.0	5.0	---	---	.0	.0	.0	.0	.5	.5
6	11.0	10.0	---	---	---	---	.0	.0	.0	.0	.5	.5
7	10.0	9.5	---	---	---	---	.0	.0	.0	.0	.5	.5
8	10.5	9.0	---	---	---	---	.0	.0	.0	.0	.5	.5
9	11.5	10.0	---	---	---	---	.0	.0	.0	.0	.5	.5
10	11.5	10.0	---	---	---	---	.0	.0	.0	.0	.5	.5
11	11.5	11.0	.0	.0	---	---	.0	.0	.0	.0	.5	.5
12	11.0	9.5	.5	.0	---	---	.0	.0	.0	.0	.5	.5
13	10.0	8.5	.0	.0	---	---	.0	.0	.0	.0	.5	.5
14	8.5	7.5	.0	.0	---	---	.0	.0	.0	.0	.5	.5
15	8.0	7.5	.0	.0	---	---	.0	.0	.0	.0	1.0	.5
16	7.5	6.0	.0	.0	---	---	.0	.0	.0	.0	.5	.5
17	7.0	6.5	.0	.0	---	---	.0	.0	.0	.0	.5	.5
18	7.0	5.5	.0	.0	---	---	.0	.0	.0	.0	.5	.5
19	7.5	6.0	.0	.0	---	---	.0	.0	.0	.0	.5	.5
20	9.0	7.5	.5	.0	.0	.0	.0	.0	.0	.0	.5	.5
21	9.5	9.0	.5	.0	.0	.0	.0	.0	.0	.0	.5	.5
22	9.5	8.0	.5	.0	.0	.0	.0	.0	.0	.0	.5	.5
23	8.0	6.5	.0	.0	.0	.0	.0	.0	.0	.0	.5	.5
24	7.5	6.5	.0	.0	.0	.0	.0	.0	.0	.0	.5	.0
25	8.0	7.0	.0	.0	.0	.0	.0	.0	.0	.0	.5	.0
26	7.5	7.0	.0	.0	.0	.0	.0	.0	.0	.0	.5	.0
27	7.0	6.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
28	6.5	5.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
29	6.0	4.5	.0	.0	.0	.0	.0	.0	---	---	.0	.0
30	6.0	5.5	.0	.0	.0	.0	.0	.0	---	---	.0	.0
31	5.5	4.5	---	---	.0	.0	.0	.0	---	---	.0	.0
MONTH	13.5	4.5	6.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0

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

05059000 SHEYENNE RIVER NEAR KINDRED, ND--Continued

SUSPENDED-SEDIMENT, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DAY	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	36	7.6	14	3.3	21	3.6	33	4.5	24	3.2	14	2.2
2	34	7.2	14	3.3	21	3.9	40	5.4	29	3.9	14	2.2
3	32	6.7	19	4.5	20	3.7	38	5.1	28	3.8	16	2.5
4	30	6.5	19	4.5	21	3.9	36	4.4	26	3.5	23	3.9
5	28	6.0	19	5.2	16	3.1	35	4.3	25	3.4	33	5.7
6	25	5.5	28	11	18	3.0	34	4.1	25	3.4	33	5.8
7	22	4.8	22	7.7	20	3.3	32	3.5	24	3.2	24	4.3
8	22	4.8	16	4.8	16	3.0	29	3.1	23	3.1	20	3.7
9	23	5.0	16	4.6	18	2.9	28	3.0	21	2.8	28	5.1
10	23	5.1	16	4.4	17	2.6	28	3.0	19	2.6	35	6.8
11	23	5.1	16	4.4	17	2.4	27	2.9	18	2.4	41	8.2
12	22	4.8	28	8.4	16	2.2	26	2.5	18	2.4	45	8.5
13	20	4.2	20	4.9	14	1.8	27	2.6	18	2.4	33	6.2
14	17	3.4	22	5.9	12	1.5	38	4.1	18	2.4	22	4.2
15	14	2.8	16	3.8	12	1.5	39	4.2	18	2.4	18	3.4
16	17	3.4	16	2.5	11	1.3	39	4.2	16	2.4	15	2.8
17	15	3.2	20	5.9	10	1.1	39	4.2	16	2.4	11	2.0
18	15	5.2	22	5.2	8	.97	38	4.3	18	2.4	9	1.7
19	14	3.1	26	6.2	8	.95	37	4.4	18	2.4	9	1.9
20	15	3.3	26	6.8	8	.89	36	4.3	18	2.4	11	2.6
21	16	3.6	28	6.8	8	.82	35	4.3	18	2.4	12	3.3
22	17	3.9	25	5.8	8	.80	34	4.1	18	2.4	12	4.9
23	16	3.6	21	4.6	8	.76	32	4.1	19	2.7	14	7.2
24	15	3.4	20	5.8	9	.83	31	4.2	20	2.9	15	11
25	13	2.9	20	5.7	9	.85	30	4.1	22	3.4	15	13
26	14	3.3	20	3.1	8	.76	30	4.1	20	3.1	16	14
27	15	3.5	20	3.0	10	1.1	28	3.8	18	2.8	17	16
28	15	3.5	20	3.0	8	.97	26	3.5	14	2.2	18	18
29	15	3.5	19	2.8	8	.99	24	3.2	---	---	17	17
30	14	3.3	19	3.0	11	1.4	22	3.0	---	---	17	18
31	14	3.3	---	---	15	1.9	22	3.0	---	---	16	17
TOTAL	---	133.5	---	144.9	---	56.79	---	119.5	---	78.8	---	223.1

DAY	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	15	16	431	4210	110	175	148	64	151	115	68	20
2	14	15	398	4100	104	155	146	76	166	132	64	19
3	12	13	396	4260	94	136	145	73	153	104	62	18
4	12	13	392	4510	92	123	145	70	146	90	55	15
5	12	15	371	4140	91	116	144	69	133	78	62	16
6	11	12	351	3940	91	112	170	68	131	75	63	16
7	12	13	348	3910	88	97	153	78	130	71	52	12
8	14	18	312	3490	82	82	150	77	122	64	38	8.7
9	15	22	261	3120	80	77	150	76	115	57	42	9.6
10	15	25	262	2880	79	75	149	75	107	48	67	15
11	23	47	256	2770	75	70	148	75	102	44	77	18
12	89	226	230	2380	69	63	147	75	94	39	73	16
13	145	399	229	2210	62	55	154	77	91	36	64	14
14	181	547	241	1980	61	53	154	75	88	34	61	14
15	208	809	290	1860	61	51	152	72	83	30	64	16
16	225	1090	375	1620	61	49	141	67	72	25	66	17
17	268	1780	294	953	61	48	126	59	58	19	61	14
18	567	5020	246	757	70	54	110	51	56	18	57	12
19	921	9950	239	697	90	71	80	38	72	22	50	10
20	841	9060	217	615	101	87	58	27	91	28	42	8.4
21	804	7900	202	534	110	101	50	23	84	25	32	6.4
22	746	6850	177	432	114	108	49	21	73	23	29	5.8
23	636	5240	166	386	118	119	50	22	67	21	27	5.2
24	592	3930	159	361	104	102	106	55	61	19	27	5.1
25	690	4150	154	341	92	77	76	45	57	17	29	4.8
26	657	4140	152	324	95	66	138	121	46	13	40	6.4
27	570	4110	136	277	104	70	183	191	42	12	55	8.8
28	536	4230	129	228	118	76	214	233	61	18	53	8.4
29	508	4350	119	192	151	96	210	222	63	18	45	7.2
30	466	4300	114	167	152	92	195	169	57	16	42	6.9
31	---	---	114	166	---	---	164	137	57	16	---	---
TOTAL	---	78288	---	57630	---	2658	---	2641	---	1327	---	353.7

TOTAL LOAD FOR YEAR: 143656.29 TONS.

05059000 SHEYENNE RIVER NEAR KINDRED, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1978 TO AUGUST 1979

DATE	OCT 25,78	APR 16,79	MAY 23,79	JUN 22,79	AUG 1,79	AUG 31,79
TIME	1130	1530	1335	1230	1300	0845
TOTAL CELLS/ML	15000	2600	6900	7900	2100	44000
DIVERSITY: DIVISION	1.1	1.2	0.5	1.6	1.5	1.4
.CLASS	1.2	1.2	0.5	1.6	1.5	1.4
..ORDER	1.8	1.5	0.5	1.7	1.9	0.0
...FAMILY	2.0	1.5	0.5	1.7	2.5	0.0
....GENUS	2.0	0.0	0.5	2.2	2.8	0.0

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)												
.CHLOROPHYCEAE												
..CHLOROCOCCALES												
...CHLOROCOCCACEAE												
....CHLOROCOCCUM	--	-	--	-	--	-	--	-	--	-	290	1
...MICRACTINIACEAE												
....GOLENKINIA	--	-	--	-	--	-	--	-	--	-	580	1
...OOCYSTACEAE												
....ANKISTRODESMUS	130	1	360	14	--	-	--	-	77	4	1400	3
....CHLORELLA	--	-	--	-	--	-	--	-	--	-	2300	5
....CHODATELLA	250	2	--	-	--	-	--	-	--	-	2000	5
....OOCYSTIS	510	3	--	-	--	-	--	-	--	-	--	-
....SELENASTRUM	--	-	--	-	62	1	--	-	150	7	--	-
....TREUBARIA	--	-	--	-	--	-	--	-	--	-	290	1
...SCENEDESMACEAE												
....ACTINASTRUM	--	-	--	-	--	-	210	3	--	-	1700	4
....SCENEDESMUS	1000	7	--	-	--	-	3200#	41	620#	30	1200	3
....TETRASTRUM	--	-	--	-	--	-	620	8	--	-	--	-
..VOLVOCALES												
...CHLAMYDOMONADACEAE	--	-	220	8	--	-	--	-	--	-	--	-
....CHLAMYDOMONAS	380	3	--	-	62	1	52	1	--	-	--	-
CHRYSOPHYTA												
.BACILLARIOPHYCEAE												
..CENTRALES												
...COSCINODISCACEAE												
....CYCLOTELLA	9500#	64	220	8	6500#	94	1400#	18	310	15	21000#	48
....MELOSIRA	--	-	--	-	--	-	--	-	150	7	--	-
....SKELETONEMA	--	-	--	-	--	-	--	-	--	-	2600	6
....STEPHANODISCUS	--	-	--	-	--	-	--	-	150	7	--	-
..PENNALES												
...ACHNANTHACEAE												
....ACHNANTHES	130	1	--	-	--	-	--	-	--	-	290	1
...FRAGILARIACEAE												
....SYNEDRA	130	1	--	-	--	-	52	1	--	-	870	2
...NAVICULACEAE												
....NAVICULA	--	-	--	-	62	1	--	-	77	4	--	-
...NITZSCHIACEAE												
....NITZSCHIA	1500	10	--	-	120	2	160	2	150	7	3500	8
...SURIRELLACEAE												
....SURIRELLA	--	-	72	3	--	-	--	-	--	-	--	-
.CHRYSOPHYCEAE												
..CHRYSOMONADALES												
...OCHROMONADACEAE												
....OCHROMONAS	130	1	--	-	--	-	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)												
.CRYPTOPHYCEAE	--	-	--	-	--	-	--	-	--	-	1400	3
..CRYPTOMONADALES												
...CRYPTOCHRYSIDACEAE												
....CHROOMONAS	--	-	--	-	--	-	52	1	--	-	290	1
...CRYPTOMONADACEAE												
....CRYPTOMONAS	130	1	--	-	62	1	--	-	--	-	1400	3
CYANOPHYTA (BLUE-GREEN ALGAE)												
.CYANOPHYCEAE												
..CHROOCOCCALES												
...CHROOCOCCACEAE												
....ANACYSTIS	890	6	--	-	--	-	2100#	27	390#	19	--	-
..HORMOGONALES												
...OSCILLATORIACEAE												
....LYNGBYA	--	-	1700#	67	--	-	--	-	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)												
.EUGLENOPHYCEAE												
..EUGLENALES												
...EUGLENACEAE												
....EUGLENA	--	-	--	-	--	-	52	1	--	-	870	2
....EUTREPTIA	--	-	--	-	--	-	--	-	--	-	1200	3
....TRACHELOMONAS	250	2	--	-	--	-	--	-	--	-	580	1
PYRRHOPHYTA (FIRE ALGAE)												
.DINOPHYCEAE												
..PERIDINIALES												
...GLENODINIACEAE												
....GLENODINIUM	--	-	--	-	62	1	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

05059000 SHEYENNE RIVER NEAR KINDRED, ND--Continued

DISSOLVED OXYGEN, WATER TEMPERATURE AND pH PROFILE

WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

HOUR	MG/L	DEGREES, C	pH
Dec. 20, 1978			
1000	5.1	0.0	7.4
1100	5.1	.0	7.3
1200	5.0	.0	7.3
1300	5.0	.0	7.3
1400	5.0	.0	7.3
1500	5.0	.0	7.2
1600	5.0	.0	7.2
1700	5.0	.0	7.2
1800	5.0	.0	7.2
1900	5.1	.0	7.2
2000	5.2	.0	7.3
2100	5.2	.0	7.3
2200	5.2	.0	7.3
2300	5.1	.0	7.3
2400	5.1	.0	7.3
Dec. 21, 1978			
0100	5.1	.0	7.3
0200	5.1	.0	7.3
0300	5.1	.0	7.3
0400	5.1	.0	7.3
0500	5.1	.0	7.3
0600	5.1	.0	7.3
0700	5.0	.0	7.3
0800	5.0	.0	7.3
0900	5.0	.0	7.3
1000	5.0	.0	7.4
Feb. 28, 1979			
1100	5.6	.0	7.8
1200	5.5	.0	-
1300	5.4	.0	-
1400	5.3	.0	-
1500	5.3	.0	-
1600	5.2	.0	7.9
1700	5.2	.0	-
1800	5.1	.0	-
1900	5.1	.0	7.9
2000	5.0	.0	-
2100	5.0	.0	-
2200	5.0	.0	-
2300	5.0	.0	-
2400	5.0	.0	-
Mar. 1, 1979			
0100	5.0	.0	7.8
0200	5.0	.0	-
0300	4.9	.0	-
0400	4.8	.0	-
0500	4.8	0.0	-
0600	4.8	.0	-
0700	4.8	.0	-
0800	4.8	.0	7.8
0900	4.9	.0	-
1000	4.9	.0	-
1100	5.0	.0	7.7
July 2, 1979			
1200	7.2	22.0	8.2
1300	7.4	22.0	8.2
1400	7.6	22.5	8.2
1500	7.9	23.0	8.2
1600	8.4	23.5	8.2
1700	8.6	23.5	8.3
1800	8.6	23.5	8.3
1900	8.5	23.5	8.3
2000	8.4	23.5	8.3
2100	8.3	23.5	8.3
2200	8.3	23.5	8.3
2300	8.0	23.5	8.3
2400	7.8	23.5	8.3
July 3, 1979			
0100	7.7	23.0	8.3
0200	7.6	23.0	8.3
0300	7.5	23.0	8.2
0400	7.3	23.0	8.2
0500	7.2	23.0	8.2
0600	7.1	22.5	8.2
0700	7.1	22.5	8.1
0800	7.0	22.0	8.1
0900	6.9	22.0	8.1
1000	7.0	22.0	8.1
1100	7.2	22.5	8.1
1200	7.4	22.5	8.1
Sept. 6, 1979			
0900	7.8	19.5	8.2
1000	-	19.5	8.1
1100	-	19.5	8.1
1200	-	19.5	8.1
1300	-	19.5	8.1
1700	9.2	20.0	8.4
2300	8.6	19.0	8.2
Sept. 7, 1979			
0400	8.2	18.0	8.2
0900	8.4	16.5	8.3

05059400 SHEYENNE RIVER NEAR HORACE, ND

LOCATION.--Lat 46°48'13", long 96°54'13', in NW¼NW¼ sec. 5, T.138 N., R. 49 W., Cass County, Hydrologic Unit 09020204, at bridge on county road 3 mi (4.8 km) north, and 0.1 mi (0.2 km) east of Horace.

DRAINAGE AREA.--8,800 mi² (22,800 km²), approximately, of which about 5,780 mi (9,300 km) is probably non-contributing, including 3,800 mi (6,114.2 km) in closed basins.

PERIOD OF RECORD.--Water years 1976 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: September 1976 to current year.
WATER TEMPERATURES: September 1976 to current year.

INSTRUMENTATION.--Water-quality monitor since September 1976.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 1,340 micromhos Jan. 14, 1979; minimum, 306 micromhos Apr. 15, 1979.
WATER TEMPERATURES: Maximum, 31.0°C July 19, 1977; minimum, 0.0°C on many days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 1,340 micromhos Jan. 14; minimum, 306 micromhos Apr. 15.
WATER TEMPERATURES: Maximum, 27.0°C July 22; minimum, 0.0°C on many days during winter months.

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)
OCT						
26...	1420	84	831	8.2	7.5	10.4
DEC						
01...	1700	56	925	7.5	.0	8.0
21...	0830	41	995	7.4	.0	4.8
JAN						
24...	1630	50	1160	7.3	.0	2.7
MAR						
01...	1400	57	910	7.8	.0	4.6
22...	1600	105	850	7.8	.5	5.4
APR						
26...	1745	E2850	520	7.8	9.5	8.8
JUN						
07...	1500	455	660	--	18.0	7.6
27...	1515	327	730	8.4	22.0	7.8
AUG						
02...	1430	332	560	8.2	23.0	7.4
SEP						
06...	1000	96	792	8.3	19.5	7.4

05059400 SHEYENNE RIVER NEAR HORACE, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)
OCT						
26...	1420	534	.73	121	.01	.17
DEC						
21...	0830	627	.85	69.4	.27	.05
JAN						
24...	1630	745	1.01	101	.55	.07
MAR						
01...	1400	586	.80	90.5	.86	.10
22...	1600	563	.77	220	1.1	.11
APR						
26...	1745	337	.46	--	.83	.06
JUN						
07...	1500	426	.58	523	.12	.10
27...	1515	474	.64	419	.00	.03
AUG						
02...	1430	366	.50	328	.50	.09
SEP						
06...	1000	552	.75	143	.01	.02

05059400 SHEYENNE RIVER NEAR HORACE, ND--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	673	652	829	796	966	925	996	978	1080	1070	916	905
2	720	680	822	790	---	---	1010	991	1080	1060	914	909
3	766	720	832	791	---	---	1060	1010	1060	1050	912	907
4	838	770	837	812	---	---	1190	1050	1070	1050	916	899
5	858	839	847	821	---	---	1220	1180	1060	1050	898	887
6	863	835	848	814	---	---	1220	1200	1060	1040	901	885
7	835	800	836	812	---	---	1240	1220	1050	1040	910	894
8	845	805	838	813	---	---	1240	1210	1060	1040	920	903
9	860	836	843	818	---	---	1230	1220	1040	1030	929	912
10	875	846	823	795	---	---	1230	1200	1020	1010	956	921
11	880	856	793	774	---	---	1240	1220	1020	993	978	948
12	885	866	790	779	---	---	1280	1250	1020	992	1010	965
13	891	867	791	780	---	---	1330	1290	1000	991	981	975
14	902	877	808	781	---	---	1340	1310	997	979	973	961
15	892	868	851	790	---	---	1330	1270	984	960	971	959
16	892	868	874	847	---	---	1280	1250	983	954	957	939
17	873	854	871	853	---	---	1260	1220	976	953	949	931
18	874	845	881	859	---	---	1220	1200	970	952	941	917
19	860	841	901	882	---	---	1240	1210	975	957	934	905
20	865	853	912	883	---	---	1290	1240	968	956	914	897
21	875	847	948	908	---	---	1300	1280	955	939	906	862
22	890	876	965	954	---	---	1280	1240	938	927	883	843
23	896	857	967	956	---	---	1230	1180	926	910	853	818
24	858	835	973	951	---	---	1180	1160	920	903	813	794
25	844	835	969	947	996	976	1170	1140	919	903	822	793
26	849	822	987	954	985	979	1130	1100	918	907	826	811
27	849	819	994	986	986	963	1100	1080	912	901	806	740
28	851	820	1000	984	981	969	1090	1070	917	900	736	689
29	839	817	996	980	982	964	1090	1080	---	---	689	657
30	853	822	986	959	983	977	1100	1080	---	---	653	609
31	868	824	---	---	990	978	1100	1080	---	---	666	600
MONTH	902	652	1000	774	996	925	1340	978	1080	900	1010	600

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	697	665	390	379	647	630	766	739	810	593	786	763
2	704	697	396	382	647	630	774	756	576	539	802	773
3	711	703	396	381	653	637	802	778	571	529	808	784
4	714	703	390	379	657	630	822	796	585	563	799	766
5	706	683	393	387	667	644	895	821	615	586	805	763
6	679	622	396	387	664	647	957	894	624	593	816	783
7	622	586	414	397	667	657	1030	963	640	605	829	804
8	582	492	431	415	680	641	1040	1000	626	596	826	787
9	483	440	453	432	678	659	1050	1000	665	624	819	785
10	445	418	463	394	694	661	1040	995	703	670	826	812
11	426	382	429	387	704	684	1030	945	712	687	828	800
12	379	313	387	362	---	---	951	836	714	688	826	802
13	324	309	382	370	770	750	887	824	724	706	838	805
14	320	308	405	381	779	751	910	868	734	707	821	797
15	342	306	431	407	789	767	935	903	739	713	829	782
16	370	345	444	427	822	781	947	901	749	736	817	780
17	397	371	471	445	833	804	946	900	750	715	838	800
18	418	399	503	475	825	796	952	893	756	716	841	802
19	431	419	541	506	812	789	937	892	767	730	853	824
20	479	431	567	541	794	781	950	903	778	749	922	836
21	---	---	576	562	800	791	935	902	755	742	843	824
22	---	---	579	559	797	778	954	901	761	743	841	822
23	---	---	567	551	784	762	973	920	791	762	834	788
24	---	---	584	557	771	754	952	887	806	782	822	791
25	---	---	805	587	806	725	931	868	818	759	824	789
26	524	478	805	582	821	734	910	849	775	738	822	795
27	521	486	593	570	813	726	884	854	771	740	839	802
28	492	468	596	579	760	738	871	814	777	749	846	816
29	482	434	605	587	773	742	870	818	793	773	868	839
30	433	385	634	608	772	741	845	801	803	775	880	841
31	---	---	640	618	---	---	827	769	790	740	---	---
MONTH	714	306	805	362	833	630	1050	739	818	529	922	763

05059400 SHEYENNE RIVER NEAR HORACE, ND--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	14.0	12.5	5.5	4.5	.5	.0	.5	.5	.5	.0	.0	.0
2	14.0	13.0	5.5	4.5	---	---	.5	.5	.5	.0	.0	.0
3	13.0	12.0	6.0	5.0	---	---	.5	.0	.5	.0	.5	.0
4	12.5	12.0	6.0	5.0	---	---	.5	.0	.5	.0	.5	.0
5	12.0	11.0	6.0	5.0	---	---	.5	.0	.5	.0	.5	.0
6	11.0	10.5	4.5	3.5	---	---	.5	.5	.0	.0	.5	.0
7	10.5	9.5	4.0	3.0	---	---	.5	.5	.5	.0	.5	.0
8	10.5	9.0	5.0	4.0	---	---	.5	.0	.0	.0	.5	.0
9	11.5	10.0	5.5	4.5	---	---	.5	.0	.0	.0	.5	.0
10	11.5	10.0	4.5	2.0	---	---	1.0	.5	.0	.0	1.0	.5
11	12.0	11.0	2.0	.5	---	---	1.0	.5	.0	.0	.5	.0
12	11.0	10.0	1.0	.0	---	---	.5	.5	.5	.0	1.0	.0
13	10.0	9.5	.5	.0	---	---	1.0	.5	.5	.0	.5	.0
14	9.0	8.0	.0	.0	---	---	1.0	.5	.0	.0	.5	.0
15	8.5	7.5	.0	.0	---	---	.5	.5	.5	.0	.5	.5
16	7.5	6.0	.0	.0	---	---	1.0	.5	.5	.0	.5	.0
17	7.5	6.0	.0	.0	---	---	.5	.0	.0	.0	.5	.0
18	6.5	5.5	.0	.0	---	---	.5	.0	.0	.0	.5	.0
19	7.5	6.0	.5	.0	---	---	.0	.0	.5	.0	.5	.5
20	9.0	7.5	.5	.0	---	---	.0	.0	.5	.0	.5	.5
21	10.0	8.5	.5	.0	---	---	.0	.0	.0	.0	.5	.5
22	10.0	8.0	.5	.0	---	---	.0	.0	.0	.0	.5	.5
23	8.0	6.5	.0	.0	---	---	.0	.0	.5	.0	.5	.5
24	8.0	6.0	.5	.0	---	---	.0	.0	.5	.0	1.0	.5
25	8.0	7.5	.0	.0	.0	.0	.0	.0	.5	.0	1.0	.5
26	7.5	7.0	.5	.0	.0	.0	.0	.0	.0	.0	1.0	.5
27	7.0	5.5	.5	.0	.5	.0	.0	.0	.0	.0	1.0	.5
28	6.0	5.5	.5	.0	.0	.0	.0	.0	.0	.0	1.0	1.0
29	6.0	5.0	.5	.0	.5	.0	.0	.0	---	---	1.0	1.0
30	7.0	5.5	.5	.0	.5	.0	.0	.0	---	---	1.0	1.0
31	5.5	4.5	---	---	.5	.0	.0	.0	---	---	1.0	.5
MONTH	14.0	4.5	6.0	.0	.5	.0	1.0	.0	.5	.0	1.0	.0

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

05059500 SHEYENNE RIVER AT WEST FARGO, ND

LOCATION.--Lat 46°53'28", long 96°54'24", in SE¼SE¼ sec.31, T.140 N., R.49 W., Cass County, Hydrologic Unit 09020204, on right bank at downstream side of county highway bridge, 1 mi (2 km) north of West Fargo, 3 mi (5 km) upstream from Maple River, and at mile 24.5 (39.4 km).

DRAINAGE AREA.--8,870 mi^2 (22,970 km^2), approximately, of which about 5,780 mi^2 (14,970 km^2) is probably noncontributing, includes 3,800 mi^2 (9,840 km^2) 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.

REVISED RECORDS.--WSP 1388: 1904(M). WSP 1728: Drainage area. See also "PERIOD OF RECORD."

GAGE.--Water-stage recorder. Datum of gage is 877.19 ft (267.368 m) National Geodetic Vertical Datum of 1929. June 27, 1933 to September 1969 on left bank about 600 ft (180 m) downstream on unimproved channel at same datum. See WSP 1728 or 1913 for history of changes prior to June 27, 1933.

REMARKS.--Records fair. Flow regulated to a large degree by Lake Ashtabula (station 05057500) 246 mi (396 km) upstream. Above 3,000 ft^3/s (84.96 m^3/s) overflow occurs upstream between Kindred and West Fargo. This overflow bypasses the station in the Maple River basin and drain 21 to the west and in the Wild Rice River basin to the east. This overflow is not included in the flow for this station. Some small diversions for municipal supply. Figures of daily discharge do not include diversions to the Red River of the North; however, there were no diversions during the 1978 water year.

AVERAGE DISCHARGE (ADJUSTED).--52 years (water years 1904-5, 1930-79), 174 ft^3/s (4.928 m^3/s), 126,100 acre-ft/yr (155 hm^3/yr); median of yearly mean discharges, 148 ft^3/s (4.19 m^3/s), 107,000 acre-ft/yr (132 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,480 ft^3/s (98.6 m^3/s) Apr. 21, 1979; maximum gage height, 22.25 ft (6.782 m) July 5, 1975, backwater from Red and/or Maple Rivers; minimum daily, 1.0 ft^3/s (0.028 m^3/s) Sept. 23, 1976, caused by diversion to Red River of the North.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,480 ft^3/s (98.6 m^3/s) Apr. 21, gage height, 22.12 ft (6.742 m), backwater from Red and/or Maple Rivers; minimum daily, 31 ft^3/s (0.88 m^3/s) Dec. 24.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	77	85	60	45	50	52	400	3050	615	253	306	110
2	79	84	59	45	50	53	400	3340	600	229	323	110
3	76	83	61	49	50	55	400	3260	570	218	305	110
4	80	83	59	52	50	55	400	3200	540	201	282	110
5	76	85	58	50	50	55	400	3100	500	184	245	105
6	76	83	55	40	50	58	400	3120	470	185	229	96
7	76	114	54	40	50	58	400	3170	450	185	219	95
8	78	146	52	40	50	58	400	3240	430	194	206	91
9	78	121	55	40	50	60	400	3220	400	196	197	87
10	80	102	52	40	50	60	430	3220	390	189	187	87
11	77	96	53	40	50	60	500	3210	380	187	170	88
12	77	89	51	40	50	64	600	3210	380	181	154	91
13	77	74	49	40	50	68	730	3200	380	178	143	92
14	77	69	50	35	50	70	810	3100	380	163	132	89
15	77	91	49	35	50	70	850	3000	373	172	131	88
16	77	92	50	35	50	72	1000	2300	360	166	126	89
17	77	76	49	40	50	75	1350	1700	348	164	125	89
18	77	73	48	40	50	80	1850	1200	337	162	122	85
19	77	90	46	40	50	85	2200	1100	345	162	121	80
20	77	90	41	44	50	85	3000	1030	348	160	114	74
21	76	84	38	44	50	80	3480	1000	359	150	116	71
22	80	72	36	44	50	100	3480	990	378	154	118	69
23	82	62	35	44	51	100	3460	960	392	152	119	67
24	84	59	31	44	51	100	3430	910	411	161	120	65
25	84	58	32	45	51	150	2880	860	420	176	121	64
26	84	55	32	46	51	190	2650	830	378	191	118	64
27	86	55	32	47	52	300	2000	780	330	216	110	63
28	88	55	35	49	52	330	2770	750	297	350	109	60
29	86	55	40	50	---	350	2770	720	278	400	108	56
30	83	57	40	50	---	370	2890	670	261	410	110	55
31	85	---	45	50	---	380	---	620	---	366	112	---
TOTAL	2466	2458	1447	1343	1408	3723	47736	64060	12098	6475	5098	2500
MEAN	79.5	81.9	46.7	43.3	50.3	120	1591	2066	403	209	164	83.3
MAX	88	146	61	52	52	380	3480	3340	615	410	323	110
MIN	76	55	31	35	50	52	400	620	261	150	108	55
AC-FT	4890	4880	2870	2660	2790	7380	94680	127100	24000	12840	10110	4960

CAL YR 1978 TOTAL 79081 MEAN 217 MAX 1650 MIN 31 AC-FT 156900
WTR YR 1979 TOTAL 150812 MEAN 413 MAX 3480 MIN 31 AC-FT 299100

05059600 MAPLE RIVER NEAR HOPE, ND

LOCATION.--Lat 47°19'30", long 97°47'25", in NW¼NW¼ sec.4, T.144 N., R.56 W., Steele County, Hydrologic Unit 09020205, 100 ft (30 m) downstream from box culvert on State Highway 38, 500 ft (152 m) east of the intersection of State Highways 32 and 38, and 3 mi (5 km) west of Hope.

DRAINAGE AREA.--20.2 mi^2 (52.3 km^2), of which about 2.8 mi^2 (7.3 km^2) is probably noncontributing.

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

GAGE.--Water-stage recorder. Datum of gage is 1,296.62 ft (395.210 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--15 years, 3.12 ft^3/s (0.088 m^3/s), 2,260 acre-ft/yr (2.79 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 900 ft^3/s (25.5 m^3/s) Apr. 18, 1979, gage height, 5.86 ft (1.786 m), backwater from ice; no flow for many months each year.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 50 ft^3/s (1.42 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Apr. 18	2400	*900	25.5	[a]5.86	1.786	Apr. 24	1300	119	3.37	3.46	1.055

No flow for many months.

a - Backwater from ice.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	8.4	.85	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	7.9	.79	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	7.4	.57	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	6.0	.36	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	5.4	.19	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	5.4	.12	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	5.4	.07	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	5.4	.03	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	4.5	.03	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	4.1	.02	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	3.7	.02	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	3.0	.01	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	2.6	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	2.5	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	1.7	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	1.3	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	20	1.1	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	500	.89	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	400	.87	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	260	.98	.02	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	121	.98	.01	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	60	.94	.01	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	43	.77	.01	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	85	.72	.01	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	73	.72	.01	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	34	.72	.01	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	22	.72	.01	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	15	.69	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.00	12	.55	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	9.9	.85	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.91	---	.00	.00	---
TOTAL	.00	.00	.00	.00	.00	.00	1654.90	87.11	3.15	.00	.00	.00
MEAN	.000	.000	.000	.000	.000	.000	55.2	2.81	.11	.000	.000	.000
MAX	.00	.00	.00	.00	.00	.00	500	8.4	.85	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.55	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	.00	3280	173	6.2	.00	.00	.00

CAL YR 1978 TOTAL 1129.61 MEAN 3.09 MAX 115 MIN .00 AC-FT 2240
WTR YR 1979 TOTAL 1745.16 MEAN 4.78 MAX 500 MIN .00 AC-FT 3460

05059700 MAPLE RIVER NEAR ENDERLIN, ND

LOCATION.--Lat 46°37'18", long 97°34'25", on west line sec.2, T.136 N., R.55 W., Ransom County, Hydrologic Unit 09020205, on left bank 25 ft (8 m) downstream from county highway bridge, 1 mi (1.6 km) downstream from South Branch, and 1.2 mi (1.9 km) east of Enderlin.

DRAINAGE AREA.--843 mi^2 (2,180 km^2), of which about 47 mi^2 (122 km^2) is probably noncontributing.

WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WSP 1728: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,056.72 ft (322.088 m) National Geodetic Vertical Datum of 1929. 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 (8 m) upstream at same datum.

REMARKS.--Records good.

AVERAGE DISCHARGE.--23 years, 36.7 ft^3/s (1.039 m^3/s), 26,590 acre-ft/yr (32.8 hm^3/yr); median of yearly mean discharges, 24 ft^3/s (0.68 m^3/s), 17,400 acre-ft/yr (21 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,610 ft^3/s (216 m^3/s) June 30, 1975, gage height, 15.41 ft (4.697 m); minimum daily, 0.1 ft^3/s (0.003 m^3/s) Dec. 7-9, 1963; minimum gage height, 1.90 ft (0.579 m) Oct. 5, 1956.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,200 ft^3/s (90.6 m^3/s) Apr. 20, gage height, 11.50 ft (3.505 m), only peak above base of 100 ft^3/s (2.83 m^3/s); minimum daily, 2.2 ft^3/s (0.062 m^3/s) on many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.7	2.4	2.6	2.2	2.2	2.8	6.8	479	27	7.3	2.9	3.1
2	2.7	2.4	2.6	2.2	2.2	2.4	6.8	430	25	6.6	2.9	3.1
3	2.6	2.4	2.6	2.2	2.2	2.2	6.8	391	24	6.6	2.9	3.1
4	2.6	2.6	2.6	2.2	2.2	2.2	6.8	375	22	6.6	2.9	3.1
5	2.7	2.9	2.6	2.2	2.2	2.2	6.4	359	19	6.6	2.9	3.2
6	2.7	2.7	2.6	2.2	2.2	2.2	5.9	327	18	6.6	2.9	3.4
7	3.1	2.7	2.6	2.2	2.2	2.2	6.4	289	17	6.4	2.9	3.5
8	3.3	2.6	2.6	2.2	2.2	2.2	9.1	251	16	5.9	2.9	3.8
9	3.1	2.5	2.6	2.2	2.2	2.2	13	249	15	5.0	3.0	4.0
10	2.9	2.6	2.6	2.2	2.2	2.2	16	247	14	5.0	2.9	4.1
11	2.7	2.7	2.6	2.2	2.2	2.2	27	238	13	4.8	2.9	4.3
12	3.1	2.7	2.5	2.2	2.2	2.2	69	217	12	4.8	2.9	4.1
13	3.8	2.7	2.5	2.2	2.5	2.2	147	202	11	4.8	2.9	4.1
14	4.3	2.6	2.5	2.2	3.0	2.2	452	184	10	5.0	2.9	4.1
15	4.3	2.6	2.5	2.2	3.2	2.2	654	160	9.1	4.6	2.9	4.1
16	4.3	2.6	2.5	2.2	3.5	2.2	993	133	9.1	4.3	2.9	4.1
17	4.3	2.6	2.5	2.2	3.8	2.2	1710	117	8.8	2.9	3.1	3.6
18	4.3	2.6	2.5	2.9	3.6	2.2	1920	103	8.6	2.9	2.9	3.8
19	4.3	2.6	2.5	5.5	3.5	3.0	2600	96	8.8	2.9	2.9	4.0
20	4.0	2.6	2.4	3.5	3.4	5.5	3020	90	12	2.9	2.9	3.8
21	3.8	2.6	2.4	2.2	2.8	6.6	3010	81	13	2.9	2.9	3.7
22	3.7	2.6	2.4	2.2	2.5	7.9	2540	75	14	2.9	3.1	3.3
23	3.7	2.6	2.4	2.2	2.2	7.8	2070	66	14	2.9	3.1	3.1
24	3.3	2.6	2.4	2.2	3.4	6.6	1790	58	14	2.9	3.1	2.9
25	2.9	2.6	2.2	2.2	3.2	6.4	1490	51	14	2.9	3.1	2.4
26	2.9	2.6	2.2	2.2	2.6	6.4	1120	46	13	2.9	3.1	2.6
27	2.6	2.6	2.2	2.2	2.2	6.4	874	42	12	3.1	3.1	2.6
28	2.5	2.6	2.2	2.2	2.2	6.6	722	38	9.9	3.1	4.1	2.6
29	2.4	2.6	2.2	2.2	---	6.8	610	32	9.1	2.9	3.4	2.6
30	2.4	2.6	2.2	2.2	---	6.8	542	31	8.0	3.1	3.4	2.6
31	2.4	---	2.2	2.2	---	6.8	---	29	---	3.1	3.4	---
TOTAL	100.4	78.1	76.0	73.5	74.0	124.0	26644.0	5486	420.4	135.4	94.1	102.8
MEAN	3.24	2.60	2.45	2.37	2.64	4.00	888	177	14.0	4.37	3.04	3.43
MAX	4.3	2.9	2.6	5.5	3.8	7.9	3020	479	27	7.3	4.1	4.3
MIN	2.4	2.4	2.2	2.2	2.2	2.2	5.9	29	8.0	2.9	2.9	2.4
AC-FT	199	155	151	146	147	246	52850	10880	834	269	187	204

CAL YR 1978 TOTAL 21346.8 MEAN 58.5 MAX 1720 MIN 2.0 AC-FT 42340
WTR YR 1979 TOTAL 33408.7 MEAN 91.5 MAX 3020 MIN 2.2 AC-FT 66270

05059700 MAPLE RIVER NEAR ENDERLIN, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1972 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE (DEG C) (00010)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)
OCT										
19...	1345	4.2	1490	7.2	8.5	640	350	160	58	81
NOV										
14...	1540	2.6	1600	7.8	3.0	710	400	180	63	67
DEC										
19...	1240	2.5	1500	7.4	2.0	740	360	180	71	73
JAN										
23...	1545	2.2	1600	8.0	2.0	730	360	180	68	70
FEB										
14...	1515	3.0	1580	7.5	1.0	720	370	180	66	74
MAR										
21...	1635	6.7	1600	7.3	4.5	690	350	180	58	80
APR										
12...	1230	65	850	--	.5	--	--	--	--	--
16...	2010	916	421	7.6	2.0	150	68	35	15	18
20...	1815	3060	420	--	1.0	--	--	--	--	--
24...	1900	1710	430	--	9.0	--	--	--	--	--
30...	0925	691	575	--	6.0	--	--	--	--	--
MAY										
10...	1615	238	880	7.8	6.0	350	180	90	30	42
JUN										
19...	1315	8.4	1390	7.8	17.0	680	360	170	62	94
JUL										
17...	1700	2.6	1520	7.6	21.5	700	360	180	61	83
AUG										
22...	1010	3.1	1500	7.5	18.0	700	340	180	61	83
SEP										
19...	0930	3.3	1470	7.5	13.0	690	360	190	52	79

DATE	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE (MG/L AS HCO3) (00440)	CAR-BONATE (MG/L AS CO3) (00445)	ALKA-LINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
OCT									
19...	21	1.4	8.6	348	0	285	35	470	44
NOV									
14...	17	1.1	8.0	378	0	310	9.6	430	38
DEC									
19...	17	1.2	8.1	464	0	381	30	450	41
JAN									
23...	17	1.1	7.9	453	0	372	7.2	450	39
FEB									
14...	18	1.2	8.8	424	0	348	21	460	43
MAR									
21...	20	1.3	8.9	418	0	343	34	440	53
APR									
12...	--	--	--	--	--	--	--	--	--
16...	20	.6	5.3	99	0	81	4.0	100	12
20...	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--
MAY									
10...	20	1.0	8.4	203	0	167	5.1	240	24
JUN									
19...	23	1.6	10	391	0	321	9.9	470	55
JUL									
17...	20	1.4	9.2	418	0	343	17	480	55
AUG									
22...	20	1.4	8.9	444	0	364	22	450	44
SEP									
19...	20	1.3	8.6	397	0	326	20	480	44

05059700 MAPLE RIVER NEAR ENDERLIN, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
OCT									
19...	.2	9.7	1070	1000	1.46	12.1	250	20	780
NOV									
14...	.2	12	980	986	1.33	6.88	90	120	1300
DEC									
19...	.1	35	1130	1090	1.54	7.63	0	300	1600
JAN									
23...	.2	26	1120	1070	1.52	6.65	130	100	1400
FEB									
14...	.2	25	1070	1070	1.46	8.67	310	360	1300
MAR									
21...	.4	26	1120	1050	1.52	20.3	330	120	1300
APR									
12...	--	--	--	--	--	--	--	--	--
16...	.1	11	289	245	.39	715	0	100	170
20...	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--
MAY									
10...	.1	20	626	555	.85	402	120	20	110
JUN									
19...	.2	10	1110	1070	1.51	25.2	0	120	780
JUL									
17...	.2	24	1160	1100	1.58	8.14	170	430	840
AUG									
22...	.2	30	1140	1080	1.55	9.54	200	280	1100
SEP									
19...	.2	29	1140	1080	1.55	10.2	290	20	810

05060500 RUSH RIVER AT AMENIA, ND

LOCATION.--Lat 47°01'00", long 97°12'50", in sec.24, T.141 N., R.52 W., Cass County, Hydrologic Unit 09020204, on left bank on downstream side of bridge on State Highway 18, and 0.6 mi (1.0 km) north of Amenia.

DRAINAGE AREA.--116 mi^2 (300 km^2).

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

REVISED RECORDS.--WSP 1728: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is about 943 ft (287 m), from topographic map. See WSP 1913 for history of changes prior to June 10, 1961.

REMARKS.--Records good.

AVERAGE DISCHARGE.--33 years, 9.52 ft^3/s (0.270 m^3/s), 6,900 acre-ft/yr (8.51 hm^3/yr); median of yearly mean discharges, 5.9 ft^3/s (0.17 m^3/s), 4,300 acre-ft/yr (5.3 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,490 ft^3/s (98.8 m^3/s) Apr. 19, 1979; maximum gage height, 12.15 ft (3.703 m) Mar. 23, 1966, backwater from ice; no flow at times each year.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 27 ft^3/s (0.76 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Apr. 17	--	Backwater from ice		*10.92	3.328	May 7	0830	31	0.88	5.19	1.582
Apr. 19	0600	*3,490	98.8	10.37	3.161	June 22	0945	34	.96	5.24	1.597

No flow for many months.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	31	22	3.8	.54	.00
2	.00	.00	.00	.00	.00	.00	.00	28	18	3.7	.69	.00
3	.00	.00	.00	.00	.00	.00	.00	26	15	3.6	.39	.00
4	.00	.00	.00	.00	.00	.00	.00	23	11	2.3	.14	.00
5	.00	.00	.00	.00	.00	.00	.00	24	8.8	2.3	.11	.00
6	.00	.00	.00	.00	.00	.00	.00	25	5.6	2.3	.10	.00
7	.00	.00	.00	.00	.00	.00	.00	29	5.3	1.1	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	27	4.0	.69	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	24	3.3	.82	.01	.00
10	.00	.00	.00	.00	.00	.00	.00	20	3.2	.80	.02	.00
11	.00	.00	.00	.00	.00	.00	.00	17	2.2	.50	.01	.00
12	.00	.00	.00	.00	.00	.00	.00	17	1.4	.62	.02	.00
13	.00	.00	.00	.00	.00	.00	.00	16	1.7	1.2	.02	.00
14	.00	.00	.00	.00	.00	.00	.00	15	1.6	1.1	.00	.00
15	.00	.00	.00	.00	.00	.00	5.6	13	1.4	.81	.00	.00
16	.00	.00	.00	.00	.00	.00	279	13	1.3	.78	.00	.00
17	.00	.00	.00	.00	.00	.00	433	13	.74	.23	.00	.00
18	.00	.00	.00	.00	.00	.00	1360	13	.34	.53	.00	.00
19	.00	.00	.00	.00	.00	.00	3160	16	.87	1.3	.00	.00
20	.00	.00	.00	.00	.00	.00	2550	20	6.6	1.4	.00	.00
21	.00	.00	.00	.00	.00	.00	1530	19	21	1.3	.00	.00
22	.00	.00	.00	.00	.00	.00	781	18	30	.92	.00	.00
23	.00	.00	.00	.00	.00	.00	420	22	31	.47	.00	.00
24	.00	.00	.00	.00	.00	.00	302	22	23	1.0	.00	.00
25	.00	.00	.00	.00	.00	.00	262	19	16	.69	.00	.00
26	.00	.00	.00	.00	.00	.00	146	15	12	.65	.00	.00
27	.00	.00	.00	.00	.00	.00	89	12	6.9	.24	.00	.00
28	.00	.00	.00	.00	.00	.00	59	18	3.9	.16	.00	.00
29	.00	.00	.00	.00	---	.00	43	20	5.8	.16	.00	.00
30	.00	.00	.00	.00	---	.00	36	22	4.3	.13	.00	.00
31	.00	---	.00	.00	---	.00	---	23	---	.15	.00	---
TOTAL	.00	.00	.00	.00	.00	.00	11455.60	620	268.25	36.25	2.05	.00
MEAN	.000	.000	.000	.000	.000	.000	382	20.0	8.94	1.17	.066	.000
MAX	.00	.00	.00	.00	.00	.00	3160	31	31	3.8	.69	.00
MIN	.00	.00	.00	.00	.00	.00	.00	12	.34	.13	.00	.00
AC-FT	.00	.00	.00	.00	.00	.00	22720	1230	532	72	4.1	.00

CAL YR 1978 TOTAL 4229.77 MEAN 11.6 MAX 330 MIN .00 AC-FT 8390
WTR YR 1979 TOTAL 12382.15 MEAN 33.9 MAX 3160 MIN .00 AC-FT 24560

05064500 RED RIVER OF THE NORTH AT HALSTAD, MN

LOCATION.--Lat 47°21'10", long 96°50'50", on line between secs.24 and 25, T.145 N., R.49 W., Traill County, Hydrologic Unit 09020107, on left bank on upstream side of highway bridge, 0.5 mi (0.8 km) west of Halstad, 2.5 mi (4.0 km) downstream from Wild Rice River, and at mile 375.2 (603.7 km).

DRAINAGE AREA.--21,800 mi^2 (56,500 km^2), approximately, including 3,800 mi^2 (9,840 km^2) in closed basins.

WATER-DISCHARGE RECORDS

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.

REVISED RECORDS.--WSP 1388: 1936, 1950. WSP 1728: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 826.65 ft (251.963 m) National Geodetic Vertical Datum of 1929. Prior to July 17, 1961, nonrecording gage at same site and datum.

REMARKS.--Records good. Some regulation by many controlled lakes and reservoirs on tributaries.

AVERAGE DISCHARGE.--18 years (1961-79), 1,885 ft^3/s (53.38 m^3/s), 1,366,000 acre-ft/yr (1.68 km^3/yr); median of yearly mean discharges, 1,880 ft^3/s (53.2 m^3/s), 1,362,000 acre-ft/yr (1.7 km^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 42,000 ft^3/s (1,190 m^3/s) Apr. 22, 1979, gage height, 39.00 ft (11.887 m); minimum observed, 5.4 ft^3/s (0.15 m^3/s) Oct. 8, 9, 12-14, 1936.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in 1897 reached a stage of about 38.5 ft (11.73 m).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 42,000 ft^3/s (1,190 m^3/s) Apr. 22, gage height, 39.00 ft (11.887 m); minimum daily, 160 ft^3/s (4.53 m^3/s) Jan. 21-28.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	380	277	325	210	165	185	1300	24600	3040	3780	1980	1110
2	431	266	315	210	165	185	1350	21900	3010	3650	2100	1080
3	428	258	305	210	165	185	1410	19000	2970	3580	2170	1050
4	412	258	290	205	165	190	1420	16400	2930	3500	2070	1010
5	402	258	285	205	165	200	1430	14700	2900	3450	1920	996
6	399	255	282	200	165	225	1500	13700	2870	3400	1780	970
7	389	258	278	200	165	280	1620	13000	2860	3300	1660	947
8	376	252	275	195	170	340	1950	12100	2840	3200	1590	924
9	370	258	273	190	170	370	2200	11400	2750	3100	1530	905
10	367	297	271	185	170	380	2600	10600	2700	3080	1480	871
11	354	311	269	180	170	385	2800	10100	2650	3050	1420	867
12	335	283	267	180	170	385	3100	9500	2600	3000	1350	848
13	305	258	265	180	170	385	3900	8600	2570	2800	1300	841
14	280	260	263	175	175	390	5500	8400	2540	2600	1250	837
15	258	275	262	175	175	395	8500	8080	2500	2300	1220	834
16	247	280	260	175	175	400	13200	7880	2450	2000	1200	830
17	231	280	255	170	175	410	18200	7720	2390	2010	1190	823
18	229	280	255	170	175	420	24000	7220	2380	2020	1180	812
19	226	280	250	165	180	445	31000	6500	2330	2050	1150	808
20	226	280	250	165	180	470	35900	5750	2340	2060	1130	798
21	224	280	245	160	180	530	39100	5190	2380	1960	1090	790
22	229	300	240	160	180	630	41500	4720	2410	1570	1140	769
23	234	305	235	160	180	600	40300	4400	2610	1520	1180	754
24	242	310	230	160	180	530	38600	4100	3020	1540	1130	736
25	229	310	230	160	185	560	37200	3800	3420	1690	1150	730
26	242	310	230	160	185	600	35800	3500	3580	1590	1240	726
27	247	310	225	160	185	630	34400	3250	3480	1610	1230	719
28	252	315	225	160	185	700	32800	3190	3180	1720	1190	698
29	260	320	220	165	---	780	30300	3140	3110	1910	1140	674
30	266	325	220	165	---	960	27600	3100	3540	2040	1120	656
31	280	---	215	165	---	1160	---	3070	---	2030	1110	---
TOTAL	9350	8509	8010	5520	4870	14305	520480	278810	84350	77110	43390	25413
MEAN	302	284	258	178	174	461	17350	8994	2812	2487	1400	847
MAX	431	325	325	210	185	1160	41500	24600	3580	3780	2170	1110
MIN	224	252	215	160	165	185	1300	3070	2330	1520	1090	656
AC-FT	18550	16880	15890	10950	9660	28370	1032000	553000	167300	152900	86060	50410

CAL YR 1978 TOTAL 854911 MEAN 2342 MAX 28700 MIN 188 AC-FT 1696000
WTR YR 1979 TOTAL 1080117 MEAN 2959 MAX 41500 MIN 160 AC-FT 2142000

05064500 RED RIVER OF THE NORTH AT HALSTAD, MN--Continued
(National stream-quality accounting network station)
(Radiochemical station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1961, 1964-67, 1972 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: February 1977 to current year.
WATER TEMPERATURES: February 1977 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,050 micromhos Oct. 4, 1978; minimum daily, 225 micromhos Apr. 5, 1978.
WATER TEMPERATURES: Maximum daily, 29.0°C Aug. 14, 1978; minimum observed, 0.0°C on many days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,050 micromhos Oct. 4; minimum daily, 300 micromhos Apr. 18, 24.
WATER TEMPERATURES: Maximum daily, 26.5°C July 25; minimum observed, 1.0°C on many days during winter months.

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	COLI-FORM, TOTAL, IMMED. (COLS. PER 100 ML) (31501)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS (MG/L AS CACO3) (00900)
OCT												
24...	1315	240	719	8.4	--	6.5	15	11.6	--	K10	K23	290
NOV												
29...	1445	525	1190	8.0	10.0	.5	4.7	10.0	--	K20	100	380
DEC												
18...	1400	255	1000	7.5	--	.0	2.7	6.8	--	K640	1800	410
JAN												
23...	1340	160	1020	7.3	--	.0	2.2	3.4	--	K13	42	410
FEB												
27...	1350	186	910	7.8	--	.0	2.7	3.2	--	K13	1150	380
MAR												
20...	1240	466	780	8.2	--	.5	3.0	2.4	--	31	810	360
APR												
17...	1615	19100	255	--	--	1.5	--	--	--	--	--	--
21...	1525	39100	270	--	--	7.5	--	--	--	--	--	--
25...	1630	59700	295	--	--	9.0	--	--	--	--	--	--
MAY												
01...	1325	24600	440	--	--	8.0	--	--	--	--	--	--
03...	1115	19200	480	7.7	--	7.0	93	10.4	--	83	3200	210
09...	1200	11400	500	--	--	8.0	--	--	--	--	--	--
JUN												
08...	1135	2840	500	8.2	--	19.0	84	7.4	--	K90	K95	290
JUL												
03...	1435	3600	580	8.2	--	23.0	56	6.4	--	340	1100	260
31...	1350	2020	655	8.2	--	24.0	180	6.2	470	--	380	300
SEP												
10...	1340	870	550	8.4	--	19.5	26	8.0	--	320	390	240

DATE	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)
OCT												
24...	73	63	33	44	24	1.1	8.8	220	120	29	.2	12
NOV												
29...	95	76	45	60	25	1.3	9.2	280	190	31	.4	12
DEC												
18...	110	85	48	67	26	1.4	9.6	300	190	35	.4	16
JAN												
23...	52	89	46	48	20	1.0	8.2	360	140	26	.3	19
FEB												
27...	46	83	41	50	22	1.1	8.3	330	120	30	.3	22
MAR												
20...	52	79	40	35	17	.8	8.0	310	100	18	.3	21
APR												
17...	--	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--	--
MAY												
01...	--	--	--	--	--	--	--	--	--	--	--	--
03...	80	51	20	18	15	.5	7.6	130	97	9.8	.2	14
09...	--	--	--	--	--	--	--	--	--	--	--	--
JUN												
08...	100	63	33	27	16	.7	7.0	190	130	12	.2	6.9
JUL												
03...	83	54	31	21	14	.6	6.3	180	130	9.6	.2	14
31...	86	64	33	31	29	.8	6.7	210	150	14	.2	19
SEP												
10...	27	47	29	22	16	.6	5.5	210	81	11	.2	16

K - Results based on colony count outside the acceptable range (non-ideal colony count).

05064500 RED RIVER OF THE NORTH AT HALSTAD, MN--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, NH4 + ORG. SUSP. TOTAL (MG/L AS N) (00624)	NITRO-GEN, AMMONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN, TOTAL (MG/L AS N) (00600)
OCT												
24...	461	442	.63	299	.42	--	.20	.80	1.0	.28	.72	1.4
NOV												
29...	577	592	.78	506	.23	--	.72	.78	1.5	.00	1.5	1.7
DEC												
18...	656	631	.89	452	.27	--	1.6	1.4	3.0	.10	2.9	3.3
JAN												
23...	611	593	.83	264	.52	--	.63	.77	1.4	.00	1.4	1.9
FEB												
27...	590	553	.80	296	.71	--	.81	.79	1.6	.10	1.5	2.3
MAR												
20...	470	488	.64	594	.36	--	.41	.79	1.2	.10	1.1	1.6
APR												
17...	--	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--	--
MAY												
01...	--	--	--	--	--	--	--	--	--	--	--	--
03...	302	296	.41	15700	1.3	--	.10	1.5	1.6	.78	.82	2.9
09...	--	--	--	--	--	--	--	--	--	--	--	--
JUN												
08...	435	393	.59	3340	.33	--	.06	1.1	1.2	.38	.82	1.5
JUL												
03...	383	374	.52	3720	.52	--	.04	1.3	1.3	.50	.80	1.8
31...	431	444	.59	2350	.52	--	.01	1.2	1.2	.39	.81	1.7
SEP												
10...	331	340	.45	778	.28	.33	.04	1.2	1.2	.00	1.2	1.5

DATE	NITRO-GEN, DIS-SOLVED (MG/L AS N) (00602)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHATE, TOTAL (MG/L AS PO4) (00650)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC SUS-PENDED TOTAL (UG/L AS AS) (01001)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BARIUM, SUS-PENDED RECOV-ERABLE (UG/L AS BA) (01006)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD) (01027)
OCT												
24...	--	6.3	.29	--	.23	4	--	4	0	0	80	0
NOV												
29...	--	7.7	.64	--	.61	--	--	--	--	--	--	--
DEC												
18...	--	14	2.7	--	1.8	--	--	--	--	--	--	--
JAN												
23...	--	8.5	.26	--	.24	3	--	2	100	0	100	--
FEB												
27...	--	10	.30	--	.23	--	--	--	--	--	--	--
MAR												
20...	--	6.9	.13	--	.16	--	--	--	--	--	--	--
APR												
17...	--	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--	--
MAY												
01...	--	--	--	--	--	--	--	--	--	--	--	--
03...	--	13	.33	1.0	.16	4	--	4	100	100	0	1
09...	--	--	--	--	--	--	--	--	--	--	--	--
JUN												
08...	--	6.8	.31	.95	.15	--	--	--	--	--	--	--
JUL												
03...	--	8.1	.29	.89	.11	--	--	--	--	--	--	--
31...	--	7.6	.26	--	.16	7	--	6	100	0	100	1
SEP												
10...	1.5	6.6	.41	--	.04	5	0	5	200	100	90	1

05064500 RED RIVER OF THE NORTH AT HALSTAD, MN--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	CADMIUM SUS-PENDED RECOV-ERABLE (UG/L AS CD) (01026)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	CHRO-MIUM, SUS-PENDED RECOV. (UG/L AS CR) (01031)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO) (01037)	COBALT, SUS-PENDED RECOV-ERABLE (UG/L AS CO) (01036)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	COPPER, SUS-PENDED RECOV-ERABLE (UG/L AS CU) (01041)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)
OCT												
24...	0	<1	0	0	0	0	0	<1	5	2	3	480
NOV												
29...	--	--	--	--	--	--	--	--	--	--	--	--
DEC												
18...	--	--	--	--	--	--	--	--	--	--	--	--
JAN												
23...	--	--	10	10	0	2	0	<3	3	2	1	150
MAY												
01...	--	--	--	--	--	--	--	--	--	--	--	--
03...	1	0	10	10	0	2	0	4	5	4	1	5300
09...	--	--	--	--	--	--	--	--	--	--	--	--
JUN												
08...	--	--	--	--	--	--	--	--	--	--	--	--
JUL												
03...	--	--	--	--	--	--	--	--	--	--	--	--
31...	0	4	10	10	0	3	0	<3	11	7	4	6500
SEP												
10...	0	<1	10	10	0	0	0	<3	6	4	2	1500

DATE	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	LEAD, SUS-PENDED RECOV-ERABLE (UG/L AS PB) (01050)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MANGA-NESE, SUS-PENDED RECOV. (UG/L AS MN) (01054)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	MERCURY SUS-PENDED RECOV-ERABLE (UG/L AS HG) (71695)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)
OCT											
24...	20	10	10	0	90	80	6	.0	.0	.0	0
NOV											
29...	--	--	--	--	--	--	--	--	--	--	--
DEC											
18...	--	--	--	--	--	--	--	--	--	--	--
JAN											
23...	20	--	--	--	80	10	70	.0	.0	.0	0
FEB											
27...	--	--	--	--	--	--	--	--	--	--	--
MAR											
20...	--	--	--	--	--	--	--	--	--	--	--
MAY											
03...	20	19	19	0	380	350	30	29	22	6.9	1
JUN											
08...	--	--	--	--	--	--	--	--	--	--	--
JUL											
03...	--	--	--	--	--	--	--	--	--	--	--
31...	70	10	9	1	500	480	20	.4	.1	.3	1
SEP											
10...	<10	7	7	0	160	150	10	.2	.1	.1	0

DATE	SELE-NIUM, SUS-PENDED TOTAL (UG/L AS SE) (01146)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	SILVER, SUS-PENDED RECOV-ERABLE (UG/L AS AG) (01076)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, SUS-PENDED RECOV-ERABLE (UG/L AS ZN) (01091)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	GROSS ALPHA, DIS-SOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DIS-SOLVED (PCI/L AS CS-137) (03515)
OCT											
24...	0	1	1	1	0	50	50	<3	<4.1	.7	12
NOV											
29...	--	--	--	--	--	--	--	--	--	--	--
DEC											
18...	--	--	--	--	--	--	--	--	--	--	--
JAN											
23...	0	0	1	1	0	20	20	5	--	--	--
FEB											
27...	--	--	--	--	--	--	--	--	--	--	--
MAR											
20...	--	--	--	--	--	--	--	--	--	--	--
MAY											
03...	1	0	0	0	0	70	0	190	<4.8	5.7	10
JUN											
08...	--	--	--	--	--	--	--	--	--	--	--
JUL											
03...	--	--	--	--	--	--	--	--	--	--	--
31...	1	0	0	0	0	40	10	30	--	--	--
SEP											
10...	0	0	0	0	0	0	0	20	--	--	--

05064500 RED RIVER OF THE NORTH AT HALSTAD, MN--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)	GROSS BETA, DIS-SOLVED (PCI/L AS SR/YT-90) (80050)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90) (80060)	RADIUM 226, DIS-SOLVED, RADON METHOD (PCI/L) (09511)	URANIUM DIS-SOLVED, EXTRAC-TION (UG/L) (80020)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C) (00689)	PHYTO-PLANK-TON, TOTAL (CELLS PER ML) (60050)	PERI-PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M (00573)	PERI-PHYTON BIOMASS ASH WEIGHT G/SQ M (00572)
OCT										
24...	1.4	11	1.4	.15	2.5	--	1.3	39000	.315	.157
NOV										
29...	--	--	--	--	--	9.1	1.0	--	--	--
DEC										
18...	--	--	--	--	--	10	.1	--	--	--
JAN										
23...	--	--	--	--	--	10	.4	--	.000	.000
FEB										
27...	--	--	--	--	--	10	.8	20000	--	--
MAR										
20...	--	--	--	--	--	9.8	--	--	--	--
MAY										
03...	4.1	9.4	4.0	.07	3.0	11	2.4	--	--	--
JUN										
08...	--	--	--	--	--	14	2.6	3600	--	--
JUL										
03...	--	--	--	--	--	18	1.0	--	--	--
31...	--	--	--	--	--	9.8	3.6	1400	.550	.470
SEP										
10...	--	--	--	--	--	10	2.1	180000	--	--

DATE	CHLOR-A PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70957)	CHLOR-B PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70958)	LENGTH OF EXPO-SURE (DAYS) (00022)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT						
24...	.130	.000	29	32	21	98
NOV						
29...	--	--	--	24	21	70
DEC						
18...	--	--	--	6	4.1	90
JAN						
23...	.090	.000	36	8	3.5	85
FEB						
27...	--	--	--	14	7.0	84
MAR						
20...	--	--	--	11	14	76
MAY						
03...	--	--	--	166	6610	99
JUN						
08...	--	--	--	136	1040	100
JUL						
03...	--	--	--	204	1980	100
31...	.000	.000	--	330	1800	99
SEP						
10...	--	--	--	89	209	99

05064500 RED RIVER OF THE NORTH AT HALSTAD, MN--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	900	710	900	875	890	850	600	450	630	590	610	600
2	950	720	905	810	860	820	580	460	620	600	600	590
3	1030	700	925	800	870	800	575	480	620	580	600	590
4	1050	710	920	800	870	775	570	500	610	540	580	600
5	950	700	940	805	840	770	560	500	610	---	570	600
6	925	700	950	810	800	800	555	560	620	---	540	600
7	850	725	950	790	780	750	550	530	620	600	560	590
8	760	690	950	770	825	710	560	520	610	650	550	580
9	720	710	1000	740	850	700	550	500	625	640	560	580
10	800	720	1000	780	800	720	560	520	625	650	540	590
11	850	690	995	800	835	750	575	500	640	640	560	590
12	855	720	990	840	810	760	580	540	670	680	550	550
13	800	710	995	860	835	750	580	530	680	680	560	510
14	750	700	995	870	845	725	530	500	700	670	560	530
15	750	725	1000	850	850	710	460	520	695	---	570	540
16	730	735	1000	880	840	720	400	530	700	---	580	560
17	780	730	1010	890	800	700	360	530	720	650	600	560
18	775	700	990	900	820	675	300	550	700	640	590	550
19	790	750	990	910	810	640	320	560	700	610	600	520
20	800	760	980	950	810	700	360	540	680	600	600	500
21	790	775	975	950	800	745	350	560	690	600	600	480
22	750	790	975	940	810	690	340	580	680	620	590	500
23	720	840	940	930	840	630	320	580	640	600	580	470
24	725	850	860	950	850	650	300	600	620	600	560	460
25	710	860	820	930	870	635	320	600	600	600	560	480
26	710	850	810	900	890	600	340	600	580	600	550	470
27	720	875	810	880	900	600	340	620	560	590	570	480
28	720	880	830	870	910	610	370	620	570	600	565	470
29	710	900	830	880	---	590	410	600	570	585	580	450
30	720	920	875	900	---	590	420	620	590	610	575	500
31	720	---	875	910	---	620	---	610	---	750	580	---
MEAN	800	762	935	864	840	703	455	545	639	621	574	536

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13.5	6.5	1.0	1.0	1.0	1.0	1.5	9.0	19.5	23.0	24.5	20.5
2	13.5	6.5	1.0	1.0	1.0	1.0	1.5	9.0	20.0	23.0	24.5	20.5
3	13.0	6.5	1.0	1.0	1.0	1.0	2.0	9.0	20.0	23.0	25.0	20.0
4	13.5	6.5	1.0	1.0	1.0	1.0	2.0	9.0	20.0	22.0	23.5	24.5
5	11.5	6.0	1.0	1.0	1.0	1.0	2.0	8.5	19.0	---	24.5	22.0
6	11.5	5.5	1.0	1.0	1.0	1.0	2.0	9.0	19.5	---	25.0	21.5
7	11.0	5.5	1.0	1.0	1.0	1.0	2.5	9.0	19.5	23.0	25.5	21.0
8	9.5	7.0	1.0	1.0	1.0	1.5	2.5	9.0	19.0	23.0	26.0	21.0
9	11.0	5.5	1.0	1.0	1.0	1.5	3.0	9.0	19.0	24.0	26.0	20.5
10	11.0	5.5	1.0	1.0	1.0	1.5	3.0	9.0	19.5	24.0	25.5	21.0
11	10.5	4.0	1.0	1.0	1.0	1.5	3.0	10.0	20.0	25.0	25.0	21.0
12	11.0	2.0	1.0	1.0	1.0	1.5	2.5	10.0	21.5	25.0	22.0	20.0
13	11.0	1.5	1.0	1.0	1.0	1.0	2.5	11.0	22.0	26.0	21.0	19.0
14	10.0	1.5	1.0	1.0	1.0	1.0	3.0	11.0	23.0	25.5	20.5	21.0
15	10.0	1.0	1.0	1.0	1.0	1.0	4.0	11.5	21.5	---	20.5	22.0
16	10.0	1.5	1.0	1.0	1.0	1.0	3.0	12.0	22.0	---	20.5	21.0
17	9.0	1.5	1.0	1.0	1.0	1.0	3.0	13.5	21.5	24.0	22.0	20.0
18	9.0	2.0	1.0	1.0	1.0	1.5	3.0	14.5	21.0	23.0	23.0	19.0
19	9.5	3.0	1.0	1.0	1.0	1.5	4.0	14.5	21.0	24.0	22.5	18.5
20	11.0	1.5	1.0	1.0	1.0	1.5	5.0	15.0	20.0	26.0	22.5	18.0
21	10.5	1.5	1.0	1.0	1.0	1.5	6.0	14.5	19.5	26.0	23.0	17.0
22	9.5	1.0	1.0	1.0	1.0	2.0	7.0	15.0	19.0	26.0	23.0	17.0
23	8.5	1.0	1.0	1.0	1.0	2.0	8.0	15.0	20.0	26.0	21.0	17.5
24	9.5	1.0	1.0	1.0	1.0	1.5	8.0	15.5	21.0	26.0	21.0	17.5
25	9.5	1.0	1.0	1.0	1.0	1.0	9.0	15.5	21.0	26.5	22.0	18.5
26	8.5	1.0	1.0	1.0	1.0	1.5	9.0	16.0	23.0	26.0	21.0	18.5
27	8.5	1.0	1.0	1.0	1.0	1.5	9.0	17.0	23.0	25.0	22.5	17.5
28	6.5	1.0	1.0	1.0	1.0	1.5	9.0	19.0	23.0	24.0	22.0	17.5
29	7.0	1.0	1.0	1.0	---	1.5	9.0	19.0	23.0	24.0	22.5	16.0
30	7.5	1.0	1.0	1.0	---	2.0	9.0	18.5	23.0	24.5	22.5	15.0
31	6.5	---	1.0	1.0	---	1.5	---	19.0	---	24.5	23.5	---
MEAN	10.0	3.0	1.0	1.0	1.0	1.5	4.5	13.0	21.0	24.5	23.0	19.5

05064500 RED RIVER OF THE NORTH AT HALSTAD, MN--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1978 TO SEPTEMBER 1979

DATE	OCT 24,78	FEB 27,79	JUN 8,79	JUL 4,79	JUL 31,79	SEP 10,79
TIME	1315	1350	1135	1435	1350	1340
TOTAL CELLS/ML	39000	20000	3600	700	1400	180000
DIVERSITY: DIVISION	1.5	0.2	1.4	0.5	1.8	0.5
.CLASS	1.4	0.2	1.4	0.5	1.8	0.5
..ORDER	1.9	0.2	2.0	0.5	2.3	0.5
...FAMILY	2.1	0.2	2.7	0.5	2.9	0.0
....GENUS	2.5	0.2	3.4	0.5	3.3	0.0

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)												
.CHLOROPHYCEAE												
..CHLOROCOCCALES												
...COELASTRACEAE												
....COELASTRUM	--	-	--	-	410	12	--	-	--	-	*	0
...HYDRODICTYACEAE												
....PEDIASTRUM	--	-	--	-	--	-	--	-	84	6	--	-
...MICRACTINIACEAE												
....GOLENKINIA	280	1	--	-	100	3	--	-	--	-	--	-
....MICRACTINIUM	550	1	--	-	--	-	620#	89	--	-	--	-
...OOCYSTACEAE												
....ANKISTRODESMUS	830	2	--	-	52	1	--	-	98	7	*	0
....CHODATELLA	830	2	--	-	--	-	--	-	--	-	--	-
....DICTYOSPHAERIUM	--	-	--	-	--	-	--	-	--	-	1600	1
....GLOEOACTINIUM	--	-	--	-	--	-	--	-	--	-	*	0
....KIRCHNERIELLA	--	-	--	-	--	-	--	-	--	-	*	0
....NEPHROCYTIUM	--	-	--	-	--	-	--	-	--	-	*	0
....OOCYSTIS	550	1	--	-	260	7	--	-	110	8	*	0
....POLYEDRIOPSIS	--	-	--	-	--	-	--	-	--	-	*	0
....QUADRIGULA	--	-	--	-	--	-	--	-	--	-	*	0
....SELENASTRUM	--	-	--	-	--	-	--	-	--	-	*	0
....TREUBARIA	--	-	--	-	52	1	--	-	--	-	--	-
...SCENEDESMACEAE												
....ACTINASTRUM	1100	3	--	-	--	-	--	-	--	-	*	0
....SCENEDESMUS	3900	10	--	-	310	9	--	-	130	9	1100	1
....TETRASTRUM	--	-	--	-	--	-	--	-	56	4	*	0
..VOLVOCALES												
...CHLAMYDOMONADACEAE												
....CHLAMYDOMONAS	1100	3	520	3	150	4	--	-	14	1	*	0
CHRYSOPHYTA												
.BACILLARIOPHYCEAE												
..CENTRALES												
...COSCINODISCACEAE												
....CYCLOTELLA	20000#	52	--	-	150	4	77	11	150	11	5300	3
....MELOSIRA	--	-	--	-	570#	16	--	-	70	5	*	0
....SKELETONEMA	1700	4	--	-	--	-	--	-	--	-	--	-
....STEPHANODISCUS	--	-	--	-	620#	17	--	-	--	-	--	-
..PENNALES												
...NAVICULACEAE												
....NAVICULA	--	-	--	-	52	1	--	-	--	-	--	-
...NITZSCHIACEAE												
....NITZSCHIA	2500	6	--	-	520	14	--	-	28	2	*	0
...SURIRELLACEAE												
....SURIRELLA	--	-	--	-	--	-	--	-	14	1	--	-
.CHRYSOPHYCEAE												
..CHRYSOMONADALES												
...OCHROMONADACEAE												
....OCHROMONAS	830	2	--	-	--	-	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)												
.CRYPTOPHYCEAE												
..CRYPTOMONADALES												
...CRYPTOCHRYSIDACEAE												
....CHROOMONAS	--	-	--	-	52	1	--	-	--	-	--	-
...CRYPTOMONADACEAE												
....CRYPTOMONAS	280	1	--	-	--	-	--	-	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)												
.CYANOPHYCEAE												
..CHROOCOCCALES												
...CHROOCOCCACEAE												
....ANACYSTIS	4400	11	--	-	260	7	--	-	390#	28	170000#	92
....COCCOCHLORIS	--	-	19000#	97	--	-	--	-	--	-	--	-
..HORMOGONALES												
...OSCILLATORIACEAE												
....OSCILLATORIA	--	-	--	-	--	-	--	-	140	10	--	-
EUGLENOPHYTA (EUGLENOIDS)												
.EUGLENOPHYCEAE												
..EUGLENALES												
...EUGLENACEAE												
....EUGLENA	--	-	--	-	--	-	--	-	14	1	--	-
....TRACHELOMONAS	--	-	--	-	--	-	--	-	110	8	*	0
PYRRHOPHYTA (FIRE ALGAE)												
.DINOPHYCEAE												
..PERIDINIALES	--	-	--	-	--	-	--	-	--	-	*	0

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

05064900 BEAVER CREEK NEAR FINLEY, ND
(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, Hydrologic Unit 09020109, on right bank 500 ft (150 m) upstream from bridge on county highway, and 7 mi (11 km) northeast of Finley.

DRAINAGE AREA.--160 mi^2 (410 km^2), approximately.

WATER-DISCHARGE RECORDS

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 (356.640 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--15 years, 10.3 ft^3/s (0.292 m^3/s), 7,460 acre-ft/yr (9.20 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,900 ft^3/s (53.8 m^3/s) Apr. 19, 1979, gage height, 8.35 ft (2.545 m), backwater from ice; maximum gage height, 9.70 ft (2.957 m) Mar. 14, 1966, backwater from ice; no flow for several months each year.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 50 ft^3/s (1.42 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Apr. 19	0200	*1,900	53.8	[a]8.35	2.545
Apr. 24	1400	508	14.4	5.16	1.573

No flow for many months.

a - Backwater from ice.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.03	.00	.00	.00	.00	.00	.00	123	6.9	1.7	3.1	.01
2	.03	.00	.00	.00	.00	.00	.00	119	6.2	1.2	2.1	.01
3	.02	.00	.00	.00	.00	.00	.00	110	5.3	1.2	.62	.01
4	.02	.00	.00	.00	.00	.00	.00	95	4.4	1.5	.51	.01
5	.02	.00	.00	.00	.00	.00	.00	97	3.8	1.3	.43	.01
6	.03	.00	.00	.00	.00	.00	.00	94	3.4	1.1	.35	.01
7	.03	.00	.00	.00	.00	.00	.00	81	3.2	.96	.30	.00
8	.02	.00	.00	.00	.00	.00	.00	70	3.0	.94	.23	.00
9	.02	.00	.00	.00	.00	.00	.00	60	2.8	.79	.19	.00
10	.02	.00	.00	.00	.00	.00	.00	56	2.8	.69	.12	.00
11	.01	.00	.00	.00	.00	.00	.00	56	2.5	.59	.09	.00
12	.00	.00	.00	.00	.00	.00	.00	54	2.3	.59	.08	.00
13	.00	.00	.00	.00	.00	.00	.00	50	2.0	.59	.09	.00
14	.00	.00	.00	.00	.00	.00	10	41	1.7	.52	.06	.00
15	.00	.00	.00	.00	.00	.00	110	36	1.5	.46	.05	.00
16	.00	.00	.00	.00	.00	.00	130	35	1.2	.47	.05	.00
17	.00	.00	.00	.00	.00	.00	184	31	1.0	.42	.04	.00
18	.00	.00	.00	.00	.00	.00	551	30	.89	.34	.01	.00
19	.00	.00	.00	.00	.00	.00	1540	30	1.1	.27	.01	.00
20	.00	.00	.00	.00	.00	.00	1410	34	2.0	.28	.01	.00
21	.00	.00	.00	.00	.00	.00	917	25	2.0	.31	.01	.00
22	.00	.00	.00	.00	.00	.00	522	21	1.6	.21	.01	.00
23	.00	.00	.00	.00	.00	.00	388	19	1.4	.17	.01	.00
24	.00	.00	.00	.00	.00	.00	412	17	1.2	.15	.01	.00
25	.00	.00	.00	.00	.00	.00	314	15	.96	.09	.01	.00
26	.00	.00	.00	.00	.00	.00	206	14	.82	.09	.01	.00
27	.00	.00	.00	.00	.00	.00	184	11	.75	.10	.01	.00
28	.00	.00	.00	.00	.00	.00	161	8.7	1.3	.15	.01	.00
29	.00	.00	.00	.00	---	.00	150	7.1	3.4	.12	.01	.00
30	.00	.00	.00	.00	---	.00	133	8.4	3.3	1.6	.01	.00
31	.00	---	.00	.00	---	.00	---	7.9	---	2.2	.01	---
TOTAL	.25	.00	.00	.00	.00	.00	7322.00	1456.1	74.72	21.10	6.55	.06
MEAN	.008	.000	.000	.000	.000	.000	244	47.0	2.49	.68	.28	.002
MAX	.03	.00	.00	.00	.00	.00	1540	123	6.9	2.2	3.1	.01
MIN	.00	.00	.00	.00	.00	.00	.00	7.1	.75	.09	.01	.00
AC-FT	.5	.00	.00	.00	.00	.00	14520	2890	148	42	17	.1

CAL YR 1978	TOTAL	4073.82	MEAN 11.2	MAX 353	MIN .00	AC-FT	8080	
WTR YR 1979	TOTAL	8882.78	MEAN 24.3	MAX 1540	MIN .00	AC-FT	17620	

05064900 BEAVER CREEK NEAR FINLEY, ND--Continued
(Hydrologic bench-mark station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1968 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	COLI-FORM, TOTAL, IMMED. (COLS. PER 100 ML) (31501)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)
APR												
17...	1845	152	210	7.6	.5	11.4	280	700	>8000	83	35	21
19...	1645	E1540	205	--	1.0	--	--	--	--	--	--	--
20...	2115	1230	280	8.1	3.5	10.0	--	--	--	96	26	25
MAY												
30...	1350	9.4	850	8.6	14.0	9.0	2600	2600	580	360	170	96
JUN												
19...	1345	1.2	1060	8.2	19.5	7.9	K14000	K12000	4300	460	200	110
AUG												
02...	1440	1.2	1140	8.3	27.0	8.6	>1080	870	360	460	190	110
28...	1315	E.01	1125	8.1	23.5	9.4	>2000	<1	750	440	230	89

DATE	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)
APR												
17...	7.5	7.1	15	.3	5.8	48	45	4.2	.1	6.9	138	126
19...	--	--	--	--	--	--	--	--	--	--	--	--
20...	6.2	10	18	.4	3.9	70	47	2.3	.2	8.6	157	147
MAY												
30...	30	47	21	1.1	--	--	--	11	--	--	--	577
JUN												
19...	45	71	25	1.4	9.9	260	320	17	.2	10	770	739
AUG												
02...	46	76	26	1.5	10	270	350	25	.1	5.5	820	785
28...	52	94	46	2.0	11	210	390	45	.2	20	849	827

DATE	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHATE, TOTAL (MG/L AS PO4) (00650)	ARSENIC TOTAL (UG/L AS AS) (01002)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD) (01027)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)
APR											
17...	.19	56.6	1.9	.47	1.4	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
20...	.21	521	2.2	.40	1.2	5	100	--	1	18	8100
MAY											
30...	.82	14.6	--	--	.12	2	0	0	0	7	80
JUN											
19...	1.05	2.49	.03	.06	.18	--	--	--	--	--	--
AUG											
02...	1.12	2.66	.01	.11	--	--	--	--	--	--	--
28...	E1.15	E.02	.54	.18	--	--	--	--	--	--	--

E - Estimated

K - Results based on colony count outside the acceptable range (non-ideal colony count).

05064900 BEAVER CREEK NEAR FINLEY, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	GROSS ALPHA, DIS-SOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DIS-SOLVED (PCI/L AS CS-137) (03515)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)	GROSS BETA, DIS-SOLVED (PCI/L AS SR/YT-90) (80050)
APR 20...	--	600	11	1	0	70	--	--	--	--	--
MAY 30...	10	70	21	1	0	120	<10	<.4	15	.6	14

DATE	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90) (80060)	RADIUM 226, DIS-SOLVED, RADON METHOD (PCI/L) (09511)	URANIUM DIS-SOLVED, EXTRAC-TION (UG/L) (80020)	CYANIDE TOTAL (MG/L AS CN) (00720)	PCB, TOTAL (UG/L) (39516)	PCB, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39519)	ALDRIN, TOTAL (UG/L) (39330)	ALDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39333)	CHLOR-DANE, TOTAL (UG/L) (39350)	CHLOR-DANE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39351)	DDD, TOTAL (UG/L) (39360)
APR 20...	--	--	--	.00	--	--	--	--	--	--	--
MAY 30...	.6	.04	7.8	--	.0	0	.00	.0	.0	0	.00

DATE	DDD, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39363)	DDE, TOTAL (UG/L) (39365)	DDE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39368)	DDT, TOTAL (UG/L) (39370)	DDT, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39373)	DI-AZINON, TOTAL (UG/L) (39570)	DI-ELDRIN TOTAL (UG/L) (39380)	DI-ELDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39383)	ENDO-SULFAN, TOTAL (UG/L) (39388)	ENDRIN, TOTAL (UG/L) (39390)
APR 20...	--	--	--	--	--	--	--	--	--	--
MAY 30...	.0	.00	.1	.00	.0	.00	.00	.0	.00	.00

05064900 BEAVER CREEK NEAR FINLEY, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	ENDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG) (39393)	ETHION, TOTAL (UG/L) (39398)	HEPTACHLOR, TOTAL (UG/L) (39410)	HEPTACHLOR, TOTAL IN BOTTOM MATERIAL (UG/KG) (39413)	HEPTACHLOR EPOXIDE TOTAL (UG/L) (39420)	HEPTACHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG) (39423)	LINDANE TOTAL (UG/L) (39340)	LINDANE TOTAL IN BOTTOM MATERIAL (UG/KG) (39343)	MALATHION, TOTAL (UG/L) (39530)	METHYL PARATHION, TOTAL (UG/L) (39600)
APR										
20...	--	--	--	--	--	--	--	--	--	--
MAY										
30...	.0	.00	.00	.0	.00	.0	.01	.0	.00	.00

DATE	METHYL TRITHION, TOTAL (UG/L) (39790)	MIREX, TOTAL (UG/L) (39755)	PARATHION, TOTAL (UG/L) (39540)	PERTHANE TOTAL (UG/L) (39034)	TOXAPHENE, TOTAL (UG/L) (39400)	TOXAPHENE, TOTAL IN BOTTOM MATERIAL (UG/KG) (39403)	TOTAL TRITHION (UG/L) (39786)	2,4-D, TOTAL (UG/L) (39730)	2,4,5-T TOTAL (UG/L) (39740)	SILVEX, TOTAL (UG/L) (39760)
APR										
20...	--	--	--	--	--	--	--	--	--	--
MAY										
30...	.00	.00	.00	.00	0	0	.00	.01	.00	.00

DATE	SEDIMENT, SUSPENDED (MG/L) (80154)	SEDIMENT DISCHARGE, SUSPENDED (T/DAY) (80155)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70338)	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70340)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)
APR					
17...	52	21	--	--	--
20...	466	1550	55	85	100
MAY					
30...	94	2.4	--	--	--
JUN					
19...	12	.04	--	--	--
AUG					
02...	17	.06	--	--	--
28...	12	--	--	--	--

05066500 GOOSE RIVER AT HILLSBORO, ND

LOCATION.--Lat 47°24'20", long 97°03'40", in NW¼ sec.5, T.145 N., R.50 W., Traill County, Hydrologic Unit 09020109, on right bank 600 ft (180 m) upstream from Foogman Dam in Hillsboro, and 27.5 mi (44 km) upstream from mouth.

DRAINAGE AREA.--1,203 mi^2 (3,116 km^2), of which 110 mi^2 (285 km^2) is probably noncontributing.

WATER-DISCHARGE RECORDS

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 (268.078 m) National Geodetic Vertical Datum of 1929. Sept. 26, 1941, to Oct. 27, 1965, at site 600 ft (180 m) downstream at same datum. See WSP 1728 or 1913 for history of changes prior to Sept. 26, 1941.

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

AVERAGE DISCHARGE.--46 years (1931-32, 1934-79), 69.9 ft^3/s (1.980 m^3/s), 50,640 acre-ft/yr (62.4 hm^3/yr); median of yearly mean discharges, 41 ft^3/s (1.16 m^3/s), 29,700 acre-ft/yr (37 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,800 ft^3/s (419 m^3/s) Apr. 21, 1979, gage height, 16.76 ft (5.108 m), no flow at times.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 200 ft^3/s (5.7 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Apr. 21	1115	*14,800	419	16.76	5.108	May 30	0600	648	18.4	3.18	0.969

Minimum daily discharge, 0.18 ft^3/s (0.005 m^3/s) Oct. 26-31.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.1	.38	1.6	1.7	1.7	2.4	4.5	1290	142	47	24	6.8
2	3.1	.62	1.6	1.7	1.7	2.4	4.5	1100	135	47	24	6.8
3	2.4	.62	1.6	1.7	1.7	2.4	4.5	1020	121	51	23	6.8
4	2.0	.62	1.6	1.7	1.7	2.4	4.5	880	121	52	22	6.8
5	1.9	.62	1.6	1.7	1.7	2.4	4.5	790	117	52	22	6.3
6	1.9	.38	1.6	1.7	1.7	2.4	4.5	700	111	56	26	5.6
7	1.9	.38	1.6	1.7	1.7	2.4	4.5	630	98	58	28	5.1
8	1.9	.38	1.6	1.7	1.7	2.4	4.5	560	89	65	28	3.1
9	1.4	.38	1.6	1.7	1.7	2.4	4.5	528	86	66	27	3.0
10	1.4	.38	1.6	1.7	1.7	2.4	4.5	478	77	72	24	1.9
11	1.4	.38	1.6	1.7	1.7	2.4	4.5	421	69	74	22	1.9
12	1.4	.38	1.6	1.7	1.7	2.4	5.0	376	63	89	19	1.9
13	1.1	.62	1.6	1.7	1.7	2.4	10	347	60	74	18	1.9
14	.62	.62	1.6	1.7	1.7	2.4	50	317	55	52	14	2.1
15	.38	.62	1.6	1.7	2.4	2.4	100	291	52	47	12	2.4
16	.38	.94	1.6	1.7	2.4	2.4	221	282	47	47	11	3.1
17	.38	1.6	1.6	1.7	2.4	2.4	951	263	45	45	9.5	2.9
18	.62	1.6	1.6	1.7	2.4	2.4	2590	242	40	43	7.6	2.1
19	.62	1.6	1.6	1.7	2.4	4.0	4270	230	37	36	6.8	1.9
20	.62	1.6	1.6	1.7	2.4	4.0	9130	219	40	35	6.8	1.9
21	.94	1.6	1.6	1.7	2.4	4.0	14400	205	45	31	6.6	1.9
22	.62	1.6	1.6	1.7	2.4	4.0	12000	198	55	28	6.8	1.9
23	.38	1.6	1.6	1.7	2.4	4.0	8500	191	60	25	11	1.9
24	.38	1.6	1.6	1.7	2.4	4.0	6920	179	60	23	13	1.9
25	.38	1.6	1.6	1.7	2.4	4.0	6230	167	60	23	12	1.9
26	.18	1.6	1.7	1.7	2.4	4.0	5770	156	58	22	8.1	2.3
27	.18	1.6	1.7	1.7	2.4	4.0	5170	147	55	20	6.4	3.1
28	.18	1.6	1.7	1.7	2.4	4.5	4380	136	52	22	8.6	2.6
29	.18	1.6	1.7	1.7	---	4.5	3400	128	55	24	7.4	2.4
30	.18	1.6	1.7	1.7	---	4.5	2200	419	47	24	5.6	2.3
31	.18	---	1.7	1.7	---	4.5	---	165	---	24	6.5	---
TOTAL	32.30	30.72	50.2	52.7	57.4	97.2	86346.5	13055	2152	1374	466.7	96.5
MEAN	1.04	1.02	1.62	1.70	2.05	3.14	2878	421	71.7	44.3	15.1	3.22
MAX	3.1	1.6	1.7	1.7	2.4	4.5	14400	1290	142	89	28	6.8
MIN	.18	.38	1.6	1.7	1.7	2.4	4.5	128	37	20	5.6	1.9
AC-FT	64	61	100	105	114	193	171300	25890	4270	2730	926	191

CAL YR 1978 TOTAL 42523.93 MEAN 117 MAX 3630 MIN .18 AC-FT 84350
WTR YR 1979 TOTAL 103811.22 MEAN 284 MAX 14400 MIN .18 AC-FT 205900

05066500 GOOSE RIVER AT HILLSBORO, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1949, 1969 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE (DEG C) (00010)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)
OCT										
17...	1310	.52	1660	8.0	8.0	510	230	110	57	180
NOV										
01...	1420	.70	1800	7.4	5.5	530	270	100	68	190
DEC										
15...	1605	1.6	2100	7.8	1.0	620	280	140	66	210
JAN										
04...	1620	1.7	2100	8.0	.5	680	370	150	74	240
FEB										
09...	1500	1.7	2900	7.5	.0	870	430	200	90	310
MAR										
08...	1225	2.4	2650	7.4	.5	700	290	160	73	280
APR										
16...	1140	221	680	8.2	.5	200	87	46	21	54
19...	1230	4210	260	--	3.5	--	--	--	--	--
25...	1525	6450	370	--	7.0	--	--	--	--	--
MAY										
03...	1910	964	875	--	7.0	--	--	--	--	--
09...	1440	519	1000	--	7.5	--	--	--	--	--
JUL										
04...	1655	53	1420	8.2	23.0	700	390	170	67	78
AUG										
03...	1145	22	1480	8.2	22.5	680	380	160	68	93
SEP										
07...	1435	5.9	1500	8.2	19.0	640	350	140	71	100

DATE	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE (MG/L AS HCO3) (00440)	CAR-BONATE (MG/L AS CO3) (00445)	ALKA-LINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
OCT									
17...	43	3.5	13	339	0	278	5.4	420	140
NOV									
01...	43	3.6	12	312	0	256	20	440	140
DEC									
15...	42	3.7	15	413	0	339	10	490	180
JAN									
04...	43	4.0	17	373	0	306	6.0	550	190
FEB									
09...	43	4.6	19	538	0	441	27	720	230
MAR									
08...	46	4.6	17	495	0	406	32	600	230
APR									
16...	36	1.7	7.8	139	0	114	1.4	130	58
19...	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--
MAY									
03...	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--
JUL									
04...	19	1.3	8.6	380	0	312	3.8	480	57
AUG									
03...	23	1.6	8.9	371	0	304	3.7	450	76
SEP									
07...	25	1.7	8.4	353	0	290	3.6	450	85

05066500 GOOSE RIVER AT HILLSBORO, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
OCT									
17...	.4	9.1	1140	1100	1.55	1.60	310	0	140
NOV									
01...	.4	5.8	1080	1110	1.47	2.04	280	60	100
DEC									
15...	.5	23	1380	1330	1.88	5.96	220	20	2000
JAN									
04...	.6	24	1530	1430	2.08	7.02	280	20	2500
FEB									
09...	.8	23	2020	1860	2.75	9.27	500	160	2800
MAR									
08...	.7	12	1670	1620	2.27	10.8	500	180	1900
APR									
16...	.2	11	412	397	.56	246	120	40	230
19...	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--
MAY									
03...	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--
JUL									
04...	.3	19	1220	1070	1.66	175	100	220	200
AUG									
03...	.3	21	1130	1060	1.54	67.1	330	140	120
SEP									
07...	.2	17	1120	1050	1.52	17.8	360	60	100

05082500 RED RIVER OF THE NORTH AT GRAND FORKS, ND

LOCATION.--Lat 47°56'34", long 97°03'10", in SW¼NE¼ sec.33, T.152 N., R.50 W., Grand Forks County, Hydrologic Unit 09020301, on left bank on second floor of old sewage plant in Grand Forks, 2.3 mi (3.7 km) downstream from Red Lake River, and at mile 295.7 (475.8 km).

DRAINAGE AREA.--30,100 mi^2 (78,000 km^2), approximately, including 3,800 mi^2 (9,840 km^2) in closed basins.

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

REVISED RECORDS.--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.

GAGE.--Water-stage recorder. Datum of gage is 778.35 ft (237.241 m) National Geodetic Vertical Datum of 1929. Nov. 3, 1933, to Apr. 13, 1965, water-stage recorder 0.3 mi (0.5 km) upstream at present datum. See WSP 1728 or 1913 for history of changes prior to Nov. 3, 1933.

REMARKS.--Records good.

AVERAGE DISCHARGE.--97 years, 2,557 ft^3/s (72.41 m^3/s), 1,853,000 acre-ft/yr (2.28 km^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, about 85,000 ft^3/s (2,410 m^3/s) Apr. 10, 1897, gage height, 50.2 ft (15.30 m), site and datum then in use, from rating curve extended above 54,000 ft^3/s (1,530 m^3/s); minimum, 1.8 ft^3/s (0.051 m^3/s) Sept. 2, 1977, caused by unusual regulation during repair of dam at Grand Forks.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 82,000 ft^3/s (2,320 m^3/s) Apr. 23, gage height, 48.63 ft (14.822 m); maximum gage height, 48.81 ft (14.877 m) Apr. 26; minimum, 552 ft^3/s (15.6 m^3/s) Nov. 16, gage height, 4.02 ft (1.225 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	866	962	830	740	660	700	1410	51900	7650	5970	5660	2520
2	854	908	820	735	660	715	1590	46800	7750	6980	5740	2500
3	884	962	820	735	660	735	1710	42100	7700	9300	5450	2450
4	923	920	860	730	660	750	1840	38400	7450	10700	5130	2400
5	932	851	855	730	665	760	1910	35000	7250	11300	4700	2350
6	932	836	830	725	665	780	1930	31200	7100	11600	4300	2300
7	920	830	810	725	670	805	1940	27700	6800	10800	3990	2200
8	905	818	800	720	675	820	1990	24500	6600	9200	3750	2100
9	890	812	790	720	680	830	2110	21700	6400	7720	3520	2000
10	893	797	750	710	680	855	2320	19500	6200	7000	3370	1900
11	887	815	730	700	685	880	2780	17500	6100	6500	3220	1850
12	884	830	720	690	690	900	3470	16200	5940	6120	3090	1820
13	875	821	720	680	690	920	4000	15000	5740	5780	3000	1820
14	860	765	725	670	690	940	5000	14200	5530	5470	2920	1810
15	842	655	728	660	685	935	7600	13500	5310	5100	2800	1830
16	812	562	730	650	685	935	12500	13000	5010	4640	2670	1830
17	812	575	730	650	680	935	19600	12400	4810	4280	2610	1810
18	851	735	725	650	680	940	30100	12000	4660	4020	2570	1830
19	860	890	735	655	680	985	42500	11600	4570	3850	2540	1780
20	860	911	740	658	690	1020	55500	11000	4600	3720	2500	1770
21	863	899	740	658	700	1040	68000	10400	4490	3610	2450	1770
22	857	803	740	658	715	1050	76800	9800	4470	3480	2460	1760
23	815	698	745	660	720	1120	80900	9400	5020	3310	2650	1760
24	794	640	745	660	700	1180	80500	8900	5400	3210	2890	1780
25	851	670	740	660	690	1220	79700	8610	5720	3140	2700	1770
26	950	740	740	660	690	1190	78400	8320	6080	3250	2600	1730
27	1010	800	740	660	690	1130	80100	8000	6200	3500	2630	1700
28	839	840	740	660	690	1140	74000	7700	6120	3650	2640	1740
29	860	850	740	660	---	1160	65500	7400	6140	3650	2580	1680
30	932	850	740	660	---	1200	58800	7300	5920	3790	2570	1660
31	959	---	740	660	---	1260	---	7250	---	4330	2610	---
TOTAL	27272	24105	23598	21189	19125	29830	944500	568280	178730	178970	102310	58220
MEAN	880	804	761	684	683	962	31480	18330	5958	5773	3300	1941
MAX	1010	968	860	740	720	1260	80900	51900	7750	11600	5740	2520
MIN	794	562	720	650	660	700	1410	7250	4470	3140	2450	1660
AC-FT	54090	47810	46810	42030	37930	59170	1873000	1127000	354500	355000	202900	115500

CAL YR 1978 TOTAL 1545525 MEAN 4234 MAX 54100 MIN 562 AC-FT 3066000
WTR YR 1979 TOTAL 2176129 MEAN 5962 MAX 80900 MIN 562 AC-FT 4316000

05083600 MIDDLE BRANCH FOREST RIVER NEAR WHITMAN, ND

LOCATION.--Lat 48°14'50", long 98°07'00", in SE¼NW¼ sec.16, T.155 N., R.58 W., Walsh County, Hydrologic Unit 09020308, 150 ft (46 m) downstream from bridge on State Highway 35, and 6 mi (10 km) north of Whitman.

DRAINAGE AREA.--47.7 mi^2 (123.5 km^2), of which 8.8 mi^2 (22.8 km^2) is noncontributing.

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

GAGE.--Water-stage recorder. Altitude of gage is 1,510 ft (460.2 m) from topographic map.

REMARKS.--Records good.

AVERAGE DISCHARGE.--19 years, 3.17 ft^3/s (0.090 m^3/s), 2,300 acre-ft/yr (2.84 hm^3/yr); median of yearly mean discharges, 2.2 ft^3/s (0.062 m^3/s), 1,600 acre-ft/yr (2.0 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 984 ft^3/s (27.9 m^3/s) May 19, 1974, gage height, 7.11 ft (2.167 m); no flow for many months each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 737 ft^3/s (20.9 m^3/s) Apr. 22, gage height, 7.17 ft (2.185 m), only peak above base of 70 ft^3/s (1.98 m^3/s); maximum gage height, 7.25 ft (2.210 m) Apr. 20, backwater from ice; no flow for many months.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	34	.29	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	35	.27	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	20	.26	.18	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	15	.26	.58	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	14	.23	1.5	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	13	.20	14	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	13	.15	5.6	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	14	.09	1.9	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	11	.05	.65	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	8.1	.00	.68	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	6.5	.00	.52	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	7.9	.00	.34	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	11	.00	.25	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	9.8	.00	.20	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	6.7	.00	.11	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	4.4	.00	.04	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	3.3	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	45	3.0	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	310	1.9	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	480	1.1	.01	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	590	.68	.02	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	514	.71	.02	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	210	.52	.03	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	141	.46	.01	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	96	.68	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	65	.94	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	46	.68	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	46	.48	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.00	50	.38	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	43	.42	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.32	---	.00	.00	---
TOTAL	.00	.00	.00	.00	.00	.00	2636.00	238.77	1.89	26.55	.00	.00
MEAN	.000	.000	.000	.000	.000	.000	87.9	7.70	.063	.86	.000	.000
MAX	.00	.00	.00	.00	.00	.00	590	35	.29	14	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.32	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	.00	5230	474	3.7	53	.00	.00

CAL YR 1978 TOTAL 1826.79 MEAN 5.00 MAX 240 MIN .00 AC-FT 3620
WTR YR 1979 TOTAL 2903.21 MEAN 7.95 MAX 590 MIN .00 AC-FT 5760

05084000 FOREST RIVER NEAR FORDVILLE, ND

LOCATION.--Lat 48°11'50", long 97°43'49", on line between secs.32 and 33, T.155 N., R.55 W., Walsh County, Hydrologic Unit 09020308, on right bank 50 ft (15 m) upstream from highway bridge, 0.5 mi (0.8 km) downstream from South Branch, and 3 mi (5 km) southeast of Fordville.

DRAINAGE AREA.--456 mi^2 (1,181 km^2), of which about 120 mi^2 (311 km^2) is probably noncontributing.

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

GAGE.--Water-stage recorder. Altitude of gage is 1,035 ft (315 m), from topographic map. Prior to July 21, 1951, nonrecording gage at site 50 ft (15 m) downstream at same datum.

REMARKS.--Records good except those for Oct. 1 to Apr. 21, which are fair. 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-ft (17.3 hm^3).

AVERAGE DISCHARGE.--39 years, 39.3 ft^3/s (1.113 m^3/s), 28,500 acre-ft/yr (35.1 hm^3/yr); median of yearly mean discharges, 36 ft^3/s (1.02 m^3/s), 26,100 acre-ft/yr (32 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,400 ft^3/s (464 m^3/s) Apr. 18, 1950, gage height, 14.48 ft (4.414 m), from floodmark, from rating curve extended above 5,600 ft^3/s (159 m^3/s) on basis of contracted-opening and slope-area measurements of peak flow; no flow Apr. 1-13, Sept. 3, 1940.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,200 ft^3/s (147 m^3/s) Apr. 20, gage height, 9.98 ft (3.042 m), only peak above base of 200 ft^3/s (5.66 m^3/s); minimum, 2.4 ft^3/s (0.068 m^3/s), Sept. 17, 19.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.0	7.5	5.8	5.6	6.5	8.0	10	642	70	17	17	7.5
2	7.0	7.0	5.8	5.6	6.5	8.0	10	624	64	18	13	8.0
3	7.5	7.0	5.8	5.6	6.5	8.0	10	586	59	33	10	7.5
4	8.0	7.0	5.8	5.6	6.5	8.0	10	561	57	49	10	38
5	8.0	7.0	5.8	5.6	6.5	8.0	10	554	54	40	9.7	66
6	8.0	7.0	5.5	5.6	7.0	8.0	10	544	48	36	9.7	64
7	8.0	7.0	5.5	5.6	7.0	8.5	10	540	44	37	8.6	55
8	8.0	7.0	5.2	5.6	7.0	9.0	10	530	40	35	8.6	45
9	8.0	7.0	5.2	5.6	7.0	9.0	10	505	37	33	8.6	45
10	8.0	7.0	5.2	5.6	7.0	9.0	9.5	480	34	31	8.0	24
11	8.0	7.0	5.2	5.6	7.0	9.0	7.0	461	31	28	7.5	6.2
12	8.0	7.0	5.2	5.6	7.4	9.0	7.0	440	30	25	8.0	5.0
13	8.2	7.0	5.3	5.6	7.4	9.0	7.5	419	30	28	8.0	4.4
14	8.5	7.0	5.4	5.6	7.4	9.0	8.5	383	26	42	8.0	4.4
15	8.5	7.0	5.5	5.6	7.4	9.0	10	341	23	39	7.5	6.2
16	8.5	7.0	5.5	5.6	7.4	9.0	15	308	23	34	6.8	5.6
17	8.5	7.0	5.5	5.6	7.4	9.5	16	281	21	13	6.2	3.2
18	8.5	6.8	5.5	5.6	7.5	10	250	242	19	11	6.2	4.0
19	8.5	6.6	5.5	5.6	7.5	10	4000	202	18	9.2	5.0	8.2
20	8.5	6.4	5.5	5.8	7.5	10	4980	171	32	8.6	4.0	20
21	8.0	6.2	5.5	6.0	7.5	11	3600	144	36	8.0	5.6	21
22	8.0	6.2	5.5	6.0	7.5	11	2350	134	29	6.9	7.5	23
23	7.8	6.2	5.5	6.0	7.5	12	1660	123	26	6.9	8.0	23
24	7.5	6.2	5.5	6.0	8.0	12	1300	116	22	6.2	8.0	23
25	7.5	6.2	5.5	6.0	8.0	12	1230	106	20	9.7	6.9	22
26	7.5	6.0	5.5	6.5	8.0	12	926	98	18	9.2	6.2	21
27	7.5	6.0	5.5	6.5	8.0	11	744	93	16	8.6	6.2	21
28	7.5	6.0	5.5	6.5	8.0	10	704	87	15	6.9	6.2	21
29	7.0	6.0	5.5	6.5	---	10	704	82	16	9.7	6.9	21
30	7.0	6.0	5.5	6.5	---	10	688	84	18	29	6.2	21
31	8.8	---	5.5	6.5	---	10	---	79	---	27	6.2	---
TOTAL	245.3	200.3	170.2	181.2	203.9	298.0	23306.5	9960	976	694.9	244.3	644.2
MEAN	7.91	6.68	5.49	5.85	7.28	9.61	777	321	32.5	22.4	7.88	21.5
MAX	8.8	7.5	5.8	6.5	8.0	12	4980	642	70	49	17	66
MIN	7.0	6.0	5.2	5.6	6.5	8.0	7.0	79	15	6.2	4.0	3.2
AC-FT	487	397	338	359	404	591	46230	19760	1940	1380	485	1280

CAL YR 1978 TOTAL 17653.7 MEAN 48.4 MAX 807 MIN 2.0 AC-FT 35020
WTR YR 1979 TOTAL 37124.8 MEAN 102 MAX 4980 MIN 3.2 AC-FT 73640

05085000 FOREST RIVER AT MINTO, ND

LOCATION.--Lat 48°16'10", long 97°22'10", in SE¼ sec.31, T.156 N., R.52 W., Walsh County, Hydrologic Unit 09020308, on right bank 30 ft (9 m) upstream from dam in Minto, 150 ft (45 m) upstream from Burlington Northern Railway bridge, and 900 ft (270 m) east of U.S. Highway 81.

DRAINAGE AREA.--740 mi^2 (1,920 km^2), of which about 120 mi^2 (310 km^2) is probably noncontributing.

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

REVISED RECORDS.--WSP 1438: 1948-50. WSP 1728: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 806.95 ft (245.958 m) National Geodetic Vertical Datum of 1929. Prior to July 15, 1954, nonrecording gage at site 400 ft (120 m) upstream at same datum.

REMARKS.--Records fair. Occasionally during high stages, particularly when the channel is filled with snow, overflow occurs 0.5 mi (0.8 km) below the municipality of Forest River and bypasses the gage 3 mi (5 km) south of Minto and flows into Lake Ardoch. Bypass flow is not included in computation of discharge record for station at Minto.

AVERAGE DISCHARGE.--35 years, 52.1 ft^3/s (1.475 m^3/s), 37,820 acre-ft/yr (46.6 hm^3/yr); median of yearly mean discharges, 49 ft^3/s (1.39 m^3/s), 35,500 acre-ft/yr (44 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,600 ft^3/s (470 m^3/s) Apr. 18, 1950, gage height, 11.80 ft (3.597 m) from floodmarks, from rating curve extended above 7,200 ft^3/s (204 m^3/s) on basis of contracted-opening measurement of peak flow; no flow at times each year 1945-47, 1953-55, 1959-64.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 200 ft^3/s (5.66 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Apr. 20	2315	*6,730	191	8.93	2.722	July 3	1530	455	12.9	2.90	0.884

Minimum daily discharge, 1.0 ft^3/s (0.03 m^3/s) Feb. 24 to Apr. 10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.6	2.4	2.8	2.0	2.0	1.0	1.0	784	100	27	16	10
2	5.3	2.4	2.8	2.0	2.0	1.0	1.0	727	95	77	20	11
3	5.3	2.4	2.4	2.0	2.0	1.0	1.0	683	89	362	19	10
4	4.0	2.8	2.4	2.0	2.0	1.0	1.0	650	86	358	17	10
5	3.4	2.4	2.4	2.0	1.6	1.0	1.0	612	81	208	14	11
6	3.4	5.3	2.4	2.0	1.6	1.0	1.0	595	76	134	13	12
7	4.0	5.3	2.2	2.0	1.6	1.0	1.0	573	72	98	13	44
8	5.3	4.6	2.2	2.0	1.6	1.0	1.0	551	68	80	13	48
9	4.0	3.4	2.2	2.0	1.6	1.0	1.0	551	63	67	13	46
10	4.6	3.2	2.0	2.0	1.6	1.0	1.0	522	60	57	12	39
11	4.6	3.0	2.0	2.0	1.2	1.0	1.4	507	58	45	12	39
12	2.8	3.0	2.0	2.0	1.2	1.0	1.6	478	53	42	12	32
13	3.4	3.0	2.0	2.0	1.2	1.0	2.0	450	51	37	11	16
14	4.6	3.0	2.0	2.0	1.2	1.0	2.0	421	47	32	11	12
15	4.0	3.0	2.0	2.0	1.2	1.0	5.0	377	44	31	11	11
16	4.6	3.0	2.0	2.0	1.2	1.0	10	342	40	42	11	10
17	4.6	3.0	2.0	2.0	1.2	1.0	22	310	38	40	11	9.5
18	3.4	3.0	2.0	2.0	1.2	1.0	772	271	35	36	11	8.6
19	4.6	3.0	2.0	2.0	1.2	1.0	4190	247	35	23	11	8.6
20	5.3	3.0	2.0	2.0	1.2	1.0	6060	217	54	20	10	8.6
21	7.7	2.8	2.0	2.0	1.1	1.0	6140	187	102	17	10	9.5
22	8.6	2.8	2.0	2.0	1.1	1.0	4880	162	110	14	10	10
23	9.5	2.8	2.0	2.0	1.1	1.0	3540	145	105	14	11	12
24	9.5	2.8	2.0	2.0	1.0	1.0	2530	132	86	13	11	15
25	11	2.8	2.0	2.0	1.0	1.0	2270	122	67	14	11	15
26	8.6	2.8	2.0	2.0	1.0	1.0	1450	117	55	13	11	12
27	7.7	2.8	2.0	2.0	1.0	1.0	1150	107	41	13	11	11
28	6.8	2.8	2.0	2.0	1.0	1.0	964	102	34	12	10	11
29	6.0	2.8	2.0	2.0	---	1.0	856	98	32	12	9.5	12
30	4.6	2.8	2.0	2.0	---	1.0	820	108	30	13	10	12
31	4.0	---	2.0	2.0	---	1.0	---	104	---	13	10	---
TOTAL	169.8	92.2	65.8	62.0	37.9	31.0	35676.0	11252	1907	1964	375.5	515.8
MEAN	5.48	3.07	2.12	2.00	1.35	1.00	1189	363	63.6	63.4	12.1	17.2
MAX	11	5.3	2.8	2.0	2.0	1.0	6140	784	110	362	20	48
MIN	2.8	2.4	2.0	2.0	1.0	1.0	1.0	98	30	12	9.5	8.6
AC-FT	337	183	131	123	75	61	70760	22320	3780	3900	745	1020

CAL YR 1978 TOTAL 22449.75 MEAN 61.5 MAX 1400 MIN .10 AC-FT 44530
WTR YR 1979 TOTAL 52149.00 MEAN 143 MAX 6140 MIN 1.0 AC-FT 103400

05088500 HOMME LAKE NEAR PARK RIVER, ND

LOCATION.--Lat 48°24'20", long 97°47'10", in SE¼NW¼ sec.19, T.157 N., R.55 W., Walsh County, Hydrologic Unit 09020310, at Homme Dam on South Branch Park River, and 2 mi (3 km) west of town of Park River.

DRAINAGE AREA.--226 mi^2 (585 km^2).

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

REVISED RECORDS.--WSP 1728: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929.

REMARKS.--Reservoir is formed by an earth-fill dam, 865 ft (264 m) long; storage began in September 1949, dam completed in October 1950. Usable capacity between invert of outlet, elevation, 1,048.0 ft (319.43 m), and crest of spillway, elevation, 1,080.0 ft (329.18 m), is 3,550 acre-ft (4.38 hm^3). Dead storage is 100 acre-ft (0.12 hm^3). Low flows are controlled by two sluice gates 3 x 5 ft (0.914 x 1.524 m). The spillway, which is 150 ft (46 m) 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.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 4,500 acre-ft (5.55 hm^3) Apr. 11, 1965, elevation, 1,083.70 ft (330.312 m); minimum since first reaching spillway level, 184 acre-ft (0.23 hm^3) Feb. 8, 1952, elevation, 1,051.22 ft (320.412 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents during year, 4,710 acre-ft (5.81 hm^3) Apr. 20, elevation, 1,084.58 ft (330.580 m); minimum, 2,440 acre-ft (3.01 hm^3) Apr. 16, elevation, 1,073.57 ft (327.224 m).

MONTHEND ELEVATION AND CONTENTS AT 0800, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30	1,079.18	3,500	--
Oct. 31	1,078.94	3,460	-40
Nov. 30	1,076.80	3,050	-410
Dec. 31	1,075.94	2,890	-160
CAL YR 1978	--	--	+80
Jan. 31	1,075.54	2,810	-80
Feb. 28	1,075.10	2,730	-80
Mar. 31	1,074.00	2,520	-210
Apr. 30	1,080.82	3,820	+1,300
May 31	1,079.57	3,580	-240
June 30	1,079.60	3,580	0
July 31	1,079.28	3,520	-60
Aug. 31	1,077.73	3,230	-290
Sept. 30	1,076.38	2,970	-260
WTR YR 1979	--	--	-530

05089000 SOUTH BRANCH PARK RIVER BELOW HOMME DAM, ND

LOCATION.--Lat 48°24'07", long 97°46'55", in SE¼ sec.19, T.157 N., R.55 W., Walsh County, Hydrologic Unit 09020310, on right bank 0.5 mi (0.8 km) downstream from Homme Dam, and 2 mi (3 km) west of town of Park River.

DRAINAGE AREA.--226 mi^2 (585 km^2).

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

REVISED RECORDS.--WSP 1728: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,000.00 ft (304.800 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for the winter period, which are fair. Flow regulated by Homme Lake (station 05088500).

AVERAGE DISCHARGE.--30 years, 28.0 ft^3/s (0.793 m^3/s), 20,290 acre-ft/yr (25.0 hm^3/yr); median of yearly mean discharges, 23 ft^3/s (0.65 m^3/s), 16,700 acre-ft/yr (21 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, about 13,000 ft^3/s (368 m^3/s) Apr. 24, 1950, gage height, 37.52 ft (11.436 m), from rating curve extended above 5,500 ft^3/s (156 m^3/s), 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, July 1, 1974.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,380 ft^3/s (152 m^3/s) Apr. 20, gage height, 31.49 ft (9.598 m); minimum daily, 0.10 ft^3/s (0.003 m^3/s) Nov. 8.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.67	.94	15	4.0	2.7	4.1	5.1	273	28	7.5	7.1	4.5
2	.75	.99	15	3.0	2.5	4.3	5.0	203	27	8.4	7.1	5.2
3	1.3	.83	15	2.0	2.3	4.2	4.9	163	28	14	7.1	5.3
4	1.2	1.1	15	2.0	2.5	4.4	4.8	192	28	137	7.1	5.2
5	1.1	2.3	9.7	3.0	2.3	4.6	4.8	136	28	95	6.9	5.2
6	1.3	.78	4.7	3.5	2.7	4.8	4.8	82	22	51	6.5	5.0
7	1.2	.14	3.9	4.0	2.7	4.7	4.7	113	17	39	6.1	5.5
8	1.3	.10	3.9	4.0	2.9	4.9	4.7	158	13	32	6.3	5.3
9	1.7	.34	3.2	4.0	2.9	5.0	4.7	155	7.5	24	6.1	4.7
10	1.6	.44	2.9	4.0	2.9	5.1	4.7	112	7.5	16	6.1	4.5
11	1.5	.56	2.5	4.0	2.9	5.0	4.7	88	7.3	14	6.3	4.9
12	1.3	.60	2.5	4.0	2.9	5.1	4.7	88	7.5	11	6.7	5.3
13	.86	.68	2.5	4.0	2.9	5.2	4.7	88	7.5	10	6.7	5.3
14	.93	7.5	2.5	4.0	3.0	5.2	4.7	112	7.5	15	6.5	5.2
15	1.2	16	2.5	4.0	3.0	5.2	4.9	124	7.5	8.4	6.5	4.9
16	1.5	16	2.5	4.0	3.0	5.2	4.9	124	7.3	8.2	5.9	4.9
17	1.5	16	2.5	4.0	3.2	5.2	5.5	124	7.1	8.2	5.9	5.0
18	1.6	16	2.5	3.7	3.3	5.2	16	103	7.3	8.0	5.7	5.2
19	1.6	16	2.5	3.6	3.3	5.2	3970	89	7.5	8.4	5.7	5.7
20	1.5	16	2.5	3.3	3.4	5.2	4870	78	7.7	8.0	5.5	5.7
21	1.8	15	2.5	3.3	3.5	5.2	3620	38	7.5	7.7	5.2	5.7
22	1.9	15	2.5	3.3	3.5	5.2	2000	38	7.5	7.1	5.7	6.1
23	1.7	15	2.2	3.4	3.5	5.2	1130	39	7.3	7.3	5.3	6.1
24	1.3	15	2.0	3.4	3.6	5.2	692	39	7.3	7.3	5.0	5.7
25	.78	15	1.8	3.3	3.8	5.2	572	40	7.5	7.1	4.9	4.2
26	1.1	15	3.0	3.2	4.0	5.2	417	32	7.5	6.7	3.4	1.3
27	1.0	15	6.0	3.2	4.0	5.2	333	28	7.5	6.7	2.4	1.2
28	1.5	15	4.0	3.2	4.0	5.4	291	28	7.5	6.7	3.4	1.0
29	1.8	15	4.0	3.2	---	5.4	309	28	7.3	6.9	4.5	.84
30	1.1	15	4.0	3.2	---	5.2	297	28	7.1	6.9	4.0	.63
31	1.1	---	4.0	3.0	---	5.2	---	28	---	6.7	4.9	---
TOTAL	40.69	263.50	149.3	107.8	87.0	155.4	18601.3	2991	353.8	600.2	176.5	135.27
MEAN	1.31	8.78	4.82	3.48	3.11	5.01	620	96.5	11.8	19.4	5.69	4.51
MAX	1.9	16	15	4.0	4.0	5.4	4870	273	28	137	7.1	6.1
MIN	.67	.10	1.8	2.0	2.3	4.1	4.7	28	7.1	6.7	2.4	.63
AC-FT	81	523	296	214	173	308	36900	5930	702	1190	350	268

CAL YR 1978 TOTAL 12269.82 MEAN 33.6 MAX 1580 MIN .10 AC-FT 24340
WTR YR 1979 TOTAL 23661.76 MEAN 64.8 MAX 4870 MIN .10 AC-FT 46930

05089100 MIDDLE BRANCH PARK RIVER NEAR UNION, ND

LOCATION.--Lat 48°32'32", long 98°01'10", on north line of sec.5, T.158 N., R.57 W., Walsh County, Hydrologic Unit 09020310, on left bank 20 ft (6 m) downstream from bridge on county highway between Walsh and Cavalier Counties, and 3.5 mi (5.6 km) southwest of Union.

DRAINAGE AREA.--15.3 mi^2 (39.6 km^2).

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Altitude of gage is 1,495 ft (456 m), from topographic map.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--14 years, 2.42 ft^3/s (0.0685 m^3/s), 1,750 acre-ft/yr (2.16 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 960 ft^3/s (27.2 m^3/s) Apr. 20, 1979, gage height, 6.16 ft (1.878 m), backwater from ice; maximum gage height, 7.51 ft (2.289 m) May 4, 1966, from floodmark, backwater from snowdrift; no flow for several months each year.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 20 ft^3/s (0.57 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Apr. 19	--	Backwater from ice		*6.68	2.036	Apr. 24	0900	45	1.27	2.71	0.826
Apr. 20	1800	*960	27.2	[a]6.16	1.878	Apr. 29	1000	22	.62	2.17	.661

No flow for several months.

a - Backwater from ice.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.13	.04	.01	.00	.00	.00	.00	9.8	1.5	.06	.01	.07
2	.13	.04	.01	.00	.00	.00	.00	8.4	1.5	.23	.01	.07
3	.13	.04	.01	.00	.00	.00	.00	6.3	1.0	5.0	.01	.06
4	.15	.06	.01	.00	.00	.00	.00	5.0	1.5	4.0	.01	.06
5	.15	.07	.00	.00	.00	.00	.00	4.3	1.0	1.2	.02	.03
6	.10	.07	.00	.00	.00	.00	.00	4.2	.90	.32	.06	.03
7	.12	.07	.00	.00	.00	.00	.00	4.9	.70	.32	.06	.03
8	.10	.07	.00	.00	.00	.00	.00	5.1	.50	.37	.04	.03
9	.10	.07	.00	.00	.00	.00	.00	4.8	.30	.29	.04	.06
10	.09	.06	.00	.00	.00	.00	.00	4.6	.20	.23	.02	.06
11	.09	.06	.00	.00	.00	.00	.00	4.3	.10	.15	.02	.06
12	.08	.06	.00	.00	.00	.00	.00	4.0	.10	.15	.04	.06
13	.09	.06	.00	.00	.00	.00	.00	4.0	.10	.09	.04	.04
14	.09	.06	.00	.00	.00	.00	.00	4.0	.09	.09	.04	.06
15	.09	.06	.00	.00	.00	.00	1.0	4.0	.09	.07	.04	.02
16	.09	.06	.00	.00	.00	.00	10	3.5	.09	.07	.03	.02
17	.08	.06	.00	.00	.00	.00	50	3.5	.09	.07	.02	.01
18	.07	.04	.00	.00	.00	.00	70	3.5	.09	.06	.01	.01
19	.07	.04	.00	.00	.00	.00	550	3.5	.09	.07	.01	.02
20	.07	.04	.00	.00	.00	.00	670	3.0	.32	.07	.01	.01
21	.07	.04	.00	.00	.00	.00	210	3.0	.20	.04	.02	.02
22	.06	.03	.00	.00	.00	.00	75	3.0	.17	.02	.08	.03
23	.06	.03	.00	.00	.00	.00	36	2.7	.15	.04	.09	.03
24	.06	.03	.00	.00	.00	.00	34	2.7	.13	.07	.07	.03
25	.04	.02	.00	.00	.00	.00	27	2.5	.10	.04	.05	.02
26	.04	.02	.00	.00	.00	.00	15	2.5	.09	.04	.01	.02
27	.04	.02	.00	.00	.00	.00	13	2.0	.08	.02	.01	.02
28	.04	.02	.00	.00	.00	.00	9.3	2.0	.07	.02	.03	.02
29	.04	.02	.00	.00	---	.00	18	1.5	.07	.02	.08	.02
30	.04	.01	.00	.00	---	.00	13	2.0	.06	.02	.06	.02
31	.04	---	.00	.00	---	.00	---	2.0	---	.02	.07	---
TOTAL	2.55	1.37	.04	.00	.00	.00	1801.30	120.6	11.38	13.26	1.09	1.04
MEAN	.082	.046	.001	.000	.000	.000	60.0	3.89	.38	.43	.035	.035
MAX	.15	.07	.01	.00	.00	.00	670	9.8	1.5	5.0	.09	.07
MIN	.04	.01	.00	.00	.00	.00	.00	1.5	.06	.02	.01	.01
AC-FT	5.1	2.7	.08	.00	.00	.00	3570	239	23	26	2.2	2.1

CAL YR 1978 TOTAL 797.02 MEAN 2.18 MAX 152 MIN .00 AC-FT 1580
WTR YR 1979 TOTAL 1952.63 MEAN 5.35 MAX 670 MIN .00 AC-FT 3870

05089100 MIDDLE BRANCH PARK RIVER NEAR UNION, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1972 to current year.

REMARKS.--Some chemical data furnished by North Dakota State Water Commission.

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	PH (UNITS) (00400)	TEMPERATURE (DEG C) (00010)	HARDNESS (MG/L AS CACO3) (00900)	HARDNESS, NONCARBONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNESIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)
OCT											
05...	1800	.13	660	8.4	9.0	260	0	66	23	55	31
31...	1545	.04	700	--	6.5	--	--	--	--	--	--
APR											
18...	1520	41	155	--	1.0	--	--	--	--	--	--
21...	1730	224	160	7.1	3.0	120	60	27	13	14	20
25...	1015	26	260	--	4.0	--	--	--	--	--	--
30...	1645	12	290	--	9.0	--	--	--	--	--	--
MAY											
09...	1740	4.4	360	--	4.5	--	--	--	--	--	--
JUN											
14...	1405	.10	600	--	23.5	--	--	--	--	--	--
JUL											
11...	1650	.13	540	--	26.0	--	--	--	--	--	--
AUG											
10...	1110	.01	650	7.8	17.5	220	0	48	24	59	36
10...	1111	.01	650	7.8	17.5	220	0	58	19	63	47
SEP											
13...	1155	.05	750	--	10.0	--	--	--	--	--	--

DATE	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE (MG/L AS HCO3) (00440)	CAR-BONATE (MG/L AS CO3) (00445)	ALKA-LINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)
OCT										
05...	1.5	5.2	314	3	263	2.0	100	12	.2	14
31...	--	--	--	--	--	--	--	--	--	--
APR										
18...	--	--	--	--	--	--	--	--	--	--
21...	.6	3.3	74	0	61	9.4	78	5.9	.1	12
25...	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--
MAY										
09...	--	--	--	--	--	--	--	--	--	--
JUN										
14...	--	--	--	--	--	--	--	--	--	--
JUL										
11...	--	--	--	--	--	--	--	--	--	--
AUG										
10...	1.7	4.6	314	0	258	8.0	81	6.0	.3	30
10...	1.8	6.1	--	--	260	--	89	8.9	.2	31
SEP										
13...	--	--	--	--	--	--	--	--	--	--

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
OCT										
05...	422	433	.57	.15	--	--	--	60	40	160
31...	--	--	--	--	--	--	--	--	--	--
APR										
18...	--	--	--	--	--	--	--	--	--	--
21...	208	190	.28	126	--	--	--	30	550	160
25...	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--
MAY										
09...	--	--	--	--	--	--	--	--	--	--
JUN										
14...	--	--	--	--	--	--	--	--	--	--
JUL										
11...	--	--	--	--	--	--	--	--	--	--
AUG										
10...	428	409	.58	.01	.03	.14	.43	70	160	840
10...	421	433	.57	.01	.03	.14	.43	180	30	900
SEP										
13...	--	--	--	--	--	--	--	--	--	--

05089130 MIDDLE BRANCH PARK RIVER NEAR EDINBURG, ND

LOCATION.--Lat 48°30'16", long 97°46'05", in SW¼NE¼SW¼ sec.17, T.158 N., R.55 W., Walsh County, Hydrologic Unit 09020310, and at bridge 4 mi (6 km) northeast of Edinburg.

DRAINAGE AREA.--83.6 mi^2 (216.5 km^2).

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

REMARKS.--High flow samples.

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE (DEG C) (00010)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)
APR										
22...	2100	E490	290	8.4	5.5	61	22	16	5.0	13
25...	1500	307	227	8.1	3.5	79	31	20	7.1	17
27...	0945	258	265	7.7	5.0	84	32	21	7.6	18
MAY										
04...	1315	120	331	7.9	5.0	110	40	29	10	24
AUG										
10...	1215	.83	655	8.3	19.5	320	97	76	31	24

DATE	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00955)	ALKA-LINITY (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)
APR									
22...	30	.7	4.1	39	31	4.6	.2	13	139
25...	30	.6	4.2	48	47	5.8	.2	14	171
27...	31	.9	4.3	52	56	6.2	.2	13	175
MAY									
04...	30	1.0	4.4	74	67	8.4	.2	16	209
AUG									
10...	21	.6	5.6	220	130	8.9	.2	25	424

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
APR									
22...	121	.19	--	2.3	.22	.67	80	170	110
25...	154	.23	142	2.3	.24	.74	40	50	30
27...	168	.24	122	2.2	.25	.77	80	150	30
MAY									
04...	212	.28	67.7	1.6	.18	.55	60	280	40
AUG									
10...	436	.58	.95	.68	--	--	60	10	50

DATE	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70338)	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70340)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SED. SUSP. SIEVE DIAM. % FINER THAN .125 MM (70332)	SED. SUSP. SIEVE DIAM. % FINER THAN .250 MM (70333)	SED. SUSP. SIEVE DIAM. % FINER THAN .500 MM (70334)	SED. SUSP. SIEVE DIAM. % FINER THAN 2.00 MM (70336)
APR									
22...	1210	--	30	46	61	72	88	98	100
25...	422	350	--	--	--	--	--	--	--
27...	267	186	--	--	--	--	--	--	--
MAY									
04...	118	38	--	--	--	--	--	--	--
AUG									
10...	--	--	--	--	--	--	--	--	--

E - Estimated.

05089250 NORTH BRANCH PARK RIVER NEAR CRYSTAL, ND

LOCATION.--Lat 48°34'41", long 97°46'31", on east line of sec. 19, T.159 N., R.55 W., Pembina County, Hydrologic Unit 09020310, at bridge on gravel road, and 5 mi (8 km) southwest of Crystal.

DRAINAGE AREA.--65 mi^2 (168 km^2).

PERIOD OF RECORD.--Water year 1978 to current year (discontinued).

REMARKS.--High flow samples.

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE (DEG C) (00010)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)
APR										
22...	1855	978	210	8.2	5.5	79	31	21	6.5	17
25...	1200	363	300	8.1	4.0	100	44	26	9.0	20
27...	1100	138	365	8.0	3.5	130	58	32	12	22
MAY										
04...	1515	33	529	8.0	6.0	200	97	51	17	31

DATE	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)
APR										
22...	31	.8	4.0	48	45	4.4	.2	17	168	159
25...	29	.9	4.6	58	67	6.1	.2	20	230	205
27...	26	.8	5.1	71	93	7.8	.2	20	263	252
MAY										
04...	25	1.0	5.8	100	130	15	.3	20	361	342

DATE	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	SEDI-MENT, SUS-PENDED (MG/L) (80154)
APR									
22...	.23	444	--	.24	.74	70	100	40	4020
25...	.31	225	3.6	.25	.77	40	150	30	1280
27...	.36	98.0	3.8	.17	.52	50	40	10	656
MAY									
04...	.49	32.2	2.6	.16	.49	70	40	10	100

DATE	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70338)	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70340)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SED. SUSP. SIEVE DIAM. % FINER THAN .125 MM (70332)	SED. SUSP. SIEVE DIAM. % FINER THAN .250 MM (70333)	SED. SUSP. SIEVE DIAM. % FINER THAN .500 MM (70334)	SED. SUSP. SIEVE DIAM. % FINER THAN 1.00 MM (70335)	SED. SUSP. SIEVE DIAM. % FINER THAN 2.00 MM (70336)
APR									
22...	10600	39	62	75	82	89	96	99	100
25...	1260	--	--	--	--	--	--	--	--
27...	244	--	--	--	--	--	--	--	--
MAY									
04...	8.9	--	--	--	--	--	--	--	--

05089500 CART CREEK AT MOUNTAIN, ND

LOCATION.--Lat 48°40'37", long 97°51'41", in SW¼ sec.15, T.160 N., R.56 W., Pembina County, Hydrologic Unit 09020310, on right bank 50 ft (15 m) downstream from bridge on State Highway 32, and 0.7 mi (1.1 km) south of Mountain.

DRAINAGE AREA.--16.9 mi^2 (43.8 km^2).

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder and wooden control. Datum of gage is 1,027.40 ft (313.152 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--25 years, 2.87 ft^3/s (0.0813 m^3/s), 2,080 acre-ft/yr (2.56 hm^3/yr); median of yearly mean discharges, 3.0 ft^3/s (0.085 m^3/s), 2,200 acre-ft/yr (2.7 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,300 ft^3/s (36.8 m^3/s) June 18, 1964, gage height, 9.18 ft (2.798 m); no flow at times in some years.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 30 ft^3/s (0.85 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Apr. 19	1045	*734	20.8	[a]9.51	2.899	Aug. 31	0600	310	8.78	5.04	1.536

No flow for several months.

a - Observed, backwater from ice.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.02	.21	.00	.00	.00	.00	.00	20	6.1	.46	.42	10
2	.04	.18	.00	.00	.00	.00	.00	25	5.0	.69	.16	4.0
3	.06	.18	.00	.00	.00	.00	.00	20	4.5	2.2	.11	1.9
4	.16	.21	.00	.00	.00	.00	.00	15	4.0	1.2	.16	1.4
5	.25	.21	.00	.00	.00	.00	.00	13	3.6	.79	.13	.98
6	.14	.16	.00	.00	.00	.00	.00	12	3.3	.59	.10	.74
7	.12	.16	.00	.00	.00	.00	.00	14	2.9	.50	.10	.64
8	.12	.18	.00	.00	.00	.00	.00	15	2.7	.55	.10	.64
9	.10	.18	.00	.00	.00	.00	.00	12	2.2	.42	.10	.69
10	.08	.16	.00	.00	.00	.00	.00	8.9	2.2	.38	.10	2.1
11	.08	.13	.00	.00	.00	.00	.00	9.5	1.7	.31	.10	.98
12	.06	.11	.00	.00	.00	.00	.00	11	1.6	.38	.10	.74
13	.06	.13	.00	.00	.00	.00	.50	9.5	1.4	.38	.10	.64
14	.10	.13	.00	.00	.00	.00	1.0	12	1.0	.31	.10	.55
15	.12	.11	.00	.00	.00	.00	1.0	13	.98	.27	.10	.46
16	.12	.11	.00	.00	.00	.00	1.0	14	.85	.24	.10	.42
17	.14	.11	.00	.00	.00	.00	1.5	14	.85	.16	.10	.31
18	.14	.09	.00	.00	.00	.00	15	12	.79	.11	.10	.31
19	.16	.07	.00	.00	.00	.00	600	8.9	.85	.16	.10	.35
20	.19	.03	.00	.00	.00	.00	480	7.5	3.6	.18	.10	.31
21	.19	.02	.00	.00	.00	.00	220	7.2	1.7	.05	.10	.31
22	.19	.00	.00	.00	.00	.00	110	7.9	1.3	.02	.35	.69
23	.22	.00	.00	.00	.00	.00	53	7.5	1.1	.50	.24	.64
24	.31	.00	.00	.00	.00	.00	33	7.5	.98	.31	.13	.50
25	.31	.00	.00	.00	.00	.00	32	7.2	.85	1.0	.10	.31
26	.31	.00	.00	.00	.00	.00	28	6.6	.74	.35	.10	.42
27	.31	.00	.00	.00	.00	.00	20	6.1	.59	.18	.10	.35
28	.31	.00	.00	.00	.00	.00	19	5.2	.59	.09	.42	.42
29	.25	.00	.00	.00	---	.00	29	5.0	.55	1.6	.27	.42
30	.25	.00	.00	.00	---	.00	24	6.9	.55	2.3	.13	.38
31	.22	---	.00	.00	---	.00	---	6.1	---	.64	59	---
TOTAL	5.13	2.87	.00	.00	.00	.00	1668.00	339.5	59.07	17.32	63.42	32.60
MEAN	.17	.096	.000	.000	.000	.000	55.6	11.0	1.97	.56	2.05	1.09
MAX	.31	.21	.00	.00	.00	.00	600	25	6.1	2.3	59	10
MIN	.02	.00	.00	.00	.00	.00	.00	5.0	.55	.02	.10	.31
AC-FT	10	5.7	.00	.00	.00	.00	3310	673	117	34	126	65

CAL YR 1978 TOTAL 1286.33 MEAN 3.52 MAX 240 MIN .00 AC-FT 2550
WTR YR 1979 TOTAL 2187.91 MEAN 5.99 MAX 600 MIN .00 AC-FT 4340

05089500 CART CREEK AT MOUNTAIN, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1972 to current year.

REMARKS.--Some chemical data furnished by North Dakota State Water Commission.

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE (DEG C) (00010)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)
OCT										
05...	1610	.22	900	8.4	9.5	400	120	110	30	48
NOV										
01...	0800	.21	900	--	2.5	--	--	--	--	--
APR										
18...	1200	4.2	675	--	.0	--	--	--	--	--
19...	1130	734	150	6.9	1.0	45	19	13	3.1	14
22...	1815	69	329	7.8	.5	110	55	32	7.9	20
25...	0945	31	412	8.0	1.0	140	67	39	11	31
27...	0900	17	464	8.0	1.0	170	71	45	14	35
MAY										
04...	1705	15	580	7.9	5.0	210	98	57	16	38
09...	1405	11	550	--	4.5	--	--	--	--	--
JUN										
14...	1205	1.1	860	--	20.5	--	--	--	--	--
JUL										
11...	1500	.35	900	--	25.5	--	--	--	--	--
AUG										
10...	0915	.10	955	8.0	16.0	400	130	110	30	50
10...	0916	.10	955	8.0	16.0	400	130	110	30	51
31...	1700	39	360	--	24.0	--	--	--	--	--
SEP										
13...	1030	.55	1000	--	11.0	--	--	--	--	--

DATE	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE (MG/L AS HCO3) (00440)	CAR-BONATE (MG/L AS CO3) (00445)	ALKA-LINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)
OCT										
05...	20	1.0	6.9	340	0	279	2.2	200	18	.4
NOV										
01...	--	--	--	--	--	--	--	--	--	--
APR										
18...	--	--	--	--	--	--	--	--	--	--
19...	38	.9	3.2	--	--	26	--	27	5.1	.2
22...	27	.8	4.2	--	--	57	--	74	6.3	.2
25...	31	1.1	5.0	--	--	76	--	110	14	.3
27...	30	1.2	5.1	--	--	99	--	120	11	.3
MAY										
04...	28	1.1	4.9	--	--	110	--	150	12	.3
09...	--	--	--	--	--	--	--	--	--	--
JUN										
14...	--	--	--	--	--	--	--	--	--	--
JUL										
11...	--	--	--	--	--	--	--	--	--	--
AUG										
10...	21	1.1	6.9	333	0	273	5.3	200	19	.5
10...	28	1.1	8.7	--	--	270	--	230	21	.4
31...	--	--	--	--	--	--	--	--	--	--
SEP										
13...	--	--	--	--	--	--	--	--	--	--

05089500 CART CREEK AT MOUNTAIN, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, DIS-SOLVED (UG/L AS FE) (01046)
OCT										
05...	7.7	622	589	.85	.37	--	--	--	250	260
NOV										
01...	--	--	--	--	--	--	--	--	--	--
APR										
18...	--	--	--	--	--	--	--	--	--	--
19...	11	166	104	.23	329	2.5	.10	.31	110	300
22...	16	220	203	.30	52.9	1.8	.24	.74	100	150
25...	19	315	286	.43	26.4	2.3	.18	.55	70	250
27...	20	350	317	.48	16.1	1.4	.13	.40	90	100
MAY										
04...	19	400	367	.54	14.0	.70	.14	.43	90	110
09...	--	--	--	--	--	--	--	--	--	--
JUN										
14...	--	--	--	--	--	--	--	--	--	--
JUL										
11...	--	--	--	--	--	--	--	--	--	--
AUG										
10...	27	629	609	.86	.17	.02	.16	.49	300	120
10...	28	621	--	.84	.17	.02	.16	.49	160	10
31...	--	--	--	--	--	--	--	--	--	--
SEP										
13...	--	--	--	--	--	--	--	--	--	--

DATE	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70338)	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70340)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SED. SUSP. SIEVE DIAM. % FINER THAN .125 MM (70332)	SED. SUSP. SIEVE DIAM. % FINER THAN .250 MM (70333)	SED. SUSP. SIEVE DIAM. % FINER THAN .500 MM (70334)
OCT									
05...	80	--	--	--	--	--	--	--	--
NOV									
01...	--	--	--	--	--	--	--	--	--
APR									
18...	--	--	--	--	--	--	--	--	--
19...	90	574	1140	75	96	98	98	99	100
22...	120	2880	692	--	--	--	--	--	--
25...	130	623	52	--	--	--	--	--	--
27...	100	332	15	--	--	--	--	--	--
MAY									
04...	50	138	4.8	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--
JUN									
14...	--	--	--	--	--	--	--	--	--
JUL									
11...	--	--	--	--	--	--	--	--	--
AUG									
10...	100	--	--	--	--	--	--	--	--
10...	100	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--
SEP									
13...	--	--	--	--	--	--	--	--	--

05089950 NORTH BRANCH PARK RIVER NEAR NASH, ND

LOCATION.--Lat 48°28'14", long 97°28'57", on south line of sec. 28, T.158 N., R.53 W., Walsh County, Hydrologic Unit 09020310, at bridge on county highway, and 1.4 mi (2.3 km) east of Nash.

DRAINAGE AREA.--208 mi^2 (539 km^2).

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

REMARKS.--High flow samples.

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE (DEG C) (00010)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)
APR										
19...	1815	185	450	7.8	1.0	69	15	17	6.4	59
24...	1340	1700	282	--	5.0	100	37	28	8.1	13
26...	1405	888	312	8.2	5.5	120	46	31	9.3	17
MAY										
02...	1605	187	640	8.1	6.0	230	120	59	20	42
AUG										
09...	1305	.27	1910	7.8	20.5	460	66	110	44	240

DATE	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)
APR										
19...	63	5.1	4.8	54	33	68	.3	6.5	243	235
24...	20	.6	5.9	66	57	6.5	.2	16	206	187
26...	23	.7	5.9	70	64	8.6	.2	17	220	207
MAY										
02...	28	1.2	6.5	110	130	44	.2	20	--	400
AUG										
09...	64	4.9	12	370	210	290	.5	20	1180	1150

DATE	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
APR										
19...	.33	121	1.5	.35	1.1	170	140	200	102	51
24...	.28	946	2.7	.25	.77	40	20	50	551	2530
26...	.30	527	2.6	.19	.58	60	40	70	498	1190
MAY										
02...	.54	202	2.5	.22	.67	90	40	--	180	91
AUG										
09...	1.60	.86	.37	--	--	540	<10	120	--	--

05090000 PARK RIVER AT GRAFTON, ND

LOCATION.--Lat 48°25'24", long 97°24'30", in NE¼ sec.13, T.157 N., R.53 W., Walsh County, Hydrologic Unit 09020310, on right bank 30 ft (9 m) upstream from Wakeman Avenue bridge in Grafton, and 3.5 mi (5.6 km) downstream from South Branch.

DRAINAGE AREA.--695 mi^2 (1,800 km^2), approximately.

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

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

GAGE.--Water-stage recorder. Datum of gage is 807.39 ft (246.092 m) National Geodetic Vertical Datum of 1929. Prior to Sept. 30, 1940, nonrecording gage at site 30 ft (9 m) downstream at same datum. Oct. 1, 1940, to Sept. 17, 1946, nonrecording gage at site 2 mi (3 km) downstream above masonry dam at same datum. Sept. 18, 1946, to July 25, 1952, nonrecording gage at site 30 ft (9 m) downstream at same datum.

REMARKS.--Records good except those for the winter period, which are fair. Flow regulated by Homme Lake (station 05088500) and several small reservoirs. Diversion by city of Grafton started in 1955. Figures of daily discharge do not include diversion by city of Grafton.

AVERAGE DISCHARGE (UNADJUSTED).--48 years (water years 1932-79), 58.7 ft^3/s (1.662 m^3/s), 42,530 acre-ft/yr (52.4 hm^3/yr); median of yearly mean discharges, 42 ft^3/s (1.19 m^3/s), 30,400 acre-ft/yr (37 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,600 ft^3/s (357 m^3/s) Apr. 19, 1950, gage height, 20.13 ft (6.136 m), from rating curve extended above 9,000 ft^3/s (255 m^3/s); no flow at times in most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 8,740 ft^3/s (248 m^3/s) Apr. 22, gage height, 19.56 ft (5.962 m); minimum daily, 0.05 ft^3/s (0.001 m^3/s) Oct. 30 to Nov. 18.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.15	.05	13	1.0	.90	1.0	3.5	736	103	15	6.2	4.3
2	.10	.05	13	1.0	.90	1.0	3.5	690	100	23	5.4	4.0
3	.10	.05	13	1.0	.88	1.0	4.0	591	91	137	8.9	4.1
4	.10	.05	13	1.0	.85	1.0	4.5	579	89	241	8.4	3.8
5	.12	.05	13	1.0	.82	1.7	4.5	516	85	283	7.0	4.4
6	.12	.05	13	1.0	.80	1.7	4.5	379	81	191	6.3	3.6
7	.12	.05	10	1.0	.80	2.0	5.2	341	73	144	6.6	3.0
8	.15	.05	7.0	.70	.80	2.0	5.2	348	61	109	6.2	3.6
9	.20	.05	4.0	1.0	.78	2.0	6.0	384	55	84	6.0	5.6
10	.20	.05	3.5	.70	.75	2.0	8.0	334	46	70	5.3	5.5
11	.25	.05	3.0	.70	.72	2.0	8.0	279	42	55	5.8	4.7
12	.30	.05	2.0	.70	.70	2.0	10	252	37	45	8.0	4.1
13	.30	.05	1.7	.70	.70	2.0	6.0	250	31	38	7.7	4.1
14	.30	.05	1.4	.70	.68	2.0	6.0	249	32	29	6.5	4.4
15	.30	.05	1.0	.70	.65	2.0	5.2	259	29	25	5.8	4.4
16	.30	.05	1.0	1.0	.65	2.0	7.0	266	27	21	6.2	3.9
17	.25	.05	1.0	1.0	.62	3.0	17	266	24	18	6.9	3.9
18	.25	.05	1.0	1.0	.60	4.0	189	259	22	15	5.6	3.3
19	.25	13	1.0	1.0	.58	3.0	1180	226	24	15	4.9	2.7
20	.25	13	1.0	1.0	.55	2.5	3190	215	46	13	3.7	3.7
21	.20	13	1.0	1.0	.50	3.5	7280	200	54	13	6.3	4.4
22	.20	13	1.0	1.0	.68	3.5	8300	171	42	10	8.9	5.9
23	.20	13	1.0	1.0	1.0	3.5	6100	154	39	11	9.9	7.0
24	.20	13	1.0	.98	1.0	3.5	4600	141	36	10	7.4	6.6
25	.15	13	1.0	.98	1.0	3.0	3840	126	34	13	5.6	6.2
26	.15	13	1.0	.95	.80	2.5	3100	118	26	11	4.8	5.2
27	.10	13	1.0	.95	.80	2.5	2310	108	21	9.3	3.6	5.5
28	.10	13	1.0	.92	1.0	2.5	1500	98	18	8.3	4.2	5.3
29	.10	13	1.0	.92	---	2.5	971	94	19	8.4	3.1	4.1
30	.05	13	1.0	.90	---	3.0	828	105	20	8.7	2.8	2.6
31	.05	---	1.0	.90	---	3.5	---	101	---	7.8	8.3	---
TOTAL	5.61	156.90	127.6	28.40	21.51	73.4	43496.1	8835	1409	1681.5	192.3	133.9
MEAN	.18	5.23	4.12	.92	.77	2.37	1450	285	47.0	54.2	6.20	4.46
MAX	.30	13	13	1.0	1.0	4.0	8300	736	103	283	9.9	7.0
MIN	.05	.05	1.0	.70	.50	1.0	3.5	94	18	7.8	2.8	2.6
AC-FT	11	311	253	56	43	146	86270	17520	2790	3340	381	266
(+)	52	50	49	49	48	51	51	49	55	63	63	57
MEAN*	1.03	6.07	4.92	1.71	1.63	3.20	1450	286	47.9	55.3	7.22	5.43
AC-FT*	63	361	302	105	91	197	86320	17570	2840	3400	444	323

			OBSERVED					ADJUSTED	
CAL YR 1978	TOTAL	30910.58	MEAN	84.7	MAX	3170	MIN .05	AC-FT 61310	MEAN 86.4	AC-FT 62000
CAL YR 1979	TOTAL	56161.22	MEAN	154	MAX	8300	MIN .05	AC-FT 111400	MEAN 156	AC-FT 112000

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

05092000 RED RIVER OF THE NORTH AT DRAYTON, ND

LOCATION.--Lat 48°34'20", long 97°08'50", in SE¼SE¼SE¼ sec.24, T.159 N., R.51 W., Pembina County, Hydrologic Unit 09020311, on downstream end of east pier of interstate highway bridge, 1.5 mi (2.4 km) northeast of Drayton, and at mile 206.7 (332.6 km).

DRAINAGE AREA.--34,800 mi^2 (90,130 km^2), approximately, includes 3,800 mi^2 (9,840 km^2) in closed basins.

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

REVISED RECORDS.--WSP 1388: 1949-50. WSP 1728: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 755.00 ft (230.124 m) National Geodetic Vertical Datum of 1929 (Minnesota highway benchmark). Prior to Nov. 30, 1954, nonrecording gage at site 1.5 mi (2.4 km) upstream at datum 1.59 ft (0.485 m) higher.

REMARKS.--Records good. Some regulation by reservoirs on tributaries.

AVERAGE DISCHARGE.--30 years (1949-79), 3,900 ft^3/s (110.4 m^3/s), 2,826,000 acre-ft/yr (3.48 km^3/yr); median of yearly mean discharges, 2,770 ft^3/s (78.4 m^3/s), 2,010,000 acre-ft/yr (2.5 km^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 92,900 ft^3/s (2,630 m^3/s) Apr. 28, 1979, gage height, 43.66 ft (13.308 m); minimum observed, 7.7 ft^3/s (0.22 m^3/s) Oct. 16, 1936, gage height, 1.75 ft (0.533 m), former site and datum.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge known since 1860, that of Apr. 28, 1979. Flood of April 1897 reached a stage of about 41 ft (12.5 m), at site and datum in use prior to Nov. 30, 1954.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 92,900 ft^3/s (2,630 m^3/s) Apr. 28; gage height, 43.66 ft (13.308 m); minimum, 516 ft^3/s (14.6 m^3/s) Nov. 19, gage height, 9.58 ft (2.920 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1060	940	830	765	710	730	1140	75400	10200	6100	3900	2720
2	1030	970	840	760	710	740	1170	73200	9800	6000	4700	2670
3	980	970	850	760	715	760	1210	66500	9500	7000	5500	2630
4	980	980	850	755	715	770	1300	61200	9300	8100	5400	2550
5	1000	940	850	750	715	780	1350	55100	9100	10300	5000	2450
6	1030	940	850	745	715	790	1500	51000	8700	12000	4600	2350
7	1040	910	850	740	715	795	1520	47800	8400	13000	4200	2310
8	1050	880	850	740	715	800	1720	44000	8000	13300	3900	2260
9	1040	870	860	735	715	805	1750	42500	7600	11400	3750	2210
10	1060	860	860	730	715	810	1800	40000	7200	9750	3600	2160
11	1020	860	850	730	715	815	1850	37200	6800	8450	3400	2150
12	1040	840	830	730	715	820	2000	35000	6500	7600	3250	2140
13	1040	840	810	725	720	825	2200	32800	6200	6800	3150	2100
14	1030	820	770	725	720	630	2700	30700	6000	6300	3080	2090
15	1010	780	760	720	720	840	4500	29000	5800	5900	3000	2080
16	1000	752	760	715	720	890	5200	27100	5600	5500	2920	2040
17	950	656	760	715	725	870	8900	25200	5400	5100	2840	2000
18	940	593	760	715	725	830	15300	23700	5200	4700	2730	1980
19	920	523	760	715	725	830	24200	21800	5000	4300	2670	1960
20	930	565	760	715	725	830	32800	20300	4800	4000	2630	1900
21	940	698	760	710	730	840	42600	18700	4800	3850	2580	1870
22	960	840	760	710	730	860	55500	17500	4750	3700	2560	1850
23	960	850	760	710	740	890	67000	16400	4650	3600	2510	1850
24	920	820	760	710	750	920	75900	15300	4800	3500	2580	1840
25	910	800	760	710	750	960	83100	14300	5200	3400	2770	1830
26	900	770	765	705	740	1000	89000	13600	5600	3300	2840	1830
27	910	750	765	705	730	1100	90000	12900	6000	3200	2730	1780
28	1010	760	770	705	730	1130	91000	12300	6200	3300	2700	1780
29	1040	810	770	710	---	1130	89000	11800	6250	3500	2680	1770
30	940	820	765	710	---	1140	80600	11500	6250	3650	2680	1760
31	930	---	765	710	---	1140	---	10900	---	3700	2720	---
TOTAL	30570	24407	24710	22480	20250	27270	877810	994700	199600	194300	103570	62910
MEAN	986	814	797	725	723	880	29260	32090	6653	6268	3341	2097
MAX	1060	980	860	765	750	1140	91000	75400	10200	13300	5500	2720
MIN	900	523	760	705	710	730	1140	10900	4650	3200	2510	1760
AC-FT	60640	48410	49010	44590	40170	54090	1741000	1973000	395900	385400	205400	124800

CAL YR 1978 TOTAL 1861448 MEAN 5100 MAX 56200 MIN 523 AC-FT 3692000
WTR YR 1979 TOTAL 2582577 MEAN 7076 MAX 91000 MIN 523 AC-FT 5123000

05092200 PEMBINA COUNTY DRAIN 20 NEAR GLASSTON, ND

LOCATION.--Lat 48°41'49", long 97°23'03", in NW¼ sec.8, T.160 N., R.52 W., Pembina County, Hydrologic Unit 09020311, on left bank 50 ft (15 m) downstream from bridge on county highway, and 3 mi (5 km) southeast of Glasston.

DRAINAGE AREA.--80 mi^2 (207 km^2).

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

GAGE.--Water-stage recorder. Altitude of gage is 808 ft (246 m), from topographic map.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--8 years, 2.81 ft^3/s (0.0796 m^3/s), 2,040 acre-ft/yr (2.52 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 940 ft^3/s (26.6 m^3/s) Apr. 20, 1979; maximum gage height, 14.64 ft (4.462 m) Apr. 19, 1979, backwater from ice; no flow most of time.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 940 ft^3/s (26.6 m^3/s) Apr. 20, gage height, 9.3 ft (2.83 m), only peak above base of 25 ft^3/s (0.71 m^3/s); maximum gage height, 14.64 ft (4.462 m) Apr. 19, backwater from ice; no flow for many months.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	16	1.6	.01	.00	1.1
2	.00	.00	.00	.00	.00	.00	.00	18	1.2	.00	.00	1.1
3	.00	.00	.00	.00	.00	.00	.00	10	1.0	.15	.00	.46
4	.00	.00	.00	.00	.00	.00	.00	6.4	.90	.88	.00	.24
5	.00	.00	.00	.00	.00	.00	.00	5.4	.70	.58	.00	.16
6	.00	.00	.00	.00	.00	.00	.00	4.3	.50	.35	.00	.10
7	.00	.00	.00	.00	.00	.00	.00	4.2	.30	.21	.00	.03
8	.00	.00	.00	.00	.00	.00	.00	3.8	.10	.16	.00	.01
9	.00	.00	.00	.00	.00	.00	.00	3.5	.05	.08	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	2.9	.03	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	2.9	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	2.9	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	3.2	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	3.1	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	2.3	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	1.8	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	1.4	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	1.3	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	100	1.2	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	934	1.0	3.5	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	823	1.1	6.9	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	655	1.2	1.4	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	488	1.2	2.0	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	322	1.9	1.5	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	172	.88	1.2	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	89	.88	.58	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	53	.84	.38	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	34	.84	.24	.00	.00	.00
29	.00	.00	.00	.00	---	.00	25	.88	.16	.00	.00	.00
30	.00	.00	.00	.00	---	.00	20	3.5	.10	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	2.1	---	.00	3.7	---
TOTAL	.00	.00	.00	.00	.00	.00	5715.00	110.02	24.34	2.42	3.70	3.20
MEAN	.000	.000	.000	.000	.000	.000	124	3.55	.81	.078	.12	.11
MAX	.00	.00	.00	.00	.00	.00	934	18	6.9	.88	3.7	1.1
MIN	.00	.00	.00	.00	.00	.00	.00	.84	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	.00	7370	218	48	4.8	7.3	6.3

CAL YR 1978 TOTAL 392.40 MEAN 1.08 MAX 60 MIN .00 AC-FT 778
WTR YR 1979 TOTAL 3856.68 MEAN 10.6 MAX 934 MIN .00 AC-FT 7650

05098700 HIDDEN ISLAND COULEE NEAR HANSBORO, ND
(International gaging station)

LOCATION.--Lat 48°57'10", long 99°25'35", in SE¼SW¼ sec.11, T.163 N., R.68 W., Towner County, Hydrologic Unit 09020313, on right bank 400 ft (122 m) downstream from bridge on county highway, and 2.5 mi (4.0 km) west of Hansboro.

DRAINAGE AREA.--38 mi^2 (98 km^2), approximately.

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

GAGE.--Water-stage recorder. Altitude of gage is 1,615 ft (492 m), from topographic map. Prior to May 20, 1962, nonrecording gage 400 ft (122 m) upstream at same datum.

REMARKS.--Records fair.

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

AVERAGE DISCHARGE.--18 years, 4.05 ft^3/s (0.115 m^3/s), 2,930 acre-ft/yr (3.61 hm^3/yr); median of yearly mean discharges, 3.1 ft^3/s (0.088 m^3/s), 2,200 acre-ft/yr (2.7 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, about 1,200 ft^3/s (34.0 m^3/s) Apr. 23, 1979, gage height, 10.50 ft (3.200 m), from floodmark, backwater from ice; no flow for several months each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, about 1,200 ft^3/s (34.0 m^3/s) Apr. 23, gage height, 10.50 ft (3.200 m), from floodmark, backwater from ice, only peak above base of 25 ft^3/s (0.71 m^3/s); no flow for most of year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	46	4.5	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	42	4.2	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	39	3.4	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	22	2.9	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	20	2.1	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	18	.31	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	27	.14	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	25	.17	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	19	.35	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	14	.25	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	18	.19	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	14	.16	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	20	.12	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	18	.08	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	14	.05	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	15	.02	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	16	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	12	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	11	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	10	10	.09	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	100	9.9	.19	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	400	9.4	.19	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	1000	8.6	.14	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	430	7.8	.11	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	253	6.7	.09	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	225	6.1	.07	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	138	5.3	.02	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	86	5.1	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.00	64	4.5	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	53	4.2	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	3.4	---	.00	.00	---
TOTAL	.00	.00	.00	.00	.00	.00	2759.00	491.0	19.84	.00	.00	.00
MEAN	.000	.000	.000	.000	.000	.000	92.0	15.8	.66	.000	.000	.000
MAX	.00	.00	.00	.00	.00	.00	1000	46	4.5	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	3.4	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	.00	5470	974	39	.00	.00	.00

CAL YR 1978 TOTAL 765.15 MEAN 2.10 MAX 150 MIN .00 AC-FT 1520
WTR YR 1979 TOTAL 3269.84 MEAN 8.96 MAX 1000 MIN .00 AC-FT 6490

05098800 CYPRESS CREEK NEAR SARLES, ND
(International gaging station)

LOCATION.--Lat 48°56'35", long 98°57'05", in SW¼SE¼ sec.9, T.163 N., R.64 W., Cavalier County, Hydrologic Unit 09020313, on right bank 150 ft (46 m) downstream from twin multiplate culverts on county highway, and 2.5 mi (4.0 km) east of Sarles.

DRAINAGE AREA.--71 mi^2 (184 km^2), approximately.

PERIOD OF RECORD.--May 1961 to current year. Prior to October 1973, published as Long River near Sarles.

GAGE.--Water-stage recorder. Altitude of gage is 1,545 ft (471 m), from topographic map.

REMARKS.--Records good.

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

AVERAGE DISCHARGE.--18 years, 6.71 ft^3/s (0.190 m^3/s), 4,860 acre-ft/yr (5.99 hm^3/yr); median of yearly mean discharges, 4.9 ft^3/s (0.14 m^3/s), 3,600 acre-ft/yr (4.4 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,000 ft^3/s (56.6 m^3/s) Apr. 21, 1979, gage height, 10.35 ft (3.155 m), observed, backwater from ice and snow; no flow for several months each year.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 50 ft^3/s (1.42 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Apr. 21	2245	*2,000	56.6	[a]10.35	3.155	Apr. 30	1030	58	1.64	3.64	1.109

No flow for many months.

a - Observed, backwater from ice and snow.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	54	1.1	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	32	1.0	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	24	.91	.01	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	20	.80	.02	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	20	.66	.02	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	19	.63	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	20	.49	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	17	.40	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	12	.37	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	9.2	.29	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	7.4	.22	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	8.0	.16	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	13	.06	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	10	.04	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	7.4	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	10	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	25	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	13	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	1.0	9.2	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	100	8.8	.46	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	900	5.8	.91	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	600	5.2	.91	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	430	3.9	.66	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	430	2.9	.76	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	352	2.4	.66	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	163	2.4	.49	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	126	2.0	.35	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	81	1.6	.22	.00	.00	.00
29	.00	.00	.00	.00	---	.00	50	1.2	.12	.00	.00	.00
30	.00	.00	.00	.00	---	.00	53	1.2	.04	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	1.2	---	.00	.00	---
TOTAL	.00	.00	.00	.00	.00	.00	3186.00	368.8	12.71	.05	.00	.00
MEAN	.000	.000	.000	.000	.000	.000	106	11.9	.42	.002	.000	.000
MAX	.00	.00	.00	.00	.00	.00	800	54	1.1	.02	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	1.2	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	.00	6320	732	25	.10	.00	.00

CAL YR 1978 TOTAL 1542.91 MEAN 4.23 MAX 308 MIN .00 AC-FT 3060
WTR YR 1979 TOTAL 3567.56 MEAN 9.77 MAX 800 MIN .00 AC-FT 7080

05099100 SNOWFLAKE CREEK NEAR SNOWFLAKE, MAN
(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 mi (4.0 km) east, and 1.5 mi (2.4 km) south of Snowflake.

DRAINAGE AREA.--348 mi^2 (901 km^2).

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 (372.658 m), 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 0.5 mi (0.8 km) downstream at present datum.

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

AVERAGE DISCHARGE.--18 years, 18.7 ft^3/s (0.530 m^3/s), 13,550 acre-ft/yr (16.7 hm^3/yr); median of yearly mean discharges, 14 ft^3/s (0.40 m^3/s), 10,100 acre-ft/yr (12 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 1,130 ft^3/s (32.0 m^3/s) Apr. 21, 1979, gage height, 8.28 ft (2.524 m); no flow for several months each year.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 1,130 ft^3/s (32.0 m^3/s) Apr. 21, gage height, 8.28 ft (2.524 m); no flow for many months.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	550	147	21	5.5	4.1
2	.00	.00	.00	.00	.00	.00	.00	510	137	45	5.3	3.9
3	.00	.00	.00	.00	.00	.00	.00	472	126	56	4.7	4.2
4	.00	.00	.00	.00	.00	.00	.00	680	112	44	4.1	4.3
5	.00	.00	.00	.00	.00	.00	.00	768	103	31	3.6	4.2
6	.00	.00	.00	.00	.00	.00	.00	668	95	26	3.2	4.0
7	.00	.00	.00	.00	.00	.00	.00	623	86	24	2.8	3.9
8	.00	.00	.00	.00	.00	.00	.00	585	76	22	2.4	3.6
9	.00	.00	.00	.00	.00	.00	.00	512	68	21	1.9	3.6
10	.00	.00	.00	.00	.00	.00	.00	474	65	20	1.4	3.8
11	.00	.00	.00	.00	.00	.00	.00	450	60	19	1.3	3.9
12	.00	.00	.00	.00	.00	.00	.00	463	54	18	.94	3.4
13	.00	.00	.00	.00	.00	.00	.00	458	52	19	.54	3.2
14	.00	.00	.00	.00	.00	.00	.00	424	56	18	.26	3.2
15	.00	.00	.00	.00	.00	.00	.00	398	44	17	.13	2.8
16	.00	.00	.00	.00	.00	.00	.01	393	38	17	.09	2.6
17	.00	.00	.00	.00	.00	.00	2.0	388	34	16	.07	2.2
18	.00	.00	.00	.00	.00	.00	38	335	30	16	.04	1.7
19	.00	.00	.00	.00	.00	.00	197	311	29	15	.02	1.6
20	.00	.00	.00	.00	.00	.00	450	297	54	14	.01	1.4
21	.00	.00	.00	.00	.00	.00	1130	282	47	13	.00	1.1
22	.00	.00	.00	.00	.00	.00	620	265	38	12	.00	1.7
23	.00	.00	.00	.00	.00	.00	313	250	38	11	.00	1.5
24	.00	.00	.00	.00	.00	.00	553	239	36	10	.00	1.2
25	.00	.00	.00	.00	.00	.00	613	227	35	10	.00	.88
26	.00	.00	.00	.00	.00	.00	645	212	31	9.5	.00	.73
27	.00	.00	.00	.00	.00	.00	593	193	28	8.8	1.9	.86
28	.00	.00	.00	.00	.00	.00	614	187	26	8.2	3.9	.79
29	.00	.00	.00	.00	---	.00	585	180	24	7.7	3.1	.42
30	.00	.00	.00	.00	---	.00	509	160	22	7.3	2.6	.33
31	.00	---	.00	.00	---	.00	---	150	---	6.3	4.3	---
TOTAL	.00	.00	.00	.00	.00	.00	6662.01	12104	1791	582.8	54.10	75.11
MEAN	.000	.000	.000	.000	.000	.000	222	390	59.7	18.8	1.75	2.50
MAX	.00	.00	.00	.00	.00	.00	1130	768	147	56	5.5	4.3
MIN	.00	.00	.00	.00	.00	.00	.00	150	22	6.3	.00	.33
AC-FT	.00	.00	.00	.00	.00	.00	13210	24010	3550	1160	107	149

CAL YR 1978 TOTAL 4460.32 MEAN 12.2 MAX 225 MIN .00 AC-FT 8850
WTR YR 1979 TOTAL 21269.02 MEAN 58.3 MAX 1130 MIN .00 AC-FT 42190

05099150 MOWBRAY CREEK NEAR MOWBRAY, MAN

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, and 1.5 mi (2.4 km) east of Mowbray.

DRAINAGE AREA.--93.9 mi^2 (243.2 km^2).

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

GAGE.--Water-stage recorder operated March 1 to October 31 each year. Nonrecording gage prior to 1971.

COOPERATION.--Records furnished by Water Survey of Canada.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 777 ft^3/s (22.0 m^3/s) Apr. 24, 1979, gage height, 7.02 ft (2.140 m); maximum gage height, 7.88 ft (2.402 m) Mar. 29, 1966, backwater from ice; no flow for several months each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 777 ft^3/s (22.0 m^3/s) Apr. 24, gage height, 7.57 ft (2.307 m); maximum gage height, 7.69 ft (2.344 m) Apr. 21, backwater from ice; no flow for several months.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00					.00	.00	314	2.4	.44	12	.60
2	.00					.00	.00	248	2.0	6.5	12	1.0
3	.00					.00	.00	211	1.9	5.8	12	.85
4	.00					.00	.00	192	1.6	3.8	11	.53
5	.00					.00	.00	180	1.4	3.0	9.6	.25
6	.00					.00	.00	167	1.2	3.0	8.8	.04
7	.00					.00	.00	159	1.0	3.1	8.2	.04
8	.00					.00	.00	136	1.1	3.5	7.4	.00
9	.00					.00	.00	113	1.0	3.7	6.8	.00
10	.00					.00	.00	91	1.1	3.7	5.8	.00
11	.00					.00	.00	76	.63	3.8	5.0	.56
12	.00					.00	.00	82	.52	4.1	4.4	2.5
13	.00					.00	.00	88	.45	5.0	3.5	5.4
14	.00					.00	.00	76	.59	6.3	2.7	9.0
15	.00					.00	.00	67	.47	8.0	2.3	12
16	.00					.00	.00	58	.23	10	1.9	14
17	.00					.00	.00	49	.00	12	1.6	15
18	.00					.00	.99	34	.00	12	1.4	15
19	.00					.00	3.0	28	.00	13	1.1	16
20	.00					.00	10	22	1.4	14	.99	15
21	.00					.00	275	19	1.4	13	.85	14
22	.00					.00	441	17	.76	14	.74	16
23	.00					.00	639	15	.38	14	.67	15
24	.00					.00	696	12	.27	14	.60	15
25	.00					.00	707	11	.33	14	.53	14
26	.00					.00	612	8.8	.56	14	.46	13
27	.00					.00	636	7.0	.71	14	.39	13
28	.00					.00	526	5.2	.72	14	.32	12
29	.00					.00	424	4.2	.67	13	.21	11
30	.00					.00	366	3.6	.54	13	.14	10
31	.00					.00	---	2.9	---	12	.07	---
TOTAL	.00					.00	5335.99	2496.7	25.33	273.74	123.47	240.77
MEAN	.000					.000	178	80.5	.84	8.83	3.98	8.03
MAX	.00					.00	707	314	2.4	14	12	16
MIN	.00					.00	.00	2.9	.00	.44	.07	.00
AC-FT	.00					.00	10580	4950	50	543	245	478

05099300 PEMBINA RIVER NEAR WINDYGATES, MAN
(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 mi (0.3 km) downstream from bridge, and 3 mi (5 km) northeast of Windygates.

DRAINAGE AREA.--3,020 mi^2 (7,820 km^2).

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

GAGE.--Water-stage recorder and nonrecording gage. Datum of recording gage is 1,102.02 ft (335.896 m). Datum of nonrecording gage is 1,105.00 ft (336.804 m), both gages referred to Geodetic Survey of Canada datum.

REMARKS.--Records fair.

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

AVERAGE DISCHARGE.--17 years, 253 ft^3/s (7.165 m^3/s) 183,300 acre-ft/yr (226 hm^3/yr); median of yearly mean discharges, 200 ft^3/s (5.66 m^3/s), 145,000 acre-ft/yr (179 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,500 ft^3/s (326 m^3/s) Apr. 26, 1974, gage height, 19.50 ft (5.944 m); no flow in some years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,440 ft^3/s (154 m^3/s) May 2; gage height, 14.61 ft (4.454 m); minimum daily, 0.07 ft^3/s (0.002 m^3/s) Feb. 12-16.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	11	3.2	2.1	.21	.71	5.8	4850	1250	336	66	48
2	14	11	3.2	2.0	.21	.64	7.0	5350	1200	758	73	48
3	13	11	3.1	2.0	.16	.46	7.0	5220	1150	541	68	46
4	13	12	3.1	1.9	.18	.46	7.1	5050	1130	405	66	46
5	12	13	3.1	1.9	.16	.57	7.1	4900	1080	335	60	46
6	12	11	3.0	1.8	.14	.57	7.1	4670	1030	294	58	45
7	12	10	3.0	1.8	.14	.57	7.1	4420	979	268	56	45
8	13	8.6	3.0	1.7	.14	.46	7.2	4180	941	249	54	44
9	13	7.2	2.9	1.4	.11	.46	7.2	3870	908	228	51	45
10	13	3.0	2.9	1.3	.11	.46	7.3	3580	871	210	51	47
11	13	3.0	2.9	1.3	.11	.46	7.3	3370	831	193	53	47
12	12	3.0	2.8	1.2	.07	.57	7.3	3170	792	175	50	47
13	12	3.0	2.8	1.1	.07	.57	7.3	3090	752	172	49	46
14	13	3.0	2.8	.95	.07	.46	7.3	2960	714	164	50	46
15	12	3.0	2.7	.85	.07	.46	7.3	2760	671	152	49	46
16	12	3.1	2.7	.78	.07	.46	7.4	2600	638	143	48	46
17	12	3.1	2.6	.71	.25	.57	8.9	2520	614	138	48	45
18	11	3.1	2.6	.64	.14	.57	92	2370	587	136	48	44
19	11	3.1	2.6	.57	.25	.57	2670	2200	555	121	48	41
20	11	3.1	2.5	.46	.25	.46	5330	2110	608	116	47	41
21	12	3.1	2.5	.39	.32	.49	3500	2000	648	102	46	41
22	12	3.1	2.5	.32	.32	.85	4570	1930	630	94	45	44
23	12	3.1	2.4	.32	.39	.39	4230	1820	587	89	44	46
24	12	3.1	2.4	.28	.32	.49	3780	1740	546	85	44	46
25	11	3.1	2.4	.28	.32	.85	3210	1650	510	81	43	46
26	11	3.1	2.3	.28	.46	.85	2750	1620	475	78	41	46
27	11	3.2	2.3	.28	.64	1.6	2510	1530	442	75	41	46
28	11	3.2	2.3	.25	.85	2.6	2750	1460	419	72	41	46
29	11	3.2	2.2	.25	---	3.8	3150	1380	391	72	42	46
30	12	3.2	2.2	.21	---	4.7	3910	1310	362	76	41	45
31	12	---	2.2	.21	---	5.8	---	1270	---	73	42	---
TOTAL	375	159.7	83.2	29.53	6.57	32.93	40574.7	90950	22311	6031	1563	1361
MEAN	12.1	5.32	2.68	.95	.23	1.06	1352	2934	744	195	50.4	45.4
MAX	14	13	3.2	2.1	.85	5.8	4570	5350	1250	758	73	48
MIN	11	3.0	2.2	.21	.07	.39	5.8	1270	362	72	41	41
AC-FT	744	317	165	59	13	65	80480	180400	44250	11960	3100	2700

CAL YR 1978 TOTAL 37120.40 MEAN 102 MAX 1090 MIN .00 AC-FT 73630
WTR YR 1979 TOTAL 163477.63 MEAN 448 MAX 5350 MIN .07 AC-FT 324300

05099380 PEMBINA RIVER NEAR VANG, ND

LOCATION.--Lat 48°54'10", long 98°13'40", in SW¼NW¼ sec.29, T.163 N., R.57 W., Cavalier County, Hydrologic Unit 09020313, at bridge on county highway, and 3 mi (4.8 km) east of Vang.

DRAINAGE AREA.--3,100 mi^2 (8,000 km^2), approximately.

PERIOD OF RECORD.--Water years 1962, 1966 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE (DEG C) (00010)	COLOR (PLAT-INUM-COBALT UNITS) (00080)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L) (00310)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)
OCT										
24...	1430	10	950	8.3	7.0	10	6.8	11.4	.5	17
NOV										
29...	1015	--	--	--	--	--	--	--	.7	--
29...	1430	6.0	1120	7.7	.5	5	3.8	10.7	.6	K8
DEC										
20...	0945	E.50	1150	8.3	.0	--	3.9	8.2	.6	10
FEB										
01...	1330	.02	1150	8.2	.0	6	.90	10.6	--	K2
MAR										
21...	1425	.40	1210	7.5	.5	--	6.2	10.5	.4	K2
APR										
20...	1005	4520	290	8.0	1.5	120	1000	12.2	8.7	--
24...	0915	4280	340	8.0	3.5	40	500	11.0	2.9	K430
28...	1020	2650	421	7.9	6.0	40	250	11.0	3.1	K20
MAY										
02...	1720	5620	419	7.8	6.0	50	520	10.8	2.8	K37
16...	1010	2750	435	7.9	11.5	45	210	9.7	3.4	<20
30...	1500	1420	548	8.1	15.0	--	160	8.6	2.4	K40
JUN										
27...	1410	416	728	8.2	21.5	--	42	8.2	1.7	120
JUL										
25...	1405	103	800	8.2	24.0	--	--	8.0	1.6	--
AUG										
28...	1550	34	850	--	23.5	--	--	--	--	--
29...	0915	34	880	8.4	19.0	--	5.4	7.7	.5	150
SEP										
26...	1230	40	821	8.5	13.5	15	3.6	11.2	.9	26

DATE	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L AS CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY (MG/L AS CACO3) (00410)
OCT									
24...	--	--	--	--	--	--	--	--	270
NOV									
29...	--	--	--	--	--	--	--	--	--
29...	460	--	110	44	74	26	1.5	10	280
DEC									
20...	--	--	--	--	--	--	--	--	260
FEB									
01...	520	220	130	47	80	25	1.5	11	300
MAR									
21...	--	--	--	--	--	--	--	--	290
APR									
20...	93	50	26	6.8	16	26	.7	3.5	43
24...	150	45	40	11	20	23	.7	3.2	100
28...	150	71	37	13	23	25	.8	5.7	75
MAY									
02...	140	39	36	12	23	26	.8	5.4	100
16...	160	66	42	14	21	21	.7	5.1	97
30...	--	--	--	--	--	--	--	--	130
JUN									
27...	--	--	--	--	--	--	--	--	190
JUL									
25...	--	--	--	--	--	--	--	--	--
AUG									
28...	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	240
SEP									
26...	330	100	75	35	58	27	1.4	8.9	230

E - Estimated.

K - Results based on colony count outside the acceptable range (non-ideal colony count).

RED RIVER OF THE NORTH BASIN

05099380 PEMBINA RIVER NEAR VANG, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)
OCT									
24...	220	17	.3	19	621	--	.84	16.8	--
NOV									
29...	--	--	--	--	--	--	--	--	--
29...	280	22	.3	21	761	--	1.06	12.7	--
DEC									
20...	--	--	--	--	--	--	--	--	--
FEB									
01...	350	22	.3	21	850	843	1.16	.05	--
MAR									
21...	--	--	--	--	--	--	--	--	--
APR									
20...	65	4.5	.2	9.4	183	169	.25	2230	--
24...	67	4.8	.3	11	216	228	.29	2500	--
28...	110	7.0	.2	15	294	268	.40	2100	--
MAY									
02...	110	7.2	.2	16	280	280	.38	4250	--
16...	100	6.0	.2	17	292	271	.40	2170	--
30...	--	--	--	--	--	--	--	--	--
JUN									
27...	--	--	--	--	--	--	--	--	--
JUL									
25...	--	--	--	--	--	--	--	--	--
AUG									
28...	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--
SEP									
26...	210	13	.3	22	564	561	.77	60.9	.00

DATE	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS NO2) (71856)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS NH4) (71846)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)	BORON, DIS-SOLVED (UG/L AS B) (01020)
OCT									
24...	--	.01	.00	.00	.55	.12	.09	.28	170
NOV									
29...	--	--	--	--	--	--	--	--	--
29...	--	.03	.00	.00	.46	.11	.09	.28	170
DEC									
20...	--	.10	.00	.00	.41	.11	.08	.25	--
FEB									
01...	--	.15	.04	.05	.40	.10	.06	.18	180
MAR									
21...	--	.18	.03	.04	.34	.07	.08	.25	--
APR									
20...	--	2.6	.06	.08	4.5	.26	.22	.67	60
24...	--	2.3	.03	.04	4.1	.20	.12	.37	70
28...	--	2.6	.09	.12	2.6	.21	.19	.58	90
MAY									
02...	--	2.3	.10	.13	2.7	.21	.18	.55	80
16...	--	1.3	.06	.08	2.2	.15	.08	.25	680
30...	--	.13	.03	.04	1.3	.14	.16	.49	--
JUN									
27...	--	.00	.00	.00	.87	.21	.12	.37	--
JUL									
25...	--	--	--	--	--	--	--	--	--
AUG									
28...	--	--	--	--	--	--	--	--	--
29...	--	.01	.03	.04	.97	.17	.14	.43	--
SEP									
26...	.00	.00	.01	.01	.73	.12	.17	.52	170

05099380 PEMBINA RIVER NEAR VANG, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	PCB, TOTAL (UG/L) (39516)	ALDRIN, TOTAL (UG/L) (39330)	CHLOR-DANE, TOTAL (UG/L) (39350)	DDD, TOTAL (UG/L) (39360)	DDE, TOTAL (UG/L) (39365)	DDT, TOTAL (UG/L) (39370)	DI-AZINON, TOTAL (UG/L) (39570)
OCT									
24...	--	--	.0	.00	.0	.00	.00	.00	.00
NOV									
29...	0	240	--	--	--	--	--	--	--
FEB									
01...	20	380	.0	.00	.0	.00	.00	.00	.00
APR									
20...	240	90	--	--	--	--	--	--	--
24...	140	60	--	--	--	--	--	--	--
28...	10	40	--	--	--	--	--	--	--
MAY									
02...	150	60	.0	.00	.0	.00	.00	.00	.00
16...	220	20	--	--	--	--	--	--	--
JUL									
25...	--	--	.0	.00	.0	.00	.00	.00	.00
SEP									
26...	0	20	.0	.00	.0	.00	.00	.00	.00

DATE	DI-ELDRIN TOTAL (UG/L) (39380)	ENDO-SULFAN, TOTAL (UG/L) (39388)	ENDRIN, TOTAL (UG/L) (39390)	ETHION, TOTAL (UG/L) (39398)	HEPTA-CHLOR, TOTAL (UG/L) (39410)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L) (39420)	LINDANE TOTAL (UG/L) (39340)	MALA-THION, TOTAL (UG/L) (39530)
OCT								
24...	.00	.00	.00	.00	.00	.00	.00	.00
NOV								
29...	--	--	--	--	--	--	--	--
FEB								
01...	.00	.00	.00	.00	.00	.00	.00	.00
APR								
20...	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--
MAY								
02...	.00	.00	.00	.00	.00	.00	.00	.00
16...	--	--	--	--	--	--	--	--
JUL								
25...	.00	.00	.00	.00	.00	.00	.00	.00
SEP								
26...	.00	.00	.00	.00	.00	.00	.00	.00

DATE	METH-OXY-CHLOR, TOTAL (UG/L) (39480)	METHYL PARA-THION, TOTAL (UG/L) (39600)	METHYL TRI-THION, TOTAL (UG/L) (39790)	NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L) (39250)	MIREX, TOTAL (UG/L) (39755)	PARA-THION, TOTAL (UG/L) (39540)	PER-THANE TOTAL (UG/L) (39034)	TOX-APHENE, TOTAL (UG/L) (39400)	TOTAL TRI-THION (UG/L) (39786)	2,4-D, TOTAL (UG/L) (39730)	2,4,5-T TOTAL (UG/L) (39740)
OCT											
24...	--	.00	.00	.00	.00	.00	.00	0	.00	.00	.00
NOV											
29...	--	--	--	--	--	--	--	--	--	--	--
DEC											
20...	--	--	--	--	--	--	--	--	--	--	--
FEB											
01...	--	.00	.00	--	.00	.00	.00	0	.00	.00	.00
MAR											
21...	--	--	--	--	--	--	--	--	--	--	--
APR											
20...	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--
MAY											
02...	--	.00	.00	--	.00	.00	.00	0	.00	.12	.00
16...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
JUN											
27...	--	--	--	--	--	--	--	--	--	--	--
JUL											
25...	--	.00	.00	--	.00	.00	.00	0	.00	.01	.00
AUG											
28...	--	--	--	--	--	--	--	--	--	--	--
SEP											
26...	.00	.00	.00	--	.00	.00	.00	0	.00	.00	.00

05099380 PEMBINA RIVER NEAR VANG, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	SILVEX, TOTAL (UG/L) (39760)	SEDIMENT, SUSPENDED (MG/L) (80154)	SEDIMENT DISCHARGE, SUSPENDED (T/DAY) (80155)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70338)	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70340)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SED. SUSP. SIEVE DIAM. % FINER THAN .125 MM (70332)	SED. SUSP. SIEVE DIAM. % FINER THAN .250 MM (70333)	SED. SUSP. SIEVE DIAM. % FINER THAN .500 MM (70334)	SED. SUSP. SIEVE DIAM. % FINER THAN 1.00 MM (70335)	SED. SUSP. SIEVE DIAM. % FINER THAN 2.00 MM (70336)
OCT											
24...	.00	16	.43	--	--	--	--	--	--	--	--
NOV											
29...	--	22	.36	--	--	--	--	--	--	--	--
DEC											
20...	--	53	--	--	--	--	--	--	--	--	--
FEB											
01...	.00	25	.00	--	--	--	--	--	--	--	--
MAR											
21...	--	30	.03	--	--	--	--	--	--	--	--
APR											
20...	--	2760	33700	62	85	91	93	95	98	99	100
24...	--	2300	26600	59	82	92	94	96	98	100	--
28...	--	1460	10400	49	73	82	86	89	93	96	99
MAY											
02...	.00	1400	21200	52	75	83	84	87	93	99	100
16...	--	1070	7950	49	74	85	89	93	96	98	100
30...	--	642	2460	51	74	84	86	88	92	95	98
JUN											
27...	--	184	207	--	--	--	--	--	--	--	--
JUL											
25...	.00	52	14	--	--	--	--	--	--	--	--
AUG											
28...	--	39	5.6	--	--	--	--	--	--	--	--
SEP											
26...	.00	20	2.2	--	--	--	--	--	--	--	--

DATE	BED MAT. SIEVE DIAM. % FINER THAN .062 MM (80164)	BED MAT. SIEVE DIAM. % FINER THAN .125 MM (80165)	BED MAT. SIEVE DIAM. % FINER THAN .250 MM (80166)	BED MAT. SIEVE DIAM. % FINER THAN .500 MM (80167)	BED MAT. SIEVE DIAM. % FINER THAN 1.00 MM (80168)	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM (80169)	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM (80170)	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM (80171)	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM (80172)	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM (80173)	BED MAT. SIEVE DIAM. % FINER THAN 64.0 MM (80174)
APR											
20...	--	--	--	--	--	--	--	--	--	--	--
24...	0	0	0	2	10	19	32	57	74	100	--
28...	0	0	0	2	5	12	22	34	52	89	100
MAY											
02...	0	0	0	1	2	5	13	46	77	100	--
16...	0	0	0	1	3	7	19	48	70	87	100
30...	21	27	31	31	32	33	39	59	65	87	100

DISSOLVED OXYGEN AND WATER TEMPERATURE PROFILE, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	MG/L	DEGREES, C	DATE	MG/L	DEGREES, C	DATE	MG/L	DEGREES, C
Oct. 24, 1978			May 30, 1979			Aug. 28, 1979		
1400	11.4	7.0	1400	8.6	15.0	1400	9.0	23.5
1500	11.3	-	1500	8.6	15.0	1500	9.1	24.0
1600	11.2	-	1600	8.6	15.0	1600	8.9	24.0
1700	10.8	-	1700	8.6	15.0	1700	8.8	24.0
1800	10.5	-	1800	8.7	-	1800	8.7	24.0
1900	10.0	6.0	1900	8.6	-	1900	8.6	23.5
2000	10.1	-	2000	8.5	-	2000	8.3	23.5
2100	10.2	-	2100	8.5	-	2100	8.0	23.0
2200	10.3	-	2200	8.6	15.0	2200	7.6	22.5
2300	10.4	-	2300	8.5	-	2300	7.3	22.5
2400	10.3	-	2400	8.5	-	2400	7.2	22.0
Oct. 25, 1978			May 31, 1979			Aug. 29, 1979		
0100	10.3	-	0100	8.6	-	0100	7.1	21.5
0200	10.3	-	0200	8.6	-	0200	7.1	21.0
0300	10.3	-	0300	8.6	-	0300	7.0	21.0
0400	10.4	-	0400	8.7	14.0	0400	7.0	20.5
0500	10.4	-	0500	8.7	-	0500	7.0	20.0
0600	10.4	-	0600	8.7	-	0600	7.0	19.5
0700	10.4	-	0700	8.8	-	0700	7.2	19.5
0800	10.4	6.0	0800	9.0	13.5	0800	7.4	19.0
0900	10.5	-	0900	8.9	-	0900	7.7	19.0
1000	10.5	-	1000	9.0	-	1000	8.0	19.0
1100	10.6	-	1100	9.0	-	1100	8.5	19.5
1200	10.8	-	1200	9.0	-	1200	8.8	19.5
1300	10.9	-	1300	9.0	-	1300	9.2	19.5
1400	11.0	7.0	1400	9.0	15.0	1400	9.4	19.5

05099400 LITTLE SOUTH PEMBINA RIVER NEAR WALHALLA, ND

LOCATION.--Lat 48°51'55", long 98°00'20", in SW¼ sec.10, T.162 N., R.57 W., Cavalier County, Hydrologic Unit 09020313, on right bank 25 ft (8 m) upstream from county bridge, 3.5 mi (5.6 km) above mouth, and 6 mi (10 km) southwest of Walhalla.

DRAINAGE AREA.--182 mi^2 (471 km^2), of which 10 mi^2 (26 km^2) is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1956 to current year. Prior to October 1973, published as Little Pembina River near Walhalla.

REVISED RECORDS.--WSP 1728: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,099.48 ft (335.122 m) National Geodetic Vertical Datum of 1929. Prior to Sept. 10, 1956, nonrecording gage at bridge 25 ft (8 m) downstream at same datum.

REMARKS.--Records good except those for the winter period, which are fair. Flow regulated since March 1971 by Mt. Carmel Reservoir, 30 mi (48 km) upstream, capacity, 4,200 acre-ft (5.18 hm^3).

AVERAGE DISCHARGE.--23 years, 23.4 ft^3/s (0.663 m^3/s), 16,950 acre-ft/yr (20.9 hm^3/yr); median of yearly mean discharges, 20 ft^3/s (0.57 m^3/s), 14,500 acre-ft/yr (18 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,600 ft^3/s (187 m^3/s) Apr. 25, 1970, gage height, 13.95 ft (4.252 m); no flow at times in some years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,200 ft^3/s (90.6 m^3/s) Apr. 19, gage height, 12.44 ft (3.792 m), from floodmark; minimum daily, 0.20 ft^3/s (0.006 m^3/s) Jan. 17 to Feb. 28.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.88	1.3	.35	.25	.20	.23	.60	198	36	5.6	1.4	45
2	.88	1.3	.35	.25	.20	.23	.60	253	34	6.2	1.4	17
3	.88	1.3	.35	.25	.20	.23	.50	172	30	43	1.3	7.2
4	1.0	1.3	.35	.25	.20	.36	.50	130	28	39	1.3	4.0
5	1.1	1.3	.35	.25	.20	.36	.40	110	25	34	1.2	2.8
6	1.1	1.0	.35	.25	.20	.49	.40	102	23	31	1.2	2.1
7	1.1	1.4	.35	.25	.20	.49	.40	130	20	26	1.2	1.8
8	1.1	1.4	.35	.25	.20	.62	5.0	146	18	22	1.1	1.7
9	1.1	1.4	.35	.25	.20	.62	30	127	17	18	1.1	3.3
10	1.0	.88	.35	.25	.20	.62	15	112	15	15	1.0	2.9
11	1.0	.80	.35	.25	.20	.62	10	108	13	13	1.1	2.5
12	1.0	.75	.35	.25	.20	.62	5.0	130	11	12	.95	2.1
13	1.0	.75	.35	.25	.20	.62	4.0	166	9.0	11	1.0	1.9
14	1.0	.70	.35	.25	.20	.62	4.0	134	7.5	8.2	.95	1.7
15	1.0	.70	.35	.25	.20	.62	5.0	118	6.2	5.6	.88	1.5
16	1.0	.70	.35	.25	.20	.62	6.0	108	5.5	5.6	.95	1.3
17	1.0	.65	.35	.20	.20	1.0	8.0	130	4.8	4.8	.88	1.3
18	1.0	.65	.35	.20	.20	1.0	300	106	4.0	4.6	.88	1.2
19	1.1	.60	.35	.20	.20	.80	2060	79	4.4	4.8	.88	1.2
20	1.0	.40	.35	.20	.20	.75	2040	64	30	3.4	.88	1.1
21	1.0	.30	.35	.20	.20	.75	1710	54	33	3.1	.82	1.0
22	1.0	.30	.35	.20	.20	.75	1230	62	27	2.8	1.1	1.5
23	.75	.35	.35	.20	.20	1.5	1210	58	20	3.1	1.0	1.8
24	.88	.40	.30	.20	.20	.70	864	51	15	3.4	.82	1.4
25	.88	.40	.30	.20	.20	.60	828	46	12	9.3	.76	1.2
26	.88	.40	.30	.20	.20	.60	548	47	9.0	4.6	.76	1.2
27	.88	.40	.30	.20	.20	.60	364	43	6.8	2.6	.70	1.1
28	.88	.40	.30	.20	.20	.60	277	36	6.5	2.1	.95	1.1
29	1.3	.40	.30	.20	---	.60	301	35	6.5	2.3	.88	1.9
30	1.3	.40	.25	.20	---	.60	228	38	6.2	1.8	.82	3.3
31	1.3	---	.25	.20	---	.60	---	38	---	1.5	49	---
TOTAL	31.29	23.03	10.35	7.00	5.60	19.42	12075.40	3131	483.2	349.4	79.16	119.1
MEAN	1.01	.77	.33	.23	.20	.63	403	101	16.1	11.3	2.55	3.97
MAX	1.3	1.4	.35	.25	.20	1.5	2080	253	36	43	49	45
MIN	.75	.30	.25	.20	.20	.23	.40	35	4.0	1.5	.70	1.0
AC-FT	62	46	21	14	11	39	23950	6210	958	693	157	236

CAL YR 1978 TOTAL 10641.22 MEAN 29.2 MAX 1320 MIN .03 AC-FT 21110
WTR YR 1979 TOTAL 16333.95 MEAN 44.8 MAX 2080 MIN .20 AC-FT 32400

05099400 LITTLE SOUTH PEMBINA RIVER NEAR WALHALLA, ND--Continued

WATER-QUALITY RECORD

PERIOD OF RECORD.--Water years 1962 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE (DEG C) (00010)	COLOR (PLAT-INUM-COBALT UNITS) (00080)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L) (00310)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)
OCT										
24...	1025	.84	900	8.6	6.0	5	4.4	10.4	.3	100
24...	1430	--	--	--	--	--	--	11.4	--	--
NOV										
29...	1015	.41	919	7.6	.0	2	1.0	11.4	--	K17
DEC										
20...	1245	.35	1000	8.3	.0	--	.50	10.4	.3	8
FEB										
01...	0940	.20	925	8.0	.0	3	1.7	10.8	--	K2
21...	1410	.20	917	7.8	.0	--	1.8	12.0	.2	K4
MAR										
22...	0940	.72	909	7.8	.5	--	2.5	12.0	.2	K9
APR										
19...	1900	2830	204	8.3	.5	480	860	--	7.2	--
23...	1405	965	339	8.0	3.0	30	500	12.0	2.0	--
27...	1500	333	409	8.0	7.5	40	150	11.2	2.5	K20
MAY										
03...	1025	178	499	8.0	4.5	40	300	12.0	1.0	K68
31...	0955	36	680	8.3	10.0	--	28	10.6	1.4	K30
JUN										
27...	1035	7.6	869	--	17.5	--	--	10.0	1.3	200
JUL										
25...	1955	7.9	820	8.3	23.0	25	31	7.2	3.2	--
AUG										
29...	1400	.97	790	8.7	20.0	--	--	13.8	.4	70
SEP										
26...	0915	1.1	839	8.0	10.0	5	1.2	9.7	.4	K16

DATE	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY (MG/L AS CACO3) (00410)
OCT									
24...	--	--	--	--	--	--	--	--	240
24...	--	--	--	--	--	--	--	--	--
NOV									
29...	370	110	100	28	59	26	1.3	7.6	260
DEC									
20...	--	--	--	--	--	--	--	--	450
FEB									
01...	330	110	85	29	58	27	1.4	7.3	220
21...	--	--	--	--	--	--	--	--	270
MAR									
22...	--	--	--	--	--	--	--	--	270
APR									
19...	61	27	18	3.8	13	31	.7	2.5	34
23...	120	44	33	8.5	24	30	1.0	4.4	73
27...	140	63	37	11	29	30	1.1	5.4	75
MAY									
03...	150	52	41	12	35	33	1.2	4.9	100
31...	--	--	--	--	--	--	--	--	150
JUN									
27...	--	--	--	--	--	--	--	--	--
JUL									
25...	240	52	64	20	72	36	2.0	11	190
AUG									
29...	--	--	--	--	63	--	--	--	220
SEP									
26...	320	110	88	24	60	36	1.5	7.6	210

K - Results based on colony count outside the acceptable range (non-ideal colony count).

05099400 LITTLE SOUTH PEMBINA RIVER NEAR WALHALLA, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)
OCT									
24...	200	18	.4	20	623	--	.85	1.41	--
24...	--	--	--	--	--	--	--	--	--
NOV									
29...	170	18	.3	20	601	563	.82	.67	--
DEC									
20...	--	--	--	--	--	--	--	--	--
FEB									
01...	210	17	.4	20	617	563	.84	.33	--
21...	--	--	--	--	--	--	--	--	--
MAR									
22...	--	--	--	--	--	--	--	--	--
APR									
19...	56	2.2	.2	8.8	132	117	.18	1010	--
23...	73	4.8	.3	14	241	218	.33	628	--
27...	100	6.5	.2	18	284	265	.39	255	--
MAY									
03...	140	7.4	.3	18	345	329	.47	166	--
31...	--	--	--	--	--	--	--	--	--
JUN									
27...	--	--	--	--	--	--	--	--	--
JUL									
25...	--	23	.5	30	567	420	.77	12.1	.02
AUG									
29...	--	--	--	--	--	--	--	--	--
SEP									
26...	230	13	.4	22	579	572	.79	1.72	--

DATE	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS NO2) (71856)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS NH4) (71846)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)	BORON, DIS-SOLVED (UG/L AS B) (01020)
OCT									
24...	--	.01	.00	.00	.82	.08	.05	.15	140
24...	--	--	--	--	--	--	--	--	--
NOV									
29...	--	.76	.00	.00	.26	.10	.08	.25	130
DEC									
20...	--	.86	.00	.00	.37	.13	.09	.28	--
FEB									
01...	--	.77	.02	.03	.17	.12	.07	.21	140
21...	--	.75	.04	.05	.95	.11	.03	.09	--
MAR									
22...	--	1.0	.01	.01	.20	.09	.10	.31	--
APR									
19...	--	2.7	.04	.05	4.7	.23	.19	.58	50
23...	--	2.6	.07	.09	3.9	.23	.18	.55	60
27...	--	2.7	.09	.12	1.8	.25	.20	.61	70
MAY									
03...	--	2.2	.14	.18	1.4	.23	.21	.64	80
31...	--	.65	.00	.00	.55	.17	.13	.40	--
JUN									
27...	--	--	--	--	--	--	--	--	--
JUL									
25...	.09	--	.00	.00	.76	.25	.13	.40	180
AUG									
29...	--	.05	.01	.01	.66	.11	.09	.28	--
SEP									
26...	--	.04	.00	.00	.38	.11	.13	.40	160

05099400 LITTLE SOUTH PEMBINA RIVER NEAR WALHALLA, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	PCB, TOTAL (UG/L) (39516)	ALDRIN, TOTAL (UG/L) (39330)	CHLOR-DANE, TOTAL (UG/L) (39350)	DDD, TOTAL (UG/L) (39360)	DDE, TOTAL (UG/L) (39365)	DDT, TOTAL (UG/L) (39370)	DI-AZINON, TOTAL (UG/L) (39570)
NOV									
29...	10	210	.0	.00	.0	.00	.00	.00	.00
FEB									
01...	10	260	.0	.00	.0	.00	.00	.00	.00
APR									
19...	300	60	--	--	--	--	--	--	--
23...	180	50	--	--	--	--	--	--	--
27...	240	40	--	--	--	--	--	--	--
MAY									
03...	80	30	.0	.00	.0	.00	.00	.00	.00
JUL									
25...	0	40	.0	.00	.0	.00	.00	.00	.00
SEP									
26...	<10	50	.0	.00	.0	.00	.00	.00	.00

DATE	DI-ELDRIN TOTAL (UG/L) (39380)	ENDO-SULFAN, TOTAL (UG/L) (39388)	ENDRIN, TOTAL (UG/L) (39390)	ETHION, TOTAL (UG/L) (39398)	HEPTA-CHLOR, TOTAL (UG/L) (39410)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L) (39420)	LINDANE TOTAL (UG/L) (39340)	MALA-THION, TOTAL (UG/L) (39530)
NOV								
29...	.00	.00	.00	.00	.00	.00	.00	.00
FEB								
01...	.00	.00	.00	.00	.00	.00	.00	.00
APR								
19...	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--
MAY								
03...	.00	.00	.00	.00	.00	.00	.00	.00
JUL								
25...	.00	.00	.00	.00	.00	.00	.00	.00
SEP								
26...	.00	.00	.00	.00	.00	.00	.00	.00

DATE	METH-OXY-CHLOR, TOTAL (UG/L) (39480)	METHYL PARA-THION, TOTAL (UG/L) (39600)	METHYL TRI-THION, TOTAL (UG/L) (39790)	NAPH-THA-LENES, POLY-CHLOR, TOTAL (UG/L) (39250)	MIREX, TOTAL (UG/L) (39755)	PARA-THION, TOTAL (UG/L) (39540)	PER-THANE TOTAL (UG/L) (39034)	TOX-APHENE, TOTAL (UG/L) (39400)	TOTAL TRI-THION (UG/L) (39786)	2,4-D, TOTAL (UG/L) (39730)	2,4,5-T TOTAL (UG/L) (39740)
OCT											
24...	--	--	--	--	--	--	--	--	--	--	--
NOV											
29...	--	.00	.00	.00	.00	.00	.00	0	.00	.00	.00
DEC											
20...	--	--	--	--	--	--	--	--	--	--	--
FEB											
01...	--	.00	.00	--	.00	.00	.00	0	.00	.00	.00
21...	--	--	--	--	--	--	--	--	--	--	--
MAR											
22...	--	--	--	--	--	--	--	--	--	--	--
APR											
23...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
MAY											
03...	--	.00	.00	--	.00	.00	.00	0	.00	.15	.00
31...	--	--	--	--	--	--	--	--	--	--	--
JUN											
27...	--	--	--	--	--	--	--	--	--	--	--
JUL											
25...	--	.00	.00	--	.00	.00	.00	0	.00	.02	.00
AUG											
29...	--	--	--	--	--	--	--	--	--	--	--
SEP											
26...	.00	.00	.00	--	.00	.00	.00	0	.00	.00	.00

05099400 LITTLE SOUTH PEMBINA RIVER NEAR WALHALLA, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	SILVEX, TOTAL (UG/L) (39760)	SEDIMENT, SUSPENDED (MG/L) (80154)	SEDIMENT DISCHARGE, SUSPENDED (T/DAY) (80155)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70338)	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70340)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SED. SUSP. SIEVE DIAM. % FINER THAN .125 MM (70332)	SED. SUSP. SIEVE DIAM. % FINER THAN .250 MM (70333)	SED. SUSP. SIEVE DIAM. % FINER THAN .500 MM (70334)	SED. SUSP. SIEVE DIAM. % FINER THAN 1.00 MM (70335)	SED. SUSP. SIEVE DIAM. % FINER THAN 2.00 MM (70336)
OCT											
24...	--	20	.05	--	--	--	--	--	--	--	--
NOV											
29...	.00	12	.01	--	--	--	--	--	--	--	--
DEC											
20...	--	19	.02	--	--	--	--	--	--	--	--
FEB											
01...	.00	5	.00	--	--	--	--	--	--	--	--
21...	--	30	.02	--	--	--	--	--	--	--	--
MAR											
22...	--	12	.02	--	--	--	--	--	--	--	--
APR											
23...	--	2880	7500	42	62	68	72	76	82	90	98
27...	--	852	766	58	81	86	88	90	93	96	98
MAY											
03...	.00	464	223	68	91	96	97	98	100	--	--
31...	--	96	9.3	--	--	--	--	--	--	--	--
JUN											
27...	--	15	.31	--	--	--	--	--	--	--	--
JUL											
25...	.00	112	2.4	--	--	--	--	--	--	--	--
AUG											
29...	--	22	.06	--	--	--	--	--	--	--	--
SEP											
26...	.00	12	.04	--	--	--	--	--	--	--	--

DATE	BED MAT. SIEVE DIAM. % FINER THAN .062 MM (80164)	BED MAT. SIEVE DIAM. % FINER THAN .125 MM (80165)	BED MAT. SIEVE DIAM. % FINER THAN .250 MM (80166)	BED MAT. SIEVE DIAM. % FINER THAN .500 MM (80167)	BED MAT. SIEVE DIAM. % FINER THAN 1.00 MM (80168)	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM (80169)	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM (80170)	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM (80171)	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM (80172)	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM (80173)
APR										
23...	0	0	1	5	17	43	71	90	99	100
27...	0	1	2	8	23	48	69	91	97	100
MAY										
03...	1	2	4	12	23	41	63	88	98	100

DISSOLVED OXYGEN AND WATER TEMPERATURE PROFILE, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	MG/L	DEGREES, C
Oct. 25, 1978		
1530	10.8	7.0
1600	10.8	-
1700	10.8	-
1800	10.7	-
1900	10.5	-
2000	10.4	-
2100	10.4	6.0
2200	10.2	-
2300	10.1	-
2400	10.0	-
Oct. 26, 1978		
0100	9.9	-
0200	9.7	-
0300	9.6	-
0400	9.6	6.0
0500	9.7	-
0600	9.8	-
0700	9.9	-
0800	9.9	-
0900	10.1	-
1000	10.4	7.0
1100	10.7	-
1200	10.6	-
1300	10.5	-
1400	10.4	-
1500	10.3	-
1530	10.2	7.5
Feb. 21, 1979		
1300	12.0	0.0
1400	12.0	.0
1500	12.0	.0
1600	12.0	.0
1700	12.0	.0
1800	12.0	.0
1900	11.9	.0
2000	11.9	.0
2100	11.9	0.0
2200	11.9	.0
2300	11.9	.0
2400	11.9	.0
Feb. 22, 1979		
0100	11.9	.0
0200	11.8	.0
0300	11.8	.0
0400	11.8	.0
0500	11.8	.0
0600	11.8	.0
0700	11.8	.0
0800	11.8	.0
0900	11.9	.0
1000	11.9	.0
1100	11.9	.0
1200	11.9	.0
1300	11.9	.0
May 31, 1979		
1500	10.0	17.0
1600	9.7	-
1700	9.6	-
1800	9.5	17.5
1900	9.3	-
2000	9.2	-
2100	9.0	-
2200	9.0	-
2300	9.0	-
2400	9.2	-
June 1, 1979		
0100	9.3	-
0200	9.3	-
0300	9.3	12.0
0400	9.4	-
0500	9.4	-
0600	9.5	-
0700	9.7	-
0800	10.1	11.0
0900	10.2	-
1000	10.2	-
1100	10.2	-
1200	10.1	-
1300	10.1	-
1400	9.9	-
1500	9.7	-
Aug. 29, 1979		
1200	12.4	18.0
1300	13.3	19.5
1400	13.8	20.0
1500	14.0	20.5
1600	14.3	21.5
1700	14.7	21.5
1800	14.2	21.5
1900	13.4	20.5
2000	10.5	19.5
2100	8.0	18.5
2200	7.4	17.0
2300	7.2	16.0
2400	7.1	15.0
Aug. 30, 1979		
0100	7.2	14.5
0200	7.4	13.5
0300	7.6	13.5
0400	7.7	13.0
0500	7.7	12.5
0600	7.9	12.0
0700	8.2	11.5
0800	8.7	11.5
0900	9.3	12.0
1000	10.6	13.5
1100	11.8	16.0
1200	-	18.0

05099600 PEMBINA RIVER AT WALHALLA, ND

LOCATION.--Lat 48°54'50", long 97°55'00", in NE¼NE¼ sec.29, T.163 N., R.56 W., Pembina County, Hydrologic Unit 09020313, on left bank at downstream side of bridge on State Highway 32, at south edge of Walhalla, and 7 mi (11 km) downstream from Little South Pembina River.

DRAINAGE AREA.--3,350 mi^2 (8,680 km^2), approximately.

WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WSP 1388: 1943, 1950(P). WSP 1558: 1957. WSP 1728: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 934 ft (284.7 m), from topographic map. Prior to Nov. 10, 1943, nonrecording gage and Nov. 10, 1943, to Sept. 30, 1963, water-stage recorder at site 5.5 mi (8.8 km) upstream at different datum.

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

AVERAGE DISCHARGE.--40 years, 248 ft^3/s (7.023 m^3/s), 179,700 acre-ft/yr (222 hm^3/yr); median of yearly mean discharges, 190 ft^3/s (5.38 m^3/s), 138,000 acre-ft/yr (170 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 20,400 ft^3/s (578 m^3/s) Apr. 18, 1950, gage height, 19.2 ft (5.85 m) former site and datum, 16.2 ft (4.938 m) present site and datum, from rating curve extended above 7,000 ft^3/s (198 m^3/s) on basis of contracted-opening measurement of peak flow; no flow at times in some years.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 400 ft^3/s (11.3 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Apr. 20	0600	*9,130	259	13.32	4.060	July 2	2400	955	27.0	5.33	1.625
May 3	2000	5,780	164	10.78	3.286						

Minimum daily discharge, 3.0 ft^3/s (0.085 m^3/s) Feb. 18-24.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21	16	7.4	4.0	4.0	3.5	4.5	4680	1300	380	88	85
2	21	15	7.2	4.0	4.0	3.5	4.5	5610	1260	468	85	61
3	21	15	7.0	4.0	4.0	3.5	4.5	5720	1200	785	86	51
4	21	15	6.8	4.0	4.0	3.5	4.5	5490	1170	528	83	45
5	20	17	6.6	4.0	4.0	3.5	4.5	5270	1120	418	78	43
6	20	17	6.4	4.0	4.0	3.5	4.5	5080	1070	362	72	40
7	20	16	6.2	4.0	4.0	3.5	4.5	4850	990	325	71	39
8	18	16	6.0	4.0	4.0	3.5	4.5	4580	950	298	67	39
9	18	16	5.8	4.0	4.0	3.5	4.5	4220	910	274	64	42
10	18	14	5.6	4.0	3.8	3.5	4.5	3940	870	248	61	45
11	18	12	5.4	4.0	3.8	3.5	4.7	3730	845	232	58	45
12	18	11	5.2	4.0	3.8	3.5	15	3580	795	216	56	47
13	18	10	5.0	4.0	3.5	3.5	70	3550	728	202	54	45
14	18	10	4.8	4.0	3.5	3.5	50	3320	700	190	52	44
15	17	10	4.6	4.0	3.5	3.5	20	3100	672	180	50	43
16	17	10	4.4	4.0	3.3	3.5	30	2890	632	170	51	42
17	16	10	4.2	4.0	3.3	4.5	30	2810	612	160	50	41
18	16	9.5	4.0	4.0	3.0	4.7	500	2610	584	150	46	40
19	16	9.5	3.8	4.0	3.0	4.7	6800	2410	553	144	42	39
20	16	9.2	3.8	4.0	3.0	4.7	8610	2290	664	136	40	39
21	16	9.0	3.8	4.0	3.0	4.7	7220	2180	664	128	42	38
22	16	9.0	3.8	4.0	3.0	4.7	6170	2130	633	116	47	42
23	16	9.0	3.8	4.0	3.0	5.0	6160	2000	588	118	40	45
24	16	9.0	3.8	4.0	3.0	4.8	5520	1870	537	109	38	44
25	16	8.5	3.8	4.0	3.5	4.6	5360	1760	504	128	38	44
26	16	8.5	3.8	4.0	3.5	4.5	4070	1700	474	109	37	43
27	16	8.0	3.8	4.0	3.5	4.5	3390	1620	450	102	34	43
28	16	7.6	3.8	4.0	3.5	4.5	3170	1500	444	99	36	42
29	16	7.5	3.9	4.0	---	4.5	3490	1440	429	94	36	42
30	16	7.5	4.0	4.0	---	4.5	3920	1390	405	94	36	42
31	16	---	4.0	4.0	---	4.5	---	1330	---	92	54	---
TOTAL	544	341.8	152.5	124.0	99.5	125.4	64644.7	98650	22753	7055	1692	1340
MEAN	17.5	11.4	4.92	4.00	3.55	4.05	2155	3182	758	228	54.6	44.7
MAX	21	17	7.4	4.0	4.0	5.0	8610	5720	1300	785	88	85
MIN	16	7.5	3.8	4.0	3.0	3.5	4.5	1330	405	92	34	38
AC-FT	1080	678	302	246	197	249	128200	195700	45130	13990	3360	2660

CAL YR 1978 TOTAL 57830.00 MEAN 158 MAX 3090 MIN .10 AC-FT 114700
WTR YR 1979 TOTAL 197521.90 MEAN 541 MAX 8610 MIN 3.0 AC-FT 391800

05099600 PEMBINA RIVER AT WALHALLA, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1962 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: April 1962 to September 1972, October 1974 to current year.
WATER TEMPERATURES: April 1962 to September 1972, October 1974 to current year.

INSTRUMENTATION.--Water-quality monitor since August 1976. Once-daily observer readings are supplemented by continuous monitor records during high flow periods.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,290 micromhos Feb. 17, 1972; minimum daily, 223 micromhos Apr. 9, 1971.
WATER TEMPERATURES: Maximum recorded, 31.5°C July 20, 1979; minimum daily, 0.0°C on many days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum observed, 1,150 micromhos Dec. 14, 17; minimum daily, 233 micromhos Apr. 19.
WATER TEMPERATURES: Maximum recorded, 31.5°C July 20; minimum daily, 0.0°C on many days during winter months.

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE (DEG C) (00010)	COLOR (PLAT-INUM-COBALT UNITS) (00080)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L) (00310)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	HARD-NESS (MG/L AS CACO3) (00900)
OCT											
23...	1440	16	900	8.6	6.0	30	16	11.4	3.3	23	370
NOV											
28...	1345	7.6	1080	7.8	.5	4	2.4	10.8	1.4	K3	450
DEC											
19...	1305	3.8	1010	--	.0	--	--	--	.1	--	--
JAN											
31...	1340	4.1	910	7.9	.0	4	2.1	12.0	--	K2	440
FEB											
20...	1440	3.0	866	7.7	.0	4	2.3	11.6	.4	<10	400
MAR											
21...	1110	4.7	880	7.7	.5	7	4.9	11.9	.2	K1	430
APR											
19...	1255	7530	239	8.2	.5	--	1200	12.2	--	510	--
24...	1530	5580	368	7.9	3.5	--	1000	11.2	2.5	K280	--
28...	1420	2990	430	7.9	7.0	--	290	11.0	3.5	K27	--
MAY											
02...	1050	5650	415	7.9	5.5	50	620	11.0	2.5	K63	140
15...	1330	3240	435	8.0	10.5	--	270	10.3	3.0	K2	--
30...	0935	1410	549	8.1	15.0	45	190	8.6	2.9	K60	210
JUN											
26...	1410	470	739	8.2	22.5	45	48	8.3	1.7	200	270
JUL											
24...	1440	112	730	8.4	28.0	40	12	8.2	3.9	67	300
AUG											
27...	1535	34	875	--	22.0	--	--	--	--	--	--
28...	0830	41	841	8.3	18.5	5	29	7.7	.8	150	370
SEP											
25...	1400	43	815	8.6	16.5	10	6.4	11.0	.9	21	330

DATE	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
OCT										
23...	92	91	35	54	24	1.2	8.4	280	210	18
NOV										
28...	120	110	42	58	22	1.2	8.7	330	220	17
JAN										
31...	130	120	33	38	16	.8	6.1	310	190	12
FEB										
20...	98	110	30	31	14	.7	4.5	300	160	11
MAR										
21...	130	120	31	36	15	.8	5.6	300	190	15
APR										
19...	--	--	--	--	--	--	--	36	--	--
24...	--	--	--	--	--	--	--	53	--	--
28...	--	--	--	--	--	--	--	80	--	--
MAY										
02...	32	37	12	24	26	.9	5.6	110	100	6.9
15...	--	--	--	--	--	--	--	92	--	--
30...	78	52	19	28	22	.8	7.2	130	150	7.8
JUN										
26...	84	62	29	45	25	1.2	9.6	190	180	10
JUL										
24...	67	66	32	52	27	1.3	11	230	--	19
AUG										
28...	120	89	35	50	22	1.1	9.3	250	210	15
SEP										
25...	100	78	33	52	35	1.2	9.2	230	200	16

K - Results based on colony count outside the acceptable range (non-ideal colony count).

05099600 PEMBINA RIVER AT WALHALLA, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS NO2) (71856)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)
OCT										
23...	.3	19	622	--	.85	26.9	--	--	.03	.00
NOV										
28...	.3	23	727	--	.99	14.9	--	--	.05	.00
DEC										
19...	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--
JAN										
31...	.3	22	608	609	.83	6.73	--	--	.16	.06
FEB										
20...	.3	22	565	551	.77	4.58	--	--	.19	.08
MAR										
21...	.4	20	572	600	.78	7.26	--	--	.20	.06
APR										
19...	--	--	--	--	--	--	--	--	2.0	.04
24...	--	--	--	--	--	--	--	--	3.0	.03
28...	--	--	--	--	--	--	--	--	2.6	.07
MAY										
02...	.2	16	294	280	.40	4490	--	--	2.5	.12
15...	--	--	--	--	--	--	--	--	1.4	.04
30...	.8	19	379	363	.52	1440	--	--	.15	.00
JUN										
26...	.2	24	511	474	.70	648	--	--	.03	.00
JUL										
24...	.3	32	576	420	.78	174	.00	.00	--	.07
AUG										
25...	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--
28...	.3	25	577	584	.78	e3.9	--	--	.05	.01
SEP										
25...	.2	20	558	548	.76	64.8	--	--	.02	.00

DATE	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS NH4) (71846)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BORON, DIS-SOLVED (UG/L AS B) (01020)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)
OCT										
23...	.00	.51	.07	.03	.09	20	2	100	170	--
NOV										
28...	.00	.61	.06	.04	.12	--	--	--	150	--
DEC										
19...	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--
JAN										
31...	.08	.25	.05	.01	.03	--	--	--	110	--
FEB										
20...	.10	.17	.04	.00	.00	--	--	--	130	--
MAR										
21...	.08	.21	.04	.05	.15	--	--	--	110	--
APR										
19...	.05	6.1	.17	.10	.31	--	--	--	--	--
24...	.04	4.4	.02	.17	.52	--	--	--	--	--
28...	.09	2.8	.20	.18	.55	--	--	--	--	--
MAY										
02...	.15	3.1	.20	.17	.52	50	2	200	80	0
15...	.05	--	.15	.09	.28	--	--	--	--	--
30...	.00	1.4	.13	.40	1.2	--	--	--	70	--
JUN										
26...	.00	1.0	.19	.11	.34	--	--	--	120	--
JUL										
24...	.09	66	.26	.12	.37	--	--	--	150	--
AUG										
25...	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--
28...	.01	.72	.11	.12	.37	--	--	--	160	--
SEP										
25...	.00	.62	.10	.12	.37	0	4	90	160	<1

05099600 PEMBINA RIVER AT WALHALLA, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)
OCT										
23...	0	0	8	20	--	70	210	.0	4	9
NOV										
28...	--	--	--	10	--	--	500	--	--	--
JAN										
31...	--	--	--	0	--	--	650	--	--	--
FEB										
20...	--	--	--	10	--	--	700	--	--	--
MAR										
21...	--	--	--	0	--	--	540	--	--	--
MAY										
02...	0	4	2	180	0	30	40	.0	3	10
30...	--	--	--	30	--	--	20	--	--	--
JUN										
26...	--	--	--	20	--	--	30	--	--	--
JUL										
24...	--	--	--	10	--	--	40	--	--	--
AUG										
28...	--	--	--	0	--	--	90	--	--	--
SEP										
25...	0	<3	2	<10	0	60	50	.2	<10	5

DATE	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)	VANA-DIUM, DIS-SOLVED (UG/L AS V) (01085)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	CYANIDE TOTAL (MG/L AS CN) (00720)	PCB, TOTAL (UG/L) (39516)	ALDRIN, TOTAL (UG/L) (39330)	CHLOR-DANE, TOTAL (UG/L) (39350)	DDD, TOTAL (UG/L) (39360)	DDE, TOTAL (UG/L) (39365)
OCT										
23...	0	440	.0	10	.00	--	--	--	--	--
NOV										
28...	--	--	--	--	--	.0	.00	.0	.00	.00
JAN										
31...	--	--	--	--	--	.0	.00	.0	.00	.00
MAY										
02...	1	190	1.8	40	.00	.0	.00	.0	.00	.00
30...	--	--	--	--	--	--	--	--	--	--
JUN										
26...	--	--	--	--	--	--	--	--	--	--
JUL										
24...	--	--	--	--	--	.0	.00	.0	.00	.00
AUG										
28...	--	--	--	--	--	--	--	--	--	--
SEP										
25...	1	380	<1.0	3	.00	.0	.00	.0	.00	.00

DATE	DDT, TOTAL (UG/L) (39370)	DI-AZINON, TOTAL (UG/L) (39570)	DI-ELDRIN TOTAL (UG/L) (39380)	ENDO-SULFAN, TOTAL (UG/L) (39388)	ENDRIN, TOTAL (UG/L) (39390)	ETHION, TOTAL (UG/L) (39398)	HEPTA-CHLOR, TOTAL (UG/L) (39410)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L) (39420)	LINDANE TOTAL (UG/L) (39340)	MALA-THION, TOTAL (UG/L) (39530)
OCT										
23...	--	--	--	--	--	--	--	--	--	--
NOV										
28...	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
JAN										
31...	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
MAY										
02...	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
30...	--	--	--	--	--	--	--	--	--	--
JUN										
26...	--	--	--	--	--	--	--	--	--	--
JUL										
24...	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AUG										
28...	--	--	--	--	--	--	--	--	--	--
SEP										
25...	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

05099600 PEMBINA RIVER AT WALHALLA, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	METH-OXY-CHLOR, TOTAL (UG/L) (39480)	METHYL PARA-THION, TOTAL (UG/L) (39600)	METHYL TRI-THION, TOTAL (UG/L) (39790)	NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L) (39250)	MIREX, TOTAL (UG/L) (39755)	PARA-THION, TOTAL (UG/L) (39540)	PER-THANE TOTAL (UG/L) (39034)	TOX-APHENE, TOTAL (UG/L) (39400)	TOTAL TRI-THION (UG/L) (39786)	2,4-D, TOTAL (UG/L) (39730)	2,4,5-T TOTAL (UG/L) (39740)
OCT											
23...	--	--	--	--	--	--	--	--	--	--	--
NOV											
28...	--	.00	.00	.00	.00	.00	.00	0	.00	.00	.00
DEC											
19...	--	--	--	--	--	--	--	--	--	--	--
JAN											
31...	--	.00	.00	--	.00	.00	.00	0	.00	.00	.00
MAY											
02...	--	.00	.00	--	.00	.00	.00	0	.00	.08	.00
15...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
JUN											
26...	--	--	--	--	--	--	--	--	--	--	--
JUL											
24...	--	.00	.00	--	.00	.00	.00	0	.00	.02	.00
AUG											
27...	--	--	--	--	--	--	--	--	--	--	--
SEP											
25...	.00	.00	.00	--	.00	.00	.00	0	.00	.00	.00

DATE	SILVEX, TOTAL (UG/L) (39760)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70338)	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70340)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SED. SUSP. SIEVE DIAM. % FINER THAN .125 MM (70332)	SED. SUSP. SIEVE DIAM. % FINER THAN .250 MM (70333)	SED. SUSP. SIEVE DIAM. % FINER THAN .500 MM (70334)	SED. SUSP. SIEVE DIAM. % FINER THAN 1.00 MM (70335)	SED. SUSP. SIEVE DIAM. % FINER THAN 2.00 MM (70336)
OCT											
23...	--	40	1.7	--	--	--	--	--	--	--	--
NOV											
28...	.00	19	.39	--	--	--	--	--	--	--	--
DEC											
19...	--	44	.45	--	--	--	--	--	--	--	--
JAN											
31...	.00	9	.10	--	--	--	--	--	--	--	--
FEB											
20...	--	32	.26	--	--	--	--	--	--	--	--
MAR											
21...	--	24	.30	--	--	--	--	--	--	--	--
APR											
19...	--	4220	85800	54	76	86	90	95	99	100	--
24...	--	3120	47000	53	74	83	86	90	95	99	100
28...	--	1680	13600	47	69	82	86	90	96	99	100
MAY											
02...	.00	2140	32600	46	67	76	80	86	94	98	100
15...	--	1280	11200	35	53	62	65	69	81	95	100
30...	--	852	3240	40	58	65	66	72	90	98	99
JUN											
26...	--	332	421	--	--	--	--	--	--	--	--
JUL											
24...	.00	26	7.9	--	--	--	--	--	--	--	--
AUG											
27...	--	86	7.9	--	--	--	--	--	--	--	--
SEP											
25...	.00	21	2.4	--	--	--	--	--	--	--	--

DATE	BED MAT. SIEVE DIAM. % FINER THAN .062 MM (80164)	BED MAT. SIEVE DIAM. % FINER THAN .125 MM (80165)	BED MAT. SIEVE DIAM. % FINER THAN .250 MM (80166)	BED MAT. SIEVE DIAM. % FINER THAN .500 MM (80167)	BED MAT. SIEVE DIAM. % FINER THAN 1.00 MM (80168)	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM (80169)	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM (80170)	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM (80171)	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM (80172)	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM (80173)	BED MAT. SIEVE DIAM. % FINER THAN 64.0 MM (80174)
APR											
19...	--	--	--	--	--	--	--	--	--	--	--
24...	0	0	1	9	20	31	42	59	72	79	100
28...	0	0	1	16	56	80	87	93	100	--	--
MAY											
02...	0	0	0	5	28	48	61	76	87	97	100
15...	0	0	1	10	36	54	68	81	91	100	--
30...	0	0	0	7	31	49	61	79	83	96	100

05099600 PEMBINA RIVER AT WALHALLA, ND--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	---	---	434	399	461	426						
2	---	---	427	408	468	465						
3	---	---	443	429	522	493						
4	---	---	450	442	551	527						
5	---	---	441	435	577	552						
6	---	---	434	401	591	578						
7	---	---	421	394	605	585						
8	---	---	420	417	611	606						
9	---	---	423	414	616	608						
10	---	---	415	393	632	618						
11	---	---	422	392	642	628						
12	---	---	440	424	658	639						
13	---	---	435	420	669	659						
14	---	---	434	429	680	670						
15	---	---	458	433	687	671						
16	---	---	440	423	688	677						
17	---	---	454	424	695	684						
18	---	---	553	443	702	685						
19	239	233	577	544	714	692						
20	324	236	580	565	720	667						
21	346	317	578	565	722	700						
22	347	337	579	559	728	712						
23	362	347	581	567	729	713						
24	374	360	583	561	736	725						
25	395	366	586	571	737	726						
26	403	386	590	574	739	733						
27	412	395	590	578	---	---						
28	445	406	585	577	---	---						
29	458	447	590	575	---	---						
30	458	437	561	367	---	---						
31	---	---	451	394	---	---						
MONTH	458	233	590	367	739	426						

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	---	---	6.0	5.5	15.5	14.0	23.5	22.0				
2	---	---	6.0	5.5	16.5	13.5	24.0	21.0				
3	---	---	6.0	5.0	18.5	15.5	22.5	20.5				
4	---	---	5.5	5.5	19.0	16.5	23.0	19.5				
5	---	---	6.0	5.5	18.0	16.5	24.5	21.0				
6	---	---	5.5	5.0	19.0	16.5	26.0	22.5				
7	---	---	5.5	4.5	18.0	16.0	24.0	21.5				
8	---	---	5.0	5.0	18.0	15.0	26.5	20.5				
9	---	---	5.0	4.5	17.0	16.5	28.5	23.5				
10	---	---	4.5	4.0	18.0	15.5	29.5	25.5				
11	---	---	4.5	3.5	20.0	17.0	29.5	24.5				
12	---	---	6.5	4.0	20.5	18.0	28.5	24.5				
13	---	---	7.5	6.5	23.0	19.5	27.5	23.0				
14	---	---	10.0	7.5	23.5	21.0	24.0	21.0				
15	---	---	11.5	9.0	22.0	19.5	22.0	18.0				
16	---	---	14.0	10.5	22.0	19.5	24.5	17.0				
17	---	---	15.5	14.0	21.0	19.0	26.0	18.0				
18	---	---	14.0	12.5	22.0	18.5	27.0	20.0				
19	.5	.5	12.0	11.5	20.5	18.5	27.5	21.0				
20	1.0	.5	12.0	10.5	20.5	18.0	31.5	21.5				
21	3.5	.5	12.0	11.0	17.5	15.5	29.5	23.0				
22	4.0	2.5	12.0	11.5	17.0	15.5	30.5	20.0				
23	4.0	3.5	13.0	11.0	19.5	15.5	26.5	23.0				
24	4.0	3.0	15.0	12.0	21.0	17.0	29.5	20.5				
25	3.5	3.0	15.0	14.0	22.5	19.5	26.0	23.5				
26	4.5	3.0	17.0	13.5	23.0	19.5	---	---				
27	6.0	4.0	17.5	15.5	23.0	20.0	---	---				
28	7.0	5.5	19.0	16.5	23.5	21.0	---	---				
29	6.5	5.0	18.0	16.5	25.0	20.5	---	---				
30	5.5	4.5	16.5	14.5	26.0	21.5	---	---				
31	---	---	15.5	13.0	---	---	---	---				
MONTH	7.0	.5	19.0	3.5	26.0	13.5	31.5	17.0				

05099600 PEMBINA RIVER AT WALHALLA, ND--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	900	910	---	---	900	800	860	460	---	715	810	---
2	900	910	---	1000	900	800	890	450	610	715	810	---
3	910	910	---	1000	860	800	890	480	---	540	800	---
4	890	910	---	1000	900	800	875	480	630	650	810	---
5	890	825	975	975	900	800	850	490	640	675	800	---
6	900	825	975	975	890	800	900	---	640	725	800	840
7	900	930	975	975	880	815	925	460	650	740	800	830
8	900	900	990	975	860	800	950	450	675	740	800	830
9	910	910	---	975	860	800	950	450	670	740	810	830
10	910	910	---	975	900	800	950	460	670	740	810	830
11	920	---	975	975	900	800	950	430	690	770	810	800
12	920	---	1000	975	890	760	875	450	700	775	830	800
13	920	930	1090	1000	850	760	915	480	---	775	850	825
14	930	880	1150	950	825	775	910	---	700	775	890	830
15	930	950	990	960	825	775	910	460	700	775	855	830
16	940	950	990	960	850	800	900	---	700	750	860	840
17	920	950	1150	940	850	810	820	480	700	775	860	850
18	920	---	990	950	850	775	700	450	710	790	860	840
19	920	---	990	950	825	800	250	---	715	800	860	850
20	920	---	950	950	868	800	290	---	---	790	860	850
21	920	---	1000	950	840	825	300	---	715	790	860	850
22	920	---	1000	950	825	850	350	---	---	790	800	840
23	920	---	---	925	850	850	360	---	---	790	860	830
24	910	---	990	925	850	850	380	---	---	790	860	840
25	900	---	990	890	850	850	380	---	---	---	860	850
26	900	---	1000	900	790	855	410	---	---	775	860	850
27	900	---	1000	900	825	---	410	---	---	800	---	850
28	900	---	1000	900	825	---	420	---	---	800	860	850
29	910	---	1000	900	---	---	480	---	720	800	850	840
30	915	1050	1000	900	---	875	480	---	715	800	860	850
31	910	---	---	900	---	875	---	---	---	810	860	---
MEAN	911	916	1010	950	859	811	684	462	682	757	837	837

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10.0	3.0	---	---	.0	.0	.0	5.0	---	20.0	19.0	---
2	10.0	3.0	---	.0	.0	.0	.0	5.0	14.0	20.0	20.0	---
3	10.0	3.0	---	.0	.0	.0	.0	4.0	---	20.0	20.0	---
4	9.0	2.0	---	.0	.0	.0	.0	4.5	16.5	20.0	20.0	---
5	9.0	1.0	.0	.0	.0	.0	.0	5.0	16.5	20.0	20.0	---
6	9.0	.5	.0	.0	.0	.0	.0	---	17.0	21.0	18.5	14.0
7	8.0	1.0	.0	.0	.0	.0	.0	4.5	16.5	21.0	19.0	13.5
8	8.0	---	.0	.0	.0	.0	.0	4.5	15.0	21.5	18.5	13.5
9	7.5	1.0	---	.0	.0	.0	.0	4.5	16.5	22.5	18.0	14.5
10	8.0	.0	---	.0	.0	.0	.0	3.5	15.5	22.5	18.0	14.0
11	7.5	---	.0	.0	.0	.0	.0	3.0	16.5	23.5	18.0	14.0
12	7.5	---	.0	.0	.0	.0	.0	3.5	17.0	24.0	17.0	13.0
13	7.0	.0	.0	.0	.0	.0	.5	6.0	---	23.5	16.0	12.0
14	6.0	.0	.0	.0	.0	.0	.5	---	21.0	21.0	13.5	9.5
15	5.0	.0	.0	.0	.0	.0	1.0	8.0	20.0	20.0	13.0	12.5
16	3.0	.0	.0	.0	.0	.0	1.5	---	19.0	19.0	15.0	16.0
17	3.0	.0	.0	.0	.0	.0	.5	13.0	19.0	19.0	17.0	16.5
18	3.0	---	.0	.0	.0	.0	1.5	12.0	19.0	20.0	19.0	13.5
19	6.0	---	.0	.0	.0	.0	1.0	---	19.0	22.5	19.0	12.0
20	8.0	---	.0	.0	.0	.0	1.0	---	---	22.0	18.5	12.5
21	8.0	---	.0	.0	.0	.0	2.0	---	15.0	23.5	19.0	12.5
22	6.0	---	.0	.0	.0	.0	2.0	---	---	23.5	19.0	11.5
23	3.5	---	---	.0	.0	.0	3.0	---	---	24.0	16.0	11.5
24	5.0	---	.0	.0	.0	.0	3.0	---	---	23.0	17.0	11.5
25	4.0	---	.0	.0	.0	.0	3.0	---	---	---	18.5	12.0
26	4.0	---	.0	.0	.0	.0	3.0	---	---	20.0	19.0	12.0
27	3.5	---	.0	.0	.0	---	3.5	---	---	20.0	---	11.0
28	4.0	---	.0	.0	.0	---	5.0	---	---	21.0	19.0	10.0
29	5.0	---	.0	.0	---	---	5.0	---	20.0	21.0	18.5	10.0
30	5.0	.0	.0	.0	---	.0	4.0	---	21.0	20.0	15.0	10.0
31	2.0	---	---	.0	---	.0	---	---	---	18.0	15.0	---
MEAN	6.5	1.0	.0	.0	.0	.0	1.5	5.5	17.5	21.0	18.0	12.5

RED RIVER OF THE NORTH BASIN

05099600 PEMBINA RIVER AT WALHALLA, ND

DISSOLVED OXYGEN AND WATER TEMPERATURE PROFILE, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	MG/L	DEGREES, C
Oct. 23, 1978		
1300	11.7	6.0
1400	11.6	-
1500	11.5	-
1600	11.5	-
1700	11.4	-
1800	11.4	-
1900	11.3	-
2000	11.2	6.0
2100	11.1	-
2200	11.0	-
2300	10.8	-
2400	10.7	-
Oct. 24, 1978		
0100	10.6	-
0200	10.6	-
0300	10.5	-
0400	10.4	-
0500	10.2	-
0600	10.2	5.0
0700	10.2	-
0800	10.4	-
0900	10.4	-
1000	10.6	-
1100	10.7	-
1200	10.9	-
1245	11.0	7.0
Feb. 20, 1979		
1200	11.6	0.0
1300	11.6	.0
1400	11.6	.0
1500	11.7	.0
1600	11.8	.0
1700	11.9	.0
1800	12.0	.0
1900	11.9	.0
2000	11.8	.0
2100	11.8	0.0
2200	11.8	.0
2300	11.8	.0
2400	11.7	.0
Feb. 21, 1979		
0100	11.7	.0
0200	11.7	.0
0300	11.7	.0
0400	11.7	.0
0500	11.7	.0
0600	11.6	.0
0700	11.5	.0
0800	11.3	.0
0900	11.3	.0
1000	11.5	.0
1100	11.6	.0
1200	11.6	.0
May 29, 1979		
1600	8.6	17.5
1700	8.6	-
1800	8.6	-
1900	8.4	-
2000	8.3	-
2100	8.3	-
2200	8.3	17.0
2300	8.3	-
2400	8.3	-
May 30, 1979		
0100	8.3	-
0200	8.3	-
0300	8.4	16.0
0400	8.4	-
0500	8.4	-
0600	8.4	-
0700	8.4	-
0800	8.6	15.0
0900	8.6	-
1000	8.6	-
1100	8.7	-
1200	8.7	15.0
1300	8.7	-
1400	8.7	-
1500	8.7	-
1600	8.7	15.0
Aug. 27, 1979		
1300	9.0	20.0
1400	8.8	-
1500	9.0	-
1600	9.1	-
1700	9.0	22.5
1800	8.8	-
1900	8.5	-
2000	8.3	-
2100	8.2	21.5
2200	8.0	-
2300	7.9	-
2400	7.9	-
Aug. 28, 1979		
0100	7.9	-
0200	7.8	20.0
0300	7.7	-
0400	7.5	-
0500	7.7	-
0600	7.6	-
0700	7.6	19.0
0800	7.7	-
0900	7.7	-
1000	8.0	-
1100	8.2	-
1200	8.4	-
1300	8.4	23.0

05100000 PEMBINA RIVER AT NECHE, ND
(International gaging station)

LOCATION.--Lat 48°59'20", long 97°33'05", in SE¼NW¼ sec.31, T.164 N., R.53 W., Pembina County, Hydrologic Unit 09020313, on right bank 0.3 mi (0.5 km) east of State Highway 18, and at north edge of Neche.

DRAINAGE AREA.--3,410 mi^2 (8,830 km^2), 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.

REVISED RECORDS.--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.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 809.69 ft (246.794 m) National Geodetic Vertical Datum of 1929. Prior to May 24, 1932, nonrecording gage at Burlington Northern Railway bridge 1 mi (2 km) upstream, at same datum. May 25, 1932, to Apr. 17, 1939, nonrecording gage on bridge on State Highway 18, 500 ft (150 m) downstream from railway bridge, at same datum.

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

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

AVERAGE DISCHARGE.--71 years (1903-8, 1909-15, 1919-79), 197 ft^3/s (5.579 m^3/s), 142,700 acre-ft/yr (176 hm^3/yr); median of yearly mean discharges, 150 ft^3/s (4.25 m^3/s), 109,000 acre-ft/yr (134 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,700 ft^3/s (303 m^3/s) Apr. 20, 1950, gage height, 21.58 ft (6.578 m), backwater from ice; from rating curve extended above 5,300 ft^3/s (150 m^3/s); maximum gage height, 23.64 ft (7.205 m) Apr. 20, 1979, backwater from ice; no flow at times each year 1932-41, 1953, 1960-62.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 400 ft^3/s (11.3 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Apr. 20	2400	*9,500	269	[a]23.64	7.205	July 4	0700	815	23.1	9.50	2.896
May 4	1600	5,520	156	21.18	6.456						

Minimum daily discharge, 3.0 ft^3/s (0.085 m^3/s) Jan. 17 to Feb. 6.

a - Backwater from ice.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	33	18	7.0	4.5	3.0	3.8	4.6	3610	1480	457	110	61
2	30	20	7.0	4.5	3.0	3.8	4.6	4020	1420	440	110	72
3	25	20	7.0	4.8	3.0	3.8	4.6	4850	1370	483	112	99
4	30	20	6.5	4.8	3.0	3.8	4.6	5440	1320	802	112	92
5	30	18	6.5	4.8	3.0	3.8	4.6	5480	1270	684	112	82
6	31	17	6.0	4.8	3.0	3.8	4.6	5360	1210	552	110	70
7	31	17	6.0	4.8	3.2	3.8	4.6	5230	1150	480	107	63
8	31	16	5.5	4.8	3.2	3.8	4.6	5070	1080	429	96	61
9	31	14	5.5	4.8	3.2	3.8	4.6	4870	1020	384	94	61
10	31	12	5.0	4.8	3.2	3.8	4.6	4610	970	354	89	61
11	30	9.0	5.0	4.8	3.2	3.8	4.6	4300	918	325	86	61
12	25	10	4.5	4.8	3.2	3.8	4.6	3980	866	299	82	61
13	25	10	4.5	3.5	3.2	3.8	4.6	3720	821	274	79	63
14	25	10	4.5	3.5	3.2	3.8	4.6	3580	788	258	74	63
15	25	10	4.5	3.5	3.2	3.8	4.6	3390	756	242	74	63
16	23	10	4.5	3.5	3.2	3.8	4.6	3100	724	223	74	63
17	23	9.5	4.5	3.0	3.2	3.8	4.6	2870	691	208	72	61
18	23	9.5	4.5	3.0	3.2	3.8	35	2750	672	196	72	56
19	23	9.5	4.5	3.0	3.2	3.8	200	2570	646	182	70	56
20	23	9.5	4.5	3.0	3.5	3.8	2950	2400	646	168	61	54
21	23	9.0	4.5	3.0	3.5	3.8	9300	2270	684	164	54	54
22	23	9.0	4.5	3.0	3.5	3.8	8480	2200	736	158	68	54
23	21	9.0	4.5	3.0	3.5	25	6580	2140	724	151	70	56
24	21	8.5	4.5	3.0	3.5	6.0	6040	2020	684	151	70	56
25	21	8.5	4.5	3.0	3.5	5.0	5770	1920	646	148	63	56
26	20	8.0	4.5	3.0	3.5	4.8	5500	1840	606	132	63	54
27	20	8.0	4.5	3.0	3.8	4.7	4660	1780	570	132	63	52
28	20	7.5	4.5	3.0	3.8	4.7	3620	1700	540	124	61	52
29	18	7.5	4.5	3.0	---	4.6	3170	1620	510	118	61	52
30	18	7.0	4.5	3.0	---	4.6	3350	1580	492	115	61	52
31	18	---	4.5	3.0	---	4.6	---	1520	---	110	61	---
TOTAL	771	351.0	157.0	116.0	91.7	147.6	59733.2	101790	26010	8943	2491	1861
MEAN	24.9	11.7	5.06	3.74	3.28	4.76	1991	3284	867	288	80.4	62.0
MAX	33	20	7.0	4.8	3.8	25	9300	5480	1480	802	112	99
MIN	18	7.0	4.5	3.0	3.0	3.8	4.6	1520	492	110	54	52
AC-FT	1530	696	311	230	182	293	118500	201900	51590	17740	4940	3690

CAL YR 1978 TOTAL 63487.25 MEAN 174 MAX 3380 MIN .01 AC-FT 125900
WTR YR 1979 TOTAL 202462.50 MEAN 555 MAX 9300 MIN 3.0 AC-FT 401600

05101000 TONGUE RIVER AT AKRA, ND

LOCATION.--Lat 48°46'42", long 97°44'43", in SW¼ sec.10, T.161 N., R.55 W., Pembina County, Hydrologic Unit 09020313, on left bank 300 ft (90 m) downstream from Renwick Dam, 0.9 mi (1.4 km) northwest of Akra, and 6 mi (10 km) west of Cavalier.

DRAINAGE AREA.--160 mi^2 (414 km^2).

WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WSP 1728: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 930.00 ft (283.464 m) National Geodetic Vertical Datum of 1929. Prior to July 10, 1954, nonrecording gage 1.2 mi (1.9 km) downstream at datum 30.00 ft (9.144 m) lower. July 23, 1954 to Dec. 19, 1973, water stage recorder 2.7 mi (4.3 km) downstream at datum 9.10 ft (2.774 m) lower.

REMARKS.--Records fair. Flow regulated by temporary retention in ten retarding basins beginning 300 ft (90 m) above station, four of which have slow release outlet structures to regulate the flow. Retarding basins were completed during the period 1955 to 1961 and have a combined capacity of 19,245 acre-ft (23.7 hm^3).

AVERAGE DISCHARGE.--28 years (1951-79), 22.0 ft^3/s (0.623 m^3/s), 15,940 acre-ft/yr (19.7 hm^3/yr); median of yearly mean discharges, 20 ft^3/s (0.57 m^3/s), 14,500 acre-ft/yr (18 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,800 ft^3/s (334 m^3/s) Apr. 18, 1950, gage height, 48.7 ft (14.844 m), from floodmarks, site and datum then in use, from rating curve extended above 1,500 ft^3/s (42.5 m^3/s) on basis of contracted-opening measurement of peak flow; no flow Dec. 1-27, 1952, Aug. 13, 14, 1961.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Apr. 18, 1950, is the highest known since settlement of the region (about 1860).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 900 ft^3/s (25.5 m^3/s) Apr. 22, gage height, 16.75 ft (5.105 m); minimum daily, 0.12 ft^3/s (0.003 m^3/s) Oct. 6-9.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.15	3.5	1.4	1.3	1.2	7.6	2.0	519	34	21	8.0	54
2	.14	4.0	1.4	1.4	1.2	15	2.0	504	35	22	8.0	106
3	.14	4.5	1.4	1.4	1.2	15	1.5	483	34	32	7.0	88
4	.14	4.5	1.4	1.5	1.2	15	1.0	453	32	47	7.0	61
5	.14	6.7	1.4	1.6	1.2	15	1.0	417	30	48	6.0	42
6	.12	6.2	1.4	1.7	1.2	25	1.0	384	29	41	6.0	29
7	.12	6.1	1.4	1.8	1.1	38	1.0	360	26	33	5.0	20
8	.12	2.5	1.4	1.9	1.0	38	1.0	330	24	27	5.0	14
9	.12	1.4	1.4	2.0	1.0	38	1.5	273	22	23	4.0	12
10	.56	1.4	1.4	2.1	1.0	38	4.0	215	21	20	4.0	9.3
11	2.0	1.4	1.4	2.1	1.0	38	4.5	184	19	18	3.0	9.3
12	2.0	1.4	1.4	2.1	1.0	38	4.5	169	18	16	3.0	11
13	2.0	1.4	1.4	2.1	1.0	38	7.5	163	16	15	2.0	10
14	2.0	1.4	1.4	2.1	13	38	10	160	15	13	1.6	9.7
15	2.0	1.4	1.4	2.1	20	38	10	150	13	12	1.4	8.8
16	2.4	1.4	1.4	2.1	19	38	12	130	12	10	1.2	8.6
17	2.5	1.4	1.4	2.0	17	38	16	113	12	13	1.2	7.8
18	2.7	1.4	1.2	2.0	15	38	35	103	11	22	1.1	6.4
19	2.9	1.4	1.2	2.0	14	22	50	93	11	15	.91	6.9
20	3.0	1.4	1.2	1.8	17	2.0	422	81	20	12	6.1	7.7
21	3.7	1.4	1.2	1.6	22	2.0	780	72	29	10	9.5	8.1
22	3.9	1.4	1.2	1.4	18	2.0	884	42	32	9.1	4.1	8.8
23	4.1	1.4	1.2	1.3	16	2.0	820	28	31	8.4	.46	9.5
24	4.9	1.4	1.2	1.3	14	2.0	732	38	30	8.4	.68	9.5
25	5.3	1.4	1.2	1.3	13	2.0	692	42	28	9.8	1.0	8.5
26	5.7	1.4	1.2	1.2	12	2.0	662	44	26	11	2.0	8.5
27	7.7	1.4	1.2	1.2	8.0	2.0	630	43	23	11	3.2	8.1
28	7.5	1.4	1.2	1.2	1.4	2.0	596	44	23	10	4.9	7.8
29	7.5	1.4	1.2	1.2	---	2.0	567	16	22	10	5.4	7.5
30	7.5	1.4	1.2	1.2	---	2.0	542	23	21	9.0	6.2	7.0
31	5.9	---	1.2	1.2	---	2.0	---	30	---	9.0	6.8	---
TOTAL	88.95	68.8	40.6	51.2	233.7	594.6	7492.5	5706	699	565.7	125.75	604.8
MEAN	2.87	2.29	1.31	1.65	8.35	19.2	250	184	23.3	18.2	4.06	20.2
MAX	7.7	6.7	1.4	2.1	22	38	884	519	35	48	9.5	106
MIN	.12	1.4	1.2	1.2	1.0	2.0	1.0	16	11	8.4	.46	6.4
AC-FT	176	136	81	102	464	1180	14860	11320	1390	1120	249	1200

CAL YR 1978 TOTAL 8252.56 MEAN 22.6 MAX 427 MIN .05 AC-FT 16370
WTR YR 1979 TOTAL 16271.60 MEAN 44.6 MAX 884 MIN .12 AC-FT 32270

05101000 TONGUE RIVER AT AKRA, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1972 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE (DEG C) (00010)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)
OCT										
05...	1400	.14	510	7.8	10.0	250	20	71	18	11
NOV										
01...	0940	3.8	550	8.3	5.0	240	49	63	20	28
DEC										
13...	1515	1.4	420	8.0	1.0	280	39	70	26	25
JAN										
11...	1200	2.1	715	6.8	.0	310	56	67	35	32
FEB										
21...	1325	21	640	7.8	3.0	300	41	79	25	30
MAR										
07...	1600	38	760	7.7	3.0	310	44	82	26	32
APR										
18...	0945	19	675	7.2	1.5	310	15	80	27	19
MAY										
01...	1720	525	306	7.8	4.0	110	30	33	6.7	16
08...	1730	321	345	--	4.5	--	--	--	--	--
JUN										
14...	0930	14	555	8.6	20.0	220	53	65	14	28
JUL										
11...	1220	18	520	8.5	27.0	230	44	64	17	28
AUG										
15...	1110	1.4	530	8.8	18.5	270	17	58	30	28
SEP										
13...	0930	10	560	8.4	15.5	200	31	57	14	24

DATE	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE (MG/L AS HCO3) (00440)	CAR-BONATE (MG/L AS CO3) (00445)	ALKA-LINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
OCT									
05...	9	.3	2.8	282	0	231	7.2	46	5.1
NOV									
01...	20	.8	5.2	233	0	191	1.9	95	7.6
DEC									
13...	16	.6	5.6	296	0	243	4.7	85	10
JAN									
11...	18	.6	6.1	311	0	255	79	92	9.4
FEB									
21...	18	.8	5.9	316	0	259	8.0	95	9.1
MAR									
07...	18	.8	5.8	327	0	268	10	91	9.0
APR									
18...	12	.5	4.7	361	0	296	36	46	7.7
MAY									
01...	23	.7	3.6	97	0	80	2.5	51	5.5
08...	--	--	--	--	--	--	--	--	--
JUN									
14...	21	.8	5.2	203	0	167	.8	110	9.8
JUL									
11...	21	.8	5.1	226	0	185	1.1	93	7.0
AUG									
15...	18	.7	4.6	306	0	251	.8	78	7.1
SEP									
13...	20	.7	4.9	206	0	169	1.3	79	8.4

05101000 TONGUE RIVER AT AKRA, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
OCT									
05...	.2	11	310	305	.42	.12	30	40	460
NOV									
01...	.3	2.6	339	337	.46	3.48	30	40	200
DEC									
13...	.3	12	367	360	.50	1.39	0	0	500
JAN									
11...	.3	15	433	411	.59	2.46	220	40	1100
FEB									
21...	.3	9.9	409	411	.56	23.2	90	20	1200
MAR									
07...	.3	12	430	422	.58	44.1	90	40	2200
APR									
18...	.2	21	456	387	.59	22.4	90	160	3400
MAY									
01...	.1	13	237	177	.32	336	210	160	150
08...	--	--	--	--	--	--	--	--	--
JUN									
14...	.3	11	359	344	.49	14.1	50	20	180
JUL									
11...	.3	18	340	345	.46	16.5	230	300	320
AUG									
15...	.4	24	368	381	.50	1.39	0	1	7
SEP									
13...	.3	13	331	303	.45	8.94	130	140	240

05102500 RED RIVER OF THE NORTH AT EMERSON, MAN
(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 (460 m) downstream from Canadian National Railway bridge in Emerson, 0.8 mi (1.3 km) downstream from international boundary, 3.6 mi (5.8 km) downstream from Pembina River, and at mile 154.3 (248.3 km).

DRAINAGE AREA.--40,200 mi^2 (104,100 km^2), approximately, includes 3,800 mi^2 (9,840 km^2) in closed basins.

WATER-DISCHARGE RECORDS

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 (213.360 m) National Geodetic Vertical Datum of 1929, by Geodetic Survey of Canada. See WSP 1728 or 1913 for history of changes prior to Apr. 10, 1953.

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.

AVERAGE DISCHARGE.--67 years (water years 1913-79) 3,328 ft^3/s (94.25 m^3/s), 2,411,000 acre-ft/yr (2.97 km^3/yr); median of yearly mean discharges, 2,660 ft^3/s (75.3 m^3/s), 1,996,000 acre-ft/yr (2.5 km^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 95,500 ft^3/s (2,700 m^3/s) May 13, 1950, gage height, 90.89 ft (27.703 m); maximum gage height, 91.19 ft (27.795 m) May 1, 1979; minimum observed discharge, 0.9 ft^3/s (0.025 m^3/s) Feb. 6-8, 1937, gage height, 44.00 ft (13.411 m).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 92,700 ft^3/s (2,630 m^3/s) May 1, gage height, 91.19 ft (27.795 m); minimum daily, 532 ft^3/s (15.1 m^3/s) Feb. 7.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1070	968	708	579	565	612	1290	92400	14300	6350	3680	2700
2	1060	948	715	576	558	606	1300	86500	13100	6240	3930	2710
3	1020	960	726	571	552	597	1320	83700	12400	6350	4530	2700
4	988	993	728	563	544	595	1340	83300	11800	7090	4950	2700
5	961	1000	724	557	538	584	1390	81400	11300	8600	5040	2690
6	950	1000	716	552	533	574	1460	78000	10900	10000	4910	2620
7	981	1000	721	546	532	563	1560	74200	10400	11100	4660	2550
8	1000	988	753	549	535	559	1680	70800	9930	11700	4390	2480
9	1010	930	787	552	543	556	1800	66700	9420	11800	4110	2400
10	1010	879	790	554	548	559	1910	62800	8950	11300	3870	2350
11	1020	856	753	561	554	569	2010	59700	8510	10400	3650	2300
12	999	846	698	565	562	579	2100	56500	8100	9270	3460	2260
13	993	845	655	565	574	596	2210	53500	7760	8170	3310	2230
14	996	882	646	562	583	617	2390	50200	7450	7240	3190	2200
15	983	886	623	556	590	645	2830	46900	7190	6530	3090	2180
16	966	870	602	551	595	677	3520	44100	6910	6010	3010	2160
17	950	905	586	549	603	753	4480	41700	6590	5580	2930	2130
18	921	907	577	544	609	819	9270	39400	6300	5170	2840	2100
19	896	878	570	548	610	854	19700	37800	6030	4800	2760	2080
20	878	811	570	556	605	849	27100	36300	5890	4510	2690	2050
21	878	720	573	562	600	859	32300	34500	5760	4260	2660	2010
22	878	672	577	566	601	876	39500	33100	5730	4060	2680	1980
23	904	714	579	569	604	869	50500	31600	5650	3930	2650	1960
24	917	806	585	574	608	915	65700	29900	5590	3810	2630	1940
25	907	879	589	575	613	947	74300	28000	5660	3710	2620	1930
26	883	906	588	574	616	965	79900	25900	5840	3680	2690	1910
27	876	872	584	575	617	1030	82500	23600	6110	3620	2750	1900
28	873	805	585	570	617	1100	86400	21300	6350	3510	2740	1880
29	911	740	583	570	---	1170	89900	19100	6440	3480	2710	1870
30	1000	705	582	571	---	1230	91100	17300	6430	3530	2680	1850
31	1010	---	581	567	---	1270	---	15800	---	3600	2680	---
TOTAL	29689	26171	20052	17431	16209	24012	782360	1525800	242790	199400	104490	66820
MEAN	958	872	647	562	579	775	26080	49220	8093	6432	3371	2227
MAX	1070	1000	790	579	617	1270	91100	92400	14300	11800	5040	2710
MIN	873	672	570	544	532	556	1290	15800	5590	3480	2620	1850
AC-FT	58890	51910	39770	34570	32150	47630	1552000	3026000	481600	395500	207300	132500

CAL YR 1978 TOTAL 1908971 MEAN 5230 MAX 50300 MIN 570 AC-FT 3786000
WTR YR 1979 TOTAL 3055224 MEAN 8370 MAX 92400 MIN 532 AC-FT 6060000

05102500 RED RIVER OF THE NORTH AT EMERSON, MAN.--Continued
(National stream-quality accounting network station)
(Pesticide station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1977 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1977 to current year.
WATER TEMPERATURE: October 1977 to current year.

REMARKS.--Specific conductance and temperature monitor operated by Canada.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily mean, 1,200 micromhos Sept. 24, 1978; minimum daily mean, 330 micromhos Apr. 10, 16, 17, 1978.
WATER TEMPERATURES: Maximum daily mean, 25.0°C on several days in 1978 and 1979; minimum daily mean, 0.0°C on many days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily mean, 1,110 micromhos Jan. 2, 3; minimum daily mean, 345 micromhos Apr. 22.
WATER TEMPERATURES: Maximum daily mean, 25°C July 22-25; minimum daily mean, 0.0°C on many days during winter months.

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)
OCT												
25...	1200	907	800	8.4	7.0	21	10.4	K10	66	310	130	71
NOV												
30...	1000	705	790	8.1	.0	3.8	13.4	K3	48	270	53	63
DEC												
21...	1300	573	890	8.0	.0	3.7	11.0	--	--	300	64	69
JAN												
30...	1415	515	750	7.7	.0	5.6	8.6	62	86	290	38	69
FEB												
22...	1130	569	813	7.5	.0	5.6	10.3	K40	126	330	67	75
MAR												
20...	1230	846	631	7.5	.0	5.5	9.5	97	430	280	31	68
MAY												
10...	1030	62800	410	8.0	5.5	80	11.0	K10	3100	190	76	48
JUN												
01...	1225	14300	598	8.1	15.5	90	7.2	K270	220	270	99	65
28...	1100	6350	645	8.3	22.0	51	7.8	K40	82	260	70	58
JUL												
26...	1125	3690	640	8.2	23.0	150	5.4	K31	37	250	41	51
AUG												
30...	1120	2580	519	8.5	20.0	52	8.2	K47	54	220	45	52
SEP												
27...	1030	1900	494	8.5	15.5	40	9.4	K10	48	220	37	49

DATE	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)
OCT												
25...	33	48	24	1.2	10	180	140	48	.2	9.5	504	468
NOV												
30...	28	61	32	1.6	6.6	220	74	85	.2	3.2	457	453
DEC												
21...	32	59	29	1.5	6.6	240	95	70	.2	9.1	520	485
JAN												
30...	28	50	27	1.3	4.9	250	60	62	.2	11	460	436
FEB												
22...	34	52	25	1.3	5.2	260	72	65	.2	13	500	473
MAR												
20...	27	24	15	.6	4.5	250	47	21	.2	13	352	355
MAY												
10...	16	14	14	.4	6.0	110	86	9.8	.2	18	272	264
JUN												
01...	26	28	18	.7	6.5	170	100	44	.2	8.6	394	381
28...	28	32	21	.9	5.8	190	120	23	.2	9.0	419	390
JUL												
26...	30	30	33	.8	5.5	210	99	36	.2	16	410	394
AUG												
30...	23	21	17	.6	4.0	180	65	25	.2	12	325	310
SEP												
27...	23	21	26	.6	3.8	180	55	20	.2	10	316	290

K - Results based on colony count outside the acceptable range (non-ideal colony count).

05102500 RED RIVER OF THE NORTH AT EMERSON, MAN.--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, NH4 + ORG, SUSP, TOTAL (MG/L AS N) (00624)	NITRO-GEN, AM-MONIA + ORGANIC DIS, (MG/L AS N) (00623)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, DIS-SOLVED (MG/L AS N) (00602)
OCT											
25...	.69	1230	.02	--	.01	1.4	1.4	.10	1.3	1.4	--
NOV											
30...	.62	870	.04	--	.05	.86	.91	.20	.71	.95	--
DEC											
21...	.71	804	.20	--	.25	.95	1.2	.20	1.0	1.4	--
JAN											
30...	.63	640	.39	--	.40	.90	1.3	.20	1.1	1.7	--
FEB											
22...	.68	768	.55	--	.49	1.0	1.5	.20	1.3	2.1	--
MAR											
20...	.48	804	.50	--	.32	.78	1.1	.12	.98	1.6	--
MAY											
10...	.37	46100	1.8	--	.15	1.2	1.3	.56	.74	3.1	--
JUN											
01...	.54	15200	.24	--	.15	1.3	1.4	.43	.97	1.6	--
28...	.57	7180	.30	--	.03	1.1	1.1	.47	.63	1.4	--
JUL											
26...	.56	4090	.35	--	.01	1.3	1.3	.58	.72	1.7	--
AUG											
30...	.44	2400	.16	--	.03	1.7	1.7	.93	.77	1.9	--
SEP											
27...	.43	1620	.11	.04	.11	.88	.99	.96	.03	1.1	.07

DATE	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHATE, TOTAL (MG/L AS PO4) (00650)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BARIUM, SUS-PENDED RECOV-ERABLE (UG/L AS BA) (01006)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD) (01027)	CADMIUM SUS-PENDED RECOV-ERABLE (UG/L AS CD) (01026)
OCT											
25...	6.3	.22	--	.14	3	11	100	0	100	--	--
NOV											
30...	4.2	.11	--	.06	--	--	--	--	--	--	--
DEC											
21...	6.2	.21	--	.19	--	--	--	--	--	--	--
JAN											
30...	7.5	.21	--	.17	2	1	0	0	0	1	0
FEB											
22...	9.1	.22	--	.17	--	--	--	--	--	--	--
MAR											
20...	7.1	.17	--	.14	--	--	--	--	--	--	--
MAY											
10...	14	.30	.92	.18	5	4	100	0	100	2	2
JUN											
01...	7.3	.23	.71	.10	--	--	--	--	--	--	--
28...	6.2	.31	.95	.09	--	--	--	--	--	--	--
JUL											
26...	7.3	.02	--	.17	6	4	100	0	100	1	0
AUG											
30...	8.2	.18	--	.12	--	--	--	--	--	--	--
SEP											
27...	4.9	.18	--	.05	--	--	--	--	--	--	--

DATE	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	CHRO-MIUM, SUS-PENDED RECOV. (UG/L AS CR) (01031)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO) (01037)	COBALT, SUS-PENDED RECOV-ERABLE (UG/L AS CO) (01036)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	COPPER, SUS-PENDED RECOV-ERABLE (UG/L AS CU) (01041)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)
OCT											
25...	0	0	0	0	1	1	0	12	9	3	980
JAN											
30...	1	10	10	0	1	0	1	12	10	2	340
FEB											
22...	--	--	--	--	--	--	--	--	--	--	--
MAR											
20...	--	--	--	--	--	--	--	--	--	--	--
MAY											
10...	0	10	10	0	3	3	0	310	300	8	5200
JUN											
01...	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--
JUL											
26...	<1	10	10	0	3	0	<3	10	8	2	4700

05102500 RED RIVER OF THE NORTH AT EMERSON, MAN.--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	LEAD, SUS-PENDED RECOV-ERABLE (UG/L AS PB) (01050)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MANGA-NESE, SUS-PENDED RECOV. (UG/L AS MN) (01054)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	MERCURY SUS-PENDED RECOV-ERABLE (UG/L AS HG) (71895)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)
OCT											
25...	20	--	--	0	70	50	20	.0	.0	.0	0
NOV											
30...	--	--	--	--	--	--	--	--	--	--	--
DEC											
21...	--	--	--	--	--	--	--	--	--	--	--
JAN											
30...	10	--	--	--	80	20	60	.0	.0	.0	0
FEB											
22...	--	--	--	--	--	--	--	--	--	--	--
MAY											
10...	70	66	66	0	740	730	10	.2	.1	.1	1
JUN											
01...	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--
JUL											
26...	10	8	7	1	320	320	4	.4	.1	.3	1
AUG											
30...	--	--	--	--	--	--	--	--	--	--	--
SEP											
27...	--	--	--	--	--	--	--	--	--	--	--

DATE	SELE-NIUM, SUS-PENDED TOTAL (UG/L AS SE) (01146)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	SILVER, SUS-PENDED RECOV-ERABLE (UG/L AS AG) (01076)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, SUS-PENDED RECOV-ERABLE (UG/L AS ZN) (01091)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C) (00689)	PCB, TOTAL (UG/L) (39516)
OCT											
25...	0	0	0	0	0	20	10	10	12	1.4	--
NOV											
30...	--	--	--	--	--	--	--	--	11	1.4	--
DEC											
21...	--	--	--	--	--	--	--	--	12	1.3	ND
JAN											
30...	0	0	1	0	1	20	10	10	16	1.0	ND
FEB											
22...	--	--	--	--	--	--	--	--	15	--	--
MAY											
10...	0	1	0	0	0	110	90	20	11	--	ND
JUN											
01...	--	--	--	--	--	--	--	--	13	2.8	--
28...	--	--	--	--	--	--	--	--	11	.9	--
JUL											
26...	0	1	0	0	0	50	40	7	16	.7	ND
AUG											
30...	--	--	--	--	--	--	--	--	29	1.1	--
SEP											
27...	--	--	--	--	--	--	--	--	9.4	1.3	--

05102500 RED RIVER OF THE NORTH AT EMERSON, MAN.--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	PCB, TOTAL IN BOTTOM MATERIAL (UG/KG) (39519)	ALDRIN, TOTAL (UG/L) (39330)	ALDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG) (39333)	CHLORDANE, TOTAL (UG/L) (39350)	CHLORDANE, TOTAL IN BOTTOM MATERIAL (UG/KG) (39351)	DDD, TOTAL (UG/L) (39360)	DDD, TOTAL IN BOTTOM MATERIAL (UG/KG) (39363)	DDE, TOTAL (UG/L) (39365)	DDE, TOTAL IN BOTTOM MATERIAL (UG/KG) (39368)	DDT, TOTAL (UG/L) (39370)	DDT, TOTAL IN BOTTOM MATERIAL (UG/KG) (39373)
OCT											
25...	--	--	--	--	--	--	--	--	--	--	--
NOV											
30...	--	--	--	--	--	--	--	--	--	--	--
DEC											
21...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
JAN											
30...	--	ND	--	ND	--	ND	--	ND	--	ND	--
FEB											
22...	--	--	--	--	--	--	--	--	--	--	--
MAY											
10...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
JUN											
01...	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--
JUL											
26...	--	ND	--	ND	--	ND	--	ND	--	ND	--

DATE	DIAZINON, TOTAL (UG/L) (39570)	DIAZINON, TOTAL IN BOTTOM MATERIAL (UG/KG) (39571)	DIELDRIN TOTAL (UG/L) (39380)	DIELDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG) (39383)	ENDRIN, TOTAL (UG/L) (39390)	ENDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG) (39393)	ETHION, TOTAL (UG/L) (39398)	ETHION, TOTAL IN BOTTOM MATERIAL (UG/KG) (39399)	HEPTACHLOR, TOTAL (UG/L) (39410)	HEPTACHLOR, TOTAL IN BOTTOM MATERIAL (UG/KG) (39413)	HEPTACHLOR EPOXIDE TOTAL (UG/L) (39420)
OCT											
25...	--	--	--	--	--	--	--	--	--	--	--
NOV											
30...	--	--	--	--	--	--	--	--	--	--	--
DEC											
21...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
JAN											
30...	ND	--	ND	--	ND	--	ND	--	ND	--	ND
FEB											
22...	--	--	--	--	--	--	--	--	--	--	--
MAY											
10...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
JUN											
01...	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--
JUL											
26...	ND	--	ND	--	ND	--	ND	--	ND	--	ND

DATE	HEPTACHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG) (39423)	LINDANE TOTAL (UG/L) (39340)	LINDANE TOTAL IN BOTTOM MATERIAL (UG/KG) (39343)	MALATHION, TOTAL (UG/L) (39530)	MALATHION, TOTAL IN BOTTOM MATERIAL (UG/KG) (39531)	METHOXYCHLOR, TOTAL (UG/L) (39480)	METHOXYCHLOR, TOT. IN BOTTOM MATL. (UG/KG) (39481)	METHYL PARATHION, TOTAL (UG/L) (39600)	METHYL PARATHION, TOT. IN BOTTOM MATL. (UG/KG) (39601)	METHYL TRITHION, TOTAL (UG/L) (39790)
OCT										
25...	--	--	--	--	--	--	--	--	--	--
NOV										
30...	--	--	--	--	--	--	--	--	--	--
DEC										
21...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
JAN										
30...	--	ND	--	ND	--	ND	--	ND	--	ND
FEB										
22...	--	--	--	--	--	--	--	--	--	--
MAY										
10...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
JUN										
01...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
JUL										
26...	--	ND	--	ND	--	ND	--	ND	--	ND

Whole water ND - Not detected at 0.01 µg/L level.
Bed material ND - Not detected at 0.1 µg/mg level.

05102500 RED RIVER OF THE NORTH AT EMERSON, MAN.--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	METHYL TRI-THION, TOT. IN BOTTOM MATL. (UG/KG) (39791)	PARA-THION, TOTAL (UG/L) (39540)	PARA-THION, TOTAL IN BOTTOM MATERIAL (UG/KG) (39541)	TOX-APHENE, TOTAL (UG/L) (39400)	TOXA-PHENE, TOTAL IN BOTTOM MATERIAL (UG/KG) (39403)	TOTAL TRI-THION (UG/L) (39786)	TRI-THION, TOTAL IN BOTTOM MATERIAL (UG/KG) (39787)	PHYTO-PLANK-TON, TOTAL (CELLS PER ML) (60050)	PERI-PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M (00573)	PERI-PHYTON BIOMASS ASH WEIGHT G/SQ M (00572)
OCT										
25...	--	--	--	--	--	--	--	71000	--	--
NOV										
30...	--	--	--	--	--	--	--	--	--	--
DEC										
21...	ND	ND	ND	ND	ND	ND	ND	--	--	--
JAN										
30...	--	ND	--	ND	--	ND	--	--	.240	.160
FEB										
22...	--	--	--	--	--	--	--	470	--	--
MAY										
10...	ND	ND	ND	ND	ND	ND	ND	1000	--	--
JUN										
01...	--	--	--	--	--	--	--	3000	--	--
28...	--	--	--	--	--	--	--	2300	--	--
JUL										
26...	--	ND	--	ND	--	ND	--	1400	.630	.550
AUG										
30...	--	--	--	--	--	--	--	5200	--	--
SEP										
27...	--	--	--	--	--	--	--	--	--	--

DATE	CHLOR-A PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70957)	CHLOR-B PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70958)	LENGTH OF EXPO-SURE (DAYS) (00022)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT						
25...	--	--	--	42	103	98
NOV						
30...	--	--	--	14	27	87
DEC						
21...	--	--	--	9	14	88
JAN						
30...	.190	.000	40	8	11	77
FEB						
22...	--	--	--	8	12	90
MAR						
20...	--	--	--	18	41	90
MAY						
10...	--	--	--	183	31000	98
JUN						
01...	--	--	--	212	8190	98
28...	--	--	--	220	3770	98
JUL						
26...	.000	.000	29	237	2360	100
AUG						
30...	--	--	--	122	903	98
SEP						
27...	--	--	--	97	498	99

Whole water ND - Not detected at 0.01 µg/L level.
Bed material ND - Not detected at 0.1 µg/mg level.

05102500 RED RIVER OF THE NORTH AT EMERSON, MAN.--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	865	700	910	1100	805	740	700	---	700	---	650	635
2	850	735	990	1110	810	710	690	---	720	---	645	650
3	830	700	950	1110	810	700	690	---	730	---	650	670
4	815	670	965	1080	820	695	690	---	720	---	640	660
5	790	690	965	1050	830	690	690	---	740	---	580	680
6	805	720	935	1020	840	685	685	---	730	---	550	680
7	840	680	915	1000	850	685	670	---	700	---	560	680
8	805	670	900	990	880	685	655	---	730	---	590	680
9	730	690	895	980	890	685	655	---	740	---	610	680
10	725	700	895	980	880	685	660	---	750	---	600	690
11	710	720	885	970	860	685	665	---	740	---	600	690
12	720	740	860	950	850	680	660	---	740	---	600	690
13	730	780	840	935	830	680	670	---	750	---	620	700
14	735	740	835	925	810	680	660	---	760	---	610	710
15	750	740	830	920	800	680	640	---	740	---	595	720
16	775	760	880	910	795	670	620	---	750	---	600	730
17	790	760	890	900	790	660	615	---	760	---	610	730
18	785	755	860	890	790	650	555	---	765	735	610	730
19	805	830	850	885	790	645	440	---	735	730	610	690
20	790	880	875	885	800	650	370	---	740	730	600	690
21	795	875	900	875	800	670	355	---	750	740	600	720
22	815	910	915	860	790	690	345	---	760	735	590	730
23	850	880	930	840	785	705	360	---	760	725	610	720
24	850	865	960	830	790	710	---	---	775	725	625	660
25	840	905	1000	825	780	710	---	---	770	725	640	620
26	815	955	1030	820	770	700	---	---	750	715	650	600
27	790	1000	1050	815	760	695	---	---	730	710	660	580
28	750	990	1060	810	750	695	---	---	---	700	670	560
29	780	890	1080	810	---	710	---	---	---	685	640	560
30	750	820	1080	805	---	705	---	660	---	675	630	560
31	700	---	1090	805	---	705	---	670	---	670	620	---
MEAN	786	792	936	925	813	688	597	665	742	714	615	671

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13.5	5.5	.5	.5	.5	.5	.5	---	13.5	---	23.0	19.5
2	13.5	5.0	.5	.5	.5	.5	.5	---	14.0	---	23.0	19.0
3	13.0	5.5	.5	.5	.5	.5	.5	---	14.5	---	23.0	18.5
4	12.0	5.0	.5	.5	.5	.5	.5	---	15.5	---	23.0	19.0
5	11.5	4.5	.5	.5	.5	.5	.5	---	15.0	---	23.0	19.5
6	11.0	4.0	.5	.5	.5	.5	.5	---	15.5	---	22.0	19.0
7	10.5	3.5	.5	.5	.5	.5	.5	---	15.5	---	21.5	18.0
8	10.0	4.0	.5	.5	.5	.5	.5	---	15.0	---	22.0	18.0
9	10.5	4.5	.5	.5	.5	.5	.5	---	15.5	---	21.5	18.0
10	10.5	3.5	.5	.5	.5	.5	.5	---	16.0	---	21.0	17.5
11	11.0	2.0	.5	.5	.5	.5	.5	---	16.0	---	21.5	17.0
12	11.0	1.0	.5	.5	.5	.5	.5	---	17.0	---	23.0	17.0
13	10.0	1.0	.5	.5	.5	.5	.5	---	17.0	---	22.0	16.0
14	9.0	.5	.5	.5	.5	.5	.5	---	18.0	---	20.0	15.0
15	8.5	1.0	.5	.5	.5	.5	.5	---	18.5	---	20.5	15.0
16	8.0	.5	.5	.5	.5	.5	.5	---	18.0	---	21.0	16.0
17	8.0	.5	.5	.5	.5	.5	.5	---	18.5	---	20.5	16.5
18	7.5	.5	.5	.5	.5	.5	1.0	---	18.0	23.5	19.5	16.0
19	8.0	.5	.5	.5	.5	.5	1.0	---	18.5	23.0	20.0	15.5
20	8.5	.5	.5	.5	.5	.5	2.0	---	18.0	24.0	20.5	15.0
21	9.0	.5	.5	.5	.5	.5	2.5	---	17.0	24.5	20.5	14.5
22	9.0	.5	.5	.5	.5	.5	3.0	---	16.0	25.0	20.0	14.0
23	7.5	.5	.5	.5	.5	.5	4.0	---	16.5	25.0	19.0	13.5
24	7.0	.5	.5	.5	.5	.5	---	---	17.0	25.0	18.0	14.0
25	7.0	.5	.5	.5	.5	.5	---	---	17.5	25.0	18.5	14.0
26	7.0	.5	.5	.5	.5	.5	---	---	18.0	24.5	18.5	14.5
27	6.5	.5	.5	.5	.5	.5	---	---	18.5	24.0	19.0	14.5
28	6.0	.5	.5	.5	.5	.5	---	---	---	24.0	19.5	14.0
29	5.5	.5	.5	.5	---	.5	---	---	---	24.0	19.5	13.0
30	6.0	.5	.5	.5	---	.5	---	14.0	---	24.0	19.0	13.0
31	5.5	---	.5	.5	---	.5	---	14.0	---	23.0	19.0	---
MEAN	9.0	2.0	.5	.5	.5	.5	1.0	14.0	16.5	24.0	20.5	16.0

05102500 RED RIVER OF THE NORTH AT EMERSON, MAN.--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1978 TO AUGUST 1979

DATE	OCT 25,78	FEB 22,79	MAY 10,79	JUN 1,79
TIME	1200	1130	1030	1225
TOTAL CELLS/ML	71000	470	1000	3000
DIVERSITY: DIVISION	1.3	0.7	1.0	1.7
.CLASS	1.3	0.7	1.0	1.7
..ORDER	1.5	1.6	1.4	2.0
...FAMILY	2.3	1.8	1.5	2.5
....GENUS	3.2	2.7	1.5	2.6

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)								
.CHLOROPHYCEAE								
..CHLOROCOCCALES								
...CHARACIACEAE								
....SCHROEDERIA	--	-	--	-	--	-	--	-
...CHLOROCOCCACEAE								
....CHLOROCOCCUM	--	-	--	-	--	-	--	-
...COELASTRACEAE								
....COELASTRUM	2300	3	--	-	--	-	--	-
...HYDRODICTYACEAE								
....PEDIASTRUM	--	-	--	-	--	-	--	-
...MICRACTINIACEAE								
....GOLENKINIA	1100	2	--	-	52	5	--	-
....MICRACTINIUM	570	1	--	-	--	-	310	10
...OOCYSTACEAE								
....ANKISTRODESMUS	8900	13	15	3	--	-	78	3
....CHLORELLA	--	-	--	-	--	-	--	-
....DICTYOSPHAERIUM	3100	4	--	-	--	-	--	-
....GLOEOACTINIUM	570	1	--	-	--	-	--	-
....SELENASTRUM	9700	14	--	-	--	-	--	-
....TREUBARIA	*	0	--	-	--	-	--	-
...SCENEDESMACEAE								
....ACTINASTRUM	11000#	16	52	11	--	-	--	-
....CROOIGENIA	--	-	52	11	--	-	--	-
....SCENEDESMUS	3400	5	160#	33	210#	20	700#	23
....TETRASTRUM	2300	3	--	-	--	-	--	-
..VOLVOCALES								
...CHLAMYDOMONADACEAE								
....CHLAMYDOMONAS	1400	2	100#	22	160	15	190	6
CHRYSOPHYTA								
.BACILLARIOPHYCEAE								
..CENTRALES								
...COSCINODISCACEAE								
....CYCLOTELLA	1700	2	26	6	--	-	270	9
....MELOSIRA	--	-	13	3	--	-	190	6
....STEPHANODISCUS	--	-	--	-	620#	60	--	-
..PENNALES								
...FRAGILARIACEAE								
....ASTERIONELLA	--	-	13	3	--	-	--	-
....FRAGILARIA	--	-	--	-	--	-	--	-
....SYNEDRA	--	-	--	-	--	-	39	1
...NITZSCHIACEAE								
....NITZSCHIA	1400	2	39	8	--	-	39	1
...SURIRELLACEAE								
....SURIRELLA	--	-	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)								
.CRYPTOPHYCEAE								
..CRYPTOMONADALES								
...CRYPTOMONADACEAE								
....CRYPTOMONAS	--	-	--	-	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)								
.CYANOPHYCEAE								
..CHROOCOCCALES								
...CHROOCOCCACEAE								
....ANACYSTIS	--	-	--	-	--	-	1100#	37
..HORMOGONALES								
...OSCILLATORIACEAE								
....OSCILLATORIA	20000#	28	--	-	--	-	--	-
....SCHIZOTHRIX	--	-	--	-	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)								
.EUGLENOPHYCEAE								
..EUGLENALES								
...EUGLENACEAE								
....EUGLENA	--	-	--	-	--	-	39	1
....TRACHELOMONAS	2300	3	--	-	--	-	--	-
PYRRHOPHYTA (FIRE ALGAE)								
.DINOPHYCEAE								
..PERIDINIALES								
...GLENODINIACEAE								
....GLENODINIUM	--	-	--	-	--	-	39	1

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

05102500 RED RIVER OF THE NORTH AT EMERSON, MAN.--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1978 TO AUGUST 1979

DATE	JUN 28,79	JUL 26,79	AUG 30,79
TIME	1100	1125	1120
TOTAL CELLS/ML	2300	1400	5200
DIVERSITY: DIVISION	2.0	1.2	1.4
.CLASS	2.0	1.2	1.4
..ORDER	2.4	1.6	1.6
...FAMILY	2.4	1.6	2.9
....GENUS	2.5	1.6	3.2

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)						
.CHLOROPHYCEAE						
..CHLOROCOCCALES						
...CHARACIACEAE						
....SCHROEDERIA	--	-	--	-	37	1
...CHLOROCOCCACEAE						
....CHLOROCOCCUM	--	-	--	-	170	3
...COELASTRACEAE						
....COELASTRUM	--	-	--	-	560	11
...HYDRODICTYACEAE						
....PEDIASTRUM	--	-	--	-	580	11
...MICRACTINIACEAE						
....GOLENKINIA	--	-	--	-	--	-
....MICRACTINIUM	--	-	--	-	--	-
...OOCYSTACEAE						
....ANKISTRODESMUS	--	-	--	-	37	1
....CHLORELLA	--	-	--	-	960#	19
....DICTYOSPHAERIUM	--	-	--	-	--	-
....GLOEOACTINIUM	--	-	--	-	--	-
....SELENASTRUM	--	-	--	-	--	-
....TREUBARIA	--	-	--	-	--	-
...SCENEDESMACEAE						
....ACTINASTRUM	--	-	--	-	150	3
....CRUCIGENIA	--	-	--	-	--	-
....SCENEDESMUS	470#	20	360#	27	410	8
....TETRASTRUM	--	-	--	-	74	1
..VOLVOCALES						
...CHLAMYDOMONADACEAE						
....CHLAMYDOMONAS	78	3	--	-	--	-
CHRYSOPHYTA						
.BACILLARIOPHYCEAE						
..CENTRALES						
...COSCINODISCACEAE						
....CYCLOTELLA	78	3	--	-	520	10
....MELOSIRA	390#	17	180	13	--	-
....STEPHANODISCUS	--	-	--	-	--	-
..PENNALES						
...FRAGILARIACEAE						
....ASTERIONELLA	--	-	--	-	--	-
....FRAGILARIA	--	-	720#	53	--	-
....SYNEDRA	160	7	--	-	--	-
...NITZSCHIACEAE						
....NITZSCHIA	--	-	--	-	170	3
...SURIRELLACEAE						
....SURIRELLA	--	-	--	-	*	0
CRYPTOPHYTA (CRYPTOMONADS)						
.CRYPTOPHYCEAE						
..CRYPTOMONADALES						
...CRYPTOMONADACEAE						
....CRYPTOMONAS	78	3	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)						
.CYANOPHYCEAE						
..CHROOCOCCALES						
...CHROOCOCCACEAE						
....ANACYSTIS	930#	40	--	-	110	2
..HORMOGONALES						
...OSCILLATORIACEAE						
....OSCILLATORIA	--	-	--	-	1300#	25
....SCHIZOTHRIX	--	-	--	-	93	2
EUGLENOPHYTA (EUGLENOIDS)						
.EUGLENOPHYCEAE						
..EUGLENALES						
...EUGLENACEAE						
....EUGLENA	--	-	--	-	37	1
....TRACHELOMONAS	78	3	90	7	--	-
PYRRHOPHYTA (FIRE ALGAE)						
.DINOPHYCEAE						
..PERIDINIALES						
...GLENODINIACEAE						
....GLENODINIUM	78	3	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

05113360 LONG CREEK AT WESTERN CROSSING OF INTERNATIONAL BOUNDARY, SASK.
(International gaging station)

LOCATION.--Lat 49°00'01", long 103°21'08", in SE¼ sec.1, T.1, R.11 W., 2d meridian, Hydrologic Unit 09010001, and on right bank 10 mi (16 km) south of Outram, Saskatchewan.

DRAINAGE AREA.--1,320 mi^2 (3,420 km^2).

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

GAGE.--Water-stage recorder and artificial control. Datum of gage is 1,894.00 ft (577.291 m) National Geodetic Vertical Datum of 1929, international boundary survey.

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

AVERAGE DISCHARGE.--20 years, 45.2 ft^3/s (1.280 m^3/s), 32,750 acre-ft/yr (40.4 hm^3/yr); median of yearly mean discharges, 33 ft^3/s (0.93 m^3/s), 23,900 acre-ft/yr (29 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,690 ft^3/s (133 m^3/s) Apr. 1, 1976, gage height, 12.05 ft (3.673 m); maximum gage height, 12.70 ft (3.871 m) Mar. 31, 1976 backwater from ice; no flow for several months each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,410 ft^3/s (125 m^3/s) Apr. 22, gage height, 11.39 ft (3.472 m); no flow for several months.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	75	6.3	1.7	.00	.00	.00	76	561	66	5.5	2.7	.00
2	66	6.0	1.3	.00	.00	.00	55	470	64	5.5	1.1	.00
3	59	5.6	1.5	.00	.00	.00	48	413	60	5.4	.71	.00
4	55	5.6	1.7	.00	.00	.00	57	360	55	5.2	.49	.00
5	50	11	1.9	.00	.00	.00	178	330	50	4.4	.32	.00
6	46	9.8	1.5	.00	.00	.00	216	328	48	3.6	.21	.00
7	41	6.2	.70	.00	.00	.00	180	516	43	3.1	.11	.00
8	37	5.2	.49	.00	.00	.00	153	833	39	2.8	.04	.00
9	34	4.6	.40	.00	.00	.00	133	650	37	2.5	.00	.00
10	31	3.4	.48	.00	.00	.00	166	576	35	2.2	.00	.00
11	27	3.2	1.2	.00	.00	.00	200	516	32	4.3	.00	.00
12	25	3.2	1.4	.00	.00	.00	233	579	31	6.7	.00	.00
13	23	4.2	1.2	.00	.00	.00	234	653	30	5.8	.00	.00
14	21	3.6	1.1	.00	.00	.00	214	681	30	4.8	.00	.00
15	19	2.8	.98	.00	.00	.00	165	657	22	3.9	.00	.00
16	18	2.7	.94	.00	.00	.00	177	611	19	3.4	.00	.00
17	17	2.8	.81	.00	.00	.00	653	572	17	2.9	.00	.00
18	16	3.4	.76	.00	.00	.00	2110	491	14	2.6	.00	.00
19	14	3.4	.69	.00	.00	.00	2590	417	12	2.1	.00	.00
20	13	3.3	.59	.00	.00	.00	2320	364	11	1.6	.00	.00
21	11	3.1	.51	.00	.00	.00	2590	339	10	1.2	.00	.00
22	10	3.2	.57	.00	.00	.00	4170	302	9.4	.78	.00	.00
23	9.5	3.3	.48	.00	.00	.00	3740	246	11	.67	.00	.00
24	9.4	3.1	.43	.00	.00	.00	2970	206	11	.53	.00	.00
25	8.6	2.6	.39	.00	.00	.00	2340	182	11	.42	.00	.00
26	8.0	3.0	.37	.00	.00	.00	1790	158	9.6	.28	.00	.00
27	7.7	2.9	.36	.00	.00	67	1360	137	7.7	.21	.00	.00
28	7.4	2.6	.40	.00	.00	166	1020	119	6.7	.11	.00	.00
29	6.3	2.7	.40	.00	---	243	784	103	7.3	.21	.00	.00
30	6.3	2.2	.30	.00	---	148	653	85	6.0	.74	.00	.00
31	6.8	---	.19	.00	---	108	---	74	---	44	.00	---
TOTAL	778.0	125.0	25.54	.00	.00	732.00	31575	12529	806.7	127.45	5.68	.00
MEAN	25.1	4.17	.82	.000	.000	23.6	1053	404	26.9	4.11	.18	.000
MAX	75	11	1.9	.00	.00	243	4170	833	68	44	2.7	.00
MIN	6.3	2.2	.19	.00	.00	.00	48	74	6.0	.11	.00	.00
AC-FT	1540	248	51	.00	.00	1450	62630	24850	1600	253	11	.00

CAL YR 1978 TOTAL 28273.24 MEAN 77.5 MAX 2250 MIN .00 AC-FT 56080
WTR YR 1979 TOTAL 46704.37 MEAN 128 MAX 4170 MIN .00 AC-FT 92640

05113600 LONG CREEK NEAR NOONAN, ND
(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, Hydrologic Unit 09010001, on right bank 150 ft (46 m) upstream from county highway bridge, 1.5 mi (2.4 km) upstream from international boundary, and 7 mi (11 km) northwest of Noonan.

DRAINAGE AREA.--1,790 mi² (4,640 km²), approximately, of which about 1,160 mi² (3,000 km²) is probably non-contributing.

WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WSP 2113: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 1,840 ft (561 m), from topographic map. Prior to Aug. 18, 1960, nonrecording gage at same site and datum.

REMARKS.--Records good.

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

AVERAGE DISCHARGE.--20 years, 58.2 ft³/s (1.648 m³/s), 42,170 acre-ft/yr (52.0 hm³/yr); median of yearly mean discharges, 44 ft³/s (1.25 m³/s), 31,900 acre-ft/yr (39 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,310 ft³/s (179 m³/s) Mar. 31, 1976, gage height, 17.61 ft (5.367 m); no flow at times most years.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 200 ft³/s (5.66 m³/s) and maximum(*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Mar. 31	--	360	10.2	Backwater from ice		Apr. 22	2400	4,680	133	15.37	4.685
Apr. 7	--	430	12.2	Backwater from ice		May 8	1815	1,260	35.7	9.83	2.996
Apr. 19	0230	*4,950	140	15.65	4.770						

Minimum daily discharge, 0.23 ft³/s (0.007 m³/s) Sept. 10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	109	8.0	6.8	1.8	.58	.30	170	727	109	15	2.3	.34
2	95	7.8	6.8	1.7	.55	.30	140	609	104	15	2.2	.42
3	86	7.8	6.5	1.6	.58	.30	110	514	99	15	2.5	.50
4	77	7.8	6.5	1.4	.54	.30	70	457	88	15	2.7	.46
5	66	8.2	6.5	1.2	.52	.32	60	422	76	14	2.7	.43
6	55	8.0	6.0	1.1	.47	.33	250	421	71	14	2.4	.33
7	47	8.2	6.0	1.0	.46	.30	550	636	62	13	2.1	.26
8	40	9.3	5.5	.90	.42	.30	300	1100	57	12	1.5	.26
9	36	8.9	5.5	.80	.40	.30	250	1030	52	10	1.5	.26
10	32	7.7	5.0	.77	.41	.30	240	833	47	9.7	1.4	.23
11	29	7.2	4.5	.74	.40	.30	270	680	43	8.9	1.2	.26
12	25	7.0	4.5	.69	.37	.30	320	677	41	8.4	1.1	.36
13	22	6.9	4.5	.67	.37	.30	340	736	37	7.8	.92	.42
14	21	6.9	4.5	.68	.37	.30	350	768	34	7.3	.70	.50
15	20	7.0	4.5	.69	.36	.30	380	753	34	8.0	.61	.54
16	18	7.1	4.0	.64	.32	.35	400	701	26	8.6	.69	.44
17	17	6.7	4.0	.62	.30	.40	650	643	23	7.7	.66	.34
18	17	6.3	4.0	.55	.30	.40	3370	576	21	6.9	.52	.35
19	16	6.2	3.5	.47	.30	.40	4650	506	19	6.0	.45	.39
20	15	6.2	3.5	.47	.30	.40	3900	451	18	5.7	.44	.34
21	14	6.2	3.5	.47	.30	.40	3580	417	17	5.1	.46	.33
22	13	6.2	3.0	.47	.30	.50	4070	386	15	4.2	.53	.31
23	12	6.4	3.0	.51	.30	.60	4380	341	16	3.9	.43	.33
24	11	6.6	3.0	.51	.30	.60	3510	296	15	3.2	.34	.34
25	11	6.7	2.5	.55	.30	.70	2770	268	15	2.8	.31	.34
26	11	6.7	2.5	.55	.30	.80	2190	241	15	2.5	.28	.36
27	9.7	6.7	2.5	.59	.30	.90	1680	212	19	2.4	.25	.94
28	9.2	6.7	2.5	.59	.30	.80	1300	189	18	2.1	.28	1.4
29	8.6	6.8	2.5	.63	---	.80	1010	166	17	1.9	.31	1.5
30	8.5	6.8	2.5	.60	---	100	828	142	16	2.2	.31	1.1
31	8.6	---	2.0	.58	---	300	---	121	---	2.5	.31	---
TOTAL	959.6	215.0	132.1	24.54	10.72	412.60	41888	16019	1224	240.8	32.40	14.38
MEAN	31.0	7.17	4.26	.79	.38	13.3	1396	517	40.8	7.77	1.05	.48
MAX	109	9.3	6.8	1.8	.58	300	4650	1100	109	15	2.7	1.5
MIN	8.5	6.2	2.0	.47	.30	.30	60	121	15	1.9	.25	.23
AC-FT	1900	426	262	49	21	818	83080	31770	2430	478	64	29

CAL YR 1978 TOTAL 34770.00 MEAN 95.3 MAX 2090 MIN .00 AC-FT 68970
WTR YR 1979 TOTAL 61173.14 MEAN 168 MAX 4650 MIN .23 AC-FT 121300

05113600 LONG CREEK NEAR NOONAN, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1972 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE (DEG C) (00010)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)
OCT										
03...	1145	88	800	8.5	11.0	250	26	50	30	87
NOV										
01...	1235	8.0	1030	8.5	4.0	400	130	80	49	100
29...	1600	6.9	1325	8.2	.0	530	200	88	75	130
JAN										
03...	1520	1.6	1790	8.1	.0	760	320	150	94	180
FEB										
08...	1220	.42	2000	7.6	.5	910	340	200	100	200
MAR										
07...	1445	.31	1820	8.0	.5	770	340	160	90	120
APR										
04...	1225	67	1100	--	.5	--	--	--	--	--
17...	1045	515	650	--	1.0	--	--	--	--	--
19...	1055	4660	300	8.9	2.0	90	23	18	11	23
21...	1050	3650	370	--	2.0	--	--	--	--	--
24...	1010	3630	340	--	5.0	--	--	--	--	--
26...	1100	2180	390	--	5.5	--	--	--	--	--
MAY										
02...	1250	600	600	8.1	7.5	170	47	37	19	56
JUN										
05...	1245	77	1190	8.4	20.0	380	110	75	47	140
JUL										
03...	1155	16	1460	8.2	24.5	440	66	78	60	190
31...	1340	2.7	1220	8.2	25.0	410	110	72	56	150
SEP										
05...	1445	.45	1240	8.8	19.0	380	140	60	56	140

DATE	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE (MG/L AS HCO3) (00440)	CAR-BONATE (MG/L AS CO3) (00445)	ALKA-LINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
OCT									
03...	42	2.4	12	271	0	222	1.4	200	14
NOV									
01...	34	2.2	9.4	332	0	272	1.7	330	15
29...	34	2.5	12	405	0	332	4.1	470	20
JAN									
03...	33	2.8	14	538	0	441	6.8	650	27
FEB									
08...	32	2.9	14	691	0	567	28	720	31
MAR									
07...	25	1.9	9.8	524	0	430	8.4	500	18
APR									
04...	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--
19...	33	1.1	7.6	82	0	67	.2	76	5.1
21...	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--
MAY									
02...	40	1.9	7.6	151	0	124	1.9	170	7.9
JUN									
05...	44	3.1	11	326	0	267	2.1	390	17
JUL									
03...	47	3.9	13	458	0	376	4.6	430	19
31...	43	3.2	11	365	0	299	3.7	390	18
SEP									
05...	44	3.1	10	296	0	243	.7	430	21

05113600 LONG CREEK NEAR NOONAN, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	FLUORIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
OCT									
03...	.1	4.1	559	531	.76	133	410	120	40
NOV									
01...	.2	1.9	786	749	1.07	17.0	220	120	60
29...	.2	5.3	1030	1000	1.40	19.2	30	60	160
JAN									
03...	.2	9.8	1470	1390	2.00	6.35	130	180	320
FEB									
08...	.2	16	1680	1620	2.28	1.91	60	60	1000
MAR									
07...	.2	6.7	1210	1160	1.65	1.01	90	60	1300
APR									
04...	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--
19...	.0	6.9	179	188	.24	2250	90	80	90
21...	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--
MAY									
02...	.1	6.9	416	379	.57	674	60	180	60
JUN									
05...	.1	1.2	873	842	1.19	181	10	180	40
JUL									
03...	.3	6.1	1080	1020	1.47	46.7	170	220	100
31...	.2	7.5	915	865	1.24	6.82	200	280	220
SEP									
05...	.2	8.1	902	872	1.23	1.10	230	450	100

05113700 WEST BRANCH SHORT CREEK NEAR COLUMBUS, ND

LOCATION.--Lat 48°58'04", long 102°51'04", in SW¼SW¼SW¼ sec.2, T.163 N., R.94 W., Burke County, Hydrologic Unit 0901001, on right bank 1,000 ft (305 m) downstream from bridge on county road, 5.4 mi (8.7 km) northwest of Columbus, 3.1 mi (5.0 km) upstream from international boundary, and 6 mi (9.7 km) upstream from the confluence with East Branch Short Creek.

DRAINAGE AREA.--167 mi^2 (432 km^2), of which 87 mi^2 (225 km^2) is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1977 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,880 ft (573 m), from topographic map.

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

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,540 ft^3/s (43.6 m^3/s) Apr. 19, 1979, gage height, 8.04 ft (2.451 m); maximum gage height, 10.77 ft (3.283 m) Apr. 18, 1979, ice jam; no flow at times each year.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 100 ft^3/s (2.83 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Apr. 18	1845	Ice jam		*10.77	3.283	May 8	1600	119	3.37	6.00	1.829
Apr. 19	0015	*1,540	43.6	8.04	2.451						

No flow for many months.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.6	.24	.00	.00	.00	.00	.40	55	5.9	.00	.00	.00
2	1.2	.24	.00	.00	.00	.00	.40	47	5.5	.00	.00	.00
3	.98	.24	.00	.00	.00	.00	.70	41	4.9	.00	.00	.00
4	.90	.20	.00	.00	.00	.00	.40	36	4.1	.00	.00	.00
5	.71	.16	.00	.00	.00	.00	.20	36	3.6	.00	.00	.00
6	.66	.13	.00	.00	.00	.00	.20	42	2.9	.00	.00	.00
7	.66	.13	.00	.00	.00	.00	1.0	84	2.0	.00	.00	.00
8	.66	.16	.00	.00	.00	.00	3.0	114	2.0	.00	.00	.00
9	1.1	.16	.00	.00	.00	.00	8.0	105	1.7	.00	.00	.00
10	2.3	.12	.00	.00	.00	.00	20	88	1.6	.00	.00	.00
11	2.0	.16	.00	.00	.00	.10	40	70	1.4	.00	.00	.00
12	1.4	.16	.00	.00	.00	.40	35	51	1.3	.00	.00	.00
13	1.2	.18	.00	.00	.00	.60	30	41	.88	.00	.00	.00
14	.90	.18	.00	.00	.00	.40	35	36	.62	.00	.00	.00
15	.77	.13	.00	.00	.00	.30	50	30	.53	.00	.00	.00
16	.61	.10	.00	.00	.00	.60	70	26	.46	.00	.00	.00
17	.56	.10	.00	.00	.00	.90	90	22	.35	.00	.00	.00
18	.56	.10	.00	.00	.00	.70	370	25	.23	.00	.00	.00
19	.56	.05	.00	.00	.00	.40	900	30	.18	.00	.00	.00
20	.56	.03	.00	.00	.00	.30	688	32	.14	.00	.00	.00
21	.52	.00	.00	.00	.00	.50	457	36	.10	.00	.00	.00
22	.35	.00	.00	.00	.00	.70	323	34	.18	.00	.00	.00
23	.31	.00	.00	.00	.00	1.0	220	30	.16	.00	.00	.00
24	.35	.00	.00	.00	.00	1.0	170	23	.10	.00	.00	.00
25	.24	.00	.00	.00	.00	1.0	146	20	.08	.00	.00	.00
26	.20	.00	.00	.00	.00	.70	124	16	.05	.00	.00	.00
27	.18	.00	.00	.00	.00	.40	107	12	.03	.00	.00	.00
28	.18	.00	.00	.00	.00	.40	94	10	.01	.00	.00	.00
29	.27	.00	.00	.00	---	.60	80	8.7	.00	.00	.00	.00
30	.27	.00	.00	.00	---	.90	68	8.0	.00	.00	.00	.00
31	.24	---	.00	.00	---	.70	---	6.2	---	.00	.00	---
TOTAL	23.00	2.97	.00	.00	.00	12.60	4131.30	1214.9	41.00	.00	.00	.00
MEAN	.74	.099	.000	.000	.000	.41	138	39.2	1.37	.000	.000	.000
MAX	2.3	.24	.00	.00	.00	1.0	900	114	5.9	.00	.00	.00
MIN	.18	.00	.00	.00	.00	.00	.20	6.2	.00	.00	.00	.00
AC-FT	46	5.9	.00	.00	.00	25	8190	2410	81	.00	.00	.00

CAL YR 1978 TOTAL 3202.39 MEAN 8.77 MAX 350 MIN .00 AC-FT 6350
WTR YR 1979 TOTAL 5425.77 MEAN 14.9 MAX 900 MIN .00 AC-FT 10760

05113700 WEST BRANCH SHORT CREEK NEAR COLUMBUS, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1977 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS (MG/L AS CACO3) (00900)
OCT											
05...	1600	.30	2340	8.5	5.0	8.0	10.1	91	K33	120	300
NOV											
14...	1015	.19	2990	8.4	3.5	.5	11.6	87	K2	66	450
APR											
17...	0950	90	890	7.8	3.5	.5	12.2	91	K3	2300	120
21...	0845	474	565	7.8	3.5	6.5	7.8	65	K3	970	96
MAY											
08...	1015	114	1360	8.2	.5	2.0	11.2	87	K4	1000	170
JUN											
12...	1230	1.3	2550	8.7	28.5	22.0	6.0	101	80	34	440

DATE	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE (MG/L AS HCO3) (00440)	CAR-BONATE (MG/L AS CO3) (00445)	ALKA-LINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)
OCT											
05...	0	56	39	430	75	11	12	425	6	360	2.2
NOV											
14...	0	85	57	580	73	12	17	632	7	542	4.1
APR											
17...	0	23	15	140	70	5.6	7.0	166	0	140	4.2
21...	0	22	10	90	65	4.0	7.1	137	0	110	3.5
MAY											
08...	0	54	21	240	74	8.0	8.5	268	0	220	2.7
JUN											
12...	9	68	65	490	70	10	11	505	10	450	1.7

DATE	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)
OCT											
05...	810	50	.4	15	1670	1610	2.19	1.50	.00	.00	2.0
NOV											
14...	1100	32	.4	7.3	2270	2200	2.99	1.15	.01	.07	2.0
APR											
17...	270	7.0	.1	11	570	555	.75	135	.09	.06	1.0
21...	180	4.4	.1	9.5	378	371	.50	475	.21	.06	1.1
MAY											
08...	420	9.4	.2	9.7	924	875	1.19	269	.01	.02	--
JUN											
12...	960	13	.3	1.2	1900	1670	2.54	6.36	.02	.04	1.6

K - Results based on colony count outside the acceptable range (non-ideal colony count).

05113700 WEST BRANCH SHORT CREEK NEAR COLUMBUS, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, TOTAL (MG/L AS N) (00600)	NITROGEN, TOTAL (MG/L AS NO3) (71887)	PHOSPHORUS, TOTAL (MG/L AS P) (00665)	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	ALUMINUM, DISSOLVED (UG/L AS AL) (01106)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DISSOLVED (UG/L AS AS) (01000)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA) (01007)	BARIUM, DISSOLVED (UG/L AS BA) (01005)	BERYLLIUM, TOTAL RECOVERABLE (UG/L AS BE) (01012)
OCT											
05...	2.0	2.0	8.9	.20	.11	--	--	--	--	--	--
NOV											
14...	2.1	2.1	9.3	.10	.03	--	--	--	--	--	--
APR											
17...	1.1	1.2	5.3	.12	.07	--	--	--	--	--	--
21...	1.2	1.4	6.2	.15	.10	40	2	1	0	50	0
MAY											
08...	--	--	--	--	.06	--	--	--	--	--	--
JUN											
12...	1.6	1.6	7.2	.07	.06	--	--	--	--	--	--

DATE	BERYLLIUM, DISSOLVED (UG/L AS BE) (01010)	BORON, DISSOLVED (UG/L AS B) (01020)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) (01034)	CHROMIUM, DISSOLVED (UG/L AS CR) (01030)	COBALT, TOTAL RECOVERABLE (UG/L AS CO) (01037)	COBALT, DISSOLVED (UG/L AS CO) (01035)	COPPER, TOTAL RECOVERABLE (UG/L AS CU) (01042)	COPPER, DISSOLVED (UG/L AS CU) (01040)	IRON, DISSOLVED (UG/L AS FE) (01046)	LITHIUM TOTAL RECOVERABLE (UG/L AS LI) (01132)
OCT										
05...	--	190	--	--	--	--	--	--	210	--
NOV										
14...	--	210	--	--	--	--	--	--	80	--
APR										
17...	--	70	--	--	--	--	--	--	190	--
21...	<1	70	10	0	0	<3	18	15	160	20
MAY										
08...	--	100	--	--	--	--	--	--	240	--
JUN										
12...	--	190	--	--	--	--	--	--	50	--

DATE	LITHIUM DISSOLVED (UG/L AS LI) (01130)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN) (01055)	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOVERABLE (UG/L AS HG) (71900)	MERCURY DISSOLVED (UG/L AS HG) (71890)	MOLYBDENUM, TOTAL RECOVERABLE (UG/L AS MO) (01062)	MOLYBDENUM, DISSOLVED (UG/L AS MO) (01060)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI) (01067)	NICKEL, DISSOLVED (UG/L AS NI) (01065)	SELENIUM, TOTAL (UG/L AS SE) (01147)
OCT										
05...	--	--	--	--	--	--	--	--	--	--
NOV										
14...	--	--	--	--	--	--	--	--	--	--
APR										
17...	--	--	--	--	--	--	--	--	--	--
21...	10	60	20	.2	.1	1	<10	9	1	1
MAY										
08...	--	--	--	--	--	--	--	--	--	--
JUN										
12...	--	--	--	--	--	--	--	--	--	--

05113700 WEST BRANCH SHORT CREEK NEAR COLUMBUS, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	VANA-DIUM, DIS-SOLVED (UG/L AS V) (01085)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	GROSS ALPHA, DIS-SOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DIS-SOLVED (PCI/L AS CS-137) (03515)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C) (00689)
OCT										
05...	--	--	--	--	--	--	--	--	23	3.3
NOV										
14...	--	--	--	--	--	--	--	--	34	1.9
APR										
17...	--	--	--	--	--	--	--	--	20	1.2
21...	0	1.3	20	30	<6.2	1.7	10	2.6	15	--
MAY										
08...	--	--	--	--	--	--	--	--	19	1.4
JUN										
12...	--	--	--	--	--	--	--	--	32	.7

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
OCT				
05...	1600	.30	20	.02
NOV				
14...	1015	.19	53	.03
APR				
17...	0950	90	23	5.6
21...	0845	474	33	42
MAY				
08...	1015	114	70	22
JUN				
12...	1230	1.3	14	.05

DATE	LENGTH OF EXPO-SURE (DAYS) (00022)	CHLOR-A PERI-PHYTON CHROMO-GRAPHIC FLUORUM (MG/M2) (70957)	CHLOR-B PERI-PHYTON CHROMO-GRAPHIC FLUORUM (MG/M2) (70958)	PERI-PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M (00573)	PERI-PHYTON BIOMASS ASH WEIGHT G/SQ M (00572)
OCT					
05...	14	.270	.340	1.02	.710

05113700 WEST BRANCH SHORT CREEK NEAR COLUMBUS, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1978 TO JUNE 1979

DATE	OCT 5,78	NOV 14,78	APR 17,79	APR 21,79	MAY 8,79	JUN 12,79
TIME	1600	1015	0950	0845	1015	1230
TOTAL CELLS/ML	25000	28000	3500	26000	4200	550
DIVERSITY: DIVISION	1.2	1.6	1.2	0.3	1.6	1.7
.CLASS	1.2	1.6	1.2	0.3	1.6	1.7
..ORDER	1.3	1.7	2.1	0.4	2.1	1.9
...FAMILY	1.5	1.7	2.2	1.4	2.3	2.4
....GENUS	1.5	0.0	2.4	1.4	2.5	2.6

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)												
.CHLOROPHYCEAE												
..CHLOROCOCCALES												
...CHARACIACEAE												
....SCHROEDERIA	200	1	--	-	--	-	--	-	--	-	--	-
...OOCYSTACEAE												
....ANKISTRODESMUS	1500	6	3200	12	1100#	30	290	1	1200#	28	150#	29
....FRANCEIA	--	-	--	-	*	0	--	-	--	-	--	-
....OOCYSTIS	--	-	530	2	--	-	--	-	--	-	--	-
....SELENASTRUM	540	1	7200#	26	--	-	*	0	--	-	--	-
....TETRAEDRON	*	0	--	-	--	-	--	-	--	-	--	-
...SCENEDESMACEAE												
....SCENEDESMUS	810	3	--	-	32	1	--	-	190	4	26	5
....TETRASTRUM	--	-	--	-	--	-	--	-	--	-	52	10
..VOLVOCALES												
...CHLAMYDOMONADACEAE	--	-	1100	4	--	-	--	-	--	-	--	-
....CHLAMYDOMONAS	--	-	--	-	80	2	670	3	140	3	--	-
..ZYGNEMATALES												
...DESMIDIACEAE												
....CLOSTERIUM	--	-	--	-	190	5	--	-	--	-	--	-
CHRYSOPHYTA												
.BACILLARIOPHYCEAE												
..CENTRALES												
...COSCINODISCACEAE												
....CYCLOTELLA	2800	11	8200#	30	64	2	200	1	1100#	26	26	5
....MELOSIRA	--	-	--	-	--	-	--	-	--	-	26	5
..PENNALES												
...FRAGILARIACEAE												
....SYNEDRA	*	0	--	-	--	-	--	-	--	-	--	-
...GOMPHONEMATACEAE												
....GOMPHONEMA	--	-	--	-	--	-	--	-	--	-	26	5
...NAVICULACEAE												
....NAVICULA	200	1	--	-	--	-	*	0	--	-	--	-
...NITZSCHIACEAE												
....NITZSCHIA	200	1	--	-	*	0	*	0	630#	15	13	2
...SURIRELLACEAE												
....SURIRELLA	--	-	--	-	--	-	*	0	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)												
.CRYPTOPHYCEAE												
..CRYPTOMONADALES												
...CRYPTOCHRYSIDACEAE												
....CHROOMONAS	*	0	--	-	--	-	--	-	--	-	13	2
...CRYPTOMONADACEAE												
....CRYPTOMONAS	--	-	--	-	--	-	--	-	--	-	13	2
CYANOPHYTA (BLUE-GREEN ALGAE)												
.CYANOPHYCEAE												
..CHROOCOCCALES												
...CHROOCOCCACEAE												
....ANACYSTIS	--	-	--	-	800#	23	--	-	--	-	180#	34
....COCCOCHLORIS	--	-	--	-	160	5	--	-	--	-	--	-
..NOSTOCALES												
...NOSTOCACEAE												
....ANABAENA	--	-	--	-	1000#	29	6300#	24	--	-	--	-
...OSCILLATORIACEAE												
....OSCILLATORIA	18000#	73	--	-	--	-	17000#	67	--	-	--	-
....SPIRULINA	--	-	--	-	32	1	--	-	--	-	--	-
...RIVULARIACEAE												
....RAPHIDIOPSIS	--	-	--	-	--	-	930	4	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)												
.EUGLENOPHYCEAE												
..EUGLENALES												
...EUGLENACEAE												
....EUGLENA	400	2	--	-	--	-	--	-	140	3	--	-
....TRACHELOMONAS	*	0	7400#	27	32	1	--	-	810#	20	--	-
PYRRHOPHYTA (FIRE ALGAE)												
.DINOPHYCEAE												
..PERIDINIALES												
...GLENODINIACEAE												
....GLENODINIUM	--	-	--	-	--	-	--	-	23	1	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

05113750 EAST BRANCH SHORT CREEK RESERVOIR NEAR COLUMBUS, ND

LOCATION.--Lat 48°59'26", long 102°47'07", in SW¼NW¼ sec.32, T.164 N., R.93 W., Burke County, Hydrologic Unit 09010001, on left bank of reservoir on East Branch Short Creek, 0.5 mi (0.8 km) south of international boundary, and 6.0 mi (9.7 km) north of Columbus.

DRAINAGE AREA.--280 mi^2 (725 km^2), of which 175 mi^2 (453 km^2) is noncontributing.

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

GAGE.--Water-stage recorder. Datum of gage is 1,860.00 ft (566.928 m) National Geodetic Vertical Datum of 1929.

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 (575.127 m) above mean sea level. Reservoir capacity at crest elevation, 1,200 acre-ft (1.48 hm^3). The reservoir is operated for water supply and recreation.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 1,850 acre-ft (2.28 hm^3) Mar. 28, 1976, gage height, 32.13 ft (9.793 m); minimum, 890 acre-ft (1.10 hm^3) Dec. 10, 1977, gage height, 23.92 ft (7.291 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 1,650 acre-ft (2.03 hm^3) Apr. 20, gage height, 30.72 ft (9.363 m); minimum, 1,150 acre-ft (1.42 hm^3) Sept. 24, gage height, 26.58 ft (8.102 m).

MONTHEND GAGE HEIGHT AND CONTENTS AT 2400, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

Date	Gage height (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30	*27.20	1,220	--
Oct. 31	26.95	1,190	-30
Nov. 30	*26.80	1,180	-10
Dec. 31	*26.94	1,190	+10
CAL YR 1978	--	--	+290
Jan. 31	26.95	1,190	0
Feb. 28	27.02	1,200	+10
Mar. 31	27.18	1,220	+20
Apr. 30	29.60	1,510	+290
May 31	*28.20	1,340	-170
June 30	27.55	1,270	-70
July 31	27.30	1,240	-30
Aug. 31	26.82	1,180	-60
Sept. 30	26.65	1,160	-20
WTR YR 1979	--	--	-60

* - Estimated

05113800 SHORT CREEK BELOW INTERNATIONAL BOUNDARY NEAR ROCHE PERCEE, SASK.
(International gaging station)

LOCATION.--Lat 49°01'42", long 102°51'00", in SW¼ sec.14, T.1, R.7 W., 2d meridian, Hydrologic Unit 09010001, 4 mi (6 km) southwest of Roche Percee, Saskatchewan, and 5 mi (8 km) upstream from mouth.

DRAINAGE AREA.--480 mi^2 (1,240 km^2).

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

GAGE.--Water-stage recorder.

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

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

AVERAGE DISCHARGE.--19 years, 14.8 ft^3/s (0.419 m^3/s), 10,720 acre-ft/yr (13.2 hm^3/yr); median of yearly mean discharges, 4.9 ft^3/s (0.14 m^3/s), 3,600 acre-ft/yr (4.4 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,700 ft^3/s (48.1 m^3/s) Apr. 7, 1969, gage height, 14.33 ft (4.368 m); maximum gage height, 14.39 ft (4.386 m) Mar. 28, 1960; no flow on many days each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,590 ft^3/s (45.0 m^3/s) Apr. 19, gage height, 14.08 ft (4.292 m), backwater from ice; no flow on many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.0	.39	.11	.07	.04	.00	.32	224	24	.53	.07	.00
2	1.7	.35	.11	.07	.04	.00	.32	185	21	.56	.07	.00
3	1.5	.35	.11	.07	.04	.00	.32	155	19	.74	.07	.00
4	1.2	.32	.11	.07	.04	.00	.32	137	17	.42	.04	.00
5	1.2	.32	.11	.07	.04	.04	.32	129	15	.32	.04	.00
6	.92	.28	.11	.07	.04	.04	3.9	135	13	.21	.04	.00
7	.76	.28	.11	.07	.04	.04	9.0	192	10	.18	.04	.00
8	.76	.28	.11	.07	.04	.04	12	233	9.8	.18	.04	.00
9	.72	.25	.11	.07	.04	.04	15	203	9.1	.14	.00	.00
10	.68	.25	.11	.07	.04	.04	26	172	8.3	.14	.00	.00
11	1.7	.25	.11	.07	.04	.04	35	147	7.5	.14	.00	.00
12	1.7	.21	.11	.07	.04	.04	34	126	7.4	.11	.00	.00
13	1.4	.21	.11	.07	.04	.04	30	110	6.6	.11	.00	.00
14	1.2	.21	.11	.07	.04	.04	40	97	5.1	.14	.00	.00
15	1.1	.18	.11	.07	.04	.04	65	90	4.4	.18	.00	.00
16	1.0	.18	.11	.07	.04	.04	122	80	3.7	.21	.00	.00
17	.90	.18	.11	.07	.00	.04	243	70	3.3	.21	.00	.00
18	.80	.18	.11	.07	.00	.04	494	65	2.7	.21	.00	.00
19	.71	.14	.07	.07	.00	.04	1370	69	2.2	.21	.00	.00
20	.67	.14	.07	.04	.00	.04	1100	69	1.8	.14	.00	.00
21	.68	.14	.07	.04	.00	.18	929	77	1.5	.11	.00	.00
22	.66	.14	.07	.04	.00	.35	773	76	2.2	.14	.00	.00
23	.55	.14	.07	.04	.00	.53	710	70	2.3	.21	.00	.00
24	.58	.14	.07	.04	.00	.49	653	62	1.6	.21	.00	.00
25	.50	.14	.07	.04	.00	.49	583	55	1.3	.14	.00	.00
26	.49	.11	.07	.04	.00	.46	544	49	.99	.11	.00	.00
27	.48	.11	.07	.04	.00	.42	505	42	.78	.11	.00	.00
28	.52	.11	.07	.04	.00	.42	420	35	.67	.07	.00	.00
29	.44	.11	.07	.04	---	.35	344	32	.64	.11	.00	.00
30	.42	.11	.07	.04	---	.35	277	30	.53	.14	.00	.00
31	.39	---	.07	.04	---	.32	---	26	---	.11	.00	---
TOTAL	28.33	6.20	2.89	1.81	.64	5.00	9338.50	3242	203.41	6.54	.41	.00
MEAN	.91	.21	.093	.058	.023	.16	311	105	6.78	.21	.013	.000
MAX	2.0	.39	.11	.07	.04	.53	1370	233	24	.74	.07	.00
MIN	.39	.11	.07	.04	.00	.00	.32	26	.53	.07	.00	.00
AC-FT	56	12	5.7	3.6	1.3	9.9	18520	6430	403	13	.8	.00

CAL YR 1978	TOTAL	3796.08	MEAN 10.4	MAX 138	MIN .00	AC-FT 7530			
WTR YR 1979	TOTAL	12835.73	MEAN 35.2	MAX 1370	MIN .00	AC-FT 25460			

05114000 SOURIS (MOUSE) RIVER NEAR SHERWOOD, ND
(International gaging station)

LOCATION.--Lat 48°59'24", long 101°57'28", in NW¼SE¼NE¼ sec.33, T.164 N., R.87 W., Renville County, Hydrologic Unit 09010001, on right bank 0.8 mi (1.3 km) downstream from international boundary, 16 mi (26 km) northwest of Sherwood, and at mile 511.4 (822.8 km).

DRAINAGE AREA.--8,940 mi^2 (23,150 km^2), approximately, of which about 5,900 mi^2 (15,300 km^2) is probably noncontributing.

WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WSP 1308: 1934, 1945. WSP 2113: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1,603.73 ft (488.817 m) National Geodetic Vertical Datum of 1929. Prior to Apr. 8, 1935, nonrecording gage at same site and datum.

REMARKS.--Records good. Some regulation by reservoirs in Canada. Some small diversions for irrigation and municipal supply.

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

AVERAGE DISCHARGE.--49 years, 145 ft^3/s (4.106 m^3/s), 105,100 acre-ft/yr (130 hm^3/yr); median of yearly mean discharges, 80 ft^3/s (2.27 m^3/s), 58,000 acre-ft/yr (72 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,800 ft^3/s (419 m^3/s) Apr. 10, 1976, gage height, 25.15 ft (7.666 m); no flow at times in some years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in 1927 reached a stage of about 22 ft (6.7 m) and flood in 1904 reached a stage of about 25.8 ft (7.86 m) from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 8,550 ft^3/s (242 m^3/s) Apr. 30, gage height, 23.95 ft (7.300 m); minimum daily, 3.4 ft^3/s (0.096 m^3/s) Mar. 3-5.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	170	20	15	8.5	3.9	3.5	270	8040	799	155	54	13
2	140	20	14	8.1	3.9	3.5	240	7260	688	146	53	13
3	125	20	11	7.6	3.9	3.4	230	6630	618	137	53	14
4	120	21	11	7.1	3.9	3.4	230	6060	574	134	54	15
5	125	20	10	6.6	3.9	3.4	250	5600	535	171	48	16
6	130	18	9.4	6.3	3.9	3.5	240	5180	506	160	43	15
7	125	18	9.0	6.0	3.9	4.5	200	4810	485	126	40	15
8	115	18	8.8	5.7	3.8	4.5	150	4490	463	116	37	15
9	90	18	8.3	5.4	3.8	4.5	100	4230	437	109	35	14
10	60	18	7.8	5.2	3.8	5.0	80	4030	419	103	32	14
11	40	18	8.1	5.1	3.8	20	70	3840	411	95	31	14
12	45	18	9.2	5.0	3.8	120	70	3650	393	87	30	16
13	80	17	10	4.8	3.8	200	70	3530	366	84	31	17
14	90	16	11	4.7	3.8	250	80	3420	336	80	30	17
15	95	16	11	4.6	3.8	250	110	3340	312	76	28	16
16	105	15	10	4.3	3.7	210	150	3270	302	74	27	15
17	90	15	9.7	4.2	3.6	160	200	3150	290	70	25	13
18	60	15	9.4	4.2	3.6	130	600	3000	265	67	24	11
19	45	14	9.4	4.2	3.6	120	1200	2840	248	64	22	9.9
20	40	14	9.7	4.2	3.6	140	2000	2650	231	62	20	8.5
21	35	13	10	4.2	3.6	190	2900	2440	215	59	18	8.0
22	32	12	12	4.2	3.6	240	5550	2260	206	57	18	9.4
23	30	12	13	4.2	3.6	260	6360	2100	199	55	17	9.7
24	30	12	14	4.1	3.5	270	5200	1940	198	55	17	8.0
25	30	13	13	4.1	3.5	260	4810	1790	193	53	17	6.9
26	30	14	12	4.1	3.5	250	4810	1560	178	49	16	6.9
27	28	15	11	4.1	3.5	250	4920	1260	168	46	16	6.9
28	26	15	9.9	4.0	3.5	260	6180	1070	172	42	15	6.9
29	24	15	9.7	4.0	---	280	7960	1040	168	39	14	6.3
30	22	16	9.2	4.0	---	300	8450	1010	159	44	14	6.3
31	20	---	9.0	4.0	---	290	---	920	---	52	13	---
TOTAL	2197	486	324.6	156.8	104.1	4489.2	63680	106410	10534	2667	892	356.7
MEAN	70.9	16.2	10.5	5.06	3.72	145	2123	3433	351	86.0	28.8	11.9
MAX	170	21	15	8.5	3.9	300	8450	8040	799	171	54	17
MIN	20	12	7.8	4.0	3.5	3.4	70	920	159	39	13	6.3
AC-FT	4360	964	644	311	206	8900	126300	211100	20890	5290	1770	708

CAL YR 1978 TOTAL 51647.00 MEAN 141 MAX 1550 MIN .80 AC-FT 102400
WTR YR 1979 TOTAL 192297.40 MEAN 527 MAX 8450 MIN 3.4 AC-FT 381400

05114000 SOURIS (MOUSE) RIVER NEAR SHERWOOD, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1973 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1975 to current year.
WATER TEMPERATURES: October 1975 to current year.
SUSPENDED-SEDIMENT DISCHARGE: October 1974 to current year.

REMARKS.--No specific conductance or temperature record July 1 to Sept. 30.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 2,700 micromhos Mar. 27, 1978; minimum daily, 310 micromhos May 10, 11, 1979.
WATER TEMPERATURES: Maximum daily, 25.0°C July 17, 18, 1978; minimum daily, 0.0°C on many days during winter months.
SEDIMENT CONCENTRATIONS: Maximum daily mean, 306 mg/L May 22, 1975; minimum daily mean, 4 mg/L Feb. 14 to Mar. 17, 1978.
SEDIMENT LOADS: Maximum daily, 2,810 tons (2,550 metric tons) Apr. 9, 1976; minimum daily, 0.01 ton (0.01 metric ton) on many days.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,750 micromhos Mar. 12-14; minimum daily, 310 micromhos May 10, 11.
WATER TEMPERATURES: Maximum daily, 20.5°C June 28, minimum daily, 0.0°C on many days during winter months.
SEDIMENT CONCENTRATIONS: Maximum daily mean, 99 mg/L May 22, minimum daily, 8 mg/L July 29.
SEDIMENT LOADS: Maximum daily, 1,650 tons (1,500 metric tons) Apr. 23; minimum daily, 0.12 ton (0.11 metric ton) Jan. 17-23.

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE (DEG C) (00010)	COLOR (PLAT-INUM-COBALT UNITS) (00080)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	COLI-FORM, TOTAL, IMMED. (COLS. PER 100 ML) (31501)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)
OCT											
05...	1345	E125	835	8.2	10.5	--	16	8.9	36	1000	150
18...	2000	60	865	8.4	6.0	40	7.4	11.0	13	1100	100
NOV											
01...	0930	19	990	8.2	2.5	--	4.6	11.3	34	660	215
17...	1200	15	1180	8.1	1.0	13	3.0	11.7	33	250	--
28...	1800	15	1200	7.7	.0	--	3.0	7.8	20	K8	K2
DEC											
19...	1345	9.6	1250	7.6	.0	20	3.0	3.1	34	K18	<2
JAN											
12...	0945	5.0	1460	7.5	.0	--	3.9	2.1	27	176	K2
16...	1800	4.2	1520	7.4	.0	25	3.4	2.8	27	K8	K4
31...	1015	4.0	1530	7.6	.0	--	2.6	1.8	33	K18	K2
FEB											
14...	1700	3.8	1630	7.6	.0	23	2.5	1.9	42	K16	<2
27...	1630	3.6	1660	7.5	.0	--	5.5	3.4	22	K8	<2
MAR											
22...	1500	240	1010	8.7	.0	39	12	14.8	38	270	K13
APR											
06...	1415	239	875	8.5	.0	--	9.0	11.8	29	500	K10
20...	1400	1800	--	--	--	--	--	--	--	--	--
24...	1155	5410	405	--	4.0	--	--	--	--	--	--
MAY											
02...	1815	6710	345	7.8	7.5	140	30	9.3	44	420	K18
24...	1615	2000	520	7.9	14.0	50	69	8.8	43	1000	K13
JUN											
05...	1330	532	755	8.1	18.0	--	27	7.6	26	--	K20
20...	1700	229	830	8.3	20.0	55	11	8.4	36	2400	K47
JUL											
12...	1225	68	955	8.0	23.5	--	11	6.3	33	3300	100
25...	2215	50	980	8.2	22.5	30	4.0	7.8	25	1000	135
AUG											
01...	2030	54	970	8.2	22.5	--	3.5	8.9	24	520	180
23...	1700	17	1060	8.4	19.2	35	8.0	8.6	32	K280	K55
SEP											
05...	2015	--	1140	8.5	18.5	--	16	8.5	29	500	100
15...	2015	16	--	--	--	--	--	--	--	--	--
20...	1130	8.8	1160	8.3	12.5	20	18	7.5	35	K360	K46

K - Results based on colony count outside the acceptable range (non-ideal colony count).

05114000 SOURIS (MOUSE) RIVER NEAR SHERWOOD, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	HARDNESS (MG/L AS CACO3) (00900)	HARDNESS, NONCARBONATE (MG/L CACO3) (00902)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM ADSORPTION RATIO (00931)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	ALKALINITY (MG/L AS CACO3) (00410)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)
OCT											
05...	--	--	--	--	--	--	--	--	--	--	--
18...	230	14	51	26	100	46	2.8	13	220	230	15
NOV											
01...	--	--	--	--	--	--	--	--	--	--	--
17...	360	--	81	39	150	46	3.4	12	320	290	41
28...	--	--	--	--	--	--	--	--	--	--	--
DEC											
19...	370	0	82	40	140	44	3.2	14	370	300	43
JAN											
12...	--	--	--	--	--	--	--	--	--	--	--
16...	490	29	110	52	180	44	3.5	13	460	360	65
31...	--	--	--	--	--	--	--	--	--	--	--
FEB											
14...	530	26	120	55	190	43	3.6	13	500	320	68
27...	--	--	--	--	--	--	--	--	--	--	--
MAR											
22...	270	54	62	29	130	49	3.4	13	220	300	25
APR											
06...	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--
MAY											
02...	110	32	27	11	27	32	1.1	9.2	81	82	6.6
24...	170	51	37	19	45	35	1.5	10	120	130	8.8
JUN											
05...	--	--	--	--	--	--	--	--	--	--	--
20...	280	43	62	31	83	38	2.2	11	240	190	19
JUL											
12...	--	--	--	--	--	--	--	--	--	--	--
25...	290	0	63	33	96	55	2.4	10	300	220	41
AUG											
01...	--	--	--	--	--	--	--	--	--	--	--
23...	350	22	80	37	110	53	2.6	9.2	330	230	52
SEP											
05...	--	--	--	--	--	--	--	--	--	--	--
20...	380	34	88	40	120	40	2.7	9.9	350	240	59

DATE	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)	SOLIDS, DISSOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L) (00530)	NITROGEN, NITRATE TOTAL (MG/L AS N) (00620)	NITROGEN, NITRITE TOTAL (MG/L AS N) (00615)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N) (00630)
OCT										
05...	--	--	584	--	.79	197	17	.09	.01	.10
18...	.3	1.0	596	569	.81	96.6	10	.01	.01	.02
NOV										
01...	--	--	674	--	.92	36.4	17	.01	.00	.01
17...	.2	2.1	802	--	1.09	32.5	10	.01	.01	.02
28...	--	--	816	--	1.11	33.0	7	.04	.01	.05
DEC										
19...	.2	7.4	863	850	1.17	22.4	1	.09	.01	.10
JAN										
12...	--	--	1040	--	1.41	14.0	4	.15	.01	.16
16...	.3	13	1070	1070	1.46	12.4	4	.13	.02	.15
31...	--	--	1070	--	1.46	11.6	7	.18	.02	.20
FEB										
14...	.2	16	1120	1080	1.52	11.5	6	.23	.02	.25
27...	--	--	1110	--	1.51	10.8	7	.40	.04	.44
MAR										
22...	.4	2.5	698	695	.95	452	9	.02	.00	.02
APR										
06...	--	--	598	--	.81	386	19	.10	.00	.10
20...	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--
MAY										
02...	.1	6.9	236	220	.32	4280	49	.28	.06	.34
24...	.2	10	361	333	.49	1950	75	.14	.04	.18
JUN										
05...	--	--	517	--	.70	747	58	.11	.04	.15
20...	.2	8.1	570	549	.78	352	24	.00	.02	.02
JUL										
12...	--	--	648	--	.88	152	25	.15	.02	.17
25...	.2	8.8	646	653	.88	87.2	9	.03	.02	.05
AUG										
01...	--	--	643	--	.87	93.7	3	.08	.02	.10
23...	.2	12	719	729	.98	33.0	18	.00	.02	.01
SEP										
05...	--	--	743	--	1.01	32.1	22	.01	.02	.03
20...	.3	10	770	778	1.05	18.3	40	.06	.02	.08

05114000 SOURIS (MOUSE) RIVER NEAR SHERWOOD, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHATE, TOTAL (MG/L AS PO4) (00650)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, ORTHO, TOTAL (MG/L AS P) (70507)
OCT										
05...	--	--	--	--	--	--	.16	--	--	--
18...	.03	.02	.83	.85	.87	3.9	.09	--	.09	.08
NOV										
01...	--	--	--	--	--	--	.09	--	--	--
17...	.02	.03	.70	.73	.75	3.3	.07	--	.04	.04
28...	--	--	--	--	--	--	.07	--	--	--
DEC										
19...	.15	.24	.86	1.1	1.2	5.3	.05	--	.05	.05
JAN										
12...	--	--	--	--	--	--	.09	--	--	--
16...	.17	.71	.69	1.4	1.6	6.9	.10	--	.06	.05
31...	--	--	--	--	--	--	.09	--	--	--
FEB										
14...	.25	.81	.59	1.4	1.7	7.3	.07	--	.04	.05
27...	--	--	--	--	--	--	.06	--	--	--
MAR										
22...	.01	.02	.77	.79	.81	3.6	.12	--	.02	.03
APR										
06...	--	--	--	--	--	--	.12	--	--	--
20...	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--
MAY										
02...	.30	.06	.94	1.0	1.3	5.9	.12	.37	.06	.08
24...	.17	.13	1.3	1.4	1.6	7.0	.20	.34	.10	.11
JUN										
05...	--	--	--	--	--	--	.18	.55	--	--
20...	.00	.02	3.0	3.0	3.0	13	.13	.15	.05	.05
JUL										
12...	--	--	--	--	--	--	.13	--	--	--
25...	.05	.03	.91	.94	.99	4.4	.12	.21	.10	.07
AUG										
01...	--	--	--	--	--	--	.12	--	--	--
23...	.01	.02	.92	.94	.95	4.2	.02	.09	.00	.03
SEP										
05...	--	--	--	--	--	--	.11	--	--	--
20...	.09	.06	1.1	1.2	1.3	5.7	.09	.09	.03	.03

DATE	PHOS-PHORUS, HYDRO-LYZABLE TOTAL (MG/L AS P) (00669)	PHOS-PHORUS, ORGANIC TOTAL (MG/L AS P) (00670)	ALUM-INUM, TOTAL RECOV-ERABLE (UG/L AS AL) (01105)	ALUM-INUM, SUS-PENDED RECOV. (UG/L AS AL) (01107)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC SUS-PENDED TOTAL (UG/L AS AS) (01001)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BARIUM, SUS-PENDED RECOV-ERABLE (UG/L AS BA) (01006)
OCT										
05...	--	--	--	--	--	--	--	--	--	--
18...	.02	.00	210	170	40	4	--	4	200	--
NOV										
01...	--	--	--	--	--	--	--	--	--	--
17...	.03	.00	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
DEC										
19...	.04	.00	--	--	--	--	--	--	--	--
JAN										
12...	--	--	--	--	--	--	--	--	--	--
16...	.01	.04	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--
FEB										
14...	.02	.00	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--
MAR										
22...	.05	.04	--	--	--	--	--	--	--	--
APR										
06...	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--
MAY										
02...	.00	.05	130	100	30	2	0	1	100	0
24...	.09	.00	--	--	--	--	--	--	--	--
JUN										
05...	--	--	--	--	--	--	--	--	--	--
20...	.03	.05	--	--	--	--	--	--	--	--
JUL										
12...	--	--	--	--	--	--	--	--	--	--
25...	.00	.06	--	--	--	--	--	--	--	--
AUG										
01...	--	--	--	--	--	--	--	--	--	--
23...	.00	.00	--	--	--	--	--	--	--	--
SEP										
05...	--	--	--	--	--	--	--	--	--	--
20...	.04	.02	--	--	--	--	--	--	--	--

05114000 SOURIS (MOUSE) RIVER NEAR SHERWOOD, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE) (01012)	BERYL-LIUM, SUS-PENDED RECOV. (UG/L AS BE) (01011)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE) (01010)	BORON, TOTAL RECOV-ERABLE (UG/L AS B) (01022)	BORON, DIS-SOLVED (UG/L AS B) (01020)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD) (01027)	CADMIUM SUS-PENDED RECOV-ERABLE (UG/L AS CD) (01026)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)
OCT										
05...	--	--	--	--	--	--	--	--	--	--
18...	100	0	0	<1	540	520	0	0	<1	0
NOV										
01...	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	470	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
DEC										
19...	--	--	--	--	--	550	--	--	--	--
JAN										
12...	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	510	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--
FEB										
14...	--	--	--	--	--	510	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--
MAR										
22...	--	--	--	--	--	940	--	--	--	--
APR										
06...	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--
MAY										
02...	100	0	0	0	150	100	--	--	--	10
24...	--	--	--	--	--	90	--	--	--	--
JUN										
05...	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	80	--	--	--	--
JUL										
12...	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	180	--	--	--	--
AUG										
01...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	250	--	--	--	--
SEP										
05...	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	240	--	--	--	--

DATE	CHRO-MIUM, SUS-PENDED RECOV. (UG/L AS CR) (01031)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO) (01037)	COBALT, SUS-PENDED RECOV-ERABLE (UG/L AS CO) (01036)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	COPPER, SUS-PENDED RECOV-ERABLE (UG/L AS CU) (01041)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	LEAD, SUS-PENDED RECOV-ERABLE (UG/L AS PB) (01050)
OCT												
05...	--	--	--	--	--	--	--	--	--	--	--	--
18...	0	0	0	--	<1	7	3	4	420	10	2	2
MAY												
02...	10	0	0	0	0	15	10	5	2300	3200	--	--
24...	--	--	--	--	--	--	--	--	--	--	--	--

DATE	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM TOTAL RECOV-ERABLE (UG/L AS LI) (01132)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MANGA-NESE, SUS-PENDED RECOV. (UG/L AS MN) (01054)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	MERCURY SUS-PENDED RECOV-ERABLE (UG/L AS HG) (71895)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, TOTAL RECOV-ERABLE (UG/L AS MO) (01062)	MOLYB-DENUM, SUS-PENDED RECOV. (UG/L AS MO) (01061)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)
OCT												
05...	--	--	--	--	--	--	--	--	--	--	--	--
18...	0	50	40	70	30	40	.0	.0	.1	10	4	6
MAY												
02...	--	20	20	50	40	10	7.0	6.9	.1	0	0	0
24...	--	--	--	--	--	--	--	--	--	--	--	--

05114000 SOURIS (MOUSE) RIVER NEAR SHERWOOD, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	NICKEL, SUS-PENDED RECOV-ERABLE (UG/L AS NI) (01066)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SELE-NIUM, SUS-PENDED TOTAL (UG/L AS SE) (01146)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	SILVER, SUS-PENDED RECOV-ERABLE (UG/L AS AG) (01076)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)	VANA-DIUM, DIS-SOLVED (UG/L AS V) (01085)
OCT											
05...	--	--	--	--	--	--	--	--	--	--	--
18...	4	1	3	1	0	1	0	--	0	--	.0
MAY											
02...	16	15	1	0	0	1	0	0	0	--	.4
24...	--	--	--	--	--	--	--	--	0	--	--
JUN											
05...	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	450	--

DATE	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, SUS-PENDED RECOV-ERABLE (UG/L AS ZN) (01091)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C) (00689)	CYANIDE TOTAL (MG/L AS CN) (00720)	PHENOLS (UG/L) (32730)	PCB, TOTAL (UG/L) (39516)	ALDRIN, TOTAL (UG/L) (39330)	CHLOR-DANE, TOTAL (UG/L) (39350)	DDD, TOTAL (UG/L) (39360)
OCT											
05...	--	--	--	11	1.2	--	--	--	--	--	--
18...	40	40	<3	71	.5	.00	2	--	--	--	--
NOV											
01...	--	--	--	11	.5	--	--	--	--	--	--
17...	--	--	--	--	--	--	0	--	--	--	--
28...	--	--	--	10	.4	--	--	--	--	--	--
DEC											
19...	--	--	--	9.8	.3	--	1	.0	.00	.0	.00
JAN											
12...	--	--	--	13	.2	--	--	--	--	--	--
16...	--	--	--	13	.4	--	0	--	--	--	--
31...	--	--	--	11	.3	--	--	--	--	--	--
FEB											
14...	--	--	--	9.9	.2	--	1	.0	.00	.0	.00
27...	--	--	--	13	--	--	--	--	--	--	--
MAR											
22...	--	--	--	10	1.4	--	0	--	--	--	--
APR											
06...	--	--	--	--	.7	--	--	--	--	--	--
MAY											
02...	40	30	10	12	6.2	--	4	.0	.00	.0	.00
24...	--	--	--	15	--	--	0	--	--	--	--
JUN											
05...	--	--	--	18	1.4	--	--	--	--	--	--
20...	--	--	--	15	1.7	--	0	--	--	--	--
JUL											
12...	--	--	--	13	.5	--	--	--	--	--	--
25...	--	--	--	7.2	.4	--	3	.0	.00	.0	.00
AUG											
01...	--	--	--	7.1	.1	--	--	--	--	--	--
23...	--	--	--	11	1.8	--	1	--	--	--	--
SEP											
05...	--	--	--	8.9	1.5	--	--	--	--	--	--
20...	--	--	--	10	1.0	--	0	--	--	--	--

DATE	DDE, TOTAL (UG/L) (39365)	DDT, TOTAL (UG/L) (39370)	DI-AZINON, TOTAL (UG/L) (39570)	DI-ELDRIN TOTAL (UG/L) (39380)	ENDO-SULFAN, TOTAL (UG/L) (39388)	ENDRIN, TOTAL (UG/L) (39390)	ETHION, TOTAL (UG/L) (39398)	HEPTA-CHLOR, TOTAL (UG/L) (39410)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L) (39420)	LINDANE TOTAL (UG/L) (39340)	MALA-THION, TOTAL (UG/L) (39530)
DEC											
19...	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
JAN											
12...	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
FEB											
14...	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
MAY											
02...	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24...	--	--	--	--	--	--	--	--	--	--	--
JUN											
05...	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
JUL											
12...	--	--	--	--	--	--	--	--	--	--	--
25...	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

RED RIVER OF THE NORTH BASIN

05114000 SOURIS (MOUSE) RIVER NEAR SHERWOOD, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	METHYL PARA-THION, TOTAL (UG/L) (39600)	METHYL TRI-THION, TOTAL (UG/L) (39790)	NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L) (39250)	MIREX, TOTAL (UG/L) (39755)	PARA-THION, TOTAL (UG/L) (39540)	PER-THANE TOTAL (UG/L) (39034)	TOX-APHENE, TOTAL (UG/L) (39400)	TOTAL TRI-THION (UG/L) (39786)	2,4-D, TOTAL (UG/L) (39730)
DEC									
19...	.00	.00	.00	.00	.00	.00	0	.00	.03
JAN									
16...	--	--	--	--	--	--	--	--	--
FEB									
14...	.00	.00	--	.00	.00	.00	0	.00	.00
MAR									
22...	--	--	--	--	--	--	--	--	--
APR									
20...	--	--	--	--	--	--	--	--	--
MAY									
02...	.00	.00	--	.00	.00	.00	0	.00	.24
24...	--	--	--	--	--	--	--	--	--
JUN									
20...	--	--	--	--	--	--	--	--	--
JUL									
25...	.00	.00	--	.00	.00	.00	0	.00	.01
AUG									
23...	--	--	--	--	--	--	--	--	--
SEP									
20...	--	--	--	--	--	--	--	--	--

DATE	2,4,5-T TOTAL (UG/L) (39740)	SILVEX, TOTAL (UG/L) (39760)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70338)	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70340)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)	BED MAT. FALL DIAM. % FINER THAN .062 MM (80158)	BED MAT. FALL DIAM. % FINER THAN .125 MM (80159)
OCT									
18...	--	--	12	1.9	--	--	--	--	--
NOV									
17...	--	--	10	.40	--	--	--	--	--
DEC									
19...	.00	.00	16	.41	--	--	--	--	--
JAN									
16...	--	--	11	.13	--	--	--	--	--
FEB									
14...	.00	.00	16	.16	--	--	--	--	--
MAR									
22...	--	--	30	19	--	--	--	--	--
APR									
20...	--	--	94	457	--	--	--	--	--
MAY									
02...	.00	.00	42	761	86	94	100	37	48
24...	--	--	90	486	--	--	--	--	--
JUN									
20...	--	--	30	19	--	--	--	--	--
JUL									
25...	.00	.00	10	1.3	--	--	--	--	--
AUG									
23...	--	--	18	.83	--	--	--	--	--
SEP									
20...	--	--	28	.67	--	--	--	--	--

DATE	BED MAT. FALL DIAM. % FINER THAN .250 MM (80160)	BED MAT. FALL DIAM. % FINER THAN .500 MM (80161)	BED MAT. FALL DIAM. % FINER THAN 1.00 MM (80162)	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM (80169)	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM (80170)	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM (80171)	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM (80172)	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM (80173)
MAY								
02...	61	70	76	85	92	95	98	100
24...	--	--	--	--	--	--	--	--

05114000 SOURIS (MOUSE) RIVER NEAR SHERWOOD, ND--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1000	1000	1210	1400	1530	1710	860	400	550			
2	825	1030	1200	1500	1530	1720	875	395	525			
3	800	1050	1220	1400	1530	1700	880	370	675			
4	845	1090	1250	1400	1580	1680	900	355	775			
5	825	1090	1200	1400	1200	1710	865	375	750			
6	850	1050	1220	1410	1600	1690	865	355	740			
7	840	1090	1200	1420	1600	1700	865	325	745			
8	825	1090	1250	1480	1610	1700	865	325	790			
9	825	1100	1250	1420	1610	1710	865	340	800			
10	890	1100	1250	1420	1580	1730	865	310	800			
11	900	1050	1300	1480	1650	1730	870	310	795			
12	900	1130	1220	1500	1630	1750	900	325	810			
13	900	1100	1250	1450	1640	1750	825	395	790			
14	900	1150	1220	1450	1660	1750	840	430	830			
15	950	1150	1250	1450	1650	1680	820	430	825			
16	900	1140	1250	1450	1650	1600	820	420	800			
17	800	1130	1300	1450	1630	1430	820	420	825			
18	900	1100	1280	1550	1630	1480	850	460	825			
19	900	1180	1250	1520	1630	1480	875	540	835			
20	900	1150	1220	1530	1630	1450	850	490	850			
21	900	1210	1300	1500	1630	1240	850	---	850			
22	910	1200	1300	1490	1650	1080	800	---	835			
23	950	1200	1310	1520	1680	1000	810	---	850			
24	950	1200	1300	1580	1680	950	820	430	835			
25	940	1200	1350	1500	1680	900	825	410	835			
26	975	1230	1350	1500	1650	875	880	410	825			
27	950	1200	1300	1500	1650	875	895	435	850			
28	975	1210	1350	1600	1700	940	560	430	850			
29	950	1200	1320	1540	---	900	470	415	875			
30	1000	1210	1400	1520	---	875	495	400	860			
31	1000	---	1350	1480	---	850	---	420	---			
MEAN	902	1130	1270	1480	1610	1410	819	397	793			

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13.0	3.5	.5	.5	.5	1.0	.5	4.0	13.0			
2	12.5	4.0	.5	.0	.5	1.0	.5	4.0	14.5			
3	12.0	5.0	.5	.0	.5	1.0	.0	4.0	15.0			
4	12.0	5.0	.5	.0	.5	.5	.0	4.0	17.0			
5	11.0	5.0	.5	.0	1.0	1.0	.0	4.0	17.0			
6	9.5	3.0	.5	.0	.5	1.0	.0	3.0	17.0			
7	8.5	2.5	.5	.0	.5	1.0	.0	2.0	17.5			
8	9.0	4.5	.5	.0	.5	1.5	1.0	2.0	16.5			
9	9.5	4.5	.5	.0	.5	1.0	.0	2.0	16.0			
10	10.0	4.5	1.5	.0	1.0	1.5	.0	2.0	17.0			
11	11.0	4.5	.5	.0	.5	1.5	1.0	3.0	17.0			
12	9.0	4.0	1.5	.5	.5	1.5	1.0	4.0	18.0			
13	9.0	4.5	1.0	.5	.5	1.5	1.0	6.0	19.0			
14	7.0	3.0	1.0	.5	.5	1.5	1.0	7.5	19.0			
15	7.0	2.5	.5	.5	.5	1.5	1.0	8.5	18.5			
16	6.5	2.0	.5	.5	.5	1.5	1.0	8.5	19.0			
17	6.5	3.0	1.0	1.0	1.0	1.5	1.0	9.0	18.5			
18	6.0	2.5	1.0	1.5	1.0	1.5	1.5	9.0	18.0			
19	7.0	1.5	1.0	1.0	1.0	1.5	1.0	9.0	19.5			
20	8.0	.0	.5	.5	1.0	1.5	2.0	9.0	19.0			
21	9.0	.5	2.0	1.0	1.0	1.5	1.5	9.0	19.0			
22	6.5	1.0	1.0	1.0	1.0	1.0	1.0	9.0	19.0			
23	6.0	1.0	.0	.5	.5	1.0	2.0	9.0	19.5			
24	6.5	1.0	.0	.5	1.0	1.0	2.5	9.0	19.0			
25	6.5	1.0	1.0	1.0	1.0	1.0	2.5	9.0	18.5			
26	6.0	1.0	.5	.5	1.0	1.0	3.0	9.0	19.0			
27	5.5	1.0	.0	.5	1.0	1.0	4.0	8.5	19.0			
28	4.5	1.0	.0	.5	1.0	.5	4.0	8.5	20.5			
29	4.0	.5	.0	.5	---	1.0	3.5	9.0	20.0			
30	5.0	.5	.0	.5	---	1.0	3.0	8.5	20.0			
31	5.0	---	.0	.5	---	1.0	---	10.0	---			
MEAN	8.0	2.5	.5	.5	.5	1.0	1.5	6.5	18.0			

05114000 SOURIS (MOUSE) RIVER NEAR SHERWOOD, ND--Continued

SUSPENDED-SEDIMENT, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DAY	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	60	28	10	.54	12	.49	14	.32	14	.15	15	.14
2	50	19	10	.54	12	.45	14	.31	14	.15	15	.14
3	45	15	10	.54	12	.36	14	.29	14	.15	15	.14
4	40	13	10	.57	12	.36	14	.27	14	.15	15	.14
5	40	13	10	.54	12	.32	14	.25	14	.15	15	.14
6	40	14	10	.49	12	.30	13	.22	15	.16	16	.15
7	35	12	10	.49	12	.29	13	.21	15	.16	18	.22
8	32	9.9	10	.49	12	.29	13	.20	16	.16	20	.24
9	30	7.3	10	.49	12	.27	13	.19	16	.16	22	.27
10	25	4.1	10	.49	12	.25	13	.18	16	.16	23	.31
11	20	2.2	10	.49	13	.28	12	.17	17	.17	22	1.2
12	15	1.8	10	.49	14	.35	12	.16	17	.17	20	6.5
13	18	3.9	10	.46	15	.41	12	.16	16	.16	18	9.7
14	18	4.4	10	.43	16	.48	12	.15	16	.16	16	11
15	18	4.6	10	.43	16	.48	12	.15	16	.16	15	10
16	20	5.7	10	.41	16	.43	11	.13	16	.16	14	7.9
17	15	3.6	10	.41	16	.42	11	.12	16	.16	13	5.6
18	12	1.9	10	.41	16	.41	11	.12	16	.16	12	4.2
19	12	1.5	10	.38	16	.41	11	.12	16	.16	12	3.9
20	12	1.3	10	.38	16	.42	11	.12	16	.16	14	5.3
21	11	1.0	10	.35	16	.43	11	.12	16	.16	16	8.2
22	11	.95	10	.32	17	.55	11	.12	16	.16	22	14
23	10	.81	10	.32	17	.60	11	.12	16	.16	24	17
24	10	.81	10	.32	17	.64	12	.13	16	.15	26	19
25	10	.81	11	.39	17	.60	12	.13	16	.15	30	21
26	10	.81	11	.42	16	.52	12	.13	16	.15	33	22
27	10	.76	11	.45	16	.48	12	.13	16	.15	30	20
28	10	.70	11	.45	16	.43	13	.14	16	.15	26	18
29	10	.65	11	.45	15	.39	13	.14	---	---	24	18
30	10	.59	12	.52	15	.37	13	.14	---	---	20	16
31	10	.54	---	---	15	.36	13	.14	---	---	18	14
TOTAL	---	174.63	---	13.46	---	12.84	---	5.28	---	4.40	---	254.39

DAY	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	17	12	42	912	88	190	25	10	30	4.4	16	.56
2	17	11	40	784	74	137	24	9.5	28	4.0	16	.56
3	16	9.9	37	662	59	98	23	8.5	27	3.9	20	.76
4	16	9.9	38	622	73	113	22	8.0	26	3.8	19	.77
5	16	11	42	635	74	107	40	18	25	3.2	18	.78
6	15	9.7	44	615	49	67	30	13	24	2.8	17	.69
7	15	8.1	46	597	46	60	25	8.5	24	2.6	16	.65
8	14	5.7	54	655	46	58	20	6.3	23	2.3	15	.61
9	14	3.8	57	651	46	54	20	5.9	23	2.2	15	.57
10	14	3.0	64	696	43	49	20	5.6	23	2.0	15	.57
11	14	2.6	69	715	41	45	18	4.6	23	1.9	15	.57
12	14	2.6	67	660	41	44	18	4.2	22	1.8	40	1.7
13	14	2.6	72	686	41	41	18	4.1	22	1.8	60	2.8
14	20	4.3	74	683	40	36	16	3.5	22	1.8	50	2.3
15	62	18	74	667	38	32	16	3.3	21	1.6	42	1.8
16	70	28	77	680	36	29	16	3.2	21	1.5	36	1.5
17	80	43	78	663	34	27	16	3.0	20	1.4	34	1.2
18	85	138	79	640	32	23	14	2.5	20	1.3	32	.95
19	90	292	84	644	31	21	14	2.4	19	1.1	30	.80
20	91	491	91	651	30	19	14	2.3	19	1.0	28	.64
21	92	720	95	626	30	17	12	1.9	19	.92	26	.56
22	95	1420	99	604	30	17	12	1.8	18	.87	44	1.1
23	96	1650	94	533	28	15	10	1.5	18	.83	50	1.3
24	86	1210	93	487	28	15	10	1.5	18	.83	42	.91
25	72	935	83	401	28	15	10	1.4	18	.83	38	.71
26	57	740	61	257	26	12	9	1.2	18	.78	36	.67
27	58	770	62	211	26	12	9	1.1	18	.78	34	.63
28	65	1080	66	191	30	14	9	1.0	18	.73	32	.60
29	59	1270	64	180	28	13	8	.84	17	.64	30	.51
30	48	1100	65	177	26	11	20	2.4	17	.64	28	.48
31	---	---	80	199	---	---	30	4.2	17	.60	---	---
TOTAL	---	12001.2	---	17384	---	1391	---	145.24	---	54.85	---	28.25

TOTAL LOAD FOR YEAR: 31469.54 TONS.

05115500 LAKE DARLING NEAR FOXHOLM, ND

LOCATION.--Lat 48°27'27", long 101°35'14", in NE¼NE¼ sec.1, T.157 N., R.85 W., Ward County, Hydrologic Unit 09010001, on control structure of Lake Darling Dam, reservoir of Fish and Wildlife Service, on Souris River about 6 mi (10 km) north of Foxholm, and at mile 430.0 (691.9 km).

DRAINAGE AREA.--9,450 mi^2 (24,480 km^2), approximately, of which about 6,200 mi^2 (16,100 km^2) is probably noncontributing.

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

REVISED RECORDS.--WSP 1338: 1942. WSP 2113: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,577.00 ft (480.670 m) National Geodetic Vertical Datum of 1929. April 1936 to Aug. 8, 1963, nonrecording gages at same site and datum.

REMARKS.--Gage heights frequently affected by wind. Reservoir is formed by earth dam; storage began in April 1936; dam completed in July 1936. Usable capacity, 108,500 acre-ft (134 hm^3) between gage heights of 0.0 ft, sill of control gages, and 21.0 ft (6.40 m), crest of spillway. Dead storage, 3,500 acre-ft (4.32 hm^3). Figures given herein represent total contents based on capacity table dated June 7, 1943. Water is used during periods of low flow at wildlife refuge downstream.

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

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 145,400 acre-ft (179 hm^3) Apr. 17, 1976, gage height, 24.24 ft (7.388 m); minimum observed since April 1943 when reservoir was first filled to spillway level, 31,200 acre-ft (38.5 hm^3) Feb. 18, 25, 1963, gage height, 10.04 ft (3.060 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents observed, 122,000 acre-ft (150 hm^3) May 8, gage height, 22.00 ft (6.706 m); minimum, 64,600 acre-ft (79.7 hm^3) Apr. 15-19, gage height, 15.70 ft (4.785 m).

MONTHEND GAGE HEIGHT AND CONTENTS AT 2400, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

Date	Gage height (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30	18.97	92,700	--
Oct. 31	18.93	92,400	-300
Nov. 30	18.75	90,800	-1,600
Dec. 31	*18.49	88,400	-2,400
CAL YR 1978	--	--	+38,400
Jan. 31	*18.00	84,000	-4,400
Feb. 28	*16.70	73,000	-11,000
Mar. 31	*16.00	67,000	-6,000
Apr. 30	*19.40	96,600	+29,600
May 31	19.85	100,600	+4,000
June 30	18.90	92,100	-8,500
July 31	17.78	82,100	-10,000
Aug. 31	17.56	80,300	-1,800
Sept. 30	17.32	78,200	-2,100
WTR YR 1979	--	--	-14,500

* Estimated.

05116000 SOURIS (MOUSE) RIVER NEAR FOXHOLM, ND

LOCATION.--Lat 48°22'20", long 101°30'18", in SW¼SE¼ sec.34, T.157 N., R.84 W., Ward County, Hydrologic Unit 09010001, on left bank 30 ft (9 m) upstream from county highway bridge, 3 mi (5 km) east of Foxholm, 19 mi (31 km) upstream from Des Lacs River, and at mile 414.5 (666.9 km).

DRAINAGE AREA.--9,470 mi^2 (24,530 km^2), approximately, of which about 6,200 mi^2 (16,100 km^2) is probably noncontributing.

WATER-DISCHARGE RECORDS

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.

REVISED RECORDS.--WSP 1308: 1905. WSP 2113: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1,560.73 ft (475.711 m) National Geodetic Vertical Datum of 1929. June 23, 1904, to July 31, 1906, nonrecording gage at site 3.2 mi (5.1 km) upstream at different datum. Apr. 1, 1937, to Mar. 25, 1938, nonrecording gage at site 600 ft (180 m) downstream at datum about 0.5 ft (0.15 m) higher.

REMARKS.--Records fair. Flow almost completely regulated since 1936 by Lake Darling (station 05115500) 15 mi (24 km) upstream and several small reservoirs, combined capacity, about 184,000 acre-ft (227 hm^3). Some small diversions for irrigation and municipal supply.

AVERAGE DISCHARGE.--44 years, 153 ft^3/s (4.333 m^3/s), 110,800 acre-ft/yr (137 hm^3/yr); median of yearly mean discharges, 65 ft^3/s (1.84 m^3/s), 47,100 acre-ft/yr (58 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,600 ft^3/s (244 m^3/s) Apr. 17, 1976, gage height, 17.17 ft (5.233 m); maximum reverse flow, 25 ft^3/s (0.71 m^3/s) Apr. 4, 1949 caused by backwater from the Des Lacs River; no flow at times in many years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,330 ft^3/s (151 m^3/s) May 9, gage height, 15.67 ft (4.776 m); minimum daily, 1.6 ft^3/s (0.045 m^3/s) Sept. 5, 6.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	50	51	50	76	95	210	330	4150	1160	280	76	2.0
2	50	51	50	76	150	150	330	4290	1150	282	58	2.0
3	51	51	50	74	180	80	340	4500	1140	284	31	2.0
4	51	51	50	74	190	110	340	4620	1120	284	18	1.8
5	50	51	50	74	200	150	340	4820	1050	286	7.8	1.6
6	50	51	48	74	208	160	340	5090	926	286	7.0	1.6
7	50	51	48	72	210	165	345	5260	824	284	6.8	1.8
8	50	51	48	72	210	165	345	5310	705	280	6.6	2.0
9	50	51	48	72	210	160	345	5330	549	276	6.5	2.0
10	50	51	48	72	210	160	345	5310	513	258	6.4	2.2
11	51	51	48	72	210	160	345	5180	513	252	6.3	2.2
12	51	51	48	72	210	160	345	5060	513	258	6.3	2.0
13	52	51	48	72	210	165	350	4970	515	258	6.2	2.0
14	52	51	48	72	210	160	410	4860	509	261	6.2	2.0
15	52	51	48	72	210	165	540	4800	457	261	6.1	2.0
16	52	51	48	72	210	175	700	4710	388	261	6.1	2.0
17	52	51	48	78	210	180	780	4640	366	261	6.0	2.0
18	52	51	56	86	210	190	1000	4600	356	264	6.0	2.0
19	51	51	64	86	205	180	1100	4670	334	236	6.0	2.0
20	50	51	64	84	205	200	1150	4640	306	176	6.0	2.0
21	51	51	64	84	205	200	1190	4640	302	172	6.0	2.0
22	51	51	64	84	205	200	1610	4600	278	160	6.1	2.0
23	51	51	64	84	205	200	2250	4560	276	119	6.1	2.0
24	51	51	64	84	205	210	3490	4500	278	92	6.1	2.0
25	51	51	64	84	205	220	3860	2860	278	88	6.1	2.0
26	51	51	64	84	200	220	3970	1760	278	78	5.4	2.0
27	51	51	68	84	205	220	3970	1450	274	76	5.1	2.0
28	52	51	72	84	210	250	4000	1320	276	76	4.5	2.0
29	52	50	74	82	---	300	4040	1270	278	76	2.6	2.0
30	51	50	76	82	---	350	4080	1220	280	76	2.0	2.0
31	51	---	76	82	---	340	---	1180	---	76	2.1	---
TOTAL	1580	1528	1760	2420	5593	5955	42580	126170	16192	6377	337.4	59.2
MEAN	51.0	50.9	56.8	78.1	200	192	1419	4070	540	206	10.9	1.97
MAX	52	51	76	86	210	350	4080	5330	1160	286	76	2.2
MIN	50	50	48	72	95	80	330	1180	274	76	2.0	1.6
AC-FT	3130	3030	3490	4800	11090	11810	84460	250300	32120	12650	669	117

CAL YR 1978 TOTAL 28395.17 MEAN 77.8 MAX 330 MIN .14 AC-FT 56320
WTR YR 1979 TOTAL 210551.60 MEAN 577 MAX 5330 MIN 1.6 AC-FT 417600

05116000 SOURIS (MOUSE) RIVER NEAR FOXHOLM, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1973 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1972 to current year.
WATER TEMPERATURE: October 1972 to current year.

INSTRUMENTATION.--Water-quality monitor since October 1973.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 1,320 micromhos Jan. 4, 5, 1974; minimum, 234 micromhos June 26, 1974.
WATER TEMPERATURES: Maximum, 28.0°C on several days during July 1974 and June 16, 1975; minimum, 0.0°C on many days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 1,210 micromhos Apr. 9, 10, 15, 16; minimum, 343 micromhos May 22.
WATER TEMPERATURES: Maximum, 27.0°C July 21-23; minimum, 0.0°C on many days during winter months.

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE (DEG C) (00010)	COLOR (PLAT-INUM-COBALT UNITS) (00080)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L) (00310)	COLI-FORM, TOTAL, IMMED. (COLS. PER 100 ML) (31501)
OCT											
03...	1330	50	870	--	11.5	--	--	--	--	--	--
19...	1200	51	910	8.1	8.0	30	4.4	9.1	41	4.1	3100
NOV											
01...	1500	51	920	--	5.5	--	--	--	--	--	--
15...	1800	50	960	8.3	.5	20	2.8	13.0	44	2.2	K40
21...	1140	51	980	--	1.0	--	--	--	--	--	--
DEC											
20...	1545	62	1040	8.0	.0	8	.80	9.8	61	.4	<2
JAN											
04...	1510	E74	1050	--	.0	--	--	--	--	--	--
16...	1600	86	1100	7.8	.5	12	1.7	9.7	31	.2	K12
31...	1715	E62	1080	--	--	--	--	--	--	--	--
FEB											
13...	1845	212	1110	--	.0	--	--	--	--	--	--
16...	1015	212	1110	7.9	.0	10	2.0	9.7	35	.4	K16
26...	0950	E210	1110	--	.5	--	--	--	--	--	--
MAR											
21...	1730	200	1300	--	--	11	1.4	13.2	38	.3	K14
24...	1245	210	1150	7.8	.0	24	--	--	--	--	--
APR											
11...	1330	344	1190	--	2.5	--	--	--	--	--	--
17...	1305	765	--	--	3.5	--	--	--	--	--	--
24...	1730	3710	905	--	2.5	--	--	--	--	--	--
MAY											
04...	1605	4420	460	--	2.5	--	--	--	--	--	--
08...	1530	5310	--	8.0	2.5	20	.90	11.3	38	2.9	--
30...	1400	1150	420	8.0	15.0	70	16	7.6	30	1.7	K120
JUN											
21...	1100	303	480	8.1	18.5	50	8.5	7.9	36	1.5	120
JUL											
12...	1930	--	505	--	26.5	--	--	--	--	--	--
12...	1950	258	--	--	--	--	--	--	--	--	--
26...	1930	75	545	8.6	24.5	25	14	8.8	31	2.0	K100
AUG											
03...	0915	33	560	--	23.0	--	--	--	--	--	--
21...	1810	5.9	540	9.2	22.5	--	--	10.5	--	5.4	K340
21...	1830	5.8	540	9.2	22.5	45	6.3	--	48	--	--
SEP											
06...	1130	E1.6	570	--	19.0	--	--	--	--	--	--
21...	0900	2.0	625	8.8	14.0	50	15	6.7	52	3.0	K120

K - Results based on colony count outside the acceptable range (non-ideal colony count).

05116000 SOURIS (MOUSE) RIVER NEAR FOXHOLM, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	HARDNESS (MG/L AS CACO3) (00900)	HARDNESS, NONCARBONATE (MG/L CACO3) (00902)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM ADSORPTION RATIO (00931)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	ALKALINITY (MG/L AS CACO3) (00410)	SULFATE DISSOLVED (MG/L AS SO4) (00945)
OCT											
03...	--	--	--	--	--	--	--	--	--	--	--
19...	K28	260	--	55	32	94	42	2.5	14	240	210
NOV											
01...	--	--	--	--	--	--	--	--	--	--	--
15...	K7	300	--	59	37	100	41	2.5	13	240	240
21...	--	--	--	--	--	--	--	--	--	--	--
DEC											
20...	<2	320	45	62	39	130	46	3.2	15	270	280
JAN											
04...	--	--	--	--	--	--	--	--	--	--	--
18...	<2	330	57	65	40	120	43	2.9	14	270	300
31...	--	--	--	--	--	--	--	--	--	--	--
FEB											
15...	--	--	--	--	--	--	--	--	--	--	--
16...	<2	340	74	70	41	120	42	2.8	14	270	300
28...	--	--	--	--	--	--	--	--	--	--	--
MAR											
21...	<2	360	73	73	44	130	43	3.0	14	290	310
24...	--	370	88	78	42	130	42	3.0	14	280	310
MAY											
04...	--	--	--	--	--	--	--	--	--	--	--
08...	--	170	38	36	19	58	43	1.9	1.0	130	150
30...	K4	150	9	35	15	32	30	1.1	9.6	140	86
JUN											
21...	K14	160	35	38	17	37	31	1.3	10	130	100
JUL											
12...	--	--	--	--	--	--	--	--	--	--	--
26...	K25	180	25	41	20	45	33	1.4	11	160	130
AUG											
03...	--	--	--	--	--	--	--	--	--	--	--
21...	270	--	--	--	--	--	--	--	--	--	--
21...	--	170	29	33	21	49	37	1.6	11	140	170
SEP											
06...	--	--	--	--	--	--	--	--	--	--	--
21...	K50	210	34	43	26	62	37	1.8	12	180	170

DATE	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)	SOLIDS, DISSOLVED (TONS PER DAY) (70302)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, NO2+NO3 TOT. IN SOIL MAT (MG/KG AS N) (00633)	NITROGEN, AMMONIA TOTAL (MG/L AS N) (00610)
OCT											
03...	--	--	--	--	--	--	--	--	--	--	--
19...	23	.2	11	623	--	.85	85.8	.00	.10	--	.01
NOV											
01...	--	--	--	--	--	--	--	--	--	--	--
15...	32	.2	10	668	--	.91	90.2	.25	.29	--	.05
21...	--	--	--	--	--	--	--	--	--	--	--
DEC											
20...	27	.2	12	735	730	1.00	123	.31	.34	--	.11
JAN											
04...	--	--	--	--	--	--	--	--	--	--	--
18...	26	.2	14	775	743	1.05	180	.30	.30	4.6	.26
31...	--	--	--	--	--	--	--	--	--	--	--
FEB											
15...	--	--	--	--	--	--	--	--	--	--	--
16...	26	.2	14	769	750	1.05	440	.25	.25	--	.38
28...	--	--	--	--	--	--	--	--	--	--	--
MAR											
21...	23	.3	14	789	785	1.07	426	.24	.23	--	.34
24...	33	.3	14	798	792	1.09	452	--	.50	--	.11
MAY											
04...	--	--	--	--	--	--	--	--	--	--	--
08...	9.0	.2	8.1	369	361	.50	5290	.35	.35	7.7	.02
30...	6.5	.2	8.0	269	277	.37	835	.15	.15	--	.13
JUN											
21...	7.6	.2	12	317	301	.43	258	.14	.14	--	.13
JUL											
12...	--	--	--	--	--	--	--	--	--	--	--
26...	8.6	.2	15	369	367	.50	74.7	.01	.01	--	.01
AUG											
03...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
21...	10	.2	--	370	434	.50	5.88	.01	.02	--	.01
SEP											
06...	--	--	--	--	--	--	--	--	--	--	--
21...	13	.2	4.1	415	439	.56	2.24	.01	.07	--	.12

K - Results based on colony count outside the acceptable range (non-ideal colony count).

05116000 SOURIS (MOUSE) RIVER NEAR FOXHOLM, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	NITROGEN,NH4 TOTAL IN BOT. MAT. (MG/KG AS N) (00611)	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITROGEN,AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN,NH4 + ORG. TOT IN BOT MAT (MG/KG AS N) (00626)	NITROGEN, TOTAL (MG/L AS N) (00600)	NITROGEN, TOTAL (MG/L AS NO3) (71887)	PHOSPHORUS, TOTAL (MG/L AS P) (00665)	PHOSPHATE, TOTAL (MG/L AS PO4) (00650)	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P) (00671)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4) (00660)
OCT											
03...	--	--	--	--	--	--	--	--	--	--	--
19...	--	1.5	1.5	--	1.5	6.6	.07	--	--	.02	.06
NOV											
01...	--	--	--	--	--	--	--	--	--	--	--
15...	--	1.4	1.4	--	1.7	7.3	.08	--	--	.01	.03
21...	--	--	--	--	--	--	--	--	--	--	--
DEC											
20...	--	1.1	1.2	--	1.5	6.7	.11	--	--	.05	.15
JAN											
04...	--	--	--	--	--	--	--	--	--	--	--
18...	38	.54	.80	840	1.1	4.9	.09	--	--	.01	.03
31...	--	--	--	--	--	--	--	--	--	--	--
FEB											
15...	--	--	--	--	--	--	--	--	--	--	--
16...	--	.92	1.3	--	1.6	6.9	.09	--	--	.05	.15
28...	--	--	--	--	--	--	--	--	--	--	--
MAR											
21...	--	.96	1.3	--	1.5	6.8	.06	--	--	.03	.09
24...	--	--	--	--	--	--	.07	--	.06	.06	.18
MAY											
04...	--	--	--	--	--	--	--	--	--	--	--
08...	7.7	.97	.99	1900	1.3	5.9	.14	.43	--	.01	.03
30...	--	.82	.95	--	1.1	4.9	.11	.34	--	.04	.12
JUN											
21...	--	.85	.98	--	1.1	5.0	.10	.31	--	.07	.21
JUL											
12...	--	--	--	--	--	--	--	--	--	--	--
26...	--	.99	1.0	--	1.0	4.5	.19	--	--	.10	.31
AUG											
03...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
21...	--	.99	1.0	--	1.0	4.5	.15	--	--	.10	.31
SEP											
06...	--	--	--	--	--	--	--	--	--	--	--
21...	--	1.1	1.2	--	1.2	5.4	.16	--	--	.03	.09

DATE	PHOSPHORUS, TOTAL IN BOT. MAT. (MG/KG AS P) (00668)	ALUMINUM, TOTAL RECOVERABLE (UG/L AS AL) (01105)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC TOTAL IN BOTTOM MATERIAL (UG/G AS AS) (01003)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA) (01007)	BERYLLIUM, TOTAL RECOVERABLE (UG/L AS BE) (01012)	BORON, TOTAL RECOVERABLE (UG/L AS B) (01022)	BORON, DISSOLVED (UG/L AS B) (01020)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD) (01027)	CADMIUM RECOV. FM BOTTOM MATERIAL (UG/G AS CD) (01028)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) (01034)
OCT											
03...	--	--	--	--	--	--	--	--	--	--	--
19...	--	140	3	--	100	0	280	260	0	--	0
NOV											
01...	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	270	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
DEC											
20...	--	--	--	--	--	--	--	330	--	--	--
JAN											
04...	--	--	--	--	--	--	--	--	--	--	--
18...	430	60	2	3	0	10	360	340	0	0	10
31...	--	--	--	--	--	--	--	--	--	--	--
FEB											
15...	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	790	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--
MAR											
21...	--	--	--	--	--	--	--	340	--	--	--
24...	--	--	--	--	--	--	--	340	--	--	--
MAY											
04...	--	--	--	--	--	--	--	--	--	--	--
08...	410	400	2	4	100	0	300	300	--	0	0
30...	--	--	--	--	--	--	--	90	--	--	--
JUN											
21...	--	--	--	--	--	--	--	120	--	--	--
JUL											
12...	--	--	--	--	--	--	--	--	--	--	--
26...	--	300	6	--	100	0	160	120	0	--	0
AUG											
03...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	150	--	--	--
SEP											
06...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	160	--	--	--

05116000 SOURIS (MOUSE) RIVER NEAR FOXHOLM, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	CHRO-MIUM, RECOV. FM BOT-TOM MA-TERIAL (UG/G) (01029)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO) (01037)	COBALT, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS CO) (01038)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	COPPER, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS CU) (01043)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	SELE-NIUM, TOTAL IN BOT-TOM MA-TERIAL (UG/G) (01148)	IRON, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS FE) (01170)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	LEAD, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS PB) (01052)	LITHIUM TOTAL RECOV-ERABLE (UG/L AS LI) (01132)
OCT												
19...	--	0	--	4	--	250	<10	0	--	1	--	50
NOV												
15...	--	--	--	--	--	--	30	--	--	--	--	--
DEC												
20...	--	--	--	--	--	--	10	--	--	--	--	--
JAN												
18...	10	2	10	2	12	90	.10	0	6900	2	10	60
FEB												
16...	--	--	--	--	--	--	20	--	--	--	--	--
MAR												
21...	--	--	--	--	--	--	20	--	--	--	--	--
MAY												
08...	12	0	0	11	15	740	70	0	12000	--	20	20
30...	--	--	--	--	--	--	100	--	--	--	--	--
JUN												
21...	--	--	--	--	--	--	30	--	--	--	--	--
JUL												
26...	--	0	--	5	--	460	10	--	--	4	--	20
AUG												
21...	--	--	--	--	--	--	10	--	--	--	--	--
SEP												
21...	--	--	--	--	--	--	<10	--	--	--	--	--

DATE	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MANGA-NESE, SUS-PENDED RECOV. (UG/L AS MN) (01054)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MANGA-NESE, RECOV. FM BOT-TOM MA-TERIAL (UG/G) (01053)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	MERCURY RECOV. FM BOT-TOM MA-TERIAL (UG/G AS HG) (71921)	MOLYB-DENUM, TOTAL RECOV-ERABLE (UG/L AS MO) (01062)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS ZN) (01093)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)
OCT												
19...	160	--	90	--	.0	--	8	4	0	30	--	12
NOV												
15...	--	--	140	--	--	--	--	--	--	--	--	--
DEC												
20...	--	--	190	--	--	--	--	--	--	--	--	--
JAN												
18...	180	--	180	580	.0	.02	5	4	0	10	30	12
FEB												
16...	--	--	340	--	--	--	--	--	--	--	--	--
MAR												
21...	--	--	500	--	--	--	--	--	--	--	--	--
MAY												
08...	90	30	60	800	.4	.04	5	12	1	20	56	17
30...	--	--	100	--	--	--	--	--	--	--	--	--
JUN												
21...	--	--	50	--	--	--	--	--	--	--	--	--
JUL												
26...	160	160	<1	--	.0	--	0	7	0	30	--	11
AUG												
21...	--	--	<1	--	--	--	--	--	--	--	--	--
SEP												
21...	--	--	140	--	--	--	--	--	--	--	--	--

RED RIVER OF THE NORTH BASIN

05116000 SOURIS (MOUSE) RIVER NEAR FOXHOLM, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C) (00689)	CARBON, ORGANIC TOT. IN BOTTOM MAT. (G/KG AS C) (00687)	CYANIDE TOTAL (MG/L AS CN) (00720)	METHY-LENE BLUE ACTIVE SUB-STANCE (MG/L) (38260)	PCB, TOTAL (UG/L) (39516)	PCB, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39519)	ALDRIN, TOTAL (UG/L) (39330)	ALDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39333)	CHLOR-DANE, TOTAL (UG/L) (39350)	CHLOR-DANE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39351)	DDD, TOTAL (UG/L) (39360)
OCT											
19...	.9	--	.00	--	.0	0	.00	.0	.0	0	.00
NOV											
15...	--	--	--	.10	--	--	--	--	--	--	--
DEC											
20...	--	--	--	.10	--	--	--	--	--	--	--
JAN											
18...	.1	--	.00	.00	--	--	--	--	--	--	--
FEB											
16...	--	--	--	.00	--	--	--	--	--	--	--
MAR											
21...	--	--	--	.10	--	--	--	--	--	--	--
MAY											
08...	--	11	.00	.10	.0	0	.00	.0	.0	0	.00
30...	--	--	--	--	--	--	--	--	--	--	--
JUN											
21...	--	--	--	.00	--	--	--	--	--	--	--
JUL											
26...	.8	--	.00	.00	--	--	--	--	--	--	--
AUG											
21...	--	--	--	.00	--	--	--	--	--	--	--
SEP											
21...	--	--	--	.00	--	--	--	--	--	--	--

DATE	DDD, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39363)	DDE, TOTAL (UG/L) (39365)	DDE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39368)	DDT, TOTAL (UG/L) (39370)	DDT, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39373)	DI-AZINON, TOTAL (UG/L) (39570)	DI-AZINON, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39571)	DI-ELDRIN TOTAL (UG/L) (39380)	DI-ELDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39383)	ENDO-SULFAN, TOTAL (UG/L) (39388)	ENDRIN, TOTAL (UG/L) (39390)
OCT											
19...	.0	.00	.2	.00	.0	.00	.0	.00	.1	.00	.00
MAY											
08...	.0	.00	.0	.00	.0	.00	.0	.00	.0	.00	.00
30...	--	--	--	--	--	--	--	--	--	--	--
JUN											
21...	--	--	--	--	--	--	--	--	--	--	--
JUL											
26...	--	--	--	--	--	--	--	--	--	--	--
AUG											
21...	--	--	--	--	--	--	--	--	--	--	--
SEP											
21...	--	--	--	--	--	--	--	--	--	--	--

DATE	ENDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39393)	ETHION, TOTAL (UG/L) (39398)	ETHION, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39399)	HEPTA-CHLOR, TOTAL (UG/L) (39410)	HEPTA-CHLOR, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39413)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L) (39420)	HEPTA-CHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG) (39423)	LINDANE TOTAL (UG/L) (39340)	LINDANE TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39343)	MALA-THION, TOTAL (UG/L) (39530)	MALA-THION, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39531)
OCT											
19...	.0	.00	.0	.00	.0	.00	.0	.00	.0	.00	.0
MAY											
08...	.0	.00	.0	.00	.0	.00	.0	.00	.1	.00	.0
30...	--	--	--	--	--	--	--	--	--	--	--
JUN											
21...	--	--	--	--	--	--	--	--	--	--	--
JUL											
26...	--	--	--	--	--	--	--	--	--	--	--
AUG											
21...	--	--	--	--	--	--	--	--	--	--	--
SEP											
21...	--	--	--	--	--	--	--	--	--	--	--

05116000 SOURIS (MOUSE) RIVER NEAR FOXHOLM, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	METHYL PARATHION, TOTAL (UG/L) (39600)	METHYL PARATHION, TOT. IN BOTTOM MATL. (UG/KG) (39601)	METHYL TRITHION, TOTAL (UG/L) (39790)	METHYL TRITHION, TOT. IN BOTTOM MATL. (UG/KG) (39791)	NAPHTHALENES, POLYCHLOR. TOTAL (UG/L) (39250)	MIREX, TOTAL (UG/L) (39755)	PARATHION, TOTAL (UG/L) (39540)	PARATHION, TOTAL IN BOTTOM MATERIAL (UG/KG) (39541)	PERTHANE TOTAL (UG/L) (39034)	TOXAPHENE, TOTAL (UG/L) (39400)
OCT										
19...	.00	.0	.00	.0	.00	.00	.00	.0	.00	0
MAY										
08...	--	--	--	--	--	--	--	--	--	--
08...	.00	.0	.00	.0	--	.00	.00	.0	.00	0
30...	--	--	--	--	--	--	--	--	--	--

DATE	TOXAPHENE, TOTAL IN BOTTOM MATERIAL (UG/KG) (39403)	TOTAL TRITHION (UG/L) (39786)	TRITHION, TOTAL IN BOTTOM MATERIAL (UG/KG) (39787)	2,4-D, TOTAL (UG/L) (39730)	2,4-D, TOTAL IN BOTTOM MATERIAL (UG/KG) (39731)	2,4,5-T TOTAL (UG/L) (39740)	2,4,5-T TOTAL IN BOTTOM MATERIAL (UG/KG) (39741)	SILVEX, TOTAL (UG/L) (39760)	SILVEX, TOTAL IN BOTTOM MATERIAL (UG/KG) (39761)	PHYTOPLANKTON, TOTAL (CELLS PER ML) (60050)
OCT										
19...	0	.00	.0	.02	0	.00	0	.00	.0	3300
NOV										
15...	--	--	--	--	--	--	--	--	--	8800
DEC										
20...	--	--	--	--	--	--	--	--	--	100
JAN										
18...	--	--	--	--	--	--	--	--	--	70
FEB										
16...	--	--	--	--	--	--	--	--	--	240
MAR										
21...	--	--	--	--	--	--	--	--	--	380
MAY										
08...	--	--	--	--	--	--	--	--	--	12000
08...	0	.00	.0	.00	0	.00	0	.00	.0	--
30...	--	--	--	--	--	--	--	--	--	480
JUN										
21...	--	--	--	--	--	--	--	--	--	100
JUL										
26...	--	--	--	--	--	--	--	--	--	17000
AUG										
21...	--	--	--	--	--	--	--	--	--	84000
SEP										
10...	--	--	--	--	--	--	--	--	--	41000
21...	--	--	--	--	--	--	--	--	--	--

DATE	PERIPHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M (00573)	PERIPHYTON BIOMASS ASH WEIGHT G/SQ M (00572)	LENGTH OF EXPOSURE (DAYS) (00022)	BIOMASS CHLOROPHYLL RATIO PERIPHYTON (UNITS) (70950)	CHLOR-A PERIPHYTON CHROMOGRAPHIC FLUOROM (MG/M2) (70957)	CHLOR-B PERIPHYTON CHROMOGRAPHIC FLUOROM (MG/M2) (70958)	INVERTEBRATES, BENTHIC TOTAL (ORG/SQ METER) (70943)	SEDIMENT, SUSPENDED (MG/L) (80154)	SEDIMENT DISCHARGE, SUSPENDED (T/DAY) (80155)
OCT									
19...	--	--	--	--	--	--	--	7	.96
NOV									
15...	14.6	12.3	26	--	52.1	.000	--	9	1.2
DEC									
20...	--	--	35	--	--	--	140	4	.67
JAN									
18...	--	--	--	--	--	--	--	10	2.3
FEB									
16...	.000	.000	29	--	.000	.000	180	4	2.3
MAR									
21...	--	--	--	--	--	--	--	5	2.7
MAY									
08...	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	19	272
30...	--	--	--	--	--	--	--	15	47
JUN									
21...	3.62	2.91	22	92.2	7.70	.450	7600	12	9.8
JUL									
26...	--	--	--	--	--	--	--	14	2.8
AUG									
21...	14.2	12.4	28	361	4.99	.760	93	13	.21
SEP									
10...	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	16	.09

05116000 SOURIS (MOUSE) RIVER NEAR FOXHOLM, ND--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1			---	---	999	989	1040	1030	1090	1070	1120	1110
2			---	---	1010	999	1040	1040	1110	1070	1130	1120
3			---	---	1010	1000	1050	1040	1090	1060	1130	1120
4			---	---	1010	1010	1050	1050	1090	1080	1130	1120
5			---	---	1020	1010	1060	1050	1110	1080	1130	1120
6			---	---	1020	1020	1070	1000	1100	1080	1130	1120
7			---	---	1020	1020	1080	1030	1110	1070	1140	1120
8			---	---	1030	1020	1080	1080	1110	1080	1130	1120
9			---	---	1030	1030	1090	1080	1110	1090	1140	1110
10			---	---	1030	1030	1090	1090	1110	1090	1130	1120
11			---	---	1030	1030	1100	1100	1140	1080	1160	1130
12			---	---	1030	1030	1110	1000	1130	1080	1170	1150
13			---	---	1030	1030	1090	1000	1110	1090	1160	1150
14			---	---	1030	1030	1080	1030	1110	1100	1150	1140
15			---	---	1030	1030	1100	1020	1120	1100	1150	1110
16			---	---	1030	1030	1090	1070	1120	1110	1140	1130
17			---	---	1030	1030	1090	1050	1130	1110	1140	1130
18			---	---	1030	1030	1130	1040	1140	1120	1150	1120
19			---	---	1040	1030	1100	1090	1150	1120	1140	1120
20			---	---	1040	1040	1110	1090	1130	1120	1140	1120
21			---	---	1040	1030	1120	1090	1130	1120	1140	1130
22			985	973	1040	1030	1110	1090	1120	1110	1170	1130
23			985	985	1030	1030	1120	1090	1120	1100	1140	1130
24			985	982	1030	1020	1090	1080	1130	1110	1140	1120
25			981	978	1030	1020	1100	1080	1120	1110	1130	1130
26			981	975	1030	1030	1090	1080	1150	1120	1140	1130
27			981	921	1030	1020	1090	1080	1140	1120	1160	1130
28			984	975	1020	1020	1090	1080	1120	1110	1160	1150
29			990	974	1020	1020	1090	1070	---	---	1180	1160
30			993	990	1030	1020	1090	1070	---	---	1190	1170
31			---	---	1040	1030	1100	1070	---	---	1190	1160
MONTH			993	921	1040	989	1130	1000	1150	1060	1190	1110

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	1180	1170	512	474	429	421	486	483	548	541	552	544
2	1190	1180	471	443	432	422	486	479	557	547	551	549
3	1190	1170	447	439	437	430	489	480	562	558	562	553
4	1190	1170	468	446	442	435	491	485	561	558	568	558
5	1200	1170	496	467	457	444	488	483	563	557	574	564
6	1190	1170	523	497	464	455	492	486	568	558	571	569
7	1190	1190	543	524	464	455	495	486	565	558	574	570
8	1200	1190	556	544	469	457	497	491	566	557	580	572
9	1210	1200	551	537	467	451	500	494	568	560	581	576
10	1210	1190	536	517	463	455	503	496	569	563	589	581
11	1190	1180	514	491	465	459	505	494	566	563	598	585
12	1190	1170	490	465	468	459	506	497	564	560	600	596
13	1190	1180	464	440	476	464	503	496	563	554	605	597
14	1190	1180	439	415	474	449	504	497	563	559	605	598
15	1210	1190	412	398	464	450	505	497	566	560	610	604
16	1210	1180	397	393	474	464	509	500	569	560	618	609
17	1190	1150	393	385	475	460	512	499	577	563	624	615
18	1160	991	384	370	472	468	518	505	574	570	627	621
19	975	956	370	366	477	472	525	512	571	560	629	624
20	986	948	365	355	483	478	524	516	561	552	630	623
21	981	912	354	346	483	480	530	521	557	540	627	625
22	958	936	345	343	485	481	535	523	541	534	627	625
23	996	946	355	344	484	481	547	535	541	537	632	623
24	1050	1000	381	353	485	480	546	536	538	529	630	619
25	1050	1000	392	377	490	485	548	539	531	529	628	622
26	990	845	419	392	494	488	549	542	530	526	642	615
27	838	730	433	418	490	484	560	547	533	526	636	620
28	727	662	444	432	491	479	564	556	537	527	636	634
29	659	591	440	415	484	478	567	557	540	536	638	634
30	586	514	429	411	487	481	562	538	543	540	637	632
31	---	---	431	421	---	---	543	537	547	541	---	---
MONTH	1210	514	556	343	494	421	567	479	577	526	642	544

05116000 SOURIS (MOUSE) RIVER NEAR FOXHOLM, ND--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1			---	---	.5	.5	.0	.0	.5	.0	.0	.0
2			---	---	1.0	.5	.0	.0	.5	.0	.5	.0
3			---	---	1.0	.5	.0	.0	.5	.0	.5	.5
4			---	---	1.0	.5	.0	.0	.5	.0	.5	.5
5			---	---	1.0	.5	.0	.0	.5	.0	.5	.5
6			---	---	.5	.5	.0	.0	.5	.0	1.0	.5
7			---	---	.5	.5	.0	.0	.5	.0	.5	.5
8			---	---	.5	.5	.0	.0	.5	.0	1.0	.5
9			---	---	.5	.5	.0	.0	.5	.0	.5	.5
10			---	---	.5	.5	.0	.0	.5	.0	1.0	.5
11			---	---	.5	.5	.5	.0	.5	.5	1.0	.5
12			---	---	.5	.5	.0	.0	.5	.0	.5	.0
13			---	---	.5	.5	.0	.0	.5	.0	1.0	.0
14			---	---	.5	.5	.0	.0	.5	.5	1.0	.5
15			---	---	.5	.5	.0	.0	.5	.0	.5	.0
16			---	---	.5	.5	.0	.0	.5	.0	.5	.0
17			---	---	.5	.0	.5	.0	.5	.0	.5	.0
18			---	---	.5	.0	.0	.0	.5	.5	1.0	.5
19			---	---	.5	.0	.5	.0	.5	.5	1.0	.5
20			---	---	.5	.0	.5	.0	.5	.0	1.0	1.0
21			---	---	.5	.0	.5	.0	.5	.0	1.0	.5
22			2.0	1.0	.5	.0	.0	.0	.0	.0	1.5	.5
23			2.0	1.5	.0	.0	.0	.0	.0	.0	2.0	1.0
24			2.0	1.0	.0	.0	.0	.0	.0	.0	2.5	1.0
25			2.0	1.0	.0	.0	.0	.0	.0	.0	2.0	1.0
26			1.5	1.0	.0	.0	.0	.0	.0	.0	2.0	1.0
27			1.5	.5	.0	.0	.0	.0	.5	.0	1.5	1.0
28			.5	.5	.0	.0	.0	.0	.5	.0	1.5	.5
29			.5	.0	.0	.0	.0	.0	---	---	1.5	.5
30			.5	.5	.0	.0	.5	.0	---	---	2.0	1.0
31			---	---	.0	.0	.5	.0	---	---	1.5	1.0
MONTH			2.0	.0	1.0	.0	.5	.0	.5	.0	2.5	.0

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

05116000 SOURIS (MOUSE) RIVER NEAR FOXHOLM, ND--Continued

DISSOLVED OXYGEN AND WATER TEMPERATURE PROFILE, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	MG/L	DEGREES, C	DATE	MG/L	DEGREES, C	DATE	MG/L	DEGREES, C
Oct. 18, 1978			1900	9.7	0.5	0900	7.6	14.0
1500	10.0	7.0	2000	9.7	.5	1000	7.6	14.0
1600	10.2	7.5	2100	9.7	.5	1100	7.6	14.5
1700	10.5	7.5	2200	9.7	.5	1200	7.6	14.5
1800	10.6	7.5	2300	9.6	.5	1300	7.6	14.5
1900	10.7	7.5	2400	9.6	.5	1400	7.6	15.0
2000	10.6	7.5				1500	7.6	15.0
2100	10.6	7.5	Jan. 19, 1979			1600	7.8	15.0
2200	10.4	7.5	0100	9.6	.5	1650	7.8	15.0
2300	10.3	7.5	0200	9.6	.5			
2400	10.1	7.5	0300	9.6	.5	July 26, 1979		
			0400	9.6	.5	1300	6.6	23.5
Oct. 19, 1978			0500	9.6	.5	1400	6.9	24.0
0100	9.9	7.5	0600	9.6	.5	1500	7.0	24.0
0200	9.9	7.5	0700	9.6	.5	1600	7.2	24.5
0300	9.6	7.5	0800	9.6	.5	1700	7.5	24.5
0400	9.6	7.5	0900	9.6	.5	1800	8.8	24.5
0500	9.4	7.5	1000	9.6	.5	1900	8.9	25.0
0600	9.3	7.5				2000	8.7	25.0
0700	9.3	7.5	May 29, 1979			2100	8.4	25.0
0800	9.1	7.5	1700	7.8	15.5	2200	8.2	25.0
0900	9.0	7.5	1800	7.7	15.5	2300	8.0	24.5
1000	8.9	7.5	1900	7.8	16.0	2400	7.8	24.5
1100	9.0	8.0	2000	7.8	15.5			
1200	9.1	8.0	2100	7.8	15.5	July 27, 1979		
1300	9.3	8.5	2200	7.8	15.0	0100	7.5	24.5
1400	9.4	9.0	2300	7.8	15.0	0200	7.3	24.0
1500	9.7	9.0	2400	7.8	15.0	0300	7.0	24.0
						0400	6.7	24.0
Jan. 18, 1979			May 30, 1979			0500	6.4	24.0
1000	9.7	.5	0100	7.8	15.0	0600	6.1	24.0
1100	9.6	.5	0200	7.7	14.5	0700	6.0	23.5
1200	9.6	.5	0300	7.7	14.5	0800	6.0	23.5
1300	9.7	.5	0400	7.7	14.5	0900	6.1	23.5
1400	9.8	.5	0500	7.7	14.5	1000	6.3	24.0
1500	9.8	.5	0600	7.6	14.5	1100	6.7	24.0
1600	9.7	.5	0700	7.6	14.5	1200	7.0	24.0
1700	9.7	.5	0800	7.6	14.0	1300	7.2	24.0
1800	9.7	.5						

05116000 SOURIS (MOUSE) RIVER NEAR FOXHOLM, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1978 TO SEPTEMBER 1979

DATE	OCT 19,78	NOV 15,78	DEC 20,78	JAN 18,79	FEB 16,79	MAR 21,79
TIME	1200	1800	1545	1600	1015	1730
TOTAL CELLS/ML	5300	8800	100	70	240	380
DIVERSITY: DIVISION	1.2	0.9	0.6	0.8	1.0	1.6
.CLASS	1.2	0.9	0.6	0.8	1.0	1.6
..ORDER	1.5	1.3	0.6	0.8	1.1	1.9
...FAMILY	1.7	1.7	0.6	2.1	2.0	2.7
....GENUS	2.0	0.0	0.6	2.1	2.3	3.0

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)												
.CHLOROPHYCEAE												
..CHLOROCOCCALES												
...CHARACIACEAE												
....SCHROEDERIA	--	-	--	-	14	14	8	11	120#	50	25	7
...COELASTRACEAE												
....COELASTRUM	--	-	--	-	--	-	--	-	--	-	--	-
...MICRACTINIACEAE												
....MICRACTINIUM	--	-	--	-	--	-	--	-	--	-	--	-
...OOCYSTACEAE												
....ANKISTRODESMUS	90	3	280	3	--	-	15#	22	--	-	51	13
....DICTYOSPHAERIUM	--	-	550	6	--	-	--	-	--	-	--	-
....DIMORPHOCOCCUS	--	-	--	-	--	-	--	-	--	-	--	-
....KIRCHNERIELLA	--	-	--	-	--	-	--	-	--	-	--	-
....OOCYSTIS	--	-	--	-	--	-	--	-	--	-	--	-
....SELENASTRUM	140	4	69	1	--	-	--	-	--	-	--	-
....TREUBARIA	--	-	--	-	--	-	--	-	--	-	10	3
...SCENEDESMACEAE												
....ACTINASTRUM	430	13	--	-	--	-	--	-	--	-	--	-
....CRUCIGENIA	--	-	--	-	--	-	--	-	20	8	--	-
....SCENEDESMUS	430	13	1500#	17	--	-	31#	44	51#	21	--	-
....TETRASTRUM	--	-	280	3	--	-	--	-	--	-	--	-
..TETRASPORALES												
...COCCOMYXACEAE												
....ELAKATOTHRIX	36	1	--	-	--	-	--	-	--	-	--	-
..VOLVOCALES												
...CHLAMYDOMONADACEAE	--	-	350	4	--	-	--	-	--	-	--	-
....CHLAMYDOMONAS	18	1	--	-	--	-	--	-	--	-	--	-
...PHACOTACEAE												
....PHACOTUS	--	-	--	-	--	-	--	-	--	-	--	-
....PTEROMONAS	--	-	--	-	--	-	--	-	--	-	--	-
..ZYGNEMATALES												
...DESMIDIACEAE												
....COSMARIUM	--	-	--	-	--	-	--	-	--	-	5	1
CHRYSOPHYTA												
.BACILLARIOPHYCEAE												
..CENTRALES												
...COSCINODISCACEAE												
....CYCLOTELLA	--	-	5400#	61	--	-	--	-	5	2	20	5
....MELOSIRA	--	-	--	-	--	-	--	-	--	-	--	-
....STEPHANODISCUS	1900#	57	--	-	--	-	--	-	--	-	--	-
..PENNALES												
...ACHNANTHACEAE												
....COCCONEIS	--	-	140	2	--	-	--	-	--	-	--	-
...DIATOMACEAE												
....DIATOMA	--	-	--	-	--	-	--	-	10	4	--	-
...FRAGILARIACEAE												
....FRAGILARIA	--	-	--	-	--	-	--	-	--	-	25	7
....SYNEDRA	--	-	69	1	--	-	8	11	--	-	20	5
...GOMPHONEMATACEAE												
....GOMPHONEMA	--	-	--	-	--	-	8	11	--	-	--	-
...NAVICULACEAE												
....GYROSIGMA	--	-	--	-	--	-	--	-	5	2	--	-
....NAVICULA	18	1	--	-	--	-	--	-	--	-	30	8
...NITZSCHIACEAE												
....NITZSCHIA	36	1	210	2	87#	86	--	-	10	4	56	15
...TABELLARIACEAE												
....TABELLARIA	--	-	--	-	--	-	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)												
.CRYPTOPHYCEAE												
..CRYPTOMONADALES												
...CRYPTOCHRYSIDACEAE												
....CHROOMONAS	--	-	--	-	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

CONTINUED ...

05116000 SOURIS (MOUSE) RIVER NEAR FOXHOLM, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1978 TO SEPTEMBER 1979 (CONTINUED)

DATE TIME	OCT 19,78 1200		NOV 15,78 1800		DEC 20,78 1545		JAN 18,79 1600		FEB 16,79 1015		MAR 21,79 1730	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CYANOPHYTA (BLUE-GREEN ALGAE)												
.CYANOPHYCEAE												
..CHROOCOCCALES												
...CHROOCOCCACEAE												
....AGMENELLUM	--	-	--	-	--	-	--	-	--	-	--	-
....ANACYSTIS	220	7	--	-	--	-	--	-	--	-	--	-
..HORMOGONALES												
...NOSTOCACEAE												
....ANABAENA	--	-	--	-	--	-	--	-	--	-	--	-
....APHANIZOMENON	--	-	--	-	--	-	--	-	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)												
.EUGLENOPHYCEAE												
..EUGLENALES												
...EUGLENACEAE												
....EUGLENA	--	-	--	-	--	-	--	-	--	-	5	1
....TRACHELOMONAS	--	-	--	-	--	-	--	-	15	6	130#	33
PYRRHOPHYTA (FIRE ALGAE)												
.DINOPHYCEAE												
..PERIDINIALES												
...GLENODINIACEAE												
....GLENODINIUM	--	-	--	-	--	-	--	-	5	2	5	1

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

05116000 SOURIS (MOUSE) RIVER NEAR FOXHOLM, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1978 TO SEPTEMBER 1979

DATE	MAY 8,79	MAY 30,79	JUN 21,79	JUL 26,79	AUG 21,79	SEP 10,79
TIME	0000	1400	1100	1930	1830	0900
TOTAL CELLS/ML	12000	480	100	17000	84000	41000
DIVERSITY: DIVISION	0.3	0.8	0.0	1.4	1.4	1.3
.CLASS	0.3	0.8	0.0	1.4	1.4	1.3
..ORDER	0.4	1.4	0.0	1.5	2.0	1.3
...FAMILY	0.4	2.1	0.0	1.6	2.5	1.7
....GENUS	0.4	2.8	0.0	1.8	3.4	1.9

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)												
.CHLOROPHYCEAE												
..CHLOROCOCCALES												
...CHARACIACEAE												
....SCHROEDERIA	--	-	--	-	100#	100	--	-	*	0	--	-
...COELASTRACEAE												
....COELASTRUM	--	-	--	-	--	-	1400	8	1700	2	--	-
...MICRACTINIACEAE												
....MICRACTINIUM	140	1	52	11	--	-	--	-	7800	9	--	-
...OOCYSTACEAE												
....ANKISTRODESMUS	140	1	13	3	--	-	--	-	420	1	960	2
....DICTYOSPHAERIUM	--	-	--	-	--	-	--	-	8700	10	--	-
....DIMORPHOCOCCUS	--	-	--	-	--	-	--	-	850	1	--	-
....KIRCHNERIELLA	--	-	--	-	--	-	--	-	420	1	20000#	50
....OOCYSTIS	280	2	13	3	--	-	--	-	9100	11	960	2
....SELENASTRUM	--	-	--	-	--	-	--	-	--	-	--	-
....TREUBARIA	--	-	--	-	--	-	--	-	1500	2	--	-
...SCENEDESMACEAE												
....ACTINASTRUM	--	-	--	-	--	-	--	-	850	1	--	-
....CRUCIGENIA	--	-	--	-	--	-	470	3	--	-	--	-
....SCENEDESMUS	--	-	130#	27	--	-	--	-	--	-	3400	8
....TETRASTRUM	--	-	100#	22	--	-	--	-	--	-	--	-
..TETRASPORALES												
...COCCOMYXACEAE												
....ELAKATOTHRIX	--	-	--	-	--	-	--	-	--	-	--	-
..VOLVOCALES												
...CHLAMYDOMONADACEAE	--	-	--	-	--	-	--	-	--	-	--	-
....CHLAMYDOMONAS	70	1	39	8	--	-	120	1	--	-	--	-
...PHACOTACEAE												
....PHACOTUS	--	-	--	-	--	-	--	-	1300	2	--	-
....PTEROMONAS	--	-	--	-	--	-	--	-	420	1	--	-
..ZYGNEMATALES												
...DESMIDIACEAE												
....COSMARIUM	--	-	--	-	--	-	--	-	--	-	--	-
CHRYSOPHYTA												
.BACILLARIOPHYCEAE												
..CENTRALES												
...COSCINODISCACEAE												
....CYCLOTELLA	11000#	94	--	-	--	-	3000#	18	5900	7	2600	7
....MELOSIRA	--	-	26	5	--	-	1000	6	2500	3	--	-
....STEPHANODISCUS	--	-	78#	16	--	-	--	-	--	-	--	-
..PENNALES												
...ACHNANTHACEAE												
....COCCONEIS	--	-	--	-	--	-	--	-	--	-	--	-
...DIATOMACEAE												
....DIATOMA	--	-	--	-	--	-	--	-	--	-	--	-
...FRAGILARIACEAE												
....FRAGILARIA	--	-	--	-	--	-	--	-	--	-	--	-
....SYNEDRA	--	-	--	-	--	-	--	-	*	0	--	-
...GOMPHONEMATACEAE												
....GOMPHONEMA	--	-	--	-	--	-	--	-	--	-	--	-
...NAVICULACEAE												
....GYROSIGMA	--	-	--	-	--	-	--	-	--	-	--	-
....NAVICULA	--	-	--	-	--	-	230	1	--	-	--	-
...NITZSCHIACEAE												
....NITZSCHIA	70	1	13	3	--	-	230	1	--	-	--	-
...TABELLARIACEAE												
....TABELLARIA	--	-	13	3	--	-	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)												
.CRYPTOPHYCEAE												
..CRYPTOMONADALES												
...CRYPTOCHRYSIDACEAE												
....CHROOMONAS	--	-	--	-	--	-	--	-	--	-	720	2

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

CONTINUED ...

05116000 SOURIS (MOUSE) RIVER NEAR FOXHOLM, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1978 TO SEPTEMBER 1979 (CONTINUED)

DATE	MAY 8,79		MAY 30,79		JUN 21,79		JUL 26,79		AUG 21,79		SEP 10,79	
TIME	0000		1400		1100		1930		1830		0900	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CYANOPHYTA (BLUE-GREEN ALGAE)												
.CYANOPHYCEAE												
..CHROOCOCCALES												
...CHROOCOCCACEAE												
....AGMENELLUM	--	-	--	-	--	-	--	-	4200	5	--	-
....ANACYSTIS	--	-	--	-	--	-	10000#	61	21000#	25	12000#	29
..HORMOGONALES												
...NOSTOCACEAE												
....ANABAENA	--	-	--	-	--	-	--	-	14000#	16	--	-
....APHANIZOMENON	--	-	--	-	--	-	--	-	2100	3	--	-
EUGLENOPHYTA (EUGLENOIDS)												
.EUGLENOPHYCEAE												
..EUGLENALES												
...EUGLENACEAE												
....EUGLENA	--	-	--	-	--	-	--	-	--	-	--	-
....TRACHELOMONAS	--	-	--	-	--	-	120	1	850	1	--	-
PYRRHOPHYTA (FIRE ALGAE)												
.DINOPHYCEAE												
..PERIDINIALES												
...GLENODINIACEAE												
....GLENODINIUM	--	-	--	-	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

NOV. 15, 1978
1800 HOURS

PERIPHYTON IDENTIFICATION

	_ORGANISM__NAME_____	_COMMON__NAME_____
	CHLOROPHYTA	GREEN ALGAE
	.CHLOROPHYCEAE	
	..CHLOROCOCCALES	
	...OOCYSTACEAE	
	....ANKISTRODESMUS	
	...SCENEDESMACEAE	
	....ACTINASTRUM	
	....SCENEDESMUS	
	CHRYSOPHYTA	
	.BACILLARIOPHYCEAE	DIATOMS
	..CENTRALES	CENTRIC
	...COSCINODISCACEAE	
	....CYCLOTELLA	
	....MELOSIRA	
	..PENNALES	PENNATE
	...ACHNANTHACEAE	
	....COCCONEIS	
	....RHOICOSPHENIA	
	...DIATOMACEAE	
	....DIATOMA	
	...FRAGILARIACEAE	
	....FRAGILARIA	
&	....SYNEDRA	
	...GOMPHONEMATACEAE	
&	....GOMPHONEMA	
	...NAVICULACEAE	NAVICULOID
	....GYROSIGMA	
&	....NAVICULA	
	....STAURONEIS	
	...NITZSCHIACEAE	
&	....NITZSCHIA	
	...SURIRELLACEAE	
	....SURIRELLA	

NOTE: & - ESTIMATED DOMINANT ORGANISM; NOT ACTUALLY COUNTED
SAMPLING METHOD: PLASTIC SLIDES, TIMED SAMPLING INTERVAL
ANALYSIS METHOD: SLIDE MOUNTING, INVERTED MICROSCOPE

ANALYSIS BY USGS-ACL-RWW, NOV. 28, 1978

05116000 SOURIS (MOUSE) RIVER NEAR FOXHOLM, ND--Continued

FEB. 16, 1979
1015 HOURS

PERIPHYTON IDENTIFICATION

	_ORGANISM__NAME_____	_COMMON__NAME_____
	CHLOROPHYTA	GREEN ALGAE
	.CHLOROPHYCEAE	
	..ULOTRICHALES	
	...ULOTRICHACEAE	
	....ULOTHRIX	
	CHRYSOPHYTA	
	.BACILLARIOPHYCEAE	DIATOMS
	..PENNALES	PENNATE
	...ACHNANTHACEAE	
	....ACHNANTHES	
	....COCCONEIS	
	...DIATOMACEAE	
&	....DIATOMA	
	...FRAGILARIACEAE	
	....FRAGILARIA	
	....SYNEDRA	
	...GOMPHONEMATACEAE	
&	....GOMPHONEMA	

NOTE: & - ESTIMATED DOMINANT ORGANISM; NOT ACTUALLY COUNTED
SAMPLING METHOD: PLASTIC SLIDES, TIMED SAMPLING INTERVAL
ANALYSIS METHOD: SLIDE MOUNTING, INVERTED MICROSCOPE

ANALYSIS BY USGS-ACL-RWW, MAR. 2, 1979

JUNE 21, 1979
1100 HOURS

PERIPHYTON IDENTIFICATION

	_ORGANISM__NAME_____	_COMMON__NAME_____
	CHRYSOPHYTA	
	.BACILLARIOPHYCEAE	DIATOMS
	..PENNALES	PENNATE
	...DIATOMACEAE	
	....DIATOMA	
	...FRAGILARIACEAE	
	....SYNEDRA	
	...GOMPHONEMATACEAE	
&	....GOMPHONEMA	
	...NAVICULACEAE	NAVICULOID
	....NAVICULA	
	...NITZSCHIACEAE	
	....NITZSCHIA	

NOTE: & - ESTIMATED DOMINANT ORGANISM; NOT ACTUALLY COUNTED
SAMPLING METHOD: PLASTIC SLIDES, TIMED SAMPLING INTERVAL
ANALYSIS METHOD: SLIDE MOUNTING, INVERTED MICROSCOPE

ANALYSIS BY USGS-ACL-RWW, JULY 10, 1979

05116000 SOURIS (MOUSE) RIVER NEAR FOXHOLM, ND--Continued

AUG. 21, 1979
1830 HOURS

PERIPHYTON IDENTIFICATION

	_ORGANISM__NAME	_COMMON__NAME
	CHLOROPHYTA	GREEN ALGAE
	.CHLOROPHYCEAE	
	..CHAETOPHORALES	
	...CHAETOPHORACEAE	
	....ULVELLA	
	..CHLOROCOCCALES	
	...SCENEDESMACEAE	
	....SCENEDESMUS	
	..VOLVOCALES	
	...CHLAMYDOMONADACEAE	
	....CHLAMYDOMONAS	
	...PHACOTACEAE	
	....PHACOTUS	
	CHRYSOPHYTA	
	.BACILLARIOPHYCEAE	DIATOMS
	..CENTRALES	CENTRIC
	...COSCINODISCACEAE	
	....CYCLOTELLA	
	....MELOSIRA	
	..PENNALES	PENNATE
	...ACHNANTHACEAE	
	....COCCONEIS	
	...CYMBELLACEAE	
	....CYMBELLA	
	....EPITHEMIA	
	....RHOPALODIA	
	...FRAGILARIACEAE	
	....SYNEDRA	
	...GOMPHONEMATACEAE	
	....GOMPHONEMA	
	...NAVICULACEAE	NAVICULOID
	....NAVICULA	
	...NITZSCHIACEAE	
	....NITZSCHIA	
	CYANOPHYTA	BLUE-GREEN ALGAE
	.CYANOPHYCEAE	
	..HORMOGONALES	FILAMENTOUS BL-GREEN
	...NOSTOCACEAE	
&	....ANABAENA	
&	....NOSTOC	
	...OSCILLATORIACEAE	
	....LYNGBYA	
	....OSCILLATORIA	
	...RIVULARIACEAE	
&	....CALOTHRIX	

NOTE: & - ESTIMATED DOMINANT ORGANISM; NOT ACTUALLY COUNTED
SAMPLING METHOD: PLASTIC SLIDES, TIMED SAMPLING INTERVAL
ANALYSIS METHOD: SLIDE MOUNTING, INVERTED MICROSCOPE

ANALYSIS BY USGS-ACL-WMF, NOV. 2, 1979

BENTHIC INVERTEBRATE ANALYSES, OCTOBER 1978 TO AUGUST 1979

DATE	DEC 20,78	FEB 16,79	JUN 21,79	AUG 21,79
TIME	1545	1015	1100	1830
TOTAL COUNT	20	26	1111	136
DIVERSITY: PHYLUM	0.9	0.0	0.0	0.1
.CLASS	0.9	0.2	0.5	0.4
..ORDER	1.2	0.5	1.2	1.7
...FAMILY	0.0	0.0	0.0	0.0
....GENUS	0.0	0.0	0.0	0.0
....GENUS-INSECTA	0.0	0.0	0.0	0.0
ORGANISM	COUNT	COUNT	COUNT	COUNT
ANNELIDA				
.HIRUDINEA				
..UNKNOWN ORDER	--	--	--	1
.OLIGOCHAETA				
..UNKNOWN ORDER	14	--	--	--
ARTHROPODA (ARTHROPODS)				
.ARACHNIDA				
..ACARINA	--	--	1	--
.CRUSTACEA				
..AMPHIPODA	--	1	114	7
.INSECTA				
..COLEOPTERA				
...GYRINIDAE	--	--	4	--
..DIPTERA				
...CERATOPOGONIDAE=HELEIDAE	--	--	1	--
...CHIRONOMIDAE	4	--	272	59
...SIMULIIDAE	--	24	529	--
..EPHEMEROPTERA	--	--	4	13
..ODONATA				
...COENAGRIIDAE	2	--	8	--
..TRICHOPTERA	--	1	178	55
MOLLUSCA (MOLLUSCS)				
.GASTROPODA				
..BASOMMATOPHORA				
...ANCYLIDAE	--	--	--	1

05116500 DES LACS RIVER AT FOXHOLM, ND

LOCATION.--Lat 48°22'14", long 101°34'11", in NW¼NE¼NW¼ sec.2, T.156 N., R.85 W., Ward County, Hydrologic Unit 09010002, on left bank 200 ft (60 m) upstream from county highway bridge in Foxholm, and at mile 23.0 (37.0 km).

DRAINAGE AREA.--939 mi^2 (2,432 km^2), of which about 400 mi^2 (1,040 km^2) 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.

REVISED RECORDS.--WSP 1728: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,632.98 ft (497.732 m) National Geodetic Vertical Datum of 1929. June 14 to Oct. 23, 1955, nonrecording gage at site 200 ft (60 m) downstream from present gage at same datum. See WSP 1728 or 1913 for history of changes prior to June 14, 1955.

REMARKS.--Records fair. Some regulation at low flow by a series of wildlife refuge ponds, beginning about 53 mi (85 km) upstream, combined capacity about 64,000 acre-ft (79 hm^3). Some small diversions for irrigation above station.

AVERAGE DISCHARGE.--36 years, 32.7 ft^3/s (0.926 m^3/s), 23,690 acre-ft/yr (29.2 hm^3/yr); median of yearly mean discharges, 17 ft^3/s (0.48 m^3/s), 12,300 acre-ft/yr (15 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,260 ft^3/s (121 m^3/s) Apr. 19, 1979, gage height, 21.23 ft (6.471 m), from highwater mark; no flow at times in some years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,260 ft^3/s (121 m^3/s) Apr. 19, gage height, 21.23 ft (6.471 m), from highwater mark; minimum daily, 0.01 ft^3/s (<0.001 m^3/s) Feb. 6-25, Mar. 11.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.5	2.3	1.8	.80	.05	.04	1.8	392	246	58	17	19
2	1.5	2.3	1.7	.75	.04	.10	1.8	408	238	54	18	20
3	1.4	2.3	1.7	.70	.03	.15	1.9	412	233	50	17	23
4	1.4	2.4	1.7	.65	.02	.20	2.0	405	226	46	16	25
5	1.4	2.4	1.7	.65	.02	.15	2.1	413	218	43	17	27
6	1.4	2.4	1.7	.60	.01	.15	2.1	431	210	40	16	29
7	1.5	2.4	1.6	.60	.01	.15	2.0	525	200	38	15	31
8	1.6	2.4	1.6	.55	.01	.13	2.1	611	192	36	14	33
9	1.7	2.4	1.5	.50	.01	.10	2.6	539	180	34	13	33
10	1.8	2.4	1.5	.50	.01	.05	2.9	475	170	32	13	35
11	1.8	2.4	1.4	.40	.01	.01	3.5	443	160	30	12	37
12	1.8	2.2	1.4	.35	.01	.02	4.0	422	155	29	12	39
13	1.9	2.2	1.4	.30	.01	.05	4.0	431	150	29	12	39
14	2.0	2.1	1.4	.30	.01	.10	4.0	438	145	29	11	40
15	2.0	2.1	1.4	.30	.01	.15	4.5	428	140	29	10	40
16	2.0	2.0	1.4	.25	.01	.20	16	418	135	30	9.8	40
17	2.1	1.9	1.4	.25	.01	.30	144	419	130	33	9.8	37
18	2.1	1.9	1.4	.25	.01	.40	550	388	125	31	9.4	35
19	2.1	1.9	1.4	.20	.01	.50	3100	369	120	29	9.3	36
20	2.2	1.8	1.4	.20	.01	.60	2330	367	115	28	11	38
21	2.2	1.8	1.4	.18	.01	.80	1420	354	110	27	12	40
22	2.3	1.8	1.4	.15	.01	.90	749	330	105	25	14	43
23	2.3	1.9	1.3	.15	.01	1.0	532	312	100	24	13	44
24	2.3	1.9	1.3	.15	.01	1.1	430	300	95	23	12	46
25	2.3	1.9	1.3	.15	.01	1.1	352	287	88	23	12	43
26	2.3	1.9	1.3	.15	.02	1.2	430	277	80	22	12	41
27	2.3	1.9	1.3	.12	.10	1.4	436	267	75	21	12	41
28	2.4	1.9	1.2	.10	.10	1.5	434	262	70	20	13	45
29	2.4	1.9	1.1	.10	---	1.6	412	258	66	18	14	47
30	2.4	1.8	1.0	.10	---	1.7	392	249	62	20	15	46
31	2.3	---	.90	.08	---	1.8	---	248	---	19	16	---
TOTAL	60.7	62.9	44.00	10.53	.58	17.65	11768.3	11878	4339	970	407.3	1092
MEAN	1.96	2.10	1.42	.34	.021	.57	392	383	145	31.3	13.1	36.4
MAX	2.4	2.4	1.8	.80	.10	1.8	3100	611	246	58	16	47
MIN	1.4	1.8	.90	.08	.01	.01	1.8	248	62	18	9.3	19
AC-FT	120	125	87	21	1.2	35	23340	23560	8610	1920	808	2170

CAL YR 1978 TOTAL 5203.69 MEAN 14.3 MAX 650 MIN .01 AC-FT 10320
WTR YR 1979 TOTAL 30650.96 MEAN 84.0 MAX 3100 MIN .01 AC-FT 60800

05117500 SOURIS (MOUSE) RIVER ABOVE MINOT, ND

LOCATION.--Lat 48°14'45", long 101°22'15", in NW¼NW¼SE¼ sec.17, T.155 N., R.83 W., Ward County, Hydrologic Unit 09010001, on right bank 180 ft (55 m) downstream from county highway bridge, 3.5 mi (5.6 km) west of Minot, 7 mi (11 km) downstream from Des Lacs River, and at mile 388.5 (625.1 km).

DRAINAGE AREA.--10,600 mi^2 (27,500 km^2), approximately, of which about 6,700 mi^2 (17,400 km^2) 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.

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

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1,545.75 ft (471.145 m) National Geodetic Vertical Datum of 1929. May 5, 1903, to Sept. 30, 1928, Oct. 1, 1929, to Sept. 30, 1934, nonrecording gages at mile 377.6 (607.6 km) in Minot, at datum 12.5 ft (3.8 m) lower, Oct. 1, 1928, to Sept. 30, 1929, nonrecording gages at Saugstad bridge at mile 366.8 (590.2 km), 5 mi (8 km) southeast of Minot and at datum 19.2 ft (5.85 m) 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.

REMARKS.--Records good except those for the winter period, which are fair. Flow almost completely regulated by Lake Darling (station 05115500), 41 mi (66 km) upstream and several smaller reservoirs; combined capacity, about 248,000 acre-ft (306 hm^3). Some small diversions for irrigation and municipal supply.

AVERAGE DISCHARGE.--76 years, 173 ft^3/s (4.899 m^3/s), 125,300 acre-ft/yr (154 hm^3/yr); median of yearly mean discharges, 90 ft^3/s (2.55 m^3/s), 65,200 acre-ft/yr (80 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,000 ft^3/s (340 m^3/s) Apr. 20, 1904, gage height, 21.9 ft (6.675 m) at site in Minot, from rating curve extended above 8,100 ft^3/s (229 m^3/s); no flow at times in some years. Maximum stage at present site, about 23 ft (7.0 m) in April 1904.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage in Minot at least 3 ft (0.9 m) higher than 1904 peak, in 1881, according to Apr. 20, 1904 issue of Minot Daily Optic. This peak probably occurred in 1882.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,960 ft^3/s (169 m^3/s) May 9, gage height, 19.53 ft (5.953 m); minimum daily, 13 ft^3/s (0.368 m^3/s) Aug. 29, 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	50	50	42	64	78	220	310	4600	1420	426	143	21
2	50	51	42	66	90	220	310	4670	1390	568	100	21
3	50	51	42	66	120	180	320	4850	1360	374	79	21
4	48	51	44	68	160	110	320	4980	1340	330	55	22
5	48	53	44	70	170	110	330	5070	1310	320	45	23
6	48	50	44	72	180	130	330	5230	1240	322	35	23
7	48	50	42	74	190	150	330	5520	1130	320	32	24
8	48	51	42	74	200	160	330	5810	1020	322	28	27
9	50	51	42	74	210	160	330	5920	875	310	28	31
10	50	50	44	72	210	160	330	5900	754	304	26	33
11	50	50	44	72	210	160	330	5810	721	290	25	40
12	50	48	46	72	210	160	330	5690	699	286	24	38
13	51	42	46	72	210	160	340	5580	677	288	23	38
14	51	42	48	72	210	160	350	5430	672	288	21	38
15	51	42	48	72	210	160	400	5310	668	290	20	38
16	51	42	48	72	210	160	600	5170	570	292	19	38
17	53	42	48	72	210	160	860	5140	514	294	19	38
18	55	42	48	72	210	160	1650	5080	488	294	18	38
19	53	40	52	76	210	170	4000	4960	470	294	18	38
20	53	40	54	78	210	180	4700	4940	431	290	18	40
21	51	40	62	80	210	190	4510	4890	402	221	20	40
22	51	40	62	82	210	200	3440	4870	388	208	30	42
23	51	42	62	82	210	200	2770	4810	366	197	27	45
24	51	42	62	82	210	200	2920	4740	356	164	27	45
25	51	44	62	82	215	200	3820	4440	346	137	79	45
26	51	44	62	82	220	210	4390	3430	338	128	23	47
27	51	44	62	82	220	220	4650	2420	330	116	14	47
28	51	44	62	80	220	220	4670	1840	318	113	14	48
29	53	44	62	80	---	230	4680	1630	316	110	13	48
30	55	44	62	80	---	250	4600	1520	314	113	13	48
31	51	---	62	78	---	300	---	1460	---	113	19	---
TOTAL	1575	1366	1592	2320	5423	5650	57250	141710	21223	8122	1055	1085
MEAN	50.8	45.5	51.4	74.8	194	182	1908	4571	707	262	34.0	36.2
MAX	55	53	62	82	220	300	4700	5920	1420	568	143	48
MIN	48	40	42	64	78	110	310	1460	314	110	13	21
AC-FT	3120	2710	3160	4600	10760	11210	113600	281100	42100	16110	2090	2150

CAL YR 1978 TOTAL 35245.90 MEAN 96.6 MAX 1050 MIN .50 AC-FT 69910
WTR YR 1979 TOTAL 248371.00 MEAN 680 MAX 5920 MIN 13 AC-FT 492600

05120000 SOURIS (MOUSE) RIVER NEAR VERENDRYE, ND

LOCATION.--Lat 48°09'35", long 100°43'45", in NW¼SW¼ sec.17, T.154 N., R.78 W., McHenry County, Hydrologic Unit 09010003, on left bank 2.7 mi (4.3 km) north of Verendrye, 19 mi (31 km) upstream from mouth of Wintering River, and at mile 302.0 (485.9 km).

DRAINAGE AREA.--11,300 mi^2 (29,300 km^2), approximately, of which about 6,900 mi^2 (17,900 km^2) is probably noncontributing.

WATER-DISCHARGE RECORDS

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.

REVISED RECORDS.--WSP 2113: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,464.87 ft (446.492 m) National Geodetic Vertical Datum of 1929. February to June 1933, at site 4 mi (6 km) upstream at datum 1.65 ft (0.503 m) higher. April 1, 1937 to Mar. 3, 1938, nonrecording gage at present site, at datum 1.97 ft (0.600 m) higher.

REMARKS.--Records fair. Flow regulated by reservoirs on Souris and Des Lacs Rivers, the largest of which is Lake Darling (station 05115500), 128 mi (206 km) upstream, combined capacity about 248,000 acre-ft (306 hm^3). Some small diversions for irrigation and municipal supply.

AVERAGE DISCHARGE.--42 years, 225 ft^3/s (6.372 m^3/s), 163,000 acre-ft/yr (201 hm^3/yr); median of yearly mean discharges, 120 ft^3/s (3.40 m^3/s), 86,900 acre-ft/yr (110 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,900 ft^3/s (280 m^3/s) Apr. 19, 1976, gage height, 17.84 ft (5.438 m); minimum recorded, 0.3 ft^3/s (0.008 m^3/s) Aug. 11-19, 1937, Oct. 10-21, 1939.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 6,000 ft^3/s (170 m^3/s) May 11, gage height unknown; maximum gage height, 17.44 ft (5.316 m) Apr. 21, backwater from ice; minimum daily discharge, 26 ft^3/s (0.74 m^3/s) Sept. 7, 8.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	45	69	40	54	74	200	200	4600	1630	335	132	38
2	44	70	40	54	74	200	210	4700	1550	356	140	35
3	42	70	40	56	74	200	220	4800	1510	496	144	32
4	44	61	38	56	74	200	230	4860	1470	790	146	30
5	45	50	36	58	74	200	250	5080	1420	755	152	29
6	46	46	36	58	76	190	270	5320	1380	610	139	28
7	44	46	38	60	78	170	280	5430	1340	484	138	26
8	49	47	38	60	80	120	290	5550	1290	401	127	26
9	50	49	38	62	82	100	300	5730	1230	370	98	28
10	47	49	40	64	84	90	310	5900	1130	357	79	30
11	46	49	42	66	88	90	320	6000	1020	343	69	32
12	44	44	42	68	92	100	330	5900	921	325	63	33
13	41	42	44	70	100	130	340	5800	837	315	59	36
14	44	37	46	70	120	160	350	5700	791	313	55	41
15	44	36	48	68	140	170	360	5600	752	302	52	44
16	44	34	48	68	160	180	370	5500	712	296	51	42
17	45	34	48	68	180	180	400	5400	701	299	52	43
18	46	34	48	68	190	180	600	5350	673	300	53	43
19	46	32	48	68	200	180	1100	5300	615	299	51	42
20	47	32	48	68	200	190	1700	5250	555	303	50	41
21	46	30	48	68	200	200	3000	5200	529	311	47	41
22	47	30	48	66	200	204	5000	5150	504	307	43	46
23	53	30	48	66	200	206	5280	5050	446	272	40	47
24	54	30	48	66	200	206	4700	4950	423	200	39	49
25	51	34	48	68	200	210	4000	4900	398	171	38	53
26	58	38	48	70	200	220	3600	4800	363	186	36	57
27	74	40	48	72	200	230	3400	4500	354	179	34	59
28	76	40	50	72	200	230	4000	3500	350	160	34	61
29	76	40	52	74	---	220	4300	2500	347	152	39	65
30	74	40	52	74	---	210	4500	2020	338	141	49	63
31	69	---	52	74	---	200	---	1710	---	135	43	---
TOTAL	1581	1283	1388	2034	3840	5566	50210	152070	25579	10263	2292	1240
MEAN	51.0	42.8	44.8	65.6	137	180	1674	4905	853	331	73.9	41.3
MAX	76	70	52	74	200	230	5280	6000	1630	790	152	65
MIN	41	30	36	54	74	90	200	1710	338	135	34	26
AC-FT	3140	2540	2750	4030	7620	11040	99590	301600	50740	20360	4550	2460

CAL YR 1978 TOTAL 47065.5 MEAN 129 MAX 1250 MIN 5.5 AC-FT 93350
WTR YR 1979 TOTAL 257346.0 MEAN 705 MAX 6000 MIN 26 AC-FT 510400

05120000 SOURIS (MOUSE) RIVER NEAR VERENDRYE, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1950-51, 1952 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1973 to current year.
WATER TEMPERATURES: October 1973 to current year.

INSTRUMENTATION.--Water-quality monitor since October 1973.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 2,110 micromhos Dec. 12, 1977; minimum, 306 micromhos Apr. 20, 1979.
WATER TEMPERATURES: Maximum, 28.0°C July 19, 1974; minimum, 0.0°C on many days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 1,500 micromhos Dec. 10, 11; minimum, 306 micromhos Apr. 20.
WATER TEMPERATURES: Maximum, 26.5°C July 12, 22, 23; minimum, 0.0°C on many days during winter months.

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE (DEG C) (00010)	COLOR (PLAT-INUM-COBALT UNITS) (00080)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)
OCT												
06...	1520	45	910	--	9.5	--	--	--	--	--	--	--
20...	1215	47	970	8.1	8.0	30	310	--	62	38	110	42
30...	1405	74	950	--	5.5	--	--	--	--	--	--	--
NOV												
14...	1430	56	1030	8.3	.5	25	310	--	66	35	120	45
29...	1050	40	1090	--	.0	--	--	--	--	--	--	--
DEC												
21...	1215	48	1150	7.8	.0	12	360	61	72	44	150	46
JAN												
09...	1155	62	1150	--	.0	--	--	--	--	--	--	--
19...	1515	67	1160	--	.0	12	350	59	69	43	140	45
29...	1440	74	1160	--	.0	--	--	--	--	--	--	--
FEB												
12...	1945	92	1150	7.8	.0	17	370	78	78	42	130	42
26...	1715	200	1130	--	.0	--	--	--	--	--	--	--
MAR												
24...	1245	206	1150	7.8	.0	24	370	88	78	42	130	42
APR												
02...	1850	222	1150	--	.0	--	--	--	--	--	--	--
24...	1620	4580	345	--	4.5	--	--	--	--	--	--	--
MAY												
03...	1600	4840	715	8.5	7.0	40	220	62	49	24	73	40
04...	1530	4840	--	--	7.0	--	--	--	--	--	--	--
22...	1800	5130	440	8.2	12.0	50	150	36	32	--	36	33
JUN												
07...	0915	1350	590	--	18.0	--	--	--	--	--	--	--
18...	1930	660	630	7.8	21.0	75	220	47	49	23	58	35
JUL												
10...	1300	356	700	--	24.0	--	--	--	--	--	--	--
25...	2145	248	770	7.9	26.0	30	240	29	56	24	83	42
31...	1510	152	815	--	22.0	--	--	--	--	--	--	--
AUG												
24...	1245	59	1090	8.3	18.5	--	320	0	70	36	100	54
SEP												
04...	1940	50	1040	--	20.5	--	--	--	--	--	--	--
17...	2015	48	1210	8.4	16.0	15	400	34	91	43	130	54

05120000 SOURIS (MOUSE) RIVER NEAR VERENDRYE, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)
OCT												
06...	--	--	--	--	--	--	--	--	--	--	--	--
20...	2.7	13	280	220	28	.2	7.1	654	--	.89	83.0	.02
30...	--	--	--	--	--	--	--	--	--	--	--	--
NOV												
14...	3.0	12	290	240	32	.2	6.1	708	--	.96	68.8	.08
29...	--	--	--	--	--	--	--	--	--	--	--	--
DEC												
21...	3.4	14	300	310	30	.2	12	809	815	1.10	105	.47
JAN												
09...	--	--	--	--	--	--	--	--	--	--	--	--
19...	3.3	16	290	310	29	.2	14	815	798	1.11	147	.47
29...	--	--	--	--	--	--	--	--	--	--	--	--
FEB												
12...	3.0	14	290	320	31	.2	15	834	807	1.13	207	.57
26...	--	--	--	--	--	--	--	--	--	--	--	--
MAR												
24...	3.0	14	280	310	33	.3	14	798	792	1.09	444	.50
APR												
02...	--	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--	--
MAY												
03...	2.1	12	160	200	15	.2	6.1	498	479	.68	6510	.17
04...	--	--	--	--	--	--	--	--	--	--	--	--
22...	1.3	--	--	--	--	--	--	--	273	.40	3780	--
JUN												
07...	--	--	--	--	--	--	--	--	--	--	--	--
18...	1.7	12	170	160	11	.2	10	436	427	.59	777	.23
JUL												
10...	--	--	--	--	--	--	--	--	--	--	--	--
23...	2.3	12	210	180	23	.3	13	513	521	.70	344	.82
31...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
24...	2.4	11	340	250	29	.2	15	756	716	1.03	79.6	.14
SEP												
04...	--	--	--	--	--	--	--	--	--	--	--	--
17...	2.8	12	370	290	28	.2	11	852	828	1.13	98.8	.10

DATE	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BORON, DIS-SOLVED (UG/L AS B) (01020)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)
OCT											
06...	--	--	--	--	--	--	--	--	--	--	--
20...	.21	30	4	70	260	<1	0	<1	4	30	0
30...	--	--	--	--	--	--	--	--	--	--	--
NOV											
14...	.26	--	--	--	250	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
DEC											
21...	.14	--	--	--	310	--	--	--	--	--	--
JAN											
09...	--	--	--	--	--	--	--	--	--	--	--
19...	.10	--	--	--	330	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
FEB											
12...	.08	--	--	--	330	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--
MAR											
24...	.06	--	--	--	340	--	--	--	--	--	--
APR											
02...	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--
MAY											
03...	.03	0	2	100	350	0	0	0	3	1800	2
04...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	100	--	--	--	--	--	--
JUN											
07...	--	--	--	--	--	--	--	--	--	--	--
18...	.11	--	--	--	120	--	--	--	--	--	--
JUL											
10...	--	--	--	--	--	--	--	--	--	--	--
23...	.71	--	--	--	170	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
AUG											
24...	.04	--	--	--	210	--	--	--	--	--	--
SEP											
04...	--	--	--	--	--	--	--	--	--	--	--
17...	.10	--	--	--	0	--	--	--	--	--	--

05120000 SOURIS (MOUSE) RIVER NEAR VERENDRYE, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)	VANA-DIUM, DIS-SOLVED (UG/L AS V) (01085)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
OCT											
06...	--	--	--	--	--	--	--	--	--	--	--
20...	--	70	.0	2	2	0	340	.0	<3	6	.76
30...	--	--	--	--	--	--	--	--	--	--	--
NOV											
14...	--	--	--	--	--	--	--	--	--	8	.78
29...	--	--	--	--	--	--	--	--	--	--	--
DEC											
21...	--	--	--	--	--	--	--	--	--	8	1.0
JAN											
09...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	10	1.8
29...	--	--	--	--	--	--	--	--	--	--	--
FEB											
12...	--	--	--	--	--	--	--	--	--	7	1.7
26...	--	--	--	--	--	--	--	--	--	--	--
MAR											
24...	--	--	--	--	--	--	--	--	--	8	4.4
APR											
02...	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--
MAY											
03...	40	10	.0	5	0	1	320	.0	10	--	--
04...	--	--	--	--	--	--	--	--	--	63	823
22...	--	--	--	--	--	--	--	--	--	30	416
JUN											
07...	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	74	132
JUL											
10...	--	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	48	32
31...	--	--	--	--	--	--	--	--	--	--	--
AUG											
24...	--	--	--	--	--	--	--	--	--	12	1.3
SEP											
04...	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	22	2.6

05120000 SOURIS (MOUSE) RIVER NEAR VERENDRYE, ND--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	1160	1130	1230	964	1380	1360	1160	1150	1170	1170	1140	1140
2	1120	1100	1270	1220	1390	1380	1150	1150	1170	1170	1140	1140
3	1120	1090	1260	1220	1400	1390	1150	1140	1170	1160	1140	1130
4	1130	1100	1270	1230	1410	1410	1150	1140	1180	1170	1130	1130
5	1100	937	1270	1220	1410	1400	1150	1150	1180	1170	1140	1130
6	935	910	1220	1220	1430	1410	1150	1140	1180	1170	1140	1130
7	921	916	1230	1220	1450	1430	1150	1150	1180	1170	1150	1130
8	930	921	1230	1220	1470	1440	1150	1150	1170	1160	1160	1150
9	938	932	1230	1230	1470	1460	1150	1150	1170	1160	1170	1160
10	959	938	1230	1210	1500	1470	1150	1150	1160	1150	1170	1170
11	956	950	1220	1210	1500	1490	1150	1150	1160	1140	1170	1160
12	953	949	1230	1130	1490	1350	1150	1140	1160	1140	1170	1160
13	962	949	1120	1030	1330	1230	1150	1140	1200	1150	1210	1180
14	968	958	1030	1030	1230	1220	1150	1140	1200	1190	1200	1180
15	971	966	1050	1030	1220	1200	1150	1130	1210	1210	1190	1180
16	967	964	1060	1050	1210	1190	1150	1140	1210	1200	1180	1170
17	964	961	1080	1060	1190	1180	1150	1140	1200	1190	1180	1170
18	967	961	1090	1080	1180	1170	1150	1140	1190	1160	1190	1180
19	976	967	1090	1080	1170	1160	1160	1150	1160	1150	1190	1170
20	970	967	1100	1090	1160	1160	1170	1160	1150	1140	1170	1160
21	967	963	1100	1100	1160	1150	1170	1160	1140	1140	1170	1160
22	964	954	1100	1090	1150	1140	1170	1170	1130	1130	1180	1160
23	954	947	1110	1100	1160	1150	1170	1160	1130	1120	1170	1150
24	954	951	1110	1090	1170	1160	1170	1160	1130	1120	1150	1140
25	962	955	1100	1090	1180	1160	1170	1160	1130	1130	1150	1140
26	962	955	1100	1090	1180	1170	1160	1160	1130	1130	1150	1140
27	956	952	1100	1080	1180	1170	1160	1160	1130	1130	1150	1140
28	956	953	1080	1070	1180	1170	1160	1150	1140	1130	1140	1130
29	956	950	1230	1080	1170	1160	1170	1160	---	---	1130	1120
30	950	947	1370	1250	1170	1160	1170	1160	---	---	1130	1120
31	959	948	---	---	1170	1160	1170	1170	---	---	1140	1130
MONTH	1160	910	1370	964	1500	1140	1170	1130	1210	1120	1210	1120

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	1150	1140	891	839	558	535	704	690	829	812	1050	1040
2	1160	1150	834	768	573	560	697	686	848	829	1040	1030
3	1150	1140	763	700	573	562	700	683	851	843	1050	1040
4	1160	1150	699	630	583	571	678	561	846	837	1040	1030
5	1170	1160	626	570	590	579	664	596	901	838	---	---
6	1180	1170	567	518	598	587	695	669	976	904	---	---
7	1210	1180	519	501	598	591	692	678	975	887	---	---
8	1200	1200	500	497	599	588	709	692	978	884	---	---
9	1200	1190	519	503	613	594	709	704	1000	981	---	---
10	1200	1190	537	522	631	608	704	697	1010	984	---	---
11	1190	1190	554	540	626	613	702	697	1010	956	---	---
12	1190	1180	570	559	648	619	702	695	1040	1020	---	---
13	1190	1180	576	573	671	643	700	693	1050	1040	---	---
14	1180	1180	577	570	670	657	695	691	1070	1060	1190	1180
15	1180	1170	569	550	663	650	739	688	1080	1070	1200	1190
16	1170	1160	553	535	678	649	742	729	1100	1080	1210	1200
17	1160	1140	533	513	666	637	752	731	1100	1070	1210	1200
18	1140	1080	513	497	643	619	757	739	1070	1040	1210	1200
19	1060	415	497	472	661	636	760	755	1050	1030	1200	1190
20	381	306	471	459	674	647	760	742	1050	1040	1200	1200
21	350	312	460	450	698	667	757	742	1070	1050	1220	1200
22	363	349	451	442	691	667	760	744	1080	1070	1250	1220
23	352	316	442	436	677	669	770	744	1080	1080	1260	1260
24	384	318	436	431	686	669	788	774	1090	1080	1260	1240
25	540	387	432	427	691	686	787	750	1090	1080	1250	1240
26	667	541	427	420	705	690	785	762	1090	1080	1240	1240
27	790	664	423	416	709	705	787	771	1090	1080	1250	1240
28	880	791	437	421	707	700	773	768	1090	1080	1250	1210
29	890	874	458	436	707	700	785	775	1080	1070	1240	1180
30	897	875	494	460	709	702	805	792	1070	1060	1400	1250
31	---	---	534	496	---	---	818	807	1060	1050	---	---
MONTH	1210	306	891	416	709	535	818	561	1100	812	1400	1030

05120000 SOURIS (MOUSE) RIVER NEAR VERENDRYE, ND--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	13.0	12.0	5.0	4.5	.0	.0	.0	.0	.0	.0	.0	.0
2	12.5	11.5	5.0	4.5	.0	.0	.0	.0	.0	.0	.0	.0
3	11.5	11.0	5.0	5.0	.0	.0	.0	.0	.0	.0	.0	.0
4	11.0	10.5	5.0	4.5	.0	.0	.0	.0	.0	.0	.0	.0
5	10.5	9.5	5.0	4.0	.0	.0	.0	.0	.0	.0	.0	.0
6	9.5	8.5	4.0	3.0	.0	.0	.0	.0	.0	.0	.0	.0
7	9.0	8.0	4.0	3.0	.0	.0	.0	.0	.0	.0	.0	.0
8	9.0	8.0	4.5	3.5	.0	.0	.0	.0	.0	.0	.0	.0
9	9.5	8.5	4.5	4.0	.0	.0	.0	.0	.0	.0	.0	.0
10	10.5	8.5	3.5	2.5	.0	.0	.0	.0	.0	.0	.0	.0
11	10.0	9.5	2.5	1.5	.0	.0	.0	.0	.0	.0	.0	.0
12	9.5	8.5	1.5	.5	.0	.0	.0	.0	.0	.0	.0	.0
13	9.0	8.0	.5	.5	.0	.0	.0	.0	.5	.0	.0	.0
14	8.5	7.5	.5	.5	.0	.0	.0	.0	.0	.0	.0	.0
15	8.0	7.5	.5	.5	.0	.0	.0	.0	.0	.0	.0	.0
16	7.5	6.5	.5	.5	.0	.0	.0	.0	.0	.0	.0	.0
17	7.5	7.0	.5	.0	.0	.0	.0	.0	.0	.0	.0	.0
18	7.0	6.0	.5	.0	.0	.0	.0	.0	.0	.0	.0	.0
19	8.0	6.5	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
20	8.5	7.5	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
21	9.0	8.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
22	8.0	7.5	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
23	7.5	6.5	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
24	8.0	7.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
25	7.5	7.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
26	7.0	6.5	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
27	7.0	6.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
28	6.0	5.5	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
29	5.5	5.0	.0	.0	.0	.0	.0	.0	---	---	.0	.0
30	5.5	5.0	.0	.0	.0	.0	.0	.0	---	---	.0	.0
31	5.0	4.5	---	---	.0	.0	.0	.0	---	---	.0	.0
MONTH	13.0	4.5	5.0	.0	.0	.0	.0	.0	.5	.0	.0	.0

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	.0	.0	7.5	6.0	16.5	16.5	23.0	22.0	22.5	21.5	20.0	18.5
2	.0	.0	7.5	6.5	16.5	16.0	23.5	22.0	23.0	21.5	20.0	18.5
3	.0	.0	7.5	7.0	17.0	16.5	24.0	22.5	23.5	22.5	20.5	18.5
4	.0	.0	7.0	6.0	17.5	17.0	23.5	22.5	23.0	22.5	20.5	19.0
5	.0	.0	6.5	6.0	18.0	17.5	23.0	22.0	23.0	22.0	---	---
6	.0	.0	6.0	5.0	18.5	18.0	23.0	22.0	23.0	21.5	---	---
7	.0	.0	5.0	4.5	18.5	18.0	23.0	22.5	23.0	22.0	---	---
8	.0	.0	5.5	4.5	18.0	17.5	23.5	22.5	23.5	21.5	---	---
9	.0	.0	5.0	4.5	18.5	18.0	24.0	23.5	23.0	22.0	---	---
10	.0	.0	4.5	3.5	18.5	17.5	25.5	24.0	22.0	21.0	---	---
11	.0	.0	5.0	3.0	19.5	18.0	26.0	24.5	21.5	20.0	---	---
12	.0	.0	7.0	4.5	20.5	18.5	26.5	25.5	21.5	20.5	---	---
13	.0	.0	9.0	6.5	21.5	20.0	26.0	24.5	20.5	19.0	---	---
14	.0	.0	11.0	7.5	21.5	21.0	24.0	23.5	19.5	18.0	14.5	13.0
15	.0	.0	12.0	9.0	21.5	20.5	23.5	22.0	19.0	17.5	15.0	13.0
16	.0	.0	15.0	11.5	21.5	21.0	22.5	21.5	19.5	17.5	16.0	13.5
17	.0	.0	14.5	13.5	21.5	20.5	23.0	21.5	20.0	18.0	16.0	15.0
18	.5	.0	14.0	12.0	21.5	20.5	23.5	22.0	21.5	19.0	16.0	15.0
19	.5	.5	13.5	12.0	21.0	20.5	24.5	23.5	22.5	20.0	16.0	15.0
20	.5	.5	13.0	11.5	20.5	19.5	25.5	24.0	22.0	20.5	15.5	14.5
21	3.0	.5	13.0	11.5	19.5	19.0	26.0	24.5	21.5	21.0	15.0	13.5
22	5.5	3.0	12.5	11.5	19.5	18.5	26.5	25.5	21.0	20.0	15.0	13.5
23	5.0	4.5	13.5	11.5	19.0	18.5	26.5	26.0	20.0	19.5	14.5	13.5
24	4.5	4.5	15.0	12.5	19.5	18.5	26.0	25.5	19.5	18.0	14.5	13.0
25	5.0	4.5	15.5	13.5	20.0	19.5	25.5	24.5	19.5	18.0	14.5	13.0
26	5.5	5.0	17.0	14.5	20.5	19.5	24.5	23.5	19.5	18.0	15.0	13.5
27	5.5	5.0	18.0	15.5	20.5	20.0	23.5	22.5	19.5	18.0	15.0	14.0
28	5.5	5.5	19.0	16.5	21.5	20.5	23.5	22.0	20.0	18.0	15.0	14.0
29	5.5	5.0	19.0	17.0	22.5	21.0	23.5	23.0	20.0	18.5	14.5	13.5
30	6.5	5.0	17.0	16.5	23.5	21.5	23.0	22.0	20.0	18.5	13.5	12.5
31	---	---	17.0	16.5	---	---	22.5	21.0	20.0	19.0	---	---
MONTH	6.5	.0	19.0	3.0	23.5	16.0	26.5	21.0	23.5	17.5	20.5	12.5

05120500 WINTERING RIVER NEAR KARLSRUHE, ND

LOCATION.--Lat 48°10'14", long 100°32'20", on line between secs.10 and 11, T.154 N., R.77 W., McHenry County, Hydrologic Unit 09010003, on left bank 30 ft (9 m) upstream from county highway bridge, 4 mi (6 km) upstream from mouth, and 7 mi (11 km) northeast of Karlsruhe.

DRAINAGE AREA.--705 mi^2 (1,826 km^2), of which about 420 mi^2 (1,090 km^2) is probably noncontributing.

WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WSP 1728: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 1,480 ft (451 m), from river-profile map.

REMARKS.--Records fair. Some regulation by Fish and Wildlife Service dams on Cottonwood and Wintering Lakes; controlled capacity, about 850 acre-ft (1.05 hm^3).

AVERAGE DISCHARGE.--42 years, 13.0 ft^3/s (0.368 m^3/s), 9,450 acre-ft/yr (11.7 hm^3/yr); median of yearly mean discharges, 11 ft^3/s (0.31 m^3/s), 8,000 acre-ft/yr (9.9 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,000 ft^3/s (85.0 m^3/s) Apr. 7, 1949, by velocity-area studies; maximum gage height, 12.0 ft (3.66 m) Apr. 7, 1949 (channel choked by packed snow); no flow at times in many years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,400 ft^3/s (39.6 m^3/s) Apr. 22, gage height, 10.62 ft (3.237 m), backwater from ice; no flow Jan. 19 to Apr. 20.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.90	2.4	2.3	.90	.00	.00	.00	207	28	10	50	7.8
2	.95	2.4	2.2	.80	.00	.00	.00	187	26	9.6	50	7.4
3	1.0	2.4	2.1	.70	.00	.00	.00	165	25	9.9	47	6.2
4	1.1	2.5	2.0	.70	.00	.00	.00	150	24	9.2	46	6.0
5	1.2	2.5	2.0	.70	.00	.00	.00	147	23	8.7	40	5.1
6	1.2	2.5	1.9	.60	.00	.00	.00	146	22	7.9	35	5.4
7	1.3	2.5	1.8	.50	.00	.00	.00	144	21	7.3	31	5.5
8	1.4	2.4	1.7	.44	.00	.00	.00	127	20	6.7	28	4.7
9	1.5	2.4	1.6	.44	.00	.00	.00	116	20	5.8	25	3.8
10	1.6	2.4	1.5	.44	.00	.00	.00	108	19	5.4	23	3.7
11	1.6	2.4	1.5	.35	.00	.00	.00	102	18	5.3	21	5.5
12	1.7	2.4	1.5	.30	.00	.00	.00	98	18	5.5	19	6.1
13	1.7	2.4	1.5	.25	.00	.00	.00	96	17	5.7	18	5.8
14	1.7	2.4	1.5	.20	.00	.00	.00	91	17	6.8	16	5.9
15	1.8	2.4	1.5	.15	.00	.00	.00	87	16	9.4	15	5.7
16	1.8	2.4	1.5	.10	.00	.00	.00	82	15	12	15	5.5
17	1.8	2.4	1.5	.05	.00	.00	.00	79	15	14	14	5.1
18	1.9	2.4	1.5	.02	.00	.00	.00	73	14	15	13	4.8
19	1.9	2.4	1.5	.00	.00	.00	.00	69	14	20	12	4.6
20	2.0	2.4	1.5	.00	.00	.00	.00	72	14	39	12	4.9
21	2.1	2.4	1.5	.00	.00	.00	20	65	14	49	12	5.1
22	2.2	2.4	1.5	.00	.00	.00	660	60	14	52	13	5.1
23	2.2	2.4	1.5	.00	.00	.00	1280	55	14	52	13	4.6
24	2.2	2.4	1.4	.00	.00	.00	1010	50	13	51	13	4.1
25	2.3	2.4	1.4	.00	.00	.00	812	46	13	50	12	3.5
26	2.3	2.4	1.4	.00	.00	.00	645	42	12	48	10	3.3
27	2.3	2.4	1.3	.00	.00	.00	484	39	12	47	9.9	3.4
28	2.4	2.4	1.3	.00	.00	.00	372	36	11	45	9.8	3.1
29	2.4	2.4	1.2	.00	---	.00	298	33	11	45	9.1	3.1
30	2.4	2.4	1.0	.00	---	.00	235	32	11	47	8.5	2.8
31	2.4	---	.90	.00	---	.00	---	29	---	50	7.7	---
TOTAL	55.25	72.4	48.50	7.64	.00	.00	5816.00	2833	511	749.2	648.0	147.6
MEAN	1.78	2.41	1.56	.25	.000	.000	194	91.4	17.0	24.2	20.9	4.92
MAX	2.4	2.5	2.3	.90	.00	.00	1280	207	28	52	50	7.8
MIN	.90	2.4	.90	.00	.00	.00	.00	29	11	5.3	7.7	2.8
AC-FT	110	144	96	15	.00	.00	11540	5620	1010	1490	1290	293

CAL YR 1978	TOTAL	4334.67	MEAN 11.9	MAX 280	MIN .00	AC-FT	8600		
WTR YR 1979	TOTAL	10888.59	MEAN 29.8	MAX 1280	MIN .00	AC-FT	21600		

05120500 WINTERING RIVER NEAR KARLSRUHE, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1954-56, 1972 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE (DEG C) (00010)	COLOR (PLAT-INUM-COBALT UNITS) (00080)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)
OCT												
02...	1930	.90	660	8.2	11.0	25	260	--	57	28	54	31
30...	1730	2.4	640	8.2	5.5	18	280	--	65	29	44	25
NOV												
27...	1745	2.4	720	7.3	.0	8	310	0	75	30	45	24
JAN												
09...	1800	.40	700	7.5	.0	8	320	0	77	30	39	21
APR												
23...	1700	1180	330	8.0	5.5	--	75	0	15	9.1	46	54
26...	1440	652	345	--	7.0	--	--	--	--	--	--	--
MAY												
04...	1332	173	540	--	7.5	--	--	--	--	--	--	--
16...	1855	81	815	8.0	18.5	100	200	0	42	22	110	54
JUN												
07...	1130	21	1140	8.1	16.0	120	260	0	53	32	180	59
JUL												
10...	1715	5.4	1110	8.1	28.0	70	250	0	49	32	160	57
31...	1800	50	815	8.0	23.0	120	160	0	28	22	130	62
SEP												
04...	1750	6.0	845	8.4	22.0	70	240	0	50	27	130	54

DATE	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)
OCT												
02...	1.5	4.4	300	65	9.7	.2	11	419	--	.57	1.02	.01
30...	1.1	3.7	290	64	9.6	.1	15	409	--	.56	2.65	.00
NOV												
27...	1.1	3.9	340	68	8.9	.1	22	456	--	.62	2.95	.01
JAN												
09...	1.0	4.0	340	47	7.8	.1	28	440	438	.60	.48	.04
APR												
23...	2.3	8.0	92	77	6.1	.1	8.3	229	229	.31	730	.86
26...	--	--	--	--	--	--	--	--	--	--	--	--
MAY												
04...	--	--	--	--	--	--	--	--	--	--	--	--
16...	3.4	9.2	220	180	12	.1	18	572	526	.78	125	.13
JUN												
07...	4.8	8.9	370	250	20	.2	15	808	782	1.10	45.8	.00
JUL												
10...	4.4	6.6	450	170	11	.2	15	774	715	1.05	11.3	.00
31...	4.5	10	380	65	17	.6	35	579	536	.79	78.2	.00
SEP												
04...	3.7	1.4	420	60	14	.2	12	555	548	.75	8.99	.03

05120500 WINTERING RIVER NEAR KARLSRUHE, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BORON, DIS-SOLVED (UG/L AS B) (01020)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)
OCT												
02...	.03	0	2	100	110	0	0	0	1	20	0	30
30...	.02	--	--	--	120	--	--	--	--	--	--	--
NOV												
27...	.03	--	--	--	140	--	--	--	--	--	--	--
JAN												
09...	.03	--	--	--	120	--	--	--	--	--	--	--
APR												
23...	.16	0	1	40	110	<1	0	<3	2	160	0	10
26...	--	--	--	--	--	--	--	--	--	--	--	--
MAY												
04...	--	--	--	--	--	--	--	--	--	--	--	--
16...	.06	--	--	--	210	--	--	--	--	--	--	--
JUN												
07...	.11	--	--	--	280	--	--	--	--	--	--	--
JUL												
10...	.16	--	--	--	320	--	--	--	--	--	--	--
31...	.38	--	--	--	400	--	--	--	--	--	--	--
SEP												
04...	.14	--	--	--	330	--	--	--	--	--	--	--

DATE	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)	VANA-DIUM, DIS-SOLVED (UG/L AS V) (01085)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)
OCT											
02...	30	.0	1	0	0	210	.0	10	10	.02	--
30...	--	--	--	--	--	--	--	--	8	.05	--
NOV											
27...	--	--	--	--	--	--	--	--	--	--	--
JAN											
09...	--	--	--	--	--	--	--	--	6	.01	--
APR											
23...	40	.2	<10	0	0	70	.7	8	--	--	--
26...	--	--	--	--	--	--	--	--	14	25	42
MAY											
04...	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	8	1.7	--
JUN											
07...	--	--	--	--	--	--	--	--	4	.23	--
JUL											
10...	--	--	--	--	--	--	--	--	8	.12	--
31...	--	--	--	--	--	--	--	--	9	1.2	--
SEP											
04...	--	--	--	--	--	--	--	--	8	.13	--

05122000 SOURIS (MOUSE) RIVER NEAR BANTRY, ND

LOCATION.--Lat 48°30'20", long 100°26'04", in SE¼NW¼SE¼ sec.14, T.158 N., R.76 W., McHenry County, Hydrologic Unit 09010003, on left bank 200 ft (61 m) upstream from Nelson bridge, 8 mi (13 km) east of Bantry, 18 mi (29 km) upstream from Willow Creek, and at mile 228.0 (366.9 km).

DRAINAGE AREA.--12,300 mi² (31,900 km²), approximately, of which about 7,600 mi² (19,700 km²) is probably noncontributing.

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

REVISED RECORDS.--WSP 2113: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,427.56 ft (435.120 m) National Geodetic Vertical Datum of 1929. Prior to Mar. 16, 1938, nonrecording gage at same site at datum 0.17 ft (0.052 m) lower.

REMARKS.--Records fair. Flow regulated by reservoirs on Souris, Des Lacs, and Wintering Rivers, total capacity, about 249,000 acre-ft (307 km). Diversions for irrigation of about 7,600 acres (30.8 km²) at Eaton Dam about 42 mi (68 km) above station and other small diversions for irrigation and municipal supply.

AVERAGE DISCHARGE.--42 years, 242 ft³/s (6.853 m³/s), 175,300 acre-ft/yr (216 hm³/yr); median of yearly mean discharges, 140 ft³/s (3.96 m³/s), 101,000 acre-ft/yr (120 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,330 ft³/s (264 m³/s) Apr. 23, 1976, gage height, 14.59 ft (4.447 m); no flow at times each year 1937-40, 1963.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,900 ft³/s (167 m³/s) May 17, gage height, 13.62 ft (4.151 m), observed; minimum daily, 34 ft³/s (0.96 m³/s) Nov. 21.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	60	65	47	51	76	180	172	4500	4300	525	319	68
2	52	71	46	51	76	180	174	4200	4000	509	306	63
3	48	74	45	52	76	184	175	4200	3700	516	295	63
4	46	75	45	52	76	186	180	4300	3400	510	286	63
5	46	75	45	53	76	190	180	4400	3000	501	284	60
6	44	74	44	53	78	190	180	4500	2700	497	274	56
7	42	74	43	55	76	190	180	4700	2450	502	270	52
8	42	72	42	56	80	190	180	4900	2230	507	266	50
9	42	66	41	56	80	190	182	5100	2040	494	263	47
10	42	62	40	56	80	190	184	5300	1900	464	259	44
11	44	50	39	56	80	182	186	5400	1760	442	243	44
12	42	46	38	56	80	170	200	5500	1650	425	228	40
13	43	46	38	56	80	160	220	5600	1540	406	223	39
14	45	46	38	56	80	140	240	5700	1460	391	212	37
15	46	46	38	56	80	130	250	5750	1360	375	180	37
16	46	44	38	56	80	120	265	5800	1280	367	163	37
17	45	42	39	56	82	120	270	5850	1210	363	148	37
18	42	40	40	56	84	120	280	5800	1140	359	137	37
19	43	38	42	58	86	125	290	5750	1090	360	129	39
20	44	36	43	60	94	130	310	5700	1060	362	117	40
21	46	34	45	62	100	135	500	5650	1020	367	108	41
22	46	36	47	63	110	145	600	5600	973	372	103	42
23	46	40	47	63	120	150	700	5500	915	381	100	44
24	47	44	49	67	130	150	800	5400	850	390	95	46
25	50	46	50	69	140	150	900	5300	792	390	91	48
26	52	48	50	70	150	155	1050	5200	739	380	88	50
27	54	49	50	72	160	157	3100	5100	693	370	83	50
28	56	49	50	73	170	160	5700	5000	652	360	80	50
29	58	49	50	74	---	165	5500	4900	614	350	79	50
30	60	46	50	76	---	170	5100	4800	566	340	75	50
31	63	---	50	76	---	170	---	4600	---	330	70	---
TOTAL	1482	1594	1369	1866	2684	4976	28248	160000	51084	12905	5576	1424
MEAN	47.8	53.1	44.2	60.3	95.9	161	942	5161	1703	416	180	47.5
MAX	63	75	50	76	170	190	5700	5850	4300	525	319	68
MIN	42	34	38	51	76	120	172	4200	566	330	70	37
AC-FT	2940	3160	2720	3710	5320	9870	56030	317400	101300	25600	11060	2820

CAL YR 1978 TOTAL 54518 MEAN 149 MAX 890 MIN 10 AC-FT 108100
WTR YR 1979 TOTAL 273210 MEAN 749 MAX 5850 MIN 34 AC-FT 541900

05123000 LAKE METIGOSHE NEAR BOTTINEAU, ND

LOCATION.--Lat 48°59'05", long 100°20'52", in SE¼SW¼ sec.35, T.164 N., R.75 W., Bottineau County, Hydrologic Unit 09010004, 25 ft (7.6 m) east from northeast corner of bridge over Lake Metigoshe, and 11.7 mi (18.8 km) northeast of Bottineau.

DRAINAGE AREA.--59 mi^2 (153 km^2).

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 (649.224 m) National Geodetic Vertical Datum of 1929. 1931-32, nonrecording gage on north abutment of bridge at datum 6.32 ft (1.93 m) lower (reduced to elevations NGVD). Sept. 4, 1953, to Jan. 19, 1955, nonrecording gage at present datum on east end of south abutment of bridge.

REMARKS.--Outlet of lake is a concrete dam with removable stoplogs; average crest elevation without stoplogs about 2,138.0 ft (651.66 m) National Geodetic Vertical Datum of 1929. Lake level regulated since 1959 by dam and control works in the outlet of Sharpe Lake located on the principal tributary in Manitoba.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height, 9.70 ft (2.957 m) May 3, 1975; minimum, 4.28 ft (1.305 m) Sept. 17, 1932, present datum.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 7.91 ft (2.411 m) June 4; minimum, 6.65 ft (2.027 m) Nov. 10-12.

MONTHEND GAGE HEIGHT, IN FEET, AT 2400, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

Oct. 31--------	6.70	Jan. 31--------	6.82	Apr. 30--------	7.56	July 31--------	7.40
Nov. 30--------	6.75	Feb. 28--------	6.89	May 31--------	7.89	Aug. 31--------	6.98
Dec. 31--------	6.80	Mar. 31--------	6.98	June 30--------	7.63	Sept. 30--------	6.84

05123100 OAK CREEK AT LAKE METIGOSHE OUTLET NEAR BOTTINEAU, ND

LOCATION.--Lat 48°57'56", long 100°21'47", in SE¼SE¼ sec.3, T.163 N., R.75 W., Bottineau County, Hydrologic Unit 09010004, at outlet of Lake Metigoshe, and 10 mi (16 km) northeast of Bottineau.

DRAINAGE AREA.--59 mi^2 (153 km^2).

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 (649.224 m) National Geodetic Vertical Datum of 1929. Prior to Jan. 20, 1955, nonrecording gage at same site and datum. Gage is located 1.5 mi (2.4 km) northeast of outlet of lake, and is same as that used for station on Lake Metigoshe.

REMARKS.--No flow all year. Flow regulated since 1959 by dam and control works on the outlet of Sharpe Lake located on the principal tributary in Manitoba.

AVERAGE DISCHARGE.--26 years, 4.45 ft^3/s (0.126 m^3/s), 3,220 acre-ft/yr (3.97 hm^3/yr); median of yearly mean discharges, 1.9 ft^3/s (0.054 m^3/s), 1,400 acre-ft/yr (1.7 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 148 ft^3/s (4.19 m^3/s) May 3, 1975, gage height, 9.70 ft (2.957 m); no flow at times most years.

EXTREMES FOR CURRENT YEAR.--No flow all year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
MEAN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MAX	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

CAL YR 1978 TOTAL 0.00 MEAN .000 MAX .00 MIN .00 AC-FT .00
WTR YR 1979 TOTAL 0.00 MEAN .000 MAX .00 MIN .00 AC-FT .00

05123400 WILLOW CREEK NEAR WILLOW CITY, ND

LOCATION.--Lat 48°35'20", long 100°26'30", in NE¼NW¼ sec.23, T.159 N., R.76 W., McHenry County, Hydrologic Unit 09010004, on left bank 50 ft (15 m) downstream from bridge on county road, 1.5 mi (2.4 km) upstream from Snake Creek, and 7 mi (11 km) west of Willow City.

DRAINAGE AREA.--1,160 mi^2 (3,000 km^2), approximately, of which about 430 mi^2 (1,110 km^2) is probably noncontributing.

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

GAGE.--Water-stage recorder. Altitude of gage is 1,430 ft (436 m), from topographic map. Prior to Oct. 5, 1956, nonrecording gage at site 50 ft (15 m) upstream at same datum.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--23 years, 50.6 ft^3/s (1.433 m^3/s), 36,660 acre-ft/yr (45.2 hm^3/yr); median of yearly mean discharges, 18 ft^3/s (0.51 m^3/s), 13,000 acre-ft/yr (16 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,900 ft^3/s (167 m^3/s) Apr. 12, 1969, gage height, 16.76 ft (5.108 m); no flow at times each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,170 ft^3/s (89.8 m^3/s) Apr. 23, gage height, 16.10 ft (4.907 m), only peak above base of 50 ft^3/s (1.42 m^3/s); no flow for many months.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	738	40	1.2	.06	.00
2	.00	.00	.00	.00	.00	.00	.00	673	36	.92	.03	.00
3	.00	.00	.00	.00	.00	.00	.00	623	32	.87	.02	.00
4	.00	.00	.00	.00	.00	.00	.00	580	28	.87	.01	.00
5	.00	.00	.00	.00	.00	.00	.00	539	25	.77	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	499	22	.72	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	450	18	.67	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	388	13	.62	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	322	11	.40	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	268	8.7	.32	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	234	6.7	.17	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	212	5.4	.17	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	197	4.3	.17	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	181	3.6	.17	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	165	3.1	.14	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	151	2.2	.17	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	142	1.8	.21	.00	.00
18	.00	.00	.00	.00	.00	.00	20	131	1.4	.17	.00	.00
19	.00	.00	.00	.00	.00	.00	50	117	1.2	.17	.00	.00
20	.00	.00	.00	.00	.00	.00	100	110	1.6	.17	.00	.00
21	.00	.00	.00	.00	.00	.00	200	104	1.6	.14	.00	.00
22	.00	.00	.00	.00	.00	.00	1450	101	1.4	.14	.00	.00
23	.00	.00	.00	.00	.00	.00	3100	94	1.9	.14	.00	.00
24	.00	.00	.00	.00	.00	.00	2530	86	1.6	.14	.00	.00
25	.00	.00	.00	.00	.00	.00	1980	80	1.4	.06	.00	.00
26	.00	.00	.00	.00	.00	.00	1730	74	1.3	.14	.00	.00
27	.00	.00	.00	.00	.00	.00	1500	67	1.2	.21	.00	.00
28	.00	.00	.00	.00	.00	.00	1230	62	1.4	.17	.00	.00
29	.00	.00	.00	.00	---	.00	984	55	1.5	.14	.00	.00
30	.00	.00	.00	.00	---	.00	812	50	1.2	.14	.00	.00
31	.00	---	.00	.00	---	.00	---	45	---	.10	.00	---
TOTAL	.00	.00	.00	.00	.00	.00	15686.00	7538	279.5	10.59	.12	.00
MEAN	.000	.000	.000	.000	.000	.000	523	243	9.32	.34	.004	.000
MAX	.00	.00	.00	.00	.00	.00	3100	738	40	1.2	.06	.00
MIN	.00	.00	.00	.00	.00	.00	.00	45	1.2	.06	.00	.00
AC-FT	.00	.00	.00	.00	.00	.00	31110	14950	554	21	.2	.00

CAL YR 1978	TOTAL	5586.74	MEAN 15.3	MAX 440	MIN .00	AC-FT	11080		
WTR YR 1979	TOTAL	23514.21	MEAN 64.4	MAX 3100	MIN .00	AC-FT	46640		

05123510 DEEP RIVER NEAR UPHAM, ND

LOCATION.--Lat 48°35'03", long 100°51'44", in SW¼NW¼ sec.22, T.159 N., R.79 W., McHenry County, Hydrologic Unit 09010005, 60 ft (18 m) downstream from county highway bridge, 0.8 mi (1.3 km) downstream from Little Deep River, and 6.3 mi (10.1 km) west of Upham.

DRAINAGE AREA.--975 mi^2 (2,525 km^2), of which 605 mi^2 (1,567 km^2) is probably noncontributing.

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

REVISED RECORDS.--WSP 1728: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 1,430 ft (436 m), from topographic map.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--22 years, 21.3 ft^3/s (0.603 m^3/s), 15,430 acre-ft/yr (19.0 hm^3/yr); median of yearly mean discharges, 1.4 ft^3/s (0.040 m^3/s), 1,000 acre-ft/yr (1.2 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,760 ft^3/s (191 m^3/s) Apr. 12, 1969, gage height, 18.18 ft (5.541 m); no flow for part or all of each year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in April 1951 reached a stage of about 16 ft (4.9 m), discharge, 2,700 ft^3/s (76.5 m^3/s), from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 50 ft^3/s (1.42 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Apr. 19	--	250	7.08	[a]11.18	3.408	Apr. 24	1500	*3,000	85.0	[a]16.98	5.176

No flow for many months.

a - Backwater from ice and snow.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	675	23	7.6	5.2	.10
2	.00	.00	.00	.00	.00	.00	.00	534	22	7.0	4.5	.10
3	.00	.00	.00	.00	.00	.00	.00	468	21	6.8	4.4	.10
4	.00	.00	.00	.00	.00	.00	.00	410	20	6.6	4.2	.10
5	.00	.00	.00	.00	.00	.00	.00	353	19	6.4	3.9	.10
6	.00	.00	.00	.00	.00	.00	.00	311	18	6.4	3.4	.09
7	.00	.00	.00	.00	.00	.00	.00	276	17	5.8	2.9	.09
8	.00	.00	.00	.00	.00	.00	.00	244	16	5.6	2.4	.09
9	.00	.00	.00	.00	.00	.00	.00	216	16	5.4	2.0	.08
10	.00	.00	.00	.00	.00	.00	.00	185	16	5.0	1.7	.10
11	.00	.00	.00	.00	.00	.00	.00	173	15	4.9	1.3	.10
12	.00	.00	.00	.00	.00	.00	.00	158	14	4.7	1.1	.15
13	.00	.00	.00	.00	.00	.00	.00	142	14	4.4	.94	.10
14	.00	.00	.00	.00	.00	.00	.00	124	14	4.3	.70	.10
15	.00	.00	.00	.00	.00	.00	.00	107	14	4.5	.45	.10
16	.00	.00	.00	.00	.00	.00	.00	94	12	5.6	.30	.10
17	.00	.00	.00	.00	.00	.00	.00	92	11	13	.25	.02
18	.00	.00	.00	.00	.00	.00	.00	79	11	16	.20	.00
19	.00	.00	.00	.00	.00	.00	110	73	10	17	.15	.00
20	.00	.00	.00	.00	.00	.00	190	72	10	17	.15	.00
21	.00	.00	.00	.00	.00	.00	160	69	9.8	16	.10	.00
22	.00	.00	.00	.00	.00	.00	140	66	9.6	16	.10	.00
23	.00	.00	.00	.00	.00	.00	900	61	9.6	15	.10	.00
24	.00	.00	.00	.00	.00	.00	2400	55	9.2	14	.10	.00
25	.00	.00	.00	.00	.00	.00	2600	50	9.0	12	.10	.00
26	.00	.00	.00	.00	.00	.00	1960	45	9.0	11	.08	.00
27	.00	.00	.00	.00	.00	.00	1640	40	8.8	9.8	.06	.00
28	.00	.00	.00	.00	.00	.00	1280	34	8.6	8.6	.06	.00
29	.00	.00	.00	.00	---	.00	1000	31	8.1	7.6	.06	.00
30	.00	.00	.00	.00	---	.00	815	29	7.9	7.0	.06	.00
31	.00	---	.00	.00	---	.00	---	25	---	6.0	.06	---
TOTAL	.00	.00	.00	.00	.00	.00	13195.00	5291	402.6	277.0	41.02	1.62
MEAN	.000	.000	.000	.000	.000	.000	440	171	13.4	8.94	1.32	.054
MAX	.00	.00	.00	.00	.00	.00	2600	675	23	17	5.2	.15
MIN	.00	.00	.00	.00	.00	.00	.00	25	7.9	4.3	.06	.00
AC-FT	.00	.00	.00	.00	.00	.00	26170	10490	799	549	81	3.2

CAL YR 1978	TOTAL	713.42	MEAN	1.95	MAX	98	MIN	.00	AC-FT 1420
WTR YR 1979	TOTAL	19208.24	MEAN	52.6	MAX	2600	MIN	.00	AC-FT 38100

05123600 EGG CREEK NEAR GRANVILLE, ND

LOCATION.--Lat 48°21'18", long 100°49'19", on west line of sec.10, T.156 N., R.79 W., McHenry County, Hydrologic Unit 09010005, on right bank near right downstream wingwall of bridge, 2 mi (3 km) downstream from Hay Coulee, 3.5 mi (5.6 km) upstream from North Lake, and 6 mi (10 km) northeast of Granville.

DRAINAGE AREA.--289 mi^2 (749 km^2), of which 150 mi^2 (388 km^2) is probably noncontributing.

WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WSP 1728: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,478.14 ft (450.537 m) National Geodetic Vertical Datum of 1929 (levels by Bureau of Reclamation).

AVERAGE DISCHARGE.--23 years, 6.78 ft^3/s (0.192 m^3/s), 4,910 acre-ft/yr (6.05 hm^3/yr); median of yearly mean discharges, 3.5 ft^3/s (0.10 m^3/s), 2,500 acre-ft/yr (3.1 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,710 ft^3/s (48.4 m^3/s) Apr. 10, 1969, gage height, 7.28 ft (2.219 m); maximum gage height, 8.10 ft (2.469 m) Apr. 9, 1969, from floodmark, backwater from snow; no flow for long periods each year.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 20 ft^3/s (0.57 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Apr. 21	1700	*1,200	34.0	6.70	2.042	July 5	1700	127	3.60	6.15	1.875

No flow for many months.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	140	15	4.3	1.4	.00
2	.00	.00	.00	.00	.00	.00	.00	122	14	26	2.8	.00
3	.00	.00	.00	.00	.00	.00	.00	109	13	55	3.0	.00
4	.00	.00	.00	.00	.00	.00	.00	100	12	120	5.7	.00
5	.00	.00	.00	.00	.00	.00	.00	92	12	125	4.5	.00
6	.00	.00	.00	.00	.00	.00	.00	85	11	120	4.0	.00
7	.00	.00	.00	.00	.00	.00	.00	83	9.0	102	3.5	.00
8	.00	.00	.00	.00	.00	.00	.00	77	8.5	88	2.3	.00
9	.00	.00	.00	.00	.00	.00	.00	69	7.6	75	1.2	.00
10	.00	.00	.00	.00	.00	.00	.00	66	6.4	66	.62	.00
11	.00	.00	.00	.00	.00	.00	.00	65	5.5	56	.50	.00
12	.00	.00	.00	.00	.00	.00	.00	64	5.0	48	1.9	.00
13	.00	.00	.00	.00	.00	.00	.00	58	4.4	43	1.0	.00
14	.00	.00	.00	.00	.00	.00	.00	52	2.3	38	.62	.00
15	.00	.00	.00	.00	.00	.00	.00	46	1.9	35	.26	.00
16	.00	.00	.00	.00	.00	.00	.00	42	1.5	33	.24	.00
17	.00	.00	.00	.00	.00	.00	.00	40	.92	30	.20	.00
18	.00	.00	.00	.00	.00	.00	.00	37	.74	29	.16	.00
19	.00	.00	.00	.00	.00	.00	.00	37	.71	27	.12	.00
20	.00	.00	.00	.00	.00	.00	.00	37	1.5	25	.10	.00
21	.00	.00	.00	.00	.00	.00	400	35	1.5	21	.06	.00
22	.00	.00	.00	.00	.00	.00	740	31	.84	18	.14	.00
23	.00	.00	.00	.00	.00	.00	790	29	.84	16	.18	.00
24	.00	.00	.00	.00	.00	.00	610	28	.71	13	.16	.00
25	.00	.00	.00	.00	.00	.00	500	27	.55	11	.14	.00
26	.00	.00	.00	.00	.00	.00	384	24	.43	9.0	.12	.00
27	.00	.00	.00	.00	.00	.00	302	22	.36	8.5	.10	.00
28	.00	.00	.00	.00	.00	.00	242	20	.48	6.8	.08	.00
29	.00	.00	.00	.00	---	.00	200	18	.55	5.2	.05	.00
30	.00	.00	.00	.00	---	.00	167	17	.36	5.2	.02	.00
31	.00	---	.00	.00	---	.00	---	16	---	2.6	.01	---
TOTAL	.00	.00	.00	.00	.00	.00	4335.00	1688	139.59	1261.6	34.98	.00
MEAN	.000	.000	.000	.000	.000	.000	145	54.5	4.65	40.7	1.13	.000
MAX	.00	.00	.00	.00	.00	.00	790	140	15	125	5.7	.00
MIN	.00	.00	.00	.00	.00	.00	.00	16	.36	2.6	.01	.00
AC-FT	.00	.00	.00	.00	.00	.00	8600	3350	277	2500	69	.00

CAL YR 1978 TOTAL 1360.37 MEAN 3.73 MAX 130 MIN .00 AC-FT 2700
WTR YR 1979 TOTAL 7459.17 MEAN 20.4 MAX 790 MIN .00 AC-FT 14800

05123600 EGG CREEK NEAR GRANVILLE, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1972 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE (DEG C) (00010)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)
APR											
23...	2100	691	315	7.6	4.5	110	50	21	14	18	25
25...	1635	484	312	--	4.5	--	--	--	--	--	--
MAY											
01...	1710	140	570	--	11.0	--	--	--	--	--	--
JUN											
09...	0910	7.6	1660	--	16.0	--	--	--	--	--	--
JUL											
16...	1510	32	630	--	23.0	--	--	--	--	--	--

DATE	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)
APR											
23...	.7	8.3	60	76	7.2	.1	9.2	192	197	.26	358
25...	--	--	--	--	--	--	--	--	--	--	--
MAY											
01...	--	--	--	--	--	--	--	--	--	--	--
JUN											
09...	--	--	--	--	--	--	--	--	--	--	--
JUL											
16...	--	--	--	--	--	--	--	--	--	--	--

DATE	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BORON, DIS-SOLVED (UG/L AS B) (01020)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, DIS-SOLVED (UG/L AS FE) (01046)
APR											
23...	1.5	.32	0	1	30	60	1	0	<3	0	260
25...	--	--	--	--	--	--	--	--	--	--	--
MAY											
01...	--	--	--	--	--	--	--	--	--	--	--
JUN											
09...	--	--	--	--	--	--	--	--	--	--	--
JUL											
16...	--	--	--	--	--	--	--	--	--	--	--

DATE	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)	VANA-DIUM, DIS-SOLVED (UG/L AS V) (01085)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)
APR										
23...	0	10	20	4.7	<10	0	0	70	.2	30
25...	--	--	--	--	--	--	--	--	--	--
MAY										
01...	--	--	--	--	--	--	--	--	--	--
JUN										
09...	--	--	--	--	--	--	--	--	--	--
JUL										
16...	--	--	--	--	--	--	--	--	--	--

05123700 CUT BANK CREEK AT NORTH LAKE OUTLET NEAR GRANVILLE, ND

LOCATION.--Lat 48°23'10", long 100°46'00", on south line of sec.29, T.157 N., R.78 W., McHenry County, Hydrologic Unit 09010005, on left bank near left downstream wingwall of bridge, 9 mi (14 km) northeast of Granville, and 13.5 mi (21.7 km) east of Deering.

DRAINAGE AREA.--534 mi^2 (1,383 km^2), of which 290 mi^2 (751 km^2) is probably noncontributing.

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

REVISED RECORDS.--WSP 1728: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,477.25 ft (450.266 m) National Geodetic Vertical Datum of 1929 (levels by Bureau of Reclamation).

REMARKS.--Natural control by North Lake.

AVERAGE DISCHARGE.--23 years, 6.27 ft^3/s (0.178 m^3/s), 4,540 acre-ft/yr (5.60 hm^3/yr); median of yearly mean discharges, no flow.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 780 ft^3/s (22.1 m^3/s) Mar. 29, 1976, gage height, 4.60 ft (1.402 m); maximum gage height, 4.68 ft (1.427 m) Mar. 27, 1976, backwater from ice; no flow at times each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 306 ft^3/s (8.67 m^3/s) Apr. 26, gage height, 4.27 ft (1.301 m); no flow for several months.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	245	44	15	21	7.5
2	.00	.00	.00	.00	.00	.00	.00	225	40	18	21	7.3
3	.00	.00	.00	.00	.00	.00	.00	214	38	18	20	6.9
4	.00	.00	.00	.00	.00	.00	.00	204	37	17	20	6.7
5	.00	.00	.00	.00	.00	.00	.00	194	38	21	19	5.9
6	.00	.00	.00	.00	.00	.00	.00	182	32	26	18	5.1
7	.00	.00	.00	.00	.00	.00	.00	180	30	30	17	5.0
8	.00	.00	.00	.00	.00	.00	.00	166	28	33	17	5.0
9	.00	.00	.00	.00	.00	.00	.00	158	27	34	16	4.8
10	.00	.00	.00	.00	.00	.00	.00	149	25	35	16	4.9
11	.00	.00	.00	.00	.00	.00	.00	144	25	35	15	5.4
12	.00	.00	.00	.00	.00	.00	.00	140	25	35	14	5.7
13	.00	.00	.00	.00	.00	.00	.00	132	26	35	13	5.8
14	.00	.00	.00	.00	.00	.00	.00	129	22	34	13	5.9
15	.00	.00	.00	.00	.00	.00	.00	123	22	34	12	6.0
16	.00	.00	.00	.00	.00	.00	.00	120	22	32	12	5.9
17	.00	.00	.00	.00	.00	.00	.00	113	21	32	12	5.8
18	.00	.00	.00	.00	.00	.00	.00	105	20	30	12	5.7
19	.00	.00	.00	.00	.00	.00	.00	100	19	29	11	5.6
20	.00	.00	.00	.00	.00	.00	.00	98	18	28	11	5.5
21	.00	.00	.00	.00	.00	.00	.00	94	18	27	10	5.4
22	.00	.00	.00	.00	.00	.00	5.0	85	18	25	10	5.4
23	.00	.00	.00	.00	.00	.00	75	84	18	25	9.7	5.3
24	.00	.00	.00	.00	.00	.00	200	81	18	25	9.4	5.3
25	.00	.00	.00	.00	.00	.00	218	75	17	24	9.0	5.2
26	.00	.00	.00	.00	.00	.00	276	67	16	23	8.7	5.1
27	.00	.00	.00	.00	.00	.00	285	64	16	23	8.3	5.0
28	.00	.00	.00	.00	.00	.00	268	59	15	23	8.1	5.0
29	.00	.00	.00	.00	---	.00	255	47	14	22	8.0	4.9
30	.00	.00	.00	.00	---	.00	255	49	14	22	7.8	4.9
31	.00	---	.00	.00	---	.00	---	47	---	21	7.6	---
TOTAL	.00	.00	.00	.00	.00	.00	1837.00	3873	723	831	406.6	167.9
MEAN	.000	.000	.000	.000	.000	.000	61.2	125	24.1	26.8	13.1	5.60
MAX	.00	.00	.00	.00	.00	.00	285	245	44	35	21	7.5
MIN	.00	.00	.00	.00	.00	.00	.00	47	14	15	7.6	4.8
AC-FT	.00	.00	.00	.00	.00	.00	3640	7680	1430	1650	806	333

CAL YR 1978 TOTAL 244.07 MEAN .67 MAX 5.9 MIN .00 AC-FT 484
WTR YR 1979 TOTAL 7838.50 MEAN 21.5 MAX 285 MIN .00 AC-FT 15550

05123750 CUT BANK CREEK AT UPHAM, ND

LOCATION.--Lat 48°34'29", long 100°44'39", in SE¼SE¼SW¼ sec.21, T.159 N., R.78 W., McHenry County, Hydrologic Unit 09010005, on left bank 50 ft (15 m) downstream from county highway bridge, and 0.5 mi (0.8 km) southwest of Upham.

DRAINAGE AREA.--722 mi^2 (1,870 km^2), of which about 450 mi^2 (1,166 km^2) is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1974 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,422.77 ft (433.660 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--5 years, 16.3 ft^3/s (0.462 m^3/s), 11,810 acre-ft/yr (14.6 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 820 ft^3/s (23.2 m^3/s) Apr. 1, 1976, gage height, 7.24 ft (2.207 m), from high watermark; no flow for several months each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 270 ft^3/s (7.65 m^3/s) May 2, gage height, 5.10 ft (1.554 m); no flow for several months.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	123	11	1.3	15	12
2	.00	.00	.00	.00	.00	.00	.00	254	12	2.6	15	12
3	.00	.00	.00	.00	.00	.00	.00	258	14	3.3	15	11
4	.00	.00	.00	.00	.00	.00	.00	224	17	5.0	15	10
5	.00	.00	.00	.00	.00	.00	.00	199	19	9.0	14	10
6	.00	.00	.00	.00	.00	.00	.00	192	24	12	14	10
7	.00	.00	.00	.00	.00	.00	.00	185	23	13	12	9.5
8	.00	.00	.00	.00	.00	.00	.00	175	28	19	12	9.0
9	.00	.00	.00	.00	.00	.00	.00	166	26	23	12	8.5
10	.00	.00	.00	.00	.00	.00	.00	148	26	23	11	8.0
11	.00	.00	.00	.00	.00	.00	.00	136	23	25	10	7.5
12	.00	.00	.00	.00	.00	.00	.00	128	20	20	10	7.0
13	.00	.00	.00	.00	.00	.00	.00	118	17	15	9.0	7.0
14	.00	.00	.00	.00	.00	.00	.00	106	12	12	8.0	6.8
15	.00	.00	.00	.00	.00	.00	.00	96	8.5	8.5	7.7	6.6
16	.00	.00	.00	.00	.00	.00	.00	82	6.8	6.5	7.7	6.4
17	.00	.00	.00	.00	.00	.00	.00	70	5.3	5.0	7.4	6.2
18	.00	.00	.00	.00	.00	.00	.00	68	4.0	4.5	6.8	6.0
19	.00	.00	.00	.00	.00	.00	.00	70	3.0	4.5	6.5	6.0
20	.00	.00	.00	.00	.00	.00	.00	61	2.8	4.5	5.9	5.9
21	.00	.00	.00	.00	.00	.00	10	50	2.6	4.7	5.6	5.8
22	.00	.00	.00	.00	.00	.00	30	40	2.2	4.7	5.3	5.7
23	.00	.00	.00	.00	.00	.00	9.0	34	2.0	5.9	5.0	5.6
24	.00	.00	.00	.00	.00	.00	5.9	31	1.7	6.2	5.0	5.5
25	.00	.00	.00	.00	.00	.00	6.8	24	1.6	7.7	5.0	5.4
26	.00	.00	.00	.00	.00	.00	4.3	20	1.4	8.5	4.8	5.3
27	.00	.00	.00	.00	.00	.00	2.4	17	1.2	10	4.8	5.2
28	.00	.00	.00	.00	.00	.00	1.5	12	1.1	10	4.7	5.0
29	.00	.00	.00	.00	---	.00	.65	10	1.1	11	4.5	4.8
30	.00	.00	.00	.00	---	.00	.10	10	.95	12	4.2	4.5
31	.00	---	.00	.00	---	.00	---	12	---	13	4.5	---
TOTAL	.00	.00	.00	.00	.00	.00	70.65	3119	318.25	310.4	267.4	218.2
MEAN	.000	.000	.000	.000	.000	.000	2.36	101	10.6	10.0	8.63	7.27
MAX	.00	.00	.00	.00	.00	.00	30	258	28	25	15	12
MIN	.00	.00	.00	.00	.00	.00	.00	10	.95	1.3	4.2	4.5
AC-FT	.00	.00	.00	.00	.00	.00	140	6190	631	616	530	433

CAL YR 1978 TOTAL 152.47 MEAN .42 MAX 4.6 MIN .00 AC-FT 302
WTR YR 1979 TOTAL 4303.90 MEAN 11.8 MAX 258 MIN .00 AC-FT 8540

05123750 CUT BANK CREEK AT UPHAM, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1975 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE (DEG C) (00010)	COLOR (PLAT-INUM-COBALT UNITS) (00080)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)
MAY											
03...	1610	257	438	7.8	6.5	60	160	68	30	20	26
JUN											
08...	2045	28	860	--	19.0	--	--	--	--	--	--
JUL											
13...	1430	16	900	7.4	25.0	100	320	0	47	49	71
AUG											
02...	1650	16	1030	--	24.0	--	--	--	--	--	--
SEP											
07...	1230	9.5	1130	7.8	15.0	70	370	12	58	55	90

DATE	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)
MAY											
03...	25	.9	11	90	110	13	.1	11	291	278	.40
JUN											
08...	--	--	--	--	--	--	--	--	--	--	--
JUL											
13...	54	1.7	12	320	180	23	.2	16	636	591	.87
AUG											
02...	--	--	--	--	--	--	--	--	--	--	--
SEP											
07...	33	2.0	16	360	240	34	.2	8.3	761	719	1.04

DATE	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BORON, DIS-SOLVED (UG/L AS B) (01020)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)
MAY											
03...	202	.48	.13	10	2	100	80	0	0	0	0
JUN											
08...	--	--	--	--	--	--	--	--	--	--	--
JUL											
13...	27.5	.00	.19	0	4	100	120	<1	0	<3	--
AUG											
02...	--	--	--	--	--	--	--	--	--	--	--
SEP											
07...	19.5	.00	.12	0	2	100	170	<1	20	<3	0

DATE	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)	VANA-DIUM, DIS-SOLVED (UG/L AS V) (01085)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)
MAY											
03...	110	1	20	0	.1	3	0	0	150	.2	10
JUN											
08...	--	--	--	--	--	--	--	--	--	--	--
JUL											
13...	50	0	50	120	.0	<10	0	0	270	<1.0	5
AUG											
02...	--	--	--	--	--	--	--	--	--	--	--
SEP											
07...	90	0	60	30	.0	<10	0	0	290	<1.0	3

05123760 DEEP RIVER BELOW CUT BANK CREEK NEAR UPHAM, ND

LOCATION.--Lat 48°36'14", long 100°47'41", in SW¼SW¼SW¼ sec.7, T.159 N., R.78 W., McHenry County, Hydrologic Unit 09010005, at bridge 0.5 mi (0.8 km) below Cut Bank Creek, and about 3.5 mi (5.6 km) northwest of Upham at bridge on county highway.

DRAINAGE AREA.--1,722 mi² (4,460 km²), of which about 1,070 mi² (2,770 km²) is probably noncontributing.

PERIOD OF RECORD.--Water years 1975 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1974 to current year.
WATER TEMPERATURE: October 1974 to current year.

REMARKS.--Discharge computed from records at stations 05123510 Deep River near Upham and 05123750 Cut Bank Creek at Upham. No flow Oct. 1 to Apr. 20. No records available July 1 to Aug. 31.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 2,100 micromhos Mar. 22, 1976; minimum daily, 278 micromhos Apr. 1, 1976.
WATER TEMPERATURE: Maximum daily, 28.0°C July 6, 1975; minimum daily, 0.0°C on many days during winter months.

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE (DEG C) (00010)	COLOR (PLAT-INUM-COBALT UNITS) (00080)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)
APR											
26...	1655	E2000	280	7.7	4.5	70	110	44	23	12	9.3
JUN											
07...	2115	E42	850	8.1	17.0	70	340	96	62	44	59
JUL											
24...	1130	E20	945	7.9	24.0	70	370	54	59	55	78
AUG											
02...	1730	E20	950	7.9	23.0	70	360	29	48	58	85
SEP											
07...	1400	E10	1070	8.3	17.0	60	360	24	55	55	89

DATE	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)
APR											
26...	14	.4	11	63	45	12	.1	13	193	174	.26
JUN											
07...	42	1.4	15	240	200	34	.2	16	587	575	.80
JUL											
24...	30	1.8	12	320	180	32	.2	10	661	619	.90
AUG											
02...	33	2.0	11	330	190	31	.2	13	661	635	.90
SEP											
07...	34	2.0	15	340	240	34	.2	4.8	746	698	1.01

DATE	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BORON, DIS-SOLVED (UG/L AS B) (01020)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, DIS-SOLVED (UG/L AS FE) (01046)
APR											
26...	2.1	.20	20	2	50	30	<1	0	<3	1	930
JUN											
07...	.00	.17	--	--	--	90	--	--	--	--	--
JUL											
24...	.00	.16	--	--	--	140	--	--	--	--	--
AUG											
02...	.00	.01	--	--	--	140	--	--	--	--	--
SEP											
07...	.00	.09	0	2	100	220	<1	10	<3	0	30

DATE	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)	VANA-DIUM, DIS-SOLVED (UG/L AS V) (01085)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)
APR										
26...	0	9	70	4.6	<10	0	3	70	.0	<3
SEP										
07...	0	60	8	.1	<10	0	0	290	<1.0	<3

E - Estimated.

05123760 DEEP RIVER BELOW CUT BANK CREEK NEAR UPHAM, ND--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1							---	380	745			1020
2							---	285	850			1020
3							---	420	850			1020
4							---	460	850			1020
5							---	460	860			1010
6							---	480	860			1010
7							---	490	850			1000
8							---	500	860			1010
9							---	520	850			---
10							---	540	850			1020
11							---	540	860			1010
12							---	560	850			1010
13							---	560	850			1010
14							---	580	860			1010
15							---	600	890			1020
16							---	680	870			1010
17							---	640	860			1020
18							---	690	900			1010
19							---	740	910			1020
20							---	690	800			1020
21							380	750	900			1020
22							290	740	910			1020
23							290	725	900			1020
24							340	790	945			1020
25							325	790	950			1020
26							310	800	950			1020
27							320	790	950			1020
28							325	800	955			1030
29							340	750	955			1020
30							360	810	900			---
31							---	845	---			---
MEAN							328	626	880			1020

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1							---	5.0	18.0			18.5
2							---	4.0	15.0			17.5
3							---	5.5	18.5			18.0
4							---	4.0	15.0			19.0
5							---	4.0	15.0			18.5
6							---	5.5	16.5			17.0
7							---	5.0	15.0			16.0
8							---	3.5	14.5			16.0
9							---	3.5	16.0			---
10							---	2.5	16.0			16.0
11							---	2.5	17.0			14.5
12							---	3.5	19.0			14.0
13							---	5.5	21.0			12.5
14							---	7.0	20.5			11.5
15							---	7.0	18.5			12.0
16							---	11.0	18.5			13.0
17							---	13.5	20.0			16.0
18							---	9.5	21.0			14.0
19							---	9.0	18.5			14.0
20							---	8.0	18.0			14.0
21							5.0	10.0	17.0			13.0
22							4.0	10.5	18.0			13.5
23							1.5	11.5	16.5			12.5
24							5.0	13.0	18.5			12.0
25							1.5	16.5	18.0			12.0
26							2.5	16.0	17.5			13.0
27							4.0	17.0	18.0			14.0
28							11.0	17.5	19.0			14.0
29							5.5	17.5	18.0			12.5
30							3.5	17.5	18.5			---
31							---	14.0	---			---
MEAN							4.5	9.0	17.5			14.5

05123900 BOUNDARY CREEK NEAR LANDA, ND

LOCATION.--Lat 48°48'46", long 100°51'46", at east line sec.35, T.162 N., R.79 W., Bottineau County, Hydrologic Unit 09010003, on right bank 80 ft (24 m) downstream from bridge on county road, 5 mi (8 km) upstream from mouth, and 6 mi (10 km) southeast of Landa.

DRAINAGE AREA.--230 mi^2 (596 km^2), of which about 60 mi^2 (160 km^2) is probably noncontributing.

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

REVISED RECORDS.--WSP 1728: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,420.03 ft (432.825 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair. Some regulation since 1974 by Soil Conservation Service dam, capacity, 2,970 acre-ft (3.66 hm^3).

AVERAGE DISCHARGE.--22 years, 13.1 ft^3/s (0.371 m^3/s), 9,490 acre-ft/yr (11.7 hm^3/yr); median of yearly mean discharges, 5.5 ft^3/s (0.16 m^3/s), 4,000 acre-ft/yr (4.9 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,580 ft^3/s (101 m^3/s) Apr. 9, 1969, gage height, 12.70 ft (3.871 m); maximum gage height, 12.90 ft (3.932 m) Apr. 1, 1976, backwater from ice and snow; no flow for several months each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, about 1,200 ft^3/s (34.0 m^3/s) Apr. 18, gage height, 12.20 ft (3.719 m), backwater from ice; no flow most of year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	100	4.5	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	80	4.0	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	68	3.0	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	32	2.0	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	20	1.9	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	17	1.9	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	16	1.9	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	15	1.9	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	10	2.0	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	7.0	2.1	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	6.5	2.1	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	6.0	2.0	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	5.7	2.0	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	5.4	2.0	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	5.9	1.8	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	5.3	1.8	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	3.9	1.4	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	280	4.0	1.2	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	1050	4.8	1.0	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	800	5.0	.90	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	700	5.4	.70	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	430	6.0	.66	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	338	7.0	.58	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	232	7.0	.47	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	174	7.0	.35	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	192	7.0	.20	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	181	6.5	.10	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	172	6.0	.04	.00	.00	.00
29	.00	.00	.00	.00	---	.00	151	5.5	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	120	5.5	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	5.0	---	.00	.00	---
TOTAL	.00	.00	.00	.00	.00	.00	4820.00	485.4	44.50	.00	.00	.00
MEAN	.000	.000	.000	.000	.000	.000	161	15.7	1.48	.000	.000	.000
MAX	.00	.00	.00	.00	.00	.00	1050	100	4.5	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	3.9	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	.00	9560	963	88	.00	.00	.00

CAL YR 1978	TOTAL	1667.38	MEAN	4.57	MAX	180	MIN	.00	AC-FT	3310
WTR YR 1979	TOTAL	5349.90	MEAN	14.7	MAX	1050	MIN	.00	AC-FT	10610

05124000 SOURIS (MOUSE) RIVER NEAR WESTHOPE, ND
(International gaging station)
(Radiochemical station)

LOCATION.--Lat 48°59'47", long 100°57'29", in SW¼SE¼ sec.30, T.164 N., R.79 W., Bottineau County, Hydrologic Unit 09010003, on left bank 1,200 ft (370 m) upstream from second crossing of international boundary, 1 mi (2 km) downstream from Fish and Wildlife Service Dam 357, 7 mi (11 km) northeast of Westhope, 11 mi (18 km) downstream from Boundary Creek, and at mile 154.5 (248.6 km).

DRAINAGE AREA.--16,900 mi^2 (43,800 km^2), approximately, of which about 10,300 mi^2 (26,700 km^2) is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July to October 1929, April 1930 to current year. Monthly discharge only for some periods, published in WSP 1308.

REVISED RECORDS.--WSP 1338: 1932. WSP 2113: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1,402.45 ft (427.467 m) National Geodetic Vertical Datum of 1929. Prior to Mar. 28, 1938, nonrecording gage at site 6.3 mi (10.1 km) upstream at datum 2.52 ft (0.768 m) higher.

REMARKS.--Records good except those for the winter period, which are fair. Flow regulated by dams on Souris River and tributaries, combined capacity, about 321,000 acre-ft (3,960 hm^3). Diversion at Eaton Dam for irrigation of about 7,600 acres (30.8 km^2) and other small diversions for irrigation and municipal supply above station.

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

AVERAGE DISCHARGE.--49 years (1930-79), 269 ft^3/s (7.618 m^3/s), 194,900 acre-ft/yr (240 hm^3/yr); median of yearly mean discharges, 140 ft^3/s (3.96 m^3/s), 101,000 acre-ft/yr (120 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,600 ft^3/s (357 m^3/s) Apr. 26, 1976, gage height, 19.16 ft (5.840 m); maximum daily reverse flow, 35 ft^3/s (0.99 m^3/s) Apr. 8, 1943, caused by backwater from downstream tributary inflow; no flow at times in some years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,900 ft^3/s (167 m^3/s) May 21, gage height, 16.27 ft (4.959 m); minimum daily, 18 ft^3/s (0.51 m^3/s) Sept. 20.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	32	30	30	35	46	90	162	2400	5130	1730	330	40
2	32	30	30	35	46	90	162	2700	4980	1690	318	27
3	30	29	30	35	46	90	162	3020	4860	1650	318	24
4	31	31	34	35	46	90	162	3470	4730	1580	284	22
5	29	28	33	35	46	90	162	3870	4690	1510	212	22
6	30	28	33	35	46	90	162	4430	4410	1420	212	21
7	30	28	33	35	60	90	162	4700	4150	1380	207	21
8	29	27	33	35	80	90	162	4830	4050	1340	207	21
9	28	27	33	35	82	90	162	4980	3950	1300	198	21
10	28	27	34	35	82	90	162	5150	3790	1200	186	21
11	27	28	35	35	82	90	162	5270	3640	965	174	21
12	27	28	35	35	82	90	180	5350	3480	750	166	21
13	27	28	35	35	82	90	450	5420	3330	670	154	21
14	27	28	35	35	82	90	500	5470	3170	625	158	20
15	27	28	35	35	82	90	480	5550	2970	605	162	21
16	27	28	35	36	82	90	460	5610	2840	600	162	28
17	27	28	35	36	84	80	450	5510	2720	595	154	23
18	28	28	35	36	84	60	470	5430	2610	590	151	20
19	28	28	35	36	86	70	800	5630	2530	590	151	19
20	28	28	35	36	88	75	1100	5760	2410	585	158	18
21	27	28	35	38	88	100	1200	5830	2300	525	151	22
22	27	29	35	38	90	130	1300	5770	2280	402	83	31
23	29	29	35	38	90	138	1400	5740	2230	360	69	30
24	27	30	35	40	90	144	1500	5660	2160	324	68	29
25	27	30	35	40	90	146	1650	5590	2130	324	68	28
26	27	30	35	40	90	148	1800	5470	2030	318	68	28
27	27	29	35	42	90	152	1900	5450	1970	318	59	28
28	27	30	35	42	90	156	2050	5390	1920	324	49	28
29	28	30	35	42	---	160	2200	5120	1850	324	41	25
30	28	30	35	44	---	162	2250	5100	1780	318	22	24
31	28	---	35	44	---	162	---	5180	---	324	22	---
TOTAL	874	860	1058	1153	2132	3323	23922	154850	95090	25236	4762	725
MEAN	28.2	28.7	34.1	37.2	76.1	107	797	4995	3170	814	154	24.2
MAX	32	31	35	44	90	162	2250	5830	5130	1730	330	40
MIN	27	27	30	35	46	60	162	2400	1780	318	22	18
AC-FT	1730	1710	2100	2290	4230	6590	47450	307100	188600	50060	9450	1440

CAL YR 1978 TOTAL 49452 MEAN 135 MAX 778 MIN 10 AC-FT 98090
WTR YR 1979 TOTAL 313985 MEAN 860 MAX 5830 MIN 18 AC-FT 622800

05124000 SOURIS (MOUSE) RIVER NEAR WESTHOPE, ND--Continued
(National stream-quality accounting network station)
(Radiochemical station)
(Pesticide station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1954-64, 1966 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1956 to September 1964, October 1966 to September 1968, October 1973 to current year.
WATER TEMPERATURES: October 1954 to September 1955, October 1956 to September 1959, October 1960 to September 1964, October 1966 to September 1968, October 1973 to current year.

INSTRUMENTATION.--Water-quality monitor since October 1973.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 4,750 micromhos Feb. 21, 1961; minimum daily, 232 micromhos Apr. 18, 1957.
WATER TEMPERATURES: Maximum recorded, 28.5°C July 4, 1975; minimum recorded, 0.0°C on many days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum recorded, 2,500 micromhos Feb. 4; minimum, 362 micromhos May 1.
WATER TEMPERATURES: Maximum, 27.5°C July 10, 20-22; minimum, 0.0°C on many days during winter months.

REVISIONS.--Daily maximum and minimum specific conductance values for the period Sept. 20-30, 1978 have been revised as shown in the following table.

Date	Specific Conductance (micromhos/cm at 25°C) Max	Min	Date	Specific Conductance (micromhos/cm at 25°C) Max	Min
9-20-78	950	933	9-26-78	946	929
9-21-78	936	919	9-27-78	942	912
9-22-78	942	922	9-28-78	935	925
9-23-78	941	928	9-29-78	951	921
9-24-78	937	921	9-30-78	937	917
9-25-78	937	927			

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	COLI-FORM, TOTAL, IMMED. (COLS. PER 100 ML) (31501)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)
OCT											
04...	1750	52	930	8.9	11.0	4.1	9.8	49	K100	K67	120
17...	1645	27	955	8.9	7.5	4.1	11.8	55	K65	K4	130
31...	1415	28	965	8.8	4.5	5.0	12.9	50	K8	K2	K15
NOV											
16...	1300	28	1050	8.5	1.5	2.9	12.0	58	K20	K6	K17
28...	1100	30	1110	8.4	1.5	2.9	9.8	44	K8	<2	K2
DEC											
18...	1700	35	1390	8.1	1.0	2.1	7.8	78	K2	<2	K1
JAN											
11...	1215	E35	1800	7.6	.0	2.1	5.3	63	K42	<2	<2
17...	1245	36	1950	7.6	.0	3.2	4.0	69	>800	<2	<2
30...	1730	E44	2300	7.4	.0	2.7	2.8	82	<4	<2	K1
FEB											
13...	1400	79	2610	7.5	.0	45	.5	110	K8	<2	<2
27...	1115	E90	1880	7.5	.0	2.9	1.6	60	K4	<2	<2
MAR											
23...	1425	139	1340	7.6	.5	2.4	3.5	46	K3	<2	K5
APR											
04...	1445	102	1270	7.5	.0	2.4	3.6	41	K3	<3	<3
20...	1940	1180	685	--	5.5	--	--	--	--	--	--
MAY											
01...	1415	2350	365	7.7	4.0	12	11.6	40	K170	<2	<2
10...	2100	5200	440	8.5	3.0	6.5	14.7	49	K80	<5	430
23...	1600	5720	--	--	13.0	--	9.1	--	K30	K2	<3
JUN											
06...	1730	4310	635	8.1	18.0	4.3	7.9	26	K60	<5	K5
19...	1715	2560	590	8.1	19.5	4.3	6.6	38	K26	K2	K5
JUL											
02...	2100	1680	--	--	26.0	--	--	--	--	--	--
11...	1840	898	690	8.3	27.0	3.9	7.5	48	K200	K8	K45
25...	1315	320	700	8.6	24.0	3.8	8.0	43	K100	K7	K10
AUG											
01...	1500	330	725	8.6	23.0	4.5	9.1	43	K100	K12	K2
22...	1600	77	765	9.2	21.5	1.9	8.8	44	K1600	K5	<5
SEP											
05...	1445	21	760	9.3	20.0	84	8.7	47	K114	K13	K25
18...	1200	20	775	9.3	16.5	9.0	8.1	52	K50	K40	K55

K - Results based on colony count outside the acceptable range (non-ideal colony count).

05124000 SOURIS (MOUSE) RIVER NEAR WESTHOPE, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	HARDNESS (MG/L AS CACO3) (00900)	HARDNESS, NONCARBONATE (MG/L CACO3) (00902)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM ADSORPTION RATIO (00931)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	ALKALINITY (MG/L AS CACO3) (00410)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)
OCT											
04...	--	--	--	--	--	--	--	--	--	--	--
17...	290	0	53	38	100	42	2.6	14	300	190	26
31...	--	--	--	--	--	--	--	--	--	--	--
NOV											
16...	340	3	65	44	110	40	2.6	15	340	210	30
28...	--	--	--	--	--	--	--	--	--	--	--
DEC											
18...	450	0	86	56	160	43	3.3	20	460	300	43
JAN											
11...	--	--	--	--	--	--	--	--	--	--	--
17...	670	26	130	83	230	42	3.9	27	640	480	74
30...	--	--	--	--	--	--	--	--	--	--	--
FEB											
13...	930	150	190	110	320	42	4.6	28	780	760	100
27...	--	--	--	--	--	--	--	--	--	--	--
MAR											
23...	440	81	94	50	160	43	3.3	12	360	360	33
MAY											
01...	--	--	--	--	--	--	--	--	--	--	--
10...	150	46	32	16	34	32	1.2	11	100	120	9.9
23...	--	--	--	--	--	--	--	--	--	--	--
23...	220	61	49	24	63	37	1.8	--	--	180	--
JUN											
06...	--	--	--	--	--	--	--	--	--	--	--
19...	210	18	47	22	51	33	1.5	11	190	130	9.9
JUL											
02...	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--
25...	240	0	48	28	67	53	1.9	8.9	250	160	13
AUG											
01...	--	--	--	--	--	--	--	--	--	--	--
22...	230	0	44	30	83	42	2.4	8.9	260	180	15
22...	230	0	44	30	83	42	2.4	8.9	260	180	15
SEP											
05...	--	--	--	--	--	--	--	--	--	--	--
18...	220	0	39	30	85	63	2.5	10	260	220	13

DATE	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)	SOLIDS, DISSOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L) (00530)	NITROGEN, NITRATE TOTAL (MG/L AS N) (00620)	NITROGEN, NITRITE TOTAL (MG/L AS N) (00615)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N) (00630)
OCT										
04...	--	--	657	--	.89	55.0	11	.02	.00	.02
17...	.4	6.5	668	608	.91	48.7	7	.04	.01	.05
31...	--	--	669	--	.91	50.6	17	.01	.00	.01
NOV										
16...	.2	7.7	719	686	.98	54.4	14	.04	.01	.05
28...	--	--	776	--	1.06	62.9	9	.05	.01	.06
DEC										
18...	.3	10	974	952	1.32	92.0	20	.07	.01	.08
JAN										
11...	--	--	1310	--	1.78	124	5	.07	.01	.08
17...	.4	14	1460	1420	1.99	142	4	.06	.02	.08
30...	--	--	1730	--	2.35	168	9	.06	.02	.08
FEB										
13...	.5	22	2000	2000	2.72	427	116	.00	.02	.02
27...	--	--	1380	--	1.88	298	0	.11	.04	.15
MAR										
23...	.3	17	958	943	1.30	360	0	.30	.02	.32
APR										
04...	--	--	889	--	1.21	389	5	.15	.00	.15
20...	--	--	--	--	--	--	--	--	--	--
MAY										
01...	--	--	247	--	.34	1550	14	.88	.08	.96
10...	.1	6.7	288	--	.39	4040	14	.01	.00	.01
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	448	.64	--	9	.02	--	--
JUN										
06...	--	--	441	--	.60	4950	10	.00	.02	.02
19...	.2	7.4	402	393	.55	2780	5	.00	.02	.02
JUL										
02...	--	--	--	--	--	--	--	--	--	--
11...	--	--	470	--	.64	1230	9	.00	.02	.01
25...	.2	5.9	488	482	.66	422	8	.00	.02	.01
AUG										
01...	--	--	506	--	.69	451	7	.01	.00	.01
22...	.3	.5	528	518	.72	110	3	.00	.02	.01
22...	.3	.5	528	516	.72	110	3	.00	.02	--
SEP										
05...	--	--	528	--	.72	31.2	4	.01	.00	.01
18...	.2	.6	529	554	.72	28.6	17	.01	.02	.03

05124000 SOURIS (MOUSE) RIVER NEAR WESTHOPE, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, NH4 + ORG. SUSP. TOTAL (MG/L AS N) (00624)	NITRO-GEN, AMMONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, DIS-SOLVED (MG/L AS N) (00602)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)
OCT										
04...	--	--	--	--	--	--	--	--	--	.34
17...	--	.01	1.6	1.6	.20	1.4	1.7	--	7.3	.29
31...	--	--	--	--	--	--	--	--	--	.26
NOV										
16...	--	.17	1.5	1.7	.00	1.7	1.8	--	7.7	.21
28...	--	--	--	--	--	--	--	--	--	.21
DEC										
18...	--	.09	1.8	1.9	.00	2.0	2.0	--	8.8	.17
JAN										
11...	--	--	--	--	--	--	--	--	--	.30
17...	--	.19	2.2	2.4	.00	2.5	2.5	--	11	.32
30...	--	--	--	--	--	--	--	--	--	.36
FEB										
13...	--	.60	6.4	7.2	4.1	3.1	7.2	--	32	.57
27...	--	--	--	--	--	--	--	--	--	.44
MAR										
23...	--	.20	1.2	1.4	.00	1.4	1.7	--	7.6	.20
APR										
04...	--	--	--	--	--	--	--	--	--	.15
20...	--	--	--	--	--	--	--	--	--	--
MAY										
01...	--	--	--	--	--	--	--	--	--	.22
10...	--	.01	1.5	1.5	.74	.76	1.5	--	6.7	.16
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	1.1	--	.34	--	1.1	--	5.0	--
JUN										
06...	--	--	--	--	--	--	--	--	--	.23
19...	--	.03	1.3	1.3	.44	.86	1.3	--	5.8	.38
JUL										
02...	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	.47
25...	--	.02	1.2	1.2	.26	.94	1.2	--	5.4	.38
AUG										
01...	--	--	--	--	--	--	--	--	--	.40
22...	--	.04	.90	.94	.00	1.0	.95	--	4.2	.02
22...	.01	.04	.90	.94	.00	1.0	.95	--	4.2	.02
SEP										
05...	--	--	--	--	--	--	--	--	--	.30
18...	.00	.09	1.7	1.8	.50	1.3	1.8	1.3	8.1	.28

DATE	PHOS-PHATE, TOTAL (MG/L AS PO4) (00650)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BARIUM, SUS-PENDED RECOV-ERABLE (UG/L AS BA) (01006)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD) (01027)	CADMIUM SUS-PENDED RECOV-ERABLE (UG/L AS CD) (01026)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)
OCT										
04...	--	--	--	--	--	--	--	--	--	--
17...	--	.27	5	6	0	0	60	0	0	0
31...	--	--	--	--	--	--	--	--	--	--
NOV										
16...	--	.21	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
DEC										
18...	--	.20	--	--	--	--	--	--	--	--
JAN										
11...	--	--	--	--	--	--	--	--	--	--
17...	--	.26	5	4	100	0	100	--	--	<1
30...	--	--	--	--	--	--	--	--	--	--
FEB										
13...	--	.39	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--
MAR										
23...	--	.16	--	--	--	--	--	--	--	--
MAY										
01...	.67	--	--	--	--	--	--	--	--	--
10...	.49	.03	3	2	100	100	0	1	1	0
23...	--	--	--	--	--	--	--	--	--	--
23...	.25	--	--	--	--	--	--	--	--	--
JUN										
06...	.71	--	--	--	--	--	--	--	--	--
19...	1.2	.32	--	--	--	--	--	--	--	--
JUL										
02...	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--
25...	--	.38	5	5	100	30	70	0	0	<1
AUG										
01...	--	--	--	--	--	--	--	--	--	--
22...	--	.23	--	--	--	--	--	--	--	--
22...	--	.23	--	--	--	--	--	--	--	--
SEP										
05...	--	--	--	--	--	--	--	--	--	--
18...	--	.22	--	--	--	--	--	--	--	--

05124000 SOURIS (MOUSE) RIVER NEAR WESTHOPE, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) (01034)	CHROMIUM, SUSPENDED RECOV. (UG/L AS CR) (01031)	CHROMIUM, DISSOLVED (UG/L AS CR) (01030)	COBALT, TOTAL RECOVERABLE (UG/L AS CO) (01037)	COBALT, SUSPENDED RECOVERABLE (UG/L AS CO) (01036)	COBALT, DISSOLVED (UG/L AS CO) (01035)	COPPER, TOTAL RECOVERABLE (UG/L AS CU) (01042)	COPPER, SUSPENDED RECOVERABLE (UG/L AS CU) (01041)	COPPER, DISSOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOVERABLE (UG/L AS FE) (01045)
OCT										
04...	--	--	--	--	--	--	--	--	--	--
17...	0	0	0	0	0	<3	6	4	2	350
31...	--	--	--	--	--	--	--	--	--	--
NOV										
16...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
DEC										
18...	--	--	--	--	--	--	--	--	--	--
JAN										
11...	--	--	--	--	--	--	--	--	--	--
17...	0	0	0	2	0	<3	7	5	2	180
30...	--	--	--	--	--	--	--	--	--	--
MAY										
01...	--	--	--	--	--	--	--	--	--	--
10...	10	10	0	4	4	0	2	2	0	410
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
JUN										
06...	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--
JUL										
02...	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--
25...	0	0	10	2	0	<3	220	220	1	180
AUG										
01...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
SEP										
05...	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--

DATE	IRON, DISSOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOVERABLE (UG/L AS PB) (01051)	LEAD, SUSPENDED RECOVERABLE (UG/L AS PB) (01050)	LEAD, DISSOLVED (UG/L AS PB) (01049)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN) (01055)	MANGANESE, SUSPENDED RECOV. (UG/L AS MN) (01054)	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOVERABLE (UG/L AS HG) (71900)	MERCURY SUSPENDED RECOVERABLE (UG/L AS HG) (71895)	MERCURY DISSOLVED (UG/L AS HG) (71890)	SELENIUM, TOTAL (UG/L AS SE) (01147)	SELENIUM, SUSPENDED TOTAL (UG/L AS SE) (01146)
OCT												
04...	--	--	--	--	--	--	--	--	--	--	--	--
17...	10	2	2	0	40	30	10	.2	.2	.0	0	0
31...	--	--	--	--	--	--	--	--	--	--	--	--
NOV												
16...	--	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--	--
DEC												
18...	--	--	--	--	--	--	--	--	--	--	--	--
JAN												
11...	--	--	--	--	--	--	--	--	--	--	--	--
17...	30	--	--	1	640	20	620	.0	.0	.0	0	0
30...	--	--	--	--	--	--	--	--	--	--	--	--
FEB												
13...	--	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--	--
MAR												
23...	--	--	--	--	--	--	--	--	--	--	--	--
APR												
04...	--	--	--	--	--	--	--	--	--	--	--	--
MAY												
01...	--	--	--	--	--	--	--	--	--	--	--	--
10...	340	9	9	0	40	40	0	.5	.4	.1	1	0
23...	--	--	--	--	--	--	--	--	--	--	--	--
JUN												
06...	--	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--	--
JUL												
11...	--	--	--	--	--	--	--	--	--	--	--	--
25...	150	17	17	0	70	0	70	.0	.0	.1	0	0
AUG												
01...	--	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
05...	--	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--

05124000 SOURIS (MOUSE) RIVER NEAR WESTHOPE, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	SELENIUM, DISSOLVED (UG/L AS SE) (01145)	SILVER, TOTAL RECOVERABLE (UG/L AS AG) (01077)	SILVER, SUSPENDED RECOVERABLE (UG/L AS AG) (01076)	SILVER, DISSOLVED (UG/L AS AG) (01075)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN) (01092)	ZINC, SUSPENDED RECOVERABLE (UG/L AS ZN) (01091)	ZINC, DISSOLVED (UG/L AS ZN) (01090)	GROSS ALPHA, DISSOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DISSOLVED (PCI/L AS CS-137) (03515)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)	GROSS BETA, DISSOLVED (PCI/L AS SR/YT-90) (80050)
OCT												
04...	--	--	--	--	--	--	--	--	--	--	--	--
17...	0	0	0	0	10	7	<3	<6.9	<.4	17	<.4	16
31...	--	--	--	--	--	--	--	--	--	--	--	--
NOV												
16...	--	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--	--
DEC												
18...	--	--	--	--	--	--	--	--	--	--	--	--
JAN												
11...	--	--	--	--	--	--	--	--	--	--	--	--
17...	0	1	1	0	30	30	<3	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--	--
FEB												
13...	--	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--	--
MAR												
23...	--	--	--	--	--	--	--	--	--	--	--	--
APR												
04...	--	--	--	--	--	--	--	--	--	--	--	--
MAY												
01...	--	--	--	--	--	--	--	--	--	--	--	--
10...	1	0	0	0	20	10	10	<3.6	.4	12	<.4	11
23...	--	--	--	--	--	--	--	--	--	--	--	--
JUN												
06...	--	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--	--
JUL												
11...	--	--	--	--	--	--	--	--	--	--	--	--
25...	0	0	0	0	130	130	<3	--	--	--	--	--
AUG												
01...	--	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
05...	--	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--

DATE	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90) (80060)	RADIUM 226, DISSOLVED, RADON METHOD (PCI/L) (09511)	URANIUM DISSOLVED, EXTRACTION (UG/L) (80020)	CARBON, ORGANIC DISSOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUSPENDED TOTAL (MG/L AS C) (00689)	PCB, TOTAL (UG/L) (39516)	PCB, TOTAL IN BOTTOM MATERIAL (UG/KG) (39519)	ALDRIN, TOTAL (UG/L) (39330)	ALDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG) (39333)	CHLORDANE, TOTAL (UG/L) (39350)	CHLORDANE, TOTAL IN BOTTOM MATERIAL (UG/KG) (39351)	DDD, TOTAL (UG/L) (39360)
OCT												
04...	--	--	--	17	1.3	--	--	--	--	--	--	--
17...	<.4	.12	1.7	19	1.2	--	--	--	--	--	--	--
31...	--	--	--	16	1.5	--	--	--	--	--	--	--
NOV												
16...	--	--	--	--	--	ND	ND	ND	ND	ND	ND	ND
28...	--	--	--	18	.7	--	--	--	--	--	--	--
DEC												
18...	--	--	--	19	.7	--	--	--	--	--	--	--
JAN												
11...	--	--	--	23	.5	--	--	--	--	--	--	--
17...	--	--	--	27	.7	--	--	--	--	--	--	--
30...	--	--	--	26	.7	--	--	--	--	--	--	--
FEB												
13...	--	--	--	28	.6	ND	--	ND	--	ND	--	ND
27...	--	--	--	24	.4	--	--	--	--	--	--	--
MAR												
23...	--	--	--	16	--	--	--	--	--	--	--	--
APR												
04...	--	--	--	21	.3	--	--	--	--	--	--	--
MAY												
01...	--	--	--	11	--	--	--	--	--	--	--	--
10...	<.4	.06	.70	13	2.9	ND	0	ND	.0	ND	0	ND
23...	--	--	--	15	--	--	--	--	--	--	--	--
JUN												
06...	--	--	--	15	1.0	--	--	--	--	--	--	--
19...	--	--	--	18	.8	--	--	--	--	--	--	--
JUL												
11...	--	--	--	18	.3	--	--	--	--	--	--	--
25...	--	--	--	12	.4	--	--	--	--	--	--	--
AUG												
01...	--	--	--	14	.3	--	--	--	--	--	--	--
22...	--	--	--	19	.6	--	--	--	--	--	--	--
22...	--	--	--	19	.6	ND	--	ND	--	ND	--	ND
SEP												
05...	--	--	--	20	.6	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	16	.6	--	--	--	--	--	--	--

Whole water ND - Not detected at 0.01 µg/L level.
Bed material ND - Not detected at 0.1 µg/mg level.

05124000 SOURIS (MOUSE) RIVER NEAR WESTHOPE, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	DDD, TOTAL IN BOTTOM MATERIAL (UG/KG) (39363)	DDE, TOTAL (UG/L) (39365)	DDE, TOTAL IN BOTTOM MATERIAL (UG/KG) (39368)	DDT, TOTAL (UG/L) (39370)	DDT, TOTAL IN BOTTOM MATERIAL (UG/KG) (39373)	DI-AZINON, TOTAL (UG/L) (39570)	DI-AZINON, TOTAL IN BOTTOM MATERIAL (UG/KG) (39571)	DI-ELDRIN TOTAL (UG/L) (39380)	DI-ELDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG) (39383)	ENDRIN, TOTAL (UG/L) (39390)	ENDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG) (39393)	ETHION, TOTAL (UG/L) (39398)
OCT												
04...	--	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--	--
NOV												
16...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
28...	--	--	--	--	--	--	--	--	--	--	--	--
DEC												
18...	--	--	--	--	--	--	--	--	--	--	--	--
JAN												
11...	--	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--	--
FEB												
13...	--	ND	--	ND	--	ND	--	ND	--	ND	--	ND
27...	--	--	--	--	--	--	--	--	--	--	--	--
MAR												
23...	--	--	--	--	--	--	--	--	--	--	--	--
APR												
04...	--	--	--	--	--	--	--	--	--	--	--	--
MAY												
01...	--	--	--	--	--	--	--	--	--	--	--	--
10...	.0	ND	.0	ND	.0	ND	--	ND	.0	ND	.0	ND
23...	--	--	--	--	--	--	--	--	--	--	--	--
JUN												
06...	--	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--	--
JUL												
11...	--	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
01...	--	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--	--
22...	--	ND	--	ND	--	ND	--	ND	--	ND	--	ND
SEP												
05...	--	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--

DATE	ETHION, TOTAL IN BOTTOM MATERIAL (UG/KG) (39399)	HEPTACHLOR, TOTAL (UG/L) (39410)	HEPTACHLOR, TOTAL IN BOTTOM MATERIAL (UG/KG) (39413)	HEPTACHLOR EPOXIDE TOTAL (UG/L) (39420)	HEPTACHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG) (39423)	LINDANE TOTAL (UG/L) (39340)	LINDANE TOTAL IN BOTTOM MATERIAL (UG/KG) (39343)	MALATHION, TOTAL (UG/L) (39530)	MALATHION, TOTAL IN BOTTOM MATERIAL (UG/KG) (39531)	METHOXYCHLOR, TOTAL (UG/L) (39480)	METHOXYCHLOR, TOT. IN BOTTOM MATL. (UG/KG) (39481)	METHYL PARATHION, TOTAL (UG/L) (39600)
OCT												
04...	--	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--	--
NOV												
16...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
28...	--	--	--	--	--	--	--	--	--	--	--	--
DEC												
18...	--	--	--	--	--	--	--	--	--	--	--	--
JAN												
11...	--	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--	--
FEB												
13...	--	ND	--	ND	--	ND	--	ND	--	ND	--	ND
27...	--	--	--	--	--	--	--	--	--	--	--	--
MAR												
23...	--	--	--	--	--	--	--	--	--	--	--	--
APR												
04...	--	--	--	--	--	--	--	--	--	--	--	--
MAY												
01...	--	--	--	--	--	--	--	--	--	--	--	--
10...	--	ND	.0	ND	.0	ND	.0	ND	--	ND	--	ND
23...	--	--	--	--	--	--	--	--	--	--	--	--
JUN												
06...	--	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--	--
JUL												
11...	--	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
01...	--	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--	--
22...	--	ND	--	ND	--	ND	--	ND	--	ND	--	ND
SEP												
05...	--	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--

Whole water ND - Not detected at 0.01 µg/L level.
Bed material ND - Not detected at 0.1 µg/mg level.

05124000 SOURIS (MOUSE) RIVER NEAR WESTHOPE, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	METHYL PARATHION, TOT. IN BOTTOM MATL. (UG/KG) (39601)	METHYL TRITHION, TOTAL (UG/L) (39790)	METHYL TRITHION, TOT. IN BOTTOM MATL. (UG/KG) (39791)	PARATHION, TOTAL (UG/L) (39540)	PARATHION, TOTAL IN BOTTOM MATERIAL (UG/KG) (39541)	TOXAPHENE, TOTAL (UG/L) (39400)	TOXAPHENE, TOTAL IN BOTTOM MATERIAL (UG/KG) (39403)	TOTAL TRITHION (UG/L) (39786)	TRITHION, TOTAL IN BOTTOM MATERIAL (UG/KG) (39787)	PHYTOPLANKTON, TOTAL (CELLS PER ML) (60050)	PERIPHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M (00573)	PERIPHYTON BIOMASS ASH WEIGHT G/SQ M (00572)
OCT												
04...	--	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--	--
NOV												
16...	ND	ND	ND	ND	ND	ND	ND	ND	ND	1400	.630	.315
28...	--	--	--	--	--	--	--	--	--	--	--	--
DEC												
18...	--	--	--	--	--	--	--	--	--	--	--	--
JAN												
11...	--	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--	--
FEB												
13...	--	ND	--	ND	--	ND	--	ND	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--	--
MAR												
23...	--	--	--	--	--	--	--	--	--	2900	.000	.000
APR												
04...	--	--	--	--	--	--	--	--	--	--	--	--
MAY												
01...	--	--	--	--	--	--	--	--	--	--	--	--
10...	--	ND	--	ND	--	ND	0	ND	--	81000	--	--
23...	--	--	--	--	--	--	--	--	--	17000	--	--
JUN												
06...	--	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	10000	--	--
JUL												
11...	--	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	570	--	--
AUG												
01...	--	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	920	14.0	11.2
22...	--	ND	--	ND	--	ND	--	ND	--	--	--	--
SEP												
05...	--	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	7100	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--

DATE	CHLOR-A PENI-PHYTON CHROMO-GRAPHIC FLUORUM (MG/M2) (70957)	CHLOR-B PERI-PHYTON CHROMO-GRAPHIC FLUORUM (MG/M2) (70958)	LENGTH OF EXPO-SURE (DAYS) (00022)	SEDIMENT, SUS-PENDED (MG/L) (80154)	SEDIMENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)
OCT						
17...	--	--	--	12	.87	92
NOV						
16...	1.01	.350	30	4	.30	91
DEC						
18...	--	--	--	6	.57	82
JAN						
17...	--	--	--	28	2.7	72
MAR						
23...	.000	.000	38	6	2.3	73
MAY						
01...	--	--	--	15	94	88
10...	--	--	--	18	253	94
23...	--	--	--	7	112	79
JUN						
19...	--	--	--	7	48	98
JUL						
25...	--	--	--	6	5.2	98
AUG						
22...	23.9	2.08	28	7	1.5	73
SEP						
18...	--	--	--	12	.65	96

Whole water ND - Not detected at 0.01 µg/L level.
Bed material ND - Not detected at 0.1 µg/mg level.

05124000 SOURIS (MOUSE) RIVER NEAR WESTHOPE, ND--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	933	923	970	956	1180	1160	1620	1600	2390	2350	---	---
2	939	929	971	960	1200	1170	1630	1600	2430	2370	---	---
3	942	929	964	957	1200	1180	1650	1620	2470	2410	---	---
4	948	938	964	957	1200	1190	1690	1650	2500	2440	---	---
5	940	935	969	961	1240	1200	1700	1670	---	---	---	---
6	941	939	973	962	1250	1240	1720	1680	---	---	---	---
7	942	938	977	962	1270	1220	1760	1720	---	---	---	---
8	943	935	974	966	1290	1270	1770	1710	---	---	---	---
9	947	938	978	974	1310	1290	1770	1730	---	---	---	---
10	948	940	978	971	1300	1300	1800	1760	---	---	---	---
11	950	939	1010	982	1310	1300	1810	1780	---	---	1480	1460
12	953	946	1010	1010	1320	1310	1830	1790	---	---	1470	1440
13	954	948	1010	1010	1330	1320	1860	1830	---	---	1460	1440
14	956	949	1020	1000	1340	1340	1910	1830	---	---	1450	1420
15	955	950	1040	1020	1360	1340	1950	1850	---	---	1440	1400
16	956	950	1050	1030	1370	1350	1960	1920	---	---	1420	1400
17	960	947	1060	1040	1380	1370	1980	1920	---	---	1400	1380
18	956	950	1050	1040	1400	1380	2020	1940	---	---	1400	1390
19	963	950	1070	1050	1400	1390	2010	1960	---	---	1400	1370
20	962	953	1080	1070	1410	1400	2040	2010	---	---	1380	1360
21	958	954	1090	1080	1420	1410	2050	2040	---	---	1370	1360
22	959	955	1080	1070	1430	1410	2080	2060	---	---	1360	1340
23	959	953	1090	1070	1460	1430	2130	2080	---	---	1350	1330
24	965	956	1080	1060	1460	1440	2120	2090	---	---	1340	1310
25	965	961	1090	1080	1460	1450	2180	2090	---	---	1330	1300
26	964	959	1100	1080	1470	1460	2220	2180	---	---	1310	1270
27	967	960	1120	1100	1490	1470	2260	2220	---	---	1290	1260
28	967	961	1130	1100	1540	1490	2280	2240	---	---	1280	1250
29	966	962	1150	1130	1550	1520	2310	2270	---	---	1270	1240
30	969	964	1170	1140	1580	1550	2340	2300	---	---	1270	1240
31	972	959	---	---	1600	1570	2370	2320	---	---	1270	1250
MONTH	972	923	1170	956	1600	1160	2370	1600	2500	2350	1480	1240

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	1280	1260	368	362	661	648	635	630	727	714	758	750
2	1290	1260	374	366	647	644	641	632	718	708	760	752
3	1290	1260	396	377	661	645	645	636	709	702	772	759
4	1290	1260	416	399	657	644	642	636	705	696	771	755
5	1290	1270	443	417	652	645	638	631	704	690	762	749
6	1290	1280	453	445	646	635	644	635	703	684	768	758
7	1300	1280	453	440	637	626	652	639	712	690	766	758
8	1300	1280	441	437	623	618	666	648	711	696	764	756
9	1290	1270	447	442	620	613	674	660	709	697	760	752
10	1280	1260	450	447	619	610	688	665	713	703	768	758
11	1280	1250	457	452	616	603	695	680	712	697	769	764
12	1270	1250	472	461	610	595	690	683	719	703	769	767
13	1260	1250	499	475	601	588	693	679	715	697	773	746
14	1260	1250	529	503	606	595	689	679	711	701	747	742
15	1270	1250	568	535	608	592	691	680	712	705	749	743
16	1280	1250	607	571	609	596	687	670	727	711	747	729
17	1260	1170	638	611	610	602	702	675	753	726	765	730
18	1160	922	665	641	607	603	702	688	785	754	778	767
19	916	667	693	669	600	591	695	686	786	778	767	749
20	699	660	695	688	602	588	698	686	800	782	774	747
21	662	636	699	685	610	595	701	686	795	773	780	769
22	655	613	697	683	614	601	699	684	783	750	781	762
23	603	532	685	678	618	594	690	678	770	751	784	773
24	522	484	679	668	613	596	698	678	775	769	788	774
25	474	459	667	660	606	583	698	686	796	776	791	775
26	450	444	661	655	610	597	701	686	808	794	792	784
27	434	416	673	656	614	603	710	692	807	799	787	771
28	408	397	668	659	616	612	718	700	809	795	783	777
29	387	379	662	658	629	614	721	710	799	796	781	767
30	376	372	659	652	637	626	724	711	801	776	784	773
31	---	---	660	655	---	---	732	719	781	748	---	---
MONTH	1300	372	699	362	661	583	732	630	809	684	792	729

05124000 SOURIS (MOUSE) RIVER NEAR WESTHOPE, ND--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	13.5	12.0	4.0	2.5	1.5	1.0	.5	.5			---	---
2	13.0	11.5	4.5	2.5	1.0	1.0	.5	.5			---	---
3	11.5	10.5	4.5	3.5	1.0	1.0	.5	.0			---	---
4	11.0	10.0	4.0	3.5	1.0	1.0	.0	.0			---	---
5	9.5	8.5	3.5	2.5	1.5	1.0	.0	.0			---	---
6	8.5	8.0	3.0	1.5	1.0	1.0	---	---			---	---
7	8.5	6.5	2.5	1.0	1.0	1.0	---	---			---	---
8	9.0	7.0	4.0	2.5	1.0	1.0	---	---			---	---
9	10.5	8.0	3.5	2.0	1.0	1.0	---	---			---	---
10	11.0	8.0	2.0	.5	1.0	1.0	---	---			---	---
11	10.5	9.0	1.0	.5	1.0	1.0	---	---			---	---
12	9.0	7.5	1.0	1.0	1.5	1.0	---	---			---	---
13	7.5	6.5	1.0	1.0	1.5	1.0	---	---			---	---
14	7.0	6.0	1.0	1.0	1.5	1.0	---	---			---	---
15	6.5	5.0	1.0	1.0	1.5	1.5	---	---			---	---
16	6.5	4.5	1.0	1.0	1.5	1.0	---	---			---	---
17	6.5	5.0	1.0	1.0	1.5	1.0	---	---			---	---
18	6.5	4.5	1.0	1.0	1.5	1.0	---	---			.0	.0
19	8.0	5.5	1.0	1.0	1.5	1.0	---	---			.0	.0
20	8.5	6.5	1.0	.5	1.5	1.0	---	---			.0	.0
21	8.0	7.0	1.0	1.0	1.5	1.0	---	---			.0	.0
22	7.0	5.5	1.5	1.0	1.5	1.0	---	---			.5	.0
23	6.0	4.5	1.5	1.5	1.0	1.0	---	---			.0	.0
24	6.5	5.0	1.5	1.5	1.0	1.0	---	---			.0	.0
25	6.0	5.0	1.5	1.5	1.5	1.0	---	---			.0	.0
26	5.0	4.5	1.5	1.5	1.5	1.0	---	---			.5	.0
27	5.0	4.0	1.5	1.0	1.0	1.0	---	---			.0	.0
28	4.5	3.0	1.0	1.0	1.0	.5	---	---			.0	.0
29	4.0	2.5	1.5	1.0	1.0	.5	---	---			.0	.0
30	4.5	3.5	1.5	1.0	1.0	.5	---	---			.0	.0
31	4.0	2.5	---	---	1.0	.5	---	---			.0	.0
MONTH	13.5	2.5	4.5	.5	1.5	.5	.5	.0			.5	.0

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

05124000 SOURIS (MOUSE) RIVER NEAR WESTHOPE, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1978 TO SEPTEMBER 1979

DATE	NOV 16,78	MAR 23,79	MAY 10,79	MAY 23,79
TIME	1300	1425	2100	1600
TOTAL CELLS/ML	1400	2900	81000	17000
DIVERSITY: DIVISION	0.9	1.9	0.3	1.6
.CLASS	0.9	1.9	0.3	1.6
..ORDER	1.6	2.2	0.3	2.2
...FAMILY	2.5	2.5	0.5	2.5
....GENUS	0.0	2.5	0.5	2.8

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
BACILLARIOPHYTA (KANSTEN)								
.BACILLARIOPHYCEAE								
..BACILLARIALES								
...NITZSCHIACEAE								
....BACILLARIA	--	-	--	-	--	-	--	-
CHLOROPHYTA (GREEN ALGAE)								
.CHLOROPHYCEAE								
..CHLOROCOCCALES								
...CHARACIACEAE								
....SCHROEDERIA	--	-	450#	16	--	-	--	-
...MICRACTINIACEAE								
....MICRACTINIUM	29	2	--	-	--	-	280	2
...OOCYSTACEAE								
....ANKISTRODESMUS	100	7	100	4	2100	3	1400	8
....CHODATELLA	--	-	26	1	--	-	*	0
....DICHOTOMOCOCCUS	--	-	--	-	--	-	--	-
....DICTYOSPHAERIUM	--	-	--	-	--	-	--	-
....GLOEOACTINIUM	--	-	--	-	--	-	430	2
....KIRCHNERIELLA	--	-	--	-	--	-	--	-
....OOCYSTIS	--	-	--	-	--	-	--	-
....SELENASTRUM	29	2	--	-	--	-	140	1
....TETRAEDRON	--	-	--	-	--	-	--	-
....TREUBARIA	--	-	--	-	--	-	--	-
...SCENEDESMACEAE								
....ACTINASTRUM	--	-	--	-	--	-	570	3
....CRUCIGENIA	--	-	--	-	--	-	--	-
....SCENEDESMUS	200	14	52	2	--	-	1000	6
....TETRASTRUM	--	-	--	-	--	-	280	2
..VOLVOCALES								
...CHLAMYDOMONADACEAE	230#	16	--	-	--	-	--	-
....CHLAMYDOMONAS	190	13	130	5	700	1	--	-
...VOLVOCACEAE								
....PANDORINA	350#	25	--	-	--	-	--	-
CHRYSOPHYTA								
.BACILLARIOPHYCEAE								
..CENTRALES								
...COSCINODISCACEAE								
....CYCLOTELLA	--	-	1300#	46	78000#	96	--	-
....MELOSIRA	--	-	--	-	--	-	--	-
....STEPHANODISCUS	--	-	--	-	--	-	5100#	29
..PENNALES								
...ACHNANTHACEAE								
....COCCONEIS	--	-	--	-	--	-	--	-
...FRAGILARIACEAE								
....FRAGILARIA	--	-	--	-	--	-	--	-
....SYNEDRA	--	-	--	-	--	-	--	-
...GOMPHONEMATACEAE								
....GOMPHONEMA	--	-	--	-	--	-	--	-
...NAVICULACEAE								
....NAVICULA	--	-	--	-	--	-	--	-
...NITZSCHIACEAE								
....NITZSCHIA	--	-	79	3	--	-	500	3
.CHRYSOPHYCEAE								
..CHRYSOMONADALES								
...OCHROMONADACEAE								
....OCHROMONAS	87	6	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)								
.CRYPTOPHYCEAE								
..CRYPTOMONADALES								
...CRYPTOCHRYSIDACEAE								
....CHROOMONAS	--	-	--	-	--	-	140	1
...CRYPTOMONADACEAE								
....CRYPTOMONAS	--	-	52	2	--	-	*	0

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

CONTINUED

05124000 SOURIS (MOUSE) RIVER NEAR WESTHOPE, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1978 TO SEPTEMBER 1979 (CONTINUED)

DATE	NOV 16,78		MAR 23,79		MAY 10,79		MAY 23,79	
TIME	1300		1425		2100		1600	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CYANOPHYTA (BLUE-GREEN ALGAE)								
.CYANOPHYCEAE								
..CHROOCOCCALES								
...CHROOCOCCACEAE								
....ANACYSTIS	190	13	52	2	--	-	3800#	22
..HORMOGONALES								
...NOSTOCACEAE								
....APHANIZOMENON	--	-	--	-	--	-	--	-
...OSCILLATORIACEAE								
....OSCILLATORIA	--	-	--	-	--	-	3600#	20
EUGLENOPHYTA (EUGLENOIDS)								
.EUGLENOPHYCEAE								
..EUGLENALES								
...EUGLENACEAE								
....EUGLENA	--	-	--	-	--	-	--	-
....TRACHELOMONAS	--	-	370	13	700	1	--	-
PYRRHOPHYTA (FIRE ALGAE)								
.DINOPHYCEAE								
..GYMNODINIALES								
...GYMNODINIACEAE								
....GYMNODINIUM	--	-	240	8	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

05124000 SOURIS (MOUSE) RIVER NEAR WESTHOPE, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1978 TO SEPTEMBER 1979

DATE	JUN 19,79	JUL 25,79	AUG 22,79	SEP 17,79
TIME	0000	1315	1645	1200
TOTAL CELLS/ML	10000	570	920	7100
DIVERSITY: DIVISION	1.5	0.5	1.5	0.7
.CLASS	1.5	0.5	1.5	0.7
..ORDER	1.7	1.5	1.6	0.8
...FAMILY	2.2	1.9	1.6	0.9
....GENUS	3.0	2.5	1.6	1.0

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
BACILLARIOPHYTA (KARSTEN)								
.BACILLARIOPHYCEAE								
..BACILLARIALES								
...NITZSCHIACEAE								
....BACILLARIA	--	-	--	-	220#	23	--	-
CHLOROPHYTA (GREEN ALGAE)								
.CHLOROPHYCEAE								
..CHLOROCOCCALES								
...CHARACIACEAE								
....SCHROEDERIA	--	-	--	-	--	-	*	0
...MICRACTINIACEAE								
....MICRACTINIUM	--	-	--	-	--	-	--	-
...OOCYSTACEAE								
....ANKISTRODESMUS	980	9	26	5	--	-	72	1
....CHODATELLA	--	-	--	-	--	-	--	-
....DICHOTOMOCOCCUS	--	-	--	-	--	-	230	3
....DICTYOSPHAERIUM	810	8	--	-	--	-	--	-
....GLOEOACTINIUM	--	-	--	-	--	-	--	-
....KIRCHNERIELLA	--	-	--	-	--	-	*	0
....OOCYSTIS	130	1	--	-	--	-	100	1
....SELENASTRUM	100	1	--	-	--	-	--	-
....TETRAEDRON	--	-	13	2	--	-	--	-
....TREUBARIA	*	0	--	-	--	-	--	-
...SCENEDESMACEAE								
....ACTINASTRUM	540	5	--	-	--	-	--	-
....CRUCIGENIA	1100	10	--	-	--	-	--	-
....SCENEDESMUS	880	8	--	-	14	2	390	5
....TETRASTRUM	270	3	--	-	--	-	--	-
..VOLVOCALES								
...CHLAMYDOMONADACEAE	--	-	--	-	--	-	--	-
....CHLAMYDOMONAS	300	3	26	5	--	-	--	-
...VOLVOCACEAE								
....PANDORINA	--	-	--	-	--	-	--	-
CHRYSOPHYTA								
.BACILLARIOPHYCEAE								
..CENTRALES								
...COSCINODISCACEAE								
....CYCLOTELLA	1200	12	39	7	43	5	100	1
....MELOSIRA	--	-	26	5	--	-	--	-
....STEPHANODISCUS	--	-	140#	25	--	-	--	-
..PENNALES								
...ACHNANTHACEAE								
....COCCONEIS	--	-	13	2	--	-	--	-
...FRAGILARIACEAE								
....FRAGILARIA	--	-	26	5	--	-	--	-
....SYNEDRA	--	-	13	2	--	-	--	-
...GOMPHONEMATACEAE								
....GOMPHONEMA	--	-	--	-	29	3	--	-
...NAVICULACEAE								
....NAVICULA	--	-	--	-	--	-	*	0
...NITZSCHIACEAE								
....NITZSCHIA	100	1	250#	43	--	-	58	1
.CHRYSOPHYCEAE								
..CHRYSOMONADALES								
...OCHROMONADACEAE								
....OCHROMONAS	--	-	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)								
.CRYPTOPHYCEAE								
..CRYPTOMONADALES								
...CRYPTOCHRYSIDACEAE								
....CHROOMONAS	--	-	--	-	--	-	--	-
...CRYPTOMONADACEAE								
....CRYPTOMONAS	--	-	--	-	14	2	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

CONTINUED

05124000 SOURIS (MOUSE) RIVER NEAR WESTHOPE, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1978 TO SEPTEMBER 1979 (CONTINUED)

DATE TIME	JUN 19,79 0000		JUL 25,79 1315		AUG 22,79 1645		SEP 17,79 1200	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CYANOPHYTA (BLUE-GREEN ALGAE)								
.CYANOPHYCEAE								
..CHROOCOCCALES								
...CHROOCOCCACEAE								
....ANACYSTIS	3800#	37	--	-	--	-	58	1
..HORMOGONALES								
...NOSTOCACEAE								
....APHANIZOMENON	--	-	--	-	580#	63	6100#	85
...OSCILLATORIACEAE								
....OSCILLATORIA	--	-	--	-	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)								
.EUGLENOPHYCEAE								
..EUGLENALES								
...EUGLENACEAE								
....EUGLENA	--	-	--	-	29	3	--	-
....TRACHELOMONAS	200	2	--	-	--	-	--	-
PYRRHOPHYTA (FIRE ALGAE)								
.DINOPHYCEAE								
..GYMNODINIALES								
...GYMNODINIACEAE								
....GYMNODINIUM	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06185500 MISSOURI RIVER NEAR CULBERTSON, MT

LOCATION.--Lat 48°07'24", long 104°28'30", in SE¼NW¼ sec.3, T.27 N., R.56 E., Richland County, Hydrologic Unit 10060005, on right bank at downstream side of bridge on State Highway 16, 3 mi (5 km) southeast of Culbertson, 9.6 mi (15.4 km) downstream from Big Muddy Creek, and at mile 1,620.76 (2,607.80 km).

DRAINAGE AREA.--91,557 mi^2 (237,133 km^2).

WATER-DISCHARGE RECORDS

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 (574.06 m) National Geodetic Vertical Datum of 1929, (Corps of Engineers bench mark). July 1 to Nov. 6, 1941, water-stage recorder at site 400 ft (120 m) upstream at datum 0.11 ft (0.034 m) higher. Nov. 7, 1941, to Aug. 17, 1950, water-stage recorder at site 580 ft (177 m) 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 580 ft (177 m) downstream at present datum.

REVISIONS.--WSP 1729: Drainage area.

REMARKS.--Water-discharge records good except those for Apr. 19 to June 19, which are fair, and 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 (4,170 km^2) above station.

AVERAGE DISCHARGE.--29 years (1943-51, 1958-79, after operational level at Fort Peck Lake was reached), 10,950 ft^3/s (310.1 m^3/s), 7,933,000 acre-ft/yr (9.78 km^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 78,200 ft^3/s (2,210 m^3/s) Mar. 26, 1943, gage height, 14.80 ft (4.511 m), from rating curve extended above 30,000 ft^3/s (850 m^3/s); maximum gage height observed, 19.66 ft (5.992 m) Apr. 14, 1979, backwater from ice jam; minimum daily discharge, 575 ft^3/s (16.3 m^3/s) Nov. 22, 1941.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 52,000 ft^3/s (1,470 m^3/s) Apr. 18; maximum gage height observed, 19.66 ft (5.992 m) Apr. 14, backwater from ice; minimum daily discharge, 8,560 ft^3/s (242 m^3/s) Sept. 18.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15000	13800	13000	12100	13000	15400	21500	38100	17000	14600	14000	10600
2	14900	12900	12000	13000	15000	15400	21500	38400	16900	14600	14000	10200
3	15100	12300	11600	14000	15000	15400	21000	38300	16500	14700	14300	10200
4	14900	11900	12000	14400	15500	15800	20000	39100	16500	14600	14500	10100
5	14800	11700	12200	13000	15600	16000	18000	39600	16400	14500	14600	10200
6	14700	12200	12100	12000	15600	16000	18000	37600	16000	14500	14600	10100
7	14500	12600	12000	11800	15600	16000	18500	36000	15600	14500	14900	10200
8	14100	13000	11600	11800	15600	16000	20000	35400	15100	14500	15000	10100
9	13600	11700	11600	11800	15600	16000	25000	34600	14700	15700	15000	9940
10	14100	11900	11600	11800	15600	15800	32000	33700	14500	16800	14900	9140
11	14200	13100	12000	11800	15700	16000	33000	31400	14800	16700	14800	9090
12	14000	13800	12000	11700	15800	16000	33000	29000	14400	16100	14800	9040
13	13800	14200	12000	11600	15600	15900	31000	26500	14600	15700	14700	8890
14	13600	14300	12000	11500	15500	16000	29000	24600	14600	15200	14600	8890
15	13900	14200	11800	11500	15500	16000	28000	22700	14600	14800	14300	8910
16	13900	14000	11800	11700	15800	16000	35000	20700	14400	14600	14600	8960
17	13800	13900	12000	12000	15500	15000	50000	20500	14200	14600	14100	8840
18	13700	13800	12000	12500	15500	14000	52000	20100	14200	14300	13600	8560
19	13700	13000	12000	13000	15600	12000	48800	20500	13700	13900	13500	8760
20	13700	12500	12000	13600	15600	11500	45100	20200	13800	14100	13100	8940
21	13900	11500	12000	14000	15500	12500	41500	20100	13900	14000	11700	8890
22	13900	12000	11900	14500	15500	13500	38400	20000	14200	13900	11700	8890
23	13800	13000	12100	15000	15500	14500	37700	19900	14400	13800	11800	8910
24	13800	13500	12100	15000	15500	16000	37800	19800	14400	13900	11600	8840
25	13800	13000	12100	15000	15600	17000	38800	19000	14300	13700	11600	8760
26	13800	13000	12000	15000	15800	18000	38100	18600	14200	13600	11600	8790
27	13800	14200	12000	15000	15700	20500	39100	16700	14200	13700	11700	8860
28	13700	14000	12100	14500	15500	25000	37900	18300	14200	13900	11800	8590
29	13700	14000	12000	14500	---	23500	37600	18300	14500	14200	11500	8790
30	13700	14000	11500	14500	---	22500	37800	17800	14600	14500	9770	8860
31	13800	---	11500	15000	---	21500	---	17300	---	14400	10400	---
TOTAL	435900	393000	370000	408200	434800	510700	985100	812800	445400	452600	413070	277840
MEAN	14060	13100	11940	13170	15530	16470	32840	26220	14850	14600	13320	9261
MAX	15100	14300	13000	15000	15800	25000	52000	39600	17000	16800	15000	10600
MIN	13600	11500	11000	11500	15000	11500	18000	16700	13700	13600	9770	8560
AC-FT	864600	779500	733900	809700	862400	1013000	1954000	1612000	883500	897700	819300	551100

CAL YR 1978	TOTAL	4928630	MEAN	13500	MAX	27000	MIN	7750	AC-FT	9776000
WTR YR 1979	TOTAL	5939410	MEAN	16270	MAX	52000	MIN	8560	AC-FT	11780000

06185500 MISSOURI RIVER NEAR CULBERTSON, MT--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1946, 1965 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: July 1965 to current year.
WATER TEMPERATURES: July 1965 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 880 micromhos June 24, July 10, 1979; minimum daily, 338 micromhos Mar. 30, 1967.
WATER TEMPERATURES: Maximum daily, 24.5°C July 17, 1966; minimum daily, 0.0°C on many days during winter periods.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 880 micromhos June 24, July 10; minimum daily, 528 micromhos Mar. 31.
WATER TEMPERATURES: Maximum daily, 18.5°C July 8; minimum daily, 0.0°C on many days during November to April.

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS (MG/L AS CACO3) (00900)
OCT												
03...	1530	15000	704	8.2	17.5	12.0	70	9.4	93	K43	K15	230
NOV												
13...	1500	14800	760	8.1	-5.0	1.5	29	11.7	89	K6	K6	240
DEC												
12...	1500	12000	780	8.4	-4.0	.5	4.1	12.2	90	K1	K7	250
JAN												
09...	1500	11500	712	8.3	-12.0	.0	7.2	11.9	86	K2	K2	270
FEB												
14...	1700	13300	810	8.3	-20.0	.0	27	12.9	93	K1	K1	260
MAR												
07...	1500	14700	780	8.3	6.0	.0	8.2	11.6	86	<1	<1	260
APR												
19...	1630	48800	603	8.1	8.0	6.0	370	9.7	84	67	860	170
MAY												
15...	1700	22500	910	8.1	25.0	9.5	140	10.1	95	K16	K22	250
JUN												
19...	1200	13700	864	8.2	21.0	14.0	27	9.2	97	K6	K17	280
JUL												
25...	1600	13700	758	8.1	25.5	18.0	25	8.3	93	K14	K16	240
31...	1900	--	814	8.3	29.0	17.0	--	8.9	98	--	--	--
31...	2000	--	810	8.3	28.0	17.0	--	8.8	97	--	--	--
31...	2100	--	818	8.3	--	16.5	--	8.8	96	--	--	--
31...	2200	--	830	8.3	24.0	16.5	--	8.7	95	--	--	--
31...	2300	--	--	--	--	16.5	--	8.7	95	--	--	--
31...	2400	--	--	--	--	16.0	--	8.7	94	--	--	--
AUG												
01...	0100	--	--	--	--	16.0	--	8.7	94	--	--	--
01...	0200	--	--	--	--	16.0	--	8.7	94	--	--	--
01...	0300	--	--	--	--	15.5	--	8.7	93	--	--	--
01...	0400	--	--	--	--	15.5	--	8.7	93	--	--	--
01...	0500	--	824	8.3	19.0	15.5	--	8.7	93	--	--	--
01...	0600	--	--	--	--	15.0	--	8.7	92	--	--	--
01...	0700	--	820	8.3	--	15.0	--	8.7	92	--	--	--
01...	0800	--	814	8.3	--	15.0	--	8.7	92	--	--	--
01...	0900	--	810	8.3	21.0	15.0	--	8.7	92	--	--	--
01...	1000	--	810	8.3	--	15.0	--	8.7	92	--	--	--
01...	1100	14000	810	8.2	25.0	15.5	23	8.8	94	K21	K9	260
01...	1200	--	810	8.3	--	15.5	--	8.8	94	--	--	--
01...	1300	--	--	--	--	16.0	--	8.8	95	--	--	--
01...	1400	--	--	8.3	30.0	16.5	--	8.8	96	--	--	--
01...	1500	--	818	--	30.0	16.5	--	8.7	95	--	--	--
01...	1600	--	--	8.3	32.0	16.5	--	8.7	95	--	--	--
01...	1700	--	820	8.3	30.0	17.0	--	8.7	96	--	--	--
01...	1800	--	816	8.3	30.0	17.0	--	8.8	97	--	--	--
01...	1900	--	812	8.3	29.0	8.8	--	--	97	--	--	--
SEP												
17...	1700	9250	848	8.4	26.0	14.5	21	9.2	96	K4	K12	270

K - Results based on colony count outside the acceptable range (non-ideal colony count).

06185500 MISSOURI RIVER NEAR CULBERTSON, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	HARDNESS, NONCARBONATE (MG/L CACO3) (00902)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM ADSORPTION RATIO (00931)	SODIUM+POTASSIUM DISSOLVED (MG/L AS NA) (00933)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	ALKALINITY (MG/L AS CACO3) (00410)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)
OCT												
03...	83	57	22	56	34	1.6	--	4.1	150	190	8.5	.7
NOV												
13...	94	58	24	65	--	1.8	--	--	150	200	8.9	.6
DEC												
12...	100	60	25	65	35	1.8	--	4.9	150	220	9.0	.7
JAN												
09...	110	67	25	64	34	1.7	--	4.8	160	230	9.7	.6
FEB												
14...	110	58	27	72	37	2.0	--	4.5	150	230	9.4	.6
MAR												
07...	110	63	25	63	34	1.7	--	4.2	150	240	9.3	.5
APR												
19...	62	39	18	60	42	2.0	--	4.9	110	170	5.7	.4
MAY												
15...	100	59	26	91	43	2.5	96	5.4	150	290	9.8	.5
JUN												
19...	130	66	29	84	52	2.2	89	4.6	150	290	9.4	.6
JUL												
25...	89	53	26	71	39	2.0	76	4.9	150	240	9.0	.6
31...	--	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
01...	--	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--	--
01...	100	62	26	66	35	1.8	71	4.6	160	250	8.8	.7
01...	--	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
17...	120	63	27	77	51	2.0	81	4.3	150	270	9.3	.8

06185500 MISSOURI RIVER NEAR CULBERTSON, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, AMMONIA TOTAL (MG/L AS NH4) (71845)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, NH4 + ORG. SUSP. TOTAL (MG/L AS N) (00624)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)
OCT												
03...	8.1	447	437	.61	18100	.11	.06	--	.39	.45	.19	.26
NOV												
13...	7.5	479	454	.65	19100	.05	.03	--	.23	.26	.00	--
DEC												
12...	6.7	488	482	.66	15800	.04	.01	--	.28	.29	.09	.20
JAN												
09...	5.9	501	503	.68	15600	.05	.01	--	.23	.24	.00	--
FEB												
14...	7.5	528	499	.72	19000	.09	.05	--	.23	.28	.10	.18
MAR												
07...	7.2	488	502	.66	19400	.13	.10	--	.28	.38	.00	--
APR												
19...	8.5	389	373	.53	51300	.26	.07	.08	1.6	1.7	1.2	.53
MAY												
15...	6.6	593	578	.81	56000	.20	.03	.04	.52	.55	.00	--
JUN												
19...	5.5	586	579	.80	21700	.18	.02	.02	.68	.70	.46	.24
JUL												
25...	6.8	534	501	.73	19800	.11	.02	.02	.19	.21	.00	.34
31...	--	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
01...	--	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--	--
01...	6.6	538	521	.73	20300	.10	.00	.00	.26	.26	.00	--
01...	--	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
17...	7.3	553	550	.75	13800	.14	.00	.00	.42	.42	.35	.07

06185500 MISSOURI RIVER NEAR CULBERTSON, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHATE, TOTAL (MG/L AS PO4) (00650)	PHOS-PHORUS TOTAL (MG/L AS PO4) (71886)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BARIUM, SUS-PENDED RECOV-ERABLE (UG/L AS BA) (01006)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)
OCT											
03...	.56	2.5	.15	--	--	.02	--	--	--	--	--
NOV											
13...	.31	1.4	.06	--	--	.01	--	--	--	--	--
DEC											
12...	.33	1.5	.04	--	--	.02	3	3	0	0	0
JAN											
09...	.29	1.3	.03	--	--	.02	--	--	--	--	--
FEB											
14...	.37	1.6	.04	--	--	.02	--	--	--	--	--
MAR											
07...	.51	2.3	.05	--	--	.04	2	2	100	100	0
APR											
19...	2.0	8.7	.41	1.3	1.3	.02	--	--	--	--	--
MAY											
15...	.75	3.3	.26	.80	.80	.03	--	--	--	--	--
JUN											
19...	.88	3.9	.08	--	.25	.01	2	2	100	100	0
JUL											
25...	.32	1.4	.03	--	.09	.06	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
AUG											
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	.36	1.6	.04	--	.12	.03	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
SEP											
17...	.56	2.5	.01	--	.03	.01	3	3	0	0	50

06185500 MISSOURI RIVER NEAR CULBERTSON, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD) (01027)	CADMIUM SUS-PENDED RECOV-ERABLE (UG/L AS CD) (01026)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	CHRO-MIUM, SUS-PENDED RECOV. (UG/L AS CR) (01031)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO) (01037)	COBALT, SUS-PENDED RECOV-ERABLE (UG/L AS CO) (01036)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	COPPER, SUS-PENDED RECOV-ERABLE (UG/L AS CU) (01041)
OCT											
03...	--	--	--	--	--	--	--	--	--	--	--
NOV											
13...	--	--	--	--	--	--	--	--	--	--	--
DEC											
12...	1	0	2	10	10	0	1	0	1	3	0
JAN											
09...	--	--	--	--	--	--	--	--	--	--	--
FEB											
14...	--	--	--	--	--	--	--	--	--	--	--
MAR											
07...	1	1	0	0	0	0	0	0	0	6	5
APR											
19...	--	--	--	--	--	--	--	--	--	--	--
MAY											
15...	--	--	--	--	--	--	--	--	--	--	--
JUN											
19...	1	0	1	10	10	0	5	3	2	9	8
JUL											
25...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
AUG											
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
SEP											
17...	0	0	<1	10	10	0	0	0	<3	2	0

06185500 MISSOURI RIVER NEAR CULBERTSON, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	IRON, SUS-PENDED RECOV-ERABLE (UG/L AS FE) (01044)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	LEAD, SUS-PENDED RECOV-ERABLE (UG/L AS PB) (01050)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MANGA-NESE, SUS-PENDED RECOV. (UG/L AS MN) (01054)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)
OCT											
03...	--	--	--	--	--	--	--	--	--	--	--
NOV											
13...	--	--	--	--	--	--	--	--	--	--	--
DEC											
12...	3	460	430	30	3	0	4	10	0	20	.5
JAN											
09...	--	--	--	--	--	--	--	--	--	--	--
FEB											
14...	--	--	--	--	--	--	--	--	--	--	--
MAR											
07...	1	400	400	0	10	10	0	20	10	10	--
APR											
19...	--	--	--	--	--	--	--	--	--	--	--
MAY											
15...	--	--	--	--	--	--	--	--	--	--	--
JUN											
19...	1	4000	4000	10	16	13	3	80	80	0	.6
JUL											
25...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
AUG											
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
SEP											
17...	2	1800	--	<10	0	0	0	50	40	10	.3

MISSOURI RIVER MAIN STEM

06185500 MISSOURI RIVER NEAR CULBERTSON, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	MERCURY SUS-PENDED RECOV-ERABLE (UG/L AS HG) (71895)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SELE-NIUM, SUS-PENDED TOTAL (UG/L AS SE) (01146)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	SILVER, SUS-PENDED RECOV-ERABLE (UG/L AS AG) (01076)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, SUS-PENDED RECOV-ERABLE (UG/L AS ZN) (01091)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)
OCT											
03...	--	--	--	--	--	--	--	--	--	--	--
NOV											
13...	--	--	--	--	--	--	--	--	--	--	--
DEC											
12...	.0	.7	1	0	2	0	0	0	10	0	10
JAN											
09...	--	--	--	--	--	--	--	--	--	--	--
FEB											
14...	--	--	--	--	--	--	--	--	--	--	--
MAR											
07...	--	.5	1	0	2	0	0	0	30	20	10
APR											
19...	--	--	--	--	--	--	--	--	--	--	--
MAY											
15...	--	--	--	--	--	--	--	--	--	--	--
JUN											
19...	.0	.7	2	1	1	0	0	0	30	20	10
JUL											
25...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
AUG											
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
SEP											
17...	--	--	1	0	1	0	0	0	10	5	5

06185500 MISSOURI RIVER NEAR CULBERTSON, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C) (00689)	PCB, TOTAL (UG/L) (39516)	PCB, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39519)	ALDRIN, TOTAL (UG/L) (39330)	ALDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39333)	CHLOR-DANE, TOTAL (UG/L) (39350)	CHLOR-DANE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39351)	DDD, TOTAL (UG/L) (39360)	DDD, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39363)
OCT											
03...	5.1	--	--	--	--	--	--	--	--	--	--
NOV											
13...	4.4	--	--	ND	ND	ND	ND	ND	ND	ND	ND
DEC											
12...	--	2.9	.3	--	--	--	--	--	--	--	--
JAN											
09...	3.0	--	--	--	--	--	--	--	--	--	--
FEB											
14...	3.1	--	--	--	--	--	--	--	--	--	--
MAR											
07...	--	4.7	--	ND	--	ND	--	ND	--	ND	--
APR											
19...	19	--	--	--	--	--	--	--	--	--	--
MAY											
15...	3.0	--	--	ND	ND	ND	ND	ND	ND	ND	ND
JUN											
19...	--	4.8	.8	--	--	--	--	--	--	--	--
JUL											
25...	23	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
AUG											
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	4.4	--	--	ND	--	ND	--	ND	--	ND	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
SEP											
17...	--	4.3	.2	--	--	--	--	--	--	--	--

DATE	TIME	DDE, TOTAL (UG/L) (39365)	DDE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39368)	DDT, TOTAL (UG/L) (39370)	DDT, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39373)	DI-AZINON, TOTAL (UG/L) (39570)	DI-AZINON, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39571)	DI-ELDRIN TOTAL (UG/L) (39380)	DI-ELDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39383)	ENDRIN, TOTAL (UG/L) (39390)	ENDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39393)	ETHION, TOTAL (UG/L) (39398)
OCT												
03...	1530	--	--	--	--	--	--	--	--	--	--	--
NOV												
13...	1500	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
DEC												
12...	1500	--	--	--	--	--	--	--	--	--	--	--
JAN												
09...	1500	--	--	--	--	--	--	--	--	--	--	--
FEB												
14...	1700	--	--	--	--	--	--	--	--	--	--	--
MAR												
07...	1500	ND	--	ND	--	ND	--	ND	--	ND	--	ND
APR												
19...	1630	--	--	--	--	--	--	--	--	--	--	--
MAY												
15...	1700	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
JUN												
19...	1200	--	--	--	--	--	--	--	--	--	--	--
JUL												
25...	1600	--	--	--	--	--	--	--	--	--	--	--
AUG												
01...	1100	ND	--	ND	--	ND	--	ND	--	ND	--	ND
SEP												
17...	1700	--	--	--	--	--	--	--	--	--	--	--

Whole water ND - Not detected at 0.01 µg/L level.
Bed material ND - Not detected at 0.1 µg/mg level.

06185500 MISSOURI RIVER NEAR CULBERTSON, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	ETHION, TOTAL IN BOTTOM MATERIAL (UG/KG) (39399)	HEPTACHLOR, TOTAL (UG/L) (39410)	HEPTACHLOR, TOTAL IN BOTTOM MATERIAL (UG/KG) (39413)	HEPTACHLOR EPOXIDE TOTAL (UG/L) (39420)	HEPTACHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG) (39423)	LINDANE TOTAL (UG/L) (39340)	LINDANE TOTAL IN BOTTOM MATERIAL (UG/KG) (39343)	MALATHION, TOTAL (UG/L) (39530)	MALATHION, TOTAL IN BOTTOM MATERIAL (UG/KG) (39531)	METHOXYCHLOR, TOTAL (UG/L) (39480)	METHOXYCHLOR, TOT. IN BOTTOM MATL. (UG/KG) (39481)	METHYL PARATHION, TOTAL (UG/L) (39600)
OCT												
03...	--	--	--	--	--	--	--	--	--	--	--	--
NOV												
13...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
DEC												
12...	--	--	--	--	--	--	--	--	--	--	--	--
JAN												
09...	--	--	--	--	--	--	--	--	--	--	--	--
FEB												
14...	--	--	--	--	--	--	--	--	--	--	--	--
MAR												
07...	--	ND	--	ND	--	ND	--	ND	--	ND	--	ND
APR												
19...	--	--	--	--	--	--	--	--	--	--	--	--
MAY												
15...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
JUN												
19...	--	--	--	--	--	--	--	--	--	--	--	--
JUL												
25...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
01...	--	ND	--	ND	--	ND	--	ND	--	ND	--	ND
SEP												
17...	--	--	--	--	--	--	--	--	--	--	--	--

DATE	METHYL PARATHION, TOT. IN BOTTOM MATL. (UG/KG) (39601)	METHYL TRITHION, TOTAL (UG/L) (39790)	METHYL TRITHION, TOT. IN BOTTOM MATL. (UG/KG) (39791)	PARATHION, TOTAL (UG/L) (39540)	PARATHION, TOTAL IN BOTTOM MATERIAL (UG/KG) (39541)	TOXAPHENE, TOTAL (UG/L) (39400)	TOXAPHENE, TOTAL IN BOTTOM MATERIAL (UG/KG) (39403)	TOTAL TRITHION (UG/L) (39786)	TRITHION, TOTAL IN BOTTOM MATERIAL (UG/KG) (39787)	PHYTOPLANKTON, TOTAL (CELLS PER ML) (60050)	SEDIMENT, SUSPENDED (MG/L) (80154)	SEDIMENT DISCHARGE, SUSPENDED (T/DAY) (80155)
OCT												
03...	--	--	--	--	--	--	--	--	--	--	506	20500
NOV												
13...	ND	ND	ND	ND	ND	ND	ND	ND	ND	1500	176	7030
DEC												
12...	--	--	--	--	--	--	--	--	--	--	19	616
JAN												
09...	--	--	--	--	--	--	--	--	--	--	120	3730
FEB												
14...	--	--	--	--	--	--	--	--	--	--	70	2510
MAR												
07...	--	ND	--	ND	--	ND	--	ND	--	160	150	5950
APR												
19...	--	--	--	--	--	--	--	--	--	--	2370	312000
MAY												
15...	ND	ND	ND	ND	ND	ND	ND	ND	ND	39	596	36200
JUN												
19...	--	--	--	--	--	--	--	--	--	9100	401	14800
JUL												
25...	--	--	--	--	--	--	--	--	--	2400	251	9280
AUG												
01...	--	ND	--	ND	--	ND	--	ND	--	78	125	4730
SEP												
17...	--	--	--	--	--	--	--	--	--	1900	143	3570

Whole water ND - Not detected at 0.01 µg/L level.
Bed material ND - Not detected at 0.1 µg/mg level.

06185500 MISSOURI RIVER NEAR CULBERTSON, MT--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	700	743	729	831	754	779	548	691	840	802	776	811
2	709	752	749	756	771	761	562	696	849	831	780	824
3	709	744	783	732	790	755	564	688	825	839	772	823
4	720	739	738	745	815	735	611	692	819	820	761	828
5	728	737	759	748	761	768	639	691	806	819	775	823
6	727	734	843	747	756	773	665	693	800	841	792	819
7	738	733	847	735	765	764	591	697	800	810	790	812
8	725	732	772	756	788	689	691	691	776	800	793	810
9	730	732	772	735	737	784	700	730	775	801	796	812
10	728	733	777	731	752	783	736	742	765	880	790	814
11	732	724	762	752	756	734	688	733	773	779	779	811
12	732	725	754	718	842	730	654	735	765	840	773	815
13	731	728	754	737	848	748	594	740	768	812	774	818
14	740	741	743	764	764	722	554	748	778	801	772	819
15	732	743	739	709	835	749	549	758	800	805	776	820
16	728	744	752	732	822	670	592	780	828	776	782	816
17	731	741	753	715	803	757	612	809	810	756	778	810
18	732	733	772	712	777	674	664	810	813	781	771	811
19	732	728	776	722	683	758	641	770	852	801	776	811
20	735	709	805	726	682	772	591	769	809	810	785	812
21	740	717	813	697	707	808	598	789	780	831	789	815
22	735	720	782	738	748	804	646	769	805	851	794	814
23	737	728	771	743	800	748	674	781	810	810	785	813
24	737	707	768	654	752	648	688	767	880	799	777	810
25	740	702	756	651	762	705	703	760	868	791	782	811
26	740	705	752	707	721	650	719	756	836	782	780	811
27	741	705	775	712	724	661	729	759	810	796	776	811
28	745	706	755	706	768	662	746	736	795	779	782	812
29	742	707	754	751	---	627	761	730	808	775	789	811
30	751	710	769	---	---	542	778	746	810	778	798	808
31	755	---	828	778	---	528	---	731	---	779	806	---
MEAN	732	727	771	731	767	719	650	742	808	805	782	815

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13.5	7.0	.0	.0	.0	.0	.0	6.0	10.0	16.5	15.5	15.5
2	13.0	7.5	.0	.0	.0	.0	.0	5.0	11.0	17.5	16.5	15.5
3	13.5	8.0	.0	.0	.0	.0	.0	5.5	12.5	17.5	16.5	16.0
4	11.5	8.5	.0	.0	.0	.0	.0	4.5	13.5	18.0	16.5	16.0
5	10.0	7.0	.0	.0	.0	.0	.0	5.5	14.5	17.5	16.5	15.5
6	9.0	5.5	.0	.0	.0	.0	.0	4.5	14.0	17.5	16.0	15.0
7	10.0	6.0	.0	.0	.0	.0	.0	4.0	12.0	17.5	16.5	14.5
8	11.5	7.0	.0	.0	.0	.0	.0	4.5	11.5	18.5	16.5	14.5
9	11.0	7.5	.0	.0	.0	.0	---	4.5	10.5	18.0	16.5	15.5
10	12.0	5.0	.0	.0	.0	.0	.0	4.0	10.5	17.0	15.5	15.5
11	12.5	3.5	.0	.0	.0	.0	.0	4.5	12.0	17.0	15.0	14.0
12	12.0	2.0	.0	.0	.0	.0	.0	5.5	14.5	17.0	15.5	14.0
13	10.0	1.5	.0	.0	.0	.0	.0	7.0	15.5	15.5	14.5	12.0
14	9.5	1.5	.0	.0	.0	.0	.0	8.0	16.5	15.5	14.0	10.0
15	9.5	1.5	.0	.0	.0	.0	.5	8.0	15.0	15.5	14.0	12.0
16	9.5	1.5	.0	.0	.0	.0	.0	10.0	15.0	15.0	13.5	13.0
17	10.5	2.0	.0	.0	.0	.0	3.0	9.5	14.0	15.5	14.0	14.0
18	10.0	1.0	.0	.0	.0	.0	6.0	9.0	14.0	16.0	15.5	14.0
19	10.5	.0	.0	.0	.0	.0	5.5	9.5	17.0	17.0	16.0	14.0
20	10.0	.0	.0	.0	.0	.0	5.5	9.0	17.0	17.5	15.5	14.0
21	11.0	.0	.0	.0	.0	.0	5.5	9.5	16.0	17.0	15.0	13.0
22	10.0	.5	.0	.0	.0	.0	6.0	10.0	17.5	16.5	16.5	13.0
23	8.5	.0	.0	.0	.0	.0	5.5	10.0	14.5	17.0	16.0	13.0
24	9.5	.0	.0	.0	.0	.0	4.0	11.5	15.0	16.5	15.5	13.0
25	8.5	.5	.0	.0	.0	.0	3.5	13.0	15.0	16.0	15.0	13.0
26	8.5	1.5	.0	.0	.0	.0	4.0	14.0	15.0	15.5	15.0	13.0
27	8.0	1.0	.0	.0	.0	.0	4.5	15.0	16.0	15.0	15.0	13.0
28	9.0	.5	.0	.0	.0	.0	6.0	15.0	15.5	15.5	14.5	13.0
29	9.5	.5	.0	.0	---	.0	5.5	13.0	15.5	16.0	14.0	13.0
30	8.5	.0	.0	.0	---	.0	5.5	11.0	15.5	15.5	14.5	13.0
31	8.0	---	.0	.0	---	.0	---	10.0	---	15.0	15.5	---
MEAN	10.5	3.0	.0	.0	.0	.0	2.5	8.5	14.0	16.5	15.5	14.0

06185500 MISSOURI RIVER NEAR CULBERTSON, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	PH (UNITS) (00400)	TEMPERATURE, AIR (DEG C) (00020)	TEMPERATURE (DEG C) (00010)	OXYGEN, DISSOLVED (MG/L (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	BAROMETRIC PRESSURE (MM) OF HG) (00025)	WEATHER (WMO CODE NUMBER) (00041)
JUL									
31...	1900	814	8.3	29.0	17.0	8.9	98	712	0
31...	2000	810	8.3	28.0	17.0	8.8	97	710	0
31...	2100	818	8.3	--	16.5	8.8	96	--	--
31	2200	830	8.3	24.0	16.5	8.7	95	710	0
31...	2300	--	--	--	16.5	8.7	95	--	--
31...	2400	--	--	--	16.0	8.7	94	--	--
AUG									
01...	0100	--	--	--	16.0	8.7	94	--	--
01...	0200	--	--	--	16.0	8.7	94	--	--
01...	0300	--	--	--	15.5	8.7	93	--	--
01...	0400	--	--	--	15.5	8.7	93	--	--
01...	0500	824	8.3	19.0	15.5	8.7	93	709	0
01...	0600	--	--	--	15.0	8.7	92	--	--
01...	0700	820	8.3	--	15.0	8.7	92	--	--
01...	0800	814	8.3	--	15.0	8.7	92	--	--
01...	0900	810	8.3	21.0	15.0	8.7	92	708	0
01...	1000	810	8.3	--	15.0	8.7	92	--	--
01...	1100	810	8.2	25.0	15.5	8.8	94	708	1
01...	1200	810	8.3	--	15.5	8.8	94	--	--
01...	1300	--	--	--	16.0	8.8	95	--	--
01...	1400	--	8.3	30.0	16.5	8.8	96	--	1
01...	1500	818	--	30.0	16.5	8.7	95	--	1
01...	1600	--	8.3	32.0	16.5	8.7	95	--	1
01...	1700	820	8.3	30.0	17.0	8.7	96	708	1
01...	1800	816	8.3	30.0	17.0	8.8	97	--	1
01...	1900	812	8.3	29.0	--	8.8	97	708	1

06185600 MISSOURI RIVER STAGE GAGE NO. 4 NEAR NOHLY, MT

LOCATION.--Lat 48°02'10", long 104°09'40", in NE¼ sec.1, T.26 N., R.58 E., Richland County, Hydrologic Unit 10060005, on right bank 4.5 mi (7.2 km) northwest of Nohly, and at mile 1,595.7 (2,567.5 km).

DRAINAGE AREA.--93,000 mi² (241,000 km²), approximately.

PERIOD OF RECORD.--March 1959 to current year (seasonal).

GAGE.--Water-stage recorder. Datum of gage is 1,860.00 ft (566.928 m) National Geodetic Vertical Datum of 1929. Prior to Apr. 18, 1962 at datum 60.00 ft (18.288 m) lower.

REMARKS.--Stage regulated by Fort Peck Reservoir.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily gage height recorded, 21.20 ft (6.462 m) Mar. 23, 1960, present datum; minimum daily recorded, 6.87 ft (2.094 m) Apr. 18, 1963.

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12.92	12.43				---	13.92	---		---	---	---
2	12.86	12.29				---	14.20	---		---	---	---
3	12.82	11.99				---	14.32	---		---	---	---
4	12.85	11.91				---	14.79	---		---	---	---
5	12.81	11.75				---	14.95	---		---	---	---
6	12.80	---				---	14.94	---		---	---	---
7	12.74	---				---	14.84	---		---	---	---
8	12.67	---				---	14.84	---		---	---	---
9	12.62	---				---	14.98	---		---	---	---
10	12.50	---				---	15.37	15.97		---	---	---
11	12.56	---				---	16.12	15.79		---	---	---
12	12.53	---				---	17.06	15.50		---	---	---
13	12.49	---				---	17.99	15.21		---	---	---
14	12.45	---				---	18.40	14.98		---	---	---
15	12.46	---				---	17.95	14.72		---	13.12	---
16	12.44	---				---	17.24	14.33		---	---	---
17	12.43	---				---	---	14.00		---	---	---
18	12.41	---				---	---	13.96		12.99	---	---
19	12.40	---				---	---	13.71		---	---	11.19
20	12.40	---				---	---	13.58		---	---	11.27
21	12.42	---				---	---	13.57		---	---	11.25
22	12.49	---				---	---	13.49		---	---	11.27
23	12.49	---				---	---	13.43		---	---	11.29
24	12.50	---				---	---	13.27		---	---	11.26
25	12.42	---				---	---	---		---	---	11.20
26	12.43	---				---	---	---		---	---	11.22
27	12.44	---				14.83	---	---		---	---	11.25
28	12.43	---				14.95	---	---		---	---	11.26
29	12.40	---				14.25	---	---		---	---	11.19
30	12.41	---				13.55	---	---		---	---	11.32
31	12.41	---				13.52	---	---		---	---	---
TOTAL	386.76	---				---	---	---		---	---	---
MEAN	12.54	---				---	---	---		---	---	---
MAX	12.92	---				---	---	---		---	---	---
MIN	12.40	---				---	---	---		---	---	---

06185650 MISSOURI RIVER STAGE GAGE NO. 5 AT NOHLY, MT

LOCATION.--Lat 48°00'10", long 104°05'30", in SE¼ sec.16, T.26 N., R.59 E., Richland County, Hydrologic Unit 10060005, at downstream side of bridge, 0.2 mi (0.3 km) northwest of Nohly, and at mile 1,587.7 (2,554.6 km).

DRAINAGE AREA.--93,000 mi² (241,000 km²), approximately.

PERIOD OF RECORD.--April 1959 to current year (seasonal).

GAGE.--Water-stage recorder. Datum of gage is 1,800.00 ft (548.640 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Stage regulated by Fort Peck Reservoir.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily gage height recorded, 77.22 ft (23.537 m) Mar. 15, 1972; minimum daily recorded, 59.12 ft (18.020 m) Nov. 22, 1964.

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	65.47				---	71.04	68.55	66.53	65.78	65.52	64.25
2	---	65.37				---	71.25	68.57	66.42	65.74	65.43	64.23
3	---	65.08				---	71.49	68.60	66.08	65.72	65.49	64.11
4	---	64.90				---	71.71	68.75	65.66	65.72	65.54	64.11
5	---	64.81				---	71.85	68.96	65.76	65.68	65.58	64.09
6	---	64.83				---	71.80	68.95	65.68	65.57	65.61	64.10
7	---	65.09				---	71.68	68.81	65.59	65.56	65.63	64.10
8	---	65.22				---	71.61	68.81	65.56	65.51	65.70	64.10
9	---	---				---	71.71	68.95	65.67	65.67	65.70	64.03
10	---	---				---	72.05	68.98	65.90	66.04	65.66	63.89
11	---	---				---	72.77	68.84	65.87	66.20	65.64	63.71
12	---	---				---	73.61	68.77	65.68	66.08	65.61	63.69
13	---	---				---	74.57	68.20	65.56	65.90	65.57	63.68
14	---	---				---	75.12	67.78	65.47	65.77	65.51	63.58
15	---	---				---	74.78	67.40	65.44	65.66	65.42	63.60
16	---	---				---	74.26	66.98	65.49	65.57	65.49	63.60
17	---	---				---	74.13	66.60	65.75	65.56	65.49	63.60
18	---	---				---	73.76	66.60	66.08	65.54	65.30	63.59
19	65.55	---				---	69.89	66.39	65.90	65.40	65.23	63.51
20	65.50	---				---	69.37	66.25	65.61	65.43	65.18	63.52
21	65.50	---				---	69.01	66.23	65.59	65.42	64.88	63.56
22	65.58	---				---	68.75	66.19	65.76	65.40	64.66	63.55
23	65.57	---				---	68.61	66.17	66.04	65.37	64.68	63.59
24	65.52	---				---	69.05	66.11	66.02	65.41	64.67	63.55
25	65.50	---				---	69.07	65.93	65.87	65.40	64.60	63.51
26	65.51	---				---	69.00	65.80	65.78	65.36	64.60	63.51
27	65.50	---				72.49	68.98	65.50	65.70	65.36	64.62	63.52
28	65.50	---				72.55	68.75	65.91	65.67	65.40	64.65	63.56
29	65.47	---				72.00	68.64	66.14	65.77	65.47	64.60	63.46
30	65.43	---				71.02	68.60	66.20	65.82	65.54	64.28	63.60
31	65.45	---				70.78	---	66.32	---	65.55	64.05	---
TOTAL	---	---				---	2137.05	2068.24	1973.70	2033.78	2020.59	1912.50
MEAN	---	---				---	71.23	67.36	65.79	65.61	65.18	63.75
MAX	---	---				---	75.12	68.98	66.53	66.20	65.70	64.25
MIN	---	---				---	68.60	65.50	65.44	65.36	64.05	63.46

06329500 YELLOWSTONE RIVER NEAR SIDNEY, MT

LOCATION.--Lat 47°40'42", long 104°09'22", in SW¼NE¼SW¼ sec.9, T.22 N., R.59 E., Richland County, Hydrologic Unit 10100004, on left bank at Montana-Dakota Utilities Company powerplant, 0.2 mi (0.3 km) downstream from bridge on State Highway 23, 2.5 mi (4.0 km) south of Sidney, 3.0 mi (4.8 km) downstream from Fox Creek, and 30 mi (48 km) upstream from mouth.

DRAINAGE AREA.--69,103 mi² (178,977 km²). Area at site 4.5 mi (7.2 km) upstream, 68,812 mi² (178,223 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1910 to September 1931 (published as "at Intake"), October 1933 to current year. If monthly figures of diversions to Lower Yellowstone Canal at Intake are 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, 1966-70 published in WSP 2116, and 1971 to current year are published in annual reports.

GAGE.--Water-stage recorder. Datum of gage is 1,881.3 ft (573.42 m) National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Jan. 1, 1911, to Sept. 30, 1931, nonrecording gage at site 32 miles (51 km) upstream at different datum. Apr. 9, 1934, to May 16, 1945, water-stage recorder at two sites within 500 ft (150 m) of highway bridge 0.2 mi (0.3 km) upstream and May 17, 1945, to Apr. 3, 1952, nonrecording gage on same bridge at datum 1.36 ft (0.415 m) higher. Apr. 4, 1952, to Nov. 19, 1967, water-stage recorder at site 4.5 mi (7.2 km) upstream at different datum.

REMARKS.--Water-discharge records good except those for winter period, which are poor. Some regulation on tributary streams. Diversion for irrigation of about 1,250,000 acres (5,060 km²) 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 mi (58.9 km) upstream for irrigation of about 52,000 acres (210 km²) of which about one-third lies above station.

AVERAGE DISCHARGE.--67 years, 13,140 ft³/s (372.1 m³/s), 9,520,000 acre-ft/yr (11.7 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge observed, 159,000 ft³/s (4,500 m³/s) June 2, 1921, gage height, 12.6 ft (3.84 m), site and datum then in use; maximum gage height observed, 21.85 ft (6.660 m) Mar. 22, 1947, site and datum then in use, backwater from ice; minimum discharge, 470 ft³/s (13.3 m³/s) May 17, 1961, gage height, 2.73 ft (0.832 m), site and datum then in use.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 47,000 ft³/s (1,330 m³/s) Mar. 19; maximum gage height, 19.57 ft (5.965 m) Mar. 19, backwater from ice; minimum daily discharge, 3,900 ft³/s (110 m³/s) Nov. 21.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12000	9200	9400	5600	5800	8400	16800	13100	29400	27700	11100	7430
2	11700	9610	9400	5400	5800	8300	15600	13000	29100	26900	10700	7130
3	11500	9610	9400	5200	6000	8500	14600	12900	24700	26600	10100	7060
4	11200	9730	8800	5200	6200	8800	14300	13200	21500	26100	9390	6830
5	11000	10100	8600	5000	6500	9000	13300	13800	18700	24200	8690	6730
6	10900	10100	8400	5200	6400	9400	12700	14500	17100	22200	8220	6570
7	10900	10200	8000	5400	6300	9900	12500	14500	16700	20900	7700	6350
8	10700	10100	7800	5600	6200	11000	12900	14200	18800	20100	7230	6100
9	10600	10200	7800	5800	6400	12000	14000	14500	19600	18600	6890	5850
10	10500	10600	8000	6000	6500	13000	15800	15300	22600	17200	6570	5790
11	10400	10700	8200	6000	6600	16500	16900	15600	19400	16700	6280	5610
12	10200	10800	8200	6000	6600	17000	17100	15400	16700	15700	6160	5490
13	10100	10600	8400	5800	6800	19000	16800	14500	19100	14800	6160	5490
14	10100	7000	8600	5800	6800	23500	16400	13400	17800	13800	5970	5550
15	10100	4800	9000	5800	6800	28500	16300	12500	19200	13000	5940	5640
16	10100	4400	9000	6000	6800	34000	15600	11400	23400	12600	6030	5790
17	10100	4300	8500	6200	6800	35000	15600	11400	23900	12200	6510	5820
18	10000	4200	8000	6400	7000	39000	16900	11100	23200	11700	7600	5820
19	9880	4100	7800	6600	7200	47000	16400	11500	28400	11100	7800	5790
20	9920	4000	8000	7000	7500	43000	15700	12400	26700	10500	7450	5700
21	9920	3900	8200	7100	7800	39000	15500	14500	27200	9880	7030	5580
22	9920	5000	8400	7000	8000	36000	15400	15400	31000	9390	6860	5430
23	9880	7000	8600	6800	8000	33000	15200	16300	32100	9590	6860	5370
24	9760	8000	8800	6600	8000	36000	14500	16600	30300	9260	6990	5340
25	9730	9400	8800	6600	8200	28000	13700	17200	28800	8940	7030	5250
26	9840	10000	8800	6400	8500	30000	13300	19400	27200	9390	7060	5190
27	9760	9800	8600	6200	8700	31000	13500	21600	26400	10800	7160	5160
28	9690	9600	8400	6000	8700	25000	13600	23200	26300	10100	7290	5250
29	9690	9600	7800	5900	---	21000	13600	25100	27700	9840	7670	5310
30	9500	9600	6800	5800	---	20000	13300	27900	28200	10100	7600	5460
31	7700	---	6200	5800	---	18000	---	32200	---	10300	7600	---
TOTAL	317290	246250	258700	186200	196900	715800	448000	497600	723000	470010	231620	175880
MEAN	10240	8208	8345	6006	7032	23090	14930	16050	24100	15160	7472	5863
MAX	12000	10800	9400	7100	8700	47000	17100	32200	32100	27700	11100	7430
MIN	7700	3900	6200	5000	5800	8300	12500	11100	16700	8940	5940	5160
AC-FT	629300	488400	513100	369300	390600	1420000	888600	987000	1434000	932300	459400	348900

CAL YR 1978 TOTAL 6718320 MEAN 18410 MAX 104000 MIN 3900 AC-FT 13330000
WTR YR 1979 TOTAL 4467250 MEAN 12240 MAX 47000 MIN 3900 AC-FT 8861000

06329500 YELLOWSTONE RIVER NEAR SIDNEY, MT--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1948 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: January 1951 to current year.
WATER TEMPERATURES: January 1951 to current year.
SUSPENDED SEDIMENT DISCHARGE: July 1972 to current year.

INSTRUMENTATION.--Temperature recorder April to November 1974, May to September 1975, and July 1977 to current year.

REMARKS.--Prior to July 1972, sediment sampling and record computation under supervision of U.S. Army Corps of Engineers. Flow affected by ice during most of winter months. Ice flows and weak ice conditions prevented sediment sampling during Nov. 16 to Dec. 11.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 2,780 micromhos Jan. 14, 1951; minimum daily, 193 micromhos Aug. 15, 1964.
WATER TEMPERATURES: Maximum daily, 29.0°C July 23, 1960; minimum daily, 0.0°C on many days during winter periods
SEDIMENT CONCENTRATIONS: Maximum daily, 26,800 mg/L May 8, 1975; minimum daily, 8 mg/L Jan. 9, 1973.
SEDIMENT LOADS: Maximum daily, 3,030,000 tons (2,750,000 metric tons) May 8, 1975; minimum daily, 130 tons (118 metric tons) Jan. 9, 1975.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,220 micromhos Apr. 6; minimum daily, 304 micromhos June 20.
WATER TEMPERATURES: Maximum, 27.0°C July 20-23; minimum, 0.0°C on many days during November to March.
SEDIMENT CONCENTRATIONS: Maximum daily mean, 2,600 mg/L Mar. 26; minimum daily mean, 14 mg/L Feb. 14.
SEDIMENT LOADS: Maximum daily, 211,000 tons (191,000 metric tons) Mar. 26; minimum daily, 257 tons (233 metric tons) Feb. 14.

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE (DEG C) (00010)	TUR-BID-ITY (JTU) (00070)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)
OCT											
04...	1300	11300	739	8.6	7.0	12.5	30	3.1	9.9	99	27
24...	1300	9020	840	8.7	15.5	8.5	1	--	10.4	97	22
NOV											
14...	1200	7000	820	8.3	-3.0	3.5	20	1.9	12.3	98	38
29...	1300	9600	928	8.1	-6.0	1.5	7	--	12.3	93	12
DEC											
13...	1500	8220	950	8.3	4.0	.5	2	1.5	12.3	90	23
20...	1400	8000	932	8.1	-5.0	.0	3	--	12.7	93	15
JAN											
10...	1500	5480	1070	7.8	-20.0	.0	3	2.8	11.9	86	--
30...	1345	5800	838	7.9	-12.5	.0	3	--	10.7	79	15
FEB											
15...	1300	6890	960	8.0	-25.0	.0	6	5.9	10.2	73	18
27...	1130	8700	920	8.1	-5.0	2.0	5	--	10.4	78	20
MAR											
08...	1200	11000	910	8.0	5.0	.0	4	--	10.4	76	17
18...	1300	39000	750	7.9	.0	.5	610	510	10.0	74	34
APR											
13...	1400	16800	928	8.3	2.0	4.5	230	--	11.1	93	56
29...	1600	13600	1130	8.3	8.0	10.0	80	80	10.3	97	26
MAY											
16...	1500	11500	998	8.5	25.0	15.0	--	150	8.9	96	150
30...	1500	27900	424	8.5	16.0	16.0	--	240	8.1	87	38
JUN											
13...	1300	19400	455	8.1	30.0	20.0	--	85	7.7	92	23
26...	1430	27300	394	8.2	26.5	20.0	--	180	7.9	92	32
JUL											
10...	1100	17300	544	8.4	19.0	22.5	--	14	7.8	96	15
25...	2000	9350	620	8.2	20.5	25.5	--	65	7.3	95	18
30...	1700	--	650	8.5	19.0	23.0	--	--	7.8	96	--
30...	1800	--	--	--	--	23.0	--	--	7.8	96	--
30...	1900	--	658	8.6	18.5	23.0	--	--	7.8	97	--
30...	2000	--	--	--	--	23.0	--	--	7.7	95	--
30...	2100	--	--	--	--	23.0	--	--	7.5	93	--
30...	2200	--	658	8.3	18.5	23.0	--	--	7.4	91	--
30...	2300	--	--	--	--	22.5	--	--	7.3	89	--
30...	2400	--	--	--	--	22.5	--	--	7.2	88	--
31...	0100	--	--	--	--	22.5	--	--	7.1	87	--
31...	0200	--	--	--	--	22.0	--	--	7.1	86	--
31...	0300	--	--	--	--	22.0	--	--	7.1	86	--
31...	0400	--	--	--	--	22.0	--	--	7.1	86	--
31...	0500	--	620	8.5	14.0	21.5	--	--	7.1	85	--
31...	0600	--	--	--	--	21.5	--	--	7.1	85	--
31...	0700	--	638	8.5	15.0	21.5	--	--	7.1	85	--
31...	0800	--	--	--	--	21.5	--	--	7.2	86	--
31...	0900	--	--	--	--	21.5	--	--	7.2	86	--
31...	1000	--	640	8.4	22.0	22.0	--	--	7.3	88	--
31...	1100	--	--	--	--	22.0	--	--	7.3	88	--
31...	1200	--	--	--	--	22.5	--	--	7.4	90	--
31...	1300	10600	685	8.5	27.0	22.5	--	140	7.5	92	21
31...	1400	--	--	--	--	23.0	--	--	7.5	93	--
31...	1500	--	--	--	--	23.0	--	--	7.5	93	--
31...	1600	--	669	8.3	--	23.5	--	--	7.6	95	--
31...	1700	--	660	8.4	30.0	24.0	--	--	7.6	96	--
AUG											
14...	1500	5970	766	8.4	21.5	18.5	--	29	8.6	97	18
SEP											
07...	1300	6350	802	8.5	26.0	19.5	--	110	8.2	95	14
18...	1200	5820	772	8.5	19.0	17.0	--	23	8.6	94	22

06329500 YELLOWSTONE RIVER NEAR SIDNEY, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	COLIFORM, TOTAL, IMMED. (COLS. PER 100 ML) (31501)	COLIFORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARDNESS (MG/L AS CACO3) (00900)	HARDNESS, NONCARBONATE (MG/L CACO3) (00902)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM ADSORPTION RATIO (00931)	SODIUM+POTASSIUM DISSOLVED (MG/L AS NA) (00933)
OCT											
04...	K37	K8	K9	250	90	62	23	69	37	1.9	--
24...	K17	K8	K14	--	--	--	--	--	--	--	--
NOV											
14...	240	K14	48	290	120	68	30	76	36	1.9	--
29...	K18	K4	K24	--	--	--	--	--	--	--	--
DEC											
13...	22	K5	K8	320	130	75	32	90	38	2.2	--
20...	K12	<1	K1	--	--	--	--	--	--	--	--
JAN											
10...	47	K17	22	330	130	78	34	87	36	2.1	--
30...	97	K34	K24	--	--	--	--	--	--	--	--
FEB											
15...	88	32	24	300	120	71	29	76	35	1.9	--
27...	82	K27	K10	--	--	--	--	--	--	--	--
MAR											
08...	110	34	63	--	--	--	--	--	--	--	--
18...	K1100	350	190	200	91	46	21	73	43	2.2	--
APR											
13...	2200	K67	1600	--	--	--	--	--	--	--	--
29...	K20	110	K9	330	140	87	39	120	44	2.9	--
MAY											
16...	K31	K34	K13	300	140	71	30	95	40	2.4	--
30...	--	K24	96	--	--	--	--	--	--	--	--
JUN											
13...	K62	K74	110	150	55	35	14	37	35	1.3	40
26...	--	120	80	--	--	--	--	--	--	--	--
JUL											
10...	K27	K32	93	200	86	39	24	40	30	1.2	43
25...	K72	120	110	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
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31...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
31...	--	99	94	200	66	44	21	61	40	1.9	65
31...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
AUG											
14...	K10	K17	95	--	--	--	--	--	--	--	--
SEP											
07...	K60	<1	98	--	--	--	--	--	--	--	--
18...	K10	K13	K20	250	89	55	27	73	39	2.0	77

K - Results based on colony count outside the acceptable range (non-ideal colony count).

06329500 YELLOWSTONE RIVER NEAR SIDNEY, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	ALKALINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DISSOLVED (MG/L AS CO2) (00405)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)	SOLIDS, DISSOLVED (TONS PER DAY) (70302)
OCT											
04...	3.4	160	--	210	11	.4	10	473	485	.64	14400
24...	--	--	--	--	--	--	--	552	--	.75	13400
NOV											
14...	3.8	170	--	250	19	.4	9.8	558	560	.76	10500
29...	--	--	--	--	--	--	--	656	--	.89	17000
DEC											
13...	4.8	190	--	300	18	.4	12	641	647	.87	14200
20...	--	200	--	--	--	--	--	618	--	.84	13300
JAN											
10...	4.9	200	--	310	18	.4	13	715	666	.97	10600
30...	--	--	--	--	--	--	--	580	--	.79	9080
FEB											
15...	4.0	180	--	260	18	.4	14	603	581	.82	11200
27...	--	--	--	--	--	--	--	595	--	.81	14000
MAR											
08...	--	170	--	--	--	--	--	574	--	.78	17000
18...	5.2	110	--	230	9.6	.3	7.1	455	459	.62	47900
APR											
13...	--	170	--	--	--	--	--	780	--	1.06	35400
29...	5.0	190	--	370	15	.4	9.6	792	740	1.08	29100
MAY											
16...	4.0	160	--	310	18	.4	7.6	669	632	.91	20800
30...	--	85	--	--	--	--	--	265	--	.36	20000
JUN											
13...	2.5	90	1.4	120	6.8	.8	9.3	284	280	.39	14900
26...	--	--	--	--	--	--	--	269	--	.37	19800
JUL											
10...	3.0	110	--	170	7.9	.3	10	349	360	.47	16300
25...	--	--	--	--	--	--	--	410	--	.56	10400
30...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
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31...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
31...	4.2	130	--	200	10	.4	9.6	419	428	.57	12000
31...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
AUG											
14...	--	160	--	--	--	--	--	500	--	.68	8060
SEP											
07...	--	160	--	--	--	--	--	537	--	.73	9210
18...	3.9	160	--	240	12	.5	7.4	507	515	.69	7970

06329500 YELLOWSTONE RIVER NEAR SIDNEY, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	SOLIDS, SUSP. TOTAL, RESIDUE AT 110 DEG. C (MG/L) (70299)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, AMMONIA TOTAL (MG/L AS NH4) (71845)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, NH4 + ORG. SUSP. TOTAL (MG/L AS N) (00624)	NITRO-GEN, AMMONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, DIS-SOLVED (MG/L AS N) (00602)
OCT											
04...	73	.00	--	.02	--	.60	.62	.29	.33	.62	--
24...	6	.08	--	.00	--	.40	.40	--	--	.48	--
NOV											
14...	44	.25	--	.02	--	.31	.33	.00	.41	.58	--
29...	21	.53	--	.01	--	.44	.45	--	--	.98	--
DEC											
13...	1	.45	--	.02	--	.23	.25	.01	.24	.70	--
20...	16	.52	--	.01	--	.20	.21	--	--	.73	--
JAN											
10...	8	.63	--	.03	--	.37	.40	.00	--	1.0	--
30...	8	.51	--	.14	--	.13	.27	--	--	.78	--
FEB											
15...	23	.53	--	.12	--	.20	.32	.04	.28	.85	--
27...	20	.55	--	.06	--	.23	.29	--	--	.84	--
MAR											
08...	6	.54	--	.07	--	.33	.40	--	--	.94	--
18...	726	.52	--	.17	--	1.5	1.7	--	--	2.2	--
APR											
13...	458	.28	--	.04	.05	.90	.94	--	--	1.2	--
29...	97	.22	--	.02	.02	.53	.55	.00	--	.77	--
MAY											
16...	168	.05	--	.01	.01	.54	.55	.32	.23	.60	--
30...	784	.34	--	.07	.08	1.0	1.1	--	--	1.4	--
JUN											
13...	154	.16	--	.01	.01	.53	.54	.20	.34	.70	--
26...	360	.22	--	.03	.04	.61	.64	--	--	.86	--
JUL											
10...	36	.04	--	.04	.05	.34	.38	.26	.12	.42	--
25...	153	.05	--	.01	.01	.56	.57	--	--	.62	--
30...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
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30...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
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31...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
31...	270	.12	--	.00	.00	.68	.68	.08	.60	.80	--
31...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
AUG											
14...	87	.05	--	.01	.01	.48	.49	--	--	.54	--
SEP											
07...	176	.02	--	.02	.02	.95	.97	--	--	.99	--
18...	--	.00	.02	.00	.00	.54	.54	.00	.58	.54	.60

06329500 YELLOWSTONE RIVER NEAR SIDNEY, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHATE, TOTAL (MG/L AS PO4) (00650)	PHOS-PHORUS TOTAL (MG/L AS PO4) (71886)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC SUS-PENDED TOTAL (UG/L AS AS) (01001)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BARIUM, SUS-PENDED RECOV-ERABLE (UG/L AS BA) (01006)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)
OCT											
04...	2.7	.08	--	--	.00	--	--	--	--	--	--
24...	2.1	.03	--	--	--	--	--	--	--	--	--
NOV											
14...	2.6	.02	--	--	.00	4	--	5	0	0	0
29...	4.3	.02	--	--	--	--	--	--	--	--	--
DEC											
13...	3.1	.02	--	--	.02	4	--	4	0	0	60
20...	3.2	.01	--	--	--	--	--	--	--	--	--
JAN											
10...	4.6	.03	--	--	.02	--	--	--	--	--	--
30...	3.5	.03	--	--	--	--	--	--	--	--	--
FEB											
15...	3.8	.05	--	--	.04	--	--	--	--	--	--
27...	3.7	.05	--	--	--	--	--	--	--	--	--
MAR											
08...	4.2	.03	--	--	--	--	--	--	--	--	--
18...	9.8	.17	--	--	.07	5	--	3	200	200	0
APR											
13...	5.4	.26	.80	.80	--	--	--	--	--	--	--
29...	3.4	.09	.28	.28	.01	--	--	--	--	--	--
MAY											
16...	2.7	.12	.37	.37	.00	--	--	--	--	--	--
30...	6.4	.43	1.3	1.3	--	--	--	--	--	--	--
JUN											
13...	3.1	.23	.71	.71	.03	4	--	3	100	100	0
26...	3.8	.31	.95	.95	--	--	--	--	--	--	--
JUL											
10...	1.9	.05	--	.15	.01	--	--	--	--	--	--
25...	2.7	.05	--	.15	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
31...	3.5	.07	--	.21	.00	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
AUG											
14...	2.4	.02	--	.06	--	--	--	--	--	--	--
SEP											
07...	4.4	.11	--	.34	--	--	--	--	--	--	--
18...	2.4	.04	--	.12	.00	6	1	5	0	0	60

06329500 YELLOWSTONE RIVER NEAR SIDNEY, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD) (01027)	CADMIUM SUS-PENDED RECOV-ERABLE (UG/L AS CD) (01026)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	CHRO-MIUM, SUS-PENDED RECOV. (UG/L AS CR) (01031)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO) (01037)	COBALT, SUS-PENDED RECOV-ERABLE (UG/L AS CO) (01036)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	COPPER, SUS-PENDED RECOV-ERABLE (UG/L AS CU) (01041)
OCT											
04...	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--
NOV											
14...	5	5	0	0	0	0	0	0	0	3	2
29...	--	--	--	--	--	--	--	--	--	--	--
DEC											
13...	1	0	2	10	10	0	0	0	<3	3	1
20...	--	--	--	--	--	--	--	--	--	--	--
JAN											
10...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
FEB											
15...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
MAR											
08...	--	--	--	--	--	--	--	--	--	--	--
18...	1	0	5	20	20	0	6	6	0	27	26
APR											
13...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
MAY											
16...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
JUN											
13...	0	0	1	10	10	0	4	3	1	11	10
26...	--	--	--	--	--	--	--	--	--	--	--
SEP											
07...	--	--	--	--	--	--	--	--	--	--	--
18...	0	0	<1	10	0	10	0	0	<3	1	0

DATE	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	IRON, SUS-PENDED RECOV-ERABLE (UG/L AS FE) (01044)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	LEAD, SUS-PENDED RECOV-ERABLE (UG/L AS PB) (01050)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MANGA-NESE, SUS-PENDED RECOV. (UG/L AS MN) (01054)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)
OCT											
04...	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--
NOV											
14...	1	540	240	300	19	19	0	30	0	40	.5
29...	--	--	--	--	--	--	--	--	--	--	--
DEC											
13...	2	190	190	<10	22	19	3	10	6	4	.6
20...	--	--	--	--	--	--	--	--	--	--	--
JAN											
10...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
FEB											
15...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
MAR											
08...	--	--	--	--	--	--	--	--	--	--	--
18...	1	18000	18000	150	23	18	5	380	340	40	.5
APR											
13...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
MAY											
16...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
JUN											
13...	1	4800	4700	60	13	13	0	140	140	0	--
26...	--	--	--	--	--	--	--	--	--	--	--
SEP											
07...	--	--	--	--	--	--	--	--	--	--	--
18...	2	890	--	<10	0	0	0	50	50	5	.5

06329500 YELLOWSTONE RIVER NEAR SIDNEY, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	MERCURY SUSPENDED RECOVERABLE (UG/L AS HG) (71895)	MERCURY DISSOLVED (UG/L AS HG) (71890)	SELENIUM, TOTAL (UG/L AS SE) (01147)	SELENIUM, SUSPENDED TOTAL (UG/L AS SE) (01146)	SELENIUM, DISSOLVED (UG/L AS SE) (01145)	SILVER, TOTAL RECOVERABLE (UG/L AS AG) (01077)	SILVER, SUSPENDED RECOVERABLE (UG/L AS AG) (01076)	SILVER, DISSOLVED (UG/L AS AG) (01075)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN) (01092)	ZINC, SUSPENDED RECOVERABLE (UG/L AS ZN) (01091)	ZINC, DISSOLVED (UG/L AS ZN) (01090)
OCT											
04...	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--
NOV											
14...	.5	.0	2	0	2	0	0	0	0	0	10
29...	--	--	--	--	--	--	--	--	--	--	--
DEC											
13...	--	--	3	0	3	0	0	0	10	7	<3
20...	--	--	--	--	--	--	--	--	--	--	--
MAR											
08...	--	--	--	--	--	--	--	--	--	--	--
18...	.3	.2	2	1	1	0	0	0	90	70	20
JUN											
13...	--	.1	1	0	1	0	0	0	40	30	10
26...	--	--	--	--	--	--	--	--	--	--	--
SEP											
07...	--	--	--	--	--	--	--	--	--	--	--
18...	.5	.0	1	0	1	0	0	0	10	7	<3

DATE	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CARBON, ORGANIC DISSOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUSPENDED TOTAL (MG/L AS C) (00689)	PCB, TOTAL (UG/L) (39516)	PCB, TOTAL IN BOTTOM MATERIAL (UG/KG) (39519)	ALDRIN, TOTAL (UG/L) (39330)	ALDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG) (39333)	CHLORDANE, TOTAL (UG/L) (39350)	CHLORDANE, TOTAL IN BOTTOM MATERIAL (UG/KG) (39351)	DDD, TOTAL (UG/L) (39360)	DDD, TOTAL IN BOTTOM MATERIAL (UG/KG) (39363)
OCT											
04...	4.1	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--
NOV											
14...	--	3.3	.2	ND	ND	ND	ND	ND	ND	ND	ND
29...	3.5	--	--	--	--	--	--	--	--	--	--
DEC											
13...	--	4.0	.1	--	--	--	--	--	--	--	--
20...	.2	--	--	--	--	--	--	--	--	--	--
JAN											
10...	2.9	--	--	--	--	--	--	--	--	--	--
30...	2.7	--	--	--	--	--	--	--	--	--	--
FEB											
15...	2.5	--	--	--	--	--	--	--	--	--	--
27...	4.7	--	--	--	--	--	--	--	--	--	--
MAR											
08...	3.7	--	--	ND	--	ND	--	ND	--	ND	--
18...	--	7.3	--	--	--	--	--	--	--	--	--
APR											
13...	8.8	--	--	--	--	--	--	--	--	--	--
29...	5.0	--	--	--	--	--	--	--	--	--	--
MAY											
16...	5.0	--	--	ND	ND	ND	ND	ND	ND	ND	ND
30...	15	--	--	--	--	--	--	--	--	--	--
JUN											
13...	--	6.1	1.1	--	--	--	--	--	--	--	--
26...	7.8	--	--	--	--	--	--	--	--	--	--
JUL											
10...	5.1	--	--	--	--	--	--	--	--	--	--
25...	5.8	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
31...	7.9	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
AUG											
14...	6.0	--	--	--	--	--	--	--	--	--	--
SEP											
07...	6.3	--	--	--	--	--	--	--	--	--	--
18...	--	3.3	.4	--	--	--	--	--	--	--	--

Whole water ND - Not detected at 0.01 µg/L level.
Bed material ND - Not detected at 0.1 µg/mg level.

06329500 YELLOWSTONE RIVER NEAR SIDNEY, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	DDE, TOTAL (UG/L) (39365)	DDE, TOTAL IN BOTTOM MATERIAL (UG/KG) (39368)	DDT, TOTAL (UG/L) (39370)	DDT, TOTAL IN BOTTOM MATERIAL (UG/KG) (39373)	DIAZINON, TOTAL (UG/L) (39570)	DIAZINON, TOTAL IN BOTTOM MATERIAL (UG/KG) (39571)	DIELDRIN TOTAL (UG/L) (39380)	DIELDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG) (39383)	ENDRIN, TOTAL (UG/L) (39390)	ENDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG) (39393)	ETHION, TOTAL (UG/L) (39598)
OCT												
04...	1300	--	--	--	--	--	--	--	--	--	--	--
NOV												
14...	1200	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
DEC												
13...	1500	--	--	--	--	--	--	--	--	--	--	--
MAR												
08...	1200	ND	--	ND	--	ND	--	ND	--	ND	--	ND
18...	1300	--	--	--	--	--	--	--	--	--	--	--
APR												
29...	1600	--	--	--	--	--	--	--	--	--	--	--
MAY												
16...	1500	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
JUN												
13...	1300	--	--	--	--	--	--	--	--	--	--	--
JUL												
10...	1100	--	--	--	--	--	--	--	--	--	--	--
31...	1300	--	--	--	--	--	--	--	--	--	--	--
SEP												
18...	1200	--	--	--	--	--	--	--	--	--	--	--

DATE	ETHION, TOTAL IN BOTTOM MATERIAL (UG/KG) (39399)	HEPTACHLOR, TOTAL (UG/L) (39410)	HEPTACHLOR, TOTAL IN BOTTOM MATERIAL (UG/KG) (39413)	HEPTACHLOR EPOXIDE TOTAL (UG/L) (39420)	HEPTACHLOR EPOXIDE TOT. IN BUTTOM MATL. (UG/KG) (39423)	LINDANE TOTAL (UG/L) (39340)	LINDANE TOTAL IN BOTTOM MATERIAL (UG/KG) (39343)	MALATHION, TOTAL (UG/L) (39530)	MALATHION, TOTAL IN BOTTOM MATERIAL (UG/KG) (39531)	METHOXYCHLOR, TOTAL (UG/L) (39480)	METHOXYCHLOR, TOT. IN BUTTOM MATL. (UG/KG) (39481)	METHYL PARATHION, TOTAL (UG/L) (39600)
OCT												
04...	--	--	--	--	--	--	--	--	--	--	--	--
NOV												
14...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
DEC												
13...	--	--	--	--	--	--	--	--	--	--	--	--
MAR												
08...	--	ND	--	ND	--	ND	--	ND	--	ND	--	ND
18...	--	--	--	--	--	--	--	--	--	--	--	--
APR												
29...	--	--	--	--	--	--	--	--	--	--	--	--
MAY												
16...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SEP												
18...	--	--	--	--	--	--	--	--	--	--	--	--

DATE	METHYL PARATHION, TOT. IN BUTTOM MATL. (UG/KG) (39601)	METHYL TRITHION, TOTAL (UG/L) (39790)	METHYL TRITHION, TOT. IN BUTTOM MATL. (UG/KG) (39791)	PARATHION, TOTAL (UG/L) (39540)	PARATHION, TOTAL IN BOTTOM MATERIAL (UG/KG) (39541)	TOXAPHENE, TOTAL (UG/L) (39400)	TOXAPHENE, TOTAL IN BOTTOM MATERIAL (UG/KG) (39403)	TOTAL TRITHION (UG/L) (39786)	TRITHION, TOTAL IN BOTTOM MATERIAL (UG/KG) (39787)	PHYTOPLANKTON, TOTAL (CELLS PER ML) (60050)	PERIPHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M (00573)
OCT											
04...	--	--	--	--	--	--	--	--	--	--	--
NOV											
14...	ND	ND	ND	ND	ND	ND	ND	ND	ND	2000	--
DEC											
13...	--	--	--	--	--	--	--	--	--	--	--
MAR											
08...	--	ND	--	ND	--	ND	--	ND	--	--	--
18...	--	--	--	--	--	--	--	--	--	2000	--
APR											
29...	--	--	--	--	--	--	--	--	--	--	--
MAY											
16...	ND	ND	ND	ND	ND	ND	ND	ND	ND	6600	--
JUN											
13...	--	--	--	--	--	--	--	--	--	1400	--
JUL											
10...	--	--	--	--	--	--	--	--	--	7800	--
31...	--	--	--	--	--	--	--	--	--	1800	.940
SEP											
18...	--	--	--	--	--	--	--	--	--	9000	--

Whole water ND - Not detected at 0.01 µg/L level.
Bed material ND - Not detected at 0.1 µg/mg level.

06329500 YELLOWSTONE RIVER NEAR SIDNEY, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	PERI-PHYTON BIOMASS ASH WEIGHT G/SQ M (00572)	LENGTH OF EXPO-SURE (DAYS) (00022)	BIOMASS CHLORO-PHYLL RATIO PERI-PHYTON (UNITS) (70950)	CHLOR-A PERI-PHYTON CHROMO-GRAPHIC FLUORUM (MG/M2) (70957)	CHLOR-B PERI-PHYTON CHROMO-GRAPHIC FLUORUM (MG/M2) (70958)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70338)	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70340)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)	SED. SUSP. FALL DIAM. % FINER THAN .125 MM (70343)
OCT											
04...	--	--	--	--	--	156	4760	--	--	--	--
NOV											
14...	--	--	--	--	--	74	1400	--	--	--	--
DEC											
13...	--	--	--	--	--	18	399	--	--	--	--
MAR											
08...	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	1220	128000	52	65	75	87
APR											
29...	--	--	--	--	--	229	8410	--	--	--	--
MAY											
16...	--	--	--	--	--	242	7510	--	--	--	--
JUN											
13...	--	--	--	--	--	268	14000	--	--	--	--
JUL											
10...	--	--	--	--	--	163	7610	--	--	--	--
31...	.550	21	.975	.400	.000	280	8010	--	--	--	--
SEP											
18...	--	--	--	--	--	87	1370	--	--	--	--

DATE	SED. SUSP. FALL DIAM. % FINER THAN .250 MM (70344)	SED. SUSP. FALL DIAM. % FINER THAN .500 MM (70345)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	BED MAT. FALL DIAM. % FINER THAN .062 MM (80158)	BED MAT. FALL DIAM. % FINER THAN .125 MM (80159)	BED MAT. FALL DIAM. % FINER THAN .250 MM (80160)	BED MAT. FALL DIAM. % FINER THAN .500 MM (80161)	BED MAT. FALL DIAM. % FINER THAN 1.00 MM (80162)	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM (80169)	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM (80170)	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM (80171)
OCT											
04...	--	--	70	0	12	92	100	--	--	--	--
NOV											
14...	--	--	78	--	--	--	--	--	--	--	--
DEC											
13...	--	--	77	--	--	--	--	--	--	--	--
MAR											
08...	--	--	--	--	--	--	--	--	--	--	--
18...	99	100	--	--	--	--	--	--	--	--	--
APR											
29...	--	--	73	--	--	--	--	--	--	--	--
MAY											
16...	--	--	84	40	89	99	100	--	--	--	--
JUN											
13...	--	--	61	60	94	100	--	--	--	--	--
JUL											
10...	--	--	60	1	5	74	97	98	99	99	100
31...	--	--	91	0	0	89	100	--	--	--	--
SEP											
18...	--	--	91	2	47	98	100	--	--	--	--

06329500 YELLOWSTONE RIVER NEAR SIDNEY, MT--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	742	822	903	881	873	885	1100	1120	390	342	652	725
2	752	825	869	891	883	891	1140	1120	369	340	641	761
3	751	808	848	916	895	895	1160	1130	413	341	672	769
4	752	814	842	947	905	899	1180	1130	470	342	778	754
5	756	814	843	973	916	895	1200	1090	519	351	808	748
6	759	814	868	1000	914	891	1220	1040	540	344	782	739
7	769	825	889	1040	926	893	1200	1020	564	384	759	738
8	767	827	908	1050	935	893	1200	1010	560	390	766	737
9	768	814	925	1040	939	896	1180	1010	511	397	755	740
10	770	819	935	1040	935	886	1120	1010	410	427	743	739
11	771	797	944	1030	928	865	1070	981	355	422	740	738
12	790	794	958	1010	924	837	1120	953	377	451	731	741
13	800	806	960	1000	910	823	1130	931	420	456	736	750
14	808	804	950	985	902	763	1110	942	458	463	751	762
15	808	818	923	967	895	697	1090	983	480	481	767	780
16	810	828	902	943	895	666	1130	1000	469	487	766	764
17	820	868	892	919	896	699	1190	991	391	499	765	760
18	821	890	899	901	890	716	1150	990	315	503	752	761
19	818	900	899	887	892	741	1120	984	338	515	735	769
20	820	905	911	878	890	727	1170	963	304	527	719	771
21	822	930	902	876	892	783	1210	937	325	541	699	779
22	819	1000	899	873	883	842	1210	871	380	561	690	780
23	822	983	900	864	869	885	1160	776	348	572	678	781
24	820	954	900	861	872	912	1130	718	350	595	699	787
25	820	940	884	859	882	935	1130	715	368	619	702	780
26	826	951	868	855	878	917	1150	719	380	612	693	789
27	827	975	859	852	874	943	1140	670	390	615	688	801
28	831	967	848	852	875	975	1110	614	375	630	684	805
29	829	948	888	854	---	1020	1130	536	370	631	694	811
30	830	951	853	859	---	1060	1130	451	339	629	707	813
31	829	---	862	866	---	1090	---	422	---	630	723	---
MEAN	798	872	895	928	899	865	1150	898	409	487	725	766

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	16.5	15.5	16.0	7.0	6.0	6.5	.0	.0	.0	.0	.0	.0
2	16.0	14.0	15.0	7.5	6.5	7.0	.0	.0	.0	.0	.0	.0
3	14.0	13.0	13.5	7.5	7.0	7.5	.0	.0	.0	.0	.0	.0
4	13.5	12.0	12.5	7.5	7.0	7.5	.0	.0	.0	.0	.0	.0
5	11.5	11.0	11.0	7.0	6.0	6.5	.0	.0	.0	.0	.0	.0
6	11.5	10.5	11.0	5.5	5.0	5.5	.0	.0	.0	.0	.0	.0
7	12.0	10.5	11.0	6.5	5.0	6.0	.0	.0	.0	.0	.0	.0
8	12.0	11.0	11.5	7.5	6.5	7.0	.0	.0	.0	.0	.0	.0
9	12.5	11.0	12.0	7.5	5.0	6.5	.0	.0	.0	.0	.0	.0
10	13.0	11.5	12.5	5.0	2.5	3.5	.0	.0	.0	.0	.0	.0
11	13.0	12.0	12.5	2.5	1.5	2.0	.0	.0	.0	.0	.0	.0
12	12.5	11.0	12.0	3.0	1.0	2.0	.0	.0	.0	.0	.0	.0
13	11.0	10.0	10.5	.5	.0	.5	.0	.0	.0	.0	.0	.0
14	10.0	9.0	9.5	.5	.0	.0	.0	.0	.0	.0	.0	.0
15	10.5	9.0	10.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
16	11.0	9.5	10.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
17	11.0	10.0	10.5	.0	.0	.0	.0	.0	.0	.0	.0	.0
18	10.5	10.0	10.5	.0	.0	.0	.0	.0	.0	.0	.0	.0
19	11.5	10.0	11.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
20	11.5	10.5	11.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
21	11.5	10.5	11.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
22	10.0	9.5	9.5	.0	.0	.0	.0	.0	.0	.0	.0	.0
23	9.5	8.5	9.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
24	9.5	9.0	9.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
25	9.0	8.0	8.5	.0	.0	.0	.0	.0	.0	.0	.0	.0
26	8.5	7.5	8.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
27	8.0	7.5	8.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
28	8.5	8.0	8.5	.0	.0	.0	.0	.0	.0	.0	.0	.0
29	8.5	8.0	8.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
30	8.5	7.5	8.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
31	7.5	7.0	7.0	---	---	---	.0	.0	.0	.0	.0	.0
MONTH	16.5	7.0	10.5	7.5	.0	2.5	.0	.0	.0	.0	.0	.0

06329500 YELLOWSTONE RIVER NEAR SIDNEY, MT--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	.0	.0	.0	.0	.0	.0	---	---	---	11.0	9.5	10.5
2	.0	.0	.0	.0	.0	.0	---	---	---	12.0	9.5	10.5
3	.0	.0	.0	.0	.0	.0	4.0	2.0	3.0	11.0	10.0	10.5
4	.0	.0	.0	.0	.0	.0	4.0	3.0	3.5	10.0	9.5	10.0
5	.0	.0	.0	.0	.0	.0	3.0	1.5	2.5	10.5	9.5	10.0
6	.0	.0	.0	.0	.0	.0	4.0	2.0	3.0	11.0	10.0	10.5
7	.0	.0	.0	.0	.0	.0	4.0	3.5	3.5	11.0	10.0	10.5
8	.0	.0	.0	.0	.0	.0	5.5	3.0	4.5	10.5	9.0	10.0
9	.0	.0	.0	.0	.0	.0	7.5	5.0	6.0	9.5	8.5	9.0
10	.0	.0	.0	.0	.0	.0	6.5	5.5	6.0	8.5	8.0	8.0
11	.0	.0	.0	.0	.0	.0	6.0	5.5	6.0	9.5	7.0	8.0
12	.0	.0	.0	.0	.0	.0	5.5	4.5	5.5	11.5	9.0	10.0
13	.0	.0	.0	.0	.0	.0	5.0	4.0	4.5	12.0	10.5	11.0
14	.0	.0	.0	.0	.0	.0	6.0	4.0	5.0	13.5	10.5	12.0
15	.0	.0	.0	.0	.0	.0	7.5	5.0	6.0	15.0	12.0	13.5
16	.0	.0	.0	.0	.0	.0	9.0	6.0	7.5	17.5	14.0	16.0
17	.0	.0	.0	---	---	---	11.0	8.5	9.5	17.5	15.0	16.0
18	.0	.0	.0	---	---	---	13.5	10.5	12.0	16.0	14.0	15.0
19	.0	.0	.0	---	---	---	12.5	11.0	11.5	15.5	15.0	15.0
20	.0	.0	.0	---	---	---	11.5	10.0	10.5	16.5	14.5	15.5
21	.0	.0	.0	---	---	---	11.5	10.0	11.0	17.0	14.5	15.5
22	.0	.0	.0	---	---	---	11.0	10.0	10.5	16.5	15.0	15.5
23	.0	.0	.0	---	---	---	10.0	8.0	9.0	18.0	15.0	16.5
24	.0	.0	.0	---	---	---	8.0	7.5	7.5	19.0	16.5	17.5
25	.0	.0	.0	---	---	---	8.0	7.0	7.5	20.5	18.0	19.0
26	.0	.0	.0	---	---	---	9.0	7.5	8.0	21.0	19.0	20.0
27	.0	.0	.0	---	---	---	10.0	8.0	9.0	21.0	19.5	20.5
28	.0	.0	.0	---	---	---	10.0	8.5	9.0	20.5	18.5	20.0
29	---	---	---	---	---	---	10.0	8.0	9.0	18.5	16.5	17.5
30	---	---	---	---	---	---	10.5	9.0	10.0	17.0	16.0	16.5
31	---	---	---	---	---	---	---	---	---	16.0	15.0	15.5
MONTH	.0	.0	.0	.0	.0	.0	13.5	1.5	7.0	21.0	7.0	13.5

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	15.0	13.5	14.5	23.0	21.5	22.0	25.5	23.0	24.5	22.5	21.0	22.0
2	15.5	14.0	14.5	23.5	22.0	22.5	25.5	24.0	24.5	22.5	21.0	22.0
3	16.5	14.5	15.5	24.0	22.5	23.0	24.5	23.5	24.0	23.5	21.0	22.5
4	18.5	16.0	17.0	23.0	22.0	22.5	24.0	22.5	23.0	23.5	22.0	22.5
5	19.5	17.5	18.5	23.0	21.5	22.0	23.5	22.0	22.5	22.0	21.0	21.5
6	20.0	18.0	19.0	23.5	21.5	22.0	25.0	22.5	24.0	21.5	20.0	21.0
7	19.0	17.5	18.0	24.0	22.0	23.0	24.5	23.5	24.0	21.0	19.5	20.5
8	18.5	16.5	17.5	25.5	23.5	24.0	24.0	22.5	23.5	22.0	20.0	21.0
9	18.5	17.0	18.0	23.5	22.5	23.0	24.0	22.0	23.0	22.5	21.0	22.0
10	18.0	16.5	17.5	25.0	22.5	23.5	23.0	21.0	22.0	22.0	19.5	21.0
11	19.0	17.0	18.0	24.5	23.0	24.0	23.5	21.0	22.5	19.5	18.5	19.0
12	21.0	18.0	19.5	23.0	22.5	22.5	23.5	22.0	22.5	19.0	16.5	17.5
13	22.5	20.0	21.0	22.5	21.5	22.0	22.0	20.5	21.0	16.5	16.0	16.5
14	21.5	20.0	20.5	22.5	21.0	22.0	20.5	18.5	19.0	16.5	15.0	16.0
15	20.5	19.5	20.0	21.5	20.5	21.0	20.0	17.5	18.5	17.5	15.5	16.5
16	21.0	19.5	20.5	23.0	20.5	21.5	20.5	19.0	20.0	18.0	16.5	17.5
17	20.0	18.5	19.0	24.0	21.5	23.0	22.0	20.0	21.0	19.0	17.5	18.0
18	19.0	18.0	18.5	25.5	22.5	24.0	23.5	21.5	22.5	19.0	17.5	18.5
19	18.5	17.5	18.0	26.5	23.5	25.0	23.5	22.0	23.0	19.0	17.5	18.5
20	19.0	17.0	18.0	27.0	24.5	26.0	23.0	22.0	22.5	18.5	17.5	18.0
21	19.5	17.5	18.5	27.0	25.5	26.5	23.5	21.5	22.5	18.5	17.0	17.5
22	19.0	18.5	18.5	27.0	25.5	26.0	23.5	22.0	22.5	18.5	17.5	18.0
23	19.0	17.5	18.5	27.0	25.0	26.0	22.5	21.0	22.0	18.5	17.0	17.5
24	20.0	18.0	19.0	26.5	24.5	25.0	22.0	20.5	21.5	19.0	17.0	18.0
25	19.5	19.0	19.5	25.0	23.5	24.5	21.5	20.5	21.0	19.0	17.0	18.0
26	20.5	18.5	19.5	24.5	23.0	24.0	21.5	20.0	21.0	19.5	18.0	18.5
27	21.0	19.5	20.0	25.0	23.0	24.0	21.0	20.0	20.5	19.0	18.0	18.5
28	21.5	20.0	21.0	25.5	23.0	24.0	22.0	20.0	21.0	18.5	17.0	18.0
29	22.5	20.5	21.5	25.0	24.0	24.5	22.5	20.5	21.5	18.0	17.0	17.5
30	22.5	21.5	22.0	24.5	23.0	23.5	22.5	21.0	22.0	17.0	16.0	16.5
31	---	---	---	24.5	22.5	23.5	23.0	21.5	22.5	---	---	---
MONTH	22.5	13.5	18.5	27.0	20.5	23.5	25.5	17.5	22.0	23.5	15.0	19.0

06329500 YELLOWSTONE RIVER NEAR SIDNEY, MT--Continued

SUSPENDED-SEDIMENT, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DAY	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	211	6840	54	1340	---	1020	25	378	27	423	63	1430
2	192	6070	57	1480	---	1020	25	364	26	407	53	1190
3	178	5530	57	1460	---	1020	24	337	26	421	43	987
4	158	4780	63	1660	---	950	22	309	25	418	37	879
5	131	3890	70	1910	---	929	21	283	24	421	34	802
6	118	3470	73	1990	---	907	22	309	22	380	31	787
7	116	3410	75	2070	---	864	25	364	21	357	31	829
8	115	3320	72	1960	---	842	30	454	22	368	31	921
9	112	3210	71	1960	---	842	35	548	22	380	108	3500
10	108	3060	73	2090	---	864	26	421	21	369	343	12000
11	97	2720	83	2400	---	886	24	389	20	356	439	19600
12	94	2590	100	2920	40	886	25	405	18	321	672	30800
13	94	2560	118	3380	21	476	25	391	16	294	883	45300
14	95	2590	77	1960	36	836	25	391	14	257	1220	77400
15	102	2780	60	778	52	1260	24	376	15	275	1810	139000
16	114	3110	---	713	53	1290	24	389	18	330	1240	114000
17	113	3080	---	697	53	1220	23	385	23	422	890	84100
18	93	2510	---	680	51	1100	22	380	30	567	1160	122000
19	84	2240	---	664	46	969	22	392	41	797	1080	137000
20	94	2520	---	540	37	799	21	397	56	1130	990	115000
21	96	2570	---	526	33	731	25	479	69	1450	982	103000
22	95	2540	---	675	34	771	33	624	79	1710	1060	103000
23	95	2550	---	945	37	859	42	771	88	1900	1040	92700
24	93	2450	---	1080	40	950	53	944	94	2030	1130	110000
25	87	2290	---	1270	43	1020	56	998	94	2080	1110	83900
26	82	2180	---	1350	45	1070	51	881	89	2040	2600	211000
27	76	2000	---	1320	46	1070	46	770	82	1930	2180	182000
28	72	1880	---	1300	44	998	43	697	73	1710	1400	86900
29	73	1910	---	1300	38	800	39	621	---	---	1050	59500
30	72	1850	---	1300	32	588	34	532	---	---	2020	109000
31	49	1020	---	---	28	469	30	470	---	---	1090	53000
TOTAL	---	93500	---	43238	---	28306	---	15449	---	23543	---	2101525

DAY	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	685	31100	250	8840	1540	122000	281	21000	287	8600	120	2410
2	602	25400	195	6840	918	72100	258	18700	172	4970	105	2020
3	531	20900	187	6510	692	46100	230	16500	190	5160	128	2440
4	462	17800	195	6950	620	35700	232	16300	900	22800	379	6990
5	437	15700	195	7270	586	29600	214	14000	1190	27900	231	4200
6	438	15000	184	7200	489	22600	212	12700	922	20500	162	2870
7	458	15500	161	6300	368	16600	189	10700	542	11300	153	2620
8	545	19000	141	5410	515	26100	236	12800	321	6270	150	2470
9	710	26800	142	5560	838	44300	202	10100	276	5130	147	2320
10	907	38700	182	7520	873	53300	167	7760	241	4280	138	2160
11	995	45400	223	9390	472	24700	172	7760	206	3490	109	1650
12	1020	47100	210	8730	320	16200	186	7880	162	2690	87	1290
13	980	44500	191	7480	281	14500	198	7910	119	1980	84	1250
14	890	39400	192	6950	251	12100	177	6600	93	1500	85	1270
15	836	36800	210	7090	280	14500	150	5260	90	1440	96	1460
16	820	34500	236	7260	458	28900	134	4560	90	1470	167	2610
17	828	35300	220	6770	885	57100	117	3850	93	1630	113	1780
18	872	39800	215	6440	1060	66400	108	3410	115	2360	87	1370
19	750	33200	208	6460	563	43200	102	3060	99	2080	69	1080
20	553	23400	199	6660	470	33900	98	2780	79	1580	57	877
21	488	20400	216	8460	401	29400	97	2590	64	1210	52	783
22	461	19200	289	12000	545	45600	101	2560	57	1060	50	733
23	399	16400	321	14100	719	62300	123	3120	59	1090	49	710
24	294	11500	302	13500	772	63200	148	3710	61	1150	49	706
25	247	9140	288	13400	690	53700	189	4560	65	1230	48	680
26	239	8580	538	28200	521	38300	246	6240	67	1280	48	673
27	228	8310	772	45000	410	29200	704	20500	70	1350	47	655
28	217	7970	978	61300	351	24900	442	12100	72	1420	46	652
29	222	8150	1100	74500	369	27600	305	8100	86	1780	45	645
30	277	9950	1450	109000	323	24600	300	8180	121	2480	44	649
31	---	---	1760	153000	---	---	277	7700	129	2650	---	---
TOTAL	---	724900	---	674090	---	1178700	---	272990	---	153850	---	52023

TOTAL LOAD FOR YEAR: 5362114 TONS.

06329500 YELLOWSTONE RIVER NEAR SIDNEY, MT--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1978 TO SEPTEMBER 1979

DATE	NOV 14,78		MAR 18,79		MAY 16,79		JUN 13,79	
TIME	1200		1300		1500		1300	
TOTAL CELLS/ML	2000		2000		6600		1400	
DIVERSITY: DIVISION	1.2		0.3		1.2		1.0	
.CLASS	1.2		0.3		1.2		1.0	
..ORDER	1.3		1.2		1.9		1.8	
...FAMILY	2.1		2.7		2.3		2.3	
....GENUS	2.2		2.7		0.0		2.5	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)								
.CHLOROPHYCEAE								
..CHLOROCOCCALES								
...CHARACIACEAE								
....SCHROEDERIA	--	-	--	-	--	-	13	1
...MICRACTINIACEAE								
....MICRACTINIUM	--	-	--	-	260	4	--	-
...OOCYSTACEAE								
....ANKISTRODESMUS	--	-	--	-	620	9	26	2
....CHODATELLA	22	1	--	-	--	-	--	-
....DICTYOSPHAERIUM	--	-	--	-	--	-	--	-
....KIRCHNERIELLA	--	-	--	-	100	2	--	-
....RADIOCOCCUS	--	-	--	-	210	3	--	-
...SCENEDESMACEAE								
....SCENEDESMUS	45	2	--	-	310	5	150	11
....TETRASTRUM	--	-	--	-	150	2	--	-
..TETRASPORALES								
...COCCOMYXACEAE								
....ELAKATOTHRIX	--	-	--	-	--	-	--	-
..VOLVOCALES								
...CHLAMYDOMONADACEAE	--	-	--	-	310	5	--	-
....CHLAMYDOMONAS	--	-	--	-	--	-	--	-
...VOLVOCACEAE								
....PANDORINA	--	-	--	-	--	-	--	-
CHRYSOPHYTA								
.BACILLARIOPHYCEAE								
..CENTRALES								
...COSCINODISCACEAE								
....CYCLOTELLA	45	2	740#	37	3200#	49	620#	45
....MELOSIRA	--	-	--	-	--	-	--	-
..PENNALES								
...ACHNANTHACEAE								
....ACHNANTHES	22	1	--	-	--	-	--	-
....COCCONEIS	45	2	110	5	--	-	--	-
...CYMBELLACEAE								
....CYMBELLA	22	1	210	11	--	-	--	-
...DIATOMACEAE								
....DIATOMA	130	7	420#	21	--	-	--	-
...FRAGILARIACEAE								
....ASTERIONELLA	--	-	--	-	--	-	140	10
....SYNEDRA	110	6	110	5	--	-	39	3
...GOMPHONEMATACEAE								
....GOMPHONEMA	--	-	110	5	--	-	--	-
...NAVICULACEAE								
....GYROSIGMA	--	-	--	-	--	-	13	1
....NAVICULA	22	1	110	5	51	1	52	4
...NITZSCHIACEAE								
....NITZSCHIA	290	15	--	-	820	13	180	13
...SURIRELLACEAE								
....SURIRELLA	22	1	110	5	--	-	--	-
.CHRYSOPHYCEAE								
..CHRYSOMONADALES								
...CHROMULINACEAE								
....CHRYSOCOCCUS	--	-	--	-	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)								
.CYANOPHYCEAE								
..CHROOCOCCALES								
...CHROOCOCCACEAE								
....ANACYSTIS	--	-	--	-	510	8	130	9
..HORMOGONALES								
...OSCILLATORIACEAE								
....OSCILLATORIA	1200#	59	--	-	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)								
.EUGLENOPHYCEAE								
..EUGLENALES								
...EUGLENACEAE								
....EUGLENA	--	-	110	5	--	-	--	-
....TRACHELOMONAS	22	1	--	-	--	-	--	-
PYRRHOPHYTA (FIRE ALGAE)								
.DINOPHYCEAE								
..PERIDINIALES								
...GLENODINIACEAE								
....GLENODINIUM	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06329500 YELLOWSTONE RIVER NEAR SIDNEY, MT--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1978 TO SEPTEMBER 1979

DATE	JUL 10,79	JUL 31,79	SEP 18,79
TIME	1100	1300	1200
TOTAL CELLS/ML	7800	1800	9000
DIVERSITY: DIVISION	0.4	0.6	1.0
.CLASS	0.4	0.6	1.1
..ORDER	1.1	1.1	1.9
...FAMILY	1.1	1.2	2.7
....GENUS	1.5	1.9	3.0

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)						
.CHLOROPHYCEAE						
..CHLOROCOCCALES						
...CHARACIACEAE						
....SCHROEDERIA	--	-	--	-	61	1
...MICRACTINIACEAE						
....MICRACTINIUM	--	-	--	-	--	-
...OOCYSTACEAE						
....ANKISTRODESMUS	71	1	150	9	1600#	18
....CHODATELLA	--	-	--	-	--	-
....DICTYOSPHAERIUM	--	-	--	-	970	11
....KIRCHNERIELLA	--	-	--	-	--	-
....RADIOCOCCUS	--	-	--	-	--	-
...SCENEDESMACEAE						
....SCENEDESMUS	--	-	100	6	850	9
....TETRASTRUM	--	-	--	-	240	3
..TETRASPORALES						
...COCCOMYXACEAE						
....ELAKATOTHRIX	--	-	--	-	120	1
..VOLVOCALES						
...CHLAMYDOMONADACEAE	--	-	--	-	--	-
....CHLAMYDOMONAS	140	2	--	-	1300	14
...VOLVOCACEAE						
....PANDORINA	--	-	--	-	970	11
CHRYSOPHYTA						
.BACILLARIOPHYCEAE						
..CENTRALES						
...COSCINODISCACEAE						
....CYCLOTELLA	5200#	66	460#	26	120	1
....MELOSIRA	570	7	830#	47	--	-
..PENNALES						
...ACHNANTHACEAE						
....ACHNANTHES	--	-	--	-	--	-
....COCCONEIS	--	-	--	-	--	-
...CYMBELLACEAE						
....CYMBELLA	--	-	--	-	--	-
...DIATOMACEAE						
....DIATOMA	--	-	--	-	--	-
...FRAGILARIACEAE						
....ASTERIONELLA	--	-	--	-	--	-
....SYNEDRA	--	-	--	-	--	-
...GOMPHONEMATACEAE						
....GOMPHONEMA	--	-	--	-	--	-
...NAVICULACEAE						
....GYROSIGMA	--	-	--	-	--	-
....NAVICULA	--	-	--	-	180	2
...NITZSCHIACEAE						
....NITZSCHIA	1600#	20	210	12	2200#	25
...SURIRELLACEAE						
....SURIRELLA	--	-	--	-	--	-
.CHRYSOPHYCEAE						
..CHRYSOMONADALES						
...CHROMULINACEAE						
....CHRYSOCOCCUS	--	-	--	-	120	1
CYANOPHYTA (BLUE-GREEN ALGAE)						
.CYANOPHYCEAE						
..CHROOCOCCALES						
...CHROOCOCCACEAE						
....ANACYSTIS	--	-	--	-	240	3
..HORMOGONALES						
...OSCILLATORIACEAE						
....OSCILLATORIA	--	-	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)						
.EUGLENOPHYCEAE						
..EUGLENALES						
...EUGLENACEAE						
....EUGLENA	--	-	--	-	--	-
....TRACHELOMONAS	--	-	--	-	--	-
PYRRHOPHYTA (FIRE ALGAE)						
.DINOPHYCEAE						
..PERIDINIALES						
...GLENODINIACEAE						
....GLENODINIUM	280	4	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06329500 YELLOWSTONE RIVER NEAR SIDNEY, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	PH (UNITS) (00400)	TEMPERATURE, AIR (DEG C) (00020)	TEMPERATURE (DEG C) (00010)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	BAROMETRIC PRESSURE (MM OF HG) (00025)	WEATHER (WMU CODE NUMBER) (00041)
JUL									
30...	1700	650	8.5	19.0	23.0	7.8	96	713	1
30...	1800	--	--	--	23.0	7.8	96	--	2
30...	1900	658	8.6	18.5	23.0	7.8	97	712	3
30...	2000	--	--	--	23.0	7.7	95	--	--
30...	2100	--	--	--	23.0	7.5	93	--	--
30...	2200	658	8.3	18.5	23.0	7.4	91	714	0
30...	2300	--	--	--	22.5	7.3	89	--	--
30...	2400	--	--	--	22.5	7.2	88	--	--
31...	0100	--	--	--	22.5	7.1	87	--	--
31...	0200	--	--	--	22.0	7.1	86	--	--
31...	0300	--	--	--	22.0	7.1	86	--	--
31...	0400	--	--	--	22.0	7.1	86	--	--
31...	0500	620	8.5	14.0	21.5	7.1	85	714	0
31...	0600	--	--	--	21.5	7.1	85	--	--
31...	0700	638	8.5	15.0	21.5	7.1	85	715	0
31...	0800	--	--	--	21.5	7.2	86	--	--
31...	0900	--	--	--	21.5	7.2	86	--	--
31...	1000	640	8.4	22.0	22.0	7.3	88	714	0
31...	1100	--	--	--	22.0	7.3	88	--	--
31...	1200	--	--	--	22.5	7.4	90	--	--
31...	1300	685	8.5	27.0	22.5	7.5	92	713	0
31...	1400	--	--	--	23.0	7.5	93	--	--
31...	1500	--	--	--	23.0	7.5	93	--	--
31...	1600	669	8.3	--	23.5	7.6	95	--	--
31...	1700	660	8.4	30.0	24.0	7.6	96	712	0

06329590 YELLOWSTONE RIVER STAGE GAGE NO. 1 NEAR FAIRVIEW, MT

LOCATION.--Lat 47°48'34", long 104°02'36", sec. 18, T.150 N., R.104 W., McKenzie County, Hydrologic Unit 10100004, on left bank 3 mi (4.8 km) south of Fairview, and at mile 15.2 (24.5 km).

DRAINAGE AREA.--70,000 mi² (181,000 km²), approximately.

PERIOD OF RECORD.--March 1959 to current year (seasonal).

GAGE.--Water-stage recorder. Datum of gage is 1,860.00 ft (566.928 m) National Geodetic Vertical Datum of 1929. Prior to Feb. 19, 1962 at datum 60.00 ft (18.288 m) lower.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily gage height recorded, 23.78 ft (7.248 m) Mar. 21, 1960, present datum; minimum daily recorded, 9.10 ft (2.774 m) May 16-17, Aug. 12-13, 1961, present datum.

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12.72	11.56				---	16.02	12.78	17.71	16.70	12.60	11.69
2	12.65	11.90				---	15.78	12.72	17.07	16.54	12.59	11.58
3	12.64	11.90				---	14.25	12.74	16.03	16.45	12.44	11.53
4	12.55	---				---	13.76	12.65	15.51	16.34	12.27	---
5	12.53	---				19.22	13.52	12.98	14.86	16.11	12.06	---
6	12.47	---				18.89	13.31	13.18	14.36	15.60	11.87	---
7	12.43	---				16.57	13.16	13.15	14.23	15.24	11.69	---
8	12.38	---				16.22	13.26	13.15	14.86	15.05	11.51	---
9	12.33	---				---	13.62	13.23	16.19	14.76	11.35	---
10	12.31	---				---	14.32	13.48	17.03	14.37	11.26	---
11	12.23	---				---	14.64	13.66	16.41	14.17	11.12	---
12	12.18	---				---	14.52	13.51	15.59	13.96	11.04	---
13	12.15	---				---	14.44	13.54	14.82	13.71	11.03	---
14	12.14	---				---	14.51	13.02	14.40	13.42	11.00	---
15	12.16	---				---	14.21	12.70	14.60	13.21	10.98	---
16	12.15	---				---	14.00	12.47	15.62	13.08	10.99	---
17	12.12	---				---	14.15	12.52	17.08	12.99	11.09	---
18	12.10	---				---	14.79	12.27	17.68	12.87	11.53	---
19	12.09	---				---	14.35	12.55	17.08	12.70	11.70	10.84
20	12.10	---				---	14.05	12.51	16.45	12.55	11.58	10.85
21	12.10	---				---	13.74	13.04	16.47	12.38	11.37	10.82
22	12.10	---				---	13.67	13.29	17.15	12.24	11.25	10.78
23	12.08	---				---	13.56	13.64	17.45	12.24	11.28	10.77
24	12.05	---				---	13.37	13.81	17.19	12.18	11.37	10.77
25	12.00	---				---	13.12	13.94	16.91	12.12	11.40	10.74
26	12.03	---				---	12.94	14.47	16.68	12.17	11.42	10.73
27	12.01	---				---	12.95	15.09	16.47	12.51	11.49	10.66
28	11.98	---				---	12.95	15.59	16.42	12.45	11.54	10.73
29	11.94	---				---	12.92	16.10	16.65	12.34	11.68	10.71
30	11.92	---				---	12.85	16.70	16.77	12.36	11.74	10.72
31	11.45	---				---	---	17.47	---	12.43	11.68	---
TOTAL	378.07	---				---	416.49	421.55	485.72	425.22	357.92	---
MEAN	12.20	---				---	13.95	13.60	16.19	13.72	11.55	---
MAX	12.72	---				---	16.02	17.47	17.71	16.70	12.60	---
MIN	11.45	---				---	12.85	12.27	14.23	12.12	10.98	---

06329597 CHARBONNEAU CREEK NEAR CHARBONNEAU, ND

LOCATION.--Lat 47°51'10", long 103°47'40", in SW¼ sec.31, T.151 N., R.102 W., McKenzie County, Hydrologic Unit 10100004, Little Missouri National Grassland on right bank, 45 ft (14 m) downstream from county highway bridge, and 1.5 mi (2.4 km) west of Charbonneau.

DRAINAGE AREA.--149 mi^2 (386 km^2).

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

GAGE.--Water-stage recorder.

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

AVERAGE DISCHARGE.--13 years, 16.6 ft^3/s (0.470 m^3/s), 12,030 acre-ft/yr (14.8 hm^3/yr); median of yearly mean discharges, 16 ft^3/s (0.45 m^3/s), 11,600 acre-ft/yr (14 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,300 ft^3/s (178 m^3/s) Apr. 17, 1979, gage height, 8.32 ft (2.536 m); maximum gage height, 11.02 ft (3.359 m) Mar. 17, 1976, backwater from ice; no flow at times most years.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 100 ft^3/s (2.83 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Mar. 25	--	730	20.7	Backwater from ice		Apr. 17	1500	*6,300	178	8.32	2.536
Apr. 10	0015	3,850	109	7.82	2.384	July 30	0245	130	3.68	4.48	1.366

Minimum daily discharge, 0.07 ft^3/s (0.002 m^3/s) Sept. 9.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.25	.52	.82	.65	.40	.50	50	6.9	2.1	.48	3.7	.15
2	.31	.55	.80	.65	.40	.50	42	5.8	2.1	.59	2.0	.15
3	.28	.64	.80	.65	.40	.50	45	4.9	1.9	.53	1.5	.15
4	.23	1.0	.80	.65	.40	.55	20	4.5	1.6	.51	1.3	.15
5	.23	.72	.80	.60	.40	.65	16	4.5	1.6	.50	1.1	.12
6	.33	.74	.60	.60	.40	.70	15	4.9	1.3	.55	1.0	.08
7	.36	.94	.80	.60	.40	.70	60	6.9	1.1	.48	.92	.08
8	.44	1.4	.78	.60	.40	.75	250	6.4	1.0	.48	.89	.08
9	.50	1.2	.75	.60	.40	.80	1000	6.4	1.1	.48	.78	.07
10	.57	1.3	.75	.55	.40	.80	1510	5.8	1.0	.43	.69	.09
11	.50	1.1	.80	.55	.40	.85	435	4.9	1.0	.38	.58	.19
12	.44	1.0	.85	.55	.40	1.0	155	4.9	.89	.42	.50	.24
13	.44	1.0	.85	.55	.40	2.0	61	4.1	.78	.42	.42	.24
14	.44	1.0	.85	.55	.40	5.0	26	3.8	.59	.39	.35	.17
15	.50	1.0	.85	.55	.40	2.0	30	3.4	.59	.39	.30	.12
16	.50	1.0	.82	.50	.40	8.0	321	2.8	.89	.30	.30	.16
17	.44	1.0	.80	.50	.40	30	4170	3.1	.89	.24	.24	.15
18	.50	1.0	.80	.50	.40	25	1010	2.8	.78	.24	.19	.12
19	.57	.98	.80	.50	.45	20	194	2.8	.89	.26	.15	.12
20	.50	.95	.80	.50	.45	10	74	2.6	.89	.14	.15	.09
21	.50	.90	.80	.50	.45	8.0	39	2.6	.68	.36	.15	.08
22	.45	.90	.80	.50	.45	10	25	2.1	.78	1.6	.18	.08
23	.45	.90	.80	.50	.45	45	20	1.9	1.1	19	.19	.09
24	.45	.95	.80	.50	.45	150	16	1.9	1.1	5.8	.22	.09
25	.45	1.0	.80	.50	.45	500	16	1.7	1.0	6.8	.24	.10
26	.45	1.0	.78	.50	.45	450	14	1.6	1.0	6.8	.24	.13
27	.45	.95	.75	.48	.50	200	13	1.6	.74	4.1	.24	.13
28	.45	.95	.72	.45	.50	90	10	1.3	.68	2.1	.24	.15
29	.46	.90	.70	.45	---	65	9.2	1.7	.58	1.7	.19	.14
30	.50	.85	.68	.45	---	60	8.0	1.9	.64	38	.19	.13
31	.50	---	.65	.45	---	55	---	2.4	---	7.4	.19	---
TOTAL	15.48	28.34	24.40	16.66	11.80	1741.30	9658.2	112.9	31.29	101.65	19.33	3.84
MEAN	.43	.94	.79	.54	.42	56.2	322	3.64	1.04	3.28	.62	.13
MAX	.57	1.4	.85	.65	.50	500	4170	6.9	2.1	38	3.7	.24
MIN	.23	.52	.65	.45	.40	.50	8.0	1.3	.58	.14	.15	.07
AC-FT	27	56	48	33	23	3450	19160	224	62	202	38	7.6

CAL YR 1978 TOTAL 9087.88 MEAN 24.9 MAX 1600 MIN .00 AC-FT 18030
WTR YR 1979 TOTAL 11703.21 MEAN 32.2 MAX 4170 MIN .07 AC-FT 23330

06329610 YELLOWSTONE RIVER STAGE GAGE NO. 2 NEAR CARTWRIGHT, ND

LOCATION.--Lat 47°51'50", long 103°58'06", on south line sec.26, T.151 N., R.104 W., McKenzie County, Hydrologic Unit 10100004, on bridge on State Highway 23, 2 mi (3.2 km) west of Cartwright, and at mile 8.6 (13.8 km).

DRAINAGE AREA.--70,000 mi^2 (181,000 km^2), approximately.

PERIOD OF RECORD.--April 1959 to current year (seasonal).

GAGE.--Water-stage recorder. Datum of gage is 1,800.00 ft (548.640 m) National Geodetic Vertical Datum of 1929.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily gage height recorded, 87.08 ft (26.542 m) Mar. 23, 1978; minimum daily recorded, 58.58 ft (17.855 m) July 26, 1974.

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	67.26	65.99						---	72.09	70.95	---	65.94
2	67.24	66.34						---	71.51	70.78	---	65.82
3	67.18	66.35						---	70.80	70.70	---	65.81
4	67.15	---						---	70.12	70.58	66.57	65.73
5	67.05	---						---	69.52	70.35	66.32	65.68
6	66.96	---						---	69.01	69.88	66.16	65.63
7	66.93	---						---	68.76	69.55	65.97	65.54
8	66.86	---						---	69.32	69.30	65.79	65.43
9	66.82	---						---	70.59	69.11	65.66	65.33
10	66.76	---						68.35	71.44	68.71	65.57	65.31
11	66.75	---						68.41	70.97	68.51	65.42	65.24
12	66.66	---						68.31	70.12	68.37	65.36	65.20
13	66.63	---						68.13	69.45	68.10	65.36	65.17
14	66.62	---						67.84	69.08	67.81	65.28	65.20
15	---	---						67.54	69.17	67.59	65.27	65.21
16	---	---						67.32	70.02	67.43	65.30	65.25
17	66.59	---						67.19	71.39	67.33	65.40	65.29
18	66.56	---						67.11	72.07	67.20	65.78	65.27
19	66.56	---						67.15	71.52	67.04	65.98	65.27
20	66.54	---						67.28	70.90	66.87	65.90	65.25
21	66.55	---						67.72	70.79	66.70	65.71	65.19
22	66.55	---						67.99	71.41	66.55	65.61	65.15
23	66.50	---						68.30	71.75	66.56	65.61	65.11
24	66.51	---						68.47	71.54	66.48	65.69	65.10
25	66.45	---						68.60	71.22	66.43	65.70	65.08
26	66.48	---						68.99	70.98	66.45	65.71	65.03
27	66.45	---						69.56	70.74	66.80	65.76	65.01
28	66.43	---						70.05	70.72	66.78	65.82	65.02
29	66.40	---						70.54	70.90	66.67	65.91	65.01
30	66.39	---						71.16	71.01	---	65.95	65.01
31	66.05	---						71.76	---	---	65.94	---
TOTAL	---	---						---	2118.91	---	---	1959.28
MEAN	---	---						---	70.63	---	---	65.31
MAX	---	---						---	72.09	---	---	65.94
MIN	---	---						---	68.76	---	---	65.01

06329620 YELLOWSTONE RIVER STAGE GAGE NO. 3 NEAR BUFORD, ND

LOCATION.--Lat 47°56'16", long 103°57'52", in SW¼ sec.35, T.152 N., R.104 W., McKenzie County, Hydrologic Unit 10100004, on left bank 4 mi (6.4 km) south of Buford, and at mile 3.3 (5.3 km).

DRAINAGE AREA.--70,000 mi^2 (181,000 km^2), approximately.

PERIOD OF RECORD.--April 1959 to current year (seasonal).

GAGE.--Water-stage recorder. Datum of gage is 1,850.00 ft (563.880 m) National Geodetic Vertical Datum of 1929. Prior to Apr. 19, 1962, at datum 50.00 ft (15.240 m) lower.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily gage height recorded, 29.55 ft (9.007 m) Mar. 15, 1972; minimum daily recorded, 6.18 ft (1.884 m) Aug. 24, 1961, present datum.

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12.70	11.43						14.82	17.51	16.30	12.55	---
2	12.60	11.89						14.76	17.04	16.16	12.55	---
3	12.55	---						14.77	16.22	16.04	12.34	---
4	12.50	---						14.95	15.42	15.94	12.14	---
5	12.40	---						15.19	14.72	15.76	11.73	---
6	12.32	---						15.29	14.20	15.27	11.60	---
7	12.30	---						15.23	13.90	14.93	11.47	---
8	12.26	---						15.14	14.39	14.70	11.28	---
9	12.20	---						15.23	15.61	14.52	11.17	---
10	12.17	---						15.34	16.66	14.17	11.02	---
11	12.19	---						15.34	16.33	13.96	---	---
12	---	---						15.06	15.49	15.81	---	---
13	---	---						14.85	14.61	13.55	---	---
14	---	---						14.18	14.26	13.25	---	---
15	---	---						13.67	14.28	12.99	10.55	---
16	---	---						13.24	15.11	12.81	---	---
17	12.06	---						12.95	16.50	12.70	---	---
18	12.05	---						12.80	17.30	12.57	---	---
19	12.03	---						12.81	16.92	12.38	---	10.32
20	12.02	---						12.88	16.23	12.20	---	10.31
21	12.06	---						13.24	16.09	12.02	---	10.25
22	12.06	---						13.49	16.61	11.85	---	10.21
23	12.03	---						13.78	17.06	11.63	---	10.21
24	12.02	---						13.89	16.88	11.78	---	10.19
25	11.99	---						14.00	16.57	11.73	---	10.18
26	12.00	---						14.57	16.30	11.60	---	10.12
27	11.99	---						14.92	16.08	12.18	---	10.09
28	11.98	---						15.44	16.02	12.22	---	10.11
29	11.95	---						15.91	16.20	12.13	---	10.09
30	11.96	---						16.49	16.33	12.22	---	10.10
31	11.96	---						17.11	---	12.29	---	---
TOTAL	---	---						450.92	476.64	416.06	---	---
MEAN	---	---						14.55	15.89	13.42	---	---
MAX	---	---						17.11	17.51	16.30	---	---
MIN	---	---						12.80	13.90	11.73	---	---

06329640 MISSOURI RIVER STAGE GAGE NO. 5A AT BUFORD, ND

LOCATION.--Lat 47°59'06", long 103°59'05", in SE¼ sec.15, T.152 N., R.104 W., Williams County, Hydrologic Unit 10110101, on left bank 1.5 mi (2.4 km) southwest of Buford, and at mile 1,580.7 (2,543.3 km).

DRAINAGE AREA.--164,000 mi² (425,000 km²), approximately.

PERIOD OF RECORD.--April 1960 to current year (seasonal).

GAGE.--Water-stage recorder. Datum of gage is 1,850.00 ft (563.880 m) National Geodetic Vertical Datum of 1929. Prior to Mar. 8, 1962 at datum 50.00 ft (15.240 m) lower.

REMARKS.--Stage regulated by upstream reservoirs.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily gage height recorded, 19.37 ft (5.904 m) Mar. 23, 1978; minimum daily recorded, 2.63 ft (0.802 m) Aug. 15-16, 1966.

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10.51	8.98				---	10.67	13.49	---	13.08	9.63	---
2	10.31	9.27				---	10.70	13.47	---	12.95	9.62	---
3	10.30	9.13				---	10.76	13.53	---	12.88	9.56	---
4	10.24	8.95				---	10.63	13.72	---	12.80	9.45	---
5	10.19	9.02				---	10.16	13.99	---	12.65	9.30	---
6	10.12	9.10				---	9.40	14.06	---	12.22	9.12	---
7	10.09	9.23				---	8.35	13.91	---	11.88	8.98	---
8	9.97	9.35				---	7.54	13.83	---	11.61	8.90	---
9	9.81	9.40				---	7.14	13.96	---	11.56	8.80	---
10	9.77	---				---	7.58	14.02	---	11.45	8.71	---
11	9.79	---				---	8.14	13.90	---	11.35	8.63	---
12	9.73	---				---	8.38	13.58	---	11.17	8.55	---
13	9.67	---				---	8.72	13.15	---	10.86	8.55	---
14	9.61	---				---	9.16	---	11.43	10.50	8.48	---
15	9.65	---				---	9.67	---	11.35	10.21	8.40	---
16	9.61	---				---	10.20	---	12.00	10.02	---	---
17	9.60	---				---	---	---	13.15	9.91	---	---
18	9.56	---				---	---	---	13.99	9.82	---	---
19	9.52	---				---	---	---	13.88	9.62	---	---
20	9.50	---				---	---	---	13.91	9.51	---	7.12
21	9.49	---				---	---	---	12.84	9.40	---	---
22	9.52	---				---	---	---	13.29	9.29	---	---
23	9.52	---				---	---	---	13.81	9.23	---	---
24	9.43	---				---	---	---	13.70	9.19	---	---
25	9.46	---				---	---	---	13.41	9.16	---	---
26	9.45	---				---	---	---	13.12	9.17	---	---
27	9.45	---				13.35	---	---	12.89	9.39	---	---
28	9.42	---				13.04	---	---	12.80	9.49	---	---
29	9.40	---				12.45	---	---	12.97	9.45	---	---
30	9.38	---				11.58	---	---	13.12	9.30	---	---
31	9.16	---				11.07	---	---	---	9.58	---	---
TOTAL	301.23	---				---	---	---	---	328.92	---	---
MEAN	9.72	---				---	---	---	---	10.61	---	---
MAX	10.51	---				---	---	---	---	13.08	---	---
MIN	9.16	---				---	---	---	---	9.17	---	---

06329650 MISSOURI RIVER STAGE GAGE NO. 6 NEAR BUFORD, ND

LOCATION.--Lat 47°57'18", long 103°54'36", in SE¼ sec.30, T.152 N., R.103 W., Williams County, Hydrologic Unit 10110101, on right bank 5 mi (8 km) southeast of Buford, and at mile 1,576.0 (2,535.8 km).

DRAINAGE AREA.--164,000 mi² (425,000 km²), approximately.

PERIOD OF RECORD.--1959 to current year (seasonal).

GAGE.--Water-stage recorder. Datum of gage is 1,840.00 ft (560.832 m) National Geodetic Vertical Datum of 1929. Prior to Apr. 17, 1962, at datum 40.00 ft (12.192 m) lower.

REMARKS.--Stage regulated by upstream reservoirs.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily gage height recorded, 24.15 ft (7.361 m) June 29, 1975; minimum daily recorded, 8.23 ft (2.509 m) Aug. 15 and 22, 1963.

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17.29	15.78						---	---	---	16.53	15.01
2	17.08	15.87						---	---	---	16.52	14.92
3	17.07	15.94						---	---	---	16.42	14.76
4	17.07	15.78						---	---	---	16.35	14.74
5	17.00	15.78						---	---	---	16.22	14.66
6	16.90	15.84						---	---	---	16.07	14.66
7	16.87	15.95						---	---	---	15.93	14.58
8	16.79	16.07						---	---	---	15.85	14.50
9	16.82	16.15						---	---	---	15.76	14.34
10	16.52	---						---	---	---	15.66	14.19
11	16.57	---						20.58	---	---	15.56	13.96
12	16.56	---						---	---	---	15.49	13.94
13	16.49	---						---	---	---	15.48	13.91
14	16.44	---						---	16.60	---	15.41	13.86
15	16.46	---						---	---	---	15.54	13.86
16	16.44	---						---	---	---	15.40	13.94
17	16.43	---						---	---	16.66	15.48	13.97
18	16.40	---						---	---	16.60	15.55	13.92
19	16.36	---						---	---	16.59	15.68	13.90
20	16.30	---						---	---	16.46	15.62	13.85
21	16.32	---						---	---	16.36	15.32	13.84
22	16.35	---						---	---	16.25	14.98	13.83
23	16.35	---						---	---	16.19	14.98	13.82
24	16.30	---						---	---	16.15	15.03	13.79
25	16.29	---						---	---	16.14	15.03	13.73
26	16.30	---						---	---	16.11	15.07	13.69
27	16.30	---						---	---	16.29	15.08	13.68
28	16.27	---						---	---	16.43	15.16	13.71
29	16.22	---						---	---	16.36	15.19	13.61
30	16.20	---						---	---	16.40	15.09	13.62
31	16.04	---						---	---	16.43	14.79	---
TOTAL	512.60	---						---	---	---	482.04	422.79
MEAN	16.54	---						---	---	---	15.55	14.09
MAX	17.29	---						---	---	---	16.53	15.01
MIN	16.04	---						---	---	---	14.79	13.61

06329660 MISSOURI RIVER STAGE GAGE NO. 7 NEAR TRENTON, ND

LOCATION.--Lat 47°59'21", long 103°47'57", in NE¼ sec.13, T.152 N., R.103 W., McKenzie County, Hydrologic Unit 10110101, on right bank 5 mi (8 km) south of Trenton, and at mile 1,566.7 (2,520.8 km).

DRAINAGE AREA.--164,000 mi² (425,000 km²), approximately.

PERIOD OF RECORD.--March 1959 to current year (seasonal).

GAGE.--Water-stage recorder. Datum of gage is 1,840.00 ft (560.832 m) National Geodetic Vertical Datum of 1929. Prior to Aug. 7, 1962, at site 0.8 mi (1.3 km) upstream. Prior to May 29, 1963, at datum 40.00 ft (12.192 m) lower.

REMARKS.--Stage regulated by upstream reservoirs.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily gage height recorded, 21.56 ft (6.572 m) July 10, 1975; minimum daily recorded, 4.34 ft (1.323 m) Aug. 19, 22, 1963.

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14.03	12.87						---	17.58	16.71	13.33	---
2	13.88	12.89						---	17.41	16.59	13.34	---
3	13.82	12.81						---	16.88	16.47	13.29	---
4	13.85	12.87						---	16.32	16.36	13.23	---
5	13.79	12.83						---	15.82	16.31	13.14	---
6	13.72	12.89						---	15.59	15.95	13.02	---
7	13.68	12.77						---	15.05	15.66	12.86	---
8	13.60	12.87						---	15.09	15.38	12.79	---
9	13.43	12.91						---	15.78	15.25	12.72	---
10	13.35	---						---	16.65	15.15	12.64	---
11	13.37	---						17.09	16.83	15.06	12.57	---
12	13.33	---						16.86	16.34	14.92	12.55	---
13	13.31	---						16.51	15.69	14.68	12.51	---
14	13.25	---						16.20	15.23	14.59	12.47	---
15	13.26	---						15.81	15.04	14.15	12.42	---
16	13.25	---						15.36	15.45	13.93	12.40	---
17	13.24	---						14.89	16.39	13.79	12.41	---
18	13.20	---						14.68	17.21	13.69	12.45	11.07
19	13.16	---						14.58	17.29	13.50	12.57	11.09
20	13.12	---						14.52	16.82	13.38	12.54	11.02
21	13.11	---						14.61	16.49	13.27	12.50	11.01
22	13.13	---						14.83	16.68	13.18	12.43	11.01
23	13.16	---						15.00	17.22	13.12	11.99	10.98
24	13.15	---						15.10	17.29	13.10	12.01	10.95
25	13.10	---						15.10	17.05	13.08	12.02	10.88
26	13.10	---						15.15	16.79	13.03	12.02	10.84
27	13.09	---						15.28	16.56	13.15	12.03	10.84
28	13.08	---						15.81	16.45	13.28	12.08	10.86
29	13.02	---						16.30	16.51	13.24	12.10	10.77
30	13.00	---						16.75	16.66	13.26	12.08	10.82
31	12.98	---						17.19	---	13.30	---	---
TOTAL	413.30	---						---	491.94	446.35	---	---
MEAN	13.34	---						---	16.40	14.40	---	---
MAX	14.03	---						---	17.58	16.71	---	---
MIN	12.98	---						---	15.04	13.03	---	---

06329680 MISSOURI RIVER STAGE GAGE NO. 8 NEAR TRENTON, ND

LOCATION.--Lat 48°03'10", long 103°42'54", in NE¼ sec.30, T.153 N., R.101 W., McKenzie County, Hydrologic Unit 10110101, on right bank 5.5 mi (8.8 km) southeast of Trenton, and at mile 1,557.2 (2,505.5 km).

DRAINAGE AREA.--164,000 mi² (425,000 km²), approximately.

PERIOD OF RECORD.--March 1959 to current year (seasonal).

GAGE.--Water-stage recorder. Datum of gage is 1,830.00 ft (557.784 m) National Geodetic Vertical Datum of 1929. Prior to Jan. 4, 1962 at datum 30.00 ft (9.144 m) lower.

REMARKS.--Stage regulated by upstream reservoirs and backwater from Lake Sakakawea.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily gage height recorded, 28.50 ft (8.687 m) Mar. 25, 1978; minimum daily recorded, 4.96 ft (1.512 m) Aug. 20, 1961, present datum.

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19.67	18.51					---	21.96	22.77	21.93	19.33	---
2	19.71	18.70					---	21.94	22.73	21.86	19.31	---
3	19.68	---					---	22.00	22.51	21.75	19.33	---
4	19.65	---					---	22.11	21.82	21.66	19.30	---
5	19.59	---					---	22.31	21.39	21.65	19.43	---
6	19.53	---					---	22.43	20.94	21.59	19.20	---
7	19.50	---					---	22.32	20.61	21.08	19.00	---
8	19.46	---					---	22.32	20.53	20.82	19.00	---
9	19.36	---					---	22.31	21.01	20.66	18.88	---
10	19.26	---					---	22.45	21.61	20.59	18.80	---
11	19.21	---					---	22.49	22.15	20.53	18.79	---
12	19.20	---					---	22.36	21.95	20.43	18.72	---
13	19.19	---					---	22.17	21.35	20.25	18.70	---
14	19.15	---					---	21.96	20.82	20.02	18.77	---
15	19.11	---					---	21.63	20.56	19.81	18.79	---
16	19.17	---					---	21.17	20.74	19.66	18.69	---
17	19.16	---					---	20.64	21.41	19.59	18.64	---
18	19.09	---					---	20.43	22.35	19.50	18.67	17.52
19	19.05	---					---	20.34	22.68	19.38	18.77	17.56
20	19.00	---					---	20.27	22.31	19.29	18.80	17.43
21	19.00	---					---	20.35	21.89	19.22	18.83	17.49
22	19.01	---					---	20.44	21.88	19.20	18.34	17.51
23	19.04	---					---	20.57	22.33	19.10	18.30	17.41
24	18.95	---					---	20.67	22.55	19.10	18.33	17.40
25	18.92	---					22.18	20.65	22.55	19.08	18.33	17.37
26	18.92	---					22.09	20.65	22.15	19.04	---	17.35
27	18.91	---					22.14	20.74	21.92	19.11	---	17.31
28	18.91	---					22.12	21.07	21.79	19.27	---	17.37
29	18.89	---					21.98	21.55	21.74	19.25	---	17.23
30	18.81	---					21.98	21.95	21.85	19.24	---	17.29
31	18.75	---					---	22.40	---	19.30	---	---
TOTAL	594.91	---					---	666.65	652.67	622.76	---	---
MEAN	19.19	---					---	21.50	21.76	20.09	---	---
MAX	19.67	---					---	22.49	22.77	21.93	---	---
MIN	18.75	---					---	20.27	20.53	19.04	---	---

06330000 MISSOURI RIVER NEAR WILLISTON, ND

LOCATION (Revised).--Lat 48°06'45", long 103°43'04", in SE¼ sec.31, T.154 N., R.101 W., McKenzie County, Hydrologic Unit 10110101, at city waterplant on left bank, 5 mi (8 km) southwest of Williston, 29.3 mi (47.1 km) downstream from Yellowstone River, and at mile 1,552.7 (2,498.3 km).

DRAINAGE AREA.--164,500 mi² (426,000 km²), approximately.

GAGE-HEIGHT RECORDS

PERIOD OF RECORD.--April 1966 to current year. Operated as a stage-discharge station October 1897 to July 1965.

GAGE.--Water-stage recorder. Datum of gage is 1,830.20 ft (557.845 m) National Geodetic Vertical Datum of 1929. See WSP 1917 for history of changes prior to April 1966.

REMARKS.--Stage regulated by upstream reservoirs and backwater from Lake Sakakawea.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily gage height recorded, 26.46 ft (8.065 m) Mar. 26, 1978; minimum daily recorded, 7.80 ft (2.377 m) Nov. 2, 1966.

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16.17	17.04	19.16	16.41	19.92	20.45	23.09	19.46	19.95	19.50	17.86	16.91
2	16.00	17.10	19.16	16.10	19.92	20.46	22.91	19.43	20.01	19.47	17.87	17.01
3	17.95	17.11	19.05	17.86	19.80	20.47	22.76	19.49	19.81	19.41	17.69	17.15
4	17.87	17.05	16.80	17.96	19.81	---	22.71	19.60	19.46	19.57	17.99	16.87
5	17.85	16.75	16.52	16.20	19.82	---	22.74	19.74	19.26	19.55	16.10	16.80
6	17.87	16.95	16.54	16.51	19.80	---	22.77	19.66	16.91	19.25	16.02	16.82
7	17.86	17.00	16.27	16.59	19.85	---	22.71	19.75	16.67	19.04	17.67	17.01
8	17.74	17.04	16.28	16.47	19.85	---	22.67	19.85	16.56	16.81	17.66	---
9	17.69	17.08	16.24	16.51	19.94	---	22.66	19.75	16.77	16.71	17.56	---
10	17.67	17.06	16.04	16.65	20.01	---	22.76	19.85	19.24	16.66	17.48	16.76
11	17.55	17.04	17.95	16.75	20.05	---	22.65	19.87	19.66	16.62	17.55	16.56
12	17.55	17.20	17.96	16.62	20.10	---	21.62	19.81	19.61	16.55	17.42	16.46
13	17.55	17.20	16.19	16.92	20.20	---	21.21	19.67	19.25	16.41	17.34	---
14	17.55	17.55	16.56	19.05	20.30	---	21.07	19.55	16.76	16.22	17.47	---
15	17.47	17.35	16.69	19.10	20.30	---	20.91	19.56	16.52	16.05	17.57	16.40
16	17.60	17.17	16.66	19.15	20.35	---	20.81	19.05	16.54	16.02	17.49	16.45
17	17.48	17.25	16.91	19.17	20.35	22.47	20.47	18.57	16.90	17.96	17.35	16.37
18	17.47	17.48	16.87	19.23	20.31	22.70	20.65	16.40	19.52	17.95	17.35	16.36
19	17.46	17.69	16.82	19.25	20.26	23.00	21.02	16.35	19.68	17.66	17.40	16.44
20	17.45	17.78	16.74	19.27	20.26	23.71	20.25	16.26	19.66	17.63	17.47	16.33
21	17.35	17.77	16.57	19.38	20.26	24.06	19.82	16.36	19.42	17.79	17.42	16.36
22	17.36	17.99	16.37	19.47	20.32	24.05	19.56	16.52	19.37	17.77	17.17	16.39
23	17.44	17.95	16.22	19.66	20.37	23.95	19.45	16.46	19.60	17.72	---	16.33
24	17.29	17.94	16.29	19.62	20.42	23.92	19.46	16.60	19.60	17.70	---	16.26
25	17.22	16.11	16.45	19.69	20.47	23.66	19.47	16.61	19.77	17.69	---	16.25
26	17.29	16.43	16.71	19.99	20.49	24.14	19.47	16.59	19.65	17.66	---	16.27
27	17.26	16.70	16.82	20.05	20.45	24.21	19.55	16.66	19.52	17.69	17.11	16.17
28	17.51	16.94	16.81	20.04	20.46	24.23	19.54	16.62	19.42	17.60	17.15	16.25
29	17.69	16.97	16.72	19.96	---	24.06	19.47	19.11	19.36	17.63	17.11	16.14
30	17.16	19.12	16.66	19.91	---	23.74	19.49	19.38	19.41	17.78	17.31	16.13
31	17.19	---	16.54	19.92	---	23.40	---	19.65	---	17.65	17.14	---
TOTAL	544.61	527.65	515.55	591.66	564.44	---	655.50	594.09	560.22	568.28	---	---
MEAN	17.55	17.60	16.57	19.09	20.16	---	21.12	19.16	19.34	18.33	---	---
MAX	18.17	19.12	19.16	20.05	20.49	---	23.09	19.88	20.01	19.50	---	---
MIN	17.16	16.75	17.95	17.86	19.80	---	19.45	16.26	16.52	17.68	---	---

06330000 MISSOURI RIVER NEAR WILLISTON, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1951-65, 1969-70, 1974 to current year.

REMARKS.--Discharge data computed by adding the discharges of station 06329500 Yellowstone River near Sidney, Mont. to that of station 06185500 Missouri River near Culbertson, Mont.

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW (CFS) (00060)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)
OCT											
10...	0930	24200	700	8.6	13.0	11.5	11.6	13	K7	240	82
NOV											
08...	0930	22800	725	8.5	9.0	6.5	10.2	--	K26	270	6
DEC											
12...	1115	20200	790	8.5	-6.0	.5	12.6	--	K10	200	100
JAN											
08...	1500	17200	800	8.6	-10.0	.5	11.6	--	K15	270	100
FEB											
13...	1540	22400	760	8.0	-12.0	.5	11.4	--	K10	270	110
MAR											
12...	1600	32500	740	8.1	4.5	.5	11.8	--	K15	280	130
APR											
12...	1030	49900	780	8.4	.0	2.0	11.8	30	K25	230	76
MAY											
08...	0900	50500	810	7.9	2.0	6.0	11.2	29	K10	270	110
JUN											
13...	0900	33100	570	8.1	30.0	21.5	8.2	15	K36	170	65
JUL											
10...	0900	34300	560	8.4	23.0	22.0	8.6	14	K15	170	49
AUG											
07...	1000	22800	790	8.5	24.0	21.0	8.2	20	K15	260	110
SEP											
10...	1410	15800	750	8.1	13.5	18.0	9.2	11	K19	240	83

DATE	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, TOTAL (MG/L AS F) (00951)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)
OCT											
10...	59	23	59	34	1.7	4.4	160	200	10	.4	.5
NOV											
08...	67	24	66	35	1.8	4.1	--	230	22	--	.5
DEC											
12...	33	28	76	45	2.4	5.1	94	260	13	--	.6
JAN											
08...	61	29	78	38	2.1	5.2	170	230	17	--	.5
FEB											
13...	64	27	68	35	1.8	4.5	160	240	11	--	.6
MAR											
12...	65	28	79	38	2.1	4.4	150	260	10	--	.6
APR											
12...	46	27	87	45	2.5	5.4	150	260	11	.6	.4
MAY											
08...	63	27	91	42	2.4	5.1	160	280	11	.6	.5
JUN											
13...	42	17	49	49	1.6	3.4	110	170	7.3	.3	.4
JUL											
10...	38	18	65	45	2.2	3.7	120	190	7.7	.5	.5
AUG											
07...	63	26	79	51	2.1	4.4	150	260	11	.8	.6
SEP											
10...	56	25	73	52	2.0	3.7	160	250	9.1	.6	.6

K - Results based on colony count outside the acceptable range (non-ideal colony count).

06330000 MISSOURI RIVER NEAR WILLISTON, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NITRATE TOTAL (MG/L AS N) (00620)	NITRO-GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)
OCT											
10...	8.1	477	460	.65	31200	.01	.02	.03	.00	.65	.65
NOV											
08...	7.6	499	578	.68	30700	--	--	1.5	.13	.34	.47
DEC											
12...	9.4	572	482	.78	31200	--	--	.23	.01	.36	.37
JAN											
08...	8.9	550	532	.75	25500	--	--	.15	.01	.02	.03
FEB											
13...	9.6	561	521	.76	33900	--	--	.27	.05	.24	.29
MAR											
12...	9.1	543	546	.74	47600	--	--	.34	.02	.44	.46
APR											
12...	8.0	560	535	.76	75400	.27	.02	.29	.07	.91	.98
MAY											
08...	6.9	561	581	.76	76500	.12	.02	.14	.05	.26	.31
JUN											
13...	7.8	327	365	.44	29200	.14	.02	.16	.01	.68	.69
JUL											
10...	8.2	371	403	.50	34400	.00	.02	.01	.01	.32	.33
AUG											
07...	8.7	549	543	.75	33800	.23	.02	.25	.01	.58	.59
SEP											
10...	7.9	519	522	.71	22100	.60	.02	.62	.02	.12	.14

DATE	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHATE, TOTAL (MG/L AS PO4) (00650)	ALUM-INUM, TOTAL RECOV-ERABLE (UG/L AS AL) (01105)	ALUM-INUM, SUS-PENDED RECOV. (UG/L AS AL) (01107)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC SUS-PENDED TOTAL (UG/L AS AS) (01001)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)
OCT										
10...	.68	3.0	.08	--	1500	--	--	4	--	--
NOV										
08...	2.0	8.7	.08	--	1700	1700	0	4	--	2
DEC										
12...	.60	2.7	.03	--	--	--	--	--	--	--
JAN										
08...	.18	.80	.03	--	--	--	--	--	--	--
FEB										
13...	.56	2.5	.05	--	--	--	--	--	--	--
MAR										
12...	.80	3.5	.02	--	--	--	--	--	--	--
APR										
12...	1.3	5.6	.03	.09	7600	--	--	4	--	--
MAY										
08...	.45	2.0	.21	.64	5800	--	--	5	--	--
JUN										
13...	.85	3.8	.10	.31	4500	4000	10	4	4	0
JUL										
10...	.34	1.5	.07	--	2300	--	--	3	--	--
AUG										
07...	.84	3.7	.03	--	60	--	--	5	--	--
SEP										
10...	.76	3.4	.07	--	640	--	--	3	--	--

06330000 MISSOURI RIVER NEAR WILLISTON, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE) (01012)	BERYL-LIUM, SUS-PENDED RECOV. (UG/L AS BE) (01011)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE) (01010)	BORON, TOTAL RECOV-ERABLE (UG/L AS B) (01022)	BORON, DIS-SOLVED (UG/L AS B) (01020)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD) (01027)	CADMIUM SUS-PENDED RECOV-ERABLE (UG/L AS CD) (01026)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)
OCT										
10...	0	0	--	--	170	120	0	--	--	0
NOV										
08...	--	0	0	0	--	130	1	1	0	0
DEC										
12...	--	--	--	--	--	160	--	--	--	--
JAN										
08...	--	--	--	--	--	180	--	--	--	--
FEB										
13...	--	--	--	--	--	160	--	--	--	--
MAR										
12...	--	--	--	--	--	160	--	--	--	--
APR										
12...	200	0	--	--	350	170	--	--	--	20
MAY										
08...	100	0	--	--	190	140	--	--	--	10
JUN										
13...	100	0	0	0	--	2200	1	--	--	10
JUL										
10...	100	0	--	--	140	110	1	--	--	10
AUG										
07...	100	0	--	--	140	170	0	--	--	10
SEP										
10...	100	10	--	--	150	130	0	--	--	10

DATE	CHRO-MIUM, SUS-PENDED RECOV. (UG/L AS CR) (01031)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO) (01037)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	COPPER, SUS-PENDED RECOV-ERABLE (UG/L AS CU) (01041)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	LEAD, SUS-PENDED RECOV-ERABLE (UG/L AS PB) (01050)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)
OCT											
10...	--	--	0	8	--	--	2500	--	2	--	--
NOV											
08...	0	0	--	7	6	1	2900	10	7	7	0
DEC											
12...	--	--	--	--	--	--	--	--	--	--	--
JAN											
08...	--	--	--	--	--	--	--	--	--	--	--
FEB											
13...	--	--	--	--	--	--	--	--	--	--	--
MAR											
12...	--	--	--	--	--	--	--	--	--	--	--
APR											
12...	--	--	5	15	--	--	12000	--	--	--	--
MAY											
08...	--	--	6	6	--	--	10000	--	--	--	--
JUN											
13...	0	0	3	9	0	10	5600	50	10	--	--
JUL											
10...	--	--	4	7	--	--	3200	--	8	--	--
AUG											
07...	--	--	4	12	--	--	10000	--	15	--	--
SEP											
10...	--	--	5	4	--	--	2200	--	4	--	--

DATE	LITHIUM TOTAL RECOV-ERABLE (UG/L AS LI) (01132)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MANGA-NESE, SUS-PENDED RECOV. (UG/L AS MN) (01054)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	MERCURY SUS-PENDED RECOV-ERABLE (UG/L AS HG) (71895)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, TOTAL RECOV-ERABLE (UG/L AS MO) (01062)	MOLYB-DENUM, SUS-PENDED RECOV. (UG/L AS MO) (01061)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)
OCT											
10...	50	--	60	--	--	1.3	--	--	6	--	--
NOV											
08...	60	50	60	60	0	.0	.0	.0	5	4	1
APR											
12...	50	--	240	--	--	.1	--	--	3	--	--
MAY											
08...	70	--	200	--	--	.6	--	--	4	--	--
JUN											
13...	40	40	130	110	20	.1	.0	.1	2	1	0
JUL											
10...	40	--	80	--	--	.0	--	--	3	--	--
AUG											
07...	70	--	190	--	--	.1	--	--	3	--	--
SEP											
10...	70	--	60	--	--	.1	--	--	1	--	--

06330000 MISSOURI RIVER NEAR WILLISTON, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	NICKEL, SUS-PENDED RECOV-ERABLE (UG/L AS NI) (01066)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SELE-NIUM, SUS-PENDED TOTAL (UG/L AS SE) (01146)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	VANA-DIUM, DIS-SOLVED (UG/L AS V) (01085)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, SUS-PENDED RECOV-ERABLE (UG/L AS ZN) (01091)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)
OCT											
10...	5	--	--	1	--	--	0	--	30	--	--
NOV											
08...	4	1	3	1	1	0	--	.0	20	10	10
DEC											
12...	--	--	--	--	--	--	--	--	--	--	--
JAN											
08...	--	--	--	--	--	--	--	--	--	--	--
FEB											
13...	--	--	--	--	--	--	--	--	--	--	--
MAR											
12...	--	--	--	--	--	--	--	--	--	--	--
APR											
12...	15	--	--	1	--	--	0	--	60	--	--
MAY											
08...	17	--	--	1	--	--	0	--	70	--	--
JUN											
13...	13	0	11	4	0	1	0	.1	50	0	40
JUL											
10...	9	--	--	1	--	--	0	--	20	--	--
AUG											
07...	15	--	--	2	--	--	0	--	50	--	--
SEP											
10...	10	--	--	1	--	--	0	--	10	--	--

DATE	GROSS ALPHA, DIS-SOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DIS-SOLVED (PCI/L AS CS-137) (03515)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)	GROSS BETA, DIS-SOLVED (PCI/L AS SR/YT-90) (80050)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90) (80060)	RADIUM 226, DIS-SOLVED, RADON METHOD (PCI/L) (09511)	URANIUM DIS-SOLVED, EXTRAC-TION (UG/L) (80020)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C) (00689)
OCT										
10...	5.4	1.7	5.5	2.7	5.1	2.5	.08	5.8	4.3	.6
NOV										
08...	--	--	--	--	--	--	--	--	4.7	.5
DEC										
12...	--	--	--	--	--	--	--	--	2.8	.2
JAN										
08...	--	--	--	--	--	--	--	--	3.9	.5
FEB										
13...	--	--	--	--	--	--	--	--	4.3	.3
MAR										
12...	--	--	--	--	--	--	--	--	8.4	.6
APR										
12...	--	--	--	--	--	--	--	--	6.0	19
MAY										
08...	--	--	--	--	--	--	--	--	3.7	3.6
JUN										
13...	--	--	--	--	--	--	--	--	3.5	.8
JUL										
10...	--	--	--	--	--	--	--	--	4.7	2.0
AUG										
07...	--	--	--	--	--	--	--	--	6.9	1.3
SEP										
10...	--	--	--	--	--	--	--	--	3.8	.7

06330000 MISSOURI RIVER NEAR WILLISTON, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	PERI-PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M (00573)	PERI-PHYTON BIOMASS ASH WEIGHT G/SQ M (00572)	CHLOR-A PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70957)	CHLOR-B PERI-PHYTON CHROMO-GRAPHIC FLUORDM (MG/M2) (70958)	LENGTH OF EXPO-SURE (DAYS) (00022)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70338)	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70340)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)
OCT										
10...	--	--	.220	.000	2	116	7710	--	--	--
NOV										
08...	4.25	4.09	.310	.000	29	122	7510	46	66	79
DEC										
12...	--	--	--	--	--	17	927	--	--	--
JAN										
08...	--	--	--	--	--	21	1250	--	--	--
APR										
12...	--	--	--	--	--	477	64300	--	--	--
MAY										
08...	--	--	--	--	--	444	60500	--	--	--
JUN										
13...	--	--	--	--	--	301	26900	35	51	74
JUL										
10...	--	--	--	--	--	156	14400	--	--	--
AUG										
07...	.710	.550	.520	.000	28	376	23100	60	77	--
SEP										
10...	1.02	1.02	.886	.330	33	85	5540	--	--	--

DATE	SED. SUSP. FALL DIAM. % FINER THAN .125 MM (70343)	SED. SUSP. FALL DIAM. % FINER THAN .250 MM (70344)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SED. SUSP. SIEVE DIAM. % FINER THAN .125 MM (70332)	SED. SUSP. SIEVE DIAM. % FINER THAN .250 MM (70333)	SED. SUSP. SIEVE DIAM. % FINER THAN .500 MM (70334)	SED. SUSP. SIEVE DIAM. % FINER THAN 1.00 MM (70335)	SED. SUSP. SIEVE DIAM. % FINER THAN 2.00 MM (70336)	BED MAT. FALL DIAM. % FINER THAN .062 MM (80158)
OCT									
10...	--	--	--	--	--	--	--	--	--
NOV									
08...	98	100	--	--	--	--	--	--	4
JUN									
13...	92	100	--	--	--	--	--	--	1
JUL									
10...	--	--	--	--	--	--	--	--	--
AUG									
07...	--	--	86	92	96	97	99	100	7
SEP									
10...	--	--	--	--	--	--	--	--	--

DATE	BED MAT. FALL DIAM. % FINER THAN .125 MM (80159)	BED MAT. FALL DIAM. % FINER THAN .250 MM (80160)	BED MAT. FALL DIAM. % FINER THAN .500 MM (80161)	BED MAT. FALL DIAM. % FINER THAN 1.00 MM (80162)	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM (80169)	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM (80170)	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM (80171)	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM (80172)	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM (80173)
OCT									
10...	--	--	--	--	--	--	--	--	--
NOV									
08...	49	99	100	--	--	--	--	--	--
JUN									
13...	15	95	97	97	97	98	98	99	100
JUL									
10...	--	--	--	--	--	--	--	--	--
AUG									
07...	34	96	99	100	--	--	--	--	--
SEP									
10...	--	--	--	--	--	--	--	--	--

06330110 MISSOURI RIVER STAGE GAGE NO. 9 AT WILLISTON, ND

LOCATION.--Lat 48°08'13", long 103°36'16", in NE¼NE¼ sec.25, T.154 N., R.101 W., Williams County, Hydrologic Unit 10110101, on left bank levee at southeast edge of Williston 0.5 mi (0.8 km) upstream from Little Muddy Creek, and at mile 1,546.2 (2,487.8 km).

DRAINAGE AREA.--164,500 mi^2 (426,000 km^2), approximately.

PERIOD OF RECORD.--April 1959 to current year (seasonal).

GAGE.--Water-stage recorder. Datum of gage is 1,820.00 ft (554.736 m) National Geodetic Vertical Datum of 1929. Prior to May 13, 1969, at site 900 ft (270 m) downstream. At datum 20.00 ft (6.096 m) lower prior to Apr. 7, 1962.

REMARKS.--Stage regulated by upstream reservoirs and backwater from Lake Sakakawea.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily gage height recorded, 34.22 ft (10.430 m) July 25, 28, 1975; minimum daily recorded, 5.44 ft (1.658 m) Aug. 20, 1961, present datum.

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	25.09	24.56	26.23	25.50	26.50	27.09	28.85	25.95	26.42	26.50	25.88	25.15
2	25.41	24.60	26.20	25.33	26.50	27.09	28.72	26.02	26.51	26.52	25.78	25.45
3	25.45	24.56	26.11	25.20	26.50	27.05	28.68	26.17	26.38	26.50	26.05	25.62
4	25.23	24.51	25.99	25.25	26.47	27.05	28.61	26.27	26.12	26.60	26.00	25.03
5	25.26	24.11	25.81	---	26.47	27.07	28.65	26.49	26.12	26.73	26.71	25.02
6	25.54	24.58	25.69	25.45	26.51	27.11	28.65	26.68	25.67	26.68	25.90	25.26
7	25.65	24.57	25.65	25.50	26.55	27.12	28.65	26.57	25.50	26.51	25.79	25.68
8	25.41	24.56	25.67	25.54	26.59	27.12	28.65	26.28	25.57	26.29	26.03	25.27
9	25.55	24.58	25.60	25.59	26.62	27.11	28.68	26.41	25.74	26.28	25.52	25.40
10	25.57	24.51	25.50	25.58	26.70	27.11	28.62	26.51	26.03	26.36	25.64	25.11
11	24.99	24.56	25.40	25.67	26.70	27.20	29.18	26.59	26.28	26.28	25.80	24.90
12	25.11	24.70	25.46	25.71	26.73	27.29	29.05	26.49	26.25	26.23	25.50	24.37
13	25.12	24.51	25.55	25.78	26.78	27.40	28.77	26.44	26.03	26.07	25.57	24.78
14	25.15	24.65	25.72	---	26.82	27.62	28.45	26.30	25.70	25.84	26.00	24.85
15	25.07	24.48	25.84	---	26.86	27.89	28.15	26.35	25.80	25.89	26.23	24.93
16	25.26	24.73	25.92	---	26.86	28.18	---	26.10	25.70	26.09	25.75	24.89
17	25.00	24.96	25.91	---	26.87	28.59	---	25.50	26.10	26.12	25.48	24.50
18	25.03	25.37	25.89	---	26.91	28.91	---	25.62	26.62	26.01	25.58	24.94
19	25.01	25.52	25.87	---	26.90	29.24	---	25.58	26.62	25.97	25.65	24.93
20	24.98	25.27	25.82	26.01	26.89	29.87	---	25.61	26.11	26.00	25.75	24.69
21	24.79	25.30	25.72	26.09	26.90	30.17	---	25.87	26.16	25.98	25.60	25.00
22	24.91	25.52	25.57	26.16	26.91	30.00	---	25.44	26.29	26.11	25.30	24.91
23	25.03	25.50	25.48	26.26	26.98	29.81	---	25.62	26.39	25.89	25.38	24.68
24	24.63	25.49	25.50	26.37	27.00	29.69	---	25.80	26.51	25.90	25.36	24.63
25	24.69	25.60	25.65	26.48	27.05	29.57	---	25.66	26.39	25.79	25.37	24.64
26	24.74	25.79	25.78	26.55	27.09	29.95	---	25.61	26.33	25.82	25.31	24.75
27	24.72	25.95	25.76	26.59	27.09	29.88	---	25.94	26.37	25.82	25.45	24.51
28	24.80	26.09	25.77	26.59	27.08	29.82	---	25.80	26.22	25.90	25.35	24.82
29	24.77	26.11	25.74	26.55	---	29.68	---	25.78	26.24	25.96	25.41	24.37
30	24.80	26.20	25.68	26.51	---	29.39	---	25.99	26.58	25.77	25.98	24.44
31	24.65	---	25.60	26.50	---	29.05	---	26.17	---	25.93	25.55	---
TOTAL	777.53	750.30	798.10	---	749.87	880.10	---	807.41	784.55	810.34	796.47	747.52
MEAN	25.08	25.01	25.75	---	26.78	28.39	---	26.05	26.15	26.14	25.69	24.92
MAX	25.69	26.20	26.23	---	27.09	30.17	---	26.68	26.62	26.73	26.71	25.68
MIN	24.60	24.11	25.40	---	26.47	27.05	---	25.44	25.50	25.77	25.30	24.37

06331000 LITTLE MUDDY RIVER BELOW COW CREEK NEAR WILLISTON, ND

LOCATION.--Lat 48°17'04", long 103°34'21", in NE¼NW¼ sec.5, T.155 N., R.100 W., Williams County, Hydrologic Unit 10110102, on left bank 37 ft (11 m) downstream from centerline of highway, 1 mi (2 km) downstream from Cow Creek, 4 mi (6 km) upstream from Camp Creek, 10 mi (16 km) northeast of Williston, and 13 mi (21 km) upstream from mouth.

DRAINAGE AREA.--875 mi^2 (2,266 km^2), approximately, of which about 100 mi^2 (260 km^2) is probably noncontributing.

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

GAGE.--Water-stage recorder. Datum of gage is 1,863.18 ft (567.897 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Some small diversions for irrigation. Some regulation by Lake Zahl, Fish and Wildlife Service reservoir 22 mi (35 km) upstream and Blacktail Dam about 15 mi (24 km) upstream.

AVERAGE DISCHARGE.--25 years, 39.6 ft^3/s (1.121 m^3/s), 28,690 acre-ft/yr (35.4 hm^3/yr); median of yearly mean discharges, 31 ft^3/s (0.88 m^3/s), 22,500 acre-ft/yr (28 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,180 ft^3/s (260 m^3/s) Apr. 18, 1979, gage height, 12.77 ft (3.892 m); maximum gage height, 13.57 ft (4.136 m) Mar. 27, 1960; minimum discharge, 0.20 ft^3/s (0.006 m^3/s) Nov. 27, 1960, Feb. 5, 1963, and June 4, 1968.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 250 ft^3/s (7.08 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Apr. 11	--	930	26.3	Backwater from ice	
Apr. 18	0600	*9,180	260	12.77	3.892

Minimum daily discharge, 7.0 ft^3/s (0.20 m^3/s) on many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	15	15	8.0	7.5	7.0	45	183	34	15	10	9.3
2	12	15	12	7.5	7.5	7.0	36	163	32	15	9.7	8.0
3	12	13	10	7.5	7.5	7.0	36	150	31	14	9.8	7.6
4	15	15	10	7.2	7.5	7.0	33	141	29	13	9.6	7.5
5	12	13	10	7.2	7.5	7.2	34	141	27	13	9.3	7.0
6	13	14	10	7.2	7.7	7.5	34	142	25	13	9.2	7.0
7	13	14	9.5	7.2	7.5	7.8	32	155	24	12	8.8	7.3
8	13	14	9.0	7.2	7.5	7.6	34	155	23	12	8.6	7.5
9	13	13	8.5	7.2	7.5	8.1	44	138	23	12	8.9	7.8
10	13	13	9.0	7.2	7.2	8.2	486	119	23	12	8.7	8.8
11	14	13	9.5	7.2	7.0	8.7	868	106	22	14	8.7	9.3
12	13	13	10	7.2	7.0	9.1	598	93	21	13	8.4	9.2
13	12	13	11	7.2	7.0	11	221	81	21	12	8.2	9.1
14	12	13	11	7.2	7.0	10	253	74	19	12	8.1	9.2
15	12	13	11	7.2	7.0	11	195	68	19	11	8.0	9.0
16	13	13	11	7.0	7.0	11	250	63	18	11	8.1	8.9
17	14	13	11	7.0	7.0	12	1030	60	19	11	8.0	8.7
18	13	14	10	7.0	7.0	11	6610	57	18	11	7.8	8.3
19	13	14	10	7.0	7.0	11	5760	63	21	11	7.9	8.5
20	13	14	10	7.2	7.0	12	5360	72	20	10	7.9	8.3
21	13	13	10	7.5	7.0	12	5180	73	19	10	7.8	8.3
22	13	14	10	7.5	7.0	14	1490	63	19	10	7.8	8.3
23	13	13	10	7.5	7.0	16	858	56	24	10	7.6	8.5
24	13	13	10	7.5	7.0	19	683	52	25	10	7.8	8.4
25	12	16	10	7.5	7.0	24	491	49	27	10	7.8	8.0
26	13	16	10	7.5	7.0	26	375	45	22	10	8.0	8.0
27	13	16	10	7.5	7.0	31	313	41	19	9.7	8.0	8.0
28	13	16	9.5	7.5	7.0	29	266	39	19	9.4	8.1	8.5
29	13	16	9.5	7.5	---	26	232	39	17	9.8	7.9	8.4
30	13	15	9.0	7.5	---	33	202	37	15	10	7.8	8.4
31	13	---	8.5	7.5	---	37	---	35	---	10	8.5	---
TOTAL	397	433	312.0	227.1	200.9	470.4	29871	2753	675	355.9	260.8	249.1
MEAN	12.8	14.4	10.1	7.33	7.18	15.2	996	88.8	22.5	11.5	8.41	8.30
MAX	14	16	15	8.0	7.7	57	6610	183	34	15	10	9.3
MIN	12	13	8.5	7.0	7.0	7.0	32	35	15	9.4	7.6	7.0
AC-FT	787	859	619	450	398	933	59250	5460	1340	706	517	494

CAL YR 1978 TOTAL 19175.6 MEAN 52.5 MAX 1950 MIN 4.2 AC-FT 38030
WTR YR 1979 TOTAL 36205.2 MEAN 99.2 MAX 6610 MIN 7.0 AC-FT 71810

06331570 STONY CREEK NEAR WILLISTON, ND

LOCATION.--Lat 48°09'16", long 103°34'27", in SE¼SE¼SW¼ sec.17, T.154 N., R.100 W., Williams County, Hydrologic Unit 10110101, on left bank at the Hardy Salt Company plant, 1.2 mi (1.9 km) upstream from bridge on State Highway 1804, 3.1 mi (5.0 km) upstream from mouth, and 1.4 mi (2.3 km) east of Williston.

DRAINAGE AREA.--146 mi^2 (378 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1977 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,820 ft (555 m), from topographic map.

REMARKS.--Records good except those for October to June, which are poor. Some regulation by Epping Dam located 16 mi (25.7 km) upstream.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,120 ft^3/s (88.4 m^3/s) Apr. 18, 1979, gage height, 15.05 ft (4.587 m); no flow at times most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,120 ft^3/s (88.4 m^3/s) Apr. 18, gage height, 15.05 ft (4.587 m), only peak above base of 150 ft^3/s (4.25 m^3/s); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.23	.42	.30	.05	.00	.00	.80	36	5.5	.75	.11	.00
2	.24	.38	.30	.05	.00	.00	.80	25	5.0	.75	.11	.00
3	.30	.37	.30	.02	.00	.00	.70	15	4.5	.67	.07	.00
4	.31	.31	.30	.02	.00	.00	1.0	19	3.8	.60	.05	.00
5	.21	.21	.25	.00	.00	.05	.50	19	3.5	.60	.02	.00
6	.18	.26	.25	.00	.00	.10	.50	18	3.2	.60	.02	.00
7	.21	.29	.20	.00	.00	.08	.80	20	3.0	.60	.00	.00
8	.26	.36	.15	.00	.00	.05	1.5	19	2.8	.60	.00	.00
9	.28	.40	.10	.00	.00	.05	3.0	15	2.6	.60	.02	.00
10	.32	.41	.10	.00	.00	.05	7.0	12	2.5	.60	.04	.00
11	.27	.38	.20	.00	.00	.15	17	10	2.3	.60	.04	.00
12	.24	.47	.40	.00	.00	.10	15	9.0	2.2	.60	.04	.00
13	.27	.45	.60	.00	.00	.02	13	8.5	1.9	.52	.04	.00
14	.32	.43	.60	.00	.00	.20	12	8.0	1.7	.46	.02	.00
15	.45	.43	.50	.00	.00	.80	20	7.0	1.1	.34	.01	.00
16	.51	.28	.45	.02	.00	1.2	32	6.5	.90	.25	.00	.00
17	.57	.25	.40	.08	.00	1.5	954	6.0	.76	.20	.00	.00
18	.60	.20	.40	.08	.00	1.1	2810	8.0	.68	.20	.00	.00
19	.70	.15	.35	.08	.00	.90	1500	11	.84	.17	.00	.00
20	.68	.10	.30	.00	.00	.70	400	13	.79	.14	.00	.00
21	.66	.10	.30	.00	.00	.50	243	12	.60	.11	.00	.00
22	.61	.15	.25	.00	.00	.70	147	9.5	.56	.09	.00	.00
23	.53	.25	.25	.00	.00	1.4	114	8.0	1.1	.11	.00	.00
24	.49	.35	.20	.00	.00	2.3	89	7.0	1.1	.17	.00	.00
25	.43	.40	.15	.00	.00	2.0	72	6.0	.86	.20	.00	.00
26	.35	.40	.15	.00	.00	1.8	75	5.0	.60	.17	.00	.00
27	.46	.40	.10	.00	.00	2.1	64	4.5	.62	.17	.00	.00
28	.53	.35	.10	.00	.00	1.7	54	4.3	.94	.11	.00	.00
29	.48	.35	.10	.00	---	1.4	46	4.0	.76	.11	.00	.00
30	.45	.35	.10	.00	---	1.1	45	3.8	.76	.11	.00	.00
31	.48	---	.10	.00	---	1.0	---	6.0	---	.11	.00	---
TOTAL	12.62	9.65	8.25	.40	.00	23.05	6736.60	355.1	57.47	11.31	.59	.00
MEAN	.41	.32	.27	.013	.000	.74	225	11.5	1.92	.36	.019	.000
MAX	.70	.47	.60	.08	.00	2.3	2810	36	5.5	.75	.11	.00
MIN	.18	.10	.10	.00	.00	.00	.50	3.8	.56	.09	.00	.00
AC-FT	25	19	16	.8	.00	46	13360	704	114	22	1.2	.00

CAL YR 1978	TOTAL	3598.77	MEAN	9.86	MAX	400	MIN	.00	AC-FT	7140
WTR YR 1979	TOTAL	7215.04	MEAN	19.8	MAX	2810	MIN	.00	AC-FT	14310

06331570 STONY CREEK NEAR WILLISTON, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1977 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)
OCT												
05...	1130	.22	2200	8.6	8.0	9.5	10.0	94	93	320	290	0
NOV												
15...	0930	.44	2550	8.2	11.0	.0	12.5	90	K28	340	340	0
DEC												
13...	0925	.80	2570	8.4	-5.5	.0	11.5	85	21	52	350	0
JAN												
17...	0950	.08	2750	8.4	-11.0	.0	9.8	71	K3	38	340	0
APR												
10...	0730	8.1	1040	8.1	.5	.0	11.9	88	220	K220000	140	0
18...	0945	2820	--	--	19.0	4.0	--	--	--	--	--	--
20...	1100	337	240	8.1	9.5	2.0	12.3	94	K15	K19000	75	--
MAY												
08...	1545	19	1100	8.4	14.0	8.0	12.0	107	18	70	230	0
JUN												
13...	0900	2.1	1010	8.2	22.5	21.0	5.7	69	400	130	290	20
JUL												
09...	1700	.59	--	--	26.5	23.5	--	--	--	--	--	--
11...	0825	.60	1940	8.4	22.0	21.5	5.3	64	410	240	280	--
AUG												
06...	1330	.02	2420	8.5	30.0	26.0	11.3	147	570	100	350	0

DATE	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE (MG/L AS HCO3) (00440)	CAR-BONATE (MG/L AS CO3) (00445)	ALKA-LINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)
OCT											
05...	45	43	420	75	11	10	695	12	590	2.9	560
NOV											
15...	55	48	510	76	12	10	954	0	780	9.6	640
DEC											
13...	55	52	530	76	12	12	1010	4	840	6.5	660
JAN											
17...	45	56	570	78	13	11	966	0	790	6.2	720
APR											
10...	29	16	200	75	7.4	6.3	346	0	280	4.4	260
18...	--	--	--	--	--	--	--	--	--	--	--
20...	16	6.5	20	34	1.0	6.4	--	--	--	--	47
MAY											
08...	42	30	170	61	4.9	9.3	349	2	290	2.2	290
JUN											
13...	57	37	120	46	3.0	10	327	0	270	3.3	300
JUL											
09...	--	--	--	--	--	--	--	--	--	--	--
11...	48	39	330	71	8.6	12	--	--	--	--	510
AUG											
06...	56	51	460	73	11	11	765	19	660	4.1	690

K - Results based on colony count outside the acceptable range (non-ideal colony count).

06331570 STONY CREEK NEAR WILLISTON, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)
OCT											
05...	6.9	.5	18	1490	1450	1.97	.88	.02	.00	1.0	1.0
NOV											
15...	10	.4	12	1790	1760	2.39	2.09	.02	.01	.78	.79
DEC											
13...	12	.5	16	1840	1840	2.50	2.98	.25	.35	.62	.97
JAN											
17...	9.4	.5	18	1800	1910	2.60	.41	.47	.33	.60	.93
APR											
10...	4.6	.2	7.2	694	694	.94	15.2	.27	.04	.96	1.0
18...	--	--	--	--	--	--	--	--	--	--	--
20...	1.9	.1	5.4	156	--	.21	142	.86	.33	2.2	2.5
MAY											
08...	4.8	.2	11	744	731	.99	57.5	.29	.03	1.1	1.1
JUN											
13...	4.5	.2	5.7	659	646	.93	3.95	.15	.13	.77	.90
JUL											
09...	--	--	--	--	--	--	--	--	--	--	--
11...	8.0	.4	11	1310	--	1.78	2.12	.05	.09	.91	1.0
AUG											
06...	12	.4	13	1680	1690	2.30	.09	.03	.01	1.1	1.1

DATE	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	ARSENIC TOTAL IN BOT-TOM MA-TERIAL (UG/G AS AS) (01003)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BARIUM, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS BA) (01008)
OCT											
05...	1.0	4.5	.05	.03	--	--	--	--	--	--	--
NOV											
15...	.81	3.6	.05	.02	--	--	--	--	--	--	--
DEC											
13...	1.2	5.4	.09	.04	--	--	--	--	--	--	--
JAN											
17...	1.4	6.2	.07	.05	--	--	--	--	--	--	--
APR											
10...	1.3	5.8	.23	.15	40	3	1	8	0	100	100
18...	--	--	--	--	--	--	--	--	--	--	--
20...	3.4	15	.45	.32	60	5	1	3	300	0	16
MAY											
08...	1.4	6.2	.09	.02	--	--	--	--	--	--	--
JUN											
13...	1.1	4.6	.11	.02	--	--	--	--	--	--	--
JUL											
09...	--	--	--	--	--	--	--	--	--	--	--
11...	1.1	4.6	.04	.00	0	--	4	--	--	90	--
AUG											
06...	1.1	5.0	.05	.02	0	5	5	7	100	100	0

DATE	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	COPPER, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS CU) (01043)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LITHIUM TOTAL RECOV-ERABLE (UG/L AS LI) (01132)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MANGA-NESE, RECOV. FM BOT-TOM MA-TERIAL (UG/G) (01053)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MERCURY RECOV. FM BOT-TOM MA-TERIAL (UG/G AS HG) (71921)
OCT											
05...	--	--	70	--	--	--	--	--	--	--	--
NOV											
15...	--	--	70	--	--	--	--	--	--	--	--
DEC											
13...	--	--	80	--	--	--	--	--	--	--	--
JAN											
17...	--	--	70	--	--	--	--	--	--	--	--
APR											
10...	11	3	270	40	20	130	50	240	.1	.1	.02
18...	--	--	--	--	--	--	--	--	--	--	--
20...	9	5	170	20	0	630	40	180	.3	.1	.01
MAY											
08...	--	--	50	--	--	--	--	--	--	--	--
JUN											
13...	--	--	10	--	--	--	--	--	--	--	--
JUL											
09...	--	--	--	--	--	--	--	--	--	--	--
11...	9	--	10	--	60	--	40	--	--	.3	--
AUG											
06...	4	3	10	80	70	120	50	230	.0	.0	.03

06331570 STONY CREEK NEAR WILLISTON, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	BERYLLIUM, TOTAL RECOVERABLE (UG/L AS BE) (01012)	BERYLLIUM, DISSOLVED (UG/L AS BE) (01010)	BERYLLIUM, RECOV. FM BOTTOM MATERIAL (UG/G) (01013)	BORON, DISSOLVED (UG/L AS B) (01020)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) (01034)	CHROMIUM, DISSOLVED (UG/L AS CR) (01030)	CHROMIUM, RECOV. FM BOTTOM MATERIAL (UG/G) (01029)	COBALT, TOTAL RECOVERABLE (UG/L AS CO) (01037)	COBALT, DISSOLVED (UG/L AS CO) (01035)	COBALT, RECOV. FM BOTTOM MATERIAL (UG/G AS CO) (01038)	COPPER, TOTAL RECOVERABLE (UG/L AS CU) (01042)
OCT											
05...	--	--	--	310	--	--	--	--	--	--	--
NOV											
15...	--	--	--	350	--	--	--	--	--	--	--
DEC											
13...	--	--	--	370	--	--	--	--	--	--	--
JAN											
17...	--	--	--	340	--	--	--	--	--	--	--
APR											
10...	0	0	1	180	10	10	6	4	0	10	8
18...	--	--	--	--	--	--	--	--	--	--	--
20...	0	0	0	60	20	0	2	7	0	0	58
MAY											
08...	--	--	--	150	--	--	--	--	--	--	--
JUN											
13...	--	--	--	130	--	--	--	--	--	--	--
JUL											
09...	--	--	--	--	--	--	--	--	--	--	--
11...	--	<1	--	260	--	0	--	--	<3	--	--
AUG											
06...	0	0	0	160	0	0	6	2	0	5	3

DATE	MOLYBDENUM, TOTAL RECOVERABLE (UG/L AS MO) (01062)	MOLYBDENUM, RECOV. FM BOTTOM MATERIAL (UG/G) (01063)	MOLYBDENUM, DISSOLVED (UG/L AS MO) (01060)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI) (01067)	NICKEL, DISSOLVED (UG/L AS NI) (01065)	NICKEL, RECOV. FM BOTTOM MATERIAL (UG/G AS NI) (01068)	SELENIUM, TOTAL (UG/L AS SE) (01147)	SELENIUM, DISSOLVED (UG/L AS SE) (01145)	SELENIUM, TOTAL IN BOTTOM MATERIAL (UG/G) (01148)	VANADIUM, DISSOLVED (UG/L AS V) (01085)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN) (01092)
APR											
10...	3	3	0	4	0	0	0	0	0	4.0	30
18...	--	--	--	--	--	--	--	--	--	--	--
20...	76	0	0	26	2	30	1	0	0	1.9	120
MAY											
08...	--	--	--	--	--	--	--	--	--	--	--
JUN											
13...	--	--	--	--	--	--	--	--	--	--	--
JUL											
09...	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	<10	--	2	--	--	0	--	<1.0	--
AUG											
06...	1	0	1	8	5	10	0	0	0	1.0	20

DATE	ZINC, DISSOLVED (UG/L AS ZN) (01090)	ZINC, RECOV. FM BOTTOM MATERIAL (UG/G AS ZN) (01093)	GROSS ALPHA, DISSOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DISSOLVED (PCI/L AS CS-137) (03515)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)	CARBON, ORGANIC DISSOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUSPENDED TOTAL (MG/L AS C) (00689)	SEDIMENT, SUSPENDED (MG/L) (80154)	SEDIMENT DISCHARGE, SUSPENDED (T/DAY) (80155)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70338)
OCT											
05...	--	--	--	--	--	--	18	1.0	62	.04	--
NOV											
15...	--	--	--	--	--	--	17	1.1	121	.14	--
DEC											
13...	--	--	--	--	--	--	14	1.0	124	.20	--
JAN											
17...	--	--	--	--	--	--	11	.7	56	.01	--
APR											
10...	20	18	<8.9	<1.3	8.5	1.6	12	1.6	76	1.7	--
18...	--	--	--	--	--	--	--	--	1370	10400	--
20...	10	12	<3.1	35	7.5	19	8.3	13	761	692	52
MAY											
08...	--	--	--	--	--	--	17	.8	63	3.2	--
JUN											
13...	--	--	--	--	--	--	11	1.4	40	.23	--
JUL											
09...	--	--	--	--	--	--	--	--	82	.13	--
11...	<3	--	--	--	--	--	28	.8	56	.09	--
AUG											
06...	20	11	<25	1.2	12	1.6	21	.7	74	.00	--

06331570 STONY CREEK NEAR WILLISTON, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70340)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)	SED. SUSP. FALL DIAM. % FINER THAN .125 MM (70343)	SED. SUSP. FALL DIAM. % FINER THAN .250 MM (70344)	SED. SUSP. FALL DIAM. % FINER THAN .500 MM (70345)	BED MAT. FALL DIAM. % FINER THAN .062 MM (80158)	BED MAT. FALL DIAM. % FINER THAN .125 MM (80159)	BED MAT. FALL DIAM. % FINER THAN .250 MM (80160)
APR								
10...	--	--	--	--	--	7	15	48
20...	71	92	98	99	100	1	2	12
AUG								
06...	--	--	--	--	--	0	0	1

DATE	BED MAT. FALL DIAM. % FINER THAN .500 MM (80161)	BED MAT. FALL DIAM. % FINER THAN 1.00 MM (80162)	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM (80169)	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM (80170)	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM (80171)	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM (80172)	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM (80173)
APR							
10...	75	81	85	91	99	100	--
20...	53	80	92	98	100	--	--
AUG							
06...	5	29	44	62	74	85	100

DATE	LENGTH OF EXPO-SURE (DAYS) (00022)	CHLOR-A PERI-PHYTON CHROMO-GRAPHIC FLUORUM (MG/M2) (70957)	CHLOR-B PERI-PHYTON CHROMO-GRAPHIC FLUORUM (MG/M2) (70958)	PERI-PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M (00573)	PERI-PHYTON BIOMASS ASH WEIGHT G/SQ M (00572)
JUL					
11...	28	20.0	2.52	5.59	4.57
AUG					
06...	26	2.50	.600	2.76	2.28

06331570 STONY CREEK NEAR WILLISTON, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1978 TO AUGUST 1979

DATE	OCT 5,78		NOV 15,78		DEC 13,78		JAN 17,79		APR 10,79	
TIME	1130		0930		0925		0930		0730	
TOTAL CELLS/ML	2100		8900		220		15		240	
DIVERSITY: DIVISION	0.3		1.6		1.2		0.0		1.5	
.CLASS	0.3		1.6		1.2		0.0		1.5	
..ORDER	0.8		1.7		1.4		0.9		2.3	
...FAMILY	1.0		2.0		2.2		0.9		2.8	
....GENUS	1.9		0.0		2.8		0.9		2.8	

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)										
.CHLOROPHYCEAE										
..CHLOROCOCCALES										
...COELASTRACEAE										
....COELASTRUM	--	-	--	-	--	-	--	-	--	-
...HYDRODICTYACEAE										
....PEDIASTRUM	--	-	--	-	--	-	--	-	--	-
...MICRACTINIACEAE										
....MICRACTINIUM	--	-	--	-	--	-	--	-	--	-
...OOCYSTACEAE										
....ANKISTRODESMUS	95	5	270	3	54#	25	--	-	29	12
....KIRCHNERIELLA	--	-	270	3	15	7	--	-	--	-
....OOCYSTIS	*	0	--	-	--	-	--	-	--	-
....SELENASTRUM	--	-	610	7	--	-	--	-	--	-
....TETRAEDRON	--	-	--	-	--	-	--	-	--	-
...SCENEDESMACEAE										
....CRUCIGENIA	1300#	61	200	2	31	14	--	-	--	-
....SCENEDESMUS	250	12	540	6	46#	21	--	-	--	-
....TETRASTRUM	160	8	--	-	--	-	--	-	--	-
..VOLVOCALES										
...CHLAMYDOMONADACEAE	--	-	470	5	--	-	--	-	--	-
....CHLAMYDOMONAS	190	9	--	-	8	4	--	-	43#	18
CHRYSOPHYTA										
.BACILLARIOPHYCEAE										
..CENTRALES										
...COSCINODISCACEAE										
....CYCLOTELLA	40	2	4400#	50	--	-	10#	67	43#	18
....MELOSIRA	--	-	680	8	--	-	--	-	--	-
..PENNALES										
...ACHNANTHACEAE										
....COCCONEIS	--	-	--	-	--	-	--	-	29	12
...FRAGILARIACEAE										
....FRAGILARIA	--	-	--	-	--	-	--	-	14	6
....SYNEDRA	--	-	--	-	15	7	--	-	--	-
...GOMPHONEMATACEAE										
....GOMPHONEMA	--	-	--	-	--	-	--	-	14	6
...NAVICULACEAE										
....NAVICULA	--	-	--	-	--	-	--	-	--	-
...NITZSCHIACEAE										
....NITZSCHIA	16	1	--	-	31	14	5#	33	14	6
CRYPTOPHYTA (CRYPTOMONADS)										
.CRYPTOPHYCEAE										
..CRYPTOMONADALES										
...CRYPTOCHRYSIDACEAE										
....CHROOMONAS	--	-	--	-	--	-	--	-	--	-
...CRYPTOMONADACEAE										
....CRYPTOMONAS	--	-	--	-	--	-	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)										
.CYANOPHYCEAE										
..CHROOCOCCALES										
...CHROOCOCCACEAE										
....ANACYSTIS	--	-	680	8	8	4	--	-	--	-
..HORMOGONALES										
...NOSTOCACEAE										
....ANABAENA	--	-	--	-	--	-	--	-	58#	24
...RIVULARIACEAE										
....RAPHIDIOPSIS	--	-	--	-	--	-	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)										
.EUGLENOPHYCEAE										
..EUGLENALES										
...EUGLENACEAE										
....EUGLENA	16	1	--	-	--	-	--	-	--	-
....PHACUS	*	0	--	-	--	-	--	-	--	-
....TRACHELOMONAS	16	1	740	8	8	4	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06331570 STONY CREEK NEAR WILLISTON, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1978 TO AUGUST 1979

DATE	APR 20,79	MAY 8,79	JUN 13,79	JUL 11,79	AUG 6,79
TIME	1100	1545	0900	0825	1330
TOTAL CELLS/ML	580	560	1200	2700	4500
DIVERSITY: DIVISION	1.4	0.9	1.7	1.9	2.0
.CLASS	1.4	0.9	1.7	1.9	2.0
..ORDER	1.4	1.7	2.0	2.4	2.5
...FAMILY	1.4	2.0	2.4	3.0	2.9
....GENUS	1.4	0.0	2.9	3.5	3.3

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)										
.CHLOROPHYCEAE										
..CHLOROCOCCALES										
...COELASTRACEAE										
....COELASTRUM	--	-	--	-	--	-	65	2	350	8
...HYDRODICTYACEAE										
....PEDIASTRUM	--	-	--	-	--	-	91	3	--	-
...MICRACTINIACEAE										
....MICRACTINIUM	--	-	57	10	--	-	--	-	--	-
...OOCYSTACEAE										
....ANKISTRODESMUS	--	-	72	13	130	11	100	4	50	1
....KIRCHNERIELLA	--	-	--	-	--	-	52	2	--	-
....OOCYSTIS	--	-	--	-	--	-	52	2	--	-
....SELENASTRUM	--	-	--	-	26	2	26	1	25	1
....TETRAEDRON	--	-	--	-	--	-	--	-	25	1
...SCENEDESMACEAE										
....CRUCIGENIA	--	-	--	-	--	-	--	-	500	11
....SCENEDESMUS	290#	50	--	-	180#	15	260	10	700#	16
....TETRASTRUM	--	-	--	-	52	4	280	11	--	-
..VOLVOCALES										
...CHLAMYDOMONADACEAE	--	-	270#	49	--	-	--	-	--	-
....CHLAMYDOMONAS	--	-	--	-	120	10	210	8	330	7
CHRYSOPHYTA										
.BACILLARIOPHYCEAE										
..CENTRALES										
...COSCINODISCACEAE										
....CYCLOTELLA	--	-	130#	23	410#	35	130	5	830#	19
....MELOSIRA	--	-	--	-	77	7	78	3	--	-
..PENNALES										
...ACHNANTHACEAE										
....COCCONEIS	--	-	--	-	--	-	--	-	100	2
...FRAGILARIACEAE										
....FRAGILARIA	--	-	--	-	--	-	--	-	--	-
....SYNEDRA	--	-	14	3	--	-	--	-	--	-
...GOMPHONEMATACEAE										
....GOMPHONEMA	--	-	--	-	--	-	--	-	--	-
...NAVICULACEAE										
....NAVICULA	--	-	--	-	--	-	52	2	25	1
...NITZSCHIACEAE										
....NITZSCHIA	--	-	14	3	--	-	210	8	130	3
CRYPTOPHYTA (CRYPTOMONADS)										
.CRYPTOPHYCEAE										
..CRYPTOMONADALES										
...CRYPTOCHRYSIDACEAE										
....CHROOMONAS	--	-	--	-	13	1	--	-	--	-
...CRYPTOMONADACEAE										
....CRYPTOMONAS	--	-	--	-	13	1	--	-	280	6
CYANOPHYTA (BLUE-GREEN ALGAE)										
.CYANOPHYCEAE										
..CHROOCOCCALES										
...CHROOCOCCACEAE										
....ANACYSTIS	--	-	--	-	100	9	570#	21	730#	16
..HORMOGONALES										
...NOSTOCALEAE										
....ANABAENA	--	-	--	-	--	-	--	-	--	-
...RIVULARIACEAE										
....RHAPHIDIOPSIS	220#	38	--	-	--	-	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)										
.EUGLENOPHYCEAE										
..EUGLENALES										
...EUGLENACEAE										
....EUGLENA	--	-	--	-	13	1	65	2	230	5
....PHACUS	--	-	--	-	--	-	--	-	--	-
....TRACHELOMONAS	72	13	--	-	39	3	470#	17	180	4

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06331650 MISSOURI RIVER STAGE GAGE NO. 11 NEAR WILLISTON, ND

LOCATION.--Lat 48°01'55", long 103°31'23", in SE¼ sec.34, T.153 N., R.100 W., Williams County, Hydrologic Unit 10110101, on left bank 10 mi (16 km) southeast of Williston, and at mile 1,534.4 (2,468.8 km).

DRAINAGE AREA.--165,000 mi² (427,000 km²), approximately.

PERIOD OF RECORD.--May 1959 to current year (seasonal).

GAGE.--Water-stage recorder. Datum of gage is 1,810.00 ft (551.688 m) National Geodetic Vertical Datum of 1929. Prior to Apr. 25, 1962, at datum 10.00 ft (3.048 m) lower.

REMARKS.--Stage regulated by upstream reservoirs and Lake Sakakawea.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily gage height recorded, 43.93 ft (13.390 m) July 22, 1975; minimum daily recorded, 5.49 ft (1.673 m) Apr. 29, 1960, present datum.

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	34.95	33.21					---	33.65	34.39	35.09	35.52	34.83
2	34.64	---					---	33.77	34.51	35.34	35.48	35.11
3	34.68	---					---	34.11	34.48	35.40	35.75	35.20
4	34.29	---					---	34.09	34.70	35.52	35.68	34.78
5	34.67	---					---	34.54	34.65	35.59	36.06	34.75
6	34.68	---					---	34.46	34.54	35.62	35.50	35.00
7	34.92	---					---	34.09	34.28	35.53	35.52	35.11
8	34.66	---					---	34.43	34.43	35.50	35.62	34.97
9	34.67	---					---	34.66	34.37	35.50	35.27	35.00
10	34.61	---					---	34.72	34.40	35.67	35.39	34.80
11	34.12	---					---	34.81	34.48	35.53	35.48	34.70
12	34.32	---					---	34.81	34.57	35.52	35.28	34.48
13	34.35	---					---	34.92	34.48	35.38	35.37	34.62
14	34.23	---					---	34.94	34.25	35.22	35.52	34.60
15	34.29	---					---	35.13	34.30	35.48	35.61	34.69
16	34.42	---					---	35.05	34.45	35.58	35.32	34.68
17	34.14	---					---	34.38	34.53	35.60	35.21	34.32
18	34.05	---					---	34.85	34.70	35.54	35.28	34.69
19	34.07	---					---	34.80	34.36	35.55	35.31	34.62
20	34.00	---					---	34.85	33.96	35.58	35.37	34.48
21	33.76	---					---	34.79	34.43	35.53	35.29	34.61
22	33.95	---					---	34.61	34.63	35.65	35.10	34.62
23	33.84	---					---	34.64	34.71	35.50	35.19	34.38
24	33.24	---					---	34.73	34.73	35.50	35.12	34.37
25	33.58	---					---	34.52	34.72	35.40	35.10	34.37
26	33.53	---					---	34.50	34.82	35.45	35.10	34.39
27	33.51	---					33.23	34.71	34.94	35.43	35.12	34.30
28	33.61	---					33.26	34.43	34.80	35.50	35.01	34.35
29	33.50	---					33.41	34.37	34.95	35.55	35.17	34.09
30	33.12	---					33.59	34.32	35.30	35.43	35.41	34.05
31	33.29	---						34.38	---	35.58	34.95	---
TOTAL	1058.09	---					---	1070.84	1036.66	1100.26	1096.08	1038.96
MEAN	34.13	---					---	34.54	34.56	35.49	35.36	34.63
MAX	34.95	---					---	35.13	35.30	35.67	36.06	35.20
MIN	33.12	---					---	33.63	33.96	35.09	34.95	34.05

06331680 TOBACCO GARDEN CREEK NEAR WATFORD CITY, ND

LOCATION.--Lat 47°59'33", long 103°09'57", McKenzie County, Hydrologic Unit 10110101, in SE¼SW¼ sec. 12, T. 152 N., R.98 W., on left bank at downstream side of bridge on county highway, 14 mi (22 km) northeast of Watford City.

DRAINAGE AREA.--135 mi^2 (350 km^2), approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1976 to current year.

GAGE.--Water stage recorder. Datum of gage is 1,930.00 ft (588.264 m) National Geodetic Vertical Datum of 1929.

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

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,380 ft^3/s (67.4 m^3/s) Apr. 18, 1979, gage height, 16.19 ft (4.935 m); no flow Jan. 28 to March 1, 1978.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 100 ft^3/s (2.83 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Apr. 12	--	310	8.78	Backwater from ice		Apr. 18	1245	*2,380	67.4	*16.19	4.935

Minimum daily discharge, 0.15 ft^3/s (0.004 m^3/s) Sept. 18.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.45	1.2	1.1	.60	.45	.40	1.4	7.1	1.6	.56	.42	.30
2	.61	1.3	1.0	.60	.45	.40	1.8	6.3	1.9	.59	.44	.30
3	.63	1.6	.86	.60	.45	.35	2.2	5.6	1.5	.69	.38	.30
4	.56	1.7	.86	.60	.45	.35	2.3	5.0	1.4	.52	.40	.30
5	.64	1.3	.87	.60	.45	.35	2.6	5.0	1.3	.52	.41	.27
6	.82	1.1	.73	.60	.45	.35	3.3	5.3	1.2	.47	.47	.27
7	.84	1.2	.62	.60	.45	.35	7.6	6.7	.97	.52	.41	.27
8	.87	1.2	.57	.60	.45	.65	6.8	9.2	.87	.51	.40	.27
9	.87	1.3	.54	.60	.45	.77	9.6	8.4	.80	.77	.41	.27
10	.85	1.3	.55	.55	.45	.46	34	6.7	.69	.77	.37	.32
11	.87	1.2	.55	.55	.45	.49	160	5.9	.71	.58	.34	.27
12	.83	1.2	.56	.55	.40	.55	250	5.0	.64	.46	.35	.27
13	.89	1.2	.57	.55	.40	.64	150	4.4	.50	.38	.33	.27
14	.97	1.2	.59	.55	.40	.54	90	4.0	.54	.38	.32	.27
15	.95	1.3	.63	.55	.40	.53	95	3.6	.52	.35	.22	.27
16	.95	1.3	.65	.50	.40	.59	170	3.4	.62	.27	.24	.22
17	1.0	1.3	.65	.50	.35	.59	863	3.1	.49	.33	.25	.22
18	1.0	1.3	.70	.50	.35	.53	1930	2.6	.42	.42	.25	.15
19	1.0	1.2	.72	.50	.35	.51	690	2.9	.58	.39	.24	.24
20	1.0	1.2	.69	.50	.35	.52	110	3.4	.57	.39	.22	.29
21	1.2	1.1	.65	.50	.35	.53	35	6.0	.43	.33	.22	.18
22	1.2	1.1	.65	.50	.35	.75	21	5.7	.45	.35	.22	.29
23	1.2	1.1	.63	.50	.35	.93	16	4.3	.54	.34	.22	.24
24	1.3	1.1	.63	.50	.35	1.1	15	3.1	.50	.35	.22	.27
25	1.1	1.1	.63	.45	.35	1.7	17	3.0	.48	.41	.25	.25
26	1.0	1.1	.63	.45	.40	1.6	15	2.7	.37	.54	.35	.30
27	1.0	1.1	.63	.45	.40	1.6	12	2.3	.36	.54	.40	.25
28	1.1	1.1	.60	.45	.40	1.6	9.7	2.2	.56	.48	.38	.22
29	1.1	1.1	.60	.45	---	1.3	8.8	2.1	.61	.49	.36	.25
30	1.1	1.1	.60	.45	---	1.1	8.1	1.9	.51	.53	.34	.26
31	1.1	---	.60	.45	---	1.1	---	1.7	---	.49	.32	---
TOTAL	29.00	36.6	20.86	16.35	11.30	23.23	4737.2	138.6	22.63	14.72	10.15	7.85
MEAN	.94	1.22	.67	.53	.40	.75	158	4.47	.75	.47	.33	.26
MAX	1.3	1.7	1.1	.60	.45	1.7	1930	9.2	1.9	.77	.47	.32
MIN	.45	1.1	.54	.45	.35	.35	1.4	1.7	.36	.27	.22	.15
AC-FT	58	73	41	32	22	46	9400	275	45	29	20	16

CAL YR 1978 TOTAL 7700.96 MEAN 21.1 MAX 1300 MIN .00 AC-FT 15270
WTR YR 1979 TOTAL 5068.49 MEAN 13.9 MAX 1930 MIN .15 AC-FT 10050

06331680 TOBACCO GARDEN CREEK NEAR WATFORD CITY, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1976 to current year.

REMARKS.--Some chemical data furnished by North Dakota State Water Commission.

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE (DEG C) (00010)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)
OCT										
02...	1305	.56	2900	8.6	12.5	250	0	39	37	690
31...	1420	1.1	2850	8.4	6.0	250	0	30	43	700
DEC										
01...	1405	1.1	2900	8.4	.5	280	0	43	42	690
JAN										
02...	1345	.57	3100	7.9	.5	310	0	43	49	780
FEB										
05...	1345	.42	2950	7.5	1.5	250	0	44	34	730
MAR										
05...	1405	.37	3000	7.9	1.0	250	0	41	36	710
APR										
02...	1355	1.8	2400	--	1.5	--	--	--	--	--
11...	1045	157	470	--	.5	--	--	--	--	--
18...	1500	2370	210	8.6	9.5	52	0	12	5.4	26
20...	1010	107	380	--	7.0	--	--	--	--	--
30...	1340	8.0	1700	8.0	9.5	260	0	51	32	540
JUN										
04...	1225	1.4	2900	8.5	21.0	310	0	50	45	670
JUL										
02...	1220	.59	3400	8.5	24.5	280	0	34	47	780
30...	1250	.48	3050	8.5	21.5	200	0	26	32	780
SEP										
04...	1240	.29	3040	8.2	20.5	160	0	26	23	700

DATE	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE (MG/L AS HCO3) (00440)	CAR-BONATE (MG/L AS CO3) (00445)	ALKA-LINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
OCT									
02...	85	19	9.6	926	7	771	3.8	910	5.9
31...	85	19	8.8	1030	6	855	6.6	830	6.1
DEC									
01...	84	18	11	1250	0	1030	8.0	760	6.7
JAN									
02...	84	19	11	1350	0	1110	27	820	8.3
FEB									
05...	86	20	7.9	1220	0	1000	62	840	7.2
MAR									
05...	86	20	7.3	1090	0	894	22	890	5.4
APR									
02...	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--
18...	49	1.6	5.9	115	0	94	.5	21	2.4
20...	--	--	--	--	--	--	--	--	--
30...	73	9.2	7.9	586	0	481	9.4	500	3.1
JUN									
04...	82	17	9.4	1090	16	921	5.7	820	4.9
JUL									
02...	85	20	10	1030	43	916	5.7	1000	6.5
30...	89	24	8.1	1060	18	899	5.5	950	8.8
SEP									
04...	90	24	8.1	1030	34	901	11	800	4.4

06331680 TOBACCO GARDEN CREEK NEAR WATFORD CITY, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
OCT									
02...	.4	7.6	2250	2160	3.06	3.40	530	100	40
31...	.6	5.7	2140	2140	2.91	6.36	310	60	40
DEC									
01...	.7	6.2	2270	2180	3.09	6.74	470	280	60
JAN									
02...	.6	30	2450	2410	3.33	3.77	440	100	240
FEB									
05...	.5	24	2290	2290	3.11	2.60	310	120	320
MAR									
05...	.4	9.1	2250	2240	3.06	2.25	250	80	340
APR									
02...	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--
18...	.0	6.5	119	137	.16	761	120	1000	80
20...	--	--	--	--	--	--	--	--	--
30...	.3	11	1280	1230	1.74	27.6	70	320	120
JUN									
04...	.5	8.4	2180	2160	2.96	8.24	10	160	60
JUL									
02...	.5	6.1	2470	2440	3.36	3.93	270	750	60
30...	.4	9.1	2300	2360	3.13	2.98	630	300	40
SEP									
04...	.4	14	2140	2120	2.91	1.68	360	40	0

06331850 BEAVER CREEK NEAR RAY, ND

LOCATION.--Lat 48°10'52", long 103°01'26", in SW¼SE¼SE¼ sec.33, T.155 N., R.96 W., Williams County, Hydrologic Unit 10110101, on left bank 40 ft (12 m) upstream from bridge on North Dakota State Highway 1804, 12 mi (19 km) southeast of Ray, and 1.4 mi (2.3 km) upstream from mouth.

DRAINAGE AREA.--102 mi^2 (264 km^2), approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1977 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,870 ft (570 m), from topographic map.

REMARKS.--Records fair except those for period October to April, which are poor.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, about 5,000 ft^3/s (142 m^3/s) Apr. 18, 1979, gage height, 12.12 ft (3.694 m), ice jam; no flow Mar. 10-17, 1978.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, about 5,000 ft^3/s (142 m^3/s) Apr. 18, gage height, 12.12 ft (3.694 m), ice jam, only discharge above base of 100 ft^3/s (2.83 m^3/s); minimum daily discharge, 0.35 ft^3/s (0.010 m^3/s) Aug. 10, 12-21, 23.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.4	2.0	1.1	.80	1.2	1.1	1.7	30	3.2	.98	.65	.75
2	1.5	2.0	1.0	.80	1.2	1.0	1.7	20	2.9	.98	.56	.65
3	1.7	2.0	1.0	.80	1.1	.90	1.5	15	2.9	.86	.56	.56
4	1.8	2.1	.90	.90	1.1	1.0	1.4	18	2.6	.86	.56	.48
5	1.7	2.1	.80	1.0	1.0	1.1	1.2	20	2.6	.86	.56	.48
6	1.7	1.9	.70	1.1	1.0	1.2	1.2	19	2.4	.75	.48	.41
7	1.8	2.0	.60	1.3	1.0	1.2	1.4	19	2.4	.86	.48	.41
8	2.0	2.1	.70	1.5	1.0	1.3	1.7	18	2.3	.86	.48	.48
9	2.0	2.0	.80	1.7	1.0	1.3	2.1	15	2.3	.75	.41	.48
10	2.0	1.8	.80	1.8	1.0	1.4	2.5	13	2.3	.75	.35	.56
11	2.0	1.2	.90	1.7	1.0	1.4	4.5	11	2.2	.75	.41	.56
12	2.0	1.0	1.0	1.6	1.0	1.5	6.0	10	2.2	.75	.35	.65
13	1.9	1.0	1.0	1.6	1.0	1.6	8.0	9.5	2.2	.65	.35	.65
14	1.8	1.0	1.1	1.6	1.0	1.6	10	8.5	1.8	.56	.35	.56
15	1.8	1.3	1.2	1.5	1.0	1.6	12	7.5	1.6	.56	.35	.56
16	1.9	1.5	1.2	1.5	1.0	1.6	15	7.0	1.6	.65	.35	.56
17	2.1	1.6	1.2	1.5	1.0	1.7	150	6.5	1.6	.65	.35	.56
18	1.8	1.4	1.2	1.6	1.0	1.7	1200	6.0	1.8	.65	.35	.56
19	1.8	1.0	1.2	1.7	1.0	1.7	1190	7.0	3.2	.65	.35	.56
20	2.0	.60	1.2	1.7	1.0	1.7	395	12	2.4	.65	.35	.56
21	2.1	.50	1.2	1.8	1.1	1.6	165	10	2.0	.65	.35	.56
22	2.0	.50	1.1	1.8	1.1	1.6	118	6.5	1.8	.65	.41	.65
23	1.8	.70	1.1	1.8	1.2	1.5	129	5.5	1.8	.98	.35	.65
24	1.9	.80	1.0	1.8	1.2	1.4	103	5.5	1.6	.86	.48	.65
25	2.0	1.0	1.0	1.8	1.2	1.3	68	4.7	1.4	.75	.48	.65
26	2.1	1.2	1.0	1.7	1.2	1.2	56	4.3	1.2	.65	.48	.65
27	2.0	1.4	.90	1.6	1.2	1.2	50	3.7	1.1	.65	.48	.65
28	1.8	1.4	.90	1.6	1.2	1.2	45	3.2	1.1	.65	.48	.75
29	1.8	1.2	.80	1.5	---	1.4	42	3.4	.98	.65	.48	.65
30	1.8	1.2	.80	1.4	---	1.6	40	4.7	.98	.75	.48	.65
31	1.9	---	.80	1.3	---	1.6	---	3.7	---	.65	.56	---
TOTAL	57.9	41.50	30.20	45.80	30.0	43.20	3822.9	327.2	60.46	22.92	13.68	17.55
MEAN	1.87	1.38	.97	1.48	1.07	1.39	127	10.6	2.02	.74	.44	.59
MAX	2.1	2.1	1.2	1.8	1.2	1.7	1200	30	3.2	.98	.65	.75
MIN	1.4	.50	.60	.80	1.0	.90	1.2	3.2	.98	.56	.35	.41
AC-FT	115	82	60	91	60	86	7580	649	120	45	27	35

CAL YR 1978 TOTAL 2361.10 MEAN 6.47 MAX 200 MIN .00 AC-FT 4680
WTR YR 1979 TOTAL 4513.31 MEAN 12.4 MAX 1200 MIN .35 AC-FT 8950

06331850 BEAVER CREEK NEAR RAY, ND--Continued

WATER QUALITY RECORDS

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS (MG/L AS CACO3) (00900)
OCT											
05...	1330	.54	1850	8.5	8.0	8.5	10.9	99	93	190	400
NOV											
15...	1400	1.4	2150	8.0	3.5	.0	13.3	97	35	140	510
DEC											
12...	1100	.96	2120	8.0	-2.0	.0	9.5	70	K7	92	510
APR											
10...	1540	2.5	1780	8.1	3.0	.0	12.2	90	30	K5400	400
22...	0830	127	505	8.0	5.0	5.0	11.8	98	K30	--	150
MAY											
09...	0840	16	1270	8.1	1.0	5.0	11.2	93	28	170	350
JUN											
13...	1200	2.4	2000	8.4	29.0	24.0	8.4	108	130	400	450
JUL											
10...	1350	.90	2050	8.6	31.5	28.0	10.6	14	210	86	440
AUG											
06...	1945	.44	1960	8.6	28.0	27.0	13.8	182	K18	250	440
SEP											
11...	1330	.61	2050	8.5	21.0	17.5	10.4	116	84	190	410

DATE	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE (MG/L AS HCO3) (00440)	CAR-BONATE (MG/L AS CO3) (00445)	ALKA-LINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)
OCT											
05...	0	62	59	340	64	7.4	9.2	566	4	471	2.9
NOV											
15...	0	77	78	340	58	6.5	10	722	0	590	12
DEC											
12...	0	83	73	350	59	6.8	11	715	0	590	11
APR											
10...	0	61	60	270	59	5.9	8.8	573	0	470	7.3
22...	0	31	17	53	42	1.9	9.2	183	0	150	2.9
MAY											
09...	0	57	45	180	54	4.3	9.5	425	0	350	5.4
JUN											
13...	0	71	67	330	61	6.7	11	639	1	530	4.1
JUL											
10...	0	60	70	360	63	7.5	11	549	31	500	2.5
AUG											
06...	0	58	72	340	62	7.0	11	583	22	510	2.5
SEP											
11...	0	60	62	330	62	7.1	10	610	14	520	3.2

DATE	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)
OCT											
05...	620	9.8	.3	11	1390	1390	1.89	2.03	.01	.00	.91
NOV											
15...	680	10	.3	14	1570	1570	2.14	5.93	.01	.01	.34
DEC											
12...	650	9.7	.3	16	1530	1550	2.11	4.02	.02	.04	.30
APR											
10...	500	9.8	.3	15	1210	1210	1.65	8.17	.29	.07	.50
22...	110	5.4	.1	11	326	327	.44	112	1.5	.20	1.1
MAY											
09...	340	13	.2	15	875	869	1.18	37.5	.39	.02	.68
JUN											
13...	600	10	.3	9.0	1420	1410	1.92	9.14	.02	.02	.91
JUL											
10...	610	14	.3	16	1400	1440	1.96	3.50	.02	.06	.56
AUG											
06...	630	17	.3	16	1400	1450	1.97	1.72	.00	.00	.47
SEP											
11...	640	14	.4	17	1440	1450	1.97	2.39	.02	.03	.92

K - Results based on colony count outside the acceptable range (non-ideal colony count).

06331850 BEAVER CREEK NEAR RAY, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, TOTAL (MG/L AS N) (00600)	NITROGEN, TOTAL (MG/L AS NO3) (71887)	PHOSPHORUS, TOTAL (MG/L AS P) (00665)	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	ALUMINUM, DISSOLVED (UG/L AS AL) (01106)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DISSOLVED (UG/L AS AS) (01000)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA) (01007)	BARIUM, DISSOLVED (UG/L AS BA) (01005)	BERYLLIUM, TOTAL RECOVERABLE (UG/L AS BE) (01012)
OCT											
05...	.91	.92	4.1	.04	.02	--	--	--	--	--	--
NOV											
15...	.35	.36	1.6	.02	.01	--	--	--	--	--	--
DEC											
12...	.34	.36	1.6	.03	.02	--	--	--	--	--	--
APR											
10...	.57	.86	3.8	.07	.06	--	--	--	--	--	--
22...	1.3	2.8	12	.19	.06	30	2	1	0	40	0
MAY											
09...	.70	1.1	4.8	.05	.02	--	--	--	--	--	--
JUN											
13...	.93	.95	4.2	.04	.01	--	--	--	--	--	--
JUL											
10...	.62	.64	2.8	.02	.00	20	--	3	--	0	--
AUG											
06...	.47	.47	2.1	.02	.03	0	3	3	0	0	0
SEP											
11...	.95	.97	4.3	.03	.00	--	--	--	--	--	--

DATE	BERYLLIUM, DISSOLVED (UG/L AS BE) (01010)	BORON, DISSOLVED (UG/L AS B) (01020)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) (01034)	CHROMIUM, DISSOLVED (UG/L AS CR) (01030)	COBALT, TOTAL RECOVERABLE (UG/L AS CO) (01037)	COBALT, DISSOLVED (UG/L AS CO) (01035)	COPPER, TOTAL RECOVERABLE (UG/L AS CU) (01042)	COPPER, DISSOLVED (UG/L AS CU) (01040)	IRON, DISSOLVED (UG/L AS FE) (01046)	LITHIUM TOTAL RECOVERABLE (UG/L AS LI) (01132)	LITHIUM DISSOLVED (UG/L AS LI) (01130)
OCT											
05...	--	290	--	--	--	--	--	--	30	--	--
NOV											
15...	--	300	--	--	--	--	--	--	20	--	--
DEC											
12...	--	280	--	--	--	--	--	--	40	--	--
APR											
10...	--	230	--	--	--	--	--	--	60	--	--
22...	<1	100	0	0	0	<3	14	9	40	20	10
MAY											
09...	--	170	--	--	--	--	--	--	40	--	--
JUN											
13...	--	250	--	--	--	--	--	--	20	--	--
JUL											
10...	0	320	--	0	--	0	--	4	0	--	80
AUG											
06...	0	330	10	0	0	0	2	5	10	80	80
SEP											
11...	--	330	--	--	--	--	--	--	10	--	--

DATE	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN) (01055)	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOVERABLE (UG/L AS HG) (71900)	MERCURY DISSOLVED (UG/L AS HG) (71890)	MOLYBDENUM, TOTAL RECOVERABLE (UG/L AS MO) (01062)	MOLYBDENUM, DISSOLVED (UG/L AS MO) (01060)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI) (01067)	NICKEL, DISSOLVED (UG/L AS NI) (01065)	SELENIUM, TOTAL (UG/L AS SE) (01147)	SELENIUM, DISSOLVED (UG/L AS SE) (01145)	VANADIUM, DISSOLVED (UG/L AS V) (01085)
OCT											
05...	--	--	--	--	--	--	--	--	--	--	--
NOV											
15...	--	--	--	--	--	--	--	--	--	--	--
DEC											
12...	--	--	--	--	--	--	--	--	--	--	--
APR											
10...	--	--	--	--	--	--	--	--	--	--	--
22...	190	100	.2	.1	2	<10	11	2	1	1	1.2
MAY											
09...	--	--	--	--	--	--	--	--	--	--	--
JUN											
13...	--	--	--	--	--	--	--	--	--	--	--
JUL											
10...	--	20	--	.2	--	0	--	3	--	0	<1.0
AUG											
06...	30	20	.0	.0	2	0	1	3	0	0	1.0
SEP											
11...	--	--	--	--	--	--	--	--	--	--	--

06331850 BEAVER CREEK NEAR RAY, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	GROSS ALPHA, DIS-SOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DIS-SOLVED (PCI/L AS CS-137) (03515)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C) (00689)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
OCT										
05...	--	--	--	--	--	--	7.9	1.4	105	.15
NOV										
15...	--	--	--	--	--	--	8.1	--	24	.09
DEC										
12...	--	--	--	--	--	--	5.4	.3	7	.02
APR										
10...	--	--	--	--	--	--	7.4	5.0	19	.13
22...	30	5	<4.9	<1.7	9.9	2.9	15	5.0	83	28
MAY										
09...	--	--	--	--	--	--	21	.6	11	.48
JUN										
13...	--	--	--	--	--	--	12	--	52	.21
JUL										
10...	--	10	--	--	--	--	8.0	.2	13	.03
AUG										
08...	10	20	<21	<.4	13	.5	10	52	20	.02
SEP										
11...	--	--	--	--	--	--	7.6	.4	29	.05

DATE	BED MAT. FALL DIAM. % FINER THAN .062 MM (80158)	BED MAT. FALL DIAM. % FINER THAN .125 MM (80159)	BED MAT. FALL DIAM. % FINER THAN .250 MM (80160)	BED MAT. FALL DIAM. % FINER THAN .500 MM (80161)	BED MAT. FALL DIAM. % FINER THAN 1.00 MM (80162)	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM (80169)	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM (80170)	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM (80171)	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM (80172)	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM (80173)
AUG										
08...	2	4	25	47	57	67	77	87	92	100

DATE	LENGTH OF EXPO-SURE (DAYS) (00022)	CHLOR-A PERI-PHYTON CHROMO-GRAPHIC FLUORUM (MG/M2) (70957)	CHLOR-B PERI-PHYTON CHROMO-GRAPHIC FLUORUM (MG/M2) (70958)	PERI-PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M (00573)	PERI-PHYTON BIOMASS ASH WEIGHT G/SQ M (00572)
JUL					
10...	27	6.28	.930	28.8	25.0
AUG					
08...	28	2.75	.930	2.68	2.28

06331850 BEAVER CREEK NEAR RAY, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1978 TO SEPTEMBER 1979

DATE	OCT 5,78	NOV 15,78	DEC 12,78	APR 10,79	APR 22,79
TIME	1330	1400	1100	1540	0830
TOTAL CELLS/ML	250	1300	77	190	240
DIVERSITY: DIVISION	1.1	0.9	1.4	1.6	1.3
.CLASS	1.1	0.9	1.4	1.6	1.3
..ORDER	1.5	1.4	2.2	2.4	1.9
...FAMILY	2.3	1.5	2.5	2.6	1.9
....GENUS	2.6	0.0	2.5	2.6	0.0

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)										
.CHLOROPHYCEAE										
..CHLOROCOCCALES										
...CHLOROCOCCACEAE										
....CHLOROCOCCUM	--	-	--	-	--	-	--	-	--	-
...MICRACTINIACEAE										
....MICRACTINIUM	--	-	--	-	--	-	--	-	--	-
...OOCYSTACEAE										
....ANKISTRODESMUS	4	1	58	5	15#	20	--	-	86#	35
....CHLORELLA	--	-	--	-	--	-	--	-	--	-
....SELENASTRUM	--	-	14	1	--	-	--	-	--	-
...SCENEDESMACEAE										
....CRUCIGENIA	--	-	--	-	--	-	--	-	--	-
....SCENEDESMUS	28	11	58	5	--	-	29#	15	--	-
..VOLVOCALES										
...CHLAMYDOMONADACEAE	--	-	900#	70	--	-	--	-	43#	18
....CHLAMYDOMONAS	4	1	--	-	15#	20	29#	15	--	-
....CHLOROGONIUM	--	-	--	-	--	-	--	-	14	6
...VOLVOCACEAE										
....PANDORINA	--	-	--	-	--	-	--	-	--	-
..ZYGNEMATALES										
...DESMIDIACEAE										
....CLOSTERIUM	--	-	--	-	--	-	14	8	--	-
CHRYSOPHYTA										
.BACILLARIOPHYCEAE										
..CENTRALES										
...COSCINODISCACEAE										
....CYCLOTELLA	18	7	14	1	15#	20	14	8	--	-
....MELOSIRA	--	-	--	-	--	-	--	-	--	-
..PENNALES										
...ACHNANTHACEAE										
....COCCONEIS	--	-	--	-	--	-	--	-	--	-
....RHOICOSPHENIA	--	-	--	-	--	-	--	-	--	-
...CYMBELLACEAE										
....CYMBELLA	--	-	--	-	--	-	--	-	--	-
...FRAGILARIACEAE										
....FRAGILARIA	--	-	--	-	--	-	--	-	--	-
....SYNEDRA	--	-	14	1	15#	20	--	-	--	-
...GOMPHONEMATACEAE										
....GOMPHONEMA	--	-	--	-	--	-	--	-	--	-
...NAVICULACEAE										
....CALONEIS	--	-	--	-	--	-	--	-	--	-
....GYROSIGMA	18	7	--	-	--	-	--	-	--	-
....NAVICULA	71#	29	--	-	--	-	29#	15	--	-
...NITZSCHIACEAE										
....NITZSCHIA	82#	33	58	5	8	10	14	8	29	12
...SURIRELLACEAE										
....SURIRELLA	4	1	--	-	--	-	--	-	--	-
.CHRYSOPHYCEAE										
..CHRYSOMONADALES										
...OCHROMONADACEAE										
....OCHROMONAS	--	-	--	-	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)										
.CRYPTOPHYCEAE										
..CRYPTOMONADALES										
...CRYPTOMONADACEAE										
....CRYPTOMONAS	--	-	--	-	--	-	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)										
.CYANOPHYCEAE										
..CHROOCOCCALES										
...CHROOCOCCACEAE										
....ANACYSTIS	--	-	--	-	--	-	--	-	--	-
..HORMOGONALES										
...NOSTOCACEAE										
....ANABAENA	--	-	--	-	--	-	58#	31	72#	29
...OSCILLATORIACEAE										
....OSCILLATORIA	14	6	--	-	--	-	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)										
.EUGLENOPHYCEAE										
..EUGLENALES										
...EUGLENACEAE										
....EUGLENA	7	3	--	-	--	-	--	-	--	-
....EUTREPTIA	--	-	--	-	--	-	--	-	--	-
....PHACUS	--	-	--	-	--	-	--	-	--	-
....TRACHELOMONAS	--	-	160	13	8	10	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06331850 BEAVER CREEK NEAR RAY, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1978 TO SEPTEMBER 1979

DATE	MAY 9,79	JUN 13,79	JUL 10,79	AUG 6,79	SEP 11,79
TIME	0840	1200	1350	1945	1330
TOTAL CELLS/ML	780	1200	2400	440	710
DIVERSITY: DIVISION	0.7	1.2	0.9	1.2	0.9
.CLASS	0.7	1.3	1.0	1.2	0.9
..ORDER	1.6	2.1	1.2	1.8	1.8
...FAMILY	1.9	2.8	1.4	1.8	2.4
....GENUS	2.2	3.1	1.4	2.5	2.5

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)										
.CHLOROPHYCEAE										
..CHLOROCOCCALES										
...CHLOROCOCCACEAE										
....CHLOROCOCCUM	--	-	--	-	--	-	--	-	13	2
...MICRACTINIACEAE										
....MICRACTINIUM	56	7	--	-	--	-	--	-	--	-
...OOCYSTACEAE										
....ANKISTRODESMUS	97	13	210#	17	14	1	--	-	19	3
....CHLORELLA	--	-	--	-	--	-	--	-	19	3
....SELENASTRUM	97	13	--	-	--	-	--	-	--	-
...SCENEDESMACEAE										
....CRUCIGENIA	--	-	210#	17	--	-	150#	35	--	-
....SCENEDESMUS	--	-	100	8	--	-	100#	24	--	-
..VOLVOCALES										
...CHLAMYDOMONADACEAE	--	-	--	-	--	-	--	-	--	-
....CHLAMYDOMONAS	420#	54	280#	23	--	-	39	9	--	-
....CHLOROGONIUM	--	-	--	-	--	-	--	-	--	-
...VOLVOCACEAE										
....PANDORINA	--	-	100	8	--	-	--	-	--	-
..ZYGNEMATALES										
...DESMIDIACEAE										
....CLOSTERIUM	--	-	--	-	--	-	--	-	--	-
CHRYSOPHYTA										
.BACILLARIOPHYCEAE										
..CENTRALES										
...COSCINODISCACEAE										
....CYCLOTELLA	28	4	170	14	29	1	39	9	340#	48
....MELOSIRA	--	-	--	-	120	5	--	-	--	-
..PENNALES										
...ACHNANTHACEAE										
....COCCONEIS	--	-	--	-	--	-	52	12	13	2
....RHOICOSPHENIA	--	-	--	-	--	-	13	3	--	-
...CYMBELLACEAE										
....CYMBELLA	--	-	--	-	14	1	--	-	--	-
...FRAGILARIACEAE										
....FRAGILARIA	--	-	--	-	--	-	--	-	13	2
....SYNEDRA	--	-	13	1	29	1	--	-	--	-
...GOMPHONEMATACEAE										
....GOMPHONEMA	--	-	--	-	--	-	--	-	26	4
...NAVICULACEAE										
....CALONEIS	--	-	--	-	14	1	--	-	--	-
....GYROSIGMA	--	-	--	-	--	-	--	-	--	-
....NAVICULA	--	-	--	-	87	4	--	-	150#	21
...NITZSCHIACEAE										
....NITZSCHIA	56	7	26	2	200	8	--	-	38	5
...SURIRELLACEAE										
....SURIRELLA	--	-	--	-	--	-	--	-	6	1
.CHRYSOPHYCEAE										
..CHRYSOMONADALES										
...OCHROMONADACEAE										
....OCHROMONAS	--	-	13	1	14	1	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)										
.CRYPTOPHYCEAE										
..CRYPTOMONADALES										
...CRYPTOMONADACEAE										
....CRYPTOMONAS	--	-	13	1	58	2	39	9	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)										
.CYANOPHYCEAE										
..CHROOCOCCALES										
...CHROOCOCCACEAE										
....ANACYSTIS	--	-	26	2	1800#	76	--	-	13	2
..HORMOGONALES										
...NOSTOCACEAE										
....ANABAENA	--	-	--	-	--	-	--	-	51	7
...OSCILLATORIACEAE										
....OSCILLATORIA	--	-	--	-	--	-	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)										
.EUGLENOPHYCEAE										
..EUGLENALES										
...EUGLENACEAE										
....EUGLENA	14	2	--	-	--	-	--	-	--	-
....EUTREPTIA	--	-	--	-	--	-	--	-	6	1
....PHACUS	--	-	13	1	--	-	--	-	--	-
....TRACHELOMONAS	14	2	65	5	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06332000 WHITE EARTH RIVER AT WHITE EARTH, ND

LOCATION.--Lat 48°22'35", long 102°46'00", in SE¼SW¼ sec.36, T.157 N., R.94 W., Mountrail County, Hydrologic Unit 10110101, 35 ft (11 m) upstream from bridge on county highway, and 0.2 mi (0.3 km) east of White Earth.

DRAINAGE AREA.--780 mi^2 (2,020 km^2), approximately, of which about 290 mi^2 (750 km^2) is probably noncontributing.

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

REVISED RECORDS.--WSP 2117: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,070.00 ft (630.936 m) National Geodetic Vertical Datum of 1929. Prior to Oct. 25, 1959, nonrecording gages at site 0.2 mi (0.3 km) upstream at datum 1.64 ft (0.500 m) higher.

REMARKS.--Records fair. Flow regulated by White Earth Reservoir 12 mi (19 km) upstream beginning August 1970, capacity, 1,600 acre-ft (1.97 hm^3).

AVERAGE DISCHARGE.--25 years, 29.5 ft^3/s (0.835 m^3/s), 21,370 acre-ft/yr (26.3 hm^3/yr); median of yearly mean discharges, 15 ft^3/s (0.42 m^3/s), 10,900 acre-ft/yr (13 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,200 ft^3/s (147 m^3/s) Apr. 18, 1979, gage height, 20.12 ft (6.133 m); no flow at times in some years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of 1929 reached a stage of 21.8 ft (6.64 m) former site and datum, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,200 ft^3/s (147 m^3/s) Apr. 18, gage height, 20.12 ft (6.133 m); minimum daily, 0.35 ft^3/s (0.010 m^3/s) Aug. 23-26.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.2	10	7.0	3.5	2.2	2.5	8.1	429	66	8.2	2.9	4.1
2	4.9	9.3	6.5	3.5	2.2	2.5	7.3	395	61	7.3	2.8	2.9
3	6.2	9.3	6.5	3.2	2.2	2.5	6.8	350	58	6.8	2.0	1.6
4	6.6	11	6.5	3.1	2.2	3.0	6.5	297	56	6.1	2.4	2.5
5	7.5	12	6.5	3.0	2.2	3.5	6.0	277	54	6.0	3.0	2.0
6	6.3	11	6.5	3.0	2.2	4.0	6.0	270	51	6.4	2.7	1.3
7	5.2	9.8	6.0	3.0	2.2	4.0	6.5	263	48	6.1	2.3	2.1
8	4.6	9.5	6.0	3.0	2.2	5.0	8.0	246	45	6.3	2.3	2.9
9	4.3	8.8	5.5	3.0	2.2	4.5	13	226	44	6.4	2.2	3.7
10	4.3	8.0	5.5	3.0	2.2	4.5	20	206	41	6.3	2.4	4.3
11	4.3	8.0	5.5	3.0	2.2	5.0	22	193	38	6.3	2.0	4.8
12	4.6	8.5	5.5	3.0	2.2	5.0	25	182	36	5.1	.96	5.0
13	4.9	8.5	5.5	3.0	2.2	5.0	28	174	33	4.9	.57	5.7
14	4.9	9.0	5.5	2.5	2.2	5.0	30	161	30	4.0	.42	5.5
15	5.1	9.0	5.5	2.5	2.2	5.0	55	147	27	3.5	.46	5.1
16	5.1	9.0	5.5	2.5	2.0	5.5	60	139	26	3.2	.37	4.2
17	5.1	9.0	5.5	2.5	2.0	5.5	200	138	25	3.5	.51	3.9
18	5.4	8.5	5.0	2.5	2.0	5.0	1750	127	22	2.8	.45	3.6
19	5.4	8.5	5.0	2.5	2.0	5.5	3620	128	20	2.9	.38	3.8
20	5.2	8.5	5.0	2.5	2.0	5.5	2750	139	20	2.6	.46	3.9
21	5.2	8.0	5.0	2.5	2.0	6.0	2040	124	18	2.4	.64	4.0
22	5.7	8.0	5.0	2.5	2.0	6.5	1440	115	16	2.3	.57	3.6
23	5.4	8.0	5.0	2.5	2.0	7.0	1010	109	15	2.9	.35	3.9
24	5.3	8.0	5.0	2.5	2.0	10	880	105	14	3.9	.35	3.9
25	5.2	8.0	5.0	2.5	2.2	15	773	100	13	2.4	.35	3.4
26	5.4	8.0	4.5	2.5	2.5	12	735	95	12	2.2	.35	3.5
27	5.4	8.0	4.5	2.5	2.5	10	655	87	11	2.4	1.1	3.6
28	5.4	8.0	4.5	2.5	2.5	9.0	623	81	11	2.0	.81	3.8
29	5.6	7.5	4.5	2.5	---	8.7	566	79	10	2.3	.82	3.4
30	12	7.5	4.0	2.5	---	8.6	496	76	8.9	2.6	1.1	3.8
31	12	---	3.5	2.2	---	8.4	---	71	---	2.6	1.2	---
TOTAL	177.7	264.2	166.5	85.0	60.7	189.2	17846.2	5529	929.9	132.7	38.62	109.8
MEAN	5.73	8.81	5.37	2.74	2.17	6.10	595	178	31.0	4.28	1.25	3.66
MAX	12	12	7.0	3.5	2.5	15	3620	429	66	8.2	3.0	5.7
MIN	4.3	7.5	3.5	2.2	2.0	2.5	6.0	71	8.9	2.0	.35	1.3
AC-FT	352	524	330	169	120	375	35400	10970	1840	263	77	218

CAL YR 1978 TOTAL 11225.47 MEAN 30.8 MAX 800 MIN .37 AC-FT 22270
WTR YR 1979 TOTAL 25529.52 MEAN 69.9 MAX 3620 MIN .35 AC-FT 50640

06332515 BEAR DEN CREEK NEAR MANDAREE, ND
(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, Hydrologic Unit 10110101, on right bank 0.5 mi (0.8 km) upstream from county highway culvert, and 5.5 mi (8.8 km) northwest of Mandaree.

DRAINAGE AREA.--74 mi^2 (192 km^2).

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Datum of gage is 1,947.58 ft (593.622 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--13 years, 9.47 ft^3/s (0.268 m^3/s), 6,860 acre-ft/yr (8.46 hm^3/yr); median of yearly mean discharges, 8.6 ft^3/s (0.24 m^3/s), 6,200 acre-ft/yr (7.6 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,840 ft^3/s (80.4 m^3/s) Mar. 13, 1972, gage height, 9.02 ft (2.749 m); maximum gage height, 10.03 ft (3.057 m) Apr. 6, 1969; no flow at times most years.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 100 ft^3/s (2.83 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Apr. 10	--	240	6.80	Backwater from ice		Apr. 18	0030	*1,340	37.9	6.79	2.070

No flow Jan. 18 to Mar. 15.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.27	.27	.25	.30	.00	.00	5.0	6.7	.40	.45	.23	.24
2	.30	.27	.22	.30	.00	.00	4.0	6.7	.40	.45	.17	.20
3	.30	.24	.20	.30	.00	.00	3.6	6.1	.39	.45	.46	.16
4	.27	.27	.20	.30	.00	.00	3.0	4.9	.37	.45	.30	.15
5	.27	.30	.20	.30	.00	.00	2.5	5.6	.40	.45	.18	.07
6	.27	.27	.20	.30	.00	.00	2.0	7.4	.37	.42	.14	.07
7	.27	.24	.20	.30	.00	.00	2.5	12	.46	.37	.13	.10
8	.27	.24	.20	.30	.00	.00	4.0	8.9	.59	.41	.15	.13
9	.24	.24	.20	.30	.00	.00	20	5.6	.53	.49	.14	.12
10	.24	.24	.22	.30	.00	.00	150	4.5	.45	.45	.14	.24
11	.24	.25	.24	.25	.00	.00	100	3.6	.49	.36	.14	.40
12	.22	.25	.30	.20	.00	.00	75	2.7	.45	.34	.12	.37
13	.24	.25	.30	.15	.00	.00	50	2.6	.45	.34	.11	.30
14	.24	.25	.35	.10	.00	.00	40	2.4	.41	.29	.13	.29
15	.24	.27	.40	.05	.00	.00	30	2.0	.45	.28	.12	.30
16	.24	.30	.40	.03	.00	2.0	130	1.9	.49	.34	.11	.28
17	.24	.30	.40	.02	.00	5.0	700	1.8	.49	.28	.11	.33
18	.27	.27	.38	.00	.00	8.0	1080	1.7	.48	.23	.08	.33
19	.27	.25	.35	.00	.00	10	419	2.0	.51	.20	.09	.34
20	.24	.22	.35	.00	.00	10	89	4.7	.62	.18	.12	.33
21	.24	.20	.35	.00	.00	10	36	2.7	.60	.16	.11	.30
22	.24	.20	.35	.00	.00	15	26	1.7	.59	.19	.17	.30
23	.24	.20	.35	.00	.00	20	20	1.4	.57	.22	.17	.30
24	.24	.22	.35	.00	.00	30	18	1.2	.50	.46	.18	.30
25	.24	.25	.35	.00	.00	30	15	1.0	.50	.42	.15	.30
26	.27	.25	.35	.00	.00	20	12	.92	.48	.35	.20	.31
27	.27	.25	.35	.00	.00	15	9.4	.82	.46	.29	.16	.30
28	.27	.25	.35	.00	.00	10	8.5	.70	.56	.24	.17	.30
29	.24	.25	.34	.00	---	8.0	8.1	.64	.51	.22	.13	.34
30	.24	.25	.32	.00	---	7.0	7.4	.47	.45	.26	.15	.28
31	.24	---	.30	.00	---	6.0	---	.33	---	.26	.17	---
TOTAL	7.87	7.51	9.32	3.80	.00	206.00	3070.0	105.68	14.42	10.30	4.93	7.78
MEAN	.25	.25	.30	.12	.000	6.65	102	3.41	.48	.33	.16	.26
MAX	.30	.30	.40	.30	.00	30	1080	12	.62	.49	.46	.40
MIN	.22	.20	.20	.00	.00	.00	2.0	.33	.37	.16	.08	.07
AC-FT	16	15	18	7.5	.00	409	6090	210	29	20	9.8	15

CAL YR 1978 TOTAL 3874.62 MEAN 10.6 MAX 1000 MIN .00 AC-FT 7690
WTR YR 1979 TOTAL 3447.61 MEAN 9.45 MAX 1080 MIN .00 AC-FT 6840

06332515 BEAR DEN CREEK NEAR MANDAREE, ND--Continued
(Hydrologic bench-mark station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1968 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	COLI-FORM, TOTAL, IMMED. (COLS. PER 100 ML) (31501)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)
OCT										
09...	1340	.25	2350	8.6	16.5	10.5	11.4	K15	K30	K20
NOV										
06...	1305	.27	2680	8.7	--	3.0	9.2	K30	K22	K30
DEC										
11...	1305	.24	3400	8.6	--	.5	9.4	K45	K55	K35
JAN										
10...	1330	.29	3200	8.4	--	.5	8.2	--	--	--
MAR										
20...	1620	8.5	1040	--	--	1.0	--	--	--	--
26...	1435	27	690	--	--	.0	--	--	--	--
APR										
11...	1330	94	475	--	--	.5	--	--	--	--
18...	1040	1100	245	8.6	12.0	6.0	10.2	--	--	--
21...	1420	33	740	--	--	10.0	--	--	--	--
23...	1255	19	1000	--	--	6.0	--	--	--	--
MAY										
07...	1220	11	1850	8.1	--	7.0	10.6	K30	K44	K35
JUN										
11...	1310	.46	2900	8.4	--	22.0	6.8	K50	K100	K100
JUL										
09...	1235	.49	2800	8.0	--	24.5	8.2	K55	K56	K45
AUG										
06...	1310	.16	2650	--	--	24.5	7.4	K300	K11	K100
SEP										
11...	0925	.34	2790	8.5	--	15.5	6.8	K375	K110	775

DATE	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)
OCT										
09...	220	0	45	26	510	83	15	9.3	670	680
NOV										
06...	220	0	42	27	630	86	19	7.0	810	780
DEC										
11...	310	0	63	38	830	85	20	11	950	980
JAN										
10...	280	0	53	35	810	86	21	9.7	960	1100
MAR										
20...	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--
APR										
11...	--	--	--	--	--	--	--	--	--	--
18...	49	0	12	4.6	32	55	2.0	5.7	71	49
21...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
MAY										
07...	310	0	67	35	350	70	8.6	8.3	390	650
JUN										
11...	300	0	59	38	280	79	5.5	9.5	690	920
JUL										
09...	190	0	31	27	--	--	4.1	8.9	--	--
AUG										
06...	--	--	--	--	--	--	--	--	--	--
SEP										
11...	150	0	21	24	650	96	23	6.9	840	810

K - Results based on colony count outside the acceptable range (non-ideal colony count).

06332515 BEAR DEN CREEK NEAR MANDAREE, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)	SOLIDS, DISSOLVED (TONS PER DAY) (70302)	NITROGEN, NITRITE DISSOLVED (MG/L AS N) (00613)	NITROGEN, NITRITE DISSOLVED (MG/L AS NO2) (71856)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N) (00630)
OCT										
09...	4.8	.4	10	1720	1690	2.34	1.16	--	--	.04
NOV										
06...	4.5	.3	12	1960	1990	2.67	1.43	--	--	.03
DEC										
11...	15	.5	17	2600	2530	3.54	1.68	--	--	.05
JAN										
10...	5.2	.3	16	2510	2610	3.41	1.97	--	--	.09
MAR										
20...	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--
APR										
11...	--	--	--	--	--	--	--	--	--	--
18...	3.0	.1	5.5	175	155	.24	520	--	--	.83
21...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
MAY										
07...	11	.3	8.1	1410	1360	1.92	41.9	--	--	.02
JUN										
11...	9.9	.5	7.3	2110	1740	2.87	2.62	--	--	.02
JUL										
09...	7.5	.5	7.1	2080	1510	2.83	2.75	.00	.01	--
AUG										
06...	--	--	--	--	--	--	--	--	--	--
SEP										
11...	4.3	.5	6.1	2080	2030	2.83	1.91	--	--	.01

DATE	PHOSPHORUS, TOTAL (MG/L AS P) (00665)	PHOSPHATE, TOTAL (MG/L AS PO4) (00650)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P) (00671)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4) (00660)	ARSENIC TOTAL (UG/L AS AS) (01002)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA) (01007)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD) (01027)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOVERABLE (UG/L AS CU) (01042)	IRON, TOTAL RECOVERABLE (UG/L AS FE) (01045)
OCT										
09...	.05	--	--	--	--	--	--	--	--	--
NOV										
06...	.02	--	--	--	2	100	0	0	4	770
DEC										
11...	.04	--	--	--	--	--	--	--	--	--
JAN										
10...	.03	--	--	--	--	--	--	--	--	--
MAR										
20...	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--
APR										
11...	--	--	--	--	--	--	--	--	--	--
18...	.80	2.5	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
MAY										
07...	.09	.28	--	--	2	100	--	0	31	3900
JUN										
11...	.05	.15	--	--	--	--	--	--	--	--
JUL										
09...	.03	--	.09	.28	--	--	--	--	--	--
AUG										
06...	--	--	--	--	--	--	--	--	--	--
SEP										
11...	.03	--	--	--	--	--	--	--	--	--

06332515 BEAR DEN CREEK NEAR MANDAREE, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	GROSS ALPHA, DIS-SOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DIS-SOLVED (PCI/L AS CS-137) (03515)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)	GROSS BETA, DIS-SOLVED (PCI/L AS SR/YT-90) (80050)
OCT											
09...	--	--	--	--	--	--	<18	1.0	8.5	1.7	7.8
NOV											
06...	0	70	.0	0	0	10	--	--	--	--	--
MAY											
07...	--	150	.4	1	0	40	--	--	--	--	--

DATE	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90) (80060)	RADIUM 226, DIS-SOLVED, RADON METHOD (PCI/L) (09511)	URANIUM DIS-SOLVED, EXTRAC-TION (UG/L) (80020)	CYANIDE TOTAL (MG/L AS CN) (00720)	PCB, TOTAL (UG/L) (39516)	PCB, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39519)	ALDRIN, TOTAL (UG/L) (39330)	ALDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39333)	CHLOR-DANE, TOTAL (UG/L) (39350)	CHLOR-DANE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39351)	DDD, TOTAL (UG/L) (39360)
OCT											
09...	1.7	.05	4.8	--	.0	0	.00	.0	.0	0	.00
NOV											
06...	--	--	--	.00	--	--	--	--	--	--	--
MAY											
07...	--	--	--	.00	--	--	--	--	--	--	--

DATE	DDD, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39363)	DDE, TOTAL (UG/L) (39365)	DDE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39368)	DDT, TOTAL (UG/L) (39370)	DDT, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39373)	DI-AZINON, TOTAL (UG/L) (39570)	DI-ELDRIN TOTAL (UG/L) (39380)	DI-ELDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39383)	ENDO-SULFAN, TOTAL (UG/L) (39388)	ENDRIN, TOTAL (UG/L) (39390)	ENDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39393)
OCT											
09...	.0	.00	.0	.00	.0	.00	.00	.0	.00	.00	.0
NOV											
06...	--	--	--	--	--	--	--	--	--	--	--
MAY											
07...	--	--	--	--	--	--	--	--	--	--	--

06332515 BEAR DEN CREEK NEAR MANDAREE, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	ETHION, TOTAL (UG/L) (39398)	HEPTACHLOR, TOTAL (UG/L) (39410)	HEPTACHLOR, TOTAL IN BOTTOM MATERIAL (UG/KG) (39413)	HEPTACHLOR EPOXIDE TOTAL (UG/L) (39420)	HEPTACHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG) (39425)	LINDANE TOTAL (UG/L) (39340)	LINDANE TOTAL IN BOTTOM MATERIAL (UG/KG) (39343)	MALATHION, TOTAL (UG/L) (39530)	METHYL PARATHION, TOTAL (UG/L) (39600)	METHYL TRITHION, TOTAL (UG/L) (39790)
OCT										
09...	.00	.00	.0	.00	.0	.00	.0	.00	.00	.00
NOV										
06...	--	--	--	--	--	--	--	--	--	--
MAY										
07...	--	--	--	--	--	--	--	--	--	--

DATE	NAPHTHALENES, POLYCHLOR, TOTAL (UG/L) (39250)	MIREX, TOTAL (UG/L) (39755)	PARATHION, TOTAL (UG/L) (39540)	PERTHANE TOTAL (UG/L) (39034)	TOXAPHENE, TOTAL (UG/L) (39400)	TOXAPHENE, TOTAL IN BOTTOM MATERIAL (UG/KG) (39403)	TOTAL TRITHION (UG/L) (39786)	2,4-D, TOTAL (UG/L) (39730)	2,4,5-T TOTAL (UG/L) (39740)	SILVEX, TOTAL (UG/L) (39760)
OCT										
09...	.00	.00	.00	.00	0	0	.00	.00	.00	.00
NOV										
06...	--	--	--	--	--	--	--	--	--	--
MAY										
07...	--	--	--	--	--	--	--	--	--	--

DATE	BED MAT. FALL DIAM. % FINER THAN .062 MM (80158)	BED MAT. FALL DIAM. % FINER THAN .125 MM (80159)	BED MAT. FALL DIAM. % FINER THAN .250 MM (80160)	BED MAT. FALL DIAM. % FINER THAN .500 MM (80161)	BED MAT. FALL DIAM. % FINER THAN 1.00 MM (80162)	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM (80169)	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM (80170)	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM (80171)	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM (80172)	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM (80173)	BED MAT. SIEVE DIAM. % FINER THAN 64.0 MM (80174)
OCT											
09...	2	7	30	46	56	68	83	95	100	--	--
JUN											
11...	2	4	9	13	20	29	41	52	63	85	100
AUG											
06...	2	4	7	9	17	27	41	50	58	82	100
SEP											
11...	2	4	11	14	28	39	54	68	74	93	100

06332520 SHELL CREEK NEAR PARSHALL, ND

LOCATION.--Lat 48°03'11", long 102°08'10", in SE¼NE¼ sec.29, T.153 N., R.89 W., Mountrail County, Hydrologic Unit 10110101, on left bank 800 ft (240 m) downstream from bridge on county highway, and 6 mi (10 km) northwest of Parshall.

DRAINAGE AREA.--465 mi^2 (1,204 km^2).

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder.

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

AVERAGE DISCHARGE.--14 years, 14.3 ft^3/s (0.405 m^3/s), 10,360 acre-ft/yr (12.8 hm^3/yr); median of yearly mean discharges, 11 ft^3/s (0.31 m^3/s), 8,000 acre-ft/yr (9.9 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,400 ft^3/s (68.0 m^3/s) Apr. 18, 1979, gage height, 8.17 ft (2.490 m); no flow at times each year.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 150 ft^3/s (4.25 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Apr. 18	1830	*2,400	68.0	8.17	2.490	July 29	1200	280	7.93	4.92	1.500

No flow Jan. 2 to Apr. 8.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.82	1.4	1.1	.02	.00	.00	.00	54	12	3.0	3.1	.64
2	.88	1.4	1.0	.00	.00	.00	.00	46	12	2.6	2.2	.64
3	1.6	1.4	1.0	.00	.00	.00	.00	40	11	2.4	1.7	.64
4	2.0	1.5	1.0	.00	.00	.00	.00	36	12	2.2	1.5	.59
5	2.0	1.5	1.0	.00	.00	.00	.00	36	11	2.0	1.4	.53
6	1.8	1.5	.90	.00	.00	.00	.00	42	9.5	1.7	1.3	.30
7	1.8	1.5	.90	.00	.00	.00	.00	49	8.8	1.3	1.3	.29
8	1.6	1.6	.80	.00	.00	.00	.00	45	8.2	1.1	1.2	.28
9	1.6	1.7	.70	.00	.00	.00	.80	36	7.3	1.1	1.0	.24
10	1.6	1.7	.70	.00	.00	.00	1.0	33	7.0	.82	1.1	.62
11	1.6	1.7	.70	.00	.00	.00	1.5	32	6.5	.68	1.0	1.0
12	1.6	1.6	.70	.00	.00	.00	1.5	31	6.0	1.0	.98	.90
13	1.4	1.6	.70	.00	.00	.00	1.0	28	5.4	.82	1.0	.81
14	1.4	1.6	.70	.00	.00	.00	1.5	26	4.4	.70	.93	.82
15	1.4	1.5	.70	.00	.00	.00	2.0	25	4.2	.59	.85	.81
16	1.4	1.5	.70	.00	.00	.00	24	25	4.2	.45	.88	.66
17	1.4	1.5	.60	.00	.00	.00	349	22	3.9	.49	.89	.59
18	1.4	1.5	.60	.00	.00	.00	1400	21	3.3	.40	.78	.47
19	1.4	1.4	.60	.00	.00	.00	1560	21	3.4	.40	.73	.45
20	1.4	1.4	.50	.00	.00	.00	1110	23	3.6	.64	.69	.37
21	1.4	1.3	.50	.00	.00	.00	524	22	3.1	.29	.69	.39
22	1.4	1.3	.50	.00	.00	.00	370	20	3.3	.29	.94	.43
23	1.4	1.3	.50	.00	.00	.00	284	19	4.1	.33	.74	.52
24	1.4	1.3	.40	.00	.00	.00	206	18	4.6	.54	.68	.64
25	1.4	1.3	.40	.00	.00	.00	166	17	4.1	.70	.68	.41
26	1.4	1.3	.40	.00	.00	.00	147	16	3.5	.76	.57	.43
27	1.4	1.3	.30	.00	.00	.00	120	15	3.8	.88	.60	.45
28	1.4	1.3	.30	.00	.00	.00	100	14	3.4	.82	.90	.51
29	1.4	1.3	.20	.00	---	.00	89	14	3.0	98	.77	.53
30	1.4	1.2	.10	.00	---	.00	68	13	2.8	16	.57	.62
31	1.4	---	.05	.00	---	.00	---	13	---	4.7	.46	---
TOTAL	45.50	43.4	19.25	.02	.00	.00	6526.30	850	179.4	147.90	32.13	16.58
MEAN	1.47	1.45	.62	.001	.000	.000	218	27.4	5.98	4.77	1.04	.55
MAX	2.0	1.7	1.1	.02	.00	.00	1560	54	12	98	3.1	1.0
MIN	.82	1.2	.05	.00	.00	.00	.00	13	2.8	.29	.46	.24
AC-FT	90	86	38	.04	.00	.00	12940	1690	356	293	64	33

CAL YR 1978	TOTAL	4201.25	MEAN 11.5	MAX 310	MIN .00	AC-FT 8330			
WTR YR 1979	TOTAL	7860.48	MEAN 21.5	MAX 1560	MIN .00	AC-FT 15590			

06332520 SHELL CREEK NEAR PARSHALL, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1972 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE (DEG C) (00010)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)
OCT										
04...	1240	2.1	2600	8.7	10.0	320	0	52	46	580
30...	1355	1.4	2600	8.5	6.0	320	0	50	47	570
NOV										
27...	1520	1.3	2720	8.3	.0	350	0	59	49	630
APR										
09...	1520	.65	1820	--	2.0	--	--	--	--	--
19...	1600	1570	1150	7.4	4.0	140	0	21	21	200
21...	1130	504	770	--	5.0	--	--	--	--	--
23...	1515	274	720	--	4.0	--	--	--	--	--
MAY										
03...	1010	41	1425	8.2	7.5	250	0	39	37	250
JUN										
06...	1015	10	2250	8.2	18.0	320	0	48	49	450
JUL										
06...	1250	1.8	2450	8.7	22.0	290	0	43	44	520
AUG										
02...	1245	2.2	2020	8.2	24.0	250	0	40	36	420
SEP										
07...	1320	.29	2900	8.1	18.5	260	0	34	42	640

DATE	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE (MG/L AS HCO3) (00440)	CAR-BONATE (MG/L AS CO3) (00445)	ALKA-LINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
OCT									
04...	79	14	9.1	902	8	753	2.9	790	12
30...	79	14	7.5	893	0	732	4.5	820	11
NOV									
27...	79	15	8.1	1030	0	845	8.3	820	14
APR									
09...	--	--	--	--	--	--	--	--	--
19...	74	7.4	8.7	303	0	249	19	310	14
21...	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--
MAY									
03...	68	6.9	8.8	437	0	358	4.4	440	7.1
JUN									
06...	75	11	8.8	775	0	636	7.8	660	7.8
JUL									
06...	79	13	7.6	854	24	740	2.9	690	5.6
AUG									
02...	78	12	8.4	628	0	515	6.3	620	6.0
SEP									
07...	84	17	7.3	929	27	807	13	840	7.2

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
OCT									
04...	.3	12	1930	1960	2.62	10.9	500	970	70
30...	.4	6.3	1910	1950	2.60	7.22	220	120	40
NOV									
27...	.3	2.5	2190	2090	2.98	7.69	250	160	80
APR									
09...	--	--	--	--	--	--	--	--	--
19...	.1	11	741	736	1.01	3140	640	300	100
21...	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--
MAY									
03...	.1	16	1050	1010	1.43	116	180	180	30
JUN									
06...	.3	9.2	1620	1620	2.20	43.7	80	200	60
JUL									
06...	.4	10	1830	1770	2.49	8.89	370	380	80
AUG									
02...	.3	16	1480	1460	2.01	8.87	470	260	40
SEP									
07...	.3	2.5	2070	2060	2.82	1.62	360	80	20

06335000 LITTLE BEAVER CREEK NEAR MARMARTH, ND

LOCATION.--Lat 46°16'29", long 103°58'33", in NE¼ sec.7, T.132 N., R.106 W., Bowman County, Hydrologic Unit 10110201, on right bank 150 ft (46 m) downstream from concreted ford, 0.8 mi (1.3 km) downstream from Corral Creek, 3 mi (5 km) southwest of Marmarth, and 5 mi (8 km) upstream from mouth.

DRAINAGE AREA.--587 mi^2 (1,520 km^2), approximately.

PERIOD OF RECORD.--April 1938 to September 1979 (discontinued).

REVISED RECORDS (WATER YEARS).--WSP 1279: 1939(M), 1940, 1943-44(M), 1945, 1948.

GAGE.--Water-stage recorder. Datum of gage is 2,733.14 ft (833.061 m) National Geodetic Vertical Datum of 1929. June 28, 1951 to May 17, 1968, water-stage recorder 300 ft (90 m) upstream at datum 10.00 ft (3.048 m) higher. See WSP 1729 or 1917 for history of changes prior to June 28, 1951.

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

AVERAGE DISCHARGE.--41 years, 44.6 ft^3/s (1.263 m^3/s), 32,310 acre-ft/yr (39.8 hm^3/yr), median of yearly mean discharges, 31 ft^3/s (0.88 m^3/s), 22,500 acre-ft/yr (28 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,700 ft^3/s (360 m^3/s) Apr. 6, 1952, gage height, 13.9 ft (4.24 m), from floodmark, site and datum then in use, from rating curve extended above 4,500 ft^3/s (127 m^3/s) on basis of slope-area measurement of peak flow; no flow at times in most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,270 ft^3/s (36.0 m^3/s) Apr. 10, gage height, 14.08 ft (4.292 m), no peak above base of 2,000 ft^3/s (56.6 m^3/s); maximum gage height, 14.43 ft (4.398 m) Mar. 25, backwater from ice; minimum daily discharge, 1.5 ft^3/s (0.042 m^3/s) on many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.2	5.2	2.4	1.5	1.5	2.5	366	54	31	16	6.3	3.8
2	4.2	5.1	2.4	1.5	1.5	3.0	286	53	26	11	6.5	3.4
3	4.4	4.9	2.4	1.5	1.5	3.0	256	51	23	8.8	6.4	2.8
4	4.8	4.8	2.4	1.5	1.5	3.0	237	43	21	8.6	4.6	3.1
5	4.6	4.7	2.5	1.5	1.5	3.0	206	42	18	15	4.4	3.1
6	4.6	4.5	2.5	1.5	1.6	3.0	190	54	18	16	4.6	2.7
7	4.5	4.3	2.5	1.5	1.6	3.0	366	53	20	9.4	4.4	2.7
8	4.8	4.1	2.5	1.5	1.6	6.0	394	46	37	5.8	4.4	2.7
9	4.7	4.0	2.5	1.5	1.6	10	545	42	31	7.5	4.2	2.9
10	4.9	3.5	2.5	1.5	1.6	14	927	40	25	5.4	4.2	134
11	5.0	3.5	3.0	1.5	2.0	15	675	39	22	2.8	4.2	80
12	5.4	3.5	3.5	1.5	2.0	20	442	38	20	3.8	4.4	43
13	5.2	3.5	4.0	1.5	2.0	25	281	39	16	7.4	4.0	19
14	6.7	3.5	5.0	1.5	2.0	30	297	40	15	6.8	3.6	8.8
15	6.0	3.3	4.5	1.5	2.0	30	530	37	14	6.1	3.4	6.7
16	5.4	3.2	4.5	1.5	2.0	30	640	34	11	4.9	3.8	5.2
17	5.2	3.1	4.5	1.5	2.0	150	720	32	9.3	2.2	4.2	4.4
18	5.2	3.2	4.0	1.5	2.0	350	635	30	9.0	3.0	4.6	4.0
19	5.4	3.0	4.0	1.5	2.0	300	431	30	11	2.0	4.9	3.4
20	5.3	2.8	3.5	1.5	2.5	250	228	29	22	1.9	4.2	2.9
21	5.2	2.8	3.5	1.5	2.5	300	164	28	30	5.2	4.9	2.9
22	5.2	2.6	3.5	1.5	2.5	500	129	27	17	4.8	4.9	2.9
23	5.2	2.6	4.0	1.5	2.5	450	115	24	57	4.9	4.2	2.9
24	5.5	2.4	4.5	1.5	2.5	700	102	23	18	4.8	4.2	2.5
25	5.6	2.4	4.5	1.5	2.5	882	88	22	11	2.8	4.0	2.8
26	4.8	2.4	4.0	1.5	2.5	456	78	23	9.2	19	4.0	2.3
27	5.2	2.4	3.5	1.5	2.5	410	70	23	7.5	40	4.4	2.4
28	5.6	2.4	3.0	1.5	2.5	396	66	22	8.6	26	29	2.3
29	5.5	2.4	2.5	1.5	---	336	63	21	13	15	11	2.3
30	5.4	2.4	2.0	1.5	---	400	58	27	23	9.5	6.7	2.1
31	5.2	---	1.5	1.5	---	396	---	33	---	7.2	4.4	---
TOTAL	159.9	102.5	101.6	46.5	56.0	6272.5	9603	1099	593.6	279.6	173.0	364.0
MEAN	5.16	3.42	3.28	1.50	2.00	202	320	35.5	19.8	9.02	5.58	12.1
MAX	6.7	5.2	5.0	1.5	2.5	882	927	54	57	40	29	134
MIN	4.2	2.4	1.5	1.5	1.5	2.5	58	21	7.5	1.9	3.4	2.1
AC-FT	317	203	202	92	111	12440	19050	2180	1180	555	343	722

CAL YR 1978 TOTAL 39684.7 MEAN 109 MAX 5870 MIN 1.0 AC-FT 78710
WTR YR 1979 TOTAL 18851.2 MEAN 51.6 MAX 927 MIN 1.5 AC-FT 37390

06335500 LITTLE MISSOURI RIVER AT MARMARTH, ND

LOCATION.--Lat 46°17'44", long 103°55'06", in SW¼ sec.30, T.133 N., R.105 W., Slope County, Hydrologic Unit 10110203, on left bank 90 ft (27 m) downstream from bridge on U.S. Highway 12 in Marmarth, and 1.5 mi (2.4 km) downstream from Little Beaver Creek.

DRAINAGE AREA.--4,640 mi^2 (12,020 km^2), approximately.

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

REVISED RECORDS (WATER YEARS).--WSP 896: 1938-39. WSP 1086: 1943-44. WSP 1279: 1943(M), 1945-46, 1948. WSP 1439: 1950 (calendar year figures).

GAGE.--Water-stage recorder. Datum of gage is 2,686.32 ft (818.790 m) National Geodetic Vertical Datum of 1929. 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 (27 m) upstream at present datum.

REMARKS.--Records good except those for the winter period, which are fair. Small diversions for irrigation above station.

AVERAGE DISCHARGE.--41 years, 348 ft^3/s (9.855 m^3/s), 252,100 acre-ft/yr (311 hm^3/yr); median of yearly mean discharges, 280 ft^3/s (7.93 m^3/s), 203,000 acre-ft/yr (247 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 45,000 ft^3/s (1,270 m^3/s) Mar. 23, 1947, gage height, 21.7 ft (6.61 m); maximum gage height, 23.4 ft (7.13 m) Mar. 31, 1952, backwater from ice; no flow for part of most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--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 ft (6.55 m), 20.2 ft (6.16 m), and 19.7 ft (6.00 m), respectively. These stages are not comparable to stages during period of record, owing to construction of levees.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 3,000 ft^3/s (85.0 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Mar. 30	2330	*4,280	121	[a]7.20	2.195	Apr. 10	0630	4,080	116	7.04	2.146

Minimum daily discharge, 0.80 ft^3/s (0.023 m^3/s) Jan. 11 to Feb. 6.

a - Backwater from ice.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	28	31	22	9.0	.80	1.3	2670	363	128	80	58	29
2	28	33	21	7.0	.80	1.3	2710	334	123	135	133	22
3	29	32	21	7.0	.80	1.3	2720	309	110	127	273	19
4	28	32	21	5.0	.80	1.3	2640	277	100	84	206	32
5	31	30	22	5.0	.80	1.3	2120	259	97	74	168	29
6	29	28	22	3.0	.80	1.3	1680	280	87	121	126	14
7	30	30	22	3.0	1.0	1.5	2260	291	100	110	104	14
8	30	30	22	2.0	1.3	2.2	2250	239	125	93	87	12
9	30	30	21	1.0	1.3	10	3010	217	140	123	76	12
10	31	30	21	1.0	1.3	20	3850	206	106	78	64	167
11	31	29	21	.80	1.3	30	3930	202	94	52	55	212
12	33	28	21	.80	1.3	125	3810	196	89	100	51	284
13	35	27	21	.80	1.3	250	3060	185	85	78	46	91
14	36	27	21	.80	1.3	300	2720	188	74	42	41	67
15	39	27	20	.80	1.3	350	2880	181	67	46	37	48
16	37	27	19	.80	1.3	550	2800	174	60	37	34	37
17	35	27	18	.80	1.3	900	2960	171	57	34	34	29
18	34	26	17	.80	1.3	1450	3060	158	53	28	30	27
19	34	25	17	.80	1.3	1350	2510	153	58	27	30	23
20	35	24	16	.80	1.3	1200	1930	148	80	40	30	19
21	35	23	16	.80	1.3	1250	1670	135	150	106	30	17
22	32	22	16	.80	1.3	1100	1360	126	105	80	30	16
23	32	23	15	.80	1.3	1590	1080	119	143	67	30	16
24	30	23	15	.80	1.3	1500	890	113	95	71	29	14
25	30	23	15	.80	1.3	1850	741	110	68	66	29	14
26	28	23	14	.80	1.3	1760	645	108	126	143	29	14
27	29	23	13	.80	1.3	1570	575	106	85	290	29	13
28	29	22	13	.80	1.3	1950	500	97	95	200	29	13
29	30	22	11	.80	---	1770	446	105	121	129	29	13
30	30	22	11	.80	---	2520	401	126	104	89	29	13
31	31	---	9.0	.80	---	2700	---	144	---	70	29	---
TOTAL	979	799	554.0	59.80	33.10	26106.5	63878	5820	2925	2820	2001	1330
MEAN	31.6	26.6	17.9	1.93	1.18	842	2129	188	97.5	91.0	64.5	44.3
MAX	39	33	22	9.0	1.3	2700	3930	363	150	290	273	284
MIN	28	22	9.0	.80	.80	1.3	401	97	53	27	29	12
AC-FT	1940	1580	1100	119	66	51780	126700	11540	5800	5590	3970	2640

CAL YR 1978 TOTAL 320518.90 MEAN 878 MAX 21900 MIN 3.0 AC-FT 635700
WTR YR 1979 TOTAL 107305.40 MEAN 294 MAX 3930 MIN .80 AC-FT 212800

06335750 DEEP CREEK NEAR AMIDON, ND

LOCATION.--Lat 46°34'37", long 103°33'26", in SE¼SW¼NE¼ sec.24, T.136 N., R.103 W., Slope County, Hydrologic Unit 10110203, on left bank 100 ft (30 m) downstream from county bridge, 3.0 mi (4.8 km) above mouth, and 13 mi (21 km) northwest of Amidon.

DRAINAGE AREA.--250 mi^2 (648 km^2), approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1977 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 2,460 ft (750 m), from topographic map.

REMARKS.--Records good except those from October to March, which are poor.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,680 ft^3/s (45.6 m^3/s) Mar. 27, 1978, gage height, 8.28 ft (2.524 m); maximum gage height, 8.37 ft (2.551 m) Mar. 26, 1978; no flow for part of days Sept. 11, 1978 and Sept. 28, 1979.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 150 ft^3/s (4.24 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Mar. 26	0630	Ice jam		*4.47	1.363	Apr. 18	1200	231	6.54	3.33	1.015
Apr. 11	1200	*242	6.85	3.37	1.027						

No flow for part of Sept. 28.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.62	1.0	1.8	1.0	.50	1.2	47	18	5.2	1.9	4.4	6.9
2	.30	1.1	1.6	1.1	.40	1.2	46	15	5.4	1.4	3.4	4.4
3	.37	1.1	1.8	1.1	.40	1.2	42	11	5.2	1.3	2.4	3.4
4	.45	1.1	1.9	1.2	.40	1.4	41	12	4.6	1.1	2.0	3.7
5	.43	1.2	1.8	1.2	.60	1.6	40	12	3.9	1.1	2.2	3.0
6	.41	1.1	1.5	1.1	.60	.90	60	12	3.7	1.0	2.0	2.6
7	.38	1.0	1.6	1.1	.50	1.9	90	8.5	3.7	.88	1.6	2.0
8	.66	1.4	1.6	1.2	.50	1.8	120	14	3.7	.88	1.3	1.6
9	.81	1.9	1.6	1.1	.60	1.7	170	17	3.9	1.0	.88	1.3
10	.81	2.6	1.7	1.0	.60	1.7	185	14	3.7	.88	.67	1.3
11	.89	2.4	1.8	1.0	.60	2.5	212	12	3.7	.88	.67	1.4
12	1.0	2.1	1.8	.90	.70	5.0	162	12	3.2	.88	.77	3.0
13	.93	2.2	1.7	.80	.80	10	97	13	2.4	1.3	.48	2.0
14	.83	2.3	1.7	.80	.70	20	69	12	1.7	1.1	.40	1.7
15	.84	2.3	1.7	.90	.60	30	79	12	1.7	1.8	.36	1.0
16	.90	2.3	1.7	.90	.80	50	107	11	2.0	1.4	.36	.88
17	.88	2.3	1.6	1.0	.90	80	183	9.2	1.7	1.1	.36	.67
18	.70	2.2	1.5	1.0	1.1	80	218	8.2	1.3	.88	.31	.48
19	.50	2.1	1.5	1.1	1.2	75	169	7.5	1.7	1.5	.31	.48
20	.60	2.0	1.6	1.1	1.1	72	102	7.5	1.7	4.4	.31	.48
21	.70	2.0	1.6	1.2	1.0	70	71	7.2	2.6	3.0	.36	.40
22	.60	2.1	1.5	1.1	.90	68	57	7.2	3.7	2.4	.36	.40
23	.70	2.1	1.4	1.0	.90	65	43	6.9	3.4	2.2	.31	.36
24	.80	2.2	1.3	1.1	1.0	60	41	6.3	3.0	1.9	.31	.36
25	.70	2.2	1.3	1.1	1.2	85	37	6.0	2.8	1.6	.31	.36
26	.80	2.2	1.2	1.1	1.5	130	33	5.4	3.0	1.4	.40	.36
27	.80	2.2	1.2	1.0	1.3	115	30	5.2	2.6	1.7	.48	.31
28	.80	2.2	1.2	.80	1.2	125	26	4.6	2.6	5.4	.48	.19
29	.80	2.1	1.0	.70	---	120	22	4.9	2.8	8.9	.48	.22
30	.90	2.0	.90	.50	---	52	20	5.7	2.4	7.2	.40	.22
31	1.0	---	.90	.50	---	49	---	5.7	---	5.7	1.4	---
TOTAL	21.91	57.0	47.00	30.70	22.60	1378.10	2619	303.0	93.0	68.08	30.47	45.47
MEAN	.71	1.90	1.52	.99	.81	44.5	87.3	9.77	3.10	2.20	.98	1.52
MAX	1.0	2.6	1.9	1.2	1.5	130	218	18	5.4	8.9	4.4	6.9
MIN	.30	1.0	.90	.50	.40	.90	20	4.6	1.3	.88	.31	.19
AC-FT	43	113	93	61	45	2730	5190	601	184	135	60	90

CAL YR 1978 TOTAL 12138.64 MEAN 33.3 MAX 1560 MIN .16 AC-FT 24080
WTR YR 1979 TOTAL 4716.33 MEAN 12.9 MAX 218 MIN .19 AC-FT 9350

06335750 DEEP CREEK NEAR AMIDON, ND--Continued

WATER-QUALITY RECORDS

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)
OCT												
05...	1300	.39	3810	8.3	8.0	9.5	11.6	110	K8	130	720	200
NOV												
16...	1105	2.3	4550	8.4	3.5	.5	12.5	95	K10	290	870	270
DEC												
15...	1245	1.7	5000	7.9	1.5	.0	12.4	93	28	200	1000	300
JAN												
24...	1020	1.1	5250	8.0	-10.0	.0	9.1	68	52	K4	1100	430
FEB												
07...	1010	.52	4600	8.0	-15.0	.0	8.7	65	116	41	1000	400
MAR												
24...	1615	61	--	--	5.0	.5	--	--	--	--	--	--
30...	1100	55	1220	8.1	-1.5	.0	12.7	95	K5	470	310	150
APR												
27...	1000	31	2500	8.5	6.0	5.5	12.1	103	K5	K54	690	360
MAY												
10...	1010	15	3890	8.5	-1.5	5.0	10.8	93	82	45	900	440
JUN												
15...	1110	1.5	4390	8.3	19.5	19.0	6.9	81	83	170	960	430
JUL												
*11...	0845	.85	3970	8.2	19.5	21.0	5.5	67	270	290	--	--
AUG												
10...	0950	.59	4420	8.3	20.5	15.5	7.1	76	110	270	870	360
SEP												
14...	1200	1.7	5100	8.6	19.0	13.0	9.4	98	112	50	790	340

DATE	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE (MG/L AS HCO3) (00440)	CAR-BONATE (MG/L AS CO3) (00445)	ALKA-LINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)
OCT											
05...	90	120	740	69	12	13	637	0	520	5.1	1700
NOV											
16...	100	150	680	68	13	15	720	5	600	4.7	2000
DEC											
15...	120	170	920	66	13	18	849	0	700	17	2300
JAN											
24...	140	170	1000	67	13	16	752	0	620	12	2500
FEB											
07...	140	160	970	67	13	17	730	0	598	12	2400
MAR											
24...	--	--	--	--	--	--	--	--	--	--	--
30...	50	46	160	51	3.9	12	200	0	160	2.5	500
APR											
27...	110	100	370	54	6.1	6.4	388	6	330	2.0	940
MAY											
10...	95	160	600	59	8.7	11	532	12	480	2.8	1600
JUN											
15...	120	160	850	65	12	14	650	0	530	5.2	2100
JUL											
11...	--	--	--	--	--	--	610	0	500	6.2	--
AUG											
10...	100	150	850	68	13	15	624	0	510	5.0	2100
SEP											
14...	120	120	950	72	15	19	508	24	460	2.2	2600

* - Laboratory analysis incomplete at date of printing; data will be available via computer retrieval from WATSTORE files.

K - Results based on colony count outside the acceptable range (non-ideal colony count).

06335750 DEEP CREEK NEAR AMIDON, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)
OCT											
05...	8.6	.5	7.1	2890	2990	4.07	3.15	.01	.01	.87	.88
NOV											
16...	16	.3	5.7	5650	5530	4.80	21.9	.02	.01	.71	.72
DEC											
15...	18	.4	11	4080	3980	5.41	18.4	.06	.01	.66	.67
JAN											
24...	14	.3	14	4360	4230	5.75	12.6	.18	.15	1.1	1.2
FEB											
07...	16	.4	14	4180	4080	5.55	5.73	.21	.13	.54	.67
MAR											
24...	--	--	--	--	--	--	--	--	--	--	--
30...	4.2	.1	10	898	882	1.20	131	1.4	.08	1.2	1.3
APR											
27...	6.0	.2	7.9	1990	1740	2.57	146	.01	.03	.86	.89
MAY											
10...	9.0	.3	6.0	3130	2760	5.75	112	.02	.02	.90	.92
JUN											
15...	9.7	.3	4.6	3600	3580	4.87	14.5	.04	.05	.85	.90
JUL											
11...	--	--	--	--	--	--	--	--	--	--	--
AUG											
10...	15	.4	7.5	5350	3550	4.83	5.66	.02	.02	.98	1.0
SEP											
14...	9.5	.3	4.3	3160	4100	5.58	19.4	.04	.03	1.2	1.2

DATE	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	ARSENIC TOTAL IN BOT-TOM MA-TERIAL (UG/G AS AS) (01003)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BARIUM, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS BA) (01008)
OCT											
05...	.89	3.9	.03	.01	--	--	--	--	--	--	--
NOV											
16...	.74	3.3	.03	.01	--	--	--	--	--	--	--
DEC											
15...	.73	3.2	.00	.01	--	--	--	--	--	--	--
JAN											
24...	1.4	6.1	.02	.01	--	--	--	--	--	--	--
FEB											
07...	.88	3.9	.04	.02	--	--	--	--	--	--	--
MAR											
24...	--	--	--	--	--	--	--	--	--	--	--
30...	2.7	12	.19	.04	50	4	1	13	100	50	200
APR											
27...	.90	4.0	.05	.01	--	--	--	--	--	--	--
MAY											
10...	.94	4.2	.04	.01	--	--	--	--	--	--	--
JUN											
15...	.94	4.2	.03	.01	--	--	--	--	--	--	--
JUL											
11...	--	--	--	--	--	--	--	--	--	--	--
AUG											
10...	1.0	4.5	.03	.05	0	2	2	31	0	0	100
SEP											
14...	1.2	5.5	.02	.01	--	--	--	--	--	--	--

06335750 DEEP CREEK NEAR AMIDON, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	BERYLLIUM, TOTAL RECOVERABLE (UG/L AS BE) (01012)	BERYLLIUM, DISSOLVED (UG/L AS BE) (01010)	BERYLLIUM, RECOV. FM BOTTOM MATERIAL (UG/G) (01013)	BORON, DISSOLVED (UG/L AS B) (01020)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) (01034)	CHROMIUM, DISSOLVED (UG/L AS CR) (01030)	CHROMIUM, RECOV. FM BOTTOM MATERIAL (UG/G) (01029)	COBALT, TOTAL RECOVERABLE (UG/L AS CO) (01037)	COBALT, DISSOLVED (UG/L AS CO) (01035)	COBALT, RECOV. FM BOTTOM MATERIAL (UG/G AS CO) (01038)	COPPER, TOTAL RECOVERABLE (UG/L AS CU) (01042)
OCT											
05...	--	--	--	1400	--	--	--	--	--	--	--
NOV											
16...	--	--	--	1400	--	--	--	--	--	--	--
DEC											
15...	--	--	--	1500	--	--	--	--	--	--	--
JAN											
24...	--	--	--	1600	--	--	--	--	--	--	--
FEB											
07...	--	--	--	1500	--	--	--	--	--	--	--
MAR											
24...	--	--	--	--	--	--	--	--	--	--	--
30...	0	<1	1	580	20	0	6	9	<3	0	12
APR											
27...	--	--	--	830	--	--	--	--	--	--	--
MAY											
10...	--	--	--	1200	--	--	--	--	--	--	--
JUN											
15...	--	--	--	1600	--	--	--	--	--	--	--
JUL											
11...	--	--	--	--	--	--	--	--	--	--	--
AUG											
10...	0	0	0	940	10	0	5	0	0	ND	5
SEP											
14...	--	--	--	2800	--	--	--	--	--	--	--

DATE	COPPER, DISSOLVED (UG/L AS CU) (01040)	COPPER, RECOV. FM BOTTOM MATERIAL (UG/G AS CU) (01043)	IRON, DISSOLVED (UG/L AS FE) (01046)	LITHIUM TOTAL RECOVERABLE (UG/L AS LI) (01132)	LITHIUM DISSOLVED (UG/L AS LI) (01130)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN) (01055)	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	MANGANESE, RECOV. FM BOTTOM MATERIAL (UG/G) (01053)	MERCURY TOTAL RECOVERABLE (UG/L AS HG) (71900)	MERCURY DISSOLVED (UG/L AS HG) (71890)	MERCURY RECOV. FM BOTTOM MATERIAL (UG/G AS HG) (71921)
OCT											
05...	--	--	40	--	--	--	--	--	--	--	--
NOV											
16...	--	--	30	--	--	--	--	--	--	--	--
DEC											
15...	--	--	50	--	--	--	--	--	--	--	--
JAN											
24...	--	--	50	--	--	--	--	--	--	--	--
FEB											
07...	--	--	20	--	--	--	--	--	--	--	--
MAR											
24...	--	--	--	--	--	--	--	--	--	--	--
30...	5	8	170	20	20	280	100	0	.0	.1	.20
APR											
27...	--	--	40	--	--	--	--	--	--	--	--
MAY											
10...	--	--	30	--	--	--	--	--	--	--	--
JUN											
15...	--	--	20	--	--	--	--	--	--	--	--
JUL											
11...	--	--	--	--	--	--	--	--	--	--	--
AUG											
10...	10	3	30	80	80	160	100	390	.3	.2	.02
SEP											
14...	--	--	30	--	--	--	--	--	--	--	--

06335750 DEEP CREEK NEAR AMIDON, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	MOLYB-DENUM, TOTAL RECOV-ERABLE (UG/L AS MO) (01062)	MOLYB-DENUM, RECOV. FM BOT-TOM MA-TERIAL (UG/G) (01063)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	NICKEL, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS NI) (01068)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SELE-NIUM, TOTAL IN BOT-TOM MA-TERIAL (UG/G) (01148)	VANA-DIUM, DIS-SOLVED (UG/L AS V) (01085)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)
MAR											
24...	--	--	--	--	--	--	--	--	--	--	--
30...	3	0	1	14	4	0	1	1	0	2.0	50
AUG											
10...	2	0	3	9	3	10	1	0	0	<1.0	30
SEP											
14...	--	--	--	--	--	--	--	--	--	--	--

DATE	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ZINC, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS ZN) (01093)	GROSS ALPHA, DIS-SOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DIS-SOLVED (PCI/L AS CS-137) (03515)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C) (00689)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70338)
OCT											
05...	--	--	--	--	--	--	15	.4	58	.06	--
NOV											
16...	--	--	--	--	--	--	16	.7	143	.89	--
DEC											
15...	--	--	--	--	--	--	18	.8	88	.41	--
JAN											
24...	--	--	--	--	--	--	23	.4	94	.28	--
FEB											
07...	--	--	--	--	--	--	18	.4	129	.18	--
MAR											
24...	--	--	--	--	--	--	--	--	281	46	--
30...	<5	23	<13	15	14	9.9	15	3.7	357	53	54
APR											
27...	--	--	--	--	--	--	21	2.4	116	9.7	--
MAY											
10...	--	--	--	--	--	--	19	1.1	150	6.1	--
JUN											
15...	--	--	--	--	--	--	33	.5	46	.19	--
JUL											
11...	--	--	--	--	--	--	--	--	41	.09	--
AUG											
10...	30	12	<70	.6	25	2.8	20	.7	79	.13	--
SEP											
14...	--	--	<52	<.3	<24	.8	33	.4	51	.24	--

DATE	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70340)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)	BED MAT. FALL DIAM. % FINER THAN .062 MM (80158)	BED MAT. FALL DIAM. % FINER THAN .125 MM (80159)	BED MAT. FALL DIAM. % FINER THAN .250 MM (80160)	BED MAT. FALL DIAM. % FINER THAN .500 MM (80161)	BED MAT. FALL DIAM. % FINER THAN 1.00 MM (80162)	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM (80169)	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM (80170)	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM (80171)	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM (80172)	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM (80173)
MAR												
30...	73	100	6	13	22	23	28	34	44	62	76	100

DATE	LENGTH OF EXPO-SURE (DAYS) (00022)	CHLOR-A PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70957)	CHLOR-B PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70958)	PERI-PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M (00573)	PERI-PHYTON BIOMASS ASH WEIGHT G/SQ M (00572)
JUL					
11...	26	1.42	.000	14.0	13.1
AUG					
10...	30	.330	.000	.630	.550
SEP					
14...	33	1.00	.150	7.17	6.61

06335750 DEEP CREEK NEAR AMIDON, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1978 TO SEPTEMBER 1979

DATE	OCT 5,78		NOV 16,78		DEC 15,78		JAN 24,79		FEB 7,79		MAR 30,79	
TIME	1300		1105		1245		1020		1010		1100	
TOTAL CELLS/ML	270		1200		69		35		10		530	
DIVERSITY: DIVISION	1.0		1.6		1.2		0.0		1.0		1.0	
.CLASS	1.0		1.6		1.2		0.0		1.0		1.0	
..ORDER	1.6		1.6		1.4		0.0		1.0		1.4	
...FAMILY	2.2		1.8		1.4		0.9		1.0		2.0	
....GENUS	2.4		2.0		1.9		0.9		1.0		2.2	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)												
.CHLOROPHYCEAE												
..CHLOROCOCCALES												
...OOCYSTACEAE												
....DICHOTOMOCOCCUS	--	-	--	-	--	-	--	-	--	-	--	-
....ANKISTRODESMUS	7	3	230#	20	8	11	--	-	--	-	--	-
....DICTYOSPHAERIUM	14	5	--	-	--	-	--	-	--	-	--	-
....KIRCHNERIELLA	--	-	--	-	--	-	--	-	--	-	--	-
....NEPHROCYTIUM	--	-	--	-	--	-	--	-	--	-	--	-
....OOCYSTIS	--	-	--	-	--	-	--	-	--	-	--	-
....SELENASTRUM	4	1	29	2	--	-	--	-	--	-	--	-
...SCENEDESMACEAE												
....CRUCIGENIA	14	5	56	5	--	-	--	-	--	-	--	-
....SCENEDESMUS	7	3	--	-	--	-	--	-	--	-	280#	53
....TETRASTRUM	--	-	--	-	--	-	--	-	--	-	--	-
..VOLVOCALES												
...CHLAMYDOMONADACEAE	--	-	--	-	--	-	--	-	--	-	--	-
....CHLAMYDOMONAS	100#	38	--	-	--	-	--	-	--	-	--	-
...SPONDYLOMORACEAE												
....PASCHERIELLA	--	-	--	-	--	-	--	-	--	-	--	-
CHRYSOPHYTA												
.BACILLARIOPHYCEAE												
..CENTRALES												
...COSCINODISCACEAE												
....CYCLOTELLA	4	1	--	-	8	11	--	-	--	-	35	7
....MELOSIRA	--	-	--	-	--	-	--	-	--	-	35	7
..PENNALES												
...ACHNANTHACEAE												
....COCCONEIS	--	-	--	-	--	-	--	-	--	-	--	-
...CYMBELLACEAE												
....CYMBELLA	4	1	--	-	--	-	--	-	--	-	35	7
...GOMPHONEMATACEAE												
....GOMPHONEMA	4	1	--	-	--	-	--	-	--	-	35	7
...NAVICULACEAE												
....DIPLONEIS	--	-	14	1	--	-	--	-	--	-	--	-
....GYROSIGMA	--	-	--	-	--	-	--	-	--	-	--	-
....MASTOGLOIA	--	-	--	-	--	-	--	-	--	-	--	-
....NAVICULA	--	-	14	1	--	-	10#	29	5#	50	35	7
....NEIDIUM	28	11	--	-	--	-	--	-	--	-	--	-
....PINNULARIA	--	-	14	1	--	-	--	-	--	-	--	-
...NITZSCHIACEAE												
....NITZSCHIA	82#	30	--	-	8	11	25#	71	--	-	71	13
.XANTHOPHYCEAE												
..HETEROCOCCALES												
...CHLOROTHECIACEAE												
....OPHIOCYTIUM	--	-	--	-	--	-	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)												
.CRYPTOPHYCEAE												
..CRYPTOMONADALES												
...CRYPTOMONADACEAE												
....CRYPTOMONAS	--	-	--	-	--	-	--	-	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)												
.CYANOPHYCEAE												
..CHROOCOCCALES												
...CHROOCOCCACEAE												
....ANACYSTIS	--	-	220#	19	39#	56	--	-	--	-	--	-
....COCCOCHLORIS	--	-	--	-	8	11	--	-	--	-	--	-
..HORMOGONALES												
...OSCILLATORIACEAE												
....OSCILLATORIA	--	-	--	-	--	-	--	-	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)												
.EUGLENOPHYCEAE												
..EUGLENALES												
...EUGLENACEAE												
....EUGLENA	--	-	--	-	--	-	--	-	--	-	--	-
....PHACUS	--	-	--	-	--	-	--	-	--	-	--	-
....TRACHELOMONAS	--	-	580#	50	--	-	--	-	5#	50	--	-
PYRRHOPHYTA (FIRE ALGAE)												
.DINOPHYCEAE												
..PERIDINIALES	--	-	--	-	--	-	--	-	--	-	--	-
...GLENODINIACEAE												
....GLENODINIUM	--	-	--	-	--	-	--	-	--	-	--	-
...PERIDINIACEAE												
....PERIDINIUM	--	-	--	-	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06335750 DEEP CREEK NEAR AMIDON, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1978 TO SEPTEMBER 1979

DATE	APR 27,79	MAY 10,79	JUN 15,79	JUL 11,79	AUG 10,79	SEP 14,79
TIME	1000	1010	1110	0845	0950	1200
TOTAL CELLS/ML	7200	4300	210	660	1100	1600
DIVERSITY: DIVISION	1.1	0.5	1.3	0.9	1.7	1.7
.CLASS	1.4	0.5	1.3	0.9	1.7	1.7
..ORDER	1.8	0.5	1.8	1.2	2.1	1.9
...FAMILY	2.0	1.0	2.8	2.0	2.5	0.0
....GENUS	0.0	1.9	2.8	2.6	2.9	0.0

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)												
.CHLOROPHYCEAE												
..CHLOROCOCCALES												
...OOCYSTACEAE												
....DICHOTOMOCOCCUS	910	13	--	-	--	-	--	-	--	-	--	-
....ANKISTRODESMUS	910	13	1100#	26	--	-	90	14	26	2	69	4
....DICTYOSPHAERIUM	--	-	160	4	--	-	150#	24	52	5	--	-
....KIRCHNERIELLA	400	6	2200#	50	--	-	--	-	--	-	--	-
....NEPHROCYTIUM	57	1	--	-	--	-	--	-	--	-	--	-
....OOCYSTIS	--	-	--	-	--	-	--	-	52	5	--	-
....SELENASTRUM	--	-	--	-	26	13	--	-	39	3	14	1
...SCENEDESMACEAE												
....CRUCIGENIA	--	-	--	-	--	-	140#	22	52	5	55	3
....SCENEDESMUS	230	3	480	11	--	-	26	4	100	9	--	-
....TETRASTRUM	--	-	--	-	51#	25	--	-	--	-	--	-
..VOLVOCALES												
...CHLAMYDOMONADACEAE	280	4	--	-	--	-	--	-	--	-	--	-
....CHLAMYDOMONAS	--	-	--	-	13	6	13	2	39	3	14	1
...SPONDYLOMORACEAE												
....PASCHERIELLA	400	6	--	-	--	-	--	-	--	-	--	-
CHRYSOPHYTA												
.BACILLARIOPHYCEAE												
..CENTRALES												
...COSCINODISCACEAE												
....CYCLOTELLA	3400#	47	--	-	13	6	13	2	91	8	41	3
....MELOSIRA	--	-	--	-	--	-	--	-	--	-	--	-
..PENNALES												
...ACHNANTHACEAE												
....COCCONEIS	--	-	--	-	--	-	--	-	13	1	--	-
...CYMBELLACEAE												
....CYMBELLA	--	-	--	-	26	13	--	-	--	-	55	3
...GOMPHONEMATACEAE												
....GOMPHONEMA	--	-	--	-	--	-	--	-	--	-	--	-
...NAVICULACEAE												
....DIPLONEIS	--	-	--	-	--	-	--	-	--	-	41	3
....GYROSIGMA	--	-	--	-	--	-	26	4	--	-	--	-
....MASTOGLOIA	--	-	--	-	--	-	--	-	--	-	27	2
....NAVICULA	--	-	--	-	39#	19	26	4	52	5	180	11
....NEIDIUM	--	-	--	-	--	-	--	-	--	-	--	-
....PINNULARIA	--	-	--	-	--	-	--	-	--	-	--	-
...NITZSCHIACEAE												
....NITZSCHIA	110	2	--	-	26	13	170#	25	100	9	360#	22
.XANTHOPHYCEAE												
..HETEROCOCCALES												
...CHLOROTHECIACEAE												
....OPHIOCYTIUM	400	6	--	-	--	-	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)												
.CRYPTOPHYCEAE												
..CRYPTOMONADALES												
...CRYPTOMONADACEAE												
....CRYPTOMONAS	--	-	--	-	--	-	--	-	--	-	14	1
CYANOPHYTA (BLUE-GREEN ALGAE)												
.CYANOPHYCEAE												
..CHROOCOCCALES												
...CHROOCOCCACEAE												
....ANACYSTIS	--	-	--	-	13	6	--	-	490#	43	--	-
....COCCOCHLORIS	--	-	--	-	--	-	--	-	--	-	--	-
..HORMOGONALES												
...OSCILLATORIACEAE												
....OSCILLATORIA	--	-	--	-	--	-	--	-	--	-	650#	41
EUGLENOPHYTA (EUGLENOIDS)												
.EUGLENOPHYCEAE												
..EUGLENALES												
...EUGLENACEAE												
....EUGLENA	--	-	--	-	--	-	--	-	13	1	--	-
....PHACUS	--	-	--	-	--	-	--	-	--	-	14	1
....TRACHELOMONAS	110	2	440	10	--	-	--	-	--	-	--	-
PYRRHOPHYTA (FIRE ALGAE)												
.DINOPHYCEAE												
..PERIDINIALES	--	-	--	-	--	-	--	-	--	-	14	1
...GLENODINIACEAE												
....GLENODINIUM	--	-	--	-	--	-	--	-	13	1	--	-
...PERIDINIACEAE												
....PERIDINIUM	--	-	--	-	--	-	--	-	--	-	55	3

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06336447 DUCK CREEK NEAR WIBAUX, MT

LOCATION.--Lat 46°52'30", long 104°09'18", in SW¼SW¼SW¼ sec.17, T.13 N., R.60 W., Wibaux County, Hydrologic Unit 10110204, on right bank, and 9.5 (15.3 km) southeast of Wibaux.

DRAINAGE AREA.--46.5 mi² (120.4 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1978 to September 1979.

GAGE.--Water-stage recorder.

REMARKS.--Records poor.

EXTREMES FOR CURRENT PERIOD.--March to September 1978: Peak discharges above base of 20 ft³/s (0.57 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Mar. 21	2245	[a]*580	16.4	Unknown		July 6	0130	80	2.3	2.97	0.905
Mar. 27	2317	[a]200	5.7	Unknown							

No flow for several months.

Water year 1979: Peak discharges above base of 20 ft³/s (0.57 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Mar. 27	--	35	0.1	Backwater from ice		Apr. 18	0300	40	1.1	[a]*4.14	1.262
Apr. 10	1500	*151	4.3	3.13	0.954						

No flow for many months.

a - Backwater from Beaver Creek

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1						.00	10	.30	3.4	.02	.01	.00
2						.00	7.0	.20	5.0	.01	.00	.00
3						.00	5.0	.20	4.2	.00	.00	.00
4						.00	4.0	.20	3.8	.00	.00	.00
5						.00	3.0	.30	3.4	.15	.00	.00
6						.00	2.0	.30	2.8	35	.00	.00
7						.00	2.0	.40	2.7	16	.00	.00
8						.00	2.0	1.5	2.6	8.6	.00	.00
9						.00	2.4	1.2	2.0	5.8	.00	.00
10						.00	2.4	.80	1.2	4.8	.00	.00
11						.00	2.4	.60	.66	4.3	.00	.00
12						.00	2.4	.50	.31	3.8	.00	.00
13						.00	2.2	.40	.19	3.4	.00	.00
14						.00	2.0	.40	.11	2.8	.00	.00
15						.00	.80	.30	.09	1.4	.00	.00
16						3.0	.60	.30	.09	.50	.00	.00
17						2.0	.50	.31	.06	.21	.00	.00
18						10	.40	.31	.03	.11	.00	.00
19						50	.40	.29	.02	.21	.00	.00
20						250	.40	.31	.02	.13	.00	.00
21						350	.40	.29	.01	.10	.00	.00
22						450	.40	.19	.01	.07	.00	.00
23						150	.40	.15	.00	.04	.00	.00
24						60	.40	.12	.00	.02	.00	.00
25						80	.40	.09	.02	.01	.00	.00
26						100	.30	.07	.06	.00	.00	.00
27						150	.30	.04	.04	.00	.00	.00
28						100	.30	.04	.02	.00	.00	.00
29						40	.30	.03	.02	.00	.00	.00
30						20	.30	.12	.02	.01	.00	.00
31						15	---	1.6	---	.01	.00	---
TOTAL						1830.00	55.40	11.86	32.88	87.50	.01	.00
MEAN						59.0	1.85	.38	1.10	2.82	.000	.000
MAX						450	10	1.6	5.0	35	.01	.00
MIN						.00	.30	.03	.00	.00	.00	.00
AC-FT						3630	110	24	65	174	.02	.00

06336447 DUCK CREEK NEAR WIBAUX, MT--Continued

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	18	2.8	.16	.00	.02	.00
2	.00	.00	.00	.00	.00	.00	16	1.7	.15	.00	.02	.00
3	.00	.00	.00	.00	.00	.00	15	1.3	.12	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	8.0	.90	.11	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	5.0	.75	.09	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	5.0	.78	.07	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	20	.88	.07	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	50	.90	.05	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	125	.88	.04	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	61	.78	.03	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	33	.74	.02	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	13	.64	.01	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	11	.56	.01	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	11	.54	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	10	.53	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	17	.47	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	30	.35	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	35	.30	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	3.0	11	.31	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	6.0	8.9	.28	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	4.0	6.5	.27	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	5.0	5.0	.19	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	5.0	4.5	.15	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	6.0	4.4	.13	.00	.10	.00	.00
25	.00	.00	.00	.00	.00	8.0	4.2	.15	.00	.02	.00	.00
26	.00	.00	.00	.00	.00	10	4.1	.15	.00	.09	.00	.00
27	.00	.00	.00	.00	.00	15	4.1	.11	.00	.02	.00	.00
28	.00	.00	.00	.00	.00	25	3.7	.09	.00	.02	.00	.00
29	.00	.00	.00	.00	---	25	3.0	.12	.00	.02	.00	.00
30	.00	.00	.00	.00	---	20	3.2	.12	.00	.03	.00	.00
31	.00	---	.00	.00	---	19	---	.13	---	.02	.00	---
TOTAL	.00	.00	.00	.00	.00	151.00	545.6	18.00	.93	.32	.04	.00
MEAN	.000	.000	.000	.000	.000	4.87	18.2	.58	.031	.010	.001	.000
MAX	.00	.00	.00	.00	.00	25	125	2.8	.16	.10	.02	.00
MIN	.00	.00	.00	.00	.00	.00	3.0	.09	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	300	1080	36	1.8	.6	.08	.00

WTR YR 1979 TOTAL 715.89 MEAN 1.96 MAX 125 MIN .00 AC-FT 1420

06336447 DUCK CREEK NEAR WIBAUX, MT--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--March 1978 to September 1979.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE (DEG C) (00010)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)
MAR											
16...	1500	4.9	580	7.1	.0	220	150	42	28	29	21
17...	1735	2.2	580	--	.0	--	--	--	--	--	--
21...	1400	369	175	7.9	.5	66	9	17	5.8	5.5	13
22...	1700	416	250	--	2.0	--	--	--	--	--	--
24...	1245	46	280	--	3.0	--	--	--	--	--	--
28...	1045	--	400	--	4.5	--	--	--	--	--	--
30...	1210	7.1	720	--	13.0	--	--	--	--	--	--
31...	0815	--	870	7.4	11.0	250	120	50	30	61	33
APR											
06...	1430	1.9	1175	--	12.0	--	--	--	--	--	--
20...	1655	.38	2630	--	11.0	--	--	--	--	--	--
JUL											
06...	1200	36	--	--	--	--	--	--	--	--	--

DATE	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE (MG/L AS HCO3) (00440)	CAR-BONATE (MG/L AS CO3) (00445)	ALKA-LINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)
MAR											
16...	.9	18	87	0	71	11	190	5.1	.1	8.8	365
17...	--	--	--	--	--	--	--	--	--	--	--
21...	.3	9.3	70	0	57	1.4	25	1.9	.1	7.3	107
22...	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
31...	1.7	15	160	0	130	10	240	3.4	.1	11	491
APR											
06...	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
JUL											
06...	--	--	--	--	--	--	--	--	--	--	--

DATE	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
MAR											
16...	.50	4.83	1.6	20	220	100	80	2	350	8	.11
17...	--	--	--	--	--	--	--	--	--	--	--
21...	.15	--	.73	20	80	90	20	2	120	144	143
22...	--	--	--	--	--	--	--	--	--	163	183
24...	--	--	--	--	--	--	--	--	--	42	5.3
28...	--	--	--	--	--	--	--	--	--	254	--
30...	--	--	--	--	--	--	--	--	--	41	.79
31...	.67	--	.76	0	380	110	60	3	590	--	--
APR											
06...	--	--	--	--	--	--	--	--	--	32	.17
20...	--	--	--	--	--	--	--	--	--	--	--
JUL											
06...	--	--	--	--	--	--	--	--	--	18	1.8

06336447 DUCK CREEK NEAR WIBAUX, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE (DEG C) (00010)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)
MAR										
20...	1615	6.6	1010	--	.5	--	--	--	--	--
21...	1725	3.4	725	--	.5	--	--	--	--	--
22...	1135	5.3	700	--	.5	--	--	--	--	--
23...	0945	4.7	640	--	.5	--	--	--	--	--
27...	1030	18	500	--	.0	--	--	--	--	--
28...	1625	27	610	--	.0	--	--	--	--	--
29...	1345	26	650	--	.0	--	--	--	--	--
30...	1445	21	750	--	.0	--	--	--	--	--
APR										
03...	1715	14	700	--	.0	--	--	--	--	--
04...	1645	5.3	1090	--	.0	--	--	--	--	--
09...	1650	126	750	--	7.0	--	--	--	--	--
10...	1100	38	840	7.4	4.0	220	110	78	7.1	--
14...	1220	11	1150	--	6.0	--	--	--	--	--
18...	1115	35	1000	--	15.0	--	--	--	--	--
20...	1300	8.9	1200	--	10.5	--	--	--	--	--
25...	1500	4.3	1900	8.1	11.0	730	490	110	110	230
MAY										
02...	1020	2.0	1000	--	9.0	--	--	--	--	--
24...	1300	.15	700	--	11.0	--	--	--	--	--
JUL										
25...	1150	.03	800	--	22.0	--	--	--	--	--

DATE	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)
APR										
03...	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	110	320	4.5	.2	9.2	486	.66
14...	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--
25...	40	3.7	18	240	980	6.5	.1	17	1620	2.20
MAY										
02...	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--
JUL										
25...	--	--	--	--	--	--	--	--	--	--

DATE	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
MAR									
20...	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	28	.26
22...	--	--	--	--	--	--	--	31	.44
23...	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	52	3.8
29...	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	43	2.4
APR									
03...	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	121	41
10...	49.9	.99	390	--	--	1	--	--	--
14...	--	--	--	--	--	--	--	81	2.4
18...	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--
25...	18.8	1.6	920	200	40	2	150	--	--
MAY									
02...	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--
JUL									
25...	--	--	--	--	--	--	--	--	--

06336500 BEAVER CREEK AT WIBAUX, MT

LOCATION.--Lat 46°59'24", long 104°11'00", in NE¼NE¼ sec.12, T.14 N., R.59 E., Wibaux County, Hydrologic Unit 10110204, on left bank 20 ft (6.1 m) upstream from bridge on old U.S. Highway 10, at Wibaux, 12 mi (19 km) upstream from Little Beaver Creek, and at mile 62.5 (100.6 km).

DRAINAGE AREA.--351 mi^2 (909 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1938 to June 1969, October 1978 to September 1979.

REVISED RECORDS.--WSP 1309: 1943, 1947-48. WSP 1509: 1942(M), 1944-45, 1946(M).

GAGE.--Water-stage recorder. Altitude of gage is 2,650 ft (808 m), by barometer. Prior to Sept. 21, 1940, nonrecording gages at site about 500 ft (152 m) upstream at different datums.

REMARKS.--Water-discharge records good except those for winter period, which are poor. Several known diversions for irrigation above station.

AVERAGE DISCHARGE.--31 years (1938-68, 1979), 22.6 ft^3/s (0.640 m^3/s), 16,370 acre-ft/yr (20.2 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,780 ft^3/s (107 m^3/s) Mar. 21, 1939, gage height, 10.8 ft (3.29 m), site and datum then in use; maximum gage height observed, 13.44 ft (4.097 m) Mar. 24, 1943 (ice jam); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 7, 1929, reached a discharge of about 30,000 ft^3/s (850 m^3/s), from the average of three independent indirect measurements made at different sites. Flood in 1872 reported similar in magnitude. Flood in June 1921, reached a stage of about 8.6 ft (2.62 m) lower than 1929 (discharge about 10,000 ft^3/s (283 m^3/s), estimated on basis of cross-section and information from local residents).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,280 ft^3/s (36.2 m^3/s) Apr. 18, gage height, 10.89 ft (3.319 m); minimum, 0.09 ft^3/s (0.003 m^3/s) Sept. 21, gage height, 5.40 ft (1.646 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.2	6.9	2.9	1.3	1.5	3.7	190	53	13	3.5	3.9	.78
2	.96	6.4	2.8	1.3	1.6	3.7	185	46	13	4.2	3.5	.60
3	1.2	6.9	2.9	1.3	1.6	3.5	175	41	13	3.1	3.5	.60
4	1.4	7.9	3.2	1.2	1.8	4.0	170	37	12	2.5	3.1	.78
5	1.4	6.9	3.1	1.3	2.0	4.5	160	35	12	3.1	2.8	.60
6	2.2	6.4	3.1	1.3	2.7	5.0	155	36	12	3.1	3.1	.60
7	2.2	7.9	3.0	1.4	2.6	5.4	214	33	11	2.8	2.8	.78
8	2.2	7.4	3.0	1.5	2.7	5.6	306	33	11	2.5	2.5	.78
9	1.9	6.8	2.9	1.5	2.8	5.2	391	30	11	2.8	1.9	.78
10	1.9	6.0	3.1	1.4	2.8	5.0	629	27	11	2.5	2.2	.60
11	1.9	5.4	3.6	1.3	2.7	5.6	791	27	11	2.2	2.2	.60
12	1.9	5.0	4.3	1.1	2.8	6.0	568	27	11	2.8	2.2	1.4
13	2.2	4.8	4.2	1.1	2.9	6.2	320	26	10	3.1	1.6	2.2
14	1.9	4.5	4.2	1.0	2.7	7.2	209	25	7.9	2.8	1.4	2.2
15	1.9	4.2	3.9	.90	2.6	7.9	170	24	6.4	2.2	1.2	2.2
16	2.2	3.9	3.4	.90	2.5	16	244	24	5.9	2.2	1.2	1.6
17	2.2	3.7	3.1	1.0	2.7	17	621	22	5.9	2.2	1.6	.60
18	2.2	3.5	2.8	1.1	2.9	17	1040	21	5.5	1.9	2.2	.46
19	1.9	3.4	2.5	1.3	3.0	18	601	20	5.5	1.6	.96	.46
20	1.6	3.2	2.3	1.3	3.4	18	306	19	5.9	1.4	.60	.36
21	1.4	3.0	2.3	1.5	3.3	18	199	18	5.9	1.2	.46	.20
22	1.4	3.1	2.3	1.4	3.2	19	144	17	5.9	1.4	.36	.20
23	1.9	3.2	2.3	1.3	3.1	40	119	16	5.0	63	.36	.20
24	2.5	3.3	2.3	1.4	3.0	48	99	16	5.0	20	.46	.36
25	3.5	3.5	2.2	1.5	3.2	54	86	16	5.0	19	.36	.46
26	6.9	3.2	2.2	1.5	3.4	66	80	14	4.6	14	.46	.36
27	7.4	3.0	2.1	1.5	3.7	64	76	13	5.0	11	.60	.46
28	6.9	3.3	2.1	1.5	3.7	110	69	13	5.5	7.4	.96	.96
29	6.9	3.4	2.0	1.4	---	99	65	14	5.0	6.9	.60	.96
30	6.6	3.0	1.8	1.4	---	130	56	14	4.6	6.4	.60	.96
31	6.9	---	1.4	1.4	---	200	---	13	---	5.0	.60	---
TOTAL	88.76	143.1	87.3	40.30	76.9	1012.5	8438	770	245.5	207.8	50.28	24.10
MEAN	2.86	4.77	2.82	1.30	2.75	32.7	281	24.8	8.18	6.70	1.62	.80
MAX	7.4	7.9	4.3	1.5	3.7	200	1040	53	13	63	3.9	2.2
MIN	.96	3.0	1.4	.90	1.5	3.5	56	13	4.6	1.2	.36	.20
AC-FT	176	284	173	80	153	2010	16740	1530	487	412	100	48

WTR YR 1979 TOTAL 11184.54 MEAN 30.6 MAX 1040 MIN .20 AC-FT 22180

06336500 BEAVER CREEK AT WIBAUX, MT--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1978 to September 1979.

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L) (00310)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)
OCT												
23...	1500	2.2	2460	8.1	17.0	8.0	9.1	85	--	690	280	120
NOV												
16...	1030	3.8	2710	8.2	-3.0	.5	11.2	85	--	690	270	110
DEC												
14...	1400	4.2	2860	8.1	6.0	.0	10.6	80	--	820	360	130
JAN												
11...	1100	1.3	2780	7.8	13.0	.5	9.6	73	--	760	460	140
FEB												
27...	1400	3.7	2720	7.9	-10.0	.0	11.3	85	--	700	340	130
MAR												
29...	1100	99	1025	7.6	-3.0	.5	10.8	84	--	290	160	55
APR												
10...	1700	653	895	7.9	10.0	2.5	10.6	87	4.6	260	140	50
MAY												
17...	1700	23	2320	8.3	15.0	15.0	8.6	93	--	680	300	120
JUN												
14...	1700	7.9	2500	8.1	22.0	21.0	6.8	84	--	620	360	110
JUL												
11...	1100	2.1	2400	8.0	23.5	21.5	7.7	96	--	650	260	110
AUG												
16...	1000	1.2	2120	8.0	24.0	17.5	7.1	82	--	590	200	120
SEP												
19...	1600	.45	2490	8.1	26.0	19.0	8.2	97	--	560	240	81

DATE	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM+ PUTAS-SIUM DIS-SOLVED (MG/L AS NA) (00933)	PUTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	BROMIDE DIS-SOLVED (MG/L AS BR) (71870)	IODIDE, DIS-SOLVED (MG/L AS I) (71865)
OCT												
23...	95	370	53	6.1	--	10	410	1000	9.1	.2	1.2	3.0
NOV												
16...	100	380	54	6.3	--	8.6	420	1000	8.8	.2	--	--
DEC												
14...	120	400	51	6.1	--	11	460	1100	14	.2	.1	.00
JAN												
11...	100	420	54	6.6	--	11	300	1100	8.3	.3	--	--
FEB												
27...	92	350	52	5.7	--	9.3	360	1100	8.2	.2	--	--
MAR												
29...	37	100	42	2.6	--	11	130	380	3.2	.1	.0	.00
APR												
10...	32	75	38	2.0	83	8.0	120	290	3.0	.1	.0	.00
MAY												
17...	93	310	49	5.2	--	8.8	380	930	7.6	.3	--	--
JUN												
14...	83	380	74	6.5	390	9.8	260	1100	8.2	.3	.1	.00
JUL												
11...	91	370	55	6.3	380	10	390	980	9.0	.3	--	--
AUG												
16...	70	270	65	4.8	280	9.8	390	850	5.6	.3	--	--
SEP												
19...	86	340	56	6.3	350	11	320	1000	9.3	.3	.1	.00

06336500 BEAVER CREEK AT WIBAUX, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, AMMONIA TOTAL (MG/L AS NH4) (71845)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)
OCT											
23...	9.7	1870	2.54	11.1	.01	.01	--	.38	.39	.40	1.8
NOV											
16...	8.5	1870	2.54	19.2	.01	.01	--	.39	.40	.41	1.8
DEC											
14...	10	2060	2.80	23.4	.11	.06	--	.40	.46	.57	2.5
JAN											
11...	10	1970	2.68	6.91	.25	.08	--	.35	.43	.68	3.0
FEB											
27...	12	1920	2.61	19.2	.44	.06	--	.24	.30	.74	3.3
MAR											
29...	8.8	674	.92	180	1.6	.09	--	.83	.92	2.5	11
APR											
10...	7.8	539	.73	950	.44	.08	.10	2.1	2.2	2.6	12
MAY											
17...	7.3	1710	2.33	106	.03	.02	.02	.48	.50	.53	2.3
JUN											
14...	7.1	1860	2.53	39.7	.01	.02	.02	.78	.80	.81	3.6
JUL											
11...	8.5	1810	2.46	10.3	.05	.01	.01	.81	.82	.87	3.9
AUG											
16...	10	1570	2.14	5.09	.01	.01	.01	.52	.53	.54	2.4
SEP											
19...	10	1730	2.35	2.10	.00	.00	.00	.66	.66	.66	2.9

DATE	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHATE, TOTAL (MG/L AS PO4) (00650)	PHOS-PHORUS TOTAL (MG/L AS PO4) (71886)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC SUS-PENDED TOTAL (UG/L AS AS) (01001)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE) (01012)	BERYL-LIUM, SUS-PENDED RECOV. (UG/L AS BE) (01011)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE) (01010)	BORON, DIS-SOLVED (UG/L AS B) (01020)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD) (01027)
OCT											
23...	.01	--	--	1	--	1	0	--	0	680	1
NOV											
16...	.02	--	--	--	--	--	--	--	--	710	--
DEC											
14...	.02	--	--	--	--	--	--	--	--	760	--
JAN											
11...	.02	--	--	--	--	--	--	--	--	740	--
FEB											
27...	.02	--	--	--	--	--	--	--	--	680	--
MAR											
29...	.14	--	--	--	--	--	--	--	--	240	--
APR											
10...	.46	--	1.4	3	3	1	0	0	0	180	1
MAY											
17...	.03	.09	.09	--	--	--	--	--	--	580	--
JUN											
14...	.02	.06	.06	--	--	--	--	--	--	1100	--
JUL											
11...	.03	.09	.09	--	--	--	--	--	--	760	--
AUG											
16...	.04	--	.12	--	--	--	--	--	--	680	--
SEP											
19...	.02	--	.06	2	0	2	0	0	0	760	0

06336500 BEAVER CREEK AT WIBAUX, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	CADMIUM SUS-PENDED RECOV-ERABLE (UG/L AS CD) (01026)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	CHRO-MIUM, SUS-PENDED RECOV. (UG/L AS CR) (01031)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	COPPER, SUS-PENDED RECOV-ERABLE (UG/L AS CU) (01041)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	IRON, SUS-PENDED RECOV-ERABLE (UG/L AS FE) (01044)	IRON, DIS-SOLVED (UG/L AS FE) (01046)
OCT											
23...	--	1	0	--	0	5	--	2	300	--	30
NOV											
16...	--	--	--	--	--	--	--	--	--	--	10
DEC											
14...	--	--	--	--	--	--	--	--	--	--	40
JAN											
11...	--	--	--	--	--	--	--	--	--	--	30
FEB											
27...	--	--	--	--	--	--	--	--	--	--	30
MAR											
29...	--	--	--	--	--	--	--	--	--	--	110
APR											
10...	0	1	20	20	0	29	26	3	12000	12000	190
MAY											
17...	--	--	--	--	--	--	--	--	--	--	10
JUN											
14...	--	--	--	--	--	--	--	--	--	--	10
JUL											
11...	--	--	--	--	--	--	--	--	--	--	20
AUG											
16...	--	--	--	--	--	--	--	--	--	--	10
SEP											
19...	0	0	0	0	10	1	0	1	190	--	0

DATE	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	LEAD, SUS-PENDED RECOV-ERABLE (UG/L AS PB) (01050)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MANGA-NESE, SUS-PENDED RECOV. (UG/L AS MN) (01054)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	NICKEL, SUS-PENDED RECOV-ERABLE (UG/L AS NI) (01066)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)
OCT											
23...	0	--	0	210	--	180	.2	.0	3	--	2
APR											
10...	16	16	0	780	690	90	--	.1	17	13	4
SEP											
19...	0	0	0	190	50	140	.1	.1	3	1	2

DATE	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SELE-NIUM, SUS-PENDED TOTAL (UG/L AS SE) (01146)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, SUS-PENDED RECOV-ERABLE (UG/L AS ZN) (01091)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C) (00689)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT											
23...	0	--	0	10	--	10	6.5	--	53	.31	--
NOV											
16...	--	--	--	--	--	--	--	--	29	.30	--
DEC											
14...	--	--	--	--	--	--	6.2	.3	73	.83	--
JAN											
11...	--	--	--	--	--	--	--	--	22	.08	--
FEB											
27...	--	--	--	--	--	--	--	--	30	.30	--
MAR											
29...	--	--	--	--	--	--	9.8	.8	45	12	98
APR											
10...	1	0	1	60	40	20	8.4	--	549	968	98
MAY											
17...	--	--	--	--	--	--	--	--	60	3.7	--
JUN											
14...	--	--	--	--	--	--	9.0	.7	59	1.3	--
JUL											
11...	--	--	--	--	--	--	--	--	34	.19	--
AUG											
16...	--	--	--	--	--	--	--	--	127	.41	--
SEP											
19...	0	0	0	10	0	10	7.2	.3	87	.11	--

06336510 UPPER HAY CREEK TRIBUTARY NEAR WIBAUX, MT

LOCATION.--Lat 46°59'31", long 104°06'12", in NW¼SW¼SE¼ sec.3, T.14 N., R.60 W., Wibaux County, Hydrologic Unit 10110204, on the right bank, and 4 mi (6.4 km) west of Wibaux.

DRAINAGE AREA.--3.8 mi^2 (9.8 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1978 to September 1979.

GAGE.--Water-stage recorder.

REMARKS.--Records poor.

EXTREMES FOR CURRENT PERIOD.--March to September 1978: Peak discharges above base of 5.0 ft^3/s (0.14 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Mar. 19	--	*85	2.41	Unknown		July 5	0430	14	0.4	6.66	2.030

No flow most of time.

Water year 1979: Maximum discharge, 10 ft^3/s (0.28 m^3/s) Apr. 9, gage height, unknown; no flow most of time.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1						.00	.03	.00	.00	.05	.00	.00
2						.00	.02	.00	.00	.01	.00	.00
3						.00	.01	.00	.00	.00	.00	.00
4						.00	.01	.00	.00	.00	.00	.00
5						.00	.00	.00	.00	3.5	.00	.00
6						.00	.00	.00	.00	.09	.00	.00
7						.00	.00	.00	.00	.02	.00	.00
8						.00	.00	.00	.00	.00	.00	.00
9						.00	.00	.00	.00	.00	.00	.00
10						.00	.00	.00	.00	.00	.00	.00
11						.00	.00	.00	.00	.00	.00	.00
12						.00	.00	.00	.00	.00	.00	.00
13						.00	.00	.00	.00	.00	.00	.00
14						2.0	.00	.00	.00	.00	.00	.00
15						4.0	.00	.00	.00	.00	.00	.00
16						3.0	.00	.00	.00	.00	.00	.00
17						2.6	.00	.00	.00	.00	.00	.00
18						12	.00	.00	.00	.00	.00	.00
19						50	.00	.00	.00	.00	.00	.00
20						30	.00	.00	.00	.00	.00	.00
21						20	.00	.00	.00	.00	.00	.00
22						10	.00	.00	.00	.00	.00	.00
23						4.0	.00	.00	.00	.00	.00	.00
24						2.0	.00	.00	.00	.00	.00	.00
25						1.0	.00	.00	.00	.00	.00	.00
26						.50	.00	.00	.00	.00	.00	.00
27						.30	.00	.00	.00	.00	.00	.00
28						.10	.00	.00	.00	.00	.00	.00
29						.08	.00	.00	.03	.00	.00	.00
30						.06	.00	.00	.14	.00	.00	.00
31						.06	---	.00	---	.00	.00	---
TOTAL						141.70	.07	.00	.17	3.67	.00	.00
MEAN						4.57	.002	.000	.006	.12	.000	.000
MAX						50	.03	.00	.14	3.5	.00	.00
MIN						.00	.00	.00	.00	.00	.00	.00
AC-FT						281	.1	.00	.3	7.3	.00	.00

06336510 UPPER HAY CREEK TRIBUTARY NEAR WIBAUX, MT--Continued

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.50	.01	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.30	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.60	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.30	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.60	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	1.0	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	1.5	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	2.0	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	8.0	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	1.0	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.20	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.17	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.26	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.29	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.31	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.63	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.34	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.20	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.14	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.12	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.09	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.07	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.06	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.06	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.08	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.07	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	3.5	.06	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	3.0	.05	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	---	3.5	.03	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	3.0	.02	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	2.5	---	.00	---	.00	.00	---
TOTAL	.00	.00	.00	.00	.00	15.50	19.05	.01	.00	.00	.00	.00
MEAN	.000	.000	.000	.000	.000	.50	.64	.000	.000	.000	.000	.000
MAX	.00	.00	.00	.00	.00	3.5	8.0	.01	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.02	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	31	38	.02	.00	.00	.00	.00

WTR YR 1979 TOTAL 34.56 MEAN .095 MAX 8.0 MIN .00 AC-FT 69

06336510 UPPER HAY CREEK TRIBUTARY NEAR WIBAUX, MT--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--March 1978 to September 1979.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE (DEG C) (00010)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)
MAR											
14...	0900	--	175	7.5	1.0	80	4	25	4.2	.3	1
14...	1620	5.1	--	--	--	--	--	--	--	--	--
15...	1340	5.1	--	--	--	--	--	--	--	--	--
16...	0926	--	--	--	--	--	--	--	--	--	--
16...	1530	--	--	--	--	--	--	--	--	--	--
17...	0830	--	--	--	--	--	--	--	--	--	--
17...	1445	2.0	230	--	.0	--	--	--	--	--	--
18...	0830	11	--	--	--	--	--	--	--	--	--
19...	1600	66	--	--	.0	--	--	--	--	--	--
22...	1135	11	180	--	1.5	--	--	--	--	--	--
23...	1230	--	200	7.7	1.0	96	14	29	5.7	2.0	4
23...	1530	2.1	200	--	1.0	--	--	--	--	--	--
24...	1020	--	265	--	1.0	--	--	--	--	--	--

DATE	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE (MG/L AS HCO3) (00440)	CAR-BONATE (MG/L AS CO3) (00445)	ALKA-LINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)
MAR											
14...	.0	11	92	0	75	4.7	10	1.6	.1	7.0	105
14...	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
23...	.1	9.1	100	0	82	3.2	16	1.4	.1	9.2	122
23...	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--

DATE	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
MAR										
14...	.14	1.2	30	60	60	30	0	100	--	--
14...	--	--	--	--	--	--	--	--	39	.54
15...	--	--	--	--	--	--	--	--	34	.47
16...	--	--	--	--	--	--	--	--	22	--
16...	--	--	--	--	--	--	--	--	285	--
17...	--	--	--	--	--	--	--	--	35	--
17...	--	--	--	--	--	--	--	--	117	.63
18...	--	--	--	--	--	--	--	--	47	1.4
19...	--	--	--	--	--	--	--	--	211	37
22...	--	--	--	--	--	--	--	--	151	4.3
23...	.17	.48	60	50	90	20	0	80	--	--
23...	--	--	--	--	--	--	--	--	48	.27
24...	--	--	--	--	--	--	--	--	80	--

06336510 UPPER HAY CREEK TRIBUTARY NEAR WIBAUX, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE (DEG C) (00010)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)
MAR										
27...	1545	3.8	375	--	.5	--	--	--	--	--
28...	1045	3.1	250	--	.5	--	--	--	--	--
29...	1605	3.7	215	--	.5	--	--	--	--	--
APR										
03...	1310	.60	260	--	.5	--	--	--	--	--
04...	1230	.30	225	--	.0	--	--	--	--	--
06...	1520	1.0	250	--	--	--	--	--	--	--
09...	1405	9.1	190	--	3.0	--	--	--	--	--
10...	1255	1.0	260	--	5.0	--	--	--	--	--
11...	1240	.17	340	--	2.5	--	--	--	--	--
14...	1030	.24	775	--	1.5	--	--	--	--	--
17...	1245	.32	640	8.3	8.5	250	140	62	24	17
18...	1445	.19	800	--	15.5	--	--	--	--	--
20...	1210	.11	750	--	9.0	--	--	--	--	--
25...	1525	.09	990	8.3	9.0	440	270	100	47	34

DATE	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)
MAR										
27...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--
APR										
03...	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--
17...	12	.5	8.8	110	190	2.3	.1	9.4	380	.52
18...	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--
25...	14	.7	11	170	360	2.7	.1	13	671	.91

DATE	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDIMENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
MAR									
27...	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	50	.25
29...	--	--	--	--	--	--	--	146	1.5
APR									
03...	--	--	--	--	--	--	--	36	.06
04...	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	2580	63
10...	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--
17...	.33	.61	150	70	70	<10	190	--	--
18...	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--
25...	.16	.77	260	60	50	<10	410	--	--

06336515 LOWER HAY CREEK TRIBUTARY NEAR WIBAUX, MT

LOCATION.--Lat 47°02'26", long 104°08'04", in NW¼SW¼SW¼ sec.21, T.15 N., R.60 W., Wibaux County, Hydrologic Unit 10110204, on left bank, and 5.5 mi (8.8 km) northeast of Wibaux.

DRAINAGE AREA.--11.5 mi^2 (29.8 km^2).

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder.

REMARKS.--Records fair.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 58 ft^3/s (1.643 m^3/s) Apr. 9, 1979, gage height, 2.04 ft (0.622 m); maximum gage height, 6.67 ft (2.033 m) Mar. 19, 1978, backwater from ice; no flow for several months most years.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 10 ft^3/s (0.28 m^3/s) and maximum(*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Mar. 17	1400	Backwater from ice		*3.24	0.988	Apr. 1	--	25	0.71	Backwater from ice	
Mar. 24	--	35	0.99	Backwater from ice		Apr. 9	1545	*58	1.64	2.04	0.622

No flow for several months.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.03	.01	.00	.00	.00	.00	5.5	.89	.45	.07	.07	.01
2	.03	.01	.00	.00	.00	.00	4.0	.86	.43	.07	.06	.01
3	.03	.01	.00	.00	.00	.00	3.0	.75	.36	.07	.06	.01
4	.02	.01	.00	.00	.00	.00	3.0	.66	.34	.07	.06	.01
5	.02	.01	.00	.00	.00	.00	2.5	.66	.29	.08	.06	.01
6	.02	.01	.00	.00	.00	.00	3.0	.77	.34	.08	.05	.01
7	.02	.01	.00	.00	.00	.00	12	.90	.31	.08	.05	.01
8	.02	.01	.00	.00	.00	.00	24	.79	.27	.10	.05	.01
9	.01	.01	.00	.00	.00	.00	31	.66	.24	.15	.04	.01
10	.01	.01	.00	.00	.00	.00	14	.66	.22	.12	.04	.01
11	.01	.01	.00	.00	.00	.00	6.1	.66	.19	.20	.04	.01
12	.01	.01	.00	.00	.00	.00	3.8	.63	.16	.14	.04	.01
13	.01	.01	.00	.00	.00	.00	1.6	.57	.11	.14	.04	.01
14	.01	.01	.00	.00	.00	.00	3.3	.57	.08	.13	.04	.01
15	.01	.01	.00	.00	.00	.00	3.8	.56	.08	.12	.04	.01
16	.01	.01	.00	.00	.00	.00	5.6	.48	.08	.12	.03	.01
17	.01	.01	.00	.00	.00	3.0	6.4	.45	.07	.12	.02	.01
18	.01	.01	.00	.00	.00	2.0	4.5	.45	.07	.11	.02	.01
19	.01	.00	.00	.00	.00	1.5	2.7	.50	.07	.10	.02	.01
20	.01	.00	.00	.00	.00	1.0	2.1	.54	.07	.10	.02	.01
21	.01	.00	.00	.00	.00	1.5	1.6	.55	.07	.10	.02	.01
22	.01	.00	.00	.00	.00	1.5	1.3	.47	.08	.09	.01	.01
23	.01	.00	.00	.00	.00	4.0	1.2	.46	.07	.11	.01	.01
24	.01	.00	.00	.00	.00	18	1.5	.45	.07	.11	.01	.01
25	.01	.00	.00	.00	.00	25	1.6	.43	.07	.12	.01	.01
26	.01	.00	.00	.00	.00	8.0	1.4	.45	.07	.13	.01	.01
27	.01	.00	.00	.00	.00	5.0	1.3	.44	.07	.10	.01	.01
28	.01	.00	.00	.00	.00	4.0	1.1	.37	.07	.09	.01	.01
29	.01	.00	.00	.00	---	2.5	.96	.55	.07	.08	.01	.01
30	.01	.00	.00	.00	---	3.0	.90	.65	.07	.08	.01	.01
31	.01	---	.00	.00	---	3.5	---	.52	---	.08	.01	---
TOTAL	.42	.18	.00	.00	.00	83.50	154.76	18.35	4.94	3.26	.97	.30
MEAN	.014	.006	.000	.000	.000	2.69	5.16	.59	.16	.11	.031	.010
MAX	.03	.01	.00	.00	.00	25	31	.90	.45	.20	.07	.01
MIN	.01	.00	.00	.00	.00	.00	.90	.37	.07	.07	.01	.01
AC-FT	.8	.4	.00	.00	.00	166	307	36	9.8	6.5	1.9	.6

WTR YR 1979 TOTAL 266.68 MEAN .73 MAX 31 MIN .00 AC-FT 529

06336515 LOWER HAY CREEK TRIBUTARY NEAR WIBAUX, MT--Continued

WATER-QUALITY RECORDS

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE (DEG C) (00010)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)
MAR										
17...	1525	7.3	1000	--	.0	--	--	--	--	--
20...	1145	.85	1350	--	.5	--	--	--	--	--
21...	1535	1.2	1600	--	.5	--	--	--	--	--
22...	1510	1.6	1525	--	.5	--	--	--	--	--
23...	1115	6.6	1100	--	.5	--	--	--	--	--
27...	1415	4.6	900	--	.5	--	--	--	--	--
28...	1210	3.9	925	--	.5	--	--	--	--	--
29...	1145	2.9	1450	--	.0	--	--	--	--	--
APR										
03...	1110	3.1	1400	--	.0	--	--	--	--	--
06...	1205	3.2	1450	--	--	--	--	--	--	--
09...	1310	20	760	--	2.0	--	--	--	--	--
10...	1340	12	1020	--	3.5	--	--	--	--	--
11...	1205	5.7	1300	8.3	.5	560	390	79	87	76
14...	0925	1.9	2050	--	1.5	--	--	--	--	--
17...	1120	6.6	2000	--	8.0	--	--	--	--	--
18...	1345	4.7	1950	--	15.0	--	--	--	--	--
20...	1105	2.1	1990	--	8.5	--	--	--	--	--
25...	1230	1.6	2850	8.1	4.0	1600	1200	230	240	200
MAY										
02...	1400	.81	2700	--	7.0	--	--	--	--	--
16...	1205	.48	2600	--	15.0	--	--	--	--	--
30...	1345	.61	2200	--	16.0	--	--	--	--	--
JUN										
21...	1445	.07	2500	8.1	23.0	1300	970	170	210	200
JUL										
24...	1010	.10	2100	--	24.0	--	--	--	--	--
SEP										
11...	1255	.04	2050	--	19.0	--	--	--	--	--

DATE	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)
MAR										
17...	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--
APR										
03...	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--
11...	23	1.4	9.3	170	560	6.3	.1	9.7	931	1.27
14...	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--
25...	22	2.2	10	330	1600	15	.1	6.2	2500	3.40
MAY										
02...	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--
JUN										
21...	25	2.4	7.7	320	1500	18	.2	1.2	2300	3.13
JUL										
24...	--	--	--	--	--	--	--	--	--	--
SEP										
11...	--	--	--	--	--	--	--	--	--	--

06336515 LOWER HAY CREEK TRIBUTARY NEAR WIBAUX, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
MAR									
17...	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	11	.04
22...	--	--	--	--	--	--	--	21	.09
23...	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	12	.13
29...	--	--	--	--	--	--	--	16	.13
APR									
03...	--	--	--	--	--	--	--	14	.12
06...	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	94	5.1
10...	--	--	--	--	--	--	--	--	--
11...	14.4	.87	360	440	180	< 10	780	12	.19
14...	--	--	--	--	--	--	--	10	.05
17...	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--
25...	10.8	.94	880	110	100	0	220	--	--
MAY									
02...	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--
JUN									
21...	.43	1.6	680	60	40	0	1700	--	--
JUL									
24...	--	--	--	--	--	--	--	--	--
SEP									
11...	--	--	--	--	--	--	--	--	--

06336545 LITTLE BEAVER CREEK NEAR WIBAUX, MT

LOCATION.--Lat 47°03'44", long 104°05'30", in NW¼NW¼NW¼ sec.14, T.15 N., R.60 W., Wibaux County, Hydrologic Unit 10110204, on the right bank 100 ft (30.5 m) upstream from county highway bridge, 9.5 mi (15.3 km) northeast of Wibaux.

DRAINAGE AREA.--96.2 mi^2 (249.2 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1978 to September 1979.

GAGE.--Water-stage recorder.

REMARKS.--Records poor. Flow regulated by Odlands Dam, capacity 600 acre-ft (740 hm^3) to the top of the spillway; 9.1 mi (14.6 km) upstream.

EXTREMES FOR CURRENT PERIOD.--March to September 1978: Maximum discharge, 1,850 ft^3/s (52.4 m^3/s) Mar. 21, gage height, 10.14 ft (3.091 m), backwater from ice; no flow many days during winter months.

Water year 1979: Maximum daily discharge, 400 ft^3/s (11.3 m^3/s) Apr. 10, gage height unknown; minimum daily, 0.01 ft^3/s (0.0003 m^3/s) Oct. 1-4.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1						.00	50	1.6	1.5	61	.09	.01
2						.00	40	1.4	1.0	24	.10	.01
3						.00	30	1.3	.90	11	.15	.01
4						.00	25	2.1	.80	13	.14	.01
5						.00	20	3.4	.80	35	.10	.01
6						.00	15	5.0	1.2	9.5	.09	.01
7						.00	13	4.9	.90	28	.07	.01
8						.05	11	7.5	.70	28	.05	.01
9						.10	9.0	9.1	.70	18	.04	.01
10						.15	8.0	9.5	.60	10	.04	.01
11						.20	7.5	7.7	.60	6.3	.02	.01
12						.20	7.0	11	.50	3.6	.02	.06
13						.20	6.5	8.2	.50	2.1	.01	.02
14						.20	6.0	6.8	5.0	1.2	.01	.01
15						.20	3.7	5.8	2.0	.70	.01	.03
16						.20	3.2	4.5	1.0	.46	.01	.04
17						1.0	3.4	2.6	.90	.25	.01	.03
18						10	3.5	2.3	.80	.26	.01	.11
19						150	3.5	2.9	.70	6.2	.01	.28
20						700	3.2	2.5	.60	2.2	.01	.18
21						1500	2.7	2.4	.60	1.2	.01	.08
22						880	3.6	2.2	.50	1.2	.01	.05
23						350	3.1	1.6	.50	.77	.01	.05
24						270	1.4	1.5	10	.43	.01	.04
25						220	1.5	1.4	20	.21	.01	.02
26						180	1.8	1.3	15	.11	.01	.01
27						150	2.4	.86	10	.07	.01	.01
28						120	2.6	.69	5.0	.08	.01	.02
29						100	2.3	.57	400	.07	.01	.02
30						80	1.5	10	184	.08	.01	.01
31						60	---	4.0	---	.05	.01	---
TOTAL						4772.50	291.4	126.62	667.30	265.04	1.10	1.18
MEAN						154	9.71	4.08	22.2	8.55	.035	.039
MAX						1500	50	11	400	61	.15	.28
MIN						.00	1.4	.57	.50	.05	.01	.01
AC-FT						9470	578	251	1320	526	2.2	2.3

06336545 LITTLE BEAVER CREEK NEAR WIBAUX, MT--Continued

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.01	.14	.16	.14	.04	.02	64	9.0	.61	.12	.18	.17
2	.01	.14	.15	.14	.03	.02	62	11	.55	.10	.17	.18
3	.01	.12	.14	.14	.03	.02	60	9.7	.36	.10	.17	.18
4	.01	.14	.14	.12	.02	.02	55	7.3	.42	.08	.17	.15
5	.02	.14	.14	.12	.02	.02	50	7.0	.36	.08	.15	.14
6	.02	.14	.12	.12	.02	.05	45	7.5	.36	.06	.14	.13
7	.03	.14	.11	.10	.02	.05	100	7.3	.31	.04	.13	.15
8	.03	.14	.10	.10	.02	.10	250	6.7	.31	.08	.13	.15
9	.04	.20	.10	.10	.02	.10	350	6.0	.31	.10	.13	.15
10	.05	.36	.10	.08	.02	.10	400	5.1	.27	.12	.11	.17
11	.06	.34	.16	.08	.02	.10	137	4.1	.27	43	.10	.19
12	.06	.32	.20	.06	.02	.30	79	3.6	.36	75	.10	.18
13	.06	.30	.20	.06	.02	.50	47	3.3	.27	30	.11	.18
14	.06	.28	.20	.04	.02	.70	32	3.6	.20	11	.11	.17
15	.08	.26	.20	.04	.02	.85	38	3.0	.17	4.1	.13	.18
16	.08	.25	.20	.02	.02	1.0	94	3.0	.20	2.0	.13	.17
17	.08	.24	.20	.02	.02	1.2	154	2.1	.17	.99	.14	.15
18	.08	.23	.20	.02	.02	1.2	114	1.6	.14	.65	.15	.13
19	.10	.22	.20	.02	.02	1.5	67	1.4	.14	.41	.15	.13
20	.12	.21	.20	.02	.02	2.0	42	1.8	.17	.30	.14	.10
21	.10	.20	.20	.04	.02	3.5	28	1.7	.20	.26	.15	.10
22	.10	.19	.20	.14	.02	3.5	23	1.6	.42	.22	.15	.09
23	.10	.18	.20	.14	.02	6.2	19	.88	.36	.23	.14	.09
24	.12	.18	.20	.10	.02	30	16	.80	.31	.22	.14	.09
25	.12	.18	.20	.09	.02	128	16	.88	.27	.20	.13	.09
26	.12	.18	.18	.08	.02	140	16	.88	.23	.23	.14	.09
27	.12	.18	.18	.07	.02	120	16	.61	.14	.26	.14	.08
28	.12	.18	.18	.06	.02	100	13	.61	.17	.26	.18	.08
29	.14	.18	.16	.05	---	70	11	.73	.17	.23	.17	.07
30	.14	.18	.16	.05	---	68	9.7	.80	.14	.23	.17	.06
31	.14	---	.16	.04	---	66	---	.67	---	.22	.17	---
TOTAL	2.33	6.14	5.24	2.40	.80	745.05	2407.7	114.26	8.36	170.89	4.42	3.99
MEAN	.075	.20	.17	.077	.021	24.0	80.3	3.69	.28	5.51	.14	.13
MAX	.14	.36	.20	.14	.04	140	400	11	.61	75	.18	.19
MIN	.01	.12	.10	.02	.02	.02	9.7	.61	.14	.04	.10	.06
AC-FT	4.6	12	10	4.8	1.2	1480	4780	227	17	339	8.8	7.9

WTR YR 1979 TOTAL 3471.38 MEAN 9.51 MAX 400 MIN .01 AC-FT 6890

06336545 LITTLE BEAVER CREEK NEAR WIBAUX, MT--Continued

WATER-QUALITY RECORDS

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE (DEG C) (00010)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)
NOV											
18...	1245	.11	4550	8.4	2.5	1400	790	160	230	680	52
MAR											
20...	1445	309	2300	7.9	.0	1200	890	99	220	440	45
22...	1815	776	300	--	.0	--	--	--	--	--	--
23...	1700	247	320	--	.0	--	--	--	--	--	--
24...	1445	--	--	--	--	--	--	--	--	--	--
28...	1600	68	800	--	3.0	--	--	--	--	--	--
29...	1220	64	620	--	4.0	--	--	--	--	--	--
30...	1600	82	850	--	7.0	--	--	--	--	--	--
31...	0915	--	1100	7.8	3.0	300	170	51	43	79	35
APR											
06...	1415	14	1250	--	8.5	--	--	--	--	--	--
20...	1510	3.2	2200	--	9.0	--	--	--	--	--	--
JUN											
29...	2000	1080	--	--	--	--	--	--	--	--	--

DATE	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE (MG/L AS HCO3) (00440)	CAR-BONATE (MG/L AS CO3) (00445)	ALKA-LINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)
NOV											
18...	8.1	16	680	0	560	4.3	2100	27	.2	.7	3550
MAR											
20...	5.6	21	320	0	260	6.4	1600	33	.1	6.4	2580
22...	--	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
31...	2.0	9.4	160	0	130	4.1	320	5.6	.1	7.1	595
APR											
06...	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
JUN											
29...	--	--	--	--	--	--	--	--	--	--	--

DATE	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
NOV											
18...	4.83	1.05	.95	10	1	40	20	2	2200	--	--
MAR											
20...	3.51	--	1.5	70	970	160	350	0	1200	449	375
22...	--	--	--	--	--	--	--	--	--	444	930
23...	--	--	--	--	--	--	--	--	--	308	205
24...	--	--	--	--	--	--	--	--	--	349	--
28...	--	--	--	--	--	--	--	--	--	144	26
29...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	136	30
31...	.81	--	.87	20	250	90	150	3	430	--	--
APR											
06...	--	--	--	--	--	--	--	--	--	44	1.7
20...	--	--	--	--	--	--	--	--	--	--	--
JUN											
29...	--	--	--	--	--	--	--	--	--	500	1460

06336545 LITTLE BEAVER CREEK NEAR WIBAUX, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	PH (UNITS) (00400)	TEMPERATURE (DEG C) (00010)	HARDNESS (MG/L AS CACO3) (00900)	HARDNESS, NONCARBONATE (MG/L CACO3) (00902)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	SODIUM, DISSOLVED (MG/L AS NA) (00930)
NOV										
07...	1430	.14	1350	8.0	6.5	850	280	110	140	590
DEC										
11...	1155	.16	2400	--	.0	--	--	--	--	--
JAN										
16...	1205	.02	3500	--	.0	--	--	--	--	--
MAR										
14...	1130	.70	1750	--	.0	--	--	--	--	--
17...	1350	1.1	1150	--	--	--	--	--	--	--
20...	1300	1.9	1400	--	.5	--	--	--	--	--
21...	1420	5.2	1525	--	.5	--	--	--	--	--
22...	1345	2.7	1590	--	.5	--	--	--	--	--
23...	1245	7.1	--	--	12.0	--	--	--	--	--
27...	1300	163	--	--	.5	--	--	--	--	--
28...	1400	122	1000	--	.5	--	--	--	--	--
29...	1130	64	1100	--	.0	--	--	--	--	--
APR										
03...	1005	57	1150	--	.0	--	--	--	--	--
06...	1110	38	1290	--	--	--	--	--	--	--
09...	1200	332	1300	--	4.0	--	--	--	--	--
11...	1450	131	640	--	1.0	--	--	--	--	--
20...	1015	40	1390	--	4.5	--	--	--	--	--
25...	1130	15	1550	7.9	4.0	750	480	120	110	230
MAY										
02...	1330	12	1400	--	6.0	--	--	--	--	--
JUN										
21...	1300	.14	3250	8.3	20.5	920	460	120	150	550
JUL										
24...	0930	.22	2000	--	--	--	--	--	--	--
SEP										
11...	1345	.20	1900	--	18.5	--	--	--	--	--

DATE	SODIUM PERCENT (00932)	SODIUM ADSORPTION RATIO (00931)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	ALKALINITY (MG/L AS CACO3) (00410)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)
NOV										
07...	60	8.8	16	570	1500	15	.2	2.9	2720	3.70
APR										
25...	40	3.6	11	270	910	9.8	.2	7.6	1560	2.12
MAY										
02...	--	--	--	--	--	--	--	--	--	--
JUN										
21...	56	7.9	11	460	1500	16	.3	2.1	2630	3.58

DATE	SOLIDS, DISSOLVED (TONS PER DAY) (70302)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N) (00623)	BORON, DISSOLVED (UG/L AS B) (01020)	IRON, DISSOLVED (UG/L AS FE) (01046)	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	MOLYBDENUM, DISSOLVED (UG/L AS MO) (01060)	STRONTIUM, DISSOLVED (UG/L AS SR) (01080)	SEDIMENT, SUSPENDED (MG/L) (80154)	SEDIMENT DISCHARGE, SUSPENDED (T/DAY) (80155)
NOV									
07...	1.03	1.3	900	30	40	4	890	--	--
DEC									
11...	--	--	--	--	--	--	--	--	--
JAN									
16...	--	--	--	--	--	--	--	--	--
MAR									
14...	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	12	.10
22...	--	--	--	--	--	--	--	19	.14
23...	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	60	10
APR									
03...	--	--	--	--	--	--	--	51	7.9
06...	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	156	55
20...	--	--	--	--	--	--	--	--	--
25...	63.6	1.2	550	420	290	0	110	--	--
MAY									
02...	--	--	--	--	--	--	--	--	--
JUN									
21...	.99	.02	1000	30	40	3	1700	--	--

06336600 BEAVER CREEK NEAR TROTTERS, ND

LOCATION.--Lat 47°09'47", long 103°59'32", in SW¼SW¼NE¼ sec.33, T.143 N., R.105 W., Golden Valley County, Hydrologic Unit 10110204, on left bank 100 ft (30 m) upstream from bridge on county road, 2.4 mi (3.9 km) east of Montana-North Dakota State line, 13 mi (21 km) southwest of Trotters, 17 mi (27 km) north of Beach, 20 mi (32 km) upstream from Elk Creek, and 27 mi (43 km) above mouth.

DRAINAGE AREA.--485 mi² (1,260 km²), approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1977 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 2,370 ft (722 m), from topographic map.

REMARKS.--Records good except those for periods from November to March, which are fair.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,720 ft³/s (77.0 m³/s) Mar. 29, 1978, gage height, 18.61 ft (5.672 m); maximum gage height, 19.27 ft (5.874 m) Mar. 22, 1978, ice jam; minimum daily discharge, 0.04 ft³/s (0.001 m³/s) Oct. 3-7, 10-15, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 200 ft³/s (5.66 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Apr. 11	--	970	27.5	Ice jam		Apr. 19	0500	*1,410	39.9	13.74	4.188

Minimum daily discharge, 0.13 ft³/s (0.004 m³/s) Sept. 22.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.1	5.5	5.0	3.5	4.5	5.0	250	87	24	7.6	8.6	1.1
2	1.2	5.5	5.0	3.5	4.5	5.0	230	79	23	7.4	7.0	1.0
3	1.4	5.5	5.0	3.5	4.5	5.0	220	75	22	6.9	6.0	.90
4	1.4	5.5	5.0	3.5	5.0	5.0	215	70	21	6.4	5.0	.71
5	1.6	5.5	5.0	3.5	5.5	5.2	210	65	19	5.9	4.6	.56
6	1.4	5.5	4.8	3.5	5.5	5.5	300	64	18	5.3	4.3	.44
7	1.4	5.5	4.5	3.5	5.2	5.5	400	64	17	5.1	3.9	.39
8	1.4	6.0	4.0	3.5	5.5	5.5	500	60	15	4.7	3.8	.39
9	1.1	6.5	4.0	3.5	5.5	5.5	610	58	17	4.5	3.4	.39
10	1.3	6.0	4.5	3.5	5.5	5.5	750	55	16	4.6	3.3	.42
11	1.1	5.5	5.0	3.5	5.4	6.0	880	52	16	9.3	3.3	.57
12	1.2	5.5	5.0	3.5	5.2	6.0	937	49	15	84	3.2	.50
13	1.7	5.5	5.5	3.5	5.2	7.0	621	47	14	61	3.0	.42
14	1.5	5.5	6.0	3.5	5.2	8.0	354	46	13	28	2.6	.41
15	1.6	5.4	6.5	3.5	5.0	9.0	264	44	13	19	2.4	.35
16	2.6	5.4	6.5	3.5	5.0	10	253	42	12	14	2.3	.31
17	2.2	5.4	6.5	3.8	5.0	18	527	40	12	11	2.2	.25
18	2.0	5.4	6.0	4.0	5.2	20	1110	37	11	9.0	2.0	.27
19	2.1	5.2	6.0	4.3	5.2	21	1220	37	11	7.4	2.0	.23
20	2.1	5.0	6.0	4.5	5.0	22	666	35	11	6.3	1.7	.20
21	2.2	5.0	6.0	4.8	5.0	23	378	34	11	5.6	1.6	.19
22	1.6	5.0	6.0	5.0	5.0	25	247	32	12	4.9	1.7	.13
23	1.5	5.2	6.0	5.0	5.0	40	186	31	12	4.4	1.6	.16
24	2.5	5.5	5.8	5.0	5.0	85	158	29	11	13	1.4	.17
25	3.5	5.5	5.5	5.0	5.2	190	138	29	10	33	1.2	.15
26	5.0	5.5	5.0	5.0	5.2	200	124	27	9.6	24	1.1	.14
27	6.0	5.5	4.5	4.8	5.2	180	116	26	8.9	23	1.2	.18
28	5.8	5.5	4.0	4.5	5.0	175	110	24	9.0	18	1.1	.18
29	5.5	5.2	3.5	4.5	---	170	101	26	8.3	16	1.1	.16
30	5.5	5.0	3.5	4.5	---	210	94	27	8.0	18	.89	.17
31	5.5	---	3.5	4.5	---	240	---	25	---	12	.84	---
TOTAL	76.0	163.7	159.1	125.2	143.2	1717.7	12169	1416	419.8	479.3	88.33	11.44
MEAN	2.45	5.46	5.13	4.04	5.11	55.4	406	45.7	14.0	15.5	2.85	.38
MAX	6.0	6.5	6.5	5.0	5.5	240	1220	87	24	84	8.6	1.1
MIN	1.1	5.0	3.5	3.5	4.5	5.0	94	24	8.0	4.4	.84	.13
AC-FT	151	325	316	248	284	3410	24140	2810	833	951	175	23

CAL YR 1978 TOTAL 29382.80 MEAN 80.5 MAX 2500 MIN .33 AC-FT 58280
WTR YR 1979 TOTAL 16968.77 MEAN 46.5 MAX 1220 MIN .13 AC-FT 33660

06336600 BEAVER CREEK NEAR TROTTERS, ND--Continued

WATER-QUALITY RECORDS

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)
OCT												
02...	1400	1.6	2300	8.2	8.0	12.0	8.7	89	20	110	560	160
NOV												
16...	1230	5.4	2490	8.0	2.0	.0	13.0	97	--	--	660	230
DEC												
15...	1035	6.5	2660	8.1	-3.0	.0	11.8	89	K3	27	780	300
JAN												
12...	1000	3.5	2840	7.9	-20.0	.0	11.1	83	K2	K3	830	280
FEB												
06...	1500	5.6	2630	8.0	-18.0	.0	11.6	87	K2	K21	810	300
APR												
10...	1225	783	--	--	5.0	1.5	--	--	--	--	--	--
12...	1420	965	695	7.8	1.0	.5	11.9	91	70	220000	240	83
16...	1815	256	--	--	15.5	9.5	--	--	--	--	--	--
MAY												
10...	0900	56	2150	8.5	1.5	7.0	9.5	98	K6	46	670	330
18...	0805	36	2280	8.5	7.0	12.5	9.3	95	34	430	720	350
JUN												
15...	1045	15	2400	8.3	19.0	19.0	7.9	92	52	48	690	310
JUL												
26...	1135	22	2370	8.4	18.5	22.0	--	--	200	370	680	310
AUG												
06...	1335	4.4	1830	8.4	31.5	24.5	9.0	115	59	88	480	170
SEP												
12...	1030	.54	2490	8.2	10.0	13.0	8.4	86	K11	220	650	220

DATE	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE (MG/L AS HCO3) (00440)	CAR-BONATE (MG/L AS CO3) (00445)	ALKA-LINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)
OCT											
02...	97	78	350	57	6.4	11	489	0	400	4.9	900
NOV											
16...	110	94	360	54	6.1	11	520	0	430	8.3	1000
DEC											
15...	130	110	400	52	6.2	12	586	0	480	7.4	1100
JAN											
12...	150	110	460	54	7.0	12	671	0	550	14	1200
FEB											
06...	160	100	420	53	6.4	12	625	0	510	10	1100
APR											
10...	--	--	--	--	--	--	--	--	--	--	--
12...	52	26	64	36	1.8	7.3	188	0	150	4.8	240
16...	--	--	--	--	--	--	--	--	--	--	--
MAY											
10...	120	91	270	46	4.5	10	412	4	350	2.1	850
18...	130	95	300	47	4.9	11	437	6	380	2.3	910
JUN											
15...	110	100	360	53	6.0	11	459	0	380	3.7	1000
JUL											
26...	110	99	340	72	5.7	12	438	8	370	2.9	670
AUG											
06...	83	66	260	53	5.2	11	371	5	310	2.4	690
SEP											
12...	110	91	370	74	6.3	11	520	0	430	5.2	1100

K - Results based on colony count outside the acceptable range (non-ideal colony count).

06336600 BEAVER CREEK NEAR TROTTERS, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)	SOLIDS, DISSOLVED (TONS PER DAY) (70302)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITROGEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)
OCT											
02...	8.7	.2	6.2	1750	1690	2.30	7.30	.02	.01	.50	.51
NOV											
16...	4.9	.2	9.1	1890	1850	2.52	27.2	.03	.02	.38	.40
DEC											
15...	12	.2	9.9	2080	2060	2.80	36.2	.15	.08	.29	.37
JAN											
12...	14	.2	12	2270	2290	3.11	21.6	.31	.27	.83	1.1
FEB											
06...	10	.2	12	2170	2120	2.88	32.1	.55	.11	.29	.40
APR											
10...	--	--	--	--	--	--	--	--	--	--	--
12...	2.6	.1	7.0	462	492	.67	1280	.36	.12	2.2	2.3
16...	--	--	--	--	--	--	--	--	--	--	--
MAY											
10...	8.0	.2	6.2	1630	1560	2.12	236	.00	.01	.60	.61
18...	7.8	.2	6.8	1760	1680	2.28	172	.02	.06	.53	.59
JUN											
15...	8.6	.2	5.4	1840	1820	2.48	63.9	.02	.04	.48	.52
JUL											
26...	9.2	.3	8.3	1790	1470	2.00	90.5	.01	.02	.64	.66
AUG											
06...	6.6	.3	8.0	1290	1310	1.78	15.6	.01	.02	.64	.66
SEP											
12...	7.3	.3	7.7	1870	1950	2.65	2.84	.02	.03	.72	.75

DATE	NITROGEN, TOTAL (MG/L AS N) (00600)	NITROGEN, TOTAL (MG/L AS NO3) (71887)	PHOSPHORUS, TOTAL (MG/L AS P) (00665)	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	ALUMINUM, DISSOLVED (UG/L AS AL) (01106)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DISSOLVED (UG/L AS AS) (01000)	ARSENIC TOTAL IN BOTTOM MATERIAL (UG/G AS AS) (01003)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA) (01007)	BARIUM, DISSOLVED (UG/L AS BA) (01005)	BARIUM, RECOV. FM BOTTOM MATERIAL (UG/G AS BA) (01008)
OCT											
02...	.53	2.3	.03	.00	--	--	--	--	--	--	--
NOV											
16...	.43	1.9	.02	.01	--	--	--	--	--	--	--
DEC											
15...	.52	2.3	.01	.01	--	--	--	--	--	--	--
JAN											
12...	1.4	6.2	.02	.01	--	--	--	--	--	--	--
FEB											
06...	.95	4.2	.01	.00	--	--	--	--	--	--	--
APR											
10...	--	--	--	--	--	--	--	--	--	--	--
12...	2.7	12	.43	.03	50	5	1	32	400	400	200
16...	--	--	--	--	--	--	--	--	--	--	--
MAY											
10...	.61	2.7	.04	.01	--	--	--	--	--	--	--
18...	.61	2.7	.03	.01	--	--	--	--	--	--	--
JUN											
15...	.54	2.4	.03	.00	--	--	--	--	--	--	--
JUL											
26...	.67	3.0	.07	.08	30	--	1	--	--	0	--
AUG											
06...	.67	3.0	.04	.02	0	3	2	400	0	70	400
SEP											
12...	.77	3.4	.02	.01	--	--	--	--	--	--	--

06336600 BEAVER CREEK NEAR TROTTERS, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	BERYLLIUM, TOTAL RECOVERABLE (UG/L AS BE) (01012)	BERYLLIUM, DISSOLVED (UG/L AS BE) (01010)	BERYLLIUM, RECOV. FM BOTTOM MATERIAL (UG/G) (01013)	BORON, DISSOLVED (UG/L AS B) (01020)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) (01034)	CHROMIUM, DISSOLVED (UG/L AS CR) (01030)	CHROMIUM, RECOV. FM BOTTOM MATERIAL (UG/G) (01029)	COBALT, TOTAL RECOVERABLE (UG/L AS CO) (01037)	COBALT, DISSOLVED (UG/L AS CO) (01035)	COBALT, RECOV. FM BOTTOM MATERIAL (UG/G AS CO) (01038)	COPPER, TOTAL RECOVERABLE (UG/L AS CU) (01042)
OCT											
02...	--	--	--	670	--	--	--	--	--	--	--
NOV											
16...	--	--	--	610	--	--	--	--	--	--	--
DEC											
15...	--	--	--	650	--	--	--	--	--	--	--
JAN											
12...	--	--	--	680	--	--	--	--	--	--	--
FEB											
06...	--	--	--	680	--	--	--	--	--	--	--
APR											
10...	--	--	--	--	--	--	--	--	--	--	--
12...	0	0	2	190	20	20	8	20	0	20	50
16...	--	--	--	--	--	--	--	--	--	--	--
MAY											
10...	--	--	--	530	--	--	--	--	--	--	--
18...	--	--	--	590	--	--	--	--	--	--	--
JUN											
15...	--	--	--	740	--	--	--	--	--	--	--
JUL											
26...	--	0	--	740	--	10	--	--	0	--	--
AUG											
06...	0	<1	0	680	10	0	4	0	<3	7	6
SEP											
12...	--	--	--	760	--	--	--	--	--	--	--

DATE	COPPER, DISSOLVED (UG/L AS CU) (01040)	COPPER, RECOV. FM BOTTOM MATERIAL (UG/G AS CU) (01043)	IRON, DISSOLVED (UG/L AS FE) (01046)	LITHIUM TOTAL RECOVERABLE (UG/L AS LI) (01132)	LITHIUM DISSOLVED (UG/L AS LI) (01130)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN) (01055)	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	MANGANESE, RECOV. FM BOTTOM MATERIAL (UG/G) (01053)	MERCURY TOTAL RECOVERABLE (UG/L AS HG) (71900)	MERCURY DISSOLVED (UG/L AS HG) (71890)	MERCURY RECOV. FM BOTTOM MATERIAL (UG/G AS HG) (71921)
OCT											
02...	--	--	20	--	--	--	--	--	--	--	--
NOV											
16...	--	--	20	--	--	--	--	--	--	--	--
DEC											
15...	--	--	140	--	--	--	--	--	--	--	--
JAN											
12...	--	--	0	--	--	--	--	--	--	--	--
FEB											
06...	--	--	20	--	--	--	--	--	--	--	--
APR											
10...	--	--	--	--	--	--	--	--	--	--	--
12...	11	16	140	30	5	820	50	710	.2	.1	.03
16...	--	--	--	--	--	--	--	--	--	--	--
MAY											
10...	--	--	10	--	--	--	--	--	--	--	--
18...	--	--	10	--	--	--	--	--	--	--	--
JUN											
15...	--	--	10	--	--	--	--	--	--	--	--
JUL											
26...	2	--	10	--	60	--	20	--	--	.0	--
AUG											
06...	14	5	<10	50	60	120	10	310	.2	.1	.03
SEP											
12...	--	--	0	--	--	--	--	--	--	--	--

DATE	MOLYBDENUM, TOTAL RECOVERABLE (UG/L AS MO) (01062)	MOLYBDENUM, RECOV. FM BOTTOM MATERIAL (UG/G) (01063)	MOLYBDENUM, DISSOLVED (UG/L AS MO) (01060)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI) (01067)	NICKEL, DISSOLVED (UG/L AS NI) (01065)	NICKEL, RECOV. FM BOTTOM MATERIAL (UG/G AS NI) (01068)	SELENIUM, TOTAL (UG/L AS SE) (01147)	SELENIUM, DISSOLVED (UG/L AS SE) (01145)	SELENIUM, TOTAL IN BOTTOM MATERIAL (UG/G) (01148)	VANADIUM, DISSOLVED (UG/L AS V) (01085)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN) (01092)
APR											
10...	--	--	--	--	--	--	--	--	--	--	--
12...	3	14	0	27	0	20	1	0	0	1.4	110
16...	--	--	--	--	--	--	--	--	--	--	--
JUL											
26...	--	--	2	--	3	--	--	0	--	<1.0	--
AUG											
06...	0	0	<10	4	3	15	0	3	0	<1.0	20
SEP											
12...	--	--	--	--	--	--	--	--	--	--	--

06336600 BEAVER CREEK NEAR TROTTERS, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ZINC, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS ZN) (01093)	GROSS ALPHA, DIS-SOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DIS-SOLVED (PCI/L AS CS-137) (03515)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C) (00689)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70338)
OCT											
02...	--	--	--	--	--	--	17	.4	58	.25	--
NOV											
16...	--	--	--	--	--	--	5.9	.5	57	.84	--
DEC											
15...	--	--	--	--	--	--	5.1	.3	52	.91	--
JAN											
12...	--	--	--	--	--	--	9.4	.3	80	.76	--
FEB											
06...	--	--	--	--	--	--	6.5	.4	24	.36	--
APR											
10...	--	--	--	--	--	--	--	--	1330	2810	--
12...	10	28	<7.9	<12	9.0	9.0	6.9	8.1	991	2580	52
16...	--	--	--	--	--	--	--	--	300	207	--
MAY											
10...	--	--	--	--	--	--	13	.9	28	4.2	--
18...	--	--	--	--	--	--	9.3	.7	75	7.7	--
JUN											
15...	--	--	--	--	--	--	15	.7	95	3.3	--
JUL											
26...	30	--	--	--	--	--	7.8	1.1	155	9.5	--
AUG											
06...	<3	21	<25	<.7	14	2.8	8.0	1.0	90	1.1	--
SEP											
12...	--	--	--	--	--	--	14	.4	55	.08	--

DATE	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70340)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)	SED. SUSP. FALL DIAM. % FINER THAN .125 MM (70343)	SED. SUSP. FALL DIAM. % FINER THAN .250 MM (70344)	BED MAT. FALL DIAM. % FINER THAN .062 MM (80158)	BED MAT. FALL DIAM. % FINER THAN .125 MM (80159)	BED MAT. FALL DIAM. % FINER THAN .250 MM (80160)
APR							
12...	75	94	98	100	8	12	19

DATE	BED MAT. FALL DIAM. % FINER THAN .500 MM (80161)	BED MAT. FALL DIAM. % FINER THAN 1.00 MM (80162)	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM (80169)	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM (80170)	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM (80171)	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM (80172)	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM (80173)
APR							
12...	21	22	27	49	75	91	100

DATE	LENGTH OF EXPO-SURE (DAYS) (00022)	CHLOR-A PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70957)	CHLOR-B PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70958)	PERI-PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M (00573)	PERI-PHYTON BIOMASS ASH WEIGHT G/SQ M (00572)
JUL					
26...	41	1.62	.020	19.1	16.7
AUG					
06...	11	.120	.000	.870	.710
SEP					
12...	37	.720	.000	2.05	1.65

06336600 BEAVER CREEK NEAR TROTTERS, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1978 TO SEPTEMBER 1979

DATE	OCT 2,78	NOV 16,78	DEC 15,78	JAN 12,79	FEB 6,79	APR 12,79
TIME	1400	1230	1035	1000	1500	1420
TOTAL CELLS/ML	1800	650	280	240	91	290
DIVERSITY: DIVISION	1.8	1.8	1.6	1.3	0.0	1.0
.CLASS	1.8	1.8	1.6	1.3	0.0	1.0
..ORDER	2.3	2.0	1.7	1.5	0.0	1.0
...FAMILY	2.6	2.3	2.4	2.9	0.3	1.8
....GENUS	2.9	0.0	2.4	2.9	0.3	2.5

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)												
.CHLOROPHYCEAE												
..CHLOROCOCCALES												
...CHARACIACEAE												
....SCHROEDERIA	--	-	--	-	--	-	--	-	--	-	--	-
...CHLOROCOCCACEAE												
....CHLOROCOCCUM	--	-	--	-	--	-	--	-	--	-	--	-
...OOCYSTACEAE												
....ANKISTRODESMUS	700#	39	200#	31	120#	44	23	10	--	-	--	-
....CHLORELLA	--	-	--	-	--	-	--	-	--	-	--	-
....CHODATELLA	--	-	--	-	--	-	--	-	--	-	--	-
....DICTYOSPHAERIUM	43	2	--	-	--	-	--	-	--	-	--	-
....KIRCHNERIELLA	--	-	--	-	--	-	--	-	--	-	--	-
....OOCYSTIS	--	-	--	-	--	-	--	-	--	-	--	-
....SELENASTRUM	--	-	--	-	--	-	--	-	--	-	--	-
....TETRAEDRON	--	-	--	-	--	-	--	-	--	-	--	-
...SCENEDESMACEAE												
....ACTINASTRUM	--	-	--	-	--	-	--	-	--	-	58#	20
....CRUCIGENIA	86	5	--	-	--	-	--	-	--	-	--	-
....SCENEDESMUS	--	-	--	-	15	6	15	6	--	-	120#	40
..VOLVOCALES												
...CHLAMYDOMONADACEAE	--	-	43	7	--	-	--	-	--	-	--	-
....CHLAMYDOMONAS	32	2	--	-	8	3	--	-	--	-	--	-
CHRYSOPHYTA												
.BACILLARIOPHYCEAE												
..CENTRALES												
...COSCINODISCACEAE												
....CYCLOTELLA	54	3	--	-	--	-	8	3	--	-	--	-
....STEPHANODISCUS	22	1	--	-	--	-	--	-	--	-	--	-
..PENNALES												
...ACHNANTHACEAE												
....ACHNANTHES	--	-	--	-	--	-	8	3	--	-	--	-
....COCCONEIS	--	-	--	-	--	-	--	-	--	-	14	5
...CYMBELLACEAE												
....AMPHORA	--	-	14	2	8	3	--	-	--	-	--	-
....CYMBELLA	--	-	--	-	--	-	15	6	--	-	--	-
...FRAGILARIACEAE												
....SYNEDRA	22	1	--	-	8	3	8	3	--	-	--	-
...GOMPHONEMATACEAE												
....GOMPHONEMA	--	-	--	-	--	-	--	-	--	-	14	5
...NAVICULACEAE												
....DIPLONEIS	--	-	14	2	--	-	--	-	--	-	--	-
....GYROSIGMA	--	-	--	-	--	-	--	-	--	-	14	5
....NAVICULA	22	1	14	2	15	6	69#	29	5	6	14	5
...NITZSCHIACEAE												
....NITZSCHIA	150	8	58	9	46#	17	54#	23	86#	94	43	15
...SURIRELLACEAE												
....CYMATOPLEURA	--	-	--	-	--	-	--	-	--	-	14	5
CRYPTOPHYTA (CRYPTOMONADS)												
.CRYPTOPHYCEAE												
..CRYPTOMONADALES												
...CRYPTOMONADACEAE												
....CRYPTOMONAS	--	-	--	-	--	-	--	-	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)												
.CYANOPHYCEAE												
..CHROOCOCCALES												
...CHROOCOCCACEAE												
....ANACYSTIS	130	7	58	9	--	-	--	-	--	-	--	-
....COCCOCHLORIS	54	3	--	-	--	-	--	-	--	-	--	-
..HORMOGONALES												
...OSCILLATORIACEAE												
....OSCILLATORIA	190	11	--	-	--	-	8	3	--	-	--	-
....SCHIZOTHRIX	--	-	--	-	--	-	--	-	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)												
.EUGLENOPHYCEAE												
..EUGLENALES												
...EUGLENACEAE												
....EUGLENA	--	-	--	-	--	-	--	-	--	-	--	-
....EUTREPTIA	--	-	--	-	--	-	--	-	--	-	--	-
....TRACHELOMONAS	280#	16	250#	38	46#	17	31	13	--	-	--	-
PYRRHOPHYTA (FIRE ALGAE)												
.DINOPHYCEAE												
..GYMNODINIALES												
...GYMNODINIACEAE												
....GYMNODINIUM	--	-	--	-	8	3	--	-	--	-	--	-
..PERIDINIALES												
...GLENODINIACEAE												
....GLENODINIUM	--	-	--	-	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06336600 BEAVER CREEK NEAR TROTTERS, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1978 TO SEPTEMBER 1979

DATE	MAY 10,79	MAY 18,79	JUN 15,79	JUL 26,79	AUG 6,79	SEP 12,79
TIME	0900	0805	1045	1135	1335	1030
TOTAL CELLS/ML	6400	1400	1300	49000	7400	8700
DIVERSITY: DIVISION	1.1	1.5	0.6	0.9	1.2	0.4
.CLASS	1.1	1.5	0.6	0.9	1.2	0.4
..ORDER	1.3	1.7	0.8	1.6	1.9	0.4
...FAMILY	1.4	2.3	1.6	1.6	2.2	0.5
....GENUS	1.7	2.7	2.4	1.8	2.4	0.8

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)												
.CHLOROPHYCEAE												
..CHLOROCOCCALES												
...CHARACIACEAE												
....SCHROEDERIA	--	-	--	-	--	-	*	0	--	-	--	-
...CHLOROCOCCACEAE												
....CHLOROCOCCUM	--	-	--	-	--	-	--	-	--	-	*	0
...OOCYSTACEAE												
....ANKISTRODESMUS	390	6	260#	19	180	14	5200	11	520	7	65	1
....CHLORELLA	--	-	--	-	--	-	--	-	--	-	58	1
....CHODATELLA	--	-	--	-	--	-	330	1	--	-	--	-
....DICTYOSPHAERIUM	--	-	--	-	520#	39	1800	4	310	4	--	-
....KIRCHNERIELLA	56	1	--	-	--	-	--	-	--	-	--	-
....OOCYSTIS	--	-	--	-	--	-	--	-	52	1	--	-
....SELENASTRUM	1100#	18	240#	18	--	-	--	-	--	-	--	-
....TETRAEDRON	--	-	--	-	13	1	--	-	--	-	--	-
...SCENEDESMACEAE												
....ACTINASTRUM	--	-	--	-	260#	20	--	-	--	-	--	-
....CRUCIGENIA	--	-	--	-	150	12	--	-	--	-	*	0
....SCENEDESMUS	110	2	310#	22	--	-	*	0	1300#	18	140	2
..VOLVOCALES												
...CHLAMYDOMONADACEAE	--	-	--	-	--	-	--	-	--	-	--	-
....CHLAMYDOMONAS	170	3	64	5	39	3	*	0	52	1	--	-
CHRYSOPHYTA												
.BACILLARIOPHYCEAE												
..CENTRALES												
...COSCINODISCACEAE												
....CYCLOTELLA	4200#	66	64	5	120	9	*	0	--	-	87	1
....STEPHANODISCUS	--	-	--	-	--	-	--	-	--	-	--	-
..PENNALES												
...ACHNANTHACEAE												
....ACHNANTHES	--	-	--	-	--	-	--	-	--	-	--	-
....COCCONEIS	--	-	--	-	--	-	--	-	--	-	--	-
...CYMBELLACEAE												
....AMPHORA	--	-	--	-	--	-	--	-	--	-	--	-
....CYMBELLA	--	-	--	-	--	-	--	-	--	-	--	-
...FRAGILARIACEAE												
....SYNEDRA	--	-	--	-	26	2	--	-	--	-	--	-
...GOMPHONEMATACEAE												
....GOMPHONEMA	--	-	--	-	--	-	--	-	--	-	--	-
...NAVICULACEAE												
....DIPLONEIS	--	-	--	-	--	-	--	-	--	-	--	-
....GYROSIGMA	--	-	--	-	--	-	--	-	52	1	--	-
....NAVICULA	--	-	--	-	--	-	*	0	52	1	--	-
...NITZSCHIACEAE												
....NITZSCHIA	110	2	13	1	--	-	490	1	210	3	--	-
...SURIRELLACEAE												
....CYMATOPLEURA	--	-	--	-	--	-	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)												
.CRYPTOPHYCEAE												
..CRYPTOMONADALES												
...CRYPTOMONADACEAE												
....CRYPTOMONAS	--	-	--	-	--	-	*	0	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)												
.CYANOPHYCEAE												
..CHROOCOCCALES												
...CHROOCOCCACEAE												
....ANACYSTIS	--	-	260#	19	--	-	10000#	21	2600#	36	--	-
....COCCOCHLORIS	--	-	--	-	--	-	--	-	--	-	--	-
..HORMOGONALES												
...OSCILLATORIACEAE												
....OSCILLATORIA	--	-	--	-	--	-	29000#	60	2100#	28	7800#	89
....SCHIZOTHRIX	--	-	--	-	--	-	--	-	--	-	410	5
EUGLENOPHYTA (EUGLENOIDS)												
.EUGLENOPHYCEAE												
..EUGLENALES												
...EUGLENACEAE												
....EUGLENA	--	-	13	1	--	-	330	1	100	1	*	0
....EUTREPTIA	--	-	--	-	--	-	--	-	--	-	*	0
....TRACHELOMONAS	220	4	150	11	13	1	*	0	--	-	*	0
PYRRHOPHYTA (FIRE ALGAE)												
.DINOPHYCEAE												
..GYMNODINIALES												
...GYMNODINIACEAE												
....GYMNODINIUM	--	-	--	-	--	-	--	-	--	-	*	0
..PERIDINIALES												
...GLENODINIACEAE												
....GLENODINIUM	--	-	--	-	--	-	*	0	--	-	*	0

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06337000 LITTLE MISSOURI RIVER NEAR WATFORD CITY, ND

LOCATION.--Lat 47°35'25", long 103°15'05", in NW¼SE¼SE¼ sec.35, T.148 N., R.99 W., McKenzie County, Hydrologic Unit 10110205, at bridge on U.S. Highway 85, 17 mi (27 km) upstream from Cherry Creek, and 17.5 mi (28.2 km) south of Watford City.

DRAINAGE AREA.--8,310 mi^2 (21,520 km^2), approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1934 to current year.

REVISED RECORDS (WATER YEARS).--WSP 926: 1935. WSP 1270: 1943.

GAGE.--Water-stage recorder and supplemental nonrecording gage. Datum of gage is 1,929.03 ft (587.968 m) National Geodetic Vertical Datum of 1929. 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 (210 m) upstream at present datum. See WSP 1729 or 1917 for history of changes prior to Oct. 2, 1959.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--45 years, 612 ft^3/s (17.33 m^3/s), 443,400 acre-ft/yr (547 hm^3/yr); median of yearly mean discharges, 470 ft^3/s (13.3 m^3/s), 341,000 acre-ft/yr (420 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 110,000 ft^3/s (3,120 m^3/s) Mar. 25, 1947, gage height, 24.0 ft (7.32 m) from floodmark, site then in use; no flow at times in most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 10,000 ft^3/s (283 m^3/s) Apr. 17, gage height, 6.45 ft (1.966 m), from graph based on gage readings, only peak above base of 8,000 ft^3/s (227 m^3/s); maximum gage height observed, 6.67 ft (2.033 m) Mar. 18, backwater from ice; no flow Jan. 16 to Mar. 6.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	147	64	35	14	.00	.00	3190	1090	250	142	275	68
2	121	62	35	14	.00	.00	3130	1010	240	113	310	66
3	113	62	33	14	.00	.00	3220	1020	230	111	247	68
4	111	64	32	14	.00	.00	3190	886	220	111	234	111
5	104	58	32	12	.00	.00	2850	830	215	104	213	94
6	94	54	30	12	.00	.00	2880	788	210	111	137	74
7	88	66	28	12	.00	10	2780	753	205	109	111	66
8	83	64	25	12	.00	50	3030	725	199	109	90	58
9	78	76	22	12	.00	100	3480	690	192	167	111	56
10	76	76	20	10	.00	100	5810	636	169	310	147	54
11	70	70	20	8.0	.00	150	5050	654	175	230	142	53
12	64	70	20	6.0	.00	400	5080	558	175	178	121	43
13	66	65	20	4.0	.00	800	4500	460	156	260	111	95
14	64	65	20	2.0	.00	1000	4350	390	172	325	101	199
15	62	60	20	1.0	.00	900	4000	375	175	234	90	121
16	62	60	20	.00	.00	1600	5220	395	166	234	81	163
17	62	60	20	.00	.00	2500	9240	370	150	166	74	243
18	60	58	20	.00	.00	3000	8960	325	139	145	72	217
19	60	55	20	.00	.00	2800	6540	315	137	185	70	162
20	62	50	20	.00	.00	2000	6430	315	121	139	66	147
21	62	50	20	.00	.00	1900	5330	365	113	156	62	106
22	62	45	20	.00	.00	2200	4120	375	113	169	56	88
23	66	45	20	.00	.00	2600	3330	370	156	106	54	74
24	66	45	20	.00	.00	2850	2850	345	175	259	51	70
25	62	45	20	.00	.00	5600	2350	335	147	345	51	64
26	62	42	18	.00	.00	4900	2190	315	123	325	58	54
27	62	40	18	.00	.00	4500	1840	300	118	345	60	50
28	64	40	16	.00	.00	4300	1570	275	139	420	58	45
29	64	38	16	.00	---	3190	1370	295	131	375	53	46
30	66	38	16	.00	---	3140	1200	270	142	385	62	37
31	64	---	16	.00	---	3170	---	260	---	285	66	---
TOTAL	2349	1687	692	147.00	.00	53760.00	119080	16090	5053	6653	3436	2792
MEAN	75.8	56.2	22.3	4.74	.000	1734	3969	519	168	215	111	93.1
MAX	147	76	35	14	.00	5600	9240	1090	250	420	310	243
MIN	60	38	16	.00	.00	.00	1200	260	113	104	51	37
AC-FT	4660	3350	1370	292	.00	106600	236200	31910	10020	13200	6820	5540

CAL YR 1978 TOTAL 520556.50 MEAN 1426 MAX 30900 MIN .00 AC-FT 1033000
WTR YR 1979 TOTAL 211739.00 MEAN 580 MAX 9240 MIN .00 AC-FT 420000

06337000 LITTLE MISSOURI RIVER NEAR WATFORD CITY, ND--Continued
(National water-quality accounting network station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1948 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: April 1974 to current year.
WATER TEMPERATURES: April 1974 to current year.

REMARKS.--Sediment records from October 1948 to September 1971 available from U.S. Corps of Engineers, Omaha, NE.
No flow Jan. 16 to Mar. 6.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 4,400 micromhos Jan. 7-9, 1975; minimum daily, 325 micromhos, Mar. 30, 1978.
WATER TEMPERATURES: Maximum daily, 30.0°C June 5, 1975; minimum daily, 0.0°C on many days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum observed, 3,100 micromhos Dec. 7; minimum observed, 610 micromhos Mar. 19.
WATER TEMPERATURES: Maximum daily, 23.0°C July 2-4, 20, 21; minimum observed, 1.0°C on many days during winter months.

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)
OCT											
11...	0920	70	1960	8.7	11.5	10.5	46	11.0	33	K44	K30
NOV											
07...	1115	66	2100	8.6	7.0	3.0	39	11.4	--	K15	K35
DEC											
13...	1140	19	2900	8.2	-6.0	.0	2.8	5.6	--	K20	K75
JAN											
09...	1130	12	2750	7.8	-12.0	.0	3.2	5.2	--	K10	K10
MAR											
20...	1340	1960	630	8.1	-1.0	1.0	760	11.6	--	--	--
29...	1505	3120	710	--	--	1.5	--	--	--	--	--
APR											
16...	1345	5200	680	8.0	11.0	6.0	2600	10.2	170	--	--
20...	1515	6190	1010	--	--	12.0	--	--	--	--	--
27...	1345	1830	1100	--	--	10.0	--	--	--	--	--
MAY											
09...	1020	684	1600	8.2	2.0	6.5	220	9.6	40	K25	K25
JUN											
12...	1140	179	2190	8.5	31.0	23.0	20	8.0	--	K65	70
JUL											
11...	1100	228	1910	8.4	25.0	24.0	2800	6.8	140	K44	K35
AUG											
08...	1035	94	2020	8.6	23.0	21.0	1500	7.2	110	K25	K50
SEP											
12...	0850	44	2020	8.3	9.0	12.0	2.6	9.9	45	K180	130

DATE	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
OCT											
11...	380	38	87	39	340	65	7.6	13	340	780	17
NOV											
07...	420	57	91	46	380	66	8.1	11	360	860	10
DEC											
13...	660	78	140	75	560	64	9.5	16	580	1300	18
JAN											
09...	680	130	150	75	480	60	8.0	16	550	1200	16
MAR											
20...	85	0	28	3.7	100	70	4.7	7.0	110	180	7.7
29...	--	--	--	--	--	--	--	--	--	--	--
APR											
16...	150	44	37	15	92	56	3.2	5.0	110	240	4.6
20...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
MAY											
09...	420	180	98	43	250	56	5.3	8.8	240	640	7.7
JUN											
12...	330	26	45	52	370	86	8.9	13	300	840	24
JUL											
11...	330	96	76	33	350	79	6.2	12	230	810	15
AUG											
08...	340	20	72	39	370	69	8.7	11	320	860	12
SEP											
12...	340	11	74	38	360	69	8.5	12	330	830	10

K - Results based on colony count outside the acceptable range (non-ideal colony count).

06337000 LITTLE MISSOURI RIVER NEAR WATFORD CITY, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	FLUO-RIDE, TOTAL (MG/L AS F) (00951)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NITRATE TOTAL (MG/L AS N) (00620)	NITRO-GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)
OCT											
11...	.3	.3	11	1480	1490	2.01	280	--	.03	.02	--
NOV											
07...	--	.3	9.2	1620	1620	2.20	289	--	--	.01	--
DEC											
13...	--	.4	12	2390	2470	3.25	123	--	--	.15	--
JAN											
09...	--	.3	13	2290	2280	3.11	74.2	--	--	.10	--
MAR											
20...	--	.1	5.8	441	398	.60	2330	--	--	.48	--
29...	--	--	--	--	--	--	--	--	--	--	--
APR											
16...	1.2	.2	6.1	463	466	.63	6500	.40	.04	.44	--
20...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
MAY											
09...	.5	.3	7.4	1230	1200	1.67	2270	.06	.02	.08	--
JUN											
12...	.3	.3	7.8	1560	1530	2.12	754	.00	.02	.01	--
JUL											
11...	3.1	.4	8.4	1370	1440	1.86	843	.55	.02	.57	--
AUG											
08...	2.7	.4	11	1510	1570	2.05	383	.53	.02	.55	--
SEP											
12...	.5	.4	11	1570	1530	2.14	187	.00	.06	.03	.22

DATE	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, NH4 + ORG. SUSP. TOTAL (MG/L AS N) (00624)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, DIS-SOLVED (MG/L AS N) (00602)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHATE, TOTAL (MG/L AS PO4) (00650)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)
OCT											
11...	.09	.58	.67	.22	.45	.69	--	3.1	.08	--	.01
NOV											
07...	.07	.60	.67	.06	.61	.68	--	3.0	.08	--	.01
DEC											
13...	.11	.57	.68	.10	.58	.83	--	3.7	.04	--	.02
JAN											
09...	.10	.68	.78	.11	.67	.88	--	3.9	.02	--	.01
MAR											
20...	.03	1.4	1.4	.67	.73	1.9	--	8.3	.46	--	.01
29...	--	--	--	--	--	--	--	--	--	--	--
APR											
16...	.10	4.4	4.5	4.0	.47	4.9	--	22	2.0	6.1	.02
20...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
MAY											
09...	.01	.95	.96	.50	.46	1.0	--	4.6	.31	.95	.01
JUN											
12...	.01	.75	.76	.00	.82	.77	--	3.4	.06	.18	.01
JUL											
11...	.06	4.5	4.6	3.7	.94	5.2	--	23	2.6	--	.02
AUG											
08...	.01	1.5	1.5	.81	.69	2.1	--	9.1	1.0	--	.04
SEP											
12...	.07	1.1	1.2	.38	.82	1.2	1.0	5.4	.14	--	.01

06337000 LITTLE MISSOURI RIVER NEAR WATFORD CITY, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	ALUMINUM, TOTAL RECOVERABLE (UG/L AS AL) (01105)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DISSOLVED (UG/L AS AS) (01000)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA) (01007)	BARIUM, SUSPENDED RECOVERABLE (UG/L AS BA) (01006)	BARIUM, DISSOLVED (UG/L AS BA) (01005)	BERYLLIUM, TOTAL RECOVERABLE (UG/L AS BE) (01012)	BORON, TOTAL RECOVERABLE (UG/L AS B) (01022)	BORON, DISSOLVED (UG/L AS B) (01020)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD) (01027)	CADMIUM SUSPENDED RECOVERABLE (UG/L AS CD) (01026)
OCT											
11...	1200	2	--	0	--	--	0	350	--	1	--
NOV											
07...	--	2	1	0	0	0	--	--	--	1	0
APR											
16...	1700	30	--	1100	--	--	10	190	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
MAY											
09...	8300	6	--	200	--	--	0	330	--	1	--
JUN											
12...	590	1	2	0	0	0	0	450	420	1	0
JUL											
11...	670	31	--	700	--	--	0	410	--	1	--
AUG											
08...	41000	19	2	400	300	100	10	470	--	3	1
SEP											
12...	2000	3	--	200	--	--	10	390	--	0	--

DATE	CADMIUM DISSOLVED (UG/L AS CD) (01025)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) (01034)	CHROMIUM, SUSPENDED RECOV. (UG/L AS CR) (01031)	CHROMIUM, DISSOLVED (UG/L AS CR) (01030)	COBALT, TOTAL RECOVERABLE (UG/L AS CO) (01037)	COBALT, SUSPENDED RECOVERABLE (UG/L AS CO) (01036)	COBALT, DISSOLVED (UG/L AS CO) (01035)	COPPER, TOTAL RECOVERABLE (UG/L AS CU) (01042)	COPPER, SUSPENDED RECOVERABLE (UG/L AS CU) (01041)	COPPER, DISSOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOVERABLE (UG/L AS FE) (01045)
OCT											
11...	--	10	--	--	0	--	--	10	--	--	2300
NOV											
07...	1	0	0	0	2	2	0	12	8	4	3000
APR											
16...	--	60	--	--	36	--	--	320	--	--	92000
20...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
MAY											
09...	--	30	--	--	11	11	--	14	--	--	16000
JUN											
12...	3	10	10	0	2	1	1	10	0	50	1100
JUL											
11...	--	100	--	--	53	--	--	200	--	--	120000
AUG											
08...	2	90	80	10	43	43	0	100	93	7	77000
SEP											
12...	--	10	--	--	3	--	--	12	--	--	5900

DATE	IRON, DISSOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOVERABLE (UG/L AS PB) (01051)	LEAD, SUSPENDED RECOVERABLE (UG/L AS PB) (01050)	LEAD, DISSOLVED (UG/L AS PB) (01049)	LITHIUM TOTAL RECOVERABLE (UG/L AS LI) (01132)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN) (01055)	MANGANESE, SUSPENDED RECOV. (UG/L AS MN) (01054)	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOVERABLE (UG/L AS HG) (71900)	MERCURY SUSPENDED RECOVERABLE (UG/L AS HG) (71895)	MERCURY DISSOLVED (UG/L AS HG) (71890)	MOLYBDENUM, TOTAL RECOVERABLE (UG/L AS MO) (01062)
OCT												
11...	--	--	--	--	70	80	--	--	.2	--	--	8
NOV												
07...	20	11	11	0	--	120	100	20	.0	.0	.0	--
APR												
16...	--	--	--	--	100	2900	--	--	.4	--	--	0
MAY												
09...	--	95	--	--	70	350	--	--	.4	--	--	3
JUN												
12...	130	7	0	19	80	40	0	80	.1	.0	1.0	5
JUL												
11...	--	85	--	--	140	2700	--	--	.3	--	--	5
AUG												
08...	30	63	61	2	140	1400	1400	0	.4	.4	.0	0
SEP												
12...	--	7	--	--	80	220	--	--	.0	--	--	4

06337000 LITTLE MISSOURI RIVER NEAR WATFORD CITY, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	NICKEL, TOTAL RECOVERABLE (UG/L AS NI) (01067)	SELENIUM, TOTAL (UG/L AS SE) (01147)	SELENIUM, SUSPENDED TOTAL (UG/L AS SE) (01146)	SELENIUM, DISSOLVED (UG/L AS SE) (01145)	SILVER, TOTAL RECOVERABLE (UG/L AS AG) (01077)	SILVER, SUSPENDED RECOVERABLE (UG/L AS AG) (01076)	SILVER, DISSOLVED (UG/L AS AG) (01075)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN) (01092)	ZINC, SUSPENDED RECOVERABLE (UG/L AS ZN) (01091)	ZINC, DISSOLVED (UG/L AS ZN) (01090)	CARBON, ORGANIC DISSOLVED (MG/L AS C) (00681)
OCT											
11...	7	1	--	--	0	--	--	30	--	--	9.7
NOV											
07...	--	0	0	0	0	0	0	30	20	10	8.2
DEC											
13...	--	--	--	--	--	--	--	--	--	--	10
JAN											
09...	--	--	--	--	--	--	--	--	--	--	9.4
MAR											
20...	--	--	--	--	--	--	--	--	--	--	19
APR											
16...	130	3	--	--	0	--	--	390	--	--	9.2
MAY											
09...	23	2	--	--	0	--	--	80	--	--	9.1
JUN											
12...	10	1	0	1	0	0	0	40	0	90	8.2
JUL											
11...	130	1	--	--	0	--	--	470	--	--	12
AUG											
08...	140	4	0	4	0	0	0	330	310	20	15
SEP											
12...	16	1	--	--	0	--	--	20	--	--	14

DATE	CARBON, ORGANIC SUSPENDED TOTAL (MG/L AS C) (00689)	PCB, TOTAL (UG/L) (39516)	PCB, TOTAL IN BOTTOM MATERIAL (UG/KG) (39519)	ALDRIN, TOTAL (UG/L) (39330)	ALDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG) (39333)	CHLORDANE, TOTAL (UG/L) (39350)	CHLORDANE, TOTAL IN BOTTOM MATERIAL (UG/KG) (39351)	DDD, TOTAL (UG/L) (39360)	DDD, TOTAL IN BOTTOM MATERIAL (UG/KG) (39363)	DDE, TOTAL (UG/L) (39365)	DDE, TOTAL IN BOTTOM MATERIAL (UG/KG) (39368)
OCT											
11...	1.5	--	--	--	--	--	--	--	--	--	--
NOV											
07...	1.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
DEC											
13...	.2	--	--	--	--	--	--	--	--	--	--
JAN											
09...	.2	--	--	--	--	--	--	--	--	--	--
MAR											
20...	5.8	--	--	--	--	--	--	--	--	--	--
APR											
16...	--	--	--	--	--	--	--	--	--	--	--
MAY											
09...	2.8	ND	--	ND	--	ND	--	ND	--	ND	--
JUN											
12...	1.0	--	--	--	--	--	--	--	--	--	--
JUL											
11...	.9	--	--	--	--	--	--	--	--	--	--
AUG											
08...	2.1	ND	--	ND	--	ND	--	ND	--	ND	--
SEP											
12...	3.0	--	--	--	--	--	--	--	--	--	--

DATE	DDT, TOTAL (UG/L) (39370)	DDT, TOTAL IN BOTTOM MATERIAL (UG/KG) (39373)	DIAZINON, TOTAL (UG/L) (39570)	DIAZINON, TOTAL IN BOTTOM MATERIAL (UG/KG) (39571)	DIELDRIN TOTAL (UG/L) (39380)	DIELDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG) (39383)	ENDRIN, TOTAL (UG/L) (39390)	ENDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG) (39393)	ETHION, TOTAL (UG/L) (39398)	ETHION, TOTAL IN BOTTOM MATERIAL (UG/KG) (39399)	HEPTACHLOR, TOTAL (UG/L) (39410)
OCT											
11...	--	--	--	--	--	--	--	--	--	--	--
NOV											
07...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MAY											
09...	ND	--	ND	--	ND	--	ND	--	ND	--	ND
JUN											
12...	--	--	--	--	--	--	--	--	--	--	--
JUL											
11...	--	--	--	--	--	--	--	--	--	--	--
AUG											
08...	ND	--	ND	--	ND	--	ND	--	ND	--	ND
SEP											
12...	--	--	--	--	--	--	--	--	--	--	--

Whole water ND - Not detected at 0.01 µg/L level.
Bed material ND - Not detected at 0.1 µg/mg level.

06337000 LITTLE MISSOURI RIVER NEAR WATFORD CITY, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	HEPTACHLOR, TOTAL IN BOTTOM MATERIAL (UG/KG) (39413)	HEPTACHLOR EPOXIDE TOTAL (UG/L) (39420)	HEPTACHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG) (39423)	LINDANE TOTAL (UG/L) (39340)	LINDANE TOTAL IN BOTTOM MATERIAL (UG/KG) (39343)	MALATHION, TOTAL (UG/L) (39530)	MALATHION, TOTAL IN BOTTOM MATERIAL (UG/KG) (39531)	METHOXYCHLOR, TOTAL (UG/L) (39480)	METHOXYCHLOR, TOT. IN BOTTOM MATL. (UG/KG) (39481)	METHYL PARATHION, TOTAL (UG/L) (39600)	METHYL PARATHION, TOT. IN BOTTOM MATL. (UG/KG) (39601)
OCT											
11...	--	--	--	--	--	--	--	--	--	--	--
NOV											
07...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MAY											
09...	--	ND	--	ND	--	ND	--	ND	--	ND	--
JUN											
12...	--	--	--	--	--	--	--	--	--	--	--
JUL											
11...	--	--	--	--	--	--	--	--	--	--	--
AUG											
08...	--	ND	--	ND	--	ND	--	ND	--	ND	--
SEP											
12...	--	--	--	--	--	--	--	--	--	--	--

DATE	METHYL TRITHION, TOTAL (UG/L) (39790)	METHYL TRITHION, TOT. IN BOTTOM MATL. (UG/KG) (39791)	PARATHION, TOTAL (UG/L) (39540)	PARATHION, TOTAL IN BOTTOM MATERIAL (UG/KG) (39541)	TOXAPHENE, TOTAL (UG/L) (39400)	TOXAPHENE, TOTAL IN BOTTOM MATERIAL (UG/KG) (39403)	TOTAL TRITHION (UG/L) (39786)	TRITHION, TOTAL IN BOTTOM MATERIAL (UG/KG) (39787)	PHYTOPLANKTON, TOTAL (CELLS PER ML) (60050)	PERIPHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M (00573)	PERIPHYTON BIOMASS ASH WEIGHT G/SQ M (00572)
OCT											
11...	--	--	--	--	--	--	--	--	--	--	--
NOV											
07...	ND	ND	ND	ND	ND	ND	ND	ND	79000	.000	.000
MAY											
09...	ND	--	ND	--	ND	--	ND	--	1900	--	--
JUN											
12...	--	--	--	--	--	--	--	--	24000	--	--
JUL											
11...	--	--	--	--	--	--	--	--	32000	2.52	2.28
AUG											
08...	ND	--	ND	--	ND	--	ND	--	4900	--	--
SEP											
12...	--	--	--	--	--	--	--	--	19000	.160	.080

DATE	CHLOR-A PERIPHYTON CHROMOGRAPHIC FLUORUM (MG/M2) (70957)	CHLOR-B PERIPHYTON CHROMOGRAPHIC FLUORUM (MG/M2) (70958)	LENGTH OF EXPOSURE (DAYS) (00022)	SEDIMENT, SUSPENDED (MG/L) (80154)	SEDIMENT DISCHARGE, SUSPENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT						
11...	--	--	--	132	25	88
NOV						
07...	.000	.000	22	226	40	94
DEC						
13...	--	--	--	52	2.7	81
JAN						
09...	--	--	--	34	1.1	58
MAR						
20...	--	--	--	1120	5930	95
APR						
16...	--	--	--	7780	109000	85
MAY						
09...	--	--	--	1130	2090	52
JUN						
12...	--	--	--	72	35	91
JUL						
11...	.220	.000	26	4580	2820	99
AUG						
08...	--	--	--	3680	934	99
SEP						
12...	.000	.000	30	223	26	99

Whole water ND - Not detected at 0.01 µg/L level.
Bed material ND - Not detected at 0.1 µg/mg level.

06337000 LITTLE MISSOURI RIVER NEAR WATFORD CITY, ND--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1600	2100	3000			---	800	1350	1810	2050	2000	2100
2	1700	2200	---			---	650	1650	1900	2000	1820	2100
3	1700	2210	3000			---	810	1650	1900	2080	2030	2010
4	1400	2100	3000			---	800	1590	1900	2080	2000	2050
5	1700	2000	2900			---	650	1570	1800	2020	1720	1600
6	1900	2250	3000			---	750	1550	1700	2050	2000	2000
7	1650	2100	3100			---	700	1600	2000	2070	2000	2000
8	1900	2300	3000			---	660	1670	1750	1750	2020	2050
9	2000	2000	3000			---	675	1650	2000	2050	2000	2000
10	2000	2000	3020			---	650	1710	1910	2080	2000	1900
11	2010	1900	3000			---	735	1900	1990	2010	2100	2000
12	2000	2200	3000			---	800	1800	2000	2000	2040	2010
13	2010	2250	3000			---	790	2000	2000	1750	1900	1750
14	2010	2190	3000			810	750	1900	2000	1800	1800	2000
15	2000	---	2990			---	700	1850	1600	1710	1900	1500
16	1950	2400	2700			820	700	1900	1950	1800	2000	1700
17	2050	2600	2650			690	650	1950	2000	2000	1900	1800
18	2000	---	2950			650	650	2000	1800	2010	1600	1600
19	2000	2600	3000			610	890	1750	1900	2100	2000	1500
20	2080	2600	3000			710	950	2000	1950	2150	2010	1700
21	2010	2670	3000			700	900	2100	2000	2100	2000	1650
22	2020	---	3000			660	810	2000	2000	1500	2090	1600
23	2020	2670	3000			690	750	2000	1900	2010	2090	1310
24	2200	2800	3000			690	800	2010	1900	1900	2050	1650
25	2190	---	3000			650	990	1820	1900	1250	2090	1900
26	2200	2800	3000			710	1000	2000	2000	1500	2100	1800
27	2200	2890	3010			750	1010	2000	2000	1500	2100	1810
28	2050	---	3020			810	1200	2000	2010	1700	2100	2000
29	2100	3000	---			710	1210	1800	2050	1850	2090	2000
30	2090	2950	---			775	1350	1850	2020	2000	2100	2000
31	2090	---	---			750	---	1800	---	1800	2100	---
MEAN	1970	2390	2980			717	825	1820	1920	1890	1990	1840

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14.0	5.0	2.0			---	1.0	10.0	16.0	21.0	22.0	16.0
2	11.0	5.5	2.0			---	1.0	7.0	17.0	23.0	20.0	19.0
3	12.0	7.0	2.0			---	1.0	9.0	17.0	23.0	22.0	19.0
4	10.0	9.0	2.0			---	2.0	7.0	18.0	23.0	21.0	20.0
5	5.0	6.5	2.0			---	1.0	8.0	18.0	20.0	20.0	16.0
6	11.0	2.0	2.0			---	1.0	9.0	17.0	19.0	20.0	15.0
7	7.0	3.0	2.0			---	4.0	7.0	16.0	21.0	20.0	15.0
8	10.0	6.0	1.0			---	4.0	7.0	18.0	20.0	19.0	15.0
9	9.0	6.0	2.0			---	4.0	8.0	19.0	20.0	21.0	19.0
10	10.0	4.0	2.0			---	4.5	6.0	18.0	20.0	18.0	17.0
11	11.0	3.0	2.0			---	4.5	5.0	19.0	22.0	18.0	13.0
12	8.0	3.0	2.0			---	3.5	6.0	20.0	22.0	21.0	14.0
13	9.0	4.0	3.0			---	3.0	9.0	22.0	20.0	19.0	11.0
14	9.0	3.0	2.0			1.0	5.0	11.0	20.0	17.0	14.0	10.0
15	8.0	4.0	3.0			---	4.5	15.0	18.0	17.0	15.0	12.0
16	7.0	3.0	2.0			5.0	6.0	14.0	19.0	18.0	16.0	13.0
17	8.0	3.0	2.0			3.0	11.0	16.0	19.0	19.0	18.0	17.0
18	8.0	---	2.0			1.0	11.0	16.0	16.0	20.0	18.0	12.0
19	9.0	3.0	2.0			1.0	11.0	10.0	19.0	21.0	22.0	15.0
20	10.0	3.0	1.5			2.0	10.5	13.0	17.0	23.0	19.0	12.0
21	11.0	2.0	1.5			3.0	11.0	15.0	18.0	23.0	20.0	10.0
22	6.0	---	2.0			3.0	10.5	13.0	19.0	21.0	19.0	14.0
23	6.0	3.0	2.0			2.5	9.0	12.0	17.0	21.0	15.0	13.0
24	8.0	4.0	2.0			2.0	12.5	15.0	19.0	21.0	15.0	12.0
25	9.5	---	2.0			1.0	7.5	17.0	19.0	19.0	18.0	20.0
26	8.0	2.5	2.0			1.5	5.0	17.0	18.0	21.0	16.0	17.0
27	5.0	3.0	2.0			1.5	5.0	18.0	19.0	20.0	16.0	15.0
28	8.5	---	2.0			1.5	9.0	19.0	20.0	20.0	15.0	22.0
29	8.5	2.0	---			2.0	7.5	15.0	19.0	22.0	17.0	12.0
30	6.0	2.0	---			1.5	8.0	15.0	21.0	19.0	19.0	12.0
31	5.0	---	---			2.5	---	14.0	---	19.0	19.0	---
MEAN	8.5	4.0	2.0			2.0	6.0	11.5	18.5	20.5	18.5	15.0

06337000 LITTLE MISSOURI RIVER NEAR WATFORD CITY, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1978 TO SEPTEMBER 1979

DATE	NOV 7,78	MAY 9,79	JUN 12,79	JUL 11,79	AUG 8,79	SEP 12,79
TIME	1115	1020	1140	1100	1035	0850
TOTAL CELLS/ML	79000	1900	24000	32000	4900	19000
DIVERSITY: DIVISION	0.7	0.6	1.1	0.2	1.1	0.9
.CLASS	0.7	0.6	1.1	0.2	1.1	0.9
..ORDER	0.9	0.6	1.2	0.2	1.1	1.0
...FAMILY	1.1	0.6	1.3	0.2	1.5	1.3
....GENUS	1.1	1.2	1.5	0.2	2.1	1.8

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)												
.CHLOROPHYCEAE												
..CHLOROCOCCALES												
...CHLOROCOCCACEAE												
....CHLOROCOCCUM	--	-	--	-	--	-	--	-	--	-	*	0
...OOCYSTACEAE												
....ANKISTRODESMUS	11000	14	1400#	73	7900#	33	--	-	1700#	35	--	-
....CHLORELLA	--	-	--	-	--	-	--	-	--	-	1100	6
....DICTYOSPHAERIUM	--	-	--	-	350	1	--	-	1200#	24	--	-
....KIRCHNERIELLA	--	-	290#	15	--	-	--	-	--	-	--	-
....SELENASTRUM	*	0	--	-	260	1	--	-	--	-	--	-
....TREUBARIA	--	-	--	-	260	1	--	-	--	-	--	-
...SCENEDESMACEAE												
....ACTINASTRUM	1800	2	--	-	--	-	--	-	--	-	11000#	58
....SCENEDESMUS	910	1	--	-	170	1	--	-	580	12	450	2
....TETRASTRUM	--	-	--	-	--	-	--	-	--	-	300	2
..VOLVOCALES												
...CHLAMYDOMONADACEAE												
....CHLAMYDOMONAS	*	0	--	-	--	-	--	-	--	-	480	2
CHRYSOPHYTA												
.BACILLARIOPHYCEAE												
..CENTRALES												
...CUSCINODISCACEAE												
....CYCLOTELLA	--	-	--	-	*	0	--	-	--	-	--	-
..PENNALES												
...NITZSCHIACEAE												
....NITZSCHIA	*	0	140	8	520	2	1300	4	290	6	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)												
.CYANOPHYCEAE												
..CHROOCOCCALES												
...CHROOCOCCACEAE												
....ANACYSTIS	2700	3	--	-	350	1	--	-	--	-	--	-
..HORMOGONALES												
...NOSTOCACEAE												
....ANABAENA	--	-	--	-	14000#	58	--	-	--	-	1500	8
....ANABAENOPSIS	--	-	--	-	--	-	--	-	--	-	4200#	22
...OSCILLATORIACEAE												
....LYNGBYA	62000#	78	--	-	--	-	--	-	1200#	24	--	-
....OSCILLATORIA	--	-	--	-	--	-	31000#	96	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)												
.EUGLENOPHYCEAE												
..EUGLENALES												
...EUGLENACEAE												
....TRACHELOMONAS	--	-	72	4	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06338000 LAKE SAKAKAWEA NEAR RIVERDALE, ND

LOCATION.--Lat 47°30'10", long 101°25'50", in S½ sec.31, T.147 N., R.84 W., Mercer County, Hydrologic Unit 10110101, in control structure of Garrison Dam, 2.5 mi (4.0 km) west of Riverdale, 14 mi (23 km) upstream from Knife River, and at mile 1,389.9 (2,236.3 km).

DRAINAGE AREA.--181,400 mi^2 (469,800 km^2), approximately.

PERIOD OF RECORD.--October 1953 to current year. Prior to October 1966, published as Garrison Reservoir near Riverdale.

REVISED RECORDS.--WSP 1559: 1957(M).

GAGE.--Water-stage recorder. Datum of gage is at National Geodetic Vertical Datum of 1929.

REMARKS.--Reservoir is formed by earth-fill dam; storage began in November 1953. Maximum capacity, 24,200,000 acre-ft (29.8 km^3) below elevation 1,854.0 ft (565.10 m), top of 29-ft (8.84 m) gates. Normal maximum, 22,700,000 acre-ft (28.0 km^3) below elevation 1,850.0 ft (563.88 m), of which about 4,300,000 acre-ft (5.30 km^3) is designated for flood control. Elevation of crest of spillway, 1,825.0 ft (556.26 m), surmounted by radial gates. Inactive storage, 5,000,000 acre-ft (6.16 km^3) below elevation 1,775.0 ft (541.02 m). Dead storage, zero at elevation 1,672.0 ft (509.63 m). Snake Creek arm of the reservoir has connecting gate to main reservoir, with sill at elevation, 1,810 ft (551.69 m). 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.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 24,368,000 acre-ft (30.0 km^3) July 25, 1975, elevation, 1,854.6 ft (565.28 m); minimum since first reaching spillway level, 12,527,000 acre-ft (15.4 km^3) March 17, 1963, elevation, 1,816.4 ft (553.64 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 21,222,000 acre-ft (26.2 km^3) July 13, elevation, 1,846.1 ft (562.69 m); minimum, 17,346,000 acre-ft (21.4 km^3) Mar. 15, elevation, 1,834.3 ft (559.09 m).

MONTHEND ELEVATION AND CONTENTS, AT 2400, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30	1845.7	21,110,000	--
Oct. 31	1843.8	20,441,000	-669,000
Nov. 30	1840.9	19,411,000	-1,030,000
Dec. 31	1839.8	19,067,000	-344,000
CAL YR 1978	--	--	+2,696,000
Jan. 31	1836.8	18,127,000	-940,000
Feb. 28	1834.9	17,566,000	-561,000
Mar. 31	1837.0	18,178,000	+612,000
Apr. 30	1843.9	20,449,000	+2,271,000
May 31	1844.8	20,793,000	+344,000
June 30	1845.3	21,031,000	+238,000
July 31	1846.0	21,186,000	+155,000
Aug. 31	1845.6	20,996,000	-190,000
Sept. 30	1844.6	20,716,000	-280,000
WTR YR 1979	--	--	-394,000

06338490 MISSOURI RIVER AT GARRISON DAM, ND

LOCATION.--Lat 47°30'08", long 101°25'50", in S½ sec.31, T.147 N., R.84 W., Mercer County, Hydrologic Unit 10130101, downstream from dam at National Fish Hatchery's supply line from penstocks 4 and 5, in control structure of Garrison Dam, 2.5 mi (4.0 km) west of Riverdale, 14 mi (23 km) upstream from Knife River, and at mile 1,389.9 (2,236.3 km).

DRAINAGE AREA.--181,400 mi^2 (469,800 km^2), approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1969 to current year.

GAGE.--Flow meter and gate readings.

REMARKS.--Records good. Many diversions above station. Flow regulated by Lake Sakakawea (station 06338000). Prior to October 1969 records were obtained at a site 9.1 mi (14.6 km) 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.

AVERAGE DISCHARGE.--10 years, 26,720 ft^3/s (757 m^3/s), 19,359,000 acre-ft/yr (23.9 km^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 65,200 ft^3/s (1,850 m^3/s) July 25, 1975; minimum daily, 6,000 ft^3/s (170 m^3/s) Sept. 29, 1974.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 39,600 ft^3/s (1,121 m^3/s) Nov. 30, May 21, June 1, 13, 15; minimum daily, 15,900 ft^3/s (450 m^3/s) Dec. 9.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	35500	32500	33000	26500	32500	29900	24700	30800	39600	30000	21900	19100
2	31100	32500	29100	27800	32200	29800	25200	31000	39500	29900	22400	17900
3	31400	32500	28800	27500	32100	29900	24800	31200	39500	29300	22900	18100
4	31400	32600	29100	28300	32000	29700	25800	31300	39500	28100	22500	18000
5	31300	32600	29400	28800	32100	29800	26700	31200	39500	29800	22100	18000
6	31300	32500	29200	28200	32100	29700	25900	31300	39500	28900	22800	18100
7	31400	32400	22200	29100	32200	29900	26900	31100	39400	27900	22000	18000
8	31400	32500	20300	29700	32100	30000	25400	31100	39500	27700	21800	18100
9	31400	32600	15900	29700	32300	29100	27000	31200	39500	27400	21700	17000
10	31500	32700	16800	29800	29600	29600	26400	31200	39500	27600	22300	17100
11	31400	32700	16700	29200	29500	26000	26800	34400	39500	27700	21100	17300
12	31500	32500	16800	29000	32400	30000	26500	38700	39500	27700	18600	17400
13	31600	32600	16300	30000	31300	29900	29200	39200	39600	27400	19900	17100
14	31500	32600	16500	29500	30000	30100	29300	39200	39500	25700	22300	16800
15	31500	32600	18200	30600	30100	29900	17500	39200	39600	25900	20100	16800
16	31500	32600	19600	30400	29600	29500	27100	39300	39500	25800	21100	17000
17	31300	32600	20300	31900	29900	28900	26900	39300	39500	26100	20800	16800
18	31400	32500	21700	32200	29700	24700	27300	39300	39500	26000	20100	16900
19	31300	32500	22200	30600	29500	24800	28200	39400	39500	24400	21000	17100
20	31400	32600	22600	32000	29300	25400	29100	39500	36300	24500	20200	16900
21	31500	32600	23800	32000	29700	24900	30200	39600	33300	24100	20400	17400
22	31400	32600	24300	32100	29700	24300	31100	39400	31400	24000	20500	17400
23	31500	32600	24400	31400	29800	24400	30300	39400	29900	25100	20200	17400
24	31500	35300	24300	31800	29200	24600	29500	39400	29800	24000	20700	17500
25	31800	35000	24400	31900	28100	24400	31300	39400	29600	25900	20200	17400
26	32300	35000	24500	32300	29100	24000	31100	39500	30200	22400	20200	17400
27	31500	34900	24500	32200	27600	23900	30400	39500	30100	21900	20100	17100
28	31600	34400	24500	32800	28100	24000	30500	39500	30100	22800	20400	17100
29	32400	34000	25700	32100	---	25200	30300	39400	30400	22000	20900	17300
30	32400	39600	26100	33100	---	24800	30300	39500	29600	22900	21000	17100
31	32500	---	26600	33100	---	24800	---	39500	---	22400	20100	---
TOTAL	982500	997200	717800	945600	851800	845900	831700	1133000	1091400	805300	652300	522600
MEAN	31690	33240	23150	30500	30420	27290	27720	36550	36380	25980	21040	17420
MAX	35500	39600	33000	33100	32500	30100	31300	39600	39600	30000	22900	19100
MIN	31100	32400	15900	26500	27600	23900	17500	30800	29600	21900	18600	16800
AC-FT	1949000	1978000	1424000	1876000	1690000	1678000	1650000	2247000	2165000	1597000	1294000	1037000

CAL YR 1978 TOTAL 10261500 MEAN 28110 MAX 39600 MIN 6300 AC-FT 20350000
WTR YR 1979 TOTAL 10377100 MEAN 28430 MAX 39600 MIN 15900 AC-FT 20580000

06338490 MISSOURI RIVER AT GARRISON DAM, ND--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

LOCATION.--Samples collected at National Fish Hatchery's supply line from penstocks 4 and 5, in control structure of Garrison Dam.

PERIOD OF RECORD.--Water years 1972 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1971 to current year.
WATER TEMPERATURES: October 1971 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 830 micromhos Mar. 5-8, 1974; minimum daily, 553 micromhos Dec. 24, 1975.
WATER TEMPERATURES: Maximum daily, 17.5°C Oct. 1, 2, 1978; minimum daily, 0.0°C on many days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 800 micromhos Dec. 4, 5, Jan. 14, May 2, Aug. 6; minimum daily, 670 micromhos Oct. 13.
WATER TEMPERATURES: Maximum daily, 17.5°C Oct. 1, 2; minimum daily, 1.0°C Dec. 23, 24, Feb. 2.

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	PH (UNITS) (00400)	TEMPERATURE, AIR (DEG C) (00020)	TEMPERATURE (DEG C) (00010)	TURBIDITY (NTU) (00076)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN DEMAND, CHEMICAL (HIGH LEVEL) (MG/L) (00340)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARDNESS (MG/L AS CACO3) (00900)
OCT											
25...	1020	720	8.4	6.0	12.5	1.0	9.5	100	<1	K1	230
DEC											
01...	1120	730	8.3	--	6.0	.50	11.0	--	<1	<1	220
18...	1400	742	8.3	--	4.5	.70	12.4	--	<0	<0	220
JAN											
24...	0930	710	8.2	-15.0	3.0	.60	12.8	--	<1	<1	220
FEB											
20...	1530	722	8.5	-8.0	1.5	.50	12.4	--	<1	<1	230
APR											
06...	1130	750	8.4	-1.0	2.0	.80	11.8	--	<1	<1	240
24...	1310	760	8.2	3.5	2.0	.40	12.1	10	--	--	240
MAY											
24...	1340	730	8.2	25.0	3.5	1.9	12.9	11	<1	<1	240
JUN											
26...	1545	700	8.3	28.0	8.0	.50	11.0	--	K1	<1	230
JUL											
27...	1120	710	8.1	23.0	9.0	.50	9.5	9	K1	K9	230
AUG											
30...	1145	742	8.0	--	9.0	.70	8.0	15	<1	K4	240
SEP											
26...	1400	730	8.0	30.5	11.0	1.6	6.6	15	K1	K4	230

DATE	HARDNESS, NONCARBONATE (MG/L CACO3) (00902)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM ADSORPTION RATIO (00931)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	ALKALINITY (MG/L AS CACO3) (00410)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, TOTAL (MG/L AS F) (00951)
OCT											
25...	80	54	23	77	42	2.2	4.6	150	220	9.9	.3
DEC											
01...	78	51	22	63	38	1.9	4.6	140	210	9.9	--
18...	78	51	22	61	37	1.8	4.8	140	200	11	--
JAN											
24...	80	52	22	69	40	2.0	4.8	140	220	9.7	--
FEB											
20...	88	55	22	70	40	2.0	4.2	140	210	7.5	--
APR											
06...	94	58	24	71	38	2.0	4.3	150	210	11	--
24...	95	60	23	68	37	1.9	4.2	150	220	11	.6
MAY											
24...	85	58	22	68	38	1.9	4.3	150	220	9.7	.3
JUN											
26...	77	53	23	74	41	2.1	4.1	150	220	12	--
JUL											
27...	78	55	22	68	51	2.0	4.7	150	230	9.3	4.4
AUG											
30...	89	56	24	70	38	2.0	4.3	150	240	10	.3
SEP											
26...	92	55	23	67	51	1.9	4.3	140	210	8.9	.5

K - Results based on colony count outside the acceptable range (non-ideal colony count).

06338490 MISSOURI RIVER AT GARRISON DAM, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	FLUORIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NITRATE TOTAL (MG/L AS N) (00620)	NITRO-GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)
OCT											
25...	.4	7.4	470	486	.64	40400	.19	.00	.19	--	.00
DEC											
01...	.4	7.5	466	453	.63	41500	--	--	.25	--	.01
18...	.4	7.6	468	442	.64	27400	--	--	.22	--	.01
JAN											
24...	.4	8.0	474	470	.64	40700	--	--	.24	--	.02
FEB											
20...	.4	8.7	471	462	.64	37300	--	--	.12	--	.04
APR											
06...	.5	8.3	491	477	.67	34300	--	--	.09	--	.02
24...	.5	8.2	503	485	.68	40100	.15	.00	.15	--	.06
MAY											
24...	.5	7.5	482	480	.66	51300	.15	.02	.17	--	.03
JUN											
26...	.5	8.3	477	465	.65	38900	.14	.00	.14	--	.06
JUL											
27...	.5	7.9	495	488	.67	29300	.20	.00	.20	--	.01
AUG											
30...	.5	8.0	493	503	.67	26000	.23	.02	.25	--	.00
SEP											
26...	.5	7.5	489	462	.67	23000	.26	.00	.26	.26	.01

DATE	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, NH4 + ORG. SUSP. TOTAL (MG/L AS N) (00624)	NITRO-GEN, AMMONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, DIS-SOLVED (MG/L AS N) (00602)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHATE, TOTAL (MG/L AS PO4) (00650)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	ALUM-INUM, TOTAL RECOV-ERABLE (UG/L AS AL) (01105)
OCT											
25...	.36	.36	.04	.32	.55	--	2.4	.01	--	.00	70
DEC											
01...	.18	.19	.00	.30	.44	--	1.9	.01	--	.00	--
18...	.31	.32	.09	.23	.54	--	2.4	.01	--	.01	--
JAN											
24...	.33	.35	.14	.21	.59	--	2.6	.01	--	.01	--
FEB											
20...	.13	.17	.02	.15	.29	--	1.3	.01	--	.03	--
APR											
06...	.19	.21	.07	.14	.30	--	1.3	.00	--	.01	--
24...	.16	.22	.05	.17	.37	--	1.6	.01	.03	.02	50
MAY											
24...	.26	.29	.06	.23	.46	--	2.0	.02	--	.01	80
JUN											
26...	.03	.09	.00	.25	.23	--	1.0	.01	.03	.00	--
JUL											
27...	.38	.39	.02	.37	.59	--	2.6	.09	--	.01	110
AUG											
30...	.51	.51	.02	.49	.76	--	3.4	.19	--	.00	110
SEP											
26...	.37	.38	.01	.37	.64	.63	2.8	.00	--	.00	80

DATE	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BARIUM, SUS-PENDED RECOV-ERABLE (UG/L AS BA) (01006)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE) (01012)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE) (01010)	BORON, TOTAL RECOV-ERABLE (UG/L AS B) (01022)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD) (01027)	CADMIUM SUS-PENDED RECOV-ERABLE (UG/L AS CD) (01026)
OCT											
25...	--	1	--	0	--	--	0	--	200	1	--
DEC											
01...	--	--	--	--	--	--	--	--	--	--	--
18...	--	2	2	0	0	50	--	--	--	0	0
APR											
06...	--	--	--	--	--	--	--	--	--	--	--
24...	20	2	1	0	0	50	0	<1	130	0	0
MAY											
24...	--	1	--	0	--	--	0	--	140	--	--
JUN											
26...	--	--	--	--	--	--	--	--	--	--	--
JUL											
27...	--	3	--	100	--	--	0	--	120	0	--
AUG											
30...	--	2	--	200	--	--	10	--	110	0	--
SEP											
26...	0	2	2	--	--	50	0	<1	130	0	--

06338490 MISSOURI RIVER AT GARRISON DAM, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	CHRO-MIUM, SUS-PENDED RECOV. (UG/L AS CR) (01031)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO) (01037)	COBALT, SUS-PENDED RECOV-ERABLE (UG/L AS CO) (01036)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	COPPER, SUS-PENDED RECOV-ERABLE (UG/L AS CU) (01041)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)
OCT											
25...	--	0	--	--	0	--	--	3	--	--	300
DEC											
01...	--	--	--	--	--	--	--	--	--	--	--
18...	1	10	10	0	2	0	<3	4	3	1	80
APR											
06...	--	--	--	--	--	--	--	--	--	--	--
24...	2	10	10	0	0	0	<3	7	7	0	30
MAY											
24...	--	10	--	--	0	--	--	6	--	--	50
JUN											
26...	--	--	--	--	--	--	--	--	--	--	--
JUL											
27...	--	0	--	--	0	--	--	4	--	--	30
AUG											
30...	--	20	--	--	0	--	--	1	--	--	80
SEP											
26...	<1	10	--	0	--	--	<3	2	--	1	90

DATE	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	LEAD, SUS-PENDED RECOV-ERABLE (UG/L AS PB) (01050)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM TOTAL RECOV-ERABLE (UG/L AS LI) (01132)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MANGA-NESE, SUS-PENDED RECOV. (UG/L AS MN) (01054)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)
OCT										
25...	--	--	--	--	40	--	10	--	--	.0
DEC										
01...	--	--	--	--	--	--	--	--	--	--
18...	10	4	3	1	--	--	10	9	1	.0
APR										
06...	--	--	--	--	--	--	--	--	--	--
24...	0	18	18	0	50	50	0	0	<1	.1
MAY										
24...	--	--	--	--	50	--	10	--	--	.2
JUN										
26...	--	--	--	--	--	--	--	--	--	--
JUL										
27...	--	21	--	--	40	--	10	--	--	.2
AUG										
30...	--	2	--	--	40	--	30	--	--	.1
SEP										
26...	<10	4	--	0	50	50	10	--	<1	.1

DATE	MERCURY SUS-PENDED RECOV-ERABLE (UG/L AS HG) (71895)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, TOTAL RECOV-ERABLE (UG/L AS MO) (01062)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SELE-NIUM, SUS-PENDED TOTAL (UG/L AS SE) (01146)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)
OCT										
25...	--	--	1	--	3	--	1	--	--	0
DEC										
01...	--	--	--	--	--	--	--	--	--	--
18...	.0	.0	--	--	--	--	2	1	1	0
APR										
06...	--	--	--	--	--	--	--	--	--	--
24...	.0	.1	3	<10	0	0	1	0	1	0
MAY										
24...	--	--	2	--	7	--	2	--	--	0
JUN										
26...	--	--	--	--	--	--	--	--	--	--
JUL										
27...	--	--	0	--	10	--	1	--	--	0
AUG										
30...	--	--	6	--	19	--	1	--	--	0
SEP										
26...	--	.0	8	<10	29	21	1	--	1	--

06338490 MISSOURI RIVER AT GARRISON DAM, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	SILVER, SUS-PENDED RECOV-ERABLE (UG/L AS AG) (01076)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	VANA-DIUM, DIS-SOLVED (UG/L AS V) (01085)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, SUS-PENDED RECOV-ERABLE (UG/L AS ZN) (01091)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	GROSS ALPHA, DIS-SOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DIS-SOLVED (PCI/L AS CS-137) (03515)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)
OCT										
25...	--	--	--	10	--	--	--	--	--	--
DEC										
01...	--	--	--	--	--	--	--	--	--	--
18...	0	0	--	20	20	4	--	--	--	--
JAN										
24...	--	--	--	--	--	--	--	--	--	--
FEB										
20...	--	--	--	--	--	--	--	--	--	--
APR										
06...	--	--	--	--	--	--	--	--	--	--
24...	0	0	.0	20	20	<3	--	--	--	--
MAY										
24...	--	--	--	20	--	--	--	--	--	--
JUN										
26...	--	--	--	--	--	--	--	--	--	--
JUL										
27...	--	--	--	30	--	--	--	--	--	--
AUG										
30...	--	--	--	10	--	--	--	--	--	--
SEP										
26...	--	0	1.0	10	--	<3	<5.8	<.4	4.6	.5

DATE	GROSS BETA, DIS-SOLVED (PCI/L AS SR/YT-90) (80050)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90) (80060)	RADIUM 226, DIS-SOLVED, RADON METHOD (PCI/L) (09511)	URANIUM DIS-SOLVED, EXTRAC-TION (UG/L) (80020)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C) (00689)	PHYTO-PLANK-TON, TOTAL (CELLS PER ML) (60050)	PERI-PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M (00573)	PERI-PHYTON BIOMASS ASH WEIGHT G/SQ M (00572)
OCT									
25...	--	--	--	--	9.2	.1	--	--	--
DEC									
01...	--	--	--	--	3.3	.1	69	--	--
18...	--	--	--	--	3.1	.1	--	--	--
JAN									
24...	--	--	--	--	3.8	.1	--	--	--
FEB									
20...	--	--	--	--	4.9	--	--	--	--
APR									
06...	--	--	--	--	2.2	--	43	--	--
24...	--	--	--	--	2.9	.2	--	--	--
MAY									
24...	--	--	--	--	3.7	--	7600	--	--
JUN									
26...	--	--	--	--	--	--	130	--	--
JUL									
27...	--	--	--	--	5.7	.1	0	.790	.550
AUG									
30...	--	--	--	--	6.0	.1	--	.080	.080
SEP									
26...	4.7	.5	.07	3.9	3.8	.2	140	2.60	2.13

DATE	CHLOR-A PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70957)	CHLOR-B PERI-PHYTON CHROMO-GRAPHIC FLUORUM (MG/M2) (70958)	LENGTH OF EXPO-SURE (DAYS) (00022)
JUL			
27...	.300	.000	--
AUG			
30...	.000	.000	34
SEP			
26...	22.0	.000	27

06338490 MISSOURI RIVER AT GARRISON DAM, ND--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	710	730	720	750	750	750	710	750	750	740	750	750
2	700	700	---	750	725	750	750	800	750	740	750	760
3	725	710	---	760	710	750	750	750	750	740	750	790
4	725	710	800	760	720	750	770	750	700	740	710	750
5	710	735	800	725	700	750	750	740	700	730	710	760
6	720	750	750	720	700	750	725	750	700	750	800	740
7	710	750	690	710	700	700	725	710	700	760	710	775
8	710	760	720	720	680	700	720	750	700	750	720	750
9	690	760	710	710	700	700	760	720	750	740	710	750
10	680	730	730	760	700	750	750	740	760	740	705	740
11	680	750	705	790	710	700	760	750	750	740	720	725
12	675	720	720	780	710	700	780	750	750	740	710	740
13	670	710	740	780	740	700	780	750	740	740	710	725
14	710	760	725	800	700	700	775	710	740	740	720	740
15	720	780	715	790	710	700	750	700	725	705	710	750
16	700	770	750	760	710	700	750	715	750	740	710	775
17	700	760	760	750	700	710	770	710	750	730	715	750
18	700	760	730	720	700	700	740	700	700	760	710	760
19	700	750	---	710	700	700	710	710	740	760	720	750
20	---	750	710	720	700	710	710	715	700	730	780	750
21	---	720	720	725	700	700	710	705	700	740	750	750
22	---	760	740	710	740	720	750	710	698	730	740	740
23	675	---	750	710	730	700	760	710	700	720	735	750
24	700	---	755	710	720	710	750	720	730	740	750	700
25	705	740	750	700	720	700	775	760	740	730	730	720
26	700	700	750	710	720	710	760	740	740	750	725	720
27	700	710	710	760	720	725	745	750	740	730	720	740
28	710	710	720	780	720	700	750	750	740	760	725	730
29	730	710	740	740	---	710	700	750	730	760	740	750
30	730	710	720	740	---	690	750	770	740	750	740	760
31	700	---	740	730	---	720	---	740	---	750	730	---
MEAN	703	736	735	741	712	715	746	735	729	741	729	746

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17.5	13.0	5.5	1.5	1.5	3.0	3.0	4.5	7.5	9.5	11.0	13.0
2	17.5	12.0	---	1.5	1.0	2.5	3.0	5.0	7.5	10.0	11.0	16.0
3	17.0	12.0	---	2.0	2.0	2.5	3.0	4.0	7.5	10.5	11.5	7.0
4	17.0	12.0	5.0	2.0	2.0	2.5	4.5	4.5	9.0	9.5	10.5	12.0
5	16.0	12.0	5.0	1.5	2.0	2.5	4.5	4.5	9.0	10.0	10.5	9.5
6	16.0	11.5	4.0	2.5	2.0	2.5	4.5	4.5	11.0	9.5	8.0	10.0
7	15.5	11.5	5.0	3.0	2.0	2.0	4.5	4.0	10.5	10.0	12.5	9.0
8	15.5	11.0	4.0	3.0	2.0	2.0	3.5	4.5	10.5	9.5	13.0	11.5
9	15.5	11.0	4.0	3.0	2.0	3.0	3.0	3.5	10.0	10.0	12.5	9.5
10	15.5	10.5	4.0	2.0	1.5	2.5	4.0	4.0	11.0	10.0	12.0	12.5
11	15.5	11.0	3.0	2.0	1.5	2.5	4.0	4.0	11.0	10.0	12.0	12.5
12	15.0	11.0	3.0	2.0	3.0	2.5	5.0	4.5	11.0	11.0	11.5	12.0
13	15.0	10.0	3.0	2.0	4.0	2.0	3.0	4.5	11.0	11.0	9.5	11.0
14	15.0	9.5	3.0	1.5	4.0	2.0	5.0	4.5	13.0	10.5	10.0	12.0
15	15.0	9.5	3.0	1.5	3.5	2.5	4.0	4.0	13.0	12.0	10.0	11.0
16	14.5	9.5	3.0	1.5	3.0	2.0	4.0	4.0	12.5	12.5	9.5	11.0
17	14.5	9.5	2.5	2.0	2.0	2.5	4.0	4.0	12.0	11.0	9.5	11.0
18	14.5	9.5	2.0	1.5	2.0	3.5	4.5	4.5	10.0	11.0	9.5	11.0
19	14.0	9.0	---	1.5	2.0	4.0	4.0	5.0	9.0	10.5	10.0	11.5
20	---	9.0	2.0	1.5	2.0	3.5	3.5	5.0	11.0	9.5	8.5	11.0
21	---	8.5	2.0	1.5	2.0	2.0	3.5	4.0	11.5	10.0	10.0	10.5
22	---	8.5	2.0	2.0	2.0	2.0	3.0	4.0	11.0	9.5	10.0	10.5
23	15.0	---	1.0	2.0	2.0	2.0	4.0	4.0	11.0	11.5	9.0	11.0
24	14.0	---	1.0	2.0	3.0	3.5	4.0	4.0	11.0	12.0	10.0	14.5
25	14.0	7.0	4.0	2.0	2.5	3.5	4.0	5.0	9.0	12.0	9.0	11.0
26	13.0	7.0	4.0	2.0	2.5	2.5	4.0	6.0	10.0	10.5	10.0	13.0
27	13.0	7.0	4.0	2.0	2.5	3.5	4.0	5.5	9.0	12.0	10.0	13.5
28	14.0	6.5	4.0	2.0	2.5	4.0	4.0	5.5	9.0	10.5	10.0	12.5
29	13.5	6.5	3.5	1.5	---	2.0	4.5	6.5	10.0	11.0	10.0	12.0
30	13.5	6.0	2.0	1.5	---	4.0	5.0	7.0	11.0	11.0	11.0	11.5
31	12.0	---	2.0	1.5	---	3.0	---	7.5	---	11.0	11.0	---
MEAN	15.0	9.5	3.0	2.0	2.5	2.5	4.0	4.5	10.5	10.5	10.5	11.5

06338490 MISSOURI RIVER AT GARRISON DAM, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1978 TO SEPTEMBER 1979

DATE	DEC 1,78	APR 6,79	MAY 24,79	JUN 26,79	JUL 27,79	SEP 26,79
TIME	1120	1130	1340	1545	1120	1400
TOTAL CELLS/ML	69	43	7600	130	0	140
DIVERSITY: DIVISION	0.0	0.9	0.0	1.4	0.0	0.7
.CLASS	0.0	0.9	0.0	1.4	0.0	0.7
..ORDER	0.7	0.9	0.5	1.4	0.0	0.7
...FAMILY	0.7	0.9	0.5	1.4	0.0	0.7
....GENUS	0.7	0.9	1.1	1.4	0.0	0.7

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)												
.CHLOROPHYCEAE												
..CHLOROCOCCALES												
...OOCYSTACEAE												
....ANKISTRODESMUS	--	-	14#	33	--	-	--	-	--	-	--	-
...SCENEDESMACEAE												
....SCENEDESMUS	--	-	--	-	--	-	--	-	--	-	26#	18
..VOLVOCALES												
...CHLAMYDOMONADACEAE												
....CHLAMYDOMONAS	--	-	--	-	--	-	13	10	--	-	--	-
CHRYSOPHYTA												
.BACILLARIOPHYCEAE												
..CENTRALES												
...COSCINODISCACEAE												
....CYCLOTELLA	55#	80	--	-	5500#	72	91#	70	--	-	--	-
....STEPHANODISCUS	--	-	--	-	1200#	16	--	-	--	-	--	-
..PENNALES												
...FRAGILARIACEAE												
....ASTERIONELLA	--	-	29#	67	940	12	--	-	--	-	--	-
...GOMPHONEMATACEAE												
....GOMPHONEMA	14#	20	--	-	--	-	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)												
.CRYPTOPHYCEAE												
..CRYPTOMONADALES												
...CRYPTOCHRYSIDACEAE												
....CHROOMONAS	--	-	--	-	--	-	13	10	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)												
.CYANOPHYCEAE												
..CHROOCOCCALES												
...CHROOCOCCACEAE												
....ANACYSTIS	--	-	--	-	--	-	13	10	--	-	--	-
..NOSTOCALES												
...NOSTOCACEAE												
....ANABAENA	--	-	--	-	--	-	--	-	--	-	120#	82

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

DISSOLVED OXYGEN AND WATER TEMPERATURE PROFILE, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	MG/L	DEGREES, C	DATE	MG/L	DEGREES, C	DATE	MG/L	DEGREES, C
Sept. 25, 1979			0200	6.8	9.5	1100	6.8	10.5
1900	6.9	12.0	0300	6.8	9.5	1200	6.8	11.0
2000	6.9	11.5	0400	6.8	9.0	1300	6.6	11.0
2100	6.8	11.0	0500	6.8	9.0	1400	6.6	11.0
2200	6.6	10.5	0600	6.9	9.0	1500	6.6	10.5
2300	6.7	10.5	0700	6.9	8.5	1600	6.6	11.0
2400	6.7	10.0	0800	6.9	10.0	1700	6.8	11.0
			0900	7.0	10.5	1800	6.7	11.0
Sept. 26, 1979			1000	6.9	10.5	1900	6.7	11.0
0100	6.8	9.5						

06339010 MISSOURI RIVER ABOVE STANTON, ND

LOCATION.--Lat 47°21'54", long 101°21'28", E½ sec.22, T.145 N., R.84 W., Mercer County, Hydrologic Unit 10130101, 9 mi (14 km) south of Riverdale, and at mile 1,378 (2,233 km).

DRAINAGE AREA.--181,400 mi^2 (469,800 km^2), approximately.

PERIOD OF RECORD.--October 1976 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1600.00 ft (487.680 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Stage regulated by Lake Sakakawea (station 06338000).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily gage height recorded, 72.24 ft (22.019 m) Jan. 29, 1977; minimum daily recorded, 64.80 ft (19.751 m) May 7, 1978.

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	70.19	69.37				---	67.95	68.06	70.28	68.97	67.52	67.28
2	69.31	69.38				---	68.07	69.04	70.29	68.82	67.60	66.95
3	69.23	69.37				---	67.98	69.06	70.29	69.03	67.64	66.83
4	69.29	69.40				---	68.09	69.06	70.28	68.76	67.69	66.92
5	69.25	69.33				---	68.20	69.09	70.31	68.61	67.46	66.74
6	69.27	69.30				---	68.31	69.11	70.27	69.02	67.74	66.81
7	69.31	69.36				---	68.17	69.08	70.26	68.51	67.66	66.95
8	69.31	69.38				---	68.18	69.05	70.27	68.63	67.43	66.93
9	69.31	69.36				---	68.60	69.05	70.29	68.67	67.44	66.84
10	69.32	69.33				---	68.18	69.07	70.28	68.60	67.30	66.62
11	69.30	---				---	68.44	69.34	70.30	68.44	67.38	66.72
12	69.30	---				---	68.37	70.17	70.31	68.75	67.08	66.67
13	69.32	---				68.72	68.69	70.26	70.35	68.51	67.27	66.56
14	69.32	---				68.83	68.94	70.28	70.30	68.25	67.48	66.65
15	69.12	---				68.85	67.48	70.32	70.31	68.33	67.39	66.40
16	---	---				68.62	67.94	70.31	70.31	68.29	67.24	66.71
17	---	---				68.96	68.82	70.27	70.31	68.32	67.38	66.33
18	---	---				67.92	68.97	70.26	70.34	68.34	67.18	66.66
19	---	---				67.85	68.94	70.28	70.32	68.07	67.25	66.62
20	---	---				68.26	69.26	70.29	69.93	68.17	67.17	66.59
21	---	---				68.07	68.57	70.34	69.44	68.00	67.34	66.67
22	---	---				67.86	68.57	70.28	69.13	67.93	67.16	66.63
23	---	---				68.00	68.57	70.28	68.94	67.95	67.33	66.56
24	---	---				67.91	68.15	70.30	68.88	68.09	67.14	66.57
25	---	---				67.87	68.06	70.30	68.94	68.18	67.20	66.42
26	69.37	---				67.71	68.06	70.29	68.90	67.86	67.20	66.68
27	69.24	---				68.11	68.06	70.31	68.94	67.91	67.14	---
28	69.25	---				67.81	68.06	70.32	69.08	67.78	68.72	---
29	69.38	---				68.02	68.06	70.27	68.94	67.63	67.27	66.37
30	69.36	---				68.06	68.03	70.26	68.82	67.56	67.28	66.45
31	69.37	---				68.06	---	70.28	---	67.84	67.27	---
TOTAL	---	---				---	2049.77	2164.68	2095.61	2117.82	2089.35	---
MEAN	---	---				---	68.33	69.83	69.85	68.32	67.40	---
MAX	---	---				---	69.26	70.34	70.35	69.03	68.72	---
MIN	---	---				---	67.48	68.06	68.82	67.56	67.08	---

06339100 KNIFE RIVER AT MANNING, ND

LOCATION.--Lat 47°14'10", long 102°46'10", in SE¼NW¼ sec.6, T.143 N., R.95 W., Dunn County, Hydrologic Unit 10130201, on left bank 50 ft (15 m) downstream from bridge on State Highway 22, and 0.4 mi (0.6 km) north of Manning.

DRAINAGE AREA.--205 mi^2 (531 km^2), approximately.

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Datum of gage is 2,156.55 ft (657.316 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--12 years, 26.1 ft^3/s (0.739 m^3/s) 18,910 acre-ft/yr (23.3 hm^3/yr); median of yearly mean discharges, 29 ft^3/s (0.82 m^3/s), 21,000 acre-ft/yr (26 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge 2,940 ft^3/s (83.3 m^3/s) June 15, 1970, gage height, 16.20 ft (4.938 m); no flow at times.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 300 ft^3/s (8.50 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Mar. 25	--	680	19.3	Backwater from ice		Apr. 18	1700	*1,380	39.1	14.47	4.410
Apr. 11	0700	1,170	33.1	13.98	4.261						

Minimum daily discharge, 0.17 ft^3/s (0.005 m^3/s) Sept. 22.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.8	2.5	2.9	2.0	2.0	3.0	75	21	5.4	1.7	5.4	.42
2	2.6	2.5	2.6	2.0	2.0	3.0	65	19	5.4	1.6	4.9	.39
3	2.9	2.5	2.3	2.0	2.0	3.0	50	17	4.7	1.6	2.8	.39
4	2.9	2.6	2.2	2.0	2.0	3.0	40	16	4.3	1.4	2.1	.36
5	2.9	2.5	2.2	2.0	2.0	3.0	30	16	4.3	1.4	1.6	.32
6	3.4	1.9	2.2	2.0	2.0	3.0	30	16	4.1	1.4	1.3	.29
7	4.5	2.4	2.2	2.0	2.0	3.0	40	21	4.1	1.4	1.1	.26
8	4.5	2.5	2.0	2.0	2.0	3.5	150	30	4.1	1.3	1.1	.23
9	4.1	2.9	2.0	2.0	2.0	4.0	390	31	4.1	1.2	.91	.20
10	3.4	2.9	2.0	2.0	2.0	4.0	890	23	3.9	1.2	.84	.26
11	2.9	2.9	2.0	2.0	2.0	3.5	1020	19	3.9	1.3	.58	.36
12	2.8	2.9	2.0	2.0	2.0	5.0	371	15	3.6	1.6	.48	.42
13	2.8	2.9	2.0	2.0	2.0	8.0	131	14	3.2	1.6	.42	.42
14	2.8	2.9	2.1	2.0	2.0	15	78	12	2.6	1.5	.39	.39
15	2.8	2.9	2.1	2.0	2.0	25	105	11	2.6	1.2	.36	.26
16	2.8	2.9	2.1	2.0	2.0	45	277	10	2.5	1.1	.39	.23
17	3.2	2.9	2.1	2.0	2.0	100	901	9.6	2.3	1.1	.39	.23
18	3.2	2.9	2.1	2.0	2.0	125	1300	8.8	2.1	1.1	.39	.23
19	2.9	2.9	2.0	2.0	2.0	140	889	8.8	2.3	1.1	.39	.26
20	2.9	2.9	2.0	2.0	2.5	130	257	8.6	2.3	1.1	.39	.36
21	3.1	2.9	2.0	2.0	2.5	125	90	8.3	2.5	.99	.42	.29
22	3.1	2.9	2.0	2.5	2.5	135	61	7.6	2.5	.91	.42	.17
23	3.2	2.9	2.0	2.8	2.5	270	49	7.3	2.6	.84	.39	.20
24	3.1	2.9	2.0	2.8	2.5	420	44	7.1	3.1	.91	.42	.29
25	3.1	2.9	2.0	2.5	2.5	620	41	6.6	3.1	.99	.42	.36
26	3.2	2.9	2.0	2.5	2.5	430	39	6.4	3.1	1.4	.42	.32
27	2.6	2.9	2.0	2.5	3.0	240	33	6.1	3.9	2.8	.42	.32
28	2.5	2.9	2.0	2.0	3.0	150	29	5.7	2.8	11	.42	.39
29	2.5	2.9	2.0	2.0	---	100	26	5.2	2.3	10	.42	.36
30	2.4	2.9	2.0	2.0	---	80	23	5.2	1.9	10	.42	.39
31	2.2	---	2.0	2.0	---	70	---	5.2	---	5.2	.39	---
TOTAL	94.1	83.2	65.1	65.6	61.5	3269.0	7524	397.5	99.6	71.94	30.79	9.37
MEAN	3.04	2.77	2.10	2.12	2.20	105	251	12.8	3.32	2.32	.99	.31
MAX	4.5	2.9	2.9	2.8	3.0	620	1300	31	5.4	11	5.4	.42
MIN	2.2	1.9	2.0	2.0	2.0	3.0	23	5.2	1.9	.84	.36	.17
AC-FT	187	165	129	130	122	6480	14920	788	198	143	61	19

CAL YR 1978 TOTAL 15816.82 MEAN 43.3 MAX 1630 MIN .96 AC-FT 31370
WTR YR 1979 TOTAL 11771.70 MEAN 32.3 MAX 1300 MIN .17 AC-FT 23350

06339100 KNIFE RIVER AT MANNING, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1972 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS (MG/L AS CACO3) (00900)
OCT											
04...	0830	2.9	1100	8.0	16.0	11.0	8.3	82	120	240	230
17...	1550	3.2	1520	--	11.0	7.5	--	--	--	--	--
NOV											
08...	1450	2.5	1800	8.4	14.5	4.0	11.2	93	K980	110	290
22...	1025	3.0	2160	--	-7.0	.0	--	--	--	--	--
DEC											
14...	1315	2.1	2210	8.5	5.5	.0	9.4	70	K7500	190	340
19...	1545	2.0	2410	--	-3.0	.0	--	--	--	--	--
JAN											
10...	1530	2.0	2280	8.0	-15.0	.0	8.4	63	K5	K11	380
24...	1430	2.8	2620	--	--	.0	--	--	--	--	--
FEB											
08...	1115	2.0	2390	8.2	-15.5	.0	9.8	72	K4	K25	350
20...	1510	2.6	2400	--	-8.0	.0	--	--	--	--	--
MAR											
16...	1115	31	840	--	4.0	.0	--	--	--	--	--
21...	1425	124	535	--	--	2.0	--	--	--	--	--
26...	1715	346	365	--	-7.0	.5	--	--	--	--	--
28...	0745	150	420	7.2	-10.0	.0	11.7	87	K2	K280	75
30...	1540	75	500	--	2.0	2.0	--	--	--	--	--
APR											
10...	1440	920	305	7.8	7.0	2.5	--	--	--	--	55
18...	1600	1570	250	--	25.0	13.0	--	--	--	--	--
21...	1715	81	560	--	12.0	10.0	--	--	--	--	--
24...	1550	43	800	--	4.5	6.0	--	--	--	--	--
MAY											
03...	1115	17	1300	8.3	5.5	8.5	10.8	99	K2	56	260
14...	1230	12	1830	8.4	17.5	8.5	11.4	106	K4	K18	330
24...	1640	7.2	1820	--	25.0	19.0	--	--	--	--	--
JUN											
21...	0810	2.5	2080	8.4	17.5	17.5	6.4	73	>600	620	310
27...	1435	2.9	1970	--	27.0	19.5	--	--	--	--	--
JUL											
11...	1530	1.3	2140	8.4	27.5	24.5	8.0	103	490	410	320
24...	1345	.97	2090	--	--	20.0	--	--	--	--	--
AUG											
07...	1510	1.5	1950	8.5	25.0	22.0	7.7	94	320	340	210
21...	1115	.45	1740	8.6	16.0	17.0	--	--	--	--	200
SEP											
11...	0930	.39	1750	8.3	14.5	15.0	9.5	83	1100	1480	210
19...	1345	.29	1800	--	--	16.0	--	--	--	--	--

K - Results based on colony count outside the acceptable range (non-ideal colony count).

06339100 KNIFE RIVER AT MANNING, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	HARDNESS, NONCARBONATE (MG/L CACO3) (00902)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM ADSORPTION RATIO (00931)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	BICARBONATE (MG/L AS HCO3) (00440)	CARBONATE (MG/L AS CO3) (00445)	ALKALINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DISSOLVED (MG/L AS CO2) (00405)
OCT											
04...	0	56	23	200	64	5.7	8.8	378	0	310	6.0
17...	--	--	--	--	--	--	--	--	--	--	--
NOV											
08...	0	65	32	310	69	7.9	7.5	576	5	490	3.7
22...	--	--	--	--	--	--	--	--	--	--	--
DEC											
14...	0	73	39	430	72	10	9.7	769	8	660	4.0
19...	--	--	--	--	--	--	--	--	--	--	--
JAN											
10...	0	84	42	460	72	10	9.0	781	0	640	13
24...	--	--	--	--	--	--	--	--	--	--	--
FEB											
08...	0	76	40	470	74	11	6.6	832	0	680	8.4
20...	--	--	--	--	--	--	--	--	--	--	--
MAR											
28...	0	18	7.2	55	58	2.8	8.7	113	0	93	11
30...	--	--	--	--	--	--	--	--	--	--	--
APR											
10...	0	12	6.1	40	59	2.3	4.6	93	0	76	2.4
MAY											
03...	0	61	27	210	63	5.6	6.8	415	0	340	3.3
14...	0	75	35	310	66	7.4	7.5	500	4	417	3.2
24...	--	--	--	--	--	--	--	--	--	--	--
JUN											
21...	0	63	36	370	72	9.2	7.4	654	4	540	4.2
27...	--	--	--	--	--	--	--	--	--	--	--
JUL											
11...	--	62	40	400	84	9.7	8.3	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--
AUG											
07...	0	43	26	420	89	12	8.1	634	11	540	3.3
21...	0	38	26	340	78	10	6.2	592	0	486	2.4
SEP											
11...	0	42	25	320	76	9.7	8.0	610	0	500	4.9
19...	--	--	--	--	--	--	--	--	--	--	--

DATE	SULFATE DISSOLVED (MG/L AS SO4) (00945)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)	SOLIDS, DISSOLVED (TONS PER DAY) (70302)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITROGEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)
OCT											
04...	350	6.6	.4	9.1	833	840	1.14	6.58	.00	.06	.77
17...	--	--	--	--	--	--	--	--	--	--	--
NOV											
08...	500	6.2	.5	8.1	1240	1220	1.66	8.24	.01	.03	.65
22...	--	--	--	--	--	--	--	--	--	--	--
DEC											
14...	620	8.4	.6	10	1570	1580	2.15	8.96	.23	.31	.69
19...	--	--	--	--	--	--	--	--	--	--	--
JAN											
10...	670	8.0	.6	12	1700	1670	2.27	9.02	.41	.12	.87
24...	--	--	--	--	--	--	--	--	--	--	--
FEB											
08...	650	7.2	.6	12	1690	1670	2.27	9.02	.58	.06	.43
20...	--	--	--	--	--	--	--	--	--	--	--
MAR											
28...	100	5.8	.1	6.4	277	257	.35	104	.51	.22	1.1
30...	--	--	--	--	--	--	--	--	--	--	--
APR											
10...	61	2.7	.1	3.7	183	177	.24	440	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--
MAY											
03...	370	6.6	.3	8.0	892	894	1.22	41.0	.02	.06	.92
14...	560	8.3	.4	5.8	1290	1250	1.70	40.5	.00	.03	.83
24...	--	--	--	--	--	--	--	--	--	--	--
JUN											
21...	590	8.1	.6	4.7	1410	1410	1.92	9.52	.01	.05	.77
27...	--	--	--	--	--	--	--	--	--	--	--
JUL											
11...	620	7.5	.6	4.7	1470	--	2.00	5.16	.05	.06	.88
24...	--	--	--	--	--	--	--	--	--	--	--
AUG											
07...	540	6.6	.6	6.8	1340	1380	1.88	5.59	.01	.01	1.2
21...	470	3.1	.6	7.5	1190	1180	1.60	1.43	--	--	--
SEP											
11...	450	6.1	.6	6.9	--	1160	1.58	1.22	.46	.12	.98
19...	--	--	--	--	--	--	--	--	--	--	--

06339100 KNIFE RIVER AT MANNING, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, TOTAL (MG/L AS N) (00600)	NITROGEN, TOTAL (MG/L AS NO3) (71887)	PHOSPHORUS, TOTAL (MG/L AS P) (00665)	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	ALUMINUM, DISSOLVED (UG/L AS AL) (01106)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DISSOLVED (UG/L AS AS) (01000)	ARSENIC TOTAL IN BOTTOM MATERIAL (UG/G AS AS) (01003)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA) (01007)	BARIUM, DISSOLVED (UG/L AS BA) (01005)
OCT											
04...	.83	.83	3.7	.09	.02	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--
NOV											
08...	.68	.69	3.1	.06	.01	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
DEC											
14...	1.0	1.2	5.4	.07	.05	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
JAN											
10...	.99	1.4	6.2	.06	.03	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--
FEB											
08...	.49	1.1	4.7	.06	.02	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
MAR											
16...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--
28...	1.3	1.6	8.0	.16	.11	80	1	1	--	0	0
30...	--	--	--	--	--	--	--	--	--	--	--
MAY											
03...	.98	1.0	4.4	.08	.02	--	--	--	--	--	--
14...	.86	.86	3.8	.05	.02	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--
JUN											
21...	.82	.83	3.7	.04	.01	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
JUL											
11...	.94	.99	4.4	.03	.00	20	--	2	--	--	200
24...	--	--	--	--	--	--	--	--	--	--	--
AUG											
07...	1.2	1.2	5.4	.08	.03	0	3	3	35	100	90
21...	--	--	--	--	--	--	--	--	--	--	--
SEP											
11...	1.1	1.6	6.9	.07	.02	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--

DATE	BARIUM, RECOV. FM BOTTOM MATERIAL (UG/G AS BA) (01008)	BERYLLIUM, TOTAL RECOVERABLE (UG/L AS BE) (01012)	BERYLLIUM, DISSOLVED (UG/L AS BE) (01010)	BERYLLIUM, RECOV. FM BOTTOM MATERIAL (UG/G) (01013)	BORON, DISSOLVED (UG/L AS B) (01020)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) (01034)	CHROMIUM, DISSOLVED (UG/L AS CR) (01030)	CHROMIUM, RECOV. FM BOTTOM MATERIAL (UG/G) (01029)	COBALT, TOTAL RECOVERABLE (UG/L AS CO) (01037)	COBALT, DISSOLVED (UG/L AS CO) (01035)	COBALT, RECOV. FM BOTTOM MATERIAL (UG/G AS CO) (01038)
OCT											
04...	--	--	--	--	290	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--
NOV											
08...	--	--	--	--	390	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
DEC											
14...	--	--	--	--	480	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
JAN											
10...	--	--	--	--	520	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--
FEB											
08...	--	--	--	--	500	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
MAR											
16...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--
28...	--	0	0	--	120	20	0	--	0	0	--
30...	--	--	--	--	--	--	--	--	--	--	--
APR											
10...	--	--	--	--	90	--	--	--	--	--	--
MAY											
03...	--	--	--	--	240	--	--	--	--	--	--
14...	--	--	--	--	290	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--
JUN											
21...	--	--	--	--	280	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
JUL											
11...	--	--	0	--	480	--	0	--	--	0	--
24...	--	--	--	--	--	--	--	--	--	--	--
AUG											
07...	100	0	<1	0	590	10	0	6	2	<3	0
21...	--	--	--	--	100	--	--	--	--	--	--
SEP											
11...	--	--	--	--	480	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--

06339100 KNIFE RIVER AT MANNING, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	COPPER, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS CU) (01043)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LITHIUM TOTAL RECOV-ERABLE (UG/L AS LI) (01132)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MANGA-NESE, RECOV. FM BOT-TOM MA-TERIAL (UG/G) (01053)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)
OCT											
04...	--	--	--	80	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--
NOV											
08...	--	--	--	40	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
DEC											
14...	--	--	--	140	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
JAN											
10...	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--
FEB											
08...	--	--	--	40	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
MAR											
16...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--
28...	10	12	--	320	7	9	60	40	--	.0	.0
30...	--	--	--	--	--	--	--	--	--	--	--
APR											
10...	--	--	--	320	--	--	--	80	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--
MAY											
03...	--	--	--	70	--	--	--	--	--	--	--
14...	--	--	--	20	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--
JUN											
21...	--	--	--	20	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
JUL											
11...	--	4	--	0	--	40	--	50	--	--	.3
24...	--	--	--	--	--	--	--	--	--	--	--
AUG											
07...	5	4	4	20	40	50	170	6	230	.1	.0
21...	--	--	--	100	--	--	--	120	--	--	--
SEP											
11...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--

DATE	MERCURY RECOV. FM BOT-TOM MA-TERIAL (UG/G AS HG) (71921)	MOLYB-DENUM, TOTAL RECOV-ERABLE (UG/L AS MO) (01062)	MOLYB-DENUM, RECOV. FM BOT-TOM MA-TERIAL (UG/G) (01063)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	NICKEL, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS NI) (01068)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SELE-NIUM, TOTAL IN BOT-TOM MA-TERIAL (UG/G) (01148)	VANA-DIUM, DIS-SOLVED (UG/L AS V) (01085)
MAR											
16...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--
28...	--	0	--	0	8	0	--	0	0	--	2.4
30...	--	--	--	--	--	--	--	--	--	--	--
APR											
10...	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--
MAY											
03...	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--
JUN											
21...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
JUL											
11...	--	--	--	0	--	4	--	--	0	--	<1.0
24...	--	--	--	--	--	--	--	--	--	--	--
AUG											
07...	.04	0	0	<10	6	4	10	0	0	0	1.0
21...	--	--	--	--	--	--	--	--	--	--	--
SEP											
11...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--

06339100 KNIFE RIVER AT MANNING, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ZINC, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS ZN) (01093)	GROSS ALPHA, DIS-SOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DIS-SOLVED (PCI/L AS CS-137) (03515)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C) (00689)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
OCT											
04...	--	--	--	--	--	--	--	13	1.1	31	.24
17...	--	--	--	--	--	--	--	--	--	--	--
NOV											
08...	--	--	--	--	--	--	--	11	.8	58	.39
22...	--	--	--	--	--	--	--	--	--	--	--
DEC											
14...	--	--	--	--	--	--	--	11	.9	45	.26
19...	--	--	--	--	--	--	--	--	--	--	--
JAN											
10...	--	--	--	--	--	--	--	--	--	93	.50
24...	--	--	--	--	--	--	--	--	--	--	--
FEB											
08...	--	--	--	--	--	--	--	8.4	1.2	72	.39
20...	--	--	--	--	--	--	--	--	--	--	--
MAR											
16...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--
28...	30	30	--	<4.3	2.2	11	1.8	16	1.6	32	13
30...	--	--	--	--	--	--	--	--	--	--	--
APR											
10...	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--
MAY											
03...	--	--	--	--	--	--	--	13	1.2	68	3.1
14...	--	--	--	--	--	--	--	15	1.1	41	1.3
24...	--	--	--	--	--	--	--	--	--	--	--
JUN											
21...	--	--	--	--	--	--	--	14	--	65	.44
27...	--	--	--	--	--	--	--	--	--	--	--
JUL											
11...	--	10	--	--	--	--	--	24	--	43	.15
24...	--	--	--	--	--	--	--	--	--	--	--
AUG											
07...	10	<3	30	<26	1.2	12	2.3	16	--	85	.34
21...	--	--	--	--	--	--	--	--	--	--	--
SEP											
11...	--	--	--	--	--	--	--	--	--	111	.12
19...	--	--	--	--	--	--	--	--	--	--	--

DATE	BED MAT. FALL DIAM. % FINER THAN .062 MM (80158)	BED MAT. FALL DIAM. % FINER THAN .125 MM (80159)	BED MAT. FALL DIAM. % FINER THAN .250 MM (80160)	BED MAT. FALL DIAM. % FINER THAN .500 MM (80161)	BED MAT. FALL DIAM. % FINER THAN 1.00 MM (80162)	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM (80169)	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM (80170)	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM (80171)	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM (80172)	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM (80173)
AUG										
07...	11	17	30	42	46	56	74	90	96	100

DATE	LENGTH OF EXPO-SURE (DAYS) (00022)	CHLOR-A PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70957)	CHLOR-a PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70958)	PERI-PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M (00573)	PERI-PHYTON BIOMASS ASH WEIGHT G/SQ M (00572)
SEP					
11...	35	19.5	5.89	21.8	17.9

06339100 KNIFE RIVER AT MANNING, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1978 TO SEPTEMBER 1979

DATE TIME	OCT 4,78 0830		NOV 8,78 1430		DEC 14,78 1315		JAN 11,79 1530		FEB 8,79 1115		MAR 28,79 0745	
TOTAL CELLS/ML	4200		10000		350		46		96		180	
DIVERSITY: DIVISION	1.4		0.8		1.5		1.0		1.0		1.4	
.CLASS	1.4		0.8		1.5		1.0		1.0		1.4	
..ORDER	2.2		1.2		1.9		1.5		1.7		2.2	
...FAMILY	2.4		1.3		1.9		1.5		1.7		2.6	
....GENUS	2.6		0.0		2.0		1.5		1.7		2.9	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)												
.CHLOROPHYCEAE												
..CHLOROCOCCALES												
...COELASTRACEAE												
....COELASTRUM	--	-	--	-	--	-	--	-	--	-	--	-
...OOCYSTACEAE												
....ANKISTRODESMUS	1100#	27	5800#	56	190#	53	23#	50	10	11	5	3
....CHODATELLA	--	-	680	7	--	-	--	-	--	-	--	-
....DICTYOSPHAERIUM	--	-	--	-	--	-	--	-	--	-	--	-
....KIRCHNERIELLA	60	1	--	-	8	2	--	-	--	-	--	-
....OOCYSTIS	--	-	--	-	--	-	--	-	--	-	--	-
....SELENASTRUM	--	-	680	7	--	-	--	-	--	-	20	11
....TETRAEDRON	--	-	--	-	--	-	--	-	--	-	--	-
....FREUBARIA	--	-	--	-	--	-	--	-	--	-	--	-
...SCENEDESMACEAE												
....ACTINASTRUM	--	-	--	-	--	-	--	-	--	-	20	11
....CRUCIGENIA	--	-	--	-	--	-	--	-	--	-	--	-
....SCENEDESMUS	240	6	200	2	--	-	--	-	--	-	20	11
....TETRASTRUM	--	-	--	-	--	-	--	-	--	-	--	-
..TETRASPORALES												
...TETRASPORACEAE												
....TETRASPORA	120	3	--	-	--	-	--	-	--	-	--	-
..VOLVOCALES												
...CHLAMYDOMONADACEAE	--	-	900	10	--	-	--	-	--	-	--	-
....CHLAMYDOMONAS	810#	19	--	-	15	4	--	-	45#	47	60#	33
...PHACOTACEAE												
....PHACOTUS	--	-	--	-	--	-	--	-	--	-	--	-
...VOLVOCACEAE												
....GONIUM	--	-	--	-	--	-	--	-	--	-	--	-
CHRYSOPHYTA												
.BACILLARIOPHYCEAE												
..CENTRALES												
...COSCINODISCACEAE												
....CYCLOTELLA	1300#	31	1900#	18	62#	18	15#	33	30#	32	10	6
....MELOSIRA	60	1	--	-	--	-	--	-	--	-	--	-
..PENNALES												
...ACHNANTHACEAE												
....COCCONEIS	--	-	--	-	--	-	--	-	--	-	--	-
...FRAGILARIACEAE												
....SYNEDRA	30	1	--	-	--	-	--	-	--	-	--	-
...NAVICULACEAE												
....DIPLONEIS	--	-	--	-	--	-	--	-	--	-	--	-
....NAVICULA	60	1	--	-	15	4	--	-	--	-	5	3
...NITZSCHIACEAE												
....NITZSCHIA	--	-	--	-	--	-	--	-	10	11	5	3
...SURIRELLACEAE												
....SURIRELLA	--	-	--	-	--	-	8#	17	--	-	--	-
.XANTHOPHYCEAE												
..HETEROCOCCALES												
...CENTRITRACTACEAE												
....CENTRITRACTUS	--	-	--	-	--	-	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)												
.CRYPTOPHYCEAE												
..CRYPTOMONADALES												
...CRYPTOMONADACEAE												
....CRYPTOMONAS	--	-	--	-	--	-	--	-	--	-	5	3
CYANOPHYTA (BLUE-GREEN ALGAE)												
.CYANOPHYCEAE												
..CHROOCOCCALES												
...CHROOCOCCACEAE												
....AGMENELLUM	--	-	--	-	--	-	--	-	--	-	--	-
....ANACYSTIS	180	4	--	-	54#	16	--	-	--	-	--	-
..HORMOGONALES												
...OSCILLATORIACEAE												
....LYNGBYA	--	-	--	-	--	-	--	-	--	-	--	-
....OSCILLATORIA	--	-	--	-	--	-	--	-	--	-	--	-
...RIVULARIACEAE											25	14
....RAPHIDIOPSIS	--	-	--	-	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

CONTINUED

06339100 KNIFE RIVER AT MANNING, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1978 TO SEPTEMBER 1979

(CONTINUED)

DATE / TIME	OCT 4,78 0830		NOV 8,78 1430		DEC 14,78 1315		JAN 11,79 1530		FEB 8,79 1115		MAR 28,79 0745	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
EUGLENOPHYTA (EUGLENOIDS)												
.EUGLENOPHYCEAE												
..EUGLENALES												
...EUGLENACEAE												
....EUGLENA	--	-	98	1	--	-	--	-	--	-	--	-
....PHACUS	--	-	--	-	--	-	--	-	--	-	--	-
....TRACHELOMONAS	150	4	--	-	8	2	--	-	--	-	5	3
PYRRHOPHYTA (FIRE ALGAE)												
.DINOPHYCEAE												
..GYMNODINIALES												
...GYMNODINIACEAE												
....GYMNODINIUM	30	1	--	-	--	-	--	-	--	-	--	-
..PERIDINIALES												
...GLENODINIACEAE												
....GLENODINIUM	--	-	--	-	--	-	--	-	--	-	--	-
...PERIDINIACEAE												
....PERIDINIUM	--	-	--	-	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06339100 KNIFE RIVER AT MANNING, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1978 TO SEPTEMBER 1979

DATE	MAY 3,79	MAY 14,79	JUN 21,79	JUL 11,79	AUG 7,79	SEP 11,79
TIME	1115	1230	0810	1530	1310	0930
TOTAL CELLS/ML	15000	11000	4400	20000	11000	1500
DIVERSITY: DIVISION	1.0	1.7	0.9	1.2	1.7	1.5
.CLASS	1.0	1.7	0.9	1.2	1.7	1.5
..ORDER	1.2	1.8	1.0	1.8	2.4	1.8
...FAMILY	1.2	1.8	1.4	2.0	2.7	2.7
....GENUS	0.0	1.8	1.8	2.4	3.0	2.8

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)												
.CHLOROPHYCEAE												
..CHLOROCOCCALES												
...COELASTRACEAE												
....COELASTRUM	--	-	--	-	--	-	--	-	150	1	--	-
...OOCYSTACEAE												
....ANKISTRODESMUS	290	2	420	4	2600#	59	680	3	740	6	41	3
....CHODATELLA	--	-	--	-	--	-	340	2	77	1	--	-
....DICTYOSPHAERIUM	--	-	--	-	250	6	3600#	18	--	-	--	-
....KIRCHNERIELLA	140	1	--	-	--	-	--	-	--	-	14	1
....OOCYSTIS	--	-	--	-	--	-	170	1	--	-	--	-
....SELENASTRUM	--	-	--	-	--	-	--	-	*	0	--	-
....TETRAEDRON	--	-	--	-	--	-	--	-	77	1	--	-
....TREUBARIA	--	-	--	-	--	-	--	-	*	0	--	-
...SCENEDESMACEAE												
....ACTINASTRUM	--	-	--	-	--	-	--	-	--	-	--	-
....CRUCIGENIA	--	-	--	-	130	3	--	-	310	3	--	-
....SCENEDESMUS	--	-	--	-	380	9	130	1	700	6	82	5
....TETRASTRUM	--	-	--	-	--	-	--	-	310	3	--	-
..TETRASPORALES												
...TETRASPORACEAE												
....TETRASPORA	--	-	--	-	--	-	--	-	--	-	--	-
..VOLVOCALES												
...CHLAMYDOMONADACEAE	5000#	33	--	-	--	-	--	-	--	-	--	-
....CHLAMYDOMONAS	--	-	420	4	32	1	150	1	390	3	250#	16
...PHACOTACEAE												
....PHACOTUS	--	-	--	-	--	-	--	-	--	-	41	3
...VOLVOCACEAE												
....GONIUM	--	-	--	-	--	-	170	1	--	-	--	-
CHRYSOPHYTA												
.BACILLARIOPHYCEAE												
..CENTRALES												
...COSCINODISCACEAE												
....CYCLOTELLA	9600#	63	560	5	--	-	170	1	350	3	27	2
....MELOSIRA	--	-	--	-	--	-	*	0	--	-	--	-
..PENNALES												
...ACHNANTHACEAE												
....COCCONEIS	--	-	--	-	--	-	--	-	--	-	27	2
...FRAGILARIACEAE												
....SYNEDRA	--	-	--	-	--	-	--	-	--	-	--	-
...NAVICULACEAE												
....DIPLONEIS	--	-	--	-	--	-	--	-	--	-	14	1
....NAVICULA	--	-	--	-	--	-	--	-	77	1	230#	15
...NITZSCHIACEAE												
....NITZSCHIA	--	-	280	2	32	1	*	0	230	2	600#	39
...SURIRELLACEAE												
....SURIRELLA	--	-	--	-	--	-	--	-	--	-	14	1
.XANTHOPHYCEAE												
..HETEROCOCCALES												
...CENTRITRACTACEAE												
....CENTRITRACTUS	--	-	--	-	--	-	*	0	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)												
.CRYPTOPHYCEAE												
..CRYPTOMONADALES												
...CRYPTOMONADACEAE												
....CRYPTOMONAS	--	-	140	1	--	-	170	1	77	1	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)												
.CYANOPHYCEAE												
..CHROOCOCCALES												
...CHROOCOCCACEAE												
....AGMENELLUM	--	-	--	-	--	-	10000#	51	--	-	--	-
....ANACYSTIS	--	-	--	-	950#	21	170	1	1900#	17	--	-
..HORMOGONALES												
...OSCILLATORIACEAE												
....LYNGBYA	--	-	--	-	--	-	3200#	16	--	-	--	-
....OSCILLATORIA	--	-	3800#	34	--	-	--	-	4600#	41	140	9
...RIVULARIACEAE												
....RAPHIDIOPSIS	--	-	--	-	--	-	380	2	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

CONTINUED

KNIFE RIVER BASIN

06339100 KNIFE RIVER AT MANNING, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1978 TO SEPTEMBER 1979 (CONTINUED)

DATE TIME	MAY 3,79 1115		MAY 14,79 1230		JUN 21,79 0810		JUL 11,79 1530		AUG 7,79 1310		SEP 11,79 0950	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
EUGLENOPHYTA (EUGLENOIDS)												
.EUGLENOPHYCEAE												
..EUGLENALES												
...EUGLENACEAE												
....EUGLENA	--	-	--	-	32	1	210	1	890	8	14	1
....PHACUS	--	-	--	-	--	-	--	-	*	0	--	-
....TRACHELOMONAS	140	1	5600#	50	--	-	300	1	190	2	14	1
PYRRHOPHYTA (FIRE ALGAE)												
.DINOPHYCEAE												
..GYMNODINIALES												
...GYMNODINIACEAE												
....GYMNODINIUM	--	-	--	-	32	1	--	-	--	-	--	-
..PERIDINIALES												
...GLENODINIACEAE												
....GLENODINIUM	--	-	--	-	--	-	--	-	150	1	14	1
...PERIDINIACEAE												
....PERIDINIUM	--	-	--	-	--	-	--	-	--	-	14	1

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06339180 STRAY CREEK NEAR MANNING, ND

LOCATION.--Lat 47°12'47", long 102°37'22", in SW¼SE¼SW¼ sec.8, T.143 N., R.94 W., Dunn County, Hydrologic Unit 10130201, on left bank 200 ft (61 m) upstream from bridge on county road, 6.9 mi (11.1 km) east of Manning and 3.0 mi (4.8 km) above mouth.

DRAINAGE AREA.--30.3 mi^2 (78.4 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1978 to September 1979.

GAGE.--Water-stage recorder. Altitude of gage is 2,100 ft (640 m), from topographic map.

REMARKS.--Records fair except those above 10 ft^3/s (0.28 m^3/s), which are poor.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 30 ft^3/s (0.85 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Apr. 9	2400	*150	4.25	[a]3.37	1.027	Apr. 17	0200	54	1.53	2.50	0.762

No flow for several months.

a - Backwater from ice.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.01	.05	.02	.00	.00	.00	1.5	.94	.08	.02	.00	.00
2	.01	.05	.01	.00	.00	.00	1.4	.77	.09	.02	.06	.00
3	.01	.05	.00	.00	.00	.00	1.3	.70	.10	.02	.09	.00
4	.01	.06	.00	.00	.00	.00	1.2	.60	.09	.01	.08	.00
5	.01	.05	.00	.00	.00	.00	1.1	.53	.09	.01	.05	.00
6	.01	.05	.00	.00	.00	.00	1.0	.60	.07	.00	.04	.00
7	.01	.07	.00	.00	.00	.00	2.5	.70	.07	.00	.03	.00
8	.01	.09	.00	.00	.00	.03	10	.90	.06	.00	.02	.00
9	.01	.12	.00	.00	.00	.10	45	.73	.05	.00	.01	.00
10	.01	.15	.00	.00	.00	.20	70	.56	.05	.00	.00	.00
11	.01	.15	.00	.00	.00	.30	42	.49	.04	.00	.00	.00
12	.01	.14	.00	.00	.00	.40	14	.47	.04	.00	.00	.00
13	.01	.14	.00	.00	.00	.50	11	.45	.03	.00	.00	.00
14	.02	.13	.00	.00	.00	.80	16	.41	.03	.00	.00	.00
15	.02	.13	.00	.00	.00	1.2	15	.37	.02	.00	.00	.00
16	.02	.11	.00	.00	.00	2.5	20	.32	.02	.00	.00	.00
17	.02	.10	.00	.00	.00	5.0	32	.27	.02	.00	.00	.00
18	.02	.09	.00	.00	.00	12	30	.21	.01	.00	.00	.00
19	.03	.08	.00	.00	.00	9.0	15	.19	.02	.00	.00	.00
20	.03	.07	.00	.00	.00	7.0	6.6	.16	.02	.00	.00	.00
21	.03	.04	.00	.00	.00	12	3.5	.15	.02	.00	.00	.00
22	.02	.03	.00	.00	.00	10	2.3	.12	.04	.00	.00	.00
23	.03	.04	.00	.00	.00	20	1.7	.12	.07	.00	.00	.00
24	.03	.05	.00	.00	.00	18	1.7	.13	.11	.00	.00	.00
25	.03	.05	.00	.00	.00	20	1.8	.11	.14	.00	.00	.00
26	.03	.05	.00	.00	.00	11	1.6	.09	.16	.00	.00	.00
27	.03	.05	.00	.00	.00	7.0	1.4	.08	.10	.00	.00	.00
28	.03	.05	.00	.00	.00	4.0	1.3	.08	.07	.00	.00	.00
29	.03	.05	.00	.00	---	3.0	1.1	.06	.05	.00	.00	.00
30	.04	.04	.00	.00	---	2.0	1.0	.06	.03	.00	.00	.00
31	.04	---	.00	.00	---	1.7	---	.06	---	.00	.00	---
TOTAL	.63	2.33	.03	.00	.00	147.73	354.0	11.43	1.79	.08	.38	.00
MEAN	.020	.078	.001	.000	.000	4.77	11.8	.37	.060	.003	.012	.000
MAX	.04	.15	.02	.00	.00	20	70	.94	.16	.02	.09	.00
MIN	.01	.03	.00	.00	.00	.00	1.0	.06	.01	.00	.00	.00
AC-FT	1.2	4.6	.06	.00	.00	293	702	23	3.6	.2	.8	.00

WTR YR 1979 TOTAL 518.40 MEAN 1.42 MAX 70 MIN .00 AC-FT 1030

06339180 STRAY CREEK NEAR MANNING, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1978 to September 1979.

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS (MG/L AS CACO3) (00900)
OCT											
03...	0930	.01	1540	6.6	8.5	9.0	9.3	87	1300	530	330
NOV											
15...	1400	.13	2000	8.4	4.0	2.0	12.1	95	22	61	480
MAR											
26...	0920	12	--	--	--	.0	--	--	--	--	--
APR											
*12...	1730	8.9	550	7.9	-.5	.5	10.1	77	K21	1100	--
MAY											
03...	1600	.65	1940	8.4	8.5	11.5	13.4	131	<1	K6	400
14...	1030	.45	2650	8.4	17.0	8.5	14.8	140	<1	K9	560
JUN											
14...	0830	.05	3310	8.5	18.0	17.0	5.8	65	K62V0	150	270
AUG											
09...	0830	.11	3750	9.6	22.0	19.0	10.8	126	21	200	570

DATE	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE (MG/L AS HCO3) (00440)	CAR-BONATE (MG/L AS CO3) (00445)	ALKA-LINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)
OCT											
03...	17	53	49	230	59	5.5	13	361	10	310	1.0
NOV											
15...	52	77	70	300	57	6.0	15	522	0	430	3.3
MAR											
26...	--	--	--	--	--	--	--	--	--	--	--
APR											
12...	--	--	--	--	--	--	--	98	0	80	2.0
MAY											
03...	76	78	51	300	61	6.5	10	393	1	320	2.5
14...	160	93	85	450	62	8.1	12	500	7	420	3.3
JUN											
14...	0	50	35	650	63	17	15	476	5	410	2.5
AUG											
09...	130	32	120	750	73	14	15	228	156	450	.2

DATE	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)
OCT											
03...	530	7.1	.3	2.5	1110	1070	1.46	.03	.00	.03	1.4
NOV											
15...	700	6.0	.3	1.3	1450	1430	1.94	.50	.01	.01	.88
MAR											
26...	--	--	--	--	--	--	--	--	--	--	--
APR											
12...	--	--	--	--	--	--	--	--	--	--	--
MAY											
03...	740	5.1	.2	4.8	1410	1380	1.88	2.42	.01	.02	.95
14...	1100	7.0	.3	2.4	2010	2000	2.72	2.43	.00	.01	.79
JUN											
14...	1400	8.8	.3	1.3	2600	2400	3.26	.19	.02	.20	1.3
AUG											
09...	1700	13	.4	.7	2980	2900	3.94	.86	.01	.05	2.1

* - Laboratory analysis incomplete at date of printing; data will be available via computer retrieval from WATSTORE files.

K - Results based on colony count outside the acceptable range (non-ideal colony count).

06339180 STRAY CREEK NEAR MANNING, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, TOTAL (MG/L AS N) (00600)	NITROGEN, TOTAL (MG/L AS NO3) (71887)	PHOSPHORUS, TOTAL (MG/L AS P) (00665)	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	ALUMINUM, DISSOLVED (UG/L AS AL) (01106)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DISSOLVED (UG/L AS AS) (01000)	ARSENIC TOTAL IN BOTTOM MATERIAL (UG/G AS AS) (01003)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA) (01007)	BARIUM, DISSOLVED (UG/L AS BA) (01005)
OCT											
03...	1.4	1.4	6.2	.11	.05	--	--	--	--	--	--
NOV											
15...	.89	.90	4.0	.05	.03	--	--	--	--	--	--
MAR											
26...	--	--	--	--	--	--	--	--	--	--	--
APR											
12...	--	--	--	--	--	--	--	--	--	--	--
MAY											
03...	.97	.98	4.3	.05	.02	--	--	--	--	--	--
14...	.80	.80	3.5	.05	.02	--	--	--	--	--	--
JUN											
14...	1.5	1.5	6.7	.05	.02	--	--	--	--	--	--
AUG											
09...	2.1	2.1	9.3	.11	.02	0	10	9	35	0	0

DATE	BARIUM, RECOV. FM BOTTOM MATERIAL (UG/G AS BA) (01008)	BERYLLIUM, TOTAL RECOVERABLE (UG/L AS BE) (01012)	BERYLLIUM, DISSOLVED (UG/L AS BE) (01010)	BERYLLIUM, RECOV. FM BOTTOM MATERIAL (UG/G) (01013)	BORON, DISSOLVED (UG/L AS B) (01020)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) (01034)	CHROMIUM, DISSOLVED (UG/L AS CR) (01030)	CHROMIUM, RECOV. FM BOTTOM MATERIAL (UG/G) (01029)	COBALT, TOTAL RECOVERABLE (UG/L AS CO) (01037)	COBALT, DISSOLVED (UG/L AS CO) (01035)	COBALT, RECOV. FM BOTTOM MATERIAL (UG/G AS CO) (01038)
OCT											
03...	--	--	--	--	410	--	--	--	--	--	--
NOV											
15...	--	--	--	--	490	--	--	--	--	--	--
MAR											
26...	--	--	--	--	--	--	--	--	--	--	--
APR											
12...	--	--	--	--	--	--	--	--	--	--	--
MAY											
03...	--	--	--	--	380	--	--	--	--	--	--
14...	--	--	--	--	460	--	--	--	--	--	--
JUN											
14...	--	--	--	--	1100	--	--	--	--	--	--
AUG											
09...	250	0	0	0	710	10	0	12	0	0	5

DATE	COPPER, TOTAL RECOVERABLE (UG/L AS CU) (01042)	COPPER, DISSOLVED (UG/L AS CU) (01040)	COPPER, RECOV. FM BOTTOM MATERIAL (UG/G AS CU) (01043)	IRON, DISSOLVED (UG/L AS FE) (01046)	LITHIUM TOTAL RECOVERABLE (UG/L AS LI) (01132)	LITHIUM DISSOLVED (UG/L AS LI) (01130)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN) (01055)	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	MANGANESE, RECOV. FM BOTTOM MATERIAL (UG/G) (01053)	MERCURY TOTAL RECOVERABLE (UG/L AS HG) (71900)	MERCURY DISSOLVED (UG/L AS HG) (71890)
OCT											
03...	--	--	--	30	--	--	--	--	--	--	--
NOV											
15...	--	--	--	20	--	--	--	--	--	--	--
MAR											
26...	--	--	--	--	--	--	--	--	--	--	--
APR											
12...	--	--	--	--	--	--	--	--	--	--	--
MAY											
03...	--	--	--	110	--	--	--	--	--	--	--
14...	--	--	--	30	--	--	--	--	--	--	--
JUN											
14...	--	--	--	10	--	--	--	--	--	--	--
AUG											
09...	7	9	14	30	80	80	50	40	420	.1	.0

06339180 STRAY CREEK NEAR MANNING, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	MERCURY RECOV. FM BOTTOM MATERIAL (UG/G AS HG) (71921)	MOLYBDENUM, TOTAL RECOVERABLE (UG/L AS MO) (01062)	MOLYBDENUM, RECOV. FM BOTTOM MATERIAL (UG/G) (01063)	MOLYBDENUM, DISSOLVED (UG/L AS MO) (01060)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI) (01067)	NICKEL, DISSOLVED (UG/L AS NI) (01065)	NICKEL, RECOV. FM BOTTOM MATERIAL (UG/G AS NI) (01068)	SELENIUM, TOTAL (UG/L AS SE) (01147)	SELENIUM, DISSOLVED (UG/L AS SE) (01145)	SELENIUM, TOTAL IN BOTTOM MATERIAL (UG/G) (01148)	VANADIUM, DISSOLVED (UG/L AS V) (01085)
OCT 03...	--	--	--	--	--	--	--	--	--	--	--
NOV 15...	--	--	--	--	--	--	--	--	--	--	--
MAR 26...	--	--	--	--	--	--	--	--	--	--	--
APR 12...	--	--	--	--	--	--	--	--	--	--	--
MAY 03...	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--
JUN 14...	--	--	--	--	--	--	--	--	--	--	--
AUG 09...	.04	0	4	0	7	5	15	0	0	0	1.0

DATE	ZINC, TOTAL RECOVERABLE (UG/L AS ZN) (01092)	ZINC, DISSOLVED (UG/L AS ZN) (01090)	ZINC, RECOV. FM BOTTOM MATERIAL (UG/G AS ZN) (01093)	GROSS ALPHA, DISSOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DISSOLVED (PCI/L AS CS-137) (03515)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)	CARBON, ORGANIC DISSOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUSPENDED TOTAL (MG/L AS C) (00689)	SEDIMENT, SUSPENDED (MG/L) (80154)	SEDIMENT DISCHARGE, SUSPENDED (T/DAY) (80155)
OCT 03...	--	--	--	--	--	--	--	16	1.2	57	.00
NOV 15...	--	--	--	--	--	--	--	15	.6	88	.03
MAR 26...	--	--	--	--	--	--	--	--	--	36	1.2
APR 12...	--	--	--	--	--	--	--	--	--	29	.70
MAY 03...	--	--	--	--	--	--	--	16	1.1	17	.03
14...	--	--	--	--	--	--	--	19	.5	19	.02
JUN 14...	--	--	--	--	--	--	--	29	--	21	.00
AUG 09...	50	20	40	<50	<.4	17	.5	31	--	3	.00

DATE	BED MAT. FALL DIAM. % FINER THAN .062 MM (80158)	BED MAT. FALL DIAM. % FINER THAN .125 MM (80159)	BED MAT. FALL DIAM. % FINER THAN .250 MM (80160)	BED MAT. FALL DIAM. % FINER THAN .500 MM (80161)	BED MAT. FALL DIAM. % FINER THAN 1.00 MM (80162)	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM (80169)	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM (80170)	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM (80171)	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM (80172)	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM (80173)
APR 12...	42	49	57	62	64	76	90	95	96	100
AUG 09...	59	86	98	100	--	--	--	--	--	--

06339180 STRAY CREEK NEAR MANNING, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1978 TO AUGUST 1979

DATE	OCT 3,78		NOV 15,78		APR 12,79		MAY 3,79	
TIME	0930		1400		1730		1600	
TOTAL CELLS/ML	820		350		130		3100	
DIVERSITY: DIVISION	1.9		1.5		0.9		1.5	
.CLASS	1.9		1.5		0.9		1.5	
..ORDER	2.5		2.3		0.9		2.1	
...FAMILY	3.0		2.6		1.2		2.4	
....GENUS	3.0		0.0		1.2		2.6	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)								
.CHLOROPHYCEAE								
..CHLOROCOCCALES								
...OOCYSTACEAE								
....ANKISTRODESMUS	92	11	--	-	86#	67	520#	17
....OOCYSTIS	14	2	--	-	--	-	--	-
....SELENASTRUM	150#	18	--	-	--	-	29	1
....TREUBARIA	14	2	--	-	--	-	--	-
...SCENEDESMACEAE								
....CROCIGENIA	14	2	88#	25	--	-	--	-
..VOLVOCALES								
...CHLAMYDOMONADACEAE	--	-	88#	25	--	-	--	-
....CHLAMYDOMONAS	71	9	--	-	--	-	700#	23
CHRYSOPHYTA								
.BACILLARIOPHYCEAE								
..CENTRALES								
...COSCINODISCACEAE								
....CYCLOTELLA	99	12	44	13	--	-	170	6
..PENNALES								
...ACHNANTHACEAE								
....COCCONEIS	28	3	--	-	--	-	--	-
....RHOICOSPHENIA	--	-	22	6	--	-	--	-
...CYMBELLACEAE								
....CYMBELLA	7	1	--	-	--	-	--	-
...FRAGILARIACEAE								
....FRAGILARIA	--	-	--	-	--	-	--	-
....SYNEDRA	7	1	22	6	--	-	--	-
...NAVICULACEAE								
....NAVICULA	50	6	22	6	14	11	87	3
...NITZSCHIACEAE								
....NITZSCHIA	50	6	--	-	29#	22	930#	30
...SURIRELLACEAE								
....SURIRELLA	--	-	--	-	--	-	87	3
CRYPTOPHYTA (CRYPTOMONADS)								
.CRYPTOPHYCEAE								
..CRYPTOMONADALES								
...CRYPTOCHRYSIDACEAE								
....CHROOMONAS	7	1	--	-	--	-	--	-
...CRYPTOMONADACEAE								
....CRYPTOMONAS	--	-	--	-	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)								
.CYANOPHYCEAE								
..HORMOGONALES								
...NOSTOCACEAE								
....ANABAENA	--	-	--	-	--	-	--	-
...OSCILLATORIACEAE								
....OSCILLATORIA	21	3	--	-	--	-	--	-
....SPIRULINA	7	1	--	-	--	-	--	-
...RIVULARIACEAE								
....RAPHIDIOPSIS	92	11	--	-	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)								
.EUGLENOPHYCEAE								
..EUGLENALES								
...EUGLENACEAE								
....EUGLENA	64	8	--	-	--	-	58	2
....TRACHELOMONAS	36	4	66#	19	--	-	470#	15

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06339180 STRAY CREEK NEAR MANNING, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1978 TO AUGUST 1979

DATE	MAY 14,79	JUN 14,79	AUG 9,79
TIME	1030	0830	0830
TOTAL CELLS/ML	2400	90	2900
DIVERSITY: DIVISION	1.3	1.6	0.2
.CLASS	1.3	1.6	0.2
..ORDER	1.4	1.6	0.3
...FAMILY	1.7	1.8	1.2
....GENUS	1.8	1.8	1.2

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)						
.CHLOROPHYCEAE						
..CHLOROCOCCALES						
...OOCYSTACEAE						
....ANKISTRODESMUS	420#	17	--	-	*	0
....OOCYSTIS	--	-	--	-	--	-
....SELENASTRUM	--	-	26#	29	--	-
....TREUBARIA	--	-	--	-	--	-
...SCENEDESMACEAE						
....CRUCIGENIA	--	-	--	-	--	-
..VOLVOCALES						
...CHLAMYDOMONADACEAE	--	-	--	-	--	-
....CHLAMYDOMONAS	20	1	--	-	--	-
CHRYSOPHYTA						
.BACILLARIOPHYCEAE						
..CENTRALES						
...COSCINODISCACEAE						
....CYCLOTELLA	--	-	--	-	26	1
..PENNALES						
...ACHNANTHACEAE						
....COCCONEIS	--	-	--	-	--	-
....RHOICOSPHENIA	--	-	--	-	--	-
...CYMBELLACEAE						
....CYMBELLA	--	-	--	-	--	-
...FRAGILARIACEAE						
....FRAGILARIA	120	5	--	-	--	-
....SYNEDRA	--	-	--	-	--	-
...NAVICULACEAE						
....NAVICULA	40	2	13	14	--	-
...NITZSCHIACEAE						
....NITZSCHIA	1400#	55	13	14	*	0
...SURIRELLACEAE						
....SURIRELLA	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)						
.CRYPTOPHYCEAE						
..CRYPTOMONADALES						
...CRYPTOCHRYSIDACEAE						
....CHROOMONAS	--	-	39#	43	--	-
...CRYPTOMONADACEAE						
....CRYPTOMONAS	--	-	--	-	39	1
CYANOPHYTA (BLUE-GREEN ALGAE)						
.CYANOPHYCEAE						
..HORMOGONALES						
...NOSTOCACEAE						
....ANABAENA	--	-	--	-	1900#	64
...OSCILLATORIACEAE						
....OSCILLATORIA	--	-	--	-	970#	33
....SPIRULINA	--	-	--	-	--	-
...RIVULARIACEAE						
....RAPHIDIOPSIS	--	-	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)						
.EUGLENOPHYCEAE						
..EUGLENALES						
...EUGLENACEAE						
....EUGLENA	60	2	--	-	--	-
....TRACHELOMONAS	440#	18	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06339300 KNIFE RIVER AT MARSHALL, ND

LOCATION.--Lat 47°08'17", long 102°20'00", NW¼ sec.10, T.142 N., R.92 W., Dunn County, Hydrologic Unit 10130201, and on right bank 250 ft (75 m) downstream from bridge on State Highway 8 in Marshall.

DRAINAGE AREA.--722 mi^2 (1,870 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1970 to current year.

GAGE.--Water-stage recorder.

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

AVERAGE DISCHARGE.--9 years, 77.9 ft^3/s (2.206 m^3/s), 56,440 acre-ft/yr (70.0 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,080 ft^3/s (257 m^3/s) Mar. 14, 1972, gage height, 19.37 ft (5.904 m); minimum, 0.18 ft^3/s (0.005 m^3/s) July 19, 20, 1973, gage height, 2.48 ft (0.756 m).

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of March 1943 reached a stage of at least 18.5 ft (5.639 m) prior to dike construction and is believed to be highest stage experienced since 1915.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 750 ft^3/s (21.2 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Mar. 18	1600	*1,720	48.7	[a]12.18	3.712	Apr. 20	0700	1,570	44.5	10.80	3.292
Mar. 26	--	1,140	32.3	[a]10.27	3.130	June 23	1930	1,640	46.4	11.05	3.368
Apr. 12	1400	1,360	38.5	10.10	3.078						

Minimum daily discharge, 1.5 ft^3/s (0.042 m^3/s) Feb. 17-20.

a - Backwater from ice.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18	11	9.5	7.5	4.5	3.5	230	65	15	27	32	8.2
2	18	11	9.5	7.0	4.5	3.5	200	58	15	22	24	7.1
3	17	11	9.0	6.5	4.0	3.5	190	54	14	20	18	6.0
4	17	11	9.0	5.0	4.0	3.5	180	48	14	18	14	4.5
5	16	11	9.0	4.5	4.0	4.0	150	45	13	17	14	4.0
6	15	9.7	8.5	4.5	4.5	4.0	130	44	12	15	12	2.6
7	15	9.5	8.5	4.5	4.5	4.0	130	44	12	14	10	2.2
8	15	10	8.5	4.5	4.0	4.0	193	45	12	14	9.5	2.6
9	15	12	8.5	4.5	4.0	3.5	338	46	11	13	7.1	2.6
10	14	12	8.5	4.5	4.0	3.5	784	52	10	12	6.4	3.6
11	14	11	8.5	4.5	3.5	3.5	1190	57	10	13	5.4	5.4
12	14	11	9.0	4.5	3.5	3.5	1320	48	10	17	4.4	5.6
13	13	10	9.5	4.5	3.0	5.0	1010	42	9.5	18	3.9	7.9
14	13	10	9.5	4.5	2.5	10	504	38	8.8	26	3.5	8.4
15	12	10	9.5	4.5	2.5	50	292	34	8.2	19	3.3	6.2
16	11	10	9.5	4.5	2.0	280	288	32	7.9	16	3.3	5.0
17	11	9.5	9.5	4.5	1.5	790	490	30	7.7	14	3.7	4.0
18	11	9.5	9.0	4.5	1.5	1500	970	26	7.5	13	3.6	3.9
19	11	9.5	9.0	5.0	1.5	1240	1430	25	9.7	12	3.5	3.3
20	11	9.0	9.0	5.0	1.5	860	1530	24	9.5	11	3.5	4.2
21	11	9.0	9.0	5.5	2.0	620	1040	22	9.3	10	4.0	3.5
22	10	9.5	9.0	5.5	2.0	420	340	21	16	9.3	4.2	3.5
23	10	9.5	9.0	5.5	2.0	660	174	21	1140	9.3	3.7	3.6
24	11	9.5	9.0	5.5	2.0	840	146	20	670	9.5	4.2	4.7
25	10	10	9.0	5.5	2.0	990	119	19	122	9.3	6.6	4.8
26	10	10	8.5	5.5	2.5	1060	111	18	68	8.6	6.4	4.7
27	11	10	8.5	5.5	3.0	1030	100	18	51	11	7.1	4.8
28	13	10	8.0	5.0	3.5	660	93	17	41	10	6.8	5.2
29	11	10	8.0	5.0	---	420	84	16	33	46	6.0	7.1
30	11	10	8.0	5.0	---	300	75	15	29	45	9.7	7.1
31	11	---	7.5	4.5	---	250	---	15	---	36	9.0	---
TOTAL	400	305.2	274.0	157.0	84.0	12029.0	13831	1059	2396.1	535.0	252.8	146.3
MEAN	12.9	10.2	8.84	5.06	3.00	388	461	34.2	79.9	17.3	8.15	4.88
MAX	18	12	9.5	7.5	4.5	1500	1530	65	1140	46	32	8.4
MIN	10	9.0	7.5	4.5	1.5	3.5	75	15	7.5	8.6	3.3	2.2
AC-FT	793	605	543	311	167	23860	27430	2100	4750	1060	501	290

CAL YR 1978 TOTAL 41848.7 MEAN 115 MAX 3280 MIN 4.0 AC-FT 83010
WTR YR 1979 TOTAL 31469.4 MEAN 86.2 MAX 1530 MIN 1.5 AC-FT 62420

06339300 KNIFE RIVER AT MARSHALL, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1972 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS (MG/L AS CACO3) (00900)
OCT											
03...	1300	17	1470	8.4	11.5	11.0	10.4	101	120	94	270
16...	1555	12	1720	--	15.0	8.5	--	--	--	--	--
NOV											
09...	0800	11	1960	8.4	1.0	4.5	11.6	96	43	160	340
21...	1445	9.2	2460	--	--	1.0	--	--	--	--	--
DEC											
19...	1405	9.1	2660	--	--	.0	--	--	--	--	--
21...	1200	9.0	2740	8.4	.0	.0	--	--	24	42	440
JAN											
10...	0930	4.5	2630	8.0	-12.0	.0	8.6	63	16	21	450
23...	1445	5.3	2920	--	-15.0	.0	--	--	--	--	--
FEB											
07...	0915	4.5	2750	8.0	-17.0	.0	8.5	63	K18	K24	450
19...	1525	1.7	2410	--	2.0	.5	--	--	--	--	--
MAR											
16...	1350	250	830	--	--	2.0	--	--	--	--	--
16...	1535	1690	460	--	.0	1.0	--	--	--	--	--
21...	1630	630	410	--	.0	2.0	--	--	--	--	--
26...	1510	1050	460	--	-6.0	1.5	--	--	--	--	--
28...	1625	660	515	7.5	-7.0	.0	16.2	114	K15	570	82
APR											
02...	1355	224	680	--	.0	2.0	--	--	--	--	--
07...	1440	130	880	--	3.0	2.0	--	--	--	--	--
11...	1200	1120	590	7.9	1.0	1.0	--	--	--	--	110
17...	1645	538	775	--	13.0	10.0	--	--	--	--	--
25...	1305	129	905	--	10.0	6.5	--	--	--	--	--
MAY											
03...	0800	53	1590	8.4	2.5	.0	10.5	95	46	92	280
15...	1150	42	1840	8.5	16.5	7.5	11.2	100	K16	63	350
25...	1445	19	1990	--	25.0	19.0	--	--	--	--	--
JUN											
19...	0830	10	2050	8.4	16.5	19.0	7.1	83	1300	910	330
26...	1205	72	995	--	--	19.0	--	--	--	--	--
JUL											
18...	0915	15	1550	8.5	21.0	21.0	7.5	88	540	950	210
26...	1210	8.7	1490	--	--	22.5	--	--	--	--	--
AUG											
08...	1700	9.0	1700	8.4	25.0	25.0	8.3	105	--	--	240
20...	1215	3.6	1890	8.8	--	21.5	--	--	--	--	270
SEP											
13...	0745	7.3	2040	8.6	10.5	13.5	8.7	88	310	980	280
19...	1550	3.1	1980	--	--	19.0	--	--	--	--	--

K - Results based on colony count outside the acceptable range (non-ideal colony count).

06339300 KNIFE RIVER AT MARSHALL, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	HARDNESS, NONCARBONATE (MG/L CACO3) (00902)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM ADSORPTION RATIO (00931)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	BICARBONATE (MG/L AS HCO3) (00440)	CARBONATE (MG/L AS CO3) (00445)	ALKALINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DISSOLVED (MG/L AS CO2) (00405)
OCT											
03...	0	63	28	250	66	6.6	9.4	470	2	390	3.0
16...	--	--	--	--	--	--	--	--	--	--	--
NOV											
09...	0	75	37	360	69	8.5	7.9	657	6	540	4.1
21...	--	--	--	--	--	--	--	--	--	--	--
DEC											
19...	--	--	--	--	--	--	--	--	--	--	--
21...	0	91	52	520	71	11	11	866	7	730	5.6
JAN											
10...	0	95	51	550	72	11	11	883	0	720	14
23...	--	--	--	--	--	--	--	--	--	--	--
FEB											
07...	0	100	48	530	72	11	9.8	937	0	770	15
19...	--	--	--	--	--	--	--	--	--	--	--
MAR											
28...	0	18	8.9	59	58	2.8	8.7	124	0	100	6.3
APR											
02...	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--
11...	0	24	12	74	58	3.1	5.2	143	0	117	2.9
17...	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--
MAY											
03...	0	61	32	230	63	5.9	7.6	400	5	340	2.6
13...	0	75	40	310	65	7.2	8.3	519	6	450	2.7
25...	--	--	--	--	--	--	--	--	--	--	--
JUN											
19...	0	59	45	360	70	8.6	8.5	620	4	520	4.0
26...	--	--	--	--	--	--	--	--	--	--	--
JUL											
18...	0	45	24	270	83	7.1	9.4	473	12	410	2.5
26...	--	--	--	--	--	--	--	--	--	--	--
AUG											
08...	0	45	30	320	85	9.1	11	518	8	440	3.4
20...	0	49	36	360	74	9.5	7.7	629	0	516	1.6
SEP											
13...	0	58	33	390	74	10	8.9	593	29	530	2.6
19...	--	--	--	--	--	--	--	--	--	--	--

DATE	SULFATE DISSOLVED (MG/L AS SO4) (00945)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)	SOLIDS, DISSOLVED (TONS PER DAY) (70302)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITROGEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)
OCT											
03...	420	5.7	.4	10	1020	1020	1.39	46.8	.25	.04	.84
16...	--	--	--	--	--	--	--	--	--	--	--
NOV											
09...	550	5.3	.4	8.9	1370	1370	1.86	40.7	.00	.03	.62
21...	--	--	--	--	--	--	--	--	--	--	--
DEC											
19...	--	--	--	--	--	--	--	--	--	--	--
21...	840	3.7	.6	12	1980	1960	2.67	47.6	.33	.06	.77
JAN											
10...	830	7.7	.6	14	2020	2000	2.72	24.3	.54	.12	1.2
23...	--	--	--	--	--	--	--	--	--	--	--
FEB											
07...	780	7.4	.6	15	1960	1950	2.65	23.7	.65	.07	.52
19...	--	--	--	--	--	--	--	--	--	--	--
MAR											
28...	100	4.7	.1	8.1	304	269	.37	479	.70	.13	1.4
APR											
02...	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--
11...	160	2.9	.1	5.6	344	354	.48	1070	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--
MAY											
03...	420	4.8	.3	8.3	984	966	1.31	138	.07	.08	1.1
13...	560	7.0	.4	6.1	1300	1270	1.73	144	.00	.01	.81
25...	--	--	--	--	--	--	--	--	--	--	--
JUN											
19...	620	6.6	.5	5.8	1440	1420	1.93	38.3	.01	.07	.63
26...	--	--	--	--	--	--	--	--	--	--	--
JUL											
18...	410	3.7	.4	6.2	1030	1010	1.37	35.5	.00	.04	1.6
26...	--	--	--	--	--	--	--	--	--	--	--
AUG											
08...	540	6.2	.5	8.1	1180	1220	1.66	29.6	.02	.02	.92
20...	540	3.6	.6	7.7	1370	1320	1.80	12.9	--	--	--
SEP											
13...	580	4.9	.6	7.5	1380	1400	1.90	27.6	.02	.10	.81
19...	--	--	--	--	--	--	--	--	--	--	--

06339300 KNIFE RIVER AT MARSHALL, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, TOTAL (MG/L AS N) (00600)	NITROGEN, TOTAL (MG/L AS NO3) (71887)	PHOSPHORUS, TOTAL (MG/L AS P) (00665)	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	ALUMINUM, DISSOLVED (UG/L AS AL) (01106)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DISSOLVED (UG/L AS AS) (01000)	ARSENIC TOTAL IN BOTTOM MATERIAL (UG/G AS AS) (01003)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA) (01007)	BARIUM, DISSOLVED (UG/L AS BA) (01005)
OCT											
03...	.88	1.1	5.0	.06	.01	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--
NOV											
09...	.65	.65	2.9	.06	.01	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
DEC											
19...	--	--	--	--	--	--	--	--	--	--	--
21...	.83	1.2	5.1	.04	.02	--	--	--	--	--	--
JAN											
10...	1.3	1.8	8.1	.04	.02	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--
FEB											
07...	.59	1.2	5.5	.02	.01	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
MAR											
16...	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--
28...	1.5	2.2	9.7	.22	.11	60	2	1	--	100	50
MAY											
03...	1.2	1.3	5.6	.10	.02	--	--	--	--	--	--
13...	.82	.82	3.6	.06	.02	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--
JUN											
19...	.70	.71	3.1	.05	.01	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--
JUL											
18...	1.6	1.6	7.1	.13	.06	20	--	3	--	--	80
26...	--	--	--	--	--	--	--	--	--	--	--
AUG											
08...	.94	.96	4.3	.08	.03	0	3	3	76	100	100
20...	--	--	--	--	--	--	--	--	--	--	--
SEP											
13...	.91	.93	4.1	.06	.01	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--

DATE	BARIUM, RECOV. FM BOTTOM MATERIAL (UG/G AS BA) (01008)	BERYLLIUM, TOTAL RECOVERABLE (UG/L AS BE) (01012)	BERYLLIUM, DISSOLVED (UG/L AS BE) (01010)	BERYLLIUM, RECOV. FM BOTTOM MATERIAL (UG/G) (01013)	BORON, DISSOLVED (UG/L AS B) (01020)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) (01034)	CHROMIUM, DISSOLVED (UG/L AS CR) (01030)	CHROMIUM, RECOV. FM BOTTOM MATERIAL (UG/G) (01029)	COBALT, TOTAL RECOVERABLE (UG/L AS CO) (01037)	COBALT, DISSOLVED (UG/L AS CO) (01035)	COBALT, RECOV. FM BOTTOM MATERIAL (UG/G AS CO) (01038)
OCT											
03...	--	--	--	--	230	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--
NOV											
09...	--	--	--	--	330	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
DEC											
19...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	440	--	--	--	--	--	--
JAN											
10...	--	--	--	--	440	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--
FEB											
07...	--	--	--	--	460	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
MAR											
28...	--	0	<1	--	110	20	0	--	4	<3	--
APR											
02...	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	30	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--
MAY											
03...	--	--	--	--	220	--	--	--	--	--	--
13...	--	--	--	--	280	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--
JUN											
19...	--	--	--	--	340	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--
JUL											
18...	--	--	<1	--	260	--	0	--	--	<3	--
26...	--	--	--	--	--	--	--	--	--	--	--
AUG											
08...	200	0	<1	0	310	10	10	10	1	<3	15
20...	--	--	--	--	30	--	--	--	--	--	--
SEP											
13...	--	--	--	--	380	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--

06339300 KNIFE RIVER AT MARSHALL, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	COPPER, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS CU) (01043)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LITHIUM TOTAL RECOV-ERABLE (UG/L AS LI) (01132)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MANGA-NESE, RECOV. FM BOT-TOM MA-TERIAL (UG/G) (01053)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)
OCT											
03...	--	--	--	20	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--
NOV											
09...	--	--	--	40	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
DEC											
19...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	60	--	--	--	--	--	--	--
JAN											
10...	--	--	--	0	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--
FEB											
07...	--	--	--	30	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
MAR											
16...	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--
28...	22	12	--	180	10	10	150	30	--	.0	.0
APR											
02...	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	40	--	--	--	160	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--
MAY											
03...	--	--	--	70	--	--	--	--	--	--	--
13...	--	--	--	30	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--
JUN											
19...	--	--	--	0	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--
JUL											
18...	--	4	--	20	--	30	--	2	--	--	.3
26...	--	--	--	--	--	--	--	--	--	--	--
AUG											
08...	9	22	10	10	30	40	160	<1	1000	.1	.0
20...	--	--	--	60	--	--	--	80	--	--	--
SEP											
13...	--	--	--	30	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--

DATE	MERCURY RECOV. FM BOT-TOM MA-TERIAL (UG/G AS HG) (71921)	MOLYB-DENUM, TOTAL RECOV-ERABLE (UG/L AS MO) (01062)	MOLYB-DENUM, RECOV. FM BOT-TOM MA-TERIAL (UG/G) (01063)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	NICKEL, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS NI) (01068)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SELE-NIUM, TOTAL IN BOT-TOM MA-TERIAL (UG/G) (01148)	VANA-DIUM, DIS-SOLVED (UG/L AS V) (01085)
MAR											
16...	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--
28...	--	1	--	<10	13	4	--	0	0	--	3.2
APR											
02...	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--
MAY											
03...	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--
JUN											
19...	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--
JUL											
18...	--	--	--	<10	--	2	--	--	0	--	<1.0
26...	--	--	--	--	--	--	--	--	--	--	--
AUG											
08...	.05	0	0	<10	10	4	24	1	0	0	1.0
20...	--	--	--	--	--	--	--	--	--	--	--
SEP											
13...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--

06339300 KNIFE RIVER AT MARSHALL, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ZINC, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS ZN) (01093)	GROSS ALPHA, DIS-SOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DIS-SOLVED (PCI/L AS CS-137) (03515)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C) (00689)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
OCT											
03...	--	--	--	--	--	--	--	8.2	1.8	61	3.7
16...	--	--	--	--	--	--	--	--	--	--	--
NOV											
09...	--	--	--	--	--	--	--	11	1.2	45	1.3
21...	--	--	--	--	--	--	--	--	--	--	--
DEC											
19...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	14	.4	48	1.2
JAN											
10...	--	--	--	--	--	--	--	13	.4	62	.75
23...	--	--	--	--	--	--	--	--	--	--	--
FEB											
07...	--	--	--	--	--	--	--	11	.6	49	.60
19...	--	--	--	--	--	--	--	--	--	--	--
MAR											
16...	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--
28...	40	10	--	<3.9	4.6	9.8	5.4	16	2.1	154	274
APR											
02...	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--
MAY											
03...	--	--	--	--	--	--	--	14	1.9	94	13
13...	--	--	--	--	--	--	--	12	1.5	100	11
25...	--	--	--	--	--	--	--	--	--	--	--
JUN											
19...	--	--	--	--	--	--	--	12	1.8	125	3.4
26...	--	--	--	--	--	--	--	--	--	--	--
JUL											
18...	--	9	--	--	--	--	--	19	1.7	83	2.9
26...	--	--	--	--	--	--	--	--	--	--	--
AUG											
08...	20	<3	30	<19	1.0	12	2.9	12	1.1	124	3.0
20...	--	--	--	--	--	--	--	--	--	--	--
SEP											
13...	--	--	--	--	--	--	--	15	.7	115	2.3
19...	--	--	--	--	--	--	--	--	--	--	--

DATE	BED MAT. FALL DIAM. % FINER THAN .062 MM (80158)	BED MAT. FALL DIAM. % FINER THAN .125 MM (80159)	BED MAT. FALL DIAM. % FINER THAN .250 MM (80160)	BED MAT. FALL DIAM. % FINER THAN .500 MM (80161)	BED MAT. FALL DIAM. % FINER THAN 1.00 MM (80162)	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM (80169)	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM (80170)	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM (80171)	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM (80172)	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM (80173)
AUG										
08...	1	1	4	8	15	20	38	63	73	90

DATE	LENGTH OF EXPO-SURE (DAYS) (00022)	CHLOR-A PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70957)	CHLOR-B PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70958)	PERI-PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M (00573)	PERI-PHYTON BIOMASS ASH WEIGHT G/SQ M (00572)
JUL					
18...	30	.510	.000	1.50	1.26
AUG					
08...	21	.020	.000	.080	.080
SEP					
13...	34	7.72	.000	2.83	2.44

06339300 KNIFE RIVER AT MARSHALL, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1978 TO SEPTEMBER 1979

DATE	OCT 3,78	NOV 9,78	DEC 28,78	JAN 10,79	FEB 7,79	MAR 28,79
TIME	1300	0800	1200	0930	0915	1625
TOTAL CELLS/ML	6400	14000	840	150	81	230
DIVERSITY: DIVISION	1.6	1.5	0.9	1.6	0.8	0.8
.CLASS	1.6	1.5	0.9	1.6	0.8	0.8
..ORDER	2.1	2.1	1.2	2.0	0.8	0.8
...FAMILY	2.2	2.2	1.2	2.9	1.7	2.1
....GENUS	2.8	2.5	1.2	2.9	1.7	2.1

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)												
.CHLOROPHYCEAE												
..CHLOROCOCCALES												
...CHLOROCOCCACEAE												
....CHLOROCOCCUM	--	-	--	-	--	-	--	-	--	-	--	-
...COELASTRACEAE												
....COELASTRUM	--	-	--	-	--	-	--	-	--	-	--	-
...MICRACTINIACEAE												
....GOLENKINIA	--	-	140	1	--	-	--	-	--	-	--	-
....MICRACTINIUM	--	-	--	-	--	-	--	-	--	-	--	-
...OOCYSTACEAE												
....ANKISTRODESMUS	680	11	2500#	17	110	13	15	10	20#	25	--	-
....CHLORELLA	--	-	--	-	--	-	--	-	--	-	--	-
....DICTYOSPHAERIUM	610	9	--	-	--	-	--	-	--	-	--	-
....OOCYSTIS	--	-	690	5	--	-	--	-	--	-	--	-
....SELENASTRUM	--	-	690	5	--	-	--	-	--	-	--	-
....TREUBARIA	36	1	--	-	--	-	--	-	--	-	--	-
...SCENEDESMACEAE												
....ACTINASTRUM	--	-	--	-	--	-	--	-	--	-	--	-
....CRUCIGENIA	--	-	--	-	--	-	--	-	--	-	--	-
....SCENEDESMUS	72	1	--	-	--	-	--	-	--	-	--	-
....TETRASTRUM	72	1	--	-	--	-	--	-	--	-	--	-
..TETRASPORALES												
...COCCOMYXACEAE												
....ELAKATOTHRIX	--	-	--	-	--	-	--	-	--	-	--	-
..VOLVOCALES												
...CHLAMYDOMONADACEAE												
....CHLAMYDOMONAS	1000#	16	1800	13	16	2	--	-	--	-	--	-
...PHACOTACEAE												
....PHACOTUS	--	-	--	-	--	-	--	-	--	-	--	-
....PTEROMONAS	--	-	--	-	--	-	--	-	--	-	--	-
..ZYGNEMATALES												
...DESMIDIACEAE												
....CLOSTERIUM	--	-	140	1	--	-	--	-	--	-	--	-
CHRYSOPHYTA												
.BACILLARIOPHYCEAE												
..CENTRALES												
...COSCINODISCACEAE												
....CYCLOTELLA	2300#	36	1800	13	8	1	--	-	--	-	--	-
....MELOSIRA	360	6	--	-	--	-	15	10	--	-	--	-
....STEPHANODISCUS	36	1	--	-	--	-	--	-	--	-	--	-
..PENNALES												
...ACHNANTHACEAE												
....COCCONEIS	--	-	--	-	--	-	--	-	--	-	--	-
...CYMBELLACEAE												
....EPITHEMIA	--	-	--	-	--	-	--	-	--	-	25	11
...FRAGILARIACEAE												
....SYNEDRA	--	-	--	-	--	-	8	5	5	6	25	11
...GOMPHONEMATACEAE												
....GOMPHONEMA	--	-	--	-	24	3	--	-	--	-	--	-
...NAVICULACEAE												
....NAVICULA	72	1	--	-	--	-	31#	20	15#	19	100#	44
...NITZSCHIACEAE												
....NITZSCHIA	110	2	960	7	16	2	23	15	40#	50	25	11
...SURIRELLACEAE												
....SURIRELLA	--	-	--	-	--	-	15	10	--	-	--	-
.XANTHOPHYCEAE												
..HETEROCOCCALES												
...CENTRITRACTACEAE												
....CENTRITRACTUS	--	-	--	-	--	-	--	-	--	-	--	-
...CHLOROTHECIACEAE												
....OPHIOCYTIUM	--	-	--	-	--	-	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)												
.CRYPTOPHYCEAE												
..CRYPTOMONADALES												
...CRYPTOMONADACEAE												
....CRYPTOMONAS	--	-	--	-	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

CONTINUED

06339300 KNIFE RIVER AT MARSHALL, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1978 TO SEPTEMBER 1979 (CONTINUED)

DATE / TIME	OCT 3,78 1300		NOV 9,78 0800		DEC 28,78 1200		JAN 10,79 0930		FEB 7,79 0915		MAR 28,79 1625	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CYANOPHYTA (BLUE-GREEN ALGAE)												
.CYANOPHYCEAE												
..CHROOCOCCALES												
...CHROOCOCCACEAE												
....ANACYSTIS	660	13	--	-	--	-	--	-	--	-	--	-
....COCCOCHLORIS	72	1	--	-	16	2	--	-	--	-	--	-
..HORMOGONALES												
...OSCILLATORIACEAE												
....LYNGBYA	--	-	--	-	--	-	31#	20	--	-	--	-
....OSCILLATORIA	--	-	--	-	650#	78	--	-	--	-	--	-
....SCHIZOTHRIX	--	-	--	-	--	-	--	-	--	-	--	-
...RIVULARIACEAE												
....RAPHIDIOPSIS	--	-	--	-	--	-	--	-	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)												
.EUGLENOPHYCEAE												
..EUGLENALES												
...EUGLENACEAE												
....EUGLENA	72	1	--	-	--	-	--	-	--	-	--	-
....PHACUS	36	1	--	-	--	-	--	-	--	-	--	-
....TRACHELOMONAS	--	-	5600#	39	--	-	15	10	--	-	50#	22
PYRRHOPHYTA (FIRE ALGAE)												
.DINOPHYCEAE												
..PERIDINIALES												
...GLENODINIACEAE												
....GLENODINIUM	--	-	--	-	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06339300 KNIFE RIVER AT MARSHALL, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1978 TO SEPTEMBER 1979

DATE	MAY 3,79	MAY 13,79	JUN 19,79	JUL 18,79	AUG 8,79	SEP 13,79
TIME	0800	1130	0830	0915	1700	0745
TOTAL CELLS/ML	25000	15000	1000	8000	82000	7100
DIVERSITY: DIVISION	0.8	1.2	1.5	1.4	1.0	1.0
.CLASS	0.8	1.2	1.5	1.4	1.0	1.0
..ORDER	1.1	1.5	1.7	2.1	1.7	1.0
...FAMILY	1.3	1.5	2.2	2.4	1.8	1.4
....GENUS	1.4	1.5	2.2	2.6	2.2	1.6

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)												
.CHLOROPHYCEAE												
..CHLOROCOCCALES												
...CHLOROCOCCACEAE												
....CHLOROCOCCUM	--	-	--	-	--	-	--	-	--	-	53	1
...COELASTRACEAE												
....COELASTRUM	--	-	--	-	--	-	120	1	--	-	--	-
...MICRACTINIACEAE												
....GOLENKINIA	--	-	--	-	--	-	--	-	--	-	--	-
....MICRACTINIUM	1300	5	--	-	--	-	--	-	--	-	--	-
...OOCYSTACEAE												
....ANKISTRODESMUS	2000	8	2300#	16	410#	40	200	2	1500	2	*	0
....CHLORELLA	--	-	--	-	--	-	--	-	--	-	580	8
....DICTYOSPHAERIUM	--	-	--	-	--	-	540	7	--	-	--	-
....OOCYSTIS	740	3	--	-	--	-	*	0	*	0	--	-
....SELENASTRUM	--	-	--	-	--	-	79	1	--	-	--	-
....TREUBARIA	--	-	--	-	--	-	--	-	--	-	--	-
...SCENEDESMACEAE												
....ACTINASTRUM	--	-	--	-	--	-	--	-	600	1	--	-
....CRUCIGENIA	--	-	--	-	--	-	160	2	7800	10	810	12
....SCENEDESMUS	--	-	--	-	210#	20	750	9	600	1	560	8
....TETRASTRUM	--	-	--	-	--	-	--	-	--	-	--	-
..TETRASPORALES												
...COCCOMYXACEAE												
....ELAKATOTHRIX	--	-	--	-	--	-	79	1	--	-	--	-
..VOLVOCALES												
...CHLAMYDOMONADACEAE												
....CHLAMYDOMONAS	2600	10	350	2	--	-	120	1	1500	2	*	0
...PHACOTACEAE												
....PHACOTUS	--	-	--	-	--	-	--	-	1300	2	--	-
....PTEROMONAS	180	1	--	-	--	-	--	-	--	-	--	-
..ZYGNEMATALES												
...DESMIDIACEAE												
....CLOSTERIUM	--	-	--	-	--	-	--	-	--	-	--	-
CHRYSOPHYTA												
.BACILLARIOPHYCEAE												
..CENTRALES												
...COSCINODISCACEAE												
....CYCLOTELLA	18000#	73	9600#	65	52	5	420	5	600	1	39	1
....MELOSIRA	--	-	--	-	--	-	--	-	--	-	--	-
....STEPHANODISCUS	--	-	--	-	--	-	--	-	--	-	--	-
..PENNALES												
...ACHNANTHACEAE												
....COCCONEIS	--	-	--	-	--	-	*	0	--	-	--	-
...CYMBELLACEAE												
....EPITHEMIA	--	-	--	-	--	-	--	-	--	-	--	-
...FRAGILARIACEAE												
....SYNEDRA	--	-	--	-	--	-	--	-	--	-	--	-
...GOMPHONEMATACEAE												
....GOMPHONEMA	--	-	--	-	--	-	--	-	--	-	--	-
...NAVICULACEAE												
....NAVICULA	--	-	--	-	--	-	--	-	*	0	--	-
...NITZSCHIACEAE												
....NITZSCHIA	--	-	350	2	150	15	180	2	750	1	--	-
...SURIRELLACEAE												
....SURIRELLA	--	-	--	-	--	-	--	-	--	-	--	-
.XANTHOPHYCEAE												
..HETEROCOCCALES												
...CENTRITRACTACEAE												
....CENTRITRACTUS	--	-	--	-	--	-	--	-	*	0	--	-
...CHLOROTHECIACEAE												
....OPHIOCYTIUM	--	-	--	-	--	-	*	0	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)												
.CRYPTOPHYCEAE												
..CRYPTOMONADALES												
...CRYPTOMONADACEAE												
....CRYPTOMONAS	--	-	--	-	--	-	--	-	*	0	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

CONTINUED

06339300 KNIFE RIVER AT MARSHALL, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1978 TO SEPTEMBER 1979 (CONTINUED)

DATE TIME	MAY 3,79 0800		MAY 13,79 1130		JUN 19,79 0830		JUL 18,79 0915		AUG 8,79 1700		SEP 13,79 0745	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CYANOPHYTA (BLUE-GREEN ALGAE)												
.CYANOPHYCEAE												
..CHROOCOCCALES												
...CHROOCOCCACEAE												
....ANACYSTIS	--	-	--	-	150	15	930	12	12000	15	--	-
....COCCOCHLORIS	--	-	--	-	--	-	--	-	--	-	--	-
..HORMOGONALES												
...OSCILLATORIACEAE												
....LYNGBYA	--	-	--	-	--	-	4200#	52	48000#	58	--	-
....OSCILLATORIA	--	-	--	-	--	-	--	-	4300	5	--	-
....SCHIZOTHRIX	--	-	--	-	--	-	--	-	--	-	4800#	68
...NIVULARIACEAE												
....RAPHIDIOPSIS	--	-	--	-	--	-	--	-	--	-	120	2
EUGLENOPHYTA (EUGLENOIDS)												
.EUGLENOPHYCEAE												
..EUGLENALES												
...EUGLENACEAE												
....EUGLENA	--	-	120	1	52	5	120	1	450	1	39	1
....PHACUS	--	-	--	-	--	-	--	-	*	0	--	-
....TRACHELOMONAS	--	-	2000	13	--	-	79	1	1800	2	--	-
PYRRHOPHYTA (FIRE ALGAE)												
.DINOPHYCEAE												
..PERIDINIALES												
...GLENODINIACEAE												
....GLENODINIUM	--	-	--	-	--	-	59	1	--	-	*	0

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06339490 ELM CREEK NEAR GOLDEN VALLEY, ND

LOCATION.--Lat 47°06'25", long 102°03'05", in SE¼NW¼ sec.23, T.142 N., R.90 W., Mercer County, Hydrologic Unit 10130201, on right bank 60 ft (18 m) upstream from highway bridge, and 13.5 mi (21.7 km) south of Golden Valley.

DRAINAGE AREA.--82 mi^2 (212 km^2), approximately.

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Datum of gage is 1,915.17 ft (583.744 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for period March to July, which are poor.

AVERAGE DISCHARGE.--12 years, 8.64 ft^3/s (0.245 m^3/s), 6,260 acre-ft/yr (7.72 hm^3/yr); median of yearly mean discharges, 6.1 ft^3/s (0.17 m^3/s), 4,400 acre-ft/yr (5.4 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,000 ft^3/s (283 m^3/s) May 8, 1970, gage height, 23.55 ft (7.178 m); no flow for several months each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 333 ft^3/s (9.43 m^3/s) Apr. 18, gage height, 8.18 ft (2.493 m) backwater from ice, only peak above base of 100 ft^3/s (2.83 m^3/s); maximum gage height, 8.43 ft (2.569 m) Apr. 11, backwater from ice; no flow for many months.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.95	1.8	.04	.01	.00	.00
2	.00	.00	.00	.00	.00	.00	.75	1.5	.04	.01	.00	.00
3	.00	.00	.00	.00	.00	.00	1.0	1.3	.04	.01	.00	.00
4	.00	.00	.00	.00	.00	.00	2.0	1.1	.02	.01	.00	.00
5	.00	.00	.00	.00	.00	.00	3.0	1.1	.02	.01	.00	.00
6	.00	.00	.00	.00	.00	.00	3.5	1.4	.02	.01	.00	.00
7	.00	.00	.00	.00	.00	.00	3.9	1.3	.02	.01	.00	.00
8	.00	.00	.00	.00	.00	.00	5.0	.75	.02	.01	.00	.00
9	.00	.00	.00	.00	.00	.00	10	1.3	.02	.01	.00	.00
10	.00	.00	.00	.00	.00	.00	20	1.3	.01	.01	.00	.00
11	.00	.00	.00	.00	.00	.00	30	1.5	.01	.70	.00	.00
12	.00	.00	.00	.00	.00	.00	40	1.5	.01	4.2	.00	.00
13	.00	.00	.00	.00	.00	.00	50	1.5	.01	.05	.00	.00
14	.00	.00	.00	.00	.00	.00	80	1.5	.01	.02	.00	.00
15	.00	.00	.00	.00	.00	.00	120	1.5	.01	.01	.00	.00
16	.00	.00	.00	.00	.00	.00	200	1.5	.01	.01	.00	.00
17	.00	.00	.00	.00	.00	.00	280	1.4	.01	.01	.00	.00
18	.00	.00	.00	.00	.00	.00	302	1.2	.01	.01	.00	.00
19	.00	.00	.00	.00	.00	8.0	212	1.1	.01	.01	.00	.00
20	.00	.00	.00	.00	.00	5.0	126	.45	.01	.01	.00	.00
21	.00	.00	.00	.00	.00	4.0	60	.55	.01	.01	.00	.00
22	.00	.00	.00	.00	.00	4.5	32	.23	2.5	.01	.00	.00
23	.00	.00	.00	.00	.00	10	20	.33	.30	.01	.00	.00
24	.00	.00	.00	.00	.00	30	11	.33	.05	.01	.00	.00
25	.00	.00	.00	.00	.00	35	4.4	.10	.01	.01	.00	.00
26	.00	.00	.00	.00	.00	40	3.9	.08	.01	.00	.00	.00
27	.00	.00	.00	.00	.00	45	3.6	.06	.01	.00	.00	.00
28	.00	.00	.00	.00	.00	33	3.1	.06	.01	.00	.00	.00
29	.00	.00	.00	.00	---	14	2.6	.04	.01	.00	.00	.00
30	.00	.00	.00	.00	---	4.7	1.8	.04	.01	.00	.00	.00
31	.00	---	.00	.00	---	3.5	---	.04	---	.00	.00	---
TOTAL	.00	.00	.00	.00	.00	236.70	1632.50	27.86	3.27	5.18	.00	.00
MEAN	.000	.000	.000	.000	.000	7.64	54.4	.90	.11	.17	.000	.000
MAX	.00	.00	.00	.00	.00	45	302	1.8	2.5	4.2	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.75	.04	.01	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	469	3240	55	6.5	10	.00	.00

CAL YR 1978 TOTAL 6191.05 MEAN 17.0 MAX 982 MIN .00 AC-FT 12280
WTR YR 1979 TOTAL 1905.51 MEAN 5.22 MAX 302 MIN .00 AC-FT 3780

06339490 ELM CREEK NEAR GOLDEN VALLEY, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1973 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS (MG/L AS CACO3) (00900)
MAR											
19...	1530	4.9	2120	--	.0	1.0	--	--	--	--	--
22...	1120	4.1	910	--	1.0	2.5	--	--	--	--	--
27...	1035	44	810	--	-5.0	1.0	--	--	--	--	--
29...	0900	14	810	7.7	-.5	.0	12.7	93	K11	200	100
APR											
02...	1605	15	850	--	-1.0	1.0	--	--	--	--	--
07...	1155	3.9	940	--	3.0	1.5	--	--	--	--	--
13...	1115	52	475	--	1.0	2.5	--	--	--	--	88
17...	1255	278	605	--	12.0	5.0	--	--	--	--	--
25...	1345	4.0	1100	8.0	12.0	6.0	10.7	92	140	330	170
25...	1830	4.0	1030	--	--	7.0	--	--	--	--	--
MAY											
13...	1010	1.5	1590	8.2	17.0	6.0	10.8	93	200	73	280
25...	1055	.07	1620	--	16.0	15.0	--	--	--	--	--
JUL											
18...	1245	.01	662	8.1	31.5	18.0	6.4	74	200	69	79

DATE	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE (MG/L AS HCO3) (00440)	CAR-BONATE (MG/L AS CO3) (00445)	ALKA-LINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)
MAR											
19...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
29...	0	20	13	130	70	5.6	12	153	0	130	4.9
APR											
02...	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--
13...	4	17	11	64	59	3.0	5.6	102	0	84	--
17...	--	--	--	--	--	--	--	--	--	--	--
25...	0	32	21	170	68	5.7	8.1	227	0	190	3.6
25...	--	--	--	--	--	--	--	--	--	--	--
MAY											
13...	0	56	35	260	66	6.7	9.1	350	0	290	3.5
25...	--	--	--	--	--	--	--	--	--	--	--
JUL											
18...	0	18	8.3	100	71	4.9	7.5	161	0	130	2.0

DATE	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)
MAR											
19...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
29...	250	3.4	.1	9.8	530	515	.70	19.5	.96	.20	1.4
APR											
02...	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--
13...	130	2.3	.1	2.6	284	283	.38	39.7	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--
25...	340	2.7	.1	11	723	697	.95	7.53	.03	.05	1.2
25...	--	--	--	--	--	--	--	--	--	--	--
MAY											
13...	540	4.4	.2	9.6	1120	1090	1.48	4.41	.00	.01	.98
25...	--	--	--	--	--	--	--	--	--	--	--
JUL											
18...	190	1.9	.2	6.6	431	412	.56	.01	.35	.10	1.2

K - Results based on colony count outside the acceptable range (non-ideal colony count).

06339490 ELM CREEK NEAR GOLDEN VALLEY, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, TOTAL (MG/L AS N) (00600)	NITROGEN, TOTAL (MG/L AS NO3) (71887)	PHOSPHORUS, TOTAL (MG/L AS P) (00665)	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	ALUMINUM, DISSOLVED (UG/L AS AL) (01106)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DISSOLVED (UG/L AS AS) (01000)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA) (01007)	BARIUM, DISSOLVED (UG/L AS BA) (01005)	BERYLLIUM, TOTAL RECOVERABLE (UG/L AS BE) (01012)
MAR											
19...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
29...	1.6	2.6	11	.41	.34	60	2	1	0	40	0
APR											
02...	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--
25...	1.2	1.2	5.4	.09	.06	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--
MAY											
13...	.99	.99	4.4	.10	.03	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--
JUL											
18...	1.3	1.7	7.3	.16	.06	20	--	1	--	50	--

DATE	BERYLLIUM, DISSOLVED (UG/L AS BE) (01010)	BORON, DISSOLVED (UG/L AS B) (01020)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) (01034)	CHROMIUM, DISSOLVED (UG/L AS CR) (01030)	COBALT, TOTAL RECOVERABLE (UG/L AS CO) (01037)	COBALT, DISSOLVED (UG/L AS CO) (01035)	COPPER, TOTAL RECOVERABLE (UG/L AS CU) (01042)	COPPER, DISSOLVED (UG/L AS CU) (01040)	IRON, DISSOLVED (UG/L AS FE) (01046)	LITHIUM TOTAL RECOVERABLE (UG/L AS LI) (01132)	LITHIUM DISSOLVED (UG/L AS LI) (01130)
MAR											
19...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
29...	<1	370	0	0	4	<3	6	7	320	20	20
APR											
02...	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--
13...	--	130	--	--	--	--	--	--	380	--	--
17...	--	--	--	--	--	--	--	--	--	--	--
25...	--	190	--	--	--	--	--	--	250	--	--
25...	--	--	--	--	--	--	--	--	--	--	--
MAY											
13...	--	220	--	--	--	--	--	--	120	--	--
25...	--	--	--	--	--	--	--	--	--	--	--
JUL											
18...	<1	130	--	0	--	<3	--	5	100	--	10

DATE	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN) (01055)	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOVERABLE (UG/L AS HG) (71900)	MERCURY DISSOLVED (UG/L AS HG) (71890)	MOLYBDENUM, TOTAL RECOVERABLE (UG/L AS MO) (01062)	MOLYBDENUM, DISSOLVED (UG/L AS MO) (01060)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI) (01067)	NICKEL, DISSOLVED (UG/L AS NI) (01065)	SELENIUM, TOTAL (UG/L AS SE) (01147)	SELENIUM, DISSOLVED (UG/L AS SE) (01145)	VANADIUM, DISSOLVED (UG/L AS V) (01085)
MAR											
19...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
29...	80	50	.0	.0	1	<10	9	4	0	0	4.3
APR											
02...	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--
13...	--	80	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--
MAY											
13...	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--
JUL											
18...	--	9	--	.5	--	<10	--	3	--	1	<1.0

06339490 ELM CREEK NEAR GOLDEN VALLEY, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	GROSS ALPHA, DIS-SOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DIS-SOLVED (PCI/L AS CS-137) (03515)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C) (00689)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
MAR										
19...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--
29...	20	20	<6.7	.6	12	.8	23	1.2	65	2.5
APR										
02...	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	17	1.6	69	.75
25...	--	--	--	--	--	--	--	--	--	--
MAY										
13...	--	--	--	--	--	--	15	1.5	92	.37
25...	--	--	--	--	--	--	--	--	--	--
JUL										
18...	--	7	--	--	--	--	15	2.9	83	.00

DATE	BED MAT. FALL DIAM. % FINER THAN .062 MM (80158)	BED MAT. FALL DIAM. % FINER THAN .125 MM (80159)	BED MAT. FALL DIAM. % FINER THAN .250 MM (80160)	BED MAT. FALL DIAM. % FINER THAN .500 MM (80161)	BED MAT. FALL DIAM. % FINER THAN 1.00 MM (80162)
MAR					
29...	43	56	88	97	100

06339490 ELM CREEK NEAR GOLDEN VALLEY, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1978 TO JULY 1979

DATE	APR 25,79	MAY 13,79	JUL 18,79
TIME	1345	1010	1245
TOTAL CELLS/ML	3600	1400	2100
DIVERSITY: DIVISION	1.5	1.2	0.8
.CLASS	1.5	1.2	0.8
..ORDER	2.1	1.9	1.4
...FAMILY	2.7	2.1	2.0
....GENUS	3.0	2.3	2.0

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)						
.CHLOROPHYCEAE						
..CHLOROCOCCALES						
...MICRACTINIACEAE						
....MICRACTINIUM	--	-	42	3	--	-
...OOCYSTACEAE						
....ANKISTRODESMUS	400	11	720#	51	--	-
....KIRCHNERIELLA	*	0	--	-	--	-
....OOCYSTIS	440	12	--	-	--	-
....SELENASTRUM	--	-	70	5	--	-
...SCENEDESMACEAE						
....SCENEDESMUS	57	2	--	-	--	-
..VOLVOCALES						
...CHLAMYDOMONADACEAE						
....CARTERIA	43	1	--	-	--	-
....CHLAMYDOMONAS	530	15	210	15	150	7
...VOLVOCACEAE						
....EUDORINA	710#	20	--	-	--	-
CHRYSOPHYTA						
.BACILLARIOPHYCEAE						
..CENTRALES						
...COSCINODISCACEAE						
....CYCLOTELLA	310	9	110	8	26	1
..PENNALES						
...FRAGILARIACEAE						
....FRAGILARIA	--	-	28	2	--	-
...NITZSCHIACEAE						
....NITZSCHIA	--	-	14	1	--	-
CRYPTOPHYTA (CRYPTOMONADS)						
.CRYPTOPHYCEAE						
..CRYPTOMONADALES						
...CRYPTOMONADACEAE						
....CRYPTOMONAS	--	-	--	-	26	1
CYANOPHYTA (BLUE-GREEN ALGAE)						
.CYANOPHYCEAE						
..CHROOCOCCALES						
...CHROOCOCCACEAE						
....ANACYSTIS	--	-	--	-	340#	16
..HORMOGONALES						
...NOSTOCACEAE						
....ANABAENA	--	-	--	-	410#	20
...OSCILLATORIACEAE						
....OSCILLATORIA	550#	16	110	8	1000#	50
...RIVULARIACEAE						
....RAPHIDIOPSIS	110	3	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)						
.EUGLENOPHYCEAE						
..EUGLENALES						
...EUGLENACEAE						
....EUGLENA	400	11	97	7	52	2
....TRACHELOMONAS	--	-	14	1	26	1

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06339500 KNIFE RIVER NEAR GOLDEN VALLEY, ND

LOCATION.--Lat 47°09'40", long 102°03'39", in SE¼ sec.34, T.143 N., R.90 W., Mercer County, Hydrologic Unit 10130201, on left bank 6 ft (2 m) downstream from highway bridge, 4.5 mi (7.2 km) downstream from Elm Creek, and 9 mi (14 km) south of Golden Valley.

DRAINAGE AREA.--1,230 mi^2 (3,190 km^2), 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.

REVISED RECORDS (WATER YEARS).--WSP 1006: Drainage area. WSP 1279: 1904, 1914-19(M), 1922-24(M), 1944.

GAGE.--Water-stage recorder. Datum of gage is 1,847.13 ft (563.005 m) National Geodetic Vertical Datum of 1929. See WSP 1729 or 1917 for history of changes prior to May 1, 1946.

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

AVERAGE DISCHARGE.--53 years, 98.0 ft^3/s (2.775 m^3/s), 71,000 acre-ft/yr (87.5 hm^3/yr); median of yearly mean discharges, 86 ft^3/s (2.44 m^3/s), 62,300 acre-ft/yr (77 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,200 ft^3/s (317 m^3/s) May 9, 1970, gage height, 25.84 ft (7.876 m); maximum gage height, 26.7 ft (8.14 m) Mar. 26, 27, 1943, from floodmark; no flow at times in some years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Mar. 26, 27, 1943 reached a stage of 26.7 ft (8.14 m), from floodmark, 11,500 ft^3/s (326 m^3/s). The 1943 flood was the highest since 1903 according to information from local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges above 1,500 ft^3/s (42.5 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Mar. 19	--	1,540	43.6	Backwater from ice		Apr. 20	0230	1,830	51.8	13.60	4.145
Mar. 26	--	1,500	42.5	Backwater from ice		June 24	0815	*2,470	70.0	15.96	4.865

Minimum daily discharge, 5.0 ft^3/s (0.14 m^3/s) Jan. 18-21 and Sept. 7-9.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19	12	10	10	5.5	6.0	450	132	27	88	67	11
2	17	13	10	10	5.5	6.0	400	119	27	62	63	11
3	16	14	10	8.0	5.5	6.0	350	109	25	45	46	10
4	15	13	10	8.0	5.5	6.0	300	100	24	40	36	9.4
5	13	13	10	8.0	5.5	6.5	250	93	23	35	29	7.0
6	13	13	10	7.5	5.5	6.5	200	89	22	30	26	6.0
7	13	13	10	7.5	5.5	7.0	150	89	20	27	24	5.0
8	13	14	8.0	7.0	5.5	7.5	183	87	20	26	21	5.0
9	13	14	8.0	7.0	5.5	8.0	296	87	21	25	19	5.0
10	13	16	8.0	6.5	5.5	8.0	769	88	20	24	17	6.0
11	14	16	8.0	6.5	5.5	8.5	1430	95	18	29	14	14
12	14	16	10	6.0	5.5	8.5	1650	98	18	75	12	10
13	13	16	14	6.0	5.5	9.0	1480	85	17	93	10	12
14	13	16	15	6.0	5.5	10	1010	75	15	84	9.1	10
15	13	16	15	5.5	5.5	11	549	66	13	65	7.8	15
16	14	16	15	5.5	5.5	13	516	62	13	45	7.4	16
17	13	16	15	5.5	5.5	170	667	55	12	34	7.4	12
18	13	16	15	5.0	6.0	1120	1320	50	12	27	6.5	9.0
19	13	16	15	5.0	6.0	1420	1680	47	17	24	6.7	7.0
20	13	16	15	5.0	6.0	980	1800	46	19	21	6.0	6.4
21	14	16	15	5.0	6.0	930	1560	41	15	19	8.0	6.4
22	14	14	15	5.5	6.0	800	825	40	42	17	9.0	6.4
23	13	14	15	5.5	6.0	632	341	35	871	17	12	6.4
24	14	12	15	5.5	6.0	984	265	35	2180	15	9.0	6.4
25	14	12	15	5.5	6.0	1330	223	33	626	15	6.0	6.0
26	16	12	15	5.5	6.0	1460	194	31	205	16	6.0	6.0
27	17	12	15	5.5	6.0	1290	180	29	132	20	14	6.0
28	16	12	14	5.5	6.0	1230	168	29	100	19	17	6.0
29	15	12	14	5.5	---	800	156	27	80	75	14	6.0
30	15	12	12	5.5	---	600	147	27	64	79	10	6.0
31	12	---	12	5.5	---	500	---	27	---	73	9.2	---
TOTAL	438	423	388.0	195.5	159.5	14373.5	19509	2026	4698	1264	549.1	248.4
MEAN	14.1	14.1	12.5	6.31	5.70	464	650	65.4	157	40.8	17.7	8.28
MAX	19	16	15	10	6.0	1460	1800	132	2180	93	67	16
MIN	12	12	8.0	5.0	5.5	6.0	147	27	12	15	6.0	5.0
AC-FT	869	839	770	388	316	28510	38700	4020	9320	2510	1090	493

CAL YR 1978	TOTAL	70373.2	MEAN 193	MAX 7520	MIN 1.0	AC-FT	139600	
WTR YR 1979	TOTAL	44272.0	MEAN 121	MAX 2180	MIN 5.0	AC-FT	87810	

06339550 COYOTE CREEK NEAR ZAP, ND

LOCATION.--Lat 47°11'57", long 101°54'42", in NW¼SW¼SW¼ sec.13, T.143 N., R.89 W., Mercer County, Hydrologic Unit 10130201, on right bank 40 ft (12 m) upstream from bridge on county road 6.0 mi (9.6 km) south of Zap, and 0.8 mi (1.3 km) upstream from mouth.

DRAINAGE AREA.--65.2 mi^2 (169 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1977 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,809.75 ft (551.612 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for the period November to April, which are fair.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,880 ft^3/s (53.2 m^3/s) Mar. 27, 1978, gage height, 10.67 ft (3.252 m); no flow at times each year.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 75 ft^3/s (2.12 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Apr. 10	1845	286	8.10	5.53	1.686	Apr. 17	2030	*307	8.69	5.65	1.722

No flow Feb. 4-7.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.06	.41	.19	.19	.05	.30	25	5.8	1.1	2.3	5.0	.13
2	.08	.41	.17	.12	.06	.33	25	5.2	1.1	1.9	2.4	.15
3	.15	.54	.17	.19	.02	.28	24	4.8	1.1	1.8	1.6	.17
4	.16	.70	.22	.18	.01	.47	23	4.1	1.0	1.6	1.3	.15
5	.13	.70	.23	.11	.00	.80	24	3.9	1.1	1.2	1.1	.10
6	.11	.70	.18	.10	.00	1.3	24	4.3	1.1	1.0	.80	.07
7	.13	1.2	.10	.15	.00	2.3	22	4.9	1.0	.93	.70	.05
8	.15	1.7	.11	.20	.02	3.0	28	4.9	1.0	.80	.52	.05
9	.15	1.2	.10	.30	.04	4.0	50	4.2	.98	.80	.47	.05
10	.15	.80	.20	.32	.10	5.0	223	3.9	.94	.80	.41	.15
11	.17	.93	.37	.27	.11	6.0	226	3.7	.92	.93	.36	.27
12	.18	1.1	.40	.23	.11	7.0	112	3.6	1.0	5.2	.31	.44
13	.18	1.1	.41	.25	.11	8.5	65	3.3	.80	5.2	.27	.52
14	.17	1.0	.50	.21	.10	10	53	3.1	.63	3.1	.20	.42
15	.18	.86	.51	.20	.07	13	66	3.0	.46	1.9	.18	.41
16	.28	.80	.52	.20	.17	19	145	2.8	.27	1.2	.15	.32
17	.28	.62	.50	.20	.20	26	268	2.4	.33	.86	.15	.27
18	.22	.59	.47	.22	.22	37	259	2.3	.38	.69	.13	.19
19	.22	.57	.40	.30	.23	46	140	2.2	.62	.54	.15	.18
20	.33	.48	.38	.31	.25	54	72	2.0	.62	.47	.13	.14
21	.47	.47	.40	.30	.22	60	44	2.0	.62	.41	.18	.09
22	.29	.50	.50	.31	.20	65	30	2.0	6.2	.31	.27	.08
23	.46	.52	.54	.24	.22	68	20	1.9	12	.41	.18	.08
24	.42	.54	.50	.18	.25	68	16	1.8	5.2	.54	.18	.07
25	.31	.54	.43	.18	.30	68	14	1.7	3.2	.41	.23	.05
26	.27	.50	.40	.20	.35	66	12	1.5	2.4	.47	.27	.04
27	.62	.44	.38	.20	.39	42	10	1.4	2.4	1.2	.20	.03
28	.62	.40	.32	.18	.34	30	8.7	1.2	1.9	2.3	.23	.03
29	.86	.39	.28	.16	---	27	7.4	1.2	1.3	1.3	.23	.02
30	.70	.28	.23	.10	---	26	6.7	1.1	1.2	23	.17	.02
31	.41	---	.20	.07	---	26	---	1.1	---	12	.13	---
TOTAL	8.93	20.99	10.31	6.37	4.14	790.28	2042.8	91.3	52.87	75.57	18.60	4.74
MEAN	.29	.70	.33	.21	.15	25.5	68.1	2.95	1.76	2.44	.60	.16
MAX	.86	1.7	.54	.32	.39	68	268	5.8	12	23	5.0	.52
MIN	.08	.28	.10	.07	.00	.28	6.7	1.1	.27	.31	.13	.02
AC-FT	18	42	20	13	8.2	1570	4050	181	105	150	37	9.4

CAL YR 1978 TOTAL 6718.98 MEAN 18.4 MAX 1500 MIN .00 AC-FT 13330
WTR YR 1979 TOTAL 3126.90 MEAN 8.57 MAX 268 MIN .00 AC-FT 6200

06339550 COYOTE CREEK NEAR ZAP, ND--Continued

WATER-QUALITY RECORDS

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS (MG/L AS CACO3) (00900)
OCT											
04...	0940	.16	2010	8.4	7.0	9.0	12.8	119	1200	580	320
NOV											
09...	1125	.89	2160	8.5	1.0	5.0	11.2	94	140	270	370
DEC											
14...	0930	.49	2870	8.3	-1.5	.0	10.1	74	69	66	430
JAN											
09...	1130	.52	2870	8.0	-10.0	.0	9.9	72	K6	K8	460
MAR											
29...	1445	27	525	7.7	-2.0	.0	12.6	93	K1	71	120
APR											
25...	1100	14	1320	8.2	6.0	5.0	12.0	101	K5	44	240
MAY											
22...	0720	2.1	1890	8.5	8.5	13.5	8.9	90	54	62	410
JUN											
19...	1130	.71	2030	8.2	20.0	19.0	6.6	77	440	1300	370
JUL											
18...	1545	.66	2000	8.5	28.5	30.0	9.5	130	360	43	260
AUG											
08...	0930	.57	1390	8.4	24.5	21.5	7.2	85	110	52	200
SEP											
12...	1205	.50	1690	8.5	12.0	14.5	9.7	100	180	340	240

DATE	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE (MG/L AS HCO3) (00440)	CAR-BONATE (MG/L AS CO3) (00445)	ALKA-LINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)
OCT											
04...	0	59	43	380	71	9.2	9.6	578	4	490	3.7
NOV											
09...	0	70	47	420	71	9.5	10	688	4	580	3.5
DEC											
14...	0	82	55	570	75	12	14	1010	0	830	8.1
JAN											
09...	0	90	56	570	75	12	12	947	0	780	15
MAR											
29...	33	25	14	53	47	2.1	9.5	106	0	87	3.4
APR											
25...	30	45	30	150	57	4.3	8.2	256	0	210	2.6
MAY											
22...	1	80	50	310	62	6.7	9.9	488	5	410	2.5
JUN											
19...	0	67	50	340	66	7.7	11	556	0	460	5.6
JUL											
18...	0	50	32	360	85	9.2	10	517	26	470	2.9
AUG											
08...	0	39	25	260	84	8.0	9.0	412	7	350	2.7
SEP											
12...	0	44	32	300	84	8.4	9.7	510	12	440	2.7

K - Results based on colony count outside the acceptable range (non-ideal colony count).

06339550 COYOTE CREEK NEAR ZAP, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)
OCT											
04...	610	8.1	.5	9.1	1390	1410	1.92	.61	.00	.04	.64
NOV											
09...	630	9.2	.3	8.6	1500	1540	2.09	5.70	.00	.01	.58
DEC											
14...	870	12	.4	12	2050	2110	2.87	2.79	.04	.06	.56
JAN											
09...	840	13	.4	13	2050	2060	2.80	1.78	.12	.28	.62
MAR											
29...	140	2.7	.1	8.1	340	305	.41	22.2	1.6	.06	1.0
APR											
25...	550	4.1	.2	11	757	725	.99	28.0	.24	.12	.86
MAY											
22...	620	6.9	.3	7.8	1350	1330	1.81	7.54	.01	.03	.66
JUN											
19...	680	7.9	.4	5.2	1460	1440	1.96	2.76	.02	.04	.36
JUL											
18...	590	6.7	.3	6.8	1350	1340	1.82	2.39	.00	.03	1.2
AUG											
08...	400	4.8	.3	8.8	945	957	1.30	1.47	.02	.03	.92
SEP											
12...	500	5.5	.4	300	1150	1460	1.99	1.97	.03	.01	.65

DATE	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	ARSENIC TOTAL IN BOT-TOM MA-TERIAL (UG/G AS AS) (01003)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)
OCT											
04...	.68	.68	3.0	.02	.00	--	--	--	--	--	--
NOV											
09...	.59	.59	2.6	.04	.02	--	--	--	--	--	--
DEC											
14...	.64	.68	3.0	.04	.02	--	--	--	--	--	--
JAN											
09...	.90	1.0	4.5	.03	.02	--	--	--	--	--	--
MAR											
29...	1.1	2.7	12	.18	.15	50	1	1	--	0	40
APR											
25...	.98	1.2	5.4	.06	.04	--	--	--	--	--	--
MAY											
22...	.69	.70	3.1	.03	.02	--	--	--	--	--	--
JUN											
19...	.40	.42	1.9	.02	.00	--	--	--	--	--	--
JUL											
18...	1.2	1.2	5.3	.05	.05	20	--	1	--	--	70
AUG											
08...	.95	.97	4.3	.06	.04	0	2	2	44	0	80
SEP											
12...	.66	.69	3.1	.03	.00	--	--	--	--	--	--

06339550 COYOTE CREEK NEAR ZAP, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	BARIUM, RECOV. FM BOTTOM MATERIAL (UG/G AS BA) (01008)	BERYLLIUM, TOTAL RECOVERABLE (UG/L AS BE) (01012)	BERYLLIUM, DISSOLVED (UG/L AS BE) (01010)	BERYLLIUM, RECOV. FM BOTTOM MATERIAL (UG/G) (01013)	BORON, DISSOLVED (UG/L AS B) (01020)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) (01034)	CHROMIUM, DISSOLVED (UG/L AS CR) (01030)	CHROMIUM, RECOV. FM BOTTOM MATERIAL (UG/G) (01029)	COBALT, TOTAL RECOVERABLE (UG/L AS CO) (01037)	COBALT, DISSOLVED (UG/L AS CO) (01035)	COBALT, RECOV. FM BOTTOM MATERIAL (UG/G AS CO) (01038)
OCT											
04...	--	--	--	--	330	--	--	--	--	--	--
NOV											
09...	--	--	--	--	380	--	--	--	--	--	--
DEC											
14...	--	--	--	--	470	--	--	--	--	--	--
JAN											
09...	--	--	--	--	450	--	--	--	--	--	--
MAR											
29...	--	0	<1	--	120	10	0	--	4	<3	--
APR											
25...	--	--	--	--	200	--	--	--	--	--	--
MAY											
22...	--	--	--	--	300	--	--	--	--	--	--
JUN											
19...	--	--	--	--	700	--	--	--	--	--	--
JUL											
18...	--	--	<1	--	400	--	0	--	--	<3	--
AUG											
08...	300	0	<1	0	340	0	0	8	0	<3	17
SEP											
12...	--	--	--	--	360	--	--	--	--	--	--

DATE	COPPER, TOTAL RECOVERABLE (UG/L AS CU) (01042)	COPPER, DISSOLVED (UG/L AS CU) (01040)	COPPER, RECOV. FM BOTTOM MATERIAL (UG/G AS CU) (01043)	IRON, DISSOLVED (UG/L AS FE) (01046)	LITHIUM TOTAL RECOVERABLE (UG/L AS LI) (01132)	LITHIUM DISSOLVED (UG/L AS LI) (01130)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN) (01055)	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	MANGANESE, RECOV. FM BOTTOM MATERIAL (UG/G) (01053)	MERCURY TOTAL RECOVERABLE (UG/L AS HG) (71900)	MERCURY DISSOLVED (UG/L AS HG) (71890)
OCT											
04...	--	--	--	20	--	--	--	--	--	--	--
NOV											
09...	--	--	--	60	--	--	--	--	--	--	--
DEC											
14...	--	--	--	60	--	--	--	--	--	--	--
JAN											
09...	--	--	--	0	--	--	--	--	--	--	--
MAR											
29...	4	5	--	160	10	20	60	40	--	.0	.0
APR											
25...	--	--	--	150	--	--	--	--	--	--	--
MAY											
22...	--	--	--	10	--	--	--	--	--	--	--
JUN											
19...	--	--	--	10	--	--	--	--	--	--	--
JUL											
18...	--	3	--	<0	--	50	--	50	--	--	.0
AUG											
08...	11	14	9	20	40	50	180	50	1100	.1	.1
SEP											
12...	--	--	--	20	--	--	--	--	--	--	--

DATE	MERCURY RECOV. FM BOTTOM MATERIAL (UG/G AS HG) (71921)	MOLYBDENUM, TOTAL RECOVERABLE (UG/L AS MO) (01062)	MOLYBDENUM, RECOV. FM BOTTOM MATERIAL (UG/G) (01063)	MOLYBDENUM, DISSOLVED (UG/L AS MO) (01060)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI) (01067)	NICKEL, DISSOLVED (UG/L AS NI) (01065)	NICKEL, RECOV. FM BOTTOM MATERIAL (UG/G AS NI) (01068)	SELENIUM, TOTAL (UG/L AS SE) (01147)	SELENIUM, DISSOLVED (UG/L AS SE) (01145)	SELENIUM, TOTAL IN BOTTOM MATERIAL (UG/G) (01148)	VANADIUM, DISSOLVED (UG/L AS V) (01085)
MAR											
29...	--	0	--	<10	7	4	--	1	0	--	2.4
APR											
25...	--	--	--	--	--	--	--	--	--	--	--
MAY											
22...	--	--	--	--	--	--	--	--	--	--	--
JUN											
19...	--	--	--	--	--	--	--	--	--	--	--
JUL											
18...	--	--	--	17	--	2	--	--	0	--	<1.0
AUG											
08...	.02	0	0	<10	9	5	24	0	0	0	1.0
SEP											
12...	--	--	--	--	--	--	--	--	--	--	--

06339550 COYOTE CREEK NEAR ZAP, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ZINC, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS ZN) (01093)	GROSS ALPHA, DIS-SOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DIS-SOLVED (PCI/L AS CS-137) (03515)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C) (00689)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
OCT											
04...	--	--	--	--	--	--	--	11	--	48	.02
NOV											
09...	--	--	--	--	--	--	--	13	.6	49	.12
DEC											
14...	--	--	--	--	--	--	--	12	.4	28	.04
JAN											
09...	--	--	--	--	--	--	--	11	--	57	.05
MAR											
29...	10	10	--	<4.1	.5	12	1.0	14	.9	32	2.3
APR											
25...	--	--	--	--	--	--	--	13	1.2	51	2.0
MAY											
22...	--	--	--	--	--	--	--	16	--	28	.16
JUN											
19...	--	--	--	--	--	--	--	15	.7	43	.08
JUL											
18...	--	<3	--	--	--	--	--	15	.5	26	.05
AUG											
08...	20	<3	30	<15	1.1	12	1.8	13	.3	41	.06
SEP											
12...	--	--	--	--	--	--	--	12	.4	33	.04

DATE	BED MAT. FALL DIAM. % FINER THAN .062 MM (80158)	BED MAT. FALL DIAM. % FINER THAN .125 MM (80159)	BED MAT. FALL DIAM. % FINER THAN .250 MM (80160)	BED MAT. FALL DIAM. % FINER THAN .500 MM (80161)	BED MAT. FALL DIAM. % FINER THAN 1.00 MM (80162)	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM (80169)	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM (80170)	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM (80171)	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM (80172)	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM (80173)
MAR										
29...	13	20	50	75	79	83	90	95	98	100

DATE	LENGTH OF EXPO-SURE (DAYS) (00022)	CHLOR-A PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70957)	CHLOR-B PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70958)	PERI-PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M (00573)	PERI-PHYTON BIOMASS ASH WEIGHT G/SQ M (00572)
NOV					
09...	28	15.6	.240	86.2	68.1
JUL					
18...	29	1.24	.590	2.83	2.83
AUG					
08...	21	1.71	1.10	1.73	1.26
SEP					
12...	35	3.28	.000	3.62	2.76

06339550 COYOTE CREEK NEAR ZAP, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1978 TO SEPTEMBER 1979

DATE	OCT 4,78		NOV 9,78		DEC 14,78		JAN 9,79		MAR 29,79		APR 25,79	
TIME	0940		1125		0930		1130		1445		1100	
TOTAL CELLS/ML	540		3800		1600		50		260		950	
DIVERSITY: DIVISION	1.6		1.5		1.5		1.5		1.7		1.5	
.CLASS	1.6		1.5		1.5		1.5		1.7		1.5	
..ORDER	1.9		1.5		2.0		2.1		2.2		2.0	
...FAMILY	2.3		1.7		2.4		2.3		2.4		2.1	
....GENUS	2.3		1.9		2.5		2.3		2.4		0.0	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)												
.CHLOROPHYCEAE												
..CHLOROCOCCALES												
...CHLOROCOCCACEAE												
....CHLOROCOCCUM	--	-	--	-	--	-	--	-	--	-	--	-
...OOCYSTACEAE												
....ANKISTRODESMUS	--	-	1700#	44	540#	33	--	-	13	5	86	9
....CHLORELLA	--	-	--	-	--	-	--	-	--	-	--	-
....DICTYOSPHAERIUM	--	-	--	-	--	-	--	-	--	-	--	-
....FRANCEIA	--	-	--	-	--	-	--	-	--	-	43	5
....KIRCHNERIELLA	--	-	37	1	--	-	--	-	--	-	--	-
....OOCYSTIS	--	-	--	-	--	-	20#	40	--	-	--	-
....SELENASTRUM	--	-	--	-	--	-	--	-	--	-	--	-
....TETRAEDRON	--	-	--	-	--	-	--	-	--	-	--	-
....TREUBARIA	--	-	--	-	--	-	--	-	--	-	--	-
...SCENEDESMACEAE												
....CRUCIGENIA	--	-	--	-	62	4	--	-	--	-	--	-
....SCENEDESMUS	96#	18	74	2	110	7	--	-	52#	20	29	3
....TETRASTRUM	--	-	--	-	--	-	--	-	--	-	--	-
..VOLVOCALES												
...CHLAMYDOMONADACEAE	--	-	--	-	--	-	--	-	--	-	330#	35
....CHLAMYDOMONAS	21	4	--	-	31	2	5	10	26	10	--	-
CHRYSOPHYTA												
.BACILLARIOPHYCEAE												
..CENTRALES												
...COSCINODISCACEAE												
....CYCLOTELLA	16	3	290	8	--	-	5	10	39	15	43	5
....MELOSIRA	--	-	220	6	--	-	--	-	--	-	--	-
..PENNALES												
...ACHNANTHACEAE												
....COCCONEIS	--	-	--	-	--	-	--	-	--	-	--	-
....RHOICOSPHENIA	--	-	--	-	--	-	--	-	--	-	--	-
...FRAGILARIACEAE												
....SYNEDRA	48	9	--	-	85	5	5	10	--	-	--	-
...NAVICULACEAE												
....NAVICULA	11	2	--	-	*	0	--	-	--	-	14	2
...NITZSCHIACEAE												
....NITZSCHIA	180#	34	74	2	--	-	5	10	13	5	--	-
.CHRYSOPHYCEAE												
..CHRYSOMONADALES												
...OCHROMONADACEAE												
....DINOBRYON	--	-	--	-	--	-	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)												
.CRYPTOPHYCEAE												
..CRYPTOMONADALES												
...CRYPTOCHRYSIDACEAE												
....CHROOMONAS	--	-	--	-	--	-	--	-	--	-	--	-
...CRYPTOMONADACEAE												
....CRYPTOMONAS	--	-	--	-	--	-	--	-	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)												
.CYANOPHYCEAE												
..CHROOCOCCALES												
...CHROOCOCCACEAE												
....ANACYSTIS	--	-	--	-	250#	15	--	-	--	-	--	-
....COCCOCHLORIS	--	-	--	-	*	0	--	-	--	-	--	-
..HORMOGONALES												
...NOSTOCACEAE												
....ANABAENA	--	-	--	-	--	-	--	-	100#	40	--	-
...OSCILLATORIACEAE												
....OSCILLATORIA	160#	30	--	-	460#	29	--	-	--	-	360#	38
....SCHIZOTHRIX	--	-	--	-	--	-	--	-	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)												
.EUGLENOPHYCEAE												
..EUGLENALES												
...EUGLENACEAE												
....EUGLENA	--	-	--	-	--	-	--	-	--	-	14	2
....TRACHELOMONAS	5	1	1400#	38	62	4	--	-	--	-	29	3
PYRRHOPHYTA (FIRE ALGAE)												
.DINOPHYCEAE												
..GYMNODINIALES												
...GYMNODINIACEAE												
....GYMNODINIUM	--	-	--	-	--	-	--	-	13	5	--	-
..PERIDINIALES												
...GLENODINIACEAE												
....GLENODINIUM	--	-	--	-	--	-	10#	20	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06339550 COYOTE CREEK NEAR ZAP, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1978 TO SEPTEMBER 1979

DATE	MAY 22,79	JUN 19,79	JUL 18,79	AUG 8,79	SEP 12,79
TIME	0720	1130	1545	0930	1205
TOTAL CELLS/ML	150	680	3300	7300	2000
DIVERSITY: DIVISION	1.3	0.8	1.0	1.5	1.1
.CLASS	1.3	0.8	1.0	1.5	1.1
..ORDER	1.3	1.0	1.1	2.1	1.3
...FAMILY	1.3	1.0	1.6	2.4	2.1
....GENUS	1.3	1.0	2.4	3.0	3.0

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)										
.CHLOROPHYCEAE										
..CHLOROCOCCALES										
...CHLOROCOCCACEAE										
....CHLOROCOCCUM	--	-	--	-	--	-	81	1	--	-
...OOCYSTACEAE										
....ANKISTRODESMUS	77#	50	26	4	130	4	240	3	190	10
....CHLORELLA	--	-	--	-	--	-	--	-	190	10
....DICTYOSPHAERIUM	--	-	--	-	--	-	81	1	--	-
....FRANCEIA	--	-	--	-	--	-	--	-	--	-
....KIRCHNERIELLA	--	-	--	-	--	-	--	-	69	3
....OOCYSTIS	--	-	--	-	150	5	--	-	--	-
....SELENASTRUM	--	-	--	-	52	2	140	2	--	-
....TETRAEDRON	--	-	--	-	26	1	61	1	11	1
....TREUBARIA	--	-	--	-	39	1	--	-	--	-
...SCENEDESMACEAE										
....CRUCIGENIA	--	-	--	-	1000#	31	750	10	410#	20
....SCENEDESMUS	--	-	--	-	960#	29	1700#	23	470#	23
....TETRASTRUM	--	-	--	-	--	-	160	2	46	2
..VOLVOCALES										
...CHLAMYDOMONADACEAE	--	-	--	-	--	-	--	-	--	-
....CHLAMYDOMONAS	--	-	--	-	39	1	200	3	--	-
CHRYSOPHYTA										
.BACILLARIOPHYCEAE										
..CENTRALES										
...COSCINODISCACEAE										
....CYCLOTELLA	--	-	--	-	*	0	160	2	400#	20
....MELOSIRA	--	-	--	-	--	-	81	1	--	-
..PENNALES										
...ACHNANTHACEAE										
....COCCONEIS	--	-	13	2	--	-	--	-	--	-
....RHOICOSPHENIA	--	-	--	-	--	-	--	-	23	1
...FRAGILARIACEAE										
....SYNEDRA	--	-	--	-	--	-	--	-	11	1
...NAVICULACEAE										
....NAVICULA	--	-	--	-	--	-	--	-	23	1
...NITZSCHIACEAE										
....NITZSCHIA	13	8	13	2	--	-	--	-	57	3
.CHRYSOPHYCEAE										
..CHRYSOMONADALES										
...OCHROMONADACEAE										
....DINOBRYON	--	-	--	-	--	-	--	-	23	1
CRYPTOPHYTA (CRYPTOMONADS)										
.CRYPTOPHYCEAE										
..CRYPTOMONADALES										
...CRYPTOCHRYSIDACEAE										
....CHROOMONAS	--	-	26	4	--	-	--	-	--	-
...CRYPTOMONADACEAE										
....CRYPTOMONAS	--	-	--	-	*	0	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)										
.CYANOPHYCEAE										
..CHROOCOCCALES										
...CHROOCOCCACEAE										
....ANACYSTIS	64#	42	13	2	810#	24	1700#	24	--	-
....COCCOCHLORIS	--	-	--	-	--	-	--	-	--	-
..HORMOGONALES										
...NOSTOCACEAE										
....ANABAENA	--	-	--	-	--	-	--	-	--	-
...OSCILLATORIACEAE										
....OSCILLATORIA	--	-	580#	85	--	-	1400#	19	--	-
....SCHIZOTHRIX	--	-	--	-	--	-	--	-	80	4
EUGLENOPHYTA (EUGLENOIDS)										
.EUGLENOPHYCEAE										
..EUGLENALES										
...EUGLENACEAE										
....EUGLENA	--	-	--	-	39	1	420	6	--	-
....TRACHELOMONAS	--	-	--	-	*	0	61	1	--	-
PYRRHOPHYTA (FIRE ALGAE)										
.DINOPHYCEAE										
..GYMNODINIALES										
...GYMNODINIACEAE										
....GYMNODINIUM	--	-	13	2	--	-	--	-	--	-
..PERIDINIALES										
...GLENODINIACEAE										
....GLENODINIUM	--	-	--	-	*	0	*	0	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06339560 BRUSH CREEK NEAR BEULAH, ND

LOCATION.--Lat 47°10'43", long 101°47'05", in NW¼SW¼NW¼ sec.25, T.143 N., R.88 W., Mercer County, Hydrologic Unit 10130201, on right bank 60 ft (18 m) upstream from bridge on State Highway 49, and 6 mi (10 km) south of Beulah.

DRAINAGE AREA.--22 mi^2 (57 km^2), approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1974 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 1,948 ft (593.8 m) from State Highway Department levels.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--5 years, 1.53 ft^3/s (0.043 m^3/s), 1,110 acre-ft/yr (1.37 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, about 200 ft^3/s (5.7 m^3/s) Mar. 21, 1978, gage height 9.26 ft (2.822 m), backwater from ice; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, about 90 ft^3/s (2.5 m^3/s) Apr. 16, gage height, 6.92 ft (2.109 m), backwater from ice, only peak above base of 50 ft^3/s (1.42 m^3/s); no flow for several months.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.16	.24	.32	.00	.00	.00	2.5	.85	.46	.62	.70	.04
2	.16	.32	.28	.00	.00	.00	2.0	.79	.42	.79	.66	.04
3	.35	.32	.24	.00	.00	.00	1.5	.70	.29	.79	.46	.04
4	.29	.26	.24	.00	.00	.00	1.0	.66	.22	.46	.38	.03
5	.42	.24	.24	.00	.00	.00	.50	.85	.24	.26	.32	.02
6	.32	.22	.20	.00	.00	.00	.20	1.1	.24	.16	.20	.02
7	.29	.24	.16	.00	.00	.00	.50	1.1	.22	.10	.14	.03
8	.29	.29	.12	.00	.00	.00	2.0	1.1	.22	.09	.10	.04
9	.29	.35	.10	.00	.00	.00	4.0	.92	.18	.14	.08	.04
10	.46	.35	.09	.00	.00	.00	6.0	.92	.16	.12	.07	.24
11	.32	.36	.08	.00	.00	.00	10	.92	.12	.14	.05	.58
12	.26	.36	.07	.00	.00	.00	12	.79	.14	.79	.04	.26
13	.29	.36	.06	.00	.00	.00	10	.79	.10	.46	.04	.20
14	.32	.36	.05	.00	.00	.00	15	.79	.08	.32	.04	.16
15	.32	.36	.04	.00	.00	.00	25	.74	.05	.26	.04	.12
16	.29	.36	.03	.00	.00	.00	40	.70	.05	.22	.04	.10
17	.42	.36	.02	.00	.00	.00	70	.66	.04	.20	.03	.10
18	.32	.36	.01	.00	.00	.00	40	.58	.04	.18	.03	.10
19	.35	.36	.00	.00	.00	.00	22	.62	.09	.16	.02	.10
20	.35	.36	.00	.00	.00	.00	10	.74	.22	.14	.03	.12
21	.32	.36	.00	.00	.00	.00	6.0	.70	.18	.10	.04	.10
22	.32	.36	.00	.00	.00	.00	3.6	.58	1.0	.29	.03	.12
23	.32	.36	.00	.00	.00	1.0	2.9	.66	.92	.12	.03	.14
24	.32	.36	.00	.00	.00	2.0	3.4	.66	.74	.10	.03	.16
25	.29	.36	.00	.00	.00	3.0	2.6	.58	.62	.09	.03	.14
26	.26	.36	.00	.00	.00	4.0	3.8	.54	.38	.14	.02	.16
27	.29	.36	.00	.00	.00	4.8	2.9	.46	.22	.38	.03	.16
28	.26	.36	.00	.00	.00	4.5	1.4	.38	.12	.42	.04	.16
29	.26	.36	.00	.00	---	4.0	.92	.35	.08	.50	.04	.16
30	.24	.36	.00	.00	---	3.5	.85	.35	.05	1.8	.03	.16
31	.24	---	.00	.00	---	3.0	---	.35	---	.85	.03	---
TOTAL	9.39	10.03	2.35	.00	.00	29.80	302.57	21.93	7.89	11.19	3.82	3.84
MEAN	.30	.33	.076	.000	.000	.96	10.1	.71	.26	.36	.12	.13
MAX	.46	.36	.32	.00	.00	4.8	70	1.1	1.0	1.8	.70	.58
MIN	.16	.22	.00	.00	.00	.00	.20	.35	.04	.09	.02	.02
AC-FT	19	20	4.7	.00	.00	59	600	43	16	22	7.6	7.6

CAL YR 1978 TOTAL 892.01 MEAN 2.44 MAX 137 MIN .00 AC-FT 1770
WTR YR 1979 TOTAL 402.81 MEAN 1.10 MAX 70 MIN .00 AC-FT 799

06339560 BRUSH CREEK NEAR BEULAH, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1975 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L) (00310)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)
OCT											
24...	0940	.18	1960	8.0	6.5	9.0	1.3	81	64	290	57
NOV											
30...	1010	.36	2310	7.7	.0	6.9	.9	100	83	300	52
MAR											
27...	1320	4.8	770	--	.0	--	--	--	--	--	--
30...	1100	E3.0	1070	--	.0	--	--	--	--	--	--
APR											
13...	1325	9.6	390	--	.5	--	--	--	--	--	--
16...	1240	33	405	7.7	.5	11.5	4.9	23	13	43	44
19...	1315	19	510	--	9.5	--	--	--	--	--	--
25...	1130	2.5	1160	7.9	5.0	10.0	1.1	61	39	150	50
MAY											
23...	1430	.69	1840	8.0	16.5	9.4	1.3	93	78	260	50
JUN											
26...	1135	.43	1700	8.0	16.0	6.6	1.2	51	53	300	65
JUL											
26...	0820	.17	1630	7.8	18.0	5.3	1.4	53	49	260	62
AUG											
29...	0820	E.04	1720	8.0	14.5	5.8	.4	63	52	280	61
SEP											
20...	0840	.12	1830	8.0	11.0	6.6	.9	71	59	280	76

DATE	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)
OCT											
24...	5.8	11	550	550	6.7	.3	11	1340	1.82	.65	.01
NOV											
30...	5.4	11	620	670	9.1	.2	14	1590	2.16	1.55	.03
APR											
13...	--	--	--	--	--	--	--	--	--	--	--
16...	1.8	6.7	110	92	2.3	.1	8.7	263	.36	23.6	--
19...	--	--	--	--	--	--	--	--	--	--	--
25...	3.7	8.2	300	330	4.4	.2	12	810	1.10	5.47	.09
MAY											
23...	4.8	9.7	490	570	6.7	.3	7.8	1340	1.82	2.50	.09
JUN											
26...	7.0	7.7	510	500	4.4	.2	7.0	1270	1.73	1.47	.01
JUL											
26...	6.2	11	540	440	9.1	.3	10	1190	1.62	.55	.06
AUG											
29...	6.3	8.7	540	470	6.5	.3	9.8	1190	E1.62	E.13	.05
SEP											
20...	5.9	11	540	530	7.0	.3	9.8	1270	1.73	.41	.03

DATE	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, NH4 + ORG. SUSP. TOTAL (MG/L AS N) (00624)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BORON, DIS-SOLVED (UG/L AS B) (01020)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)
OCT											
24...	.61	.07	.04	.02	--	--	--	--	--	--	--
NOV											
30...	.74	.18	.04	.01	--	--	--	--	--	--	--
APR											
13...	--	--	--	--	--	--	--	--	--	--	--
16...	1.2	--	--	.11	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
25...	.74	.08	.07	.04	10	1	60	180	<1	0	0
MAY											
23...	.61	.00	.04	.03	--	--	--	--	--	--	--
JUN											
26...	.76	.29	.04	.01	0	1	50	470	<1	0	0
JUL											
26...	.50	.08	.11	.03	--	--	--	--	--	--	--
AUG											
29...	.63	.04	.01	.01	--	--	--	--	--	--	--
SEP											
20...	.66	.00	.03	.02	0	1	50	390	<1	10	1

E - Estimated.

06339560 BRUSH CREEK NEAR BEULAH, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	GROSS ALPHA, DIS-SOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)
OCT											
24...	--	--	--	--	--	--	--	--	--	--	--
NOV											
30...	--	--	--	--	--	--	--	--	--	--	--
MAR											
27...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
APR											
13...	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
25...	90	0	40	50	.0	<10	3	1000	<3	--	--
MAY											
23...	--	--	--	--	--	--	--	--	--	--	--
JUN											
26...	160	0	80	30	.1	21	0	1500	<3	--	--
JUL											
26...	--	--	--	--	--	--	--	--	--	--	--
AUG											
29...	--	--	--	--	--	--	--	--	--	--	--
SEP											
20...	30	3	80	100	.0	<10	0	1800	<3	<16	<.4

DATE	GROSS BETA, DIS-SOLVED (PCI/L AS CS-137) (03515)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)	GROSS BETA, DIS-SOLVED (PCI/L AS SR/YT-90) (80050)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90) (80060)	RADIUM 226, DIS-SOLVED, RADON METHOD (PCI/L) (09511)	URANIUM DIS-SOLVED, EXTRAC-TION (UG/L) (80020)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C) (00689)	CYANIDE TOTAL (MG/L AS CN) (00720)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
OCT											
24...	--	--	--	--	--	--	9.2	.6	--	12	.01
NOV											
30...	--	--	--	--	--	--	10	.4	--	7	.01
MAR											
27...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
APR											
13...	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	10	--	--	66	5.9
19...	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	14	.4	.00	7	.05
MAY											
23...	--	--	--	--	--	--	17	--	--	6	.01
JUN											
26...	--	--	--	--	--	--	17	--	.00	3	.00
JUL											
26...	--	--	--	--	--	--	9.9	.1	--	3	.00
AUG											
29...	--	--	--	--	--	--	16	.1	--	3	--
SEP											
20...	9.0	<.4	9.2	<.4	.07	.90	11	.2	.00	6	.00

DATE	BED MAT. FALL DIAM. % FINER THAN .062 MM (80158)	BED MAT. FALL DIAM. % FINER THAN .125 MM (80159)	BED MAT. FALL DIAM. % FINER THAN .250 MM (80160)	BED MAT. FALL DIAM. % FINER THAN .500 MM (80161)	BED MAT. FALL DIAM. % FINER THAN 1.00 MM (80162)	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM (80169)	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM (80170)	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM (80171)	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM (80172)	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM (80173)
MAY										
23...	2	4	14	27	30	35	46	67	94	100
JUN										
26...	--	--	--	--	--	--	--	--	--	--
JUL										
26...	--	--	--	--	--	--	--	--	--	--
AUG										
29...	--	--	--	--	--	--	--	--	--	--
SEP										
20...	--	--	--	--	--	--	--	--	--	--

06339800 SPRING CREEK BELOW LAKE ILO AT DUNN CENTER, ND

LOCATION.--Lat 47°20'34", long 102°37'03", in NW¼NW¼NE¼ sec.35, T.145 N., R.94 W., Dunn County, Hydrologic Unit 10130201, on right bank 100 ft (30 m) upstream from bridge on township road, 0.5 mi (0.8 km) south of Dunn Center, and 3.8 mi (6.1 km) downstream from Lake Ilo.

DRAINAGE AREA.--116 mi^2 (300 km^2), of which about 12 mi^2 (31 km^2) is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1977 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 2,150 ft (655 m), from topographic map.

REMARKS.--Records good except those for February, March, August and September, which are poor. Some regulation by Lake Ilo.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,150 ft^3/s (32.6 m^3/s) Mar. 27, 1978, gage height, 7.88 ft (2.402 m); minimum daily, 0.41 ft^3/s (0.012 m^3/s) Aug. 14, 16-19, 1979.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 597 ft^3/s (16.9 m^3/s) Apr. 18, gage height, 5.47 ft (1.667 m); minimum daily, 0.41 ft^3/s (0.012 m^3/s) Aug. 14, 16-19.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.8	1.5	1.8	2.0	2.0	2.0	16	17	1.9	1.9	.85	.48
2	1.9	1.4	1.8	2.0	2.0	2.0	12	15	2.2	1.6	.89	.47
3	1.9	1.3	1.7	2.0	2.0	2.0	9.0	12	1.8	1.6	.89	.44
4	2.6	1.7	1.9	2.0	2.0	2.0	8.0	11	2.1	1.8	.85	.44
5	2.0	3.0	1.9	2.0	2.0	2.0	6.0	9.9	1.3	1.8	.81	.47
6	1.4	1.3	1.8	2.0	2.0	2.0	5.0	15	1.8	1.8	.85	.50
7	1.0	1.1	1.8	2.0	2.0	2.0	5.0	30	1.5	2.0	.57	.54
8	1.0	.89	1.8	2.0	2.1	2.0	5.0	16	1.6	2.1	.48	.53
9	1.1	.89	1.7	2.0	2.0	2.0	40	13	1.2	2.2	.46	.52
10	1.3	.92	1.9	2.0	2.1	2.0	235	13	1.1	2.0	.46	.53
11	1.2	.92	2.0	2.0	2.1	2.0	380	14	1.1	2.0	.45	.57
12	1.6	.92	2.0	2.0	2.1	2.0	276	17	1.2	1.7	.45	.68
13	1.2	.96	2.0	2.0	2.0	2.0	171	12	.85	1.3	.42	.70
14	1.1	.92	2.0	2.0	2.0	2.0	109	11	.70	1.1	.41	.70
15	1.0	.89	2.0	2.0	2.1	2.5	90	8.0	.71	.92	.42	.77
16	.98	.91	2.0	2.0	2.0	3.5	102	7.8	.81	.92	.41	.79
17	.99	.83	2.0	2.0	2.0	4.0	264	18	1.2	.92	.41	.73
18	1.0	.84	1.9	2.0	2.0	3.5	530	5.4	1.2	.85	.41	.72
19	.95	.76	2.0	2.0	2.0	3.0	434	5.8	1.5	.85	.41	.71
20	1.3	.75	2.0	2.0	2.0	3.0	258	4.4	1.9	.89	.42	.68
21	1.9	.82	2.0	2.0	2.0	3.0	140	3.1	1.4	.89	.47	.67
22	2.0	1.4	1.9	2.0	2.0	5.0	87	4.1	1.5	.89	.50	1.1
23	1.7	1.6	1.9	2.0	2.0	8.0	61	2.7	1.5	.85	.47	.63
24	2.4	1.7	2.0	2.0	2.0	20	48	2.3	1.3	.92	.45	.60
25	3.2	1.7	2.0	2.0	2.0	30	39	2.4	1.3	.92	.45	.57
26	2.2	1.8	2.0	2.0	2.0	40	29	2.5	1.3	.92	.45	.56
27	1.0	1.8	2.0	2.0	2.0	65	25	2.1	1.3	.92	.45	.53
28	.88	1.8	2.0	2.0	2.0	60	22	1.8	1.4	.89	.47	.51
29	1.4	1.8	2.0	2.0	---	40	19	2.3	2.2	.85	.47	.51
30	2.0	1.8	2.0	2.0	---	35	17	2.0	1.8	.81	.45	.52
31	1.6	---	1.9	2.0	---	20	---	2.0	---	.81	.45	---
TOTAL	47.60	38.92	59.7	62.0	56.5	373.5	3442.0	282.6	42.67	39.92	16.20	18.17
MEAN	1.54	1.30	1.93	2.00	2.02	12.0	115	9.12	1.42	1.29	.52	.61
MAX	3.2	3.0	2.0	2.0	2.1	65	530	30	2.2	2.2	.89	1.1
MIN	.88	.75	1.7	2.0	2.0	2.0	5.0	1.8	.70	.81	.41	.44
AC-FT	94	77	118	123	112	741	6830	561	85	79	32	36

CAL YR 1978 TOTAL 6967.85 MEAN 19.1 MAX 900 MIN .47 AC-FT 13820
WTR YR 1979 TOTAL 4479.78 MEAN 12.3 MAX 530 MIN .41 AC-FT 8890

06339800 SPRING CREEK BELOW LAKE ILO AT DUNN CENTER, ND--Continued

WATER-QUALITY RECORDS

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS (MG/L AS CACO3) (00900)
OCT											
04...	1030	1.6	1410	8.2	14.0	11.0	10.2	98	67	210	240
NOV											
08...	0750	.87	1580	7.9	7.5	4.0	6.7	55	K6	160	300
DEC											
13...	1000	1.9	1450	7.3	-6.5	.0	6.2	46	59	240	240
JAN											
10...	1005	2.0	1620	8.1	-20.0	.0	5.2	38	430	310	260
FEB											
08...	1020	2.1	1840	7.7	-15.0	.0	4.9	36	K2000	K9600	310
APR											
*12...	1215	283	625	8.1	.5	1.5	11.4	89	K9	8100	--
17...	0900	217	--	--	13.0	2.0	--	--	--	--	--
MAY											
02...	0915	15	630	7.9	1.5	5.5	9.1	77	<1	K5	110
16...	1235	7.4	858	8.4	29.0	18.0	10.6	122	K6	K19	160
JUN											
14...	1230	.68	150	8.3	21.5	22.0	7.4	91	23	K70	340
JUL											
13...	0940	1.4	1240	8.2	19.5	21.5	4.7	58	29	46	200
AUG											
08...	1030	.49	2700	8.2	26.0	23.0	9.0	110	20	90	640
SEP											
12...	1700	.72	2250	8.6	13.5	16.0	9.0	98	87	170	360

DATE	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE (MG/L AS HCO3) (00440)	CAR-BONATE (MG/L AS CO3) (00445)	ALKA-LINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)
OCT											
04...	0	51	28	240	67	6.7	8.9	439	0	360	7.0
NOV											
08...	0	59	37	260	65	6.5	9.2	510	0	420	10
DEC											
13...	0	47	29	240	68	6.8	11	500	0	410	40
JAN											
10...	0	50	32	260	69	7.6	11	554	0	450	7.0
FEB											
08...	0	60	38	320	69	8.0	9.3	612	0	500	20
APR											
12...	--	--	--	--	--	--	--	232	0	190	2.9
17...	--	--	--	--	--	--	--	--	--	--	--
MAY											
02...	0	24	13	100	64	4.1	5.4	215	0	180	4.3
16...	0	31	19	140	65	4.9	6.3	264	1	220	1.7
JUN											
14...	0	53	50	250	61	5.9	8.1	449	0	370	3.6
JUL											
13...	0	39	24	200	68	6.2	8.1	366	0	300	3.7
AUG											
08...	310	120	83	400	74	6.9	8.2	405	0	330	4.1
SEP											
12...	0	71	45	400	70	9.1	9.7	570	24	510	2.5

* - Laboratory analysis incomplete at date of printing; data will be available via computer retrieval from WATSTORE files.

K - Results based on colony count outside the acceptable range (non-ideal colony count).

06339800 SPRING CREEK BELOW LAKE ILO AT DUNN CENTER, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)
OCT											
04...	360	5.4	.5	7.3	942	916	1.25	4.06	.40	.09	1.1
NOV											
08...	440	6.2	.4	11	1090	1060	1.47	2.54	.05	2.9	2.1
DEC											
13...	420	6.0	.4	8.8	1020	1010	1.37	5.29	.45	.49	1.4
JAN											
10...	420	7.3	.4	9.5	1100	1080	1.47	5.83	.38	.24	1.5
FEB											
06...	470	8.8	.5	11	1240	1220	1.66	6.92	.60	.73	1.1
APR											
12...	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--
MAY											
02...	160	2.9	.2	4.7	419	416	.57	16.8	.17	.20	.77
16...	220	3.6	.3	.8	562	552	.75	11.0	.02	.05	.95
JUN											
14...	460	4.8	.4	3.0	1050	1050	1.43	1.93	.00	.02	.74
JUL											
13...	340	4.2	.4	7.4	831	804	1.09	3.04	.03	.10	1.2
AUG											
08...	1200	42	.7	8.4	2090	2060	2.80	2.73	.03	.03	1.3
SEP											
12...	760	6.6	.7	11	1750	1610	2.19	3.13	.04	.06	.86

DATE	NITRO-GEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	ARSENIC TOTAL IN BOT-TOM MA-TERIAL (UG/G AS AS) (01003)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)
OCT											
04...	1.2	1.6	7.1	.17	.08	--	--	--	--	--	--
NOV											
08...	5.0	5.1	22	.33	.15	--	--	--	--	--	--
DEC											
13...	1.9	2.4	10	.09	.09	--	--	--	--	--	--
JAN											
10...	1.7	2.1	9.2	.16	.10	--	--	--	--	--	--
FEB											
08...	1.8	2.4	11	.16	.08	--	--	--	--	--	--
APR											
12...	--	--	--	--	--	--	--	--	19	--	--
17...	--	--	--	--	--	--	--	--	--	--	--
MAY											
02...	.97	1.1	5.0	.13	.06	--	--	--	--	--	--
16...	1.0	1.0	4.5	.09	.02	--	--	--	--	--	--
JUN											
14...	.76	.76	3.4	.08	.03	--	--	--	--	--	--
JUL											
13...	1.3	1.3	5.9	.11	.03	0	--	3	--	--	50
AUG											
08...	1.3	1.3	5.9	.10	.02	0	3	2	19	100	100
SEP											
12...	.92	.96	4.3	.10	.05	--	--	--	--	--	--

06339800 SPRING CREEK BELOW LAKE ILO AT DUNN CENTER, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	BARIUM, RECOV. FM BOTTOM MATERIAL (UG/G AS BA) (01008)	BERYLLIUM, TOTAL RECOVERABLE (UG/L AS BE) (01012)	BERYLLIUM, DISSOLVED (UG/L AS BE) (01010)	BERYLLIUM, RECOV. FM BOTTOM MATERIAL (UG/G) (01013)	BORON, DISSOLVED (UG/L AS B) (01020)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) (01034)	CHROMIUM, DISSOLVED (UG/L AS CR) (01030)	CHROMIUM, RECOV. FM BOTTOM MATERIAL (UG/G) (01029)	COBALT, TOTAL RECOVERABLE (UG/L AS CO) (01037)	COBALT, DISSOLVED (UG/L AS CO) (01035)	COBALT, RECOV. FM BOTTOM MATERIAL (UG/G AS CO) (01038)
OCT											
04...	--	--	--	--	420	--	--	--	--	--	--
NOV											
08...	--	--	--	--	500	--	--	--	--	--	--
DEC											
13...	--	--	--	--	400	--	--	--	--	--	--
JAN											
10...	--	--	--	--	590	--	--	--	--	--	--
FEB											
08...	--	--	--	--	450	--	--	--	--	--	--
APR											
12...	200	--	--	1	--	--	--	7	--	--	20
17...	--	--	--	--	--	--	--	--	--	--	--
MAY											
02...	--	--	--	--	160	--	--	--	--	--	--
16...	--	--	--	--	220	--	--	--	--	--	--
JUN											
14...	--	--	--	--	400	--	--	--	--	--	--
JUL											
13...	--	--	<1	--	370	--	10	--	--	<3	--
AUG											
08...	100	0	0	0	960	0	0	5	0	0	10
SEP											
12...	--	--	--	--	660	--	--	--	--	--	--

DATE	COPPER, TOTAL RECOVERABLE (UG/L AS CU) (01042)	COPPER, DISSOLVED (UG/L AS CU) (01040)	COPPER, RECOV. FM BOTTOM MATERIAL (UG/G AS CU) (01043)	IRON, DISSOLVED (UG/L AS FE) (01046)	LITHIUM TOTAL RECOVERABLE (UG/L AS LI) (01132)	LITHIUM DISSOLVED (UG/L AS LI) (01130)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN) (01055)	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	MANGANESE, RECOV. FM BOTTOM MATERIAL (UG/G) (01053)	MERCURY TOTAL RECOVERABLE (UG/L AS HG) (71900)	MERCURY DISSOLVED (UG/L AS HG) (71890)
OCT											
04...	--	--	--	140	--	--	--	--	--	--	--
NOV											
08...	--	--	--	370	--	--	--	--	--	--	--
DEC											
13...	--	--	--	130	--	--	--	--	--	--	--
JAN											
10...	--	--	--	160	--	--	--	--	--	--	--
FEB											
08...	--	--	--	310	--	--	--	--	--	--	--
APR											
12...	--	--	6	--	--	--	--	--	560	--	--
17...	--	--	--	--	--	--	--	--	--	--	--
MAY											
02...	--	--	--	140	--	--	--	--	--	--	--
16...	--	--	--	0	--	--	--	--	--	--	--
JUN											
14...	--	--	--	10	--	--	--	--	--	--	--
JUL											
13...	--	2	--	30	--	30	--	90	--	--	.2
AUG											
08...	8	7	7	30	70	70	400	330	1200	.1	.0
SEP											
12...	--	--	--	10	--	--	--	--	--	--	--

DATE	MERCURY RECOV. FM BOTTOM MATERIAL (UG/G AS HG) (71921)	MOLYBDENUM, TOTAL RECOVERABLE (UG/L AS MO) (01062)	MOLYBDENUM, RECOV. FM BOTTOM MATERIAL (UG/G) (01063)	MOLYBDENUM, DISSOLVED (UG/L AS MO) (01060)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI) (01067)	NICKEL, DISSOLVED (UG/L AS NI) (01065)	NICKEL, RECOV. FM BOTTOM MATERIAL (UG/G AS NI) (01068)	SELENIUM, TOTAL (UG/L AS SE) (01147)	SELENIUM, DISSOLVED (UG/L AS SE) (01145)	SELENIUM, TOTAL IN BOTTOM MATERIAL (UG/G) (01148)	VANADIUM, DISSOLVED (UG/L AS V) (01085)
APR											
12...	.04	--	6	--	--	--	10	--	--	0	--
17...	--	--	--	--	--	--	--	--	--	--	--
MAY											
02...	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--
JUN											
14...	--	--	--	--	--	--	--	--	--	--	--
JUL											
13...	--	--	--	<10	--	4	--	--	0	--	<1.0
AUG											
08...	.04	0	0	0	7	1	12	0	0	0	1.0
SEP											
12...	--	--	--	--	--	--	--	--	--	--	--

06339800 SPRING CREEK BELOW LAKE ILO AT DUNN CENTER, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ZINC, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS ZN) (01093)	GROSS ALPHA, DIS-SOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DIS-SOLVED (PCI/L AS CS-137) (03515)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C) (00689)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
OCT											
04...	--	--	--	--	--	--	--	17	.9	25	.11
NOV											
08...	--	--	--	--	--	--	--	20	1.7	14	.03
DEC											
13...	--	--	--	--	--	--	--	17	.7	16	.08
JAN											
10...	--	--	--	--	--	--	--	15	.4	10	.05
FEB											
06...	--	--	--	--	--	--	--	20	.9	73	.41
APR											
12...	--	--	42	<5.8	<1.2	9.3	2.3	--	--	59	45
17...	--	--	--	--	--	--	--	--	--	47	28
MAY											
02...	--	--	--	--	--	--	--	11	1.0	40	1.6
16...	--	--	--	--	--	--	--	12	1.1	25	.50
JUN											
14...	--	--	--	--	--	--	--	16	1.8	12	.02
JUL											
13...	--	<3	--	--	--	--	--	24	--	48	.18
AUG											
08...	30	20	43	<34	.7	<12	.7	30	1.0	61	.08
SEP											
12...	--	--	--	<23	.9	13	.9	17	1.1	34	.07

DATE	BED MAT. FALL DIAM. % FINER THAN .062 MM (80158)	BED MAT. FALL DIAM. % FINER THAN .125 MM (80159)	BED MAT. FALL DIAM. % FINER THAN .250 MM (80160)	BED MAT. FALL DIAM. % FINER THAN .500 MM (80161)	BED MAT. FALL DIAM. % FINER THAN 1.00 MM (80162)	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM (80169)	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM (80170)	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM (80171)	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM (80172)	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM (80173)
APR										
12...	9	14	27	60	69	79	92	99	100	--
AUG										
08...	2	4	11	20	26	34	46	58	62	78

DATE	LENGTH OF EXPO-SURE (DAYS) (00022)	CHLOR-A PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70957)	CHLOR-B PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70958)	PERI-PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M (00573)	PERI-PHYTON BIOMASS ASH WEIGHT G/SQ M (00572)
OCT					
04...	15	.200	.000	.710	.240
JUL					
13...	29	12.6	.900	13.9	11.3
AUG					
08...	32	3.66	.300	1.26	.950
SEP					
12...	35	2.45	.740	2.15	1.65

06339800 SPRING CREEK BELOW LAKE ILO AT DUNN CENTER, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1978 TO SEPTEMBER 1979

DATE	OCT 4,78		NOV 8,78		DEC 13,78		JAN 10,79		FEB 8,79		APR 12,79	
TIME	1030		0750		1000		1005		1020		1215	
TOTAL CELLS/ML	1300		7900		720		120		350		590	
DIVERSITY: DIVISION	1.5		1.5		1.4		0.0		1.2		1.2	
.CLASS	1.5		1.5		1.4		0.0		1.2		1.2	
..ORDER	2.1		1.7		2.1		0.0		2.0		1.9	
...FAMILY	3.0		1.8		2.7		0.9		2.8		1.9	
....GENUS	3.2		1.9		2.7		0.9		2.9		0.0	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)												
.CHLOROPHYCEAE												
..CHLOROCOCCALES												
...CHARACIACEAE												
....SCHROEDERIA	--	-	--	-	15	2	--	-	--	-	--	-
...COELASTRACEAE												
....COELASTRUM	--	-	--	-	--	-	--	-	--	-	--	-
...HYDRODICTYACEAE												
....PEDIASTRUM	--	-	--	-	--	-	--	-	--	-	--	-
...MICRACTINIACEAE												
....MICRACTINIUM	--	-	--	-	--	-	--	-	--	-	--	-
...OOCYSTACEAE												
....ANKISTRODESMUS	27	2	60	1	--	-	--	-	--	-	140#	24
....CHODATELLA	--	-	--	-	--	-	--	-	--	-	--	-
....KIRCHNERIELLA	72	5	--	-	--	-	--	-	--	-	--	-
....OOCYSTIS	--	-	--	-	--	-	--	-	--	-	110#	20
....SELENASTRUM	--	-	480	6	8	1	--	-	--	-	--	-
....TETRAEDRON	--	-	--	-	--	-	--	-	--	-	--	-
...SCENEDESMACEAE												
....CRUCIGENIA	36	3	--	-	--	-	--	-	--	-	--	-
....SCENEDESMUS	72	5	--	-	--	-	--	-	--	-	--	-
....TETRASTRUM	--	-	--	-	--	-	--	-	--	-	--	-
..TETRASPORALES												
...PALMELLACEAE												
....SPHAEROCYSTIS	--	-	--	-	--	-	--	-	--	-	--	-
..VOLVOCALES												
...CHLAMYDOMONADACEAE	--	-	--	-	--	-	--	-	--	-	110#	20
....CARTERIA	--	-	970	12	--	-	--	-	--	-	--	-
....CHLAMYDOMONAS	--	-	240	3	54	8	--	-	5	1	--	-
...VOLVOCACEAE												
....PANDORINA	--	-	--	-	--	-	--	-	--	-	--	-
..ZYGNEMATALES												
...DESMIDIACEAE												
....CLOSTERIUM	--	-	--	-	--	-	--	-	--	-	14	2
....STAURASTRUM	--	-	--	-	--	-	--	-	--	-	--	-
CHRYSOPHYTA												
.BACILLARIOPHYCEAE												
..CENTRALES												
...COSCINODISCACEAE												
....CYCLOTELLA	140	11	--	-	23	3	--	-	25	7	--	-
....MELOSIRA	18	1	--	-	--	-	--	-	10	3	--	-
....STEPHANODISCUS	--	-	--	-	--	-	--	-	--	-	--	-
..PENNALES												
...ACHNANTHACEAE												
....COCCONEIS	36	3	--	-	8	1	5	4	--	-	--	-
...FRAGILARIACEAE												
....FRAGILARIA	--	-	--	-	--	-	--	-	5	1	--	-
....SYNEDRA	27	2	--	-	--	-	--	-	--	-	--	-
...GOMPHONEMATACEAE												
....GOMPHONEMA	--	-	60	1	8	1	--	-	10	3	--	-
...NAVICULACEAE												
....NAVICULA	210#	15	--	-	130#	18	20#	17	40	12	--	-
....PINNULARIA	--	-	60	1	--	-	--	-	--	-	--	-
...NITZSCHIACEAE												
....NITZSCHIA	280#	21	910	11	100	14	91#	78	76#	22	--	-
...SURIRELLACEAE												
....SURIRELLA	27	2	--	-	8	1	--	-	--	-	--	-
.CHRYSOPHYCEAE												
..CHRYSOMONADALES												
...CHROMULINACEAE												
....CHRYSOCOCCUS	--	-	--	-	--	-	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)												
.CRYPTOPHYCEAE												
..CRYPTOMONADALES												
...CRYPTOMONADACEAE												
....CRYPTOMONAS	--	-	--	-	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

CONTINUED

06339800 SPRING CREEK BELOW LAKE ILO AT DUNN CENTER, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1978 TO SEPTEMBER 1979 (CONTINUED)

DATE TIME	OCT 4,78 1030		NOV 8,78 0750		DEC 13,78 1000		JAN 10,79 1005		FEB 8,79 1020		APR 12,79 1215	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CYANOPHYTA (BLUE-GREEN ALGAE)												
.CYANOPHYCEAE												
..CHROOCOCCALES												
...CHROOCOCCACEAE												
....ANACYSTIS	110	8	4800#	61	170#	24	--	-	45	13	160#	27
....COCCOCHLORIS	--	-	--	-	--	-	--	-	--	-	--	-
..HORMOGONALES												
...NOSTOCACEAE												
....ANABAENA	--	-	--	-	--	-	--	-	25	7	--	-
...OSCILLATORIACEAE												
....LYNGBYA	--	-	--	-	--	-	--	-	--	-	--	-
....OSCILLATORIA	270#	20	240	3	190#	27	--	-	100#	29	--	-
EUGLENOPHYTA (EUGLENOIDS)												
.EUGLENOPHYCEAE												
..EUGLENALES												
...EUGLENACEAE												
....EUGLENA	18	1	--	-	--	-	--	-	--	-	43	7
....LEPOCINCLIS	--	-	60	1	--	-	--	-	--	-	--	-
....PHACUS	--	-	--	-	--	-	--	-	--	-	--	-
....TRACHELOMONAS	--	-	--	-	--	-	--	-	5	1	--	-
PYRRHOPHYTA (FIRE ALGAE)												
.DINOPHYCEAE												
..GYMNODINIALES												
...GYMNODINIACEAE												
....GYMNODINIUM	--	-	--	-	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06339800 SPRING CREEK BELOW LAKE ILO AT DUNN CENTER, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1978 TO SEPTEMBER 1979

DATE	MAY 2,79		MAY 16,79		JUN 14,79		JUL 13,79		AUG 8,79		SEP 12,79	
TIME	0915		1235		1230		0940		1030		1700	
TOTAL CELLS/ML	3300		5600		8200		15000		17000		18000	
DIVERSITY: DIVISION	1.5		1.4		0.4		1.4		1.5		1.7	
.CLASS	1.5		1.4		0.4		1.4		1.5		1.8	
..ORDER	1.9		1.8		1.0		1.7		2.0		2.1	
...FAMILY	2.0		2.1		1.1		2.7		2.2		2.5	
....GENUS	0.0		2.3		1.3		3.2		2.6		2.7	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)												
.CHLOROPHYCEAE												
..CHLOROCOCCALES												
...CHARACIACEAE												
....SCHROEDERIA	--	-	--	-	*	0	--	-	--	-	--	-
...COELASTRACEAE												
....COELASTRUM	--	-	--	-	--	-	510	3	--	-	--	-
...HYDRODICTYACEAE												
....PEDIASTRUM	--	-	--	-	--	-	1000	7	--	-	800	4
...MICRACTINIACEAE												
....MICRACTINIUM	140	4	--	-	--	-	--	-	--	-	--	-
...OOCYSTACEAE												
....ANKISTRODESMUS	680#	20	1200#	21	170	2	1000	7	640	4	1600	9
....CHODATELLA	--	-	48	1	--	-	--	-	--	-	--	-
....KIRCHNERIELLA	48	1	--	-	--	-	880	6	--	-	600	3
....OOCYSTIS	220	7	--	-	--	-	440	3	--	-	--	-
....SELENASTRUM	--	-	48	1	--	-	--	-	--	-	--	-
....TETRAEDRON	--	-	--	-	*	0	*	0	130	1	--	-
...SCENEDESMACEAE												
....CRUCIGENIA	--	-	--	-	--	-	--	-	--	-	600	3
....SCENEDESMUS	--	-	190	3	130	2	5100#	35	4800#	28	1300	7
....TETRASTRUM	--	-	190	3	130	2	250	2	510	3	--	-
..TETRASPORALES												
...PALMELLACEAE												
....SPHAEROCYSTIS	--	-	--	-	--	-	--	-	250	1	--	-
..VOLVOCALES												
...CHLAMYDOMONADACEAE	270	8	--	-	--	-	--	-	--	-	--	-
....CARTERIA	--	-	--	-	--	-	--	-	--	-	--	-
....CHLAMYDOMONAS	--	-	140	3	--	-	--	-	1400	8	--	-
...VOLVOCACEAE												
....PANDORINA	--	-	--	-	--	-	--	-	--	-	1600	9
..ZYGNEMATALES												
...DESMIDIACEAE												
....CLOSTERIUM	--	-	--	-	--	-	--	-	--	-	--	-
....STAURASTRUM	--	-	--	-	--	-	320	2	--	-	--	-
CHRYSOPHYTA												
.BACILLARIOPHYCEAE												
..CENTRALES												
...COSCINODISCACEAE												
....CYCLOTELLA	1600#	47	--	-	*	0	*	0	6600#	38	300	2
....MELOSIRA	--	-	--	-	--	-	380	3	510	3	--	-
....STEPHANODISCUS	--	-	2900#	52	--	-	--	-	--	-	--	-
..PENNALES												
...ACHNANTHACEAE												
....COCCONEIS	--	-	--	-	--	-	--	-	--	-	--	-
...FRAGILARIACEAE												
....FRAGILARIA	--	-	140	3	--	-	--	-	--	-	--	-
....SYNEDRA	--	-	--	-	--	-	--	-	--	-	--	-
...GOMPHONEMATACEAE												
....GOMPHONEMA	--	-	--	-	--	-	--	-	--	-	--	-
...NAVICULACEAE												
....NAVICULA	--	-	48	1	--	-	--	-	--	-	--	-
....PINNULARIA	--	-	--	-	--	-	--	-	--	-	--	-
...NITZSCHIACEAE												
....NITZSCHIA	--	-	140	3	*	0	130	1	380	2	100	1
...SURIRELLACEAE												
....SURIRELLA	--	-	--	-	--	-	--	-	--	-	--	-
.CHRYSOPHYCEAE												
..CHRYSOMONADALES												
...CHROMULINACEAE												
....CHRYSOCOCCUS	--	-	--	-	--	-	--	-	--	-	200	1
CRYPTOPHYTA (CRYPTOMONADS)												
.CRYPTOPHYCEAE												
..CRYPTOMONADALES												
...CRYPTOMONADACEAE												
....CRYPTOMONAS	--	-	--	-	--	-	--	-	760	4	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

CONTINUED

06339800 SPRING CREEK BELOW LAKE ILO AT DUNN CENTER, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1976 TO SEPTEMBER 1979 (CONTINUED)

DATE TIME	MAY 2,79 0915		MAY 16,79 1255		JUN 14,79 1230		JUL 13,79 0940		AUG 8,79 1030		SEP 12,79 1700	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CYANOPHYTA (BLUE-GREEN ALGAE)												
.CYANOPHYCEAE												
..CHROOCOCCALES												
...CHROOCOCCACEAE												
....ANACYSTIS	97	3	530	9	6200#	75	2500#	17	--	-	6300#	34
....COCCOCHLORIS	--	-	--	-	320	4	--	-	--	-	--	-
..HORMOGONALES												
...NOSTOCACEAE												
....ANABAENA	--	-	--	-	--	-	--	-	--	-	--	-
...OSCILLATORIACEAE												
....LYNGBYA	--	-	--	-	--	-	1000	7	--	-	--	-
....OSCILLATORIA	240	7	--	-	1200	14	--	-	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)												
.EUGLENOPHYCEAE												
..EUGLENALES												
...EUGLENACEAE												
....EUGLENA	24	1	48	1	--	-	190	1	890	5	100	1
....LEPOCINCLIS	--	-	--	-	--	-	--	-	--	-	--	-
....PHACUS	--	-	--	-	--	-	130	1	130	1	--	-
....TRACHELOMONAS	--	-	--	-	*	0	760	5	250	1	5000#	27
PYRRHOPHYTA (FIRE ALGAE)												
.DINOPHYCEAE												
..GYMNODINIALES												
...GYMNODINIACEAE												
....GYMNODINIUM	24	1	--	-	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06339900 SPRING CREEK NEAR HALLIDAY, ND

LOCATION.--Lat 47°21'56", long 102°22'35", in NE¼SE¼NE¼ sec. 22, T.145 N., R.92 W., Dunn County, Hydrologic Unit 10130201, on left bank 600 ft (183 m) upstream from bridge on township road, 1.7 mi (2.7 km) northwest of Halliday, and 3.6 mi (5.8 km) upstream from Alkali Creek.

DRAINAGE AREA.--260 mi^2 (673 km^2) approximately, of which about 25 mi^2 (65 km^2) probably is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1977 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 2,050 ft (625 m), from topographic map.

REMARKS.--Records fair except those for November to April, which are poor.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,100 ft^3/s (59.5 m^3/s) Mar. 27, 1978, gage height, 14.3 ft (4.36 m), from floodmark, backwater from ice; no flow Mar. 14-17, 1978.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 130 ft^3/s (3.68 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Apr. 11	--	570	16.1	Ice jam		Apr. 18	0230	*1,790	50.7	12.14	3.700

Minimum daily discharge, 1.0 ft^3/s (0.03 m^3/s) Sept. 6-8.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.9	3.6	5.0	5.0	3.5	3.5	40	32	9.0	5.2	12	2.0
2	5.8	4.9	5.0	5.0	3.5	3.5	40	30	9.0	5.7	9.3	2.0
3	5.2	4.9	5.5	5.0	3.5	3.5	40	28	9.5	5.5	6.3	2.0
4	5.5	4.3	6.0	5.0	3.5	3.5	35	25	9.0	5.2	5.7	1.5
5	5.8	3.9	6.5	5.0	3.5	3.5	35	22	8.0	4.7	6.0	1.2
6	5.5	3.3	6.5	5.0	3.5	3.5	35	23	7.1	4.2	4.9	1.0
7	6.1	5.2	6.5	5.0	3.5	3.5	30	26	6.1	4.1	4.4	1.0
8	5.5	5.2	6.0	5.0	3.5	3.5	30	34	5.8	4.4	5.1	1.0
9	4.9	4.9	7.0	5.0	3.5	3.5	35	30	6.4	5.2	5.1	1.2
10	4.3	4.9	8.0	5.0	3.5	3.5	120	23	6.4	5.5	4.5	2.9
11	3.9	4.3	8.0	4.8	3.5	3.5	550	22	5.8	4.9	4.0	6.5
12	3.3	3.9	8.0	4.5	3.5	3.5	480	21	6.4	5.4	3.7	5.9
13	3.3	4.6	7.5	4.0	3.5	3.5	330	21	5.5	4.8	3.2	4.3
14	3.3	4.6	8.0	4.0	3.5	3.5	240	22	4.3	4.8	2.8	4.0
15	4.0	4.3	8.0	4.0	3.5	3.7	220	19	3.9	3.9	2.5	3.3
16	4.3	4.3	8.0	4.0	3.5	4.0	240	17	3.9	3.0	2.6	3.2
17	3.9	3.9	7.5	4.0	3.5	5.0	757	15	3.6	2.6	2.8	3.0
18	3.6	3.5	7.5	4.0	3.5	6.0	1340	17	3.6	2.0	2.4	2.5
19	3.6	3.5	7.5	4.0	3.5	5.0	770	20	4.9	1.7	2.3	2.3
20	3.6	3.5	7.5	4.0	3.5	4.0	434	14	6.8	1.5	2.3	2.4
21	3.9	3.5	7.5	4.0	3.5	3.5	261	15	6.9	1.8	2.7	2.6
22	3.9	3.7	7.5	4.0	3.5	4.0	174	12	8.2	29	5.8	1.8
23	3.9	4.0	7.5	4.0	3.5	4.2	123	12	10	9.3	4.9	2.5
24	4.3	4.2	7.5	4.0	3.5	4.6	96	11	8.1	5.6	3.9	2.3
25	4.3	4.5	7.5	4.0	3.5	4.8	79	11	7.0	4.0	2.9	2.6
26	3.6	4.8	7.0	4.0	3.5	5.5	63	12	6.2	3.3	2.9	3.6
27	6.4	5.0	6.5	4.0	3.5	10	52	10	5.5	4.5	2.8	3.7
28	6.1	5.5	6.0	3.5	3.5	30	44	9.5	5.2	4.9	2.8	2.9
29	5.2	5.5	5.5	3.5	---	90	40	9.0	4.9	5.3	3.0	2.7
30	4.3	5.5	5.0	3.5	---	60	35	11	4.6	33	2.4	2.6
31	3.6	---	5.0	3.5	---	50	---	10	---	19	2.0	---
TOTAL	139.8	131.7	212.0	133.3	98.0	343.3	6768	583.5	191.6	204.0	128.0	80.5
MEAN	4.51	4.39	6.84	4.30	3.50	11.1	226	18.8	6.39	6.58	4.13	2.68
MAX	6.4	5.5	8.0	5.0	3.5	90	1340	34	10	33	12	6.5
MIN	3.3	3.3	5.0	3.5	3.5	3.5	30	9.0	3.6	1.5	2.0	1.0
AC-FT	277	261	421	264	194	681	13420	1160	380	405	254	160

CAL YR 1978 TOTAL 12016.85 MEAN 32.9 MAX 1500 MIN .00 AC-FT 23840
WTR YR 1979 TOTAL 9013.70 MEAN 24.7 MAX 1340 MIN 1.0 AC-FT 17880

06339900 SPRING CREEK NEAR HALLIDAY, ND--Continued

WATER-QUALITY RECORDS

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS (MG/L AS CACO3) (00900)
OCT											
04...	1230	5.5	1550	8.3	13.0	12.0	10.0	100	100	630	410
NOV											
08...	1100	5.6	1840	8.4	13.0	4.0	12.7	106	46	290	450
DEC											
13...	1530	7.6	2100	7.6	-1.0	.0	9.4	70	24	56	520
JAN											
09...	1045	5.1	1710	8.1	-15.0	.0	8.0	58	24	26	450
FEB											
11...	1240	3.6	1950	7.9	-25.0	.0	7.9	58	K3	K10	450
APR											
12...	1055	498	775	8.1	3.0	.0	10.7	82	K27	6000	110
17...	1135	442	--	--	11.0	3.0	--	--	--	--	--
MAY											
02...	1400	30	920	8.3	6.5	10.5	10.6	103	K2	15	250
16...	0915	18	1260	8.4	17.5	15.0	9.0	96	130	180	320
JUN											
20...	1600	7.0	1840	8.3	21.0	21.0	8.3	102	<14	230	420
JUL											
12...	1000	5.7	1650	8.4	24.5	23.5	8.2	103	280	150	460
AUG											
*08...	1415	5.1	1730	8.4	25.0	24.0	9.4	118	110	K110	--
SEP											
12...	1200	5.9	1700	8.6	14.5	15.5	8.9	96	330	285	420

DATE	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE (MG/L AS HCO3) (00440)	CAR-BONATE (MG/L AS CO3) (00445)	ALKA-LINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)
OCT											
04...	0	81	51	250	56	5.4	8.9	500	0	410	4.0
NOV											
08...	13	82	59	260	55	5.3	7.8	525	4	440	3.4
DEC											
13...	14	100	66	330	57	6.3	10	617	0	510	25
JAN											
09...	0	85	58	290	58	5.9	11	588	0	480	7.5
FEB											
11...	0	85	57	290	58	6.0	9.1	606	0	500	12
APR											
12...	0	22	14	120	68	4.9	8.0	266	0	220	3.4
17...	--	--	--	--	--	--	--	--	--	--	--
MAY											
02...	46	50	30	120	51	3.3	5.9	249	0	200	2.0
16...	21	60	41	180	54	4.4	7.1	361	2	300	2.3
JUN											
20...	0	73	57	270	58	5.8	7.5	551	0	450	4.4
JUL											
12...	0	80	64	280	74	5.7	7.5	508	41	490	3.8
AUG											
08...	--	--	--	--	--	--	--	478	7	400	3.0
SEP											
12...	24	71	60	290	59	6.1	8.7	451	19	400	2.0

* - Laboratory analysis incomplete at date of printing; data will be available via computer retrieval from WATSTORE files.

K - Results based on colony count outside the acceptable range (non-ideal colony count).

06339900 SPRING CREEK NEAR HALLIDAY, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)
OCT											
04...	520	7.5	.6	7.0	1210	1170	1.59	17.4	.01	.01	.67
NOV											
08...	590	6.3	.5	7.8	1320	1280	1.74	19.4	.02	.01	.72
DEC											
13...	690	7.7	.5	17	1520	1530	2.08	31.4	.25	.62	.78
JAN											
09...	590	6.9	.5	17	1360	1350	1.84	18.6	.26	.16	.84
FEB											
11...	590	6.5	.5	17	1340	1350	1.84	13.1	.56	.16	.51
APR											
12...	150	4.0	.2	6.6	496	457	.62	614	.44	.32	1.9
17...	--	--	--	--	--	--	--	--	--	--	--
MAY											
02...	300	3.4	.2	7.8	574	640	.87	51.8	.00	.05	.74
16...	390	4.7	.4	2.7	765	866	1.18	42.1	.02	.04	.84
JUN											
20...	610	26	.6	8.1	1300	1320	1.80	24.9	.01	.02	.62
JUL											
12...	600	5.2	.5	6.1	1330	1340	1.82	20.6	.05	.06	.72
AUG											
08...	--	--	--	--	--	--	--	--	--	--	--
SEP											
12...	660	6.3	.5	4.1	--	1340	1.82	21.4	.06	.05	.61

DATE	NITRO-GEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	ARSENIC TOTAL IN BOT-TOM MA-TERIAL (UG/G AS AS) (01003)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)
OCT											
04...	.68	.69	3.1	.05	.02	--	--	--	--	--	--
NOV											
08...	.73	.75	3.3	.05	.01	--	--	--	--	--	--
DEC											
13...	1.4	1.7	7.3	.01	.01	--	--	--	--	--	--
JAN											
09...	1.0	1.3	5.6	.06	.03	--	--	--	--	--	--
FEB											
11...	.67	1.3	5.5	.06	.03	--	--	--	--	--	--
APR											
12...	2.2	2.6	12	.30	.10	60	3	2	13	100	40
17...	--	--	--	--	--	--	--	--	--	--	--
MAY											
02...	.79	.79	3.5	.10	.02	--	--	--	--	--	--
16...	.88	.90	4.0	.08	.01	--	--	--	--	--	--
JUN											
20...	.64	.65	2.9	.05	.01	--	--	--	--	--	--
JUL											
12...	.78	.83	3.7	.03	.01	0	--	2	--	--	80
AUG											
08...	--	--	--	--	--	--	--	--	32	--	--
SEP											
12...	.66	.74	3.3	.04	.01	--	--	--	--	--	--

06339900 SPRING CREEK NEAR HALLIDAY, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	BARIUM, RECOV. FM BOTTOM MATERIAL (UG/G AS BA) (01008)	BERYLLIUM, TOTAL RECOVERABLE (UG/L AS BE) (01012)	BERYLLIUM, DISSOLVED (UG/L AS BE) (01010)	BERYLLIUM, RECOV. FM BOTTOM MATERIAL (UG/G) (01013)	BORON, DISSOLVED (UG/L AS B) (01020)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) (01034)	CHROMIUM, DISSOLVED (UG/L AS CR) (01030)	CHROMIUM, RECOV. FM BOTTOM MATERIAL (UG/G) (01029)	COBALT, TOTAL RECOVERABLE (UG/L AS CO) (01037)	COBALT, DISSOLVED (UG/L AS CO) (01035)	COBALT, RECOV. FM BOTTOM MATERIAL (UG/G AS CO) (01038)
OCT											
04...	--	--	--	--	650	--	--	--	--	--	--
NOV											
08...	--	--	--	--	670	--	--	--	--	--	--
DEC											
13...	--	--	--	--	740	--	--	--	--	--	--
JAN											
09...	--	--	--	--	640	--	--	--	--	--	--
FEB											
11...	--	--	--	--	620	--	--	--	--	--	--
APR											
12...	120	0	<1	1	200	10	0	8	3	<3	10
17...	--	--	--	--	--	--	--	--	--	--	--
MAY											
02...	--	--	--	--	260	--	--	--	--	--	--
16...	--	--	--	--	330	--	--	--	--	--	--
JUN											
20...	--	--	--	--	650	--	--	--	--	--	--
JUL											
12...	--	--	<1	--	680	--	0	--	--	<3	--
AUG											
08...	100	--	--	0	--	--	--	5	--	--	7
SEP											
12...	--	--	--	--	740	--	--	--	--	--	--

DATE	COPPER, TOTAL RECOVERABLE (UG/L AS CU) (01042)	COPPER, DISSOLVED (UG/L AS CU) (01040)	COPPER, RECOV. FM BOTTOM MATERIAL (UG/G AS CU) (01043)	IRON, DISSOLVED (UG/L AS FE) (01046)	LITHIUM TOTAL RECOVERABLE (UG/L AS LI) (01132)	LITHIUM DISSOLVED (UG/L AS LI) (01130)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN) (01055)	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	MANGANESE, RECOV. FM BOTTOM MATERIAL (UG/G) (01053)	MERCURY TOTAL RECOVERABLE (UG/L AS HG) (71900)	MERCURY DISSOLVED (UG/L AS HG) (71890)
OCT											
04...	--	--	--	30	--	--	--	--	--	--	--
NOV											
08...	--	--	--	40	--	--	--	--	--	--	--
DEC											
13...	--	--	--	90	--	--	--	--	--	--	--
JAN											
09...	--	--	--	40	--	--	--	--	--	--	--
FEB											
11...	--	--	--	40	--	--	--	--	--	--	--
APR											
12...	23	17	19	220	10	20	380	170	830	.3	.0
17...	--	--	--	--	--	--	--	--	--	--	--
MAY											
02...	--	--	--	120	--	--	--	--	--	--	--
16...	--	--	--	10	--	--	--	--	--	--	--
JUN											
20...	--	--	--	10	--	--	--	--	--	--	--
JUL											
12...	--	4	--	10	--	70	--	30	--	--	.2
AUG											
08...	--	--	9	--	--	--	--	--	760	--	--
SEP											
12...	--	--	--	30	--	--	--	--	--	--	--

DATE	MERCURY RECOV. FM BOTTOM MATERIAL (UG/G AS HG) (71921)	MOLYBDENUM, TOTAL RECOVERABLE (UG/L AS MO) (01062)	MOLYBDENUM, RECOV. FM BOTTOM MATERIAL (UG/G) (01063)	MOLYBDENUM, DISSOLVED (UG/L AS MO) (01060)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI) (01067)	NICKEL, DISSOLVED (UG/L AS NI) (01065)	NICKEL, RECOV. FM BOTTOM MATERIAL (UG/G AS NI) (01068)	SELENIUM, TOTAL (UG/L AS SE) (01147)	SELENIUM, DISSOLVED (UG/L AS SE) (01145)	SELENIUM, TOTAL IN BOTTOM MATERIAL (UG/G) (01148)	VANADIUM, DISSOLVED (UG/L AS V) (01085)
APR											
12...	.02	3	0	<10	15	5	20	0	0	0	1.0
17...	--	--	--	--	--	--	--	--	--	--	--
MAY											
02...	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--
JUN											
20...	--	--	--	--	--	--	--	--	--	--	--
JUL											
12...	--	--	--	<10	--	3	--	--	0	--	<1.0
AUG											
08...	.04	--	0	--	--	--	14	--	--	0	--
SEP											
12...	--	--	--	--	--	--	--	--	--	--	--

06339900 SPRING CREEK NEAR HALLIDAY, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	ZINC, TOTAL RECOVERABLE (UG/L AS ZN) (01092)	ZINC, DISSOLVED (UG/L AS ZN) (01090)	ZINC, RECOV. FM BOTTOM MATERIAL (UG/G AS ZN) (01093)	GROSS ALPHA, DISSOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DISSOLVED (PCI/L AS CS-137) (03515)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)	CARBON, ORGANIC DISSOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUSPENDED TOTAL (MG/L AS C) (00689)	SEDIMENT, SUSPENDED (MG/L) (80154)	SEDIMENT DISCHARGE, SUSPENDED (T/DAY) (80155)
OCT											
04...	--	--	--	--	--	--	--	14	1.0	101	1.5
NOV											
08...	--	--	--	--	--	--	--	11	.7	56	.54
DEC											
13...	--	--	--	--	--	--	--	13	.7	64	1.3
JAN											
09...	--	--	--	--	--	--	--	10	.6	56	.77
FEB											
11...	--	--	--	--	--	--	--	11	.6	62	.60
APR											
12...	60	10	66	<7.0	6.3	9.2	6.4	15	3.5	148	199
17...	--	--	--	--	--	--	--	--	--	121	144
MAY											
02...	--	--	--	--	--	--	--	12	1.2	48	3.9
16...	--	--	--	--	--	--	--	13	1.7	44	2.1
JUN											
20...	--	--	--	--	--	--	--	40	--	49	.93
JUL											
12...	--	<3	--	--	--	--	--	35	1.7	73	1.1
AUG											
08...	--	--	20	<21	.7	8.9	1.5	--	--	93	1.3
SEP											
12...	--	--	--	<17	.7	<7.5	<.4	13	.5	51	.81

DATE	BED MAT. FALL DIAM. % FINER THAN .062 MM (80158)	BED MAT. FALL DIAM. % FINER THAN .125 MM (80159)	BED MAT. FALL DIAM. % FINER THAN .250 MM (80160)	BED MAT. FALL DIAM. % FINER THAN .500 MM (80161)	BED MAT. FALL DIAM. % FINER THAN 1.00 MM (80162)	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM (80169)	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM (80170)	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM (80171)	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM (80172)	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM (80173)
APR										
12...	8	14	64	97	99	100	--	--	--	--
AUG										
08...	0	0	5	21	29	39	58	80	86	100

DATE	LENGTH OF EXPOSURE (DAYS) (00022)	CHLOR-A PERIPHYTON CHROMOGRAPHIC FLUOROM (MG/M2) (70957)	CHLOR-B PERIPHYTON CHROMOGRAPHIC FLUOROM (MG/M2) (70958)	PERIPHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M (00573)	PERIPHYTON BIOMASS ASH WEIGHT G/SQ M (00572)
OCT					
04...	15	1.55	.330	3.00	1.50
JUL					
12...	22	1.23	.210	3.23	2.36
AUG					
08...	27	.610	.060	2.44	2.21
SEP					
12...	35	14.2	2.58	55.4	49.4

06339900 SPRING CREEK NEAR HALLIDAY, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1978 TO SEPTEMBER 1979

DATE	OCT 4,78	NOV 8,78	DEC 13,78	JAN 9,79	FEB 11,79	APR 12,79
TIME	1230	1100	1530	1045	1240	1055
TOTAL CELLS/ML	3100	5100	350	200	240	480
DIVERSITY: DIVISION	1.7	1.6	1.0	1.0	0.3	1.4
.CLASS	1.7	1.6	1.0	1.0	0.3	1.4
..ORDER	2.1	1.7	1.5	1.2	0.5	1.6
...FAMILY	2.6	1.7	2.7	1.5	2.1	2.4
....GENUS	2.9	2.4	2.7	1.5	2.2	2.4

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)												
.CHLOROPHYCEAE												
..CHLOROCOCCALES												
...CHARACIACEAE												
....SCHROEDERIA	19	1	--	-	--	-	--	-	--	-	--	-
...MICRACTINIACEAE												
....MICRACTINIUM	--	-	--	-	--	-	--	-	--	-	--	-
...OOCYSTACEAE												
....ANKISTRODESMUS	38	1	800#	16	54#	16	--	-	--	-	200#	42
....CHODATELLA	--	-	--	-	--	-	--	-	--	-	--	-
....DICTYOSPHAERIUM	--	-	340	7	--	-	--	-	--	-	--	-
....GLOEOACTINIUM	--	-	--	-	--	-	--	-	--	-	--	-
....KIRCHNERIELLA	250	8	1500#	30	--	-	--	-	--	-	--	-
....OOCYSTIS	--	-	--	-	--	-	--	-	--	-	--	-
....RADIOCOCCUS	230	7	--	-	--	-	--	-	--	-	--	-
....SELENASTRUM	--	-	--	-	--	-	--	-	--	-	--	-
....TETRAEDRON	--	-	--	-	--	-	--	-	--	-	--	-
....TREUBARIA	19	1	--	-	--	-	--	-	--	-	--	-
...SCENEDESMACEAE												
....ACTINASTRUM	--	-	--	-	--	-	--	-	--	-	--	-
....CRUCIGENIA	--	-	--	-	--	-	--	-	--	-	--	-
....SCENEDESMUS	270	9	--	-	77#	22	--	-	10	4	87#	18
....TETRASTRUM	--	-	--	-	--	-	--	-	--	-	--	-
..TETRASPORALES												
...PALMELLACEAE												
....SPHAERUCYSTIS	--	-	--	-	--	-	--	-	--	-	--	-
..VOLVOCALES												
...CHLAMYDOMONADACEAE												
....CHLAMYDOMONAS	19	1	--	-	--	-	--	-	--	-	--	-
....CHLOROGONIUM	--	-	--	-	--	-	--	-	--	-	--	-
...PHACOTACEAE												
....PHACOTUS	--	-	--	-	--	-	--	-	--	-	--	-
CHRYSOPHYTA												
.BACILLARIOPHYCEAE												
..CENTRALES												
...COSCINODISCACEAE												
....CYCLOTELLA	270	9	1500#	30	62#	18	10	5	10	4	29	6
....MELOSIRA	--	-	--	-	--	-	--	-	--	-	--	-
....STEPHANODISCUS	--	-	--	-	--	-	--	-	--	-	--	-
..PENNALES												
...ACHNANTHACEAE												
....ACHNANTHES	--	-	--	-	--	-	--	-	--	-	--	-
....COCCONEIS	19	1	--	-	--	-	--	-	--	-	--	-
...CYMBELLACEAE												
....CYMBELLA	--	-	--	-	--	-	--	-	--	-	--	-
....EPITHEMIA	38	1	--	-	--	-	--	-	--	-	--	-
...DIATOMACEAE												
....DIATOMA	--	-	--	-	69#	20	--	-	5	2	--	-
...FRAGILARIACEAE												
....FRAGILARIA	--	-	84	2	--	-	--	-	86#	36	--	-
....SYNEDRA	19	1	--	-	--	-	--	-	5	2	--	-
...GOMPHONEMATACEAE												
....GOMPHONEMA	--	-	--	-	31	9	--	-	5	2	--	-
...NAVICULACEAE												
....CALONEIS	--	-	--	-	--	-	--	-	--	-	--	-
....NAVICULA	77	2	--	-	23	7	10	5	30	13	43	9
...NITZSCHIACEAE												
....NITZSCHIA	960#	31	--	-	31	9	81#	40	86#	36	58	12
.CHRYSOPHYCEAE												
..CHRYSOMONADALES												
...OCHROMONADACEAE												
....OCHROMONAS	--	-	--	-	--	-	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)												
.CRYPTOPHYCEAE												
..CRYPTOMONADALES												
...CRYPTOMONADACEAE												
....CRYPTOMONAS	--	-	--	-	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

CONTINUED

06339900 SPRING CREEK NEAR HALLIDAY, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1978 TO SEPTEMBER 1979 (CONTINUED)

DATE TIME	OCT 4,78 1230		NOV 8,78 1100		DEC 13,76 1530		JAN 9,79 1045		FEB 11,79 1240		APR 12,79 1055	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CYANOPHYTA (BLUE-GREEN ALGAE)												
.CYANOPHYCEAE												
..CHROOCOCCALES												
...CHROOCOCCACEAE												
....AGMENELLUM	--	-	--	-	--	-	--	-	--	-	--	-
....ANACYSTIS	--	-	460	9	--	-	--	-	--	-	29	6
..HORMOGONALES												
...OSCILLATORIACEAE												
....LYNGBYA	--	-	--	-	--	-	--	-	--	-	--	-
....OSCILLATORIA	770#	25	--	-	--	-	100#	50	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)												
.EUGLENOPHYCEAE												
..EUGLENALES												
...EUGLENACEAE												
....EUGLENA	58	2	--	-	--	-	--	-	--	-	--	-
....TRACHELOMONAS	19	1	380	7	--	-	--	-	--	-	29	6
PYRRHOPHYTA (FIRE ALGAE)												
.DINOPHYCEAE												
..GYMNODINIALES												
...GYMNODINIACEAE												
....GYMNODINIUM	--	-	--	-	--	-	--	-	--	-	--	-
..PERIDINIALES												
...GLENODINIACEAE												
....GLENODINIUM	19	1	--	-	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06339900 SPRING CREEK NEAR HALLIDAY, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1978 TO SEPTEMBER 1979

DATE	MAY 2,79	MAY 16,79	JUN 20,79	JUL 12,79	AUG 8,79	SEP 12,79
TIME	1400	0915	1600	1000	1415	1200
TOTAL CELLS/ML	16000	1460	11000	17000	28000	6400
DIVERSITY: DIVISION	0.9	1.4	1.3	1.7	1.4	1.4
.CLASS	0.9	1.4	1.3	1.8	1.4	1.4
..ORDER	1.1	1.8	1.5	2.5	1.6	1.7
...FAMILY	1.1	1.9	2.0	3.1	1.8	2.0
....GENUS	1.1	2.1	2.7	3.6	1.9	2.6

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)												
.CHLOROPHYCEAE												
..CHLOROCOCCALES												
...CHARACIACEAE												
....SCHROEDERIA	--	-	--	-	--	-	--	-	--	-	--	-
...MICRACTINIACEAE												
....MICRACTINIUM	--	-	--	-	--	-	--	-	--	-	34	1
...OOCYSTACEAE												
....ANKISTRODESMUS	420	3	260#	18	970	9	2200	13	2300	8	51	1
....CHODATELLA	--	-	--	-	*	0	--	-	--	-	--	-
....DICTYOSPHAERIUM	--	-	--	-	1900#	17	--	-	--	-	--	-
....GLOEOACTINIUM	--	-	26	2	--	-	--	-	--	-	--	-
....KIRCHNERIELLA	--	-	--	-	--	-	630	4	410	1	--	-
....OOCYSTIS	--	-	--	-	--	-	320	2	340	1	290	5
....RADIOCOCCUS	--	-	--	-	--	-	--	-	--	-	--	-
....SELENASTRUM	--	-	26	2	*	0	--	-	--	-	--	-
....TETRAEDRON	--	-	--	-	*	0	--	-	--	-	--	-
....TREUBARIA	--	-	--	-	*	0	--	-	--	-	--	-
...SCENEDESMACEAE												
....ACTINASTRUM	--	-	--	-	270	2	--	-	--	-	--	-
....CRUCIGENIA	--	-	--	-	670	6	2500	15	--	-	270	4
....SCENEDESMUS	--	-	52	4	1200	11	1900	11	1900	7	270	4
....TETRASTRUM	--	-	--	-	270	2	--	-	--	-	140	2
..TETRASPORALES												
...PALMELLACEAE												
....SPHAEROCYSTIS	--	-	--	-	--	-	420	2	--	-	--	-
..VOLVOCALES												
...CHLAMYDOMONADACEAE												
....CHLAMYDOMONAS	5200#	32	39	3	400	4	1400	8	760	3	170	3
....CHLOROGONIUM	140	1	--	-	--	-	--	-	--	-	--	-
...PHACOTACEAE												
....PHACOTUS	--	-	--	-	--	-	110	1	--	-	--	-
CHRYSOPHYTA												
.BACILLARIOPHYCEAE												
..CENTRALES												
...COSCINODISCACEAE												
....CYCLOTELLA	10000#	64	--	-	230	2	1200	7	890	3	340	5
....MELOSIRA	--	-	--	-	--	-	320	2	--	-	--	-
....STEPHANODISCUS	--	-	810#	57	--	-	--	-	--	-	--	-
..PENNALES												
...ACHNANTHACEAE												
....ACHNANTHES	--	-	--	-	--	-	--	-	--	-	*	0
....COCCONEIS	--	-	--	-	--	-	--	-	--	-	--	-
...CYMBELLACEAE												
....CYMBELLA	--	-	--	-	--	-	210	1	--	-	--	-
....EPITHEMIA	--	-	--	-	--	-	--	-	--	-	--	-
...DIATOMACEAE												
....DIATOMA	--	-	--	-	--	-	--	-	--	-	--	-
...FRAGILARIACEAE												
....FRAGILARIA	--	-	--	-	--	-	--	-	--	-	--	-
....SYNEDRA	--	-	--	-	--	-	--	-	--	-	--	-
...GOMPHONEMATACEAE												
....GOMPHONEMA	--	-	--	-	--	-	--	-	--	-	--	-
...NAVICULACEAE												
....CALONEIS	--	-	--	-	--	-	--	-	--	-	*	0
....NAVICULA	--	-	--	-	--	-	210	1	270	1	100	2
...NITZSCHIACEAE												
....NITZSCHIA	--	-	77	5	130	1	1500	9	480	2	34	1
.CHRYSOPHYCEAE												
..CHRYSOMONADALES												
...OCHROMONADACEAE												
....OCHROMONAS	--	-	--	-	--	-	530	3	210	1	--	-
CRYPTOPHYTA (CRYPTOMONADS)												
.CRYPTOPHYCEAE												
..CRYPTOMONADALES												
...CRYPTOMONADACEAE												
....CRYPTOMONAS	--	-	13	1	--	-	210	1	*	0	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

CONTINUED

06339900 SPRING CREEK NEAR HALLIDAY, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1978 TO SEPTEMBER 1979 (CONTINUED)

DATE TIME	MAY 2,79 1400		MAY 16,79 0915		JUN 20,79 1600		JUL 12,79 1000		AUG 8,79 1415		SEP 12,79 1200	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CYANOPHYTA (BLUE-GREEN ALGAE)												
.CYANOPHYCEAE												
..CHROOCOCCALES												
...CHROOCOCCACEAE												
....AGMENELLUM	--	-	--	-	--	-	--	-	--	-	890	14
....ANACYSTIS	--	-	90	6	4400#	41	2700#	16	19000#	68	3200#	50
..HORMOGONALES												
...OSCILLATORIACEAE												
....LYNGBYA	--	-	--	-	--	-	--	-	--	-	150	2
....OSCILLATORIA	--	-	--	-	--	-	--	-	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)												
.EUGLENOPHYCEAE												
..EUGLENALES												
...EUGLENACEAE												
....EUGLENA	--	-	--	-	100	1	110	1	*	0	--	-
....TRACHELOMONAS	--	-	13	1	*	0	840	5	1100	4	410	6
PYRRHOPHYTA (FIRE ALGAE)												
.DINOPHYCEAE												
..GYMNODINIALES												
...GYMNODINIACEAE												
....GYMNODINIUM	--	-	--	-	*	0	--	-	--	-	--	-
..PERIDINIALES												
...GLENODINIACEAE												
....GLENODINIUM	--	-	13	1	--	-	--	-	*	0	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06340000 SPRING CREEK AT ZAP, ND

LOCATION.--Lat 47°17'10", long 101°55'31", in SW¼ sec.14, T.144 N., R.89 W., Mercer County, Hydrologic Unit 10130201, on right bank 250 ft (76 m) downstream from Burlington Northern Railway bridge in Zap, and 9 mi (14 km) upstream from mouth.

DRAINAGE AREA.--549 mi^2 (1,422 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March to September 1924, October 1945 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,819.39 ft (554.550 m) National Geodetic Vertical Datum of 1929. Mar. 4 to Sept. 30, 1924, nonrecording gage at site 250 ft (76 m) upstream at different datum. Oct. 1, 1945, to Sept. 30, 1947, nonrecording gage 250 ft (76 m) upstream at datum 1.12 ft (0.341 m) higher.

REMARKS.--Records fair. Flow slightly regulated by Lake Ilo 56 mi (90 km) upstream, capacity, 7,130 acre-ft (8.79 hm^3).

AVERAGE DISCHARGE.--34 years, 43.8 ft^3/s (1.240 m^3/s), 31,730 acre-ft/yr (39.1 hm^3/yr); median of yearly mean discharges, 40 ft^3/s (1.13 m^3/s), 29,000 acre-ft/yr (36 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,130 ft^3/s (174 m^3/s) Apr. 7, 1952, gage height, 20.03 ft (6.105 m); maximum gage height, 20.70 ft (6.309 m) Mar. 15, 1972; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known occurred in about 1902, from ice jam. Floods of February 1913 and March 1943 reached a stage of about 20 ft (6.10 m) and 19.5 ft (5.94 m), respectively, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,100 ft^3/s (87.8 m^3/s) Apr. 18, gage height, 16.63 ft (5.069 m), only peak above base of 1,000 ft^3/s (28.3 m^3/s); minimum daily, 5.3 ft^3/s (0.15 m^3/s) Sept. 28.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10	12	11	8.8	6.9	6.0	60	83	24	20	46	10
2	11	12	10	8.7	6.8	6.0	80	76	25	19	42	10
3	12	12	11	8.6	6.7	6.0	70	70	23	17	28	10
4	12	12	11	8.6	6.7	6.0	50	67	23	14	22	9.0
5	12	11	11	8.6	6.6	6.0	45	53	21	13	18	9.0
6	11	12	11	8.6	6.6	7.0	40	51	22	11	15	9.0
7	13	12	11	8.6	6.5	9.0	35	52	20	10	12	8.5
8	13	13	10	8.6	6.5	10	40	63	19	11	11	8.0
9	13	14	10	8.6	6.5	10	60	65	19	11	10	8.0
10	12	15	10	8.6	6.5	10	115	72	16	11	9.0	9.0
11	11	15	10	8.6	6.4	10	450	61	16	11	8.6	12
12	11	16	10	8.6	6.4	11	550	53	19	12	8.6	10
13	11	16	10	8.5	6.4	12	600	45	17	11	8.2	9.0
14	12	16	10	8.5	6.4	12	430	38	17	10	7.8	8.5
15	11	15	10	8.5	6.3	13	300	38	16	9.0	7.4	8.0
16	10	12	10	8.4	6.3	14	360	39	15	8.6	6.8	7.7
17	10	12	10	8.3	6.3	15	900	40	14	9.9	6.7	7.0
18	10	12	10	8.3	6.3	16	2410	40	14	10	6.4	6.5
19	10	12	10	8.2	6.3	18	2210	38	17	9.0	6.4	6.0
20	10	10	9.6	8.2	6.3	20	950	41	18	8.6	5.8	5.5
21	10	10	9.6	8.1	6.2	23	420	45	16	12	6.1	5.8
22	10	11	9.5	8.0	6.2	26	280	35	19	11	7.4	5.8
23	10	11	9.4	7.9	6.2	28	180	34	21	7.4	9.0	5.8
24	10	12	9.3	7.8	6.1	29	140	32	22	21	7.8	6.1
25	12	12	9.3	7.8	6.1	30	120	29	20	19	7.1	6.1
26	10	12	9.2	7.4	6.0	30	110	29	19	14	10	6.4
27	10	12	9.2	7.3	6.0	30	100	24	17	14	11	5.8
28	11	12	9.1	7.2	6.0	30	90	22	16	14	12	5.3
29	11	13	9.0	7.1	---	30	94	24	16	22	12	5.6
30	11	11	8.9	7.0	---	30	90	25	14	18	11	6.1
31	12	---	8.8	7.0	---	35	---	23	---	17	11	---
TOTAL	342	377	306.9	252.6	178.5	558.0	11579	1403	555	405.5	390.1	229.5
MEAN	11.0	12.6	9.90	8.15	6.38	17.4	379	45.3	18.5	13.1	12.6	7.65
MAX	13	16	11	8.8	6.9	35	2410	83	25	22	46	12
MIN	10	10	8.8	7.0	6.0	6.0	35	22	14	7.4	5.8	5.3
AC-FT	678	748	609	501	354	1070	22570	2780	1100	804	774	455

CAL YR 1978 TOTAL 26478.7 MEAN 72.5 MAX 3100 MIN 1.5 AC-FT 52520
WTR YR 1979 TOTAL 16357.1 MEAN 44.8 MAX 2410 MIN 5.3 AC-FT 32440

06340000 SPRING CREEK AT ZAP, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1969-70, 1974 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)
OCT											
23...	1420	10	1675	--	6.0	11.5	410	11	82	50	250
NOV											
29...	1500	12	1950	8.0	.0	11.8	500	28	99	61	260
DEC											
20...	1015	9.6	2410	7.6	.0	10.1	620	31	120	78	350
JAN											
22...	1315	8.0	1980	7.5	.0	9.7	470	0	94	57	290
FEB											
21...	1100	6.3	1900	7.5	.0	10.5	460	0	100	52	280
MAR											
27...	1500	30	1500	--	.0	--	--	--	--	--	--
APR											
10...	1150	116	700	8.2	.0	11.9	180	20	39	20	87
13...	1520	623	770	--	.0	--	--	--	--	--	--
17...	1335	845	550	7.9	2.0	10.8	170	77	35	19	53
19...	1600	2040	315	--	8.0	--	--	--	--	--	--
MAY											
23...	1205	53	1510	8.2	13.0	9.9	410	54	85	49	200
JUN											
27...	0955	17	1570	8.2	20.0	7.6	430	19	86	52	230
JUL											
25...	1420	20	1700	8.4	25.0	8.0	360	0	63	48	270
AUG											
28...	1430	12	1400	8.2	19.5	8.4	330	0	64	42	210
29...	1520	12	1400	--	--	--	--	--	--	--	--
SEP											
21...	0940	--	--	--	--	8.4	--	--	--	--	--
21...	1120	5.5	1620	--	12.5	--	--	--	--	--	--

DATE	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)
OCT											
23...	56	5.4	9.2	400	540	8.6	.4	7.5	1150	1190	1.56
NOV											
29...	53	5.1	8.0	470	590	8.2	.4	11	1350	1320	1.84
DEC											
20...	55	6.1	11	590	800	14	.4	15	1700	1740	2.31
JAN											
22...	57	5.8	12	520	580	9.0	.4	18	1390	1370	1.89
FEB											
21...	56	5.7	8.8	480	540	6.7	.4	17	1300	1290	1.77
MAR											
27...	--	--	--	--	--	--	--	--	--	--	--
APR											
10...	50	2.8	7.1	160	200	3.3	.2	6.5	462	459	.63
13...	--	--	--	--	--	--	--	--	--	--	--
17...	40	1.8	7.5	89	180	2.3	.1	55	360	406	.49
19...	--	--	--	--	--	--	--	--	--	--	--
MAY											
23...	51	4.3	8.1	360	470	6.4	.4	7.1	1070	1040	1.46
JUN											
27...	69	4.8	8.9	410	510	7.1	.4	9.1	1160	1150	1.58
JUL											
25...	62	6.2	9.6	360	550	7.6	.5	10	1270	1180	1.73
AUG											
28...	57	5.0	8.4	370	440	6.4	.4	9.0	979	1000	1.33
29...	--	--	--	--	--	--	--	--	--	--	--
SEP											
21...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--

06340000 SPRING CREEK AT ZAP, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHATE, TOTAL (MG/L AS PO4) (00650)	ALUM-INUM, TOTAL RECOV-ERABLE (UG/L AS AL) (01105)
OCT										
23...	31.7	.03	.02	.61	.63	.66	2.9	.02	--	--
NOV										
29...	44.8	.14	.04	.51	.55	.69	3.1	.02	--	--
DEC										
20...	44.1	.25	.12	.54	.66	.91	4.0	.04	--	--
JAN										
22...	30.0	.54	.31	.43	.74	1.3	5.7	.02	--	--
FEB										
21...	22.1	.59	.09	.37	.46	1.1	4.6	.02	--	--
MAR										
27...	--	--	--	--	--	--	--	--	--	--
APR										
10...	145	.47	.05	1.5	1.5	2.0	8.7	.33	--	--
13...	--	--	--	--	--	--	--	--	--	--
17...	821	.98	.23	2.5	2.7	3.7	16	.49	1.5	9300
19...	--	--	--	--	--	--	--	--	--	--
MAY										
23...	95.3	.06	.05	.61	.66	.72	3.2	.04	--	--
JUN										
27...	53.2	.01	.02	.78	.80	.81	3.6	.08	--	--
JUL										
25...	68.6	.02	.01	.82	.83	.85	3.8	.10	--	--
AUG										
28...	31.7	.01	.00	.32	.32	.33	1.5	.15	--	--
29...	--	--	--	--	--	--	--	--	--	--
SEP										
21...	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--

DATE	ALUM-INUM, SUS-PENDED RECOV. (UG/L AS AL) (01107)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC SUS-PENDED TOTAL (UG/L AS AS) (01001)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE) (01012)	BERYL-LIUM, SUS-PENDED RECOV. (UG/L AS BE) (01011)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE) (01010)	BORON, DIS-SOLVED (UG/L AS B) (01020)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)
OCT										
23...	--	--	--	--	--	--	--	--	450	--
NOV										
29...	--	--	--	--	--	--	--	--	480	--
DEC										
20...	--	--	--	--	--	--	--	--	650	--
JAN										
22...	--	--	--	--	--	--	--	--	490	--
FEB										
21...	--	--	--	--	--	--	--	--	--	--
MAR										
27...	--	--	--	--	--	--	--	--	--	--
APR										
10...	--	--	--	--	--	--	--	--	160	--
13...	--	--	--	--	--	--	--	--	--	--
17...	9300	20	4	3	1	0	0	0	90	20
19...	--	--	--	--	--	--	--	--	--	--
MAY										
23...	--	--	--	--	--	--	--	--	340	--
JUN										
27...	--	--	--	--	--	--	--	--	410	--
JUL										
25...	--	--	--	--	--	--	--	--	530	--
AUG										
28...	--	--	--	--	--	--	--	--	410	--
29...	--	--	--	--	--	--	--	--	--	--
SEP										
21...	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--

KNIFE RIVER BASIN

06340000 SPRING CREEK AT ZAP, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	CHRO-MIUM, SUS-PENDED RECOV. (UG/L AS CR) (01031)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	COPPER, SUS-PENDED RECOV-ERABLE (UG/L AS CU) (01041)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LITHIUM TOTAL RECOV-ERABLE (UG/L AS LI) (01132)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)
APR										
10...	--	--	--	--	--	--	--	--	--	--
17...	20	0	38	37	1	19000	160	30	4	820
MAY										
23...	--	--	--	--	--	--	--	--	--	--
JUN										
27...	--	--	--	--	--	--	--	--	--	--
JUL										
25...	--	--	--	--	--	--	--	--	--	--
AUG										
28...	--	--	--	--	--	--	--	--	--	--
SEP										
21...	--	--	--	--	--	--	--	--	--	--

DATE	MANGA-NESE, SUS-PENDED RECOV. (UG/L AS MN) (01054)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	MERCURY SUS-PENDED RECOV-ERABLE (UG/L AS HG) (71895)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, TOTAL RECOV-ERABLE (UG/L AS MO) (01062)	MOLYB-DENUM, SUS-PENDED RECOV. (UG/L AS MO) (01061)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	NICKEL, SUS-PENDED RECOV-ERABLE (UG/L AS NI) (01066)
APR										
10...	--	--	--	--	--	--	--	--	--	--
17...	680	140	.1	.0	.1	0	0	0	36	36
MAY										
23...	--	--	--	--	--	--	--	--	--	--
JUN										
27...	--	--	--	--	--	--	--	--	--	--
JUL										
25...	--	--	--	--	--	--	--	--	--	--
AUG										
28...	--	--	--	--	--	--	--	--	--	--
SEP										
21...	--	--	--	--	--	--	--	--	--	--

DATE	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SELE-NIUM, SUS-PENDED TOTAL (UG/L AS SE) (01146)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	VANA-DIUM, DIS-SOLVED (UG/L AS V) (01085)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, SUS-PENDED RECOV-ERABLE (UG/L AS ZN) (01091)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	GROSS ALPHA, DIS-SOLVED (UG/L AS U-NAT) (80030)
APR									
10...	--	--	--	--	--	--	--	--	--
17...	0	1	1	0	1.2	100	90	10	--
MAY									
23...	--	--	--	--	--	--	--	--	--
JUN									
27...	--	--	--	--	--	--	--	--	--
JUL									
25...	--	--	--	--	--	--	--	--	--
AUG									
28...	--	--	--	--	--	--	--	--	--
SEP									
21...	--	--	--	--	--	--	--	--	<15

06340000 SPRING CREEK AT ZAP, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DIS-SOLVED (PCI/L AS CS-137) (03515)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)	GROSS BETA, DIS-SOLVED (PCI/L AS SR/YT-90) (80050)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90) (80060)	RADIUM 226, DIS-SOLVED, RADON METHOD (PCI/L) (09511)	URANIUM DIS-SOLVED, EXTRAC-TION (UG/L) (80020)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C) (00689)
OCT									
23...	--	--	--	--	--	--	--	11	--
NOV									
29...	--	--	--	--	--	--	--	8.4	--
DEC									
20...	--	--	--	--	--	--	--	11	--
JAN									
22...	--	--	--	--	--	--	--	10	.5
FEB									
21...	--	--	--	--	--	--	--	8.8	--
APR									
10...	--	--	--	--	--	--	--	33	4.3
17...	--	--	--	--	--	--	--	13	--
MAY									
23...	--	--	--	--	--	--	--	19	--
JUN									
27...	--	--	--	--	--	--	--	13	1.5
JUL									
25...	--	--	--	--	--	--	--	12	--
AUG									
28...	--	--	--	--	--	--	--	13	.6
SEP									
21...	1.4	7.6	1.4	7.7	1.3	.15	3.2	--	--

DATE	PERI-PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M (00573)	PERI-PHYTON BIOMASS ASH WEIGHT G/SQ M (00572)	LENGTH OF EXPO-SURE (DAYS) (00022)	BIOMASS CHLORO-PHYLL RATIO PERI-PHYTON (UNITS) (70950)	CHLOR-A PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70957)	CHLOR-B PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70958)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70338)	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70340)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)	SED. SUSP. FALL DIAM. % FINER THAN .125 MM (70343)
OCT												
23...	--	--	--	--	--	--	40	1.1	--	--	--	--
NOV												
29...	--	--	--	--	--	--	19	.63	--	--	--	--
DEC												
20...	.945	.945	22	--	5.15	.000	33	.86	--	--	--	--
JAN												
22...	--	--	--	--	--	--	10	.22	--	--	--	--
FEB												
21...	.080	.080	31	--	.380	.000	37	.63	--	--	--	--
APR												
10...	--	--	--	--	--	--	190	60	--	--	--	--
17...	--	--	--	--	--	--	842	1920	44	71	92	98
MAY												
23...	--	--	--	--	--	--	20	1.8	--	--	--	--
JUN												
27...	3.23	2.91	34	364	.880	.000	71	3.3	--	--	--	--
JUL												
25...	12.3	12.2	--	41.3	2.42	.000	54	2.9	--	--	--	--
AUG												
28...	46.5	43.2	34	375	8.79	.610	32	1.0	--	--	--	--
SEP												
21...	18.0	16.4	24	151	10.6	.780	--	--	--	--	--	--
21...	--	--	--	--	--	--	56	.83	--	--	--	--

DATE	SED. SUSP. FALL DIAM. % FINER THAN .250 MM (70344)	BED MAT. FALL DIAM. % FINER THAN .062 MM (80158)	BED MAT. FALL DIAM. % FINER THAN .125 MM (80159)	BED MAT. FALL DIAM. % FINER THAN .250 MM (80160)	BED MAT. FALL DIAM. % FINER THAN .500 MM (80161)	BED MAT. FALL DIAM. % FINER THAN 1.00 MM (80162)	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM (80169)	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM (80170)	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM (80171)	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM (80172)	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM (80173)
APR											
10...	--	--	--	--	--	--	--	--	--	--	--
17...	100	--	--	--	--	--	--	--	--	--	--
MAY											
23...	--	4	5	9	21	25	31	44	57	74	100
JUN											
27...	--	--	--	--	--	--	--	--	--	--	--
JUL											
25...	--	--	--	--	--	--	--	--	--	--	--

06340200 WEST BRANCH OTTER CREEK NEAR BEULAH, ND

LOCATION.--Lat 47°08'05", long 101°39'35", in NW¼NW¼SW¼ sec.12, T.142 N., R.87 W., Oliver County, Hydrologic Unit 10130201, and on right bank 10 mi (16 km) southeast of Beulah.

DRAINAGE AREA.--26.5 mi^2 (68.6 km^2).

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

GAGE.--Water-stage recorder.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--14 years, 3.31 ft^3/s (0.094 m^3/s), 2,400 acre-ft/yr (2.96 hm^3/yr); median of yearly mean discharges, 2.8 ft^3/s (0.079 m^3/s), 2,000 acre-ft/yr (2.5 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 23,700 ft^3/s (671 m^3/s) June 24, 1966, gage height, 17.2 ft (5.243 m), from floodmark, from rating curve extended above 77 ft^3/s (2.18 m^3/s) on basis of slope-area measurement of peak flow; no flow at times most years.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 100 ft^3/s (2.83 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Apr. 17	2300	*478	13.5	6.65	2.027	Jul. 1	0830	102	2.89	4.60	1.402

No flow for several months.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.02	.02	.00	.00	.00	1.0	2.4	.08	51	.28	.01
2	.00	.02	.02	.00	.00	.00	1.0	2.2	.08	10	.25	.01
3	.00	.02	.02	.00	.00	.00	.90	2.0	.08	2.2	.22	.01
4	.00	.02	.02	.00	.00	.00	.90	1.8	.10	.44	.20	.02
5	.00	.03	.02	.00	.00	.00	.80	1.6	.12	.28	.16	.04
6	.00	.02	.02	.00	.00	.00	.80	1.6	.10	.22	.16	.04
7	.00	.02	.02	.00	.00	.00	.80	1.5	.10	.12	.16	.04
8	.00	.02	.02	.00	.00	.00	1.0	1.3	.10	.12	.02	.04
9	.00	.03	.02	.00	.00	.00	2.0	1.1	.02	.08	.04	.06
10	.00	.03	.02	.00	.00	.00	3.0	.91	.02	.06	.06	.20
11	.00	.02	.02	.00	.00	.00	5.0	.74	.02	.04	.06	.22
12	.00	.02	.02	.00	.00	.01	10	.64	.04	.04	.06	.18
13	.01	.03	.02	.00	.00	.02	19	.53	.06	.06	.06	.18
14	.02	.03	.02	.00	.00	.10	22	.44	.04	.06	.06	.16
15	.03	.03	.02	.00	.00	.20	25	.38	.02	.06	.04	.16
16	.04	.03	.02	.00	.00	.50	30	.33	.02	.06	.04	.16
17	.06	.02	.02	.00	.00	1.0	200	.30	.02	.06	.06	.16
18	.08	.02	.02	.00	.00	1.0	180	.25	.01	.06	.04	.16
19	.08	.02	.02	.00	.00	1.5	45	.18	.02	.08	.04	.14
20	.10	.02	.02	.00	.00	1.5	17	.16	.08	.08	.04	.14
21	.10	.02	.02	.00	.00	2.0	8.8	.18	.02	.06	.52	.14
22	.10	.02	.02	.00	.00	2.0	5.6	.18	.06	.04	.28	.14
23	.10	.02	.02	.00	.00	2.0	4.4	.18	.06	.06	.14	.14
24	.08	.02	.02	.00	.00	2.5	4.4	.16	.04	.06	.99	.14
25	.04	.02	.02	.00	.00	2.5	4.4	.16	.06	.06	.97	.14
26	.06	.02	.02	.00	.00	5.0	4.2	.16	.04	.04	.12	.14
27	.05	.02	.01	.00	.00	4.0	3.8	.14	.02	2.1	.30	.14
28	.04	.02	.01	.00	.00	3.0	3.4	.10	.02	7.2	.69	.14
29	.03	.02	.01	.00	---	2.5	3.0	.08	.04	6.7	.14	.14
30	.03	.02	.00	.00	---	2.0	2.8	.08	.02	.64	.02	.14
31	.03	---	.00	.00	---	1.5	---	.08	---	.33	.01	---
TOTAL	1.08	.67	.55	.00	.00	32.83	610.00	21.86	1.51	82.41	6.23	3.53
MEAN	.035	.022	.018	.000	.000	1.06	20.3	.71	.050	2.66	.20	.12
MAX	.10	.03	.02	.00	.00	4.0	200	2.4	.12	51	.99	.22
MIN	.00	.02	.00	.00	.00	.00	.80	.08	.01	.04	.01	.01
AC-FT	2.1	1.3	1.1	.00	.00	65	1210	43	3.0	163	12	7.0

CAL YR 1978 TOTAL 1932.48 MEAN 5.29 MAX 386 MIN .00 AC-FT 3830
WTR YR 1979 TOTAL 760.67 MEAN 2.08 MAX 200 MIN .00 AC-FT 1510

06340500 KNIFE RIVER AT HAZEN, ND

LOCATION.--Lat 47°17'07", long 101°37'18", in SW¼SE¼SE¼ sec.18, T.144 N., R.86 W., Mercer County, Hydrologic Unit 10130201, on left bank at downstream side of highway bridge, 0.5 mi (0.8 km) south of Hazen, and 3 mi (5 km) upstream from Antelope Creek.

DRAINAGE AREA.--2,240 mi^2 (5,800 km^2), approximately.

WATER-DISCHARGE RECORDS

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.

REVISED RECORDS.--WSP 1146: 1943. WSP 1279: 1930-31, 1932-33(M). WSP 1917: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,712.35 ft (521.924 m) National Geodetic Vertical Datum of 1929. Prior to Sept. 25, 1947, nonrecording gages at same site and datum.

REMARKS.--Records good except those for the winter period, which are fair. Small diversions above station. Slight regulation by Lake Ilo 81 mi (130 km) upstream, capacity, 7,130 acre-ft (8.79 hm^3).

AVERAGE DISCHARGE.--46 years (1929-33, 1937-79), 181 ft^3/s (5.126 m^3/s), 131,100 acre-ft/yr (162 hm^3/yr); median of yearly mean discharges, 150 ft^3/s (4.25 m^3/s), 109,000 acre-ft/yr (130 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 35,300 ft^3/s (1,000 m^3/s) June 24, 1966, gage height, 27.01 ft (8.233 m); no flow at times in 1933, 1959, 1962.

EXTREMES OUTSIDE PERIOD OF RECORD.--According to local residents, the floods of 1943 and 1950 were not exceeded during the period 1884 to 1942.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,500 ft^3/s (42.5 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Mar. 20	--	1,700	48.1	Backwater from ice		Apr. 18	1400	*5,440	154	20.26	6.175
Apr. 13	--	2,000	56.6	Backwater from ice		June 25	--	2,000	56.6	Unknown	

Minimum daily discharge, 20 ft^3/s (0.57 m^3/s) Feb. 17 - Mar. 12.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	50	42	33	26	23	20	340	265	67	142	76	35
2	48	41	32	26	23	20	340	249	63	215	99	34
3	48	41	32	26	23	20	270	220	60	102	70	32
4	47	41	32	26	23	20	240	193	57	82	58	33
5	47	41	32	26	23	20	210	186	54	61	48	31
6	45	41	30	26	23	20	170	191	50	58	36	30
7	44	41	29	26	22	20	210	190	47	52	34	29
8	43	41	29	26	22	20	270	179	46	41	30	28
9	42	40	29	26	22	20	360	179	44	42	28	28
10	42	41	29	26	22	20	980	181	42	41	27	31
11	42	41	28	26	22	20	1350	179	40	39	27	33
12	42	39	28	26	22	20	1800	171	39	48	26	32
13	43	38	28	26	21	25	1950	163	34	184	26	33
14	43	38	28	26	21	30	1750	150	32	66	25	32
15	42	38	28	26	21	25	1100	138	32	104	26	31
16	42	38	27	26	21	30	1050	136	30	74	26	31
17	42	38	27	26	20	40	2020	124	28	68	25	32
18	42	37	27	26	20	80	5200	112	28	48	25	32
19	42	37	27	26	20	1200	5100	112	30	41	26	30
20	41	36	27	26	20	1600	3900	114	34	39	26	28
21	41	36	27	26	20	1120	2710	118	37	37	26	27
22	41	36	27	26	20	900	2150	108	44	42	27	26
23	41	35	27	26	20	850	1110	102	62	43	28	26
24	41	35	27	25	20	800	766	100	712	39	29	26
25	41	35	27	25	20	750	636	96	1850	57	31	25
26	42	35	26	25	20	1200	620	90	542	49	33	25
27	43	35	26	25	20	1350	494	84	262	47	34	24
28	42	35	26	25	20	1180	372	78	193	48	35	23
29	45	36	26	24	---	950	326	72	108	45	39	23
30	43	35	26	24	---	620	299	69	91	118	40	23
31	43	---	26	23	---	470	---	66	---	90	37	---
TOTAL	1340	1143	873	794	594	13460	38093	4415	4758	2162	1123	873
MEAN	43.2	38.1	28.2	25.6	21.2	434	1270	142	159	69.7	36.2	29.1
MAX	50	42	33	26	23	1600	5200	265	1850	215	99	35
MIN	41	35	26	23	20	20	170	66	28	37	25	23
AC-FT	2660	2270	1730	1570	1180	26700	75560	8760	9440	4290	2230	1730

CAL YR 1978 TOTAL 120706 MEAN 331 MAX 10500 MIN 13 AC-FT 239400
WTR YR 1979 TOTAL 69628 MEAN 191 MAX 5200 MIN 20 AC-FT 138100

06340500 KNIFE RIVER AT HAZEN, ND--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1946-51, 1970-71, 1973 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1974 to current year.
WATER TEMPERATURES: October 1974 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 2,800 micromhos Feb. 20, 1977; minimum daily, 225 micromhos Mar. 24, 1978.
WATER TEMPERATURES: Maximum daily, 30.0°C July 18, 1977; minimum daily, 0.0°C on many days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 2,200 micromhos Dec. 29; minimum daily, 380 micromhos Apr. 18.
WATER TEMPERATURES: Maximum daily, 29.0°C July 21; minimum daily, 0.0°C on many days during winter months.

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS (MG/L AS CACO3) (00900)
OCT												
24...	1220	40	1510	8.5	25.5	7.5	4.1	11.6	93	K3	K5	370
NOV												
30...	1320	34	1925	8.1	-11.0	.0	3.0	12.1	--	155	85	420
DEC												
19...	1300	27	2150	7.8	-8.0	.0	4.4	11.0	--	65	26	480
JAN												
23...	1345	26	2000	7.7	-17.0	.0	3.3	9.9	--	38	125	430
FEB												
21...	1320	20	2000	7.8	-10.0	.0	4.1	10.6	--	42	134	450
MAR												
21...	1110	1130	460	--	--	.0	--	--	--	--	--	--
30...	1010	666	545	--	--	.5	--	--	--	--	--	--
APR												
11...	1310	1580	572	7.9	.0	.0	240	12.4	--	K330	630	120
18...	1505	5340	373	8.0	--	3.0	420	9.3	92	K330	5500	100
MAY												
24...	0900	102	1610	8.3	19.0	14.0	16	9.2	35	K60	--	390
JUN												
27...	1330	267	900	8.0	29.0	22.0	400	7.0	63	1250	2100	200
JUL												
26...	1320	52	1360	8.4	--	24.0	26	8.2	33	620	921	280
AUG												
08...	1350	50	--	--	--	25.5	--	--	--	--	--	--
29...	1220	40	1460	8.4	22.5	20.5	18	8.9	27	117	295	340
SEP												
20...	1235	28	1480	8.5	18.0	15.5	15	9.1	39	77	110	0

DATE	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, TOTAL (MG/L AS F) (00951)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)
OCT												
24...	0	84	39	230	57	5.2	8.9	430	390	14	.3	.3
NOV												
30...	0	89	48	270	58	5.7	8.1	540	530	7.6	--	.4
DEC												
19...	0	100	55	360	62	7.2	11	620	600	7.9	--	.4
JAN												
23...	0	93	49	320	61	6.7	3.0	530	540	7.7	--	.4
FEB												
21...	0	100	48	320	60	6.6	8.8	580	510	6.0	--	.4
MAR												
21...	--	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--	--
APR												
11...	1	27	13	78	57	3.1	6.6	120	160	2.3	--	.2
18...	2	24	9.8	40	45	1.7	5.6	98	99	1.8	.7	.1
MAY												
24...	0	82	45	240	57	5.3	8.6	400	490	6.1	.2	.4
JUN												
27...	19	45	21	140	59	4.3	9.3	180	330	3.6	.7	.3
JUL												
26...	0	56	33	200	60	5.2	9.5	350	380	6.7	.6	.4
AUG												
08...	--	--	--	--	--	--	--	--	--	--	--	--
29...	0	69	40	220	58	5.2	8.8	410	420	6.1	.3	.4
SEP												
20...	0	--	--	--	--	--	9.1	430	440	6.8	.4	.4

K - Results based on colony count outside the acceptable range (non-ideal colony count).

06340500 KNIFE RIVER AT HAZEN, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NITRATE TOTAL (MG/L AS N) (00620)	NITRO-GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)
OCT											
24...	13	1000	1040	1.36	109	.02	.00	.02	--	.01	.67
NOV											
30...	12	1310	1290	1.78	122	--	--	.10	--	.04	.59
DEC											
19...	14	1490	1520	2.03	110	--	--	.20	--	.11	.57
JAN											
23...	17	1390	1350	1.89	97.6	--	--	.43	--	.25	.29
FEB											
21...	17	1360	1360	1.85	73.4	--	--	.49	--	.12	.32
MAR											
21...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
APR											
11...	6.1	380	365	.52	1620	--	--	.38	--	.11	2.0
18...	5.5	238	245	.32	3430	.40	.14	.54	--	.29	3.1
MAY											
24...	8.4	1140	1120	1.55	314	.03	.02	.05	--	.09	.85
JUN											
27...	7.3	646	665	.88	466	.29	.06	.35	--	.10	.74
JUL											
26...	12	970	908	1.32	136	.01	.00	.01	--	.01	.92
AUG											
08...	--	--	--	--	--	--	--	--	--	--	--
29...	13	996	1020	1.35	109	.00	.02	.01	--	.01	.42
SEP											
20...	--	1030	715	1.40	77.9	.00	.02	.00	.01	.00	.75

DATE	NITRO-GEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, NH4 + ORG. SUSP. TOTAL (MG/L AS N) (00624)	NITRO-GEN, AMMONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, DIS-SOLVED (MG/L AS N) (00602)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHATE, TOTAL (MG/L AS PO4) (00650)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	ALUM-INUM, TOTAL RECOV-ERABLE (UG/L AS AL) (01105)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)
OCT											
24...	.68	.02	.66	.70	--	3.1	.03	--	.01	150	--
NOV											
30...	.63	.18	.45	.73	--	3.2	.02	--	.00	--	--
DEC											
19...	.68	.10	.58	.88	--	3.9	.02	--	.01	--	--
JAN											
23...	.54	.00	.54	.97	--	4.3	.02	--	.01	--	--
FEB											
21...	.44	.31	.13	.93	--	4.1	.02	--	.02	--	--
MAR											
21...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
APR											
11...	2.1	1.4	.67	2.5	--	11	.47	--	.07	--	--
18...	3.4	2.8	.61	3.9	--	17	.60	1.8	.04	11000	20
MAY											
24...	.94	.00	1.1	.99	--	4.4	.04	--	.02	720	--
JUN											
27...	.84	.28	.56	1.2	--	5.3	.38	--	.05	15000	--
JUL											
26...	.93	.49	.44	.94	--	4.2	.07	--	.01	1100	--
AUG											
08...	--	--	--	--	--	--	--	--	--	--	--
29...	.43	.00	.45	.44	--	1.9	.04	--	.00	450	--
SEP											
20...	.75	.00	.75	.75	.76	3.3	.04	--	.01	400	0

06340500 KNIFE RIVER AT HAZEN, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC SUS-PENDED TOTAL (UG/L AS AS) (01001)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BARIUM, SUS-PENDED RECOV-ERABLE (UG/L AS BA) (01006)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE) (01012)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE) (01010)	BORON, TOTAL RECOV-ERABLE (UG/L AS B) (01022)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD) (01027)	CADMIUM SUS-PENDED RECOV-ERABLE (UG/L AS CD) (01026)
OCT											
24...	1	--	--	100	--	--	0	--	340	1	--
NOV											
30...	--	--	--	--	--	--	--	--	--	--	--
DEC											
19...	1	--	1	100	0	100	--	--	--	1	1
JAN											
23...	--	--	--	--	--	--	--	--	--	--	--
FEB											
21...	--	--	--	--	--	--	--	--	--	--	--
MAR											
21...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
APR											
11...	--	--	--	--	--	--	--	--	--	--	--
18...	6	--	1	300	300	0	10	0	120	--	--
MAY											
24...	1	--	--	100	--	--	0	--	300	1	--
JUN											
27...	4	--	1	200	200	0	0	--	210	1	1
JUL											
26...	2	--	--	100	--	--	0	--	320	0	--
AUG											
08...	--	--	--	--	--	--	--	--	--	--	--
29...	1	--	--	100	--	--	10	--	300	0	--
SEP											
20...	2	0	2	100	0	100	0	--	300	0	0

DATE	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	CHRO-MIUM, SUS-PENDED RECOV. (UG/L AS CR) (01031)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO) (01037)	COBALT, SUS-PENDED RECOV-ERABLE (UG/L AS CO) (01036)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	COPPER, SUS-PENDED RECOV-ERABLE (UG/L AS CU) (01041)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)
OCT											
24...	--	0	--	--	0	--	--	3	--	--	490
NOV											
30...	--	--	--	--	--	--	--	--	--	--	--
DEC											
19...	0	20	0	20	2	1	1	6	4	2	710
JAN											
23...	--	--	--	--	--	--	--	--	--	--	--
FEB											
21...	--	--	--	--	--	--	--	--	--	--	--
MAR											
21...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
APR											
11...	--	--	--	--	--	--	--	--	--	--	--
18...	--	20	20	0	10	10	0	90	88	2	24000
MAY											
24...	--	10	--	--	0	--	--	10	--	--	1500
JUN											
27...	0	20	20	0	9	9	0	34	32	2	230
JUL											
26...	--	10	--	--	2	--	--	11	--	--	2200
AUG											
08...	--	--	--	--	--	--	--	--	--	--	--
29...	--	10	--	--	0	--	--	4	--	--	820
SEP											
20...	<1	0	0	0	0	0	<3	1	0	1	800

06340500 KNIFE RIVER AT HAZEN, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	LEAD, SUS-PENDED RECOV-ERABLE (UG/L AS PB) (01050)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM TOTAL RECOV-ERABLE (UG/L AS LI) (01132)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MANGA-NESE, SUS-PENDED RECOV. (UG/L AS MN) (01054)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)
OCT										
24...	--	4	--	--	40	--	100	--	--	.0
NOV										
30...	--	--	--	--	--	--	--	--	--	--
DEC										
19...	40	3	0	3	--	--	160	0	180	.0
APR										
11...	--	--	--	--	--	--	--	--	--	--
18...	160	--	--	--	30	0	840	780	60	.2
MAY										
24...	--	9	--	--	40	--	180	--	--	.3
JUN										
27...	70	20	20	0	30	--	600	600	0	.3
JUL										
26...	--	9	--	--	30	--	160	--	--	.2
AUG										
29...	--	3	--	--	40	--	120	--	--	.1
SEP										
20...	<10	0	0	0	40	--	160	130	30	.1

DATE	MERCURY SUS-PENDED RECOV-ERABLE (UG/L AS HG) (71895)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, TOTAL RECOV-ERABLE (UG/L AS MO) (01062)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SELE-NIUM, SUS-PENDED TOTAL (UG/L AS SE) (01146)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)
OCT										
24...	--	--	1	--	4	--	0	--	--	0
NOV										
30...	--	--	--	--	--	--	--	--	--	--
DEC										
19...	.0	.0	--	--	--	--	0	0	0	4
APR										
11...	--	--	--	--	--	--	--	--	--	--
18...	.1	.1	0	0	42	0	1	1	0	0
MAY										
24...	--	--	1	--	11	--	1	--	--	0
JUN										
27...	.2	.1	0	--	41	--	1	1	0	0
JUL										
26...	--	--	2	--	14	--	0	--	--	0
AUG										
29...	--	--	5	--	20	--	0	--	--	0
SEP										
20...	.0	.1	2	--	13	22	0	0	0	0

DATE	SILVER, SUS-PENDED RECOV-ERABLE (UG/L AS AG) (01076)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	VANA-DIUM, DIS-SOLVED (UG/L AS V) (01085)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, SUS-PENDED RECOV-ERABLE (UG/L AS ZN) (01091)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	GROSS ALPHA, DIS-SOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DIS-SOLVED (PCI/L AS CS-137) (03515)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)
OCT										
24...	--	--	--	10	--	--	--	--	--	--
NOV										
30...	--	--	--	--	--	--	--	--	--	--
DEC										
19...	4	0	--	10	0	10	--	--	--	--
APR										
11...	--	--	--	--	--	--	--	--	--	--
18...	0	0	1.3	100	90	10	--	--	--	--
MAY										
24...	--	--	--	20	--	--	--	--	--	--
JUN										
27...	0	0	--	90	80	10	--	--	--	--
JUL										
26...	--	--	--	30	--	--	--	--	--	--
AUG										
29...	--	--	--	10	--	--	--	--	--	--
SEP										
20...	0	0	.0	0	0	<3	<14	1.2	9.0	1.8

06340500 KNIFE RIVER AT HAZEN, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	GROSS BETA, DIS-SOLVED (PCI/L AS SR/YT-90) (80050)	GROSS BETA, SUSP, TOTAL (PCI/L AS SR/YT-90) (80060)	RADIUM 226, DIS-SOLVED, RADON METHOD (PCI/L) (09511)	URANIUM DIS-SOLVED, EXTRAC-TION (UG/L) (80020)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C) (00689)	CYANIDE TOTAL (MG/L AS CN) (00720)	PHYTO-PLANK-TON, TOTAL (CELLS PER ML) (60050)	PERI-PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M (00573)	PERI-PHYTON BIOMASS ASH WEIGHT G/SQ M (00572)
OCT										
24...	--	--	--	--	8.2	.8	--	--	--	--
NOV										
30...	--	--	--	--	6.4	.5	--	1500	29.3	13.2
DEC										
19...	--	--	--	--	8.7	.6	.00	--	--	--
JAN										
23...	--	--	--	--	8.4	.3	--	--	--	--
FEB										
21...	--	--	--	--	8.5	--	--	--	--	--
APR										
11...	--	--	--	--	12	8.9	--	2400	--	--
18...	--	--	--	--	9.5	--	.00	--	--	--
MAY										
24...	--	--	--	--	12	--	--	9700	--	--
JUN										
27...	--	--	--	--	11	6.8	.00	340	--	--
JUL										
26...	--	--	--	--	20	1.7	--	24000	--	--
AUG										
29...	--	--	--	--	13	1.1	--	--	20.3	18.7
SEP										
20...	9.2	1.7	.13	5.0	13	.9	.00	24000	5.51	5.20

DATE	CHLOR-A PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70957)	CHLOR-B PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70958)	LENGTH OF EXPO-SURE (DAYS) (00022)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)
OCT						
24...	--	--	--	32	3.5	82
NOV						
30...	13.3	.000	38	17	1.6	88
DEC						
19...	--	--	--	30	2.2	63
JAN						
23...	--	--	--	18	1.3	68
FEB						
21...	--	--	--	22	1.2	76
APR						
11...	--	--	--	754	3220	79
18...	--	--	--	1320	19000	92
MAY						
24...	--	--	--	86	24	96
JUN						
27...	--	--	--	662	477	97
JUL						
26...	--	--	--	92	13	97
AUG						
29...	4.21	.000	54	41	4.5	97
SEP						
20...	1.89	.000	22	52	3.9	99

06340500 KNIFE RIVER AT HAZEN, ND--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1150	1480	1850	2120	1600	1700	725	1050	1530	1150	1130	1350
2	1180	1500	1850	2100	1750	1730	650	1080	1580	1180	1150	1380
3	1200	1500	1850	2100	1750	1730	825	1100	1550	1130	1180	1400
4	1100	1500	1850	2080	1830	1700	750	1150	1550	1150	1180	1400
5	1180	1480	1900	2080	1830	1680	775	990	1550	1100	1050	1300
6	1250	1480	1900	2020	1830	1680	775	1200	1580	1100	1030	1400
7	1230	1500	1930	2050	1800	1500	750	1250	1600	1350	1030	1500
8	1280	1450	1900	2020	1850	975	825	1280	1450	1300	1050	1430
9	1250	1480	1930	2020	1750	1500	700	1300	1450	1250	1080	1430
10	1300	1500	1930	2020	1800	1680	750	1350	1400	1100	1250	1380
11	1300	1550	1980	2020	1800	1500	600	1320	1400	1150	1280	1380
12	1330	1330	2000	2020	1850	1430	525	1350	1350	1180	1230	1400
13	1380	1350	1980	2000	1800	1580	575	1380	1330	1230	1250	1350
14	1380	1600	2000	2000	---	1630	575	1400	1400	1250	1300	1380
15	1350	1630	2000	1980	1800	1200	550	1480	1430	950	1350	1450
16	1350	---	2030	1980	1830	1380	520	1500	1500	1100	1400	1400
17	1350	1700	2080	1980	1850	1500	475	1500	1530	1280	1480	1380
18	1380	1730	2100	2000	1900	975	380	1500	1580	1230	1450	1400
19	1400	---	2100	1980	1900	1100	400	1500	1550	1280	1480	1400
20	1350	1750	2100	1920	1880	420	520	1500	1530	1280	1400	1380
21	1380	---	2080	1900	1800	430	600	1550	1530	1330	1400	1400
22	1330	---	2080	1900	1800	420	540	1520	1500	1100	1400	1480
23	1680	1750	2100	---	1750	440	575	1520	1500	1100	1400	1450
24	1400	1750	2130	1880	1850	475	600	1520	1350	1100	1330	1450
25	1400	1780	2100	1880	1780	460	690	1500	580	1130	1430	1430
26	1480	1780	2150	1850	1730	465	650	1500	675	1100	1430	1450
27	1480	1800	2130	1780	1750	450	825	1500	875	1080	1400	1450
28	1480	1830	2150	1800	1730	480	875	1520	1030	1050	1400	1450
29	1500	1850	2200	1800	---	510	875	1500	1230	1050	1400	1480
30	1430	1800	2180	1820	---	510	1000	1520	1300	1030	1430	1480
31	1480	---	2130	1800	---	540	---	1520	---	1030	1400	---
MEAN	1350	1610	2020	1960	1810	1090	663	1380	1380	1160	1300	1410

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12.0	7.0	.0	.0	.0	.0	1.5	11.0	18.0	23.0	25.5	21.0
2	11.5	8.0	.0	.0	.0	.0	2.0	9.0	21.0	25.0	25.5	22.0
3	12.0	7.0	.0	.0	.0	.0	2.5	10.0	19.0	26.0	26.0	23.0
4	10.0	5.0	.0	.0	.0	.0	2.0	10.0	21.5	24.0	22.0	22.0
5	9.0	4.5	.0	.0	.0	.0	.5	8.0	22.0	25.5	21.0	21.0
6	11.0	3.5	.0	.0	.0	.0	2.0	7.5	21.5	24.0	26.0	20.0
7	10.5	5.5	.0	.0	.0	.0	1.0	8.5	18.5	21.0	25.0	18.0
8	10.0	5.0	.0	.0	.0	.0	3.5	9.0	19.0	22.0	23.0	19.0
9	12.5	5.0	.0	.0	.0	.0	3.0	6.0	18.0	22.0	24.0	18.0
10	13.0	1.0	.0	.0	.0	.0	2.0	6.0	18.0	25.0	22.0	17.0
11	12.0	1.0	.0	.0	.0	.0	2.0	10.0	18.0	28.0	18.0	18.0
12	10.0	.5	.0	.0	.0	.0	2.0	11.0	21.0	25.0	20.0	17.0
13	8.5	.5	.0	.0	.0	.0	2.0	12.0	23.0	23.0	22.0	16.0
14	10.0	.0	.0	.0	---	.0	2.0	16.0	21.0	23.0	20.0	17.0
15	9.5	.0	.0	.0	.0	.0	4.0	17.5	23.0	20.0	22.0	13.0
16	9.5	---	.0	.0	.0	.0	4.0	21.0	23.0	24.0	25.0	17.0
17	10.5	.0	.0	.0	.0	.0	5.0	16.0	20.0	26.0	25.5	16.0
18	10.0	.0	.0	.0	.0	1.0	7.5	17.5	23.0	26.0	25.0	18.0
19	13.0	---	.0	.0	.0	1.0	7.0	18.0	22.0	26.5	23.0	18.5
20	10.0	.0	.0	.0	.0	1.5	8.5	16.0	21.0	26.5	24.0	17.0
21	9.5	---	.0	.0	.0	1.5	9.0	18.0	20.0	29.0	22.5	15.0
22	10.0	---	.0	.0	.0	2.0	10.0	14.0	19.0	25.0	22.5	16.0
23	9.0	.0	.0	---	.0	2.0	9.0	18.0	17.0	25.5	22.0	16.5
24	10.0	.0	.0	.0	.0	2.0	9.0	18.0	18.5	26.0	22.0	18.0
25	8.5	.0	.0	.0	.0	1.0	8.5	20.0	18.0	26.5	20.5	18.5
26	7.5	.0	.0	.0	.0	1.5	8.0	17.0	22.0	25.0	20.0	20.0
27	7.5	.0	.0	.0	.0	1.0	10.0	20.0	22.0	25.5	20.0	19.0
28	8.5	.0	.0	.0	.0	1.0	9.0	18.0	22.0	23.0	21.5	20.0
29	5.0	.0	.0	.0	---	1.5	9.0	18.0	24.0	25.0	23.0	18.0
30	7.5	.0	.0	.0	---	1.5	11.0	17.0	23.0	22.0	23.0	16.0
31	6.0	---	.0	.0	---	1.5	---	17.5	---	25.0	20.0	---
MEAN	10.0	2.0	.0	.0	.0	.5	5.0	14.0	20.5	24.5	22.5	18.0

06340500 KNIFE RIVER AT HAZEN, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1978 TO SEPTEMBER 1979

DATE	NOV 30,78	APR 11,79	MAY 24,79	JUN 27,79	JUL 26,79	SEP 20,79
TIME	1320	1510	0900	1330	1520	1235
TOTAL CELLS/ML	1500	2400	9700	540	24000	24000
DIVERSITY: DIVISION	1.7	0.8	1.1	0.0	0.8	1.3
.CLASS	1.7	0.8	1.1	0.0	0.8	1.3
..ORDER	2.5	1.0	1.2	0.0	0.9	1.8
...FAMILY	2.7	1.5	1.5	0.0	0.9	2.1
....GENUS	2.8	2.3	1.6	0.0	1.0	3.0

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)												
.CHLOROPHYCEAE												
..CHLOROCOCCALES												
...DOCYSTACEAE												
....ANKISTRODESMUS	580#	24	28	1	6700#	69	--	-	230	1	2100	9
....DICTYOSPHAERIUM	--	-	--	-	--	-	--	-	1000	4	270	1
....KIRCHNERIELLA	42	3	--	-	--	-	--	-	--	-	140	1
....OOCYSTIS	--	-	--	-	--	-	--	-	390	2	270	1
....TETRAEDRON	--	-	--	-	--	-	--	-	*	0	--	-
...SCENEDESMACEAE												
....CRUCIGENIA	--	-	--	-	--	-	--	-	--	-	2200	9
....SCENEDESMUS	--	-	--	-	--	-	--	-	390	2	2700	12
....TETRASTRUM	--	-	--	-	550	6	--	-	--	-	550	2
..VOLVOCALES												
...CHLAMYDOMONADACEAE												
....CHLAMYDOMONAS	210	14	42	2	--	-	--	-	310	1	270	1
...PHACOTACEAE												
....PHACOTUS	--	-	--	-	--	-	--	-	--	-	*	0
CHRYSOPHYTA												
.BACILLARIOPHYCEAE												
..CENTRALES												
...COSCINODISCACEAE												
....CYCLOTELLA	--	-	42	2	1200	12	--	-	150	1	340	1
....STEPHANODISCUS	--	-	--	-	280	3	--	-	--	-	--	-
..PENNALES												
...ACHNANTHACEAE												
....COCCONEIS	--	-	83	3	--	-	--	-	--	-	--	-
...CYMBELLACEAE												
....EPITHEMIA	--	-	14	1	--	-	--	-	--	-	--	-
...FRAGILARIACEAE												
....SYNEDRA	--	-	14	1	--	-	--	-	--	-	--	-
...GOMPHONEMATACEAE												
....GOMPHONEMA	--	-	42	2	--	-	--	-	--	-	--	-
...NAVICULACEAE												
....ENTOMONEIS	14	1	--	-	--	-	--	-	--	-	--	-
....NAVICULA	--	-	83	3	--	-	--	-	--	-	*	0
...NITZSCHIACEAE												
....NITZSCHIA	70	5	130	5	280	3	540#100		810	3	1100	5
...SURIRELLACEAE												
....SURIRELLA	--	-	14	1	--	-	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)												
.CRYPTOPHYCEAE												
..CRYPTOMONADALES												
...CRYPTOCHRYSIDACEAE												
....CHROOMONAS	14	1	--	-	--	-	--	-	--	-	--	-
...CRYPTOMONADACEAE												
....CRYPTOMONAS	--	-	--	-	--	-	--	-	*	0	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)												
.CYANOPHYCEAE												
..CHROOCOCCALES												
...CHROOCOCCACEAE												
....AGMENELLUM	--	-	--	-	--	-	--	-	--	-	2200	9
....ANACYSTIS	170	11	--	-	340	4	--	-	--	-	9100#	39
..HORMOGONALES												
...OSCILLATORIACEAE												
....LYNGBYA	--	-	1000#	42	--	-	--	-	--	-	1300	6
....OSCILLATORIA	110	7	830#	35	--	-	--	-	21000#	85	550	2
...RIVULARIACEAE												
....RAPHIDIOPSIS	320#	21	70	3	--	-	--	-	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)												
.EUGLENOPHYCEAE												
..EUGLENALES												
...EUGLENACEAE												
....EUGLENA	--	-	--	-	--	-	--	-	*	0	*	0
....PHACUS	--	-	--	-	--	-	--	-	*	0	--	-
....TRACHELOMONAS	220	14	--	-	340	4	--	-	*	0	210	1

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06340520 ANTELOPE CREEK ABOVE HAZEN, ND

LOCATION.--Lat 47°20'07", long 101°41'41", in SE¼SE¼NE¼ sec.36, T.145 N., R.87 W., Mercer County, Hydrologic Unit 10130201, on left bank about 100 ft (30 m) upstream from bridge on county road, 4.2 mi (6.8 km) northeast of Hazen, and 2.0 mi (3.2 km) upstream from Schramm Dam.

DRAINAGE AREA.--25.6 mi^2 (66.3 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1977 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,800 ft (549 m), from topographic map.

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

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 700 ft^3/s (19.8 m^3/s) Apr. 17, 1979, gage height, 6.70 ft (2.042 m); maximum gage height, 8.95 ft (2.728 m) Mar. 21, 1978, ice jam; no flow for many days each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 700 ft^3/s (19.8 m^3/s) Apr. 17, gage height, 6.70 ft (2.042 m), only peak above base of 50 ft^3/s (1.42 m^3/s); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.05	.05	.02	.00	.00	.01	3.0	.52	.88	.23	.00
2	.00	.05	.04	.01	.00	.00	.01	2.4	.47	.43	.19	.00
3	.00	.06	.04	.01	.00	.00	.01	2.2	.43	.32	.16	.00
4	.00	.08	.03	.01	.00	.00	.01	2.0	.39	.23	.13	.00
5	.00	.07	.02	.02	.00	.00	.01	1.9	.43	.26	.11	.00
6	.00	.07	.02	.02	.00	.01	.01	2.2	.39	.28	.08	.00
7	.00	.09	.01	.02	.00	.02	.05	3.0	.35	.21	.05	.00
8	.00	.10	.02	.02	.00	.03	.40	3.2	.32	.15	.03	.00
9	.00	.15	.03	.03	.00	.03	1.0	2.4	.32	.12	.01	.00
10	.00	.17	.04	.03	.00	.04	2.0	2.2	.28	.10	.00	.01
11	.00	.15	.04	.03	.00	.04	5.0	1.9	.23	.08	.00	.02
12	.00	.13	.06	.02	.00	.05	12	1.7	.26	.07	.00	.00
13	.00	.10	.06	.02	.00	.05	25	1.5	.23	.08	.00	.00
14	.00	.08	.08	.02	.00	.04	45	1.3	.15	.07	.00	.00
15	.01	.06	.08	.02	.00	.02	80	1.1	.12	.05	.00	.00
16	.01	.04	.06	.01	.00	.02	180	1.1	.11	.04	.00	.00
17	.02	.03	.06	.01	.00	.03	456	.96	.10	.04	.00	.00
18	.02	.02	.05	.02	.00	.04	361	.82	.09	.00	.00	.00
19	.02	.01	.05	.02	.00	.06	221	.82	.11	.00	.00	.00
20	.02	.01	.05	.02	.00	.08	39	.96	.12	.00	.00	.00
21	.02	.01	.05	.03	.00	.10	18	1.1	.10	.00	.00	.00
22	.02	.01	.06	.03	.00	.12	11	1.2	.19	.00	.00	.00
23	.02	.01	.06	.03	.00	.15	7.6	1.3	.19	.07	.00	.00
24	.02	.01	.05	.03	.00	.20	6.2	1.1	.17	.06	.00	.00
25	.02	.01	.05	.02	.00	.18	5.6	.96	.28	.06	.00	.00
26	.02	.02	.05	.02	.00	.15	4.7	.82	.44	.11	.01	.00
27	.02	.02	.04	.02	.00	.10	4.2	.75	.45	.10	.02	.00
28	.03	.03	.04	.01	.00	.06	3.9	.68	.33	.13	.02	.00
29	.03	.04	.03	.01	---	.03	3.6	.52	.24	.21	.02	.00
30	.03	.05	.03	.00	---	.01	3.6	.52	.18	1.3	.00	.00
31	.04	---	.02	.00	---	.01	---	.47	---	.35	.00	---
TOTAL	.37	1.73	1.39	.58	.00	1.67	1495.91	46.08	7.99	5.80	1.06	.03
MEAN	.012	.058	.045	.019	.000	.054	49.9	1.49	.27	.19	.034	.001
MAX	.04	.17	.08	.03	.00	.20	456	3.2	.52	1.3	.23	.02
MIN	.00	.01	.01	.00	.00	.00	.01	.47	.09	.00	.00	.00
AC-FT	.7	3.4	2.8	1.2	.00	3.3	2970	91	16	12	2.1	.06

CAL YR 1978 TOTAL 2153.76 MEAN 5.90 MAX 300 MIN .00 AC-FT 4270
WTR YR 1979 TOTAL 1562.61 MEAN 4.28 MAX 456 MIN .00 AC-FT 3100

06340520 ANTELOPE CREEK ABOVE HAZEN, ND--Continued

WATER-QUALITY RECORDS

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)
NOV												
07...	1215	.08	1650	8.2	15.5	3.5	12.2	96	K11	200	420	0
DEC												
*13...	1500	.07	3160	8.2	-5.0	.0	3.8	28	12	103	680	0
APR												
17...	1215	332	--	--	12.0	1.5	--	--	--	--	--	--
19...	1130	191	--	--	6.0	5.0	--	--	--	--	--	--
20...	1135	56	422	8.0	13.5	8.0	9.9	88	230	14000	130	29
MAY												
02...	1130	2.5	1450	8.3	12.0	9.5	11.0	102	580	90	430	81
17...	1100	.93	1650	8.4	14.0	15.0	11.2	118	570	64	490	0
JUN												
19...	1330	.11	2610	8.3	23.5	19.5	6.7	79	780	900	520	57

DATE	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE (MG/L AS HCO3) (00440)	CAR-BONATE (MG/L AS CO3) (00445)	ALKA-LINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)
NOV											
07...	80	53	260	56	5.5	16	588	0	480	5.9	450
DEC											
13...	120	92	550	63	9.2	23	896	0	730	9.0	1100
APR											
17...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
20...	30	14	36	35	1.4	7.8	123	0	100	2.0	110
MAY											
02...	95	48	190	48	4.0	9.7	425	0	350	3.4	460
17...	99	60	270	54	5.3	11	456	547	1280	10	610
JUN											
19...	58	90	320	57	6.1	11	564	0	460	4.5	660

DATE	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)
NOV											
07...	15	.2	5.3	1160	1170	1.59	.25	.53	.08	1.4	1.5
DEC											
13...	24	.2	13	2350	2360	3.21	.45	.37	.04	1.6	1.6
APR											
17...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
20...	3.1	.1	7.7	261	270	.37	26.5	.78	.63	2.2	2.8
MAY											
02...	9.4	.1	16	1050	1040	1.41	7.02	.17	.03	.79	.82
17...	12	.2	4.2	1330	1840	2.50	4.02	.12	.09	.91	1.0
JUN											
19...	14	.2	2.8	1460	1430	1.94	.42	.15	.05	.91	.96

* - Phytoplankton analysis incomplete at date of printing; data will be available via computer retrieval from WATSTORE files.

K - Results based on colony count outside the acceptable range (non-ideal colony count).

06340520 ANTELOPE CREEK ABOVE HAZEN, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	ARSENIC TOTAL IN BOT-TOM MA-TERIAL (UG/G AS AS) (01003)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BARIUM, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS BA) (01008)
NOV											
07...	1.8	8.1	.08	.03	--	--	--	--	--	--	--
DEC											
13...	2.0	8.7	.05	.06	--	--	--	--	--	--	--
APR											
17...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
20...	3.6	16	.32	.18	60	3	2	11	100	100	36
MAY											
02...	.99	4.4	.07	.05	--	--	--	--	--	--	--
17...	1.1	5.0	.05	.01	--	--	--	--	--	--	--
JUN											
19...	1.1	4.9	.04	.01	--	--	--	--	--	--	--

DATE	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE) (01012)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE) (01010)	BERYL-LIUM, RECOV. FM BOT-TOM MA-TERIAL (UG/G) (01013)	BORON, DIS-SOLVED (UG/L AS B) (01020)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	CHRO-MIUM, RECOV. FM BOT-TOM MA-TERIAL (UG/G) (01029)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO) (01037)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COBALT, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS CO) (01038)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)
NOV											
07...	--	--	--	220	--	--	--	--	--	--	--
DEC											
13...	--	--	--	370	--	--	--	--	--	--	--
APR											
17...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
20...	0	0	0	80	10	10	7	0	0	0	22
MAY											
02...	--	--	--	150	--	--	--	--	--	--	--
17...	--	--	--	180	--	--	--	--	--	--	--
JUN											
19...	--	--	--	250	--	--	--	--	--	--	--

DATE	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	COPPER, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS CU) (01043)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LITHIUM TOTAL RECOV-ERABLE (UG/L AS LI) (01132)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MANGA-NESE, RECOV. FM BOT-TOM MA-TERIAL (UG/G) (01053)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MERCURY RECOV. FM BOT-TOM MA-TERIAL (UG/G AS HG) (71921)
NOV											
07...	--	--	60	--	--	--	--	--	--	--	--
DEC											
13...	--	--	70	--	--	--	--	--	--	--	--
APR											
17...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
20...	10	7	330	10	4	200	90	630	.4	.0	.02
MAY											
02...	--	--	50	--	--	--	--	--	--	--	--
17...	--	--	40	--	--	--	--	--	--	--	--
JUN											
19...	--	--	30	--	--	--	--	--	--	--	--

06340520 ANTELOPE CREEK ABOVE HAZEN, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	MOLYBDENUM, TOTAL RECOVERABLE (UG/L AS MO) (01062)	MOLYBDENUM, RECOV. FM BOTTOM MATERIAL (UG/G) (01063)	MOLYBDENUM, DISSOLVED (UG/L AS MO) (01060)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI) (01067)	NICKEL, DISSOLVED (UG/L AS NI) (01065)	NICKEL, RECOV. FM BOTTOM MATERIAL (UG/G AS NI) (01068)	SELENIUM, TOTAL (UG/L AS SE) (01147)	SELENIUM, DISSOLVED (UG/L AS SE) (01145)	SELENIUM, TOTAL IN BOTTOM MATERIAL (UG/G) (01148)	VANADIUM, DISSOLVED (UG/L AS V) (01085)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN) (01092)
NOV											
07...	--	--	--	--	--	--	--	--	--	--	--
DEC											
13...	--	--	--	--	--	--	--	--	--	--	--
APR											
17...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
20...	0	1	1	12	2	40	1	0	0	1.7	50
MAY											
02...	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--
JUN											
19...	--	--	--	--	--	--	--	--	--	--	--

DATE	ZINC, DISSOLVED (UG/L AS ZN) (01090)	ZINC, RECOV. FM BOTTOM MATERIAL (UG/G AS ZN) (01093)	GROSS ALPHA, DISSOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DISSOLVED (PCI/L AS CS-137) (03515)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)	CARBON, ORGANIC DISSOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUSPENDED TOTAL (MG/L AS C) (00684)	SEDIMENT, SUSPENDED (MG/L) (80154)	SEDIMENT DISCHARGE, SUSPENDED (T/DAY) (80155)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70338)
NOV											
07...	--	--	--	--	--	--	17	1.5	32	.01	--
DEC											
13...	--	--	--	--	--	--	19	.6	67	.01	--
APR											
17...	--	--	--	--	--	--	--	--	327	293	63
19...	--	--	--	--	--	--	--	--	406	209	--
20...	10	22	<3.8	7.8	8.8	5.2	14	--	101	9.9	--
MAY											
02...	--	--	--	--	--	--	14	.9	15	.09	--
17...	--	--	--	--	--	--	17	.9	28	.07	--
JUN											
19...	--	--	--	--	--	--	18	1.5	28	.01	--

DATE	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70340)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)	BED MAT. FALL DIAM. % FINER THAN .062 MM (80158)	BED MAT. FALL DIAM. % FINER THAN .125 MM (80159)	BED MAT. FALL DIAM. % FINER THAN .250 MM (80160)	BED MAT. FALL DIAM. % FINER THAN .500 MM (80161)	BED MAT. FALL DIAM. % FINER THAN 1.00 MM (80162)	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM (80169)	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM (80170)	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM (80171)	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM (80172)	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM (80173)
APR												
17...	86	100	--	--	--	--	--	--	--	--	--	--
20...	--	--	3	3	5	7	15	24	41	67	84	97

06340520 ANTELOPE CREEK ABOVE HAZEN, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1978 TO JUNE 1979

DATE	NOV 7,78		APR 20,79		MAY 2,79		MAY 17,79		JUN 19,79	
TIME	1215		1135		1130		1100		1330	
TOTAL CELLS/ML	17000		2400		2100		2700		3600	
DIVERSITY: DIVISION	1.1		0.9		1.3		1.4		1.2	
.CLASS	1.1		0.9		1.3		1.4		1.2	
..ORDER	1.3		1.1		1.6		1.9		1.6	
...FAMILY	1.5		1.8		1.9		2.1		1.6	
....GENUS	1.8		0.0		0.0		2.2		1.7	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)										
.CHLOROPHYCEAE										
..CHLOROCOCCALES										
...CHARACIACEAE										
....SCHROEDERIA	--	-	14	1	--	-	--	-	--	-
...OOCYSTACEAE										
....ANKISTRODESMUS	560	3	87	4	14	1	75	3	39	1
....CHODATELLA	140	1	--	-	--	-	--	-	*	0
....OOCYSTIS	--	-	--	-	1000#	48	--	-	--	-
....SELENASTRUM	560	3	--	-	--	-	--	-	--	-
...SCENEDESMACEAE										
....ACTINASTRUM	560	3	--	-	--	-	--	-	--	-
....CRUCIGENIA	560	3	--	-	--	-	--	-	--	-
....SCENEDESMUS	560	3	--	-	57	3	--	-	--	-
..VOLVOCALES										
...CHLAMYDOMONADACEAE	--	-	29	1	140	7	--	-	--	-
....CARTERIA	140	1	--	-	--	-	--	-	--	-
....CHLAMYDOMONAS	140	1	--	-	--	-	--	-	320	9
...VOLVOCACEAE										
....PANDORINA	--	-	460#	19	--	-	--	-	--	-
CHRYSOPHYTA										
.BACILLARIOPHYCEAE										
..CENTRALES										
...COSCINODISCACEAE										
....CYCLOTELLA	12000#	69	14	1	170	8	1500#	55	180	5
....MELOSIRA	--	-	--	-	14	1	--	-	--	-
..PENNALES										
...FRAGILARIACEAE										
....SYNEDRA	--	-	--	-	--	-	50	2	--	-
...GOMPHONEMATACEAE										
....GOMPHONEMA	--	-	14	1	--	-	--	-	--	-
...NAVICULACEAE										
....NAVICULA	--	-	--	-	--	-	75	3	*	0
...NITZSCHIACEAE										
....NITZSCHIA	280	2	14	1	--	-	180	6	90	2
...SURIRELLACEAE										
....SURIRELLA	--	-	--	-	--	-	25	1	--	-
CRYPTOPHYTA (CRYPTOMONADS)										
.CRYPTOPHYCEAE										
..CRYPTOMONADALES										
...CRYPTOMONADACEAE										
....CRYPTOMONAS	--	-	--	-	--	-	50	2	39	1
CYANOPHYTA (BLUE-GREEN ALGAE)										
.CYANOPHYCEAE										
..CHROOCOCCALES										
...CHROOCOCCACEAE										
....ANACYSTIS	--	-	--	-	--	-	250	9	220	6
..HORMOGONALES										
...NOSTOCACEAE										
....ANABAENA	--	-	1300#	55	--	-	--	-	--	-
...OSCILLATORIACEAE										
....OSCILLATORIA	--	-	490#	21	650#	30	--	-	2600#	71
...RIVULARIACEAE										
....RAPHIDIOPSIS	--	-	--	-	57	3	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)										
.EUGLENOPHYCEAE										
..EUGLENALES										
...EUGLENACEAE										
....EUGLENA	140	1	--	-	--	-	25	1	39	1
....PHACUS	--	-	--	-	--	-	25	1	--	-
....TRACHELOMONAS	1600	9	--	-	--	-	480#	18	26	1
PYRRHOPHYTA (FIRE ALGAE)										
.DINOPHYCEAE										
..GYMNODINIALES										
...GYMNODINIACEAE										
....GYMNODINIUM	--	-	--	-	--	-	--	-	52	1

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06340524 ANTELOPE CREEK TRIBUTARY NO. 5 NEAR ZAP, ND

LOCATION.--Lat 47°23'10", long 101°50'04", in NE¼NE¼SE¼ sec.20, T.145 N., R.88 W., Mercer County, Hydrologic Unit 10130301, on left bank upstream from culvert on county highway, and 5.5 mi (8.9 km) north of Zap.

DRAINAGE AREA.--4.45 mi^2 (11.53 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1977 to current year.

GAGE.--Water-stage recorder.

REMARKS.--Records good.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 435 ft^3/s (12.3 m^3/s) Apr. 17, 1979, gage height, 9.78 ft (2.981 m); no flow for many months.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 435 ft^3/s (12.3 m^3/s) Apr. 17, gage height, 9.78 ft (2.981 m), only peak above base of 10 ft^3/s (0.28 m^3/s); no flow for many months.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.05	.01	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.02	.01	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.02	.01	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.02	.01	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.02	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.13	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.08	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.04	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.03	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.02	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.02	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.02	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.02	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.02	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.02	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	27	.02	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	142	.02	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	91	.02	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	8.7	.05	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	1.5	.05	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.62	.05	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.34	.04	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.25	.03	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.24	.04	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.27	.03	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.23	.02	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.13	.01	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.10	.01	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.00	.09	.01	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.07	.01	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.01	---	.00	.00	---
TOTAL	.00	.00	.00	.00	.00	.00	272.54	.95	.04	.00	.00	.00
MEAN	.000	.000	.000	.000	.000	.000	9.08	.031	.001	.000	.000	.000
MAX	.00	.00	.00	.00	.00	.00	142	.13	.01	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	.00	541	1.9	.08	.00	.00	.00

CAL YR 1978 TOTAL 280.09 MEAN .77 MAX 61 MIN .00 AC-FT 556
WTR YR 1979 TOTAL 273.53 MEAN .75 MAX 142 MIN .00 AC-FT 543

06340524 ANTELOPE CREEK TRIBUTARY NO. 5 NEAR ZAP, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--June 1977 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE (DEG C) (00010)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)
APR										
16...	1740	64	120	--	2.0	--	--	--	--	--
17...	1645	--	80	6.6	2.0	24	8	5.6	2.5	1.3
18...	--	--	--	--	--	--	--	--	--	--
19...	1540	4.9	215	--	5.0	--	--	--	--	--
20...	1125	1.5	285	7.3	7.0	120	51	24	15	5.1
23...	1512	.25	540	--	5.5	--	--	--	--	--
30...	1505	.06	750	--	13.0	--	--	--	--	--
MAY										
08...	1310	.04	900	--	7.0	--	--	--	--	--

DATE	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)
APR										
16...	--	--	--	--	--	--	--	--	--	--
17...	8	.1	4.9	16	4.8	1.5	.0	3.9	34	.05
18...	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--
20...	8	.2	8.4	71	50	4.7	.1	10	160	.22
23...	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--
MAY										
08...	--	--	--	--	--	--	--	--	--	--

DATE	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
APR									
16...	--	--	--	--	--	--	--	84	15
17...	--	.98	90	120	20	<10	20	391	--
18...	--	--	--	--	--	--	--	152	--
19...	--	--	--	--	--	--	--	--	--
20...	.66	.98	50	110	10	<10	90	36	.15
23...	--	--	--	--	--	--	--	14	.01
30...	--	--	--	--	--	--	--	--	--
MAY									
08...	--	--	--	--	--	--	--	--	--

06340536 ANTELOPE CREEK TRIBUTARY NO. 2 NEAR BEULAH, ND

LOCATION.--Lat 47°19'45", long 101°47'06", in SW¼SE¼SE¼ sec.32, T.145 N., R.87 W., Mercer County, Hydrologic Unit 10130201, on left bank 30 ft (9.14 m) downstream from county highway box culvert, and 4 mi (6.4 km) north of Beulah.

DRAINAGE AREA.--28.3 mi^2 (73.3 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1976 to current year.

GAGE.--Water-stage recorder.

REMARKS.--Records fair. Some channelization and regulation one mile upstream due to mining efforts.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 543 ft^3/s (15.4 m^3/s) Apr. 17, 1979, gage height, 8.33 ft (2.539 m); no flow for many months each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 543 ft^3/s (15.4 m^3/s) Apr. 17, gage height, 8.33 ft (2.539 m), only peak above base of 25 ft^3/s (0.71 m^3/s); no flow for many months

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.30	.50	.03	.01	.00	.00
2	.00	.00	.00	.00	.00	.00	.10	.50	.03	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.20	.50	.03	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.30	.50	.03	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.30	.60	.03	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.20	1.0	.02	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.10	1.5	.02	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.10	2.0	.01	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.40	.81	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	14	.71	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	27	.62	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	30	.52	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	40	.44	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	50	.21	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	60	.08	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	140	.08	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	240	.08	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	343	.06	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	88	.05	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	28	.05	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	14	.05	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.01	11	.05	.00	.01	.00	.00
23	.00	.00	.00	.00	.00	.40	7.1	.04	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.80	6.0	.04	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	1.2	5.0	.04	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	1.6	4.0	.04	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	2.0	3.0	.04	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.30	2.2	.03	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.40	1.4	.03	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.40	.50	.03	.00	.00	.00	.00
31	.00	---	.00	.00	---	.40	---	.03	---	.00	.00	---
TOTAL	.00	.00	.00	.00	.00	7.51	1116.20	11.23	.20	.02	.00	.00
MEAN	.000	.000	.000	.000	.000	.24	37.2	.36	.007	.001	.000	.000
MAX	.00	.00	.00	.00	.00	2.0	343	2.0	.03	.01	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.10	.03	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	15	2210	22	.4	.04	.00	.00

CAL YR 1978 TOTAL 1136.19 MEAN 3.11 MAX 197 MIN .00 AC-FT 2250
WTR YR 1979 TOTAL 1135.16 MEAN 3.11 MAX 343 MIN .00 AC-FT 2250

06340536 ANTELOPE CREEK TRIBUTARY NO. 2 NEAR BEULAH, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1976 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE (DEG C) (00010)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)
MAR										
27...	1350	6.8	--	--	.5	--	--	--	--	--
29...	1155	.46	--	--	1.0	--	--	--	--	--
APR										
02...	1200	.16	340	--	1.0	--	--	--	--	--
09...	1815	1.0	80	--	1.5	--	--	--	--	--
10...	1715	44	405	--	1.0	--	--	--	--	--
11...	1640	28	320	--	.5	--	--	--	--	--
17...	1038	122	160	--	4.0	--	--	--	--	--
17...	1650	320	120	--	5.5	--	--	--	--	--
18...	0925	243	140	--	6.0	--	--	--	--	--
18...	1715	313	195	--	14.0	--	--	--	--	--
19...	1740	53	240	--	7.0	--	--	--	--	--
23...	1730	4.5	600	8.1	7.0	200	57	44	21	45
30...	1150	.52	1000	--	8.5	--	--	--	--	--
MAY										
15...	1025	.06	860	--	13.0	--	--	--	--	--

DATE	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)
MAR										
27...	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--
APR										
02...	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--
23...	32	1.4	7.5	140	150	3.2	.2	12	368	.50
30...	--	--	--	--	--	--	--	--	--	--
MAY										
15...	--	--	--	--	--	--	--	--	--	--

DATE	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, AMMONIA + ORGANIC DIS. (MG/L AS N) (00623)	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
MAR									
27...	--	--	--	--	--	--	--	34	.62
29...	--	--	--	--	--	--	--	49	.06
APR									
02...	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	327	.91
10...	--	--	--	--	--	--	--	104	12
11...	--	--	--	--	--	--	--	56	4.2
17...	--	--	--	--	--	--	--	624	206
17...	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	1100	722
18...	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--
23...	4.47	.61	100	30	40	<10	370	480	5.8
30...	--	--	--	--	--	--	--	--	--
MAY									
15...	--	--	--	--	--	--	--	--	--

06340540 ANTELOPE CREEK TRIBUTARY NEAR HAZEN, ND

LOCATION.--Lat 47°19'00", long 101°41'27", in NE¼SE¼SW¼ sec.3, T.144 N., R.87 W., Mercer County, Hydrologic Unit 10130201, on right bank 50 ft (15 m) upstream from bridge on county road, 600 ft (183 m) upstream from mouth, and 3.2 mi (5.1 km) northwest of Hazen.

DRAINAGE AREA.--37.7 mi^2 (97.6 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1977 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,780 ft (543 m), from topographic map.

REMARKS.--Records good above 30 ft^3/s (0.85 m^3/s) and poor below.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 508 ft^3/s (14.4 m^3/s) Apr. 18, 1979, gage height, 11.93 ft (3.636 m); no flow much of the time each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 508 ft^3/s (14.4 m^3/s) Apr. 18, gage height, 11.93 ft (3.636 m), only peak above base of 15 ft^3/s (0.42 m^3/s); no flow for most of time.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.92	.04	.03	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	1.1	.03	.01	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	1.1	.03	.01	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	1.2	.03	.01	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	1.1	.02	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	1.7	.01	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	2.2	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	2.6	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	2.3	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	1.6	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.03	1.4	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	3.0	1.4	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	5.0	1.2	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	10	.88	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	15	.61	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	50	.56	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	277	.49	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	418	.31	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	186	.28	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	28	.31	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	81	.33	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	3.0	.32	.01	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.88	.26	.01	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.81	.24	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.41	.23	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.27	.20	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.35	.17	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.45	.15	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.00	.54	.11	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.71	.08	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.06	---	.00	.00	---
TOTAL	.00	.00	.00	.00	.00	.00	1080.45	25.41	.18	.06	.00	.00
MEAN	.000	.000	.000	.000	.000	.000	36.0	.82	.006	.002	.000	.000
MAX	.00	.00	.00	.00	.00	.00	418	2.6	.04	.03	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.06	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	.00	2140	50	.4	.1	.00	.00

CAL YR 1978 TOTAL 1535.61 MEAN 4.21 MAX 250 MIN .00 AC-FT 3050
WTR YR 1979 TOTAL 1106.10 MEAN 3.03 MAX 418 MIN .00 AC-FT 2190

06340540 ANTELOPE CREEK TRIBUTARY NEAR HAZEN, ND--Continued

WATER-QUALITY RECORDS

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)
APR												
17...	1030	194	--	--	12.0	2.5	--	--	--	--	--	--
19...	0840	228	--	--	6.0	7.0	--	--	--	--	--	--
20...	0845	33	368	7.9	9.5	5.0	9.4	78	390	12000	120	8
MAY												
02...	1350	1.1	1150	8.2	8.0	10.5	9.5	90	K1	K230	320	0
17...	1345	.51	1395	8.1	15.0	16.5	6.5	71	570	64	390	0

DATE	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE (MG/L AS HCO3) (00440)	CAR-BONATE (MG/L AS CO3) (00445)	ALKA-LINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)
APR											
17...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
20...	30	11	30	34	1.2	6.9	137	0	110	2.8	76
MAY											
02...	72	34	140	48	3.4	8.5	427	0	350	4.3	280
17...	84	44	200	52	4.4	11	561	0	460	7.1	330

DATE	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)
APR											
17...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
20...	1.9	.1	7.3	241	231	.31	20.7	.54	.43	2.5	2.9
MAY											
02...	3.3	.2	16	755	764	1.04	2.27	.02	.03	.64	.67
17...	4.5	.3	12	966	962	1.31	1.32	.02	.06	.94	1.0

DATE	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	ARSENIC TOTAL IN BOT-TOM MA-TERIAL (UG/G AS AS) (01003)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BARIUM, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS BA) (01008)
APR											
17...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
20...	3.4	15	.33	.13	60	4	2	6	300	0	48
MAY											
02...	.69	3.1	.12	.09	--	--	--	--	--	--	--
17...	1.0	4.5	.27	.20	--	--	--	--	--	--	--

K - Results based on colony count outside the acceptable range (non-ideal colony count).

06340540 ANTELOPE CREEK TRIBUTARY NEAR HAZEN, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	BERYLLIUM, TOTAL RECOVERABLE (UG/L AS BE) (01012)	BERYLLIUM, DISSOLVED (UG/L AS BE) (01010)	BERYLLIUM, RECOV. FM BOTTOM MATERIAL (UG/G) (01013)	BORON, DISSOLVED (UG/L AS B) (01020)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) (01034)	CHROMIUM, DISSOLVED (UG/L AS CR) (01030)	CHROMIUM, RECOV. FM BOTTOM MATERIAL (UG/G) (01029)	COBALT, TOTAL RECOVERABLE (UG/L AS CO) (01037)	COBALT, DISSOLVED (UG/L AS CO) (01035)	COBALT, RECOV. FM BOTTOM MATERIAL (UG/G AS CO) (01038)	COPPER, TOTAL RECOVERABLE (UG/L AS CU) (01042)
APR											
17...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
20...	0	0	0	40	20	0	2	5	0	0	24
MAY											
02...	--	--	--	140	--	--	--	--	--	--	--
17...	--	--	--	180	--	--	--	--	--	--	--

DATE	COPPER, DISSOLVED (UG/L AS CU) (01040)	COPPER, RECOV. FM BOTTOM MATERIAL (UG/G AS CU) (01043)	IRON, DISSOLVED (UG/L AS FE) (01046)	LITHIUM TOTAL RECOVERABLE (UG/L AS LI) (01132)	LITHIUM DISSOLVED (UG/L AS LI) (01130)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN) (01055)	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	MANGANESE, RECOV. FM BOTTOM MATERIAL (UG/G) (01053)	MERCURY TOTAL RECOVERABLE (UG/L AS HG) (71900)	MERCURY DISSOLVED (UG/L AS HG) (71890)	MERCURY RECOV. FM BOTTOM MATERIAL (UG/G AS HG) (71921)
APR											
17...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
20...	11	3	330	10	4	420	40	150	.5	.1	.02
MAY											
02...	--	--	60	--	--	--	--	--	--	--	--
17...	--	--	40	--	--	--	--	--	--	--	--

DATE	MOLYBDENUM, TOTAL RECOVERABLE (UG/L AS MO) (01062)	MOLYBDENUM, RECOV. FM BOTTOM MATERIAL (UG/G) (01063)	MOLYBDENUM, DISSOLVED (UG/L AS MO) (01060)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI) (01067)	NICKEL, DISSOLVED (UG/L AS NI) (01065)	NICKEL, RECOV. FM BOTTOM MATERIAL (UG/G AS NI) (01068)	SELENIUM, TOTAL (UG/L AS SE) (01147)	SELENIUM, DISSOLVED (UG/L AS SE) (01145)	SELENIUM, TOTAL IN BOTTOM MATERIAL (UG/G) (01148)	VANADIUM, DISSOLVED (UG/L AS V) (01085)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN) (01092)
APR											
17...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
20...	0	0	0	27	2	20	1	0	0	1.7	80
MAY											
02...	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--

DATE	ZINC, DISSOLVED (UG/L AS ZN) (01090)	ZINC, RECOV. FM BOTTOM MATERIAL (UG/G AS ZN) (01093)	GROSS ALPHA, DISSOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DISSOLVED (PCI/L AS CS-137) (03515)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)	CARBON, ORGANIC DISSOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUSPENDED TOTAL (MG/L AS C) (00689)	SEDIMENT, SUSPENDED (MG/L) (80154)	SEDIMENT DISCHARGE, SUSPENDED (T/DAY) (80155)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70338)
APR											
17...	--	--	--	--	--	--	--	--	448	235	74
19...	--	--	--	--	--	--	--	--	1120	689	84
20...	20	7	<2.8	24	7.5	13	10	8.0	330	30	--
MAY											
02...	--	--	--	--	--	--	14	.4	15	.04	--
17...	--	--	--	--	--	--	26	.4	39	.05	--

DATE	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70340)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)	BED MAT. FALL DIAM. % FINER THAN .062 MM (80158)	BED MAT. FALL DIAM. % FINER THAN .125 MM (80159)	BED MAT. FALL DIAM. % FINER THAN .250 MM (80160)	BED MAT. FALL DIAM. % FINER THAN .500 MM (80161)	BED MAT. FALL DIAM. % FINER THAN 1.00 MM (80162)	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM (80169)	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM (80170)	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM (80171)	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM (80172)	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM (80173)
APR												
17...	94	100	--	--	--	--	--	--	--	--	--	--
19...	97	100	--	--	--	--	--	--	--	--	--	--
20...	--	--	18	21	23	24	25	33	55	81	94	100

06340540 ANTELOPE CREEK TRIBUTARY NEAR HAZEN, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1978 TO MAY 1979

DATE	APR 20,79	MAY 2,79	MAY 17,79
TIME	0845	1350	1345
TOTAL CELLS/ML	0	5900	410
DIVERSITY: DIVISION	0.0	1.3	1.2
.CLASS	0.0	1.3	1.2
..ORDER	0.0	2.0	1.7
...FAMILY	0.0	2.0	1.8
....GENUS	0.0	2.1	1.9

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)						
.CHLOROPHYCEAE						
..CHLOROCOCCALES						
...OOCYSTACEAE						
....ANKISTRODESMUS	--	-	130	2	64#	16
....OOCYSTIS	--	-	110	2	--	-
....SELENASTRUM	--	-	--	-	13	3
..TETRASPORALES						
...PALMELLACEAE						
....SPHAEROCYSTIS	--	-	750	13	--	-
..VOLVOCALES						
...CHLAMYDOMONADACEAE						
....CHLAMYDOMONAS	--	-	2200#	37	--	-
CHRYSOPHYTA						
.BACILLARIOPHYCEAE						
..CENTRALES						
...COSCINODISCACEAE						
....CYCLOTELLA	--	-	110	2	--	-
....STEPHANODISCUS	--	-	--	-	52	13
..PENNALES						
...FRAGILARIACEAE						
....SYNEDRA	--	-	*	0	--	-
...NAVICULACEAE						
....NAVICULA	--	-	*	0	--	-
...NITZSCHIACEAE						
....NITZSCHIA	--	-	81	1	230#	56
CRYPTOPHYTA (CRYPTOMONADS)						
.CRYPTOPHYCEAE						
..CRYPTOMONADALES						
...CRYPTOCHRYSIDACEAE						
....CHROOMONAS	--	-	--	-	39	9
...CRYPTOMONADACEAE						
....CRYPTOMONAS	--	-	54	1	13	3
CYANOPHYTA (BLUE-GREEN ALGAE)						
.CYANOPHYCEAE						
..HORMOGONALES						
...OSCILLATORIACEAE						
....OSCILLATORIA	--	-	2300#	40	--	-
EUGLENOPHYTA (EUGLENOIDS)						
.EUGLENOPHYCEAE						
..EUGLENALES						
...EUGLENACEAE						
....EUGLENA	--	-	*	0	--	-
....PHACUS	--	-	*	0	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06340580 COAL CREEK NEAR STANTON, ND

LOCATION.--Lat 47°20'03", long 101°31'38", in SE¼NE¼SE¼ sec.32, T.145 N., R.85 W., Mercer County, Hydrologic Unit 10130201, on right bank 60 ft (18.3 m) upstream from bridge, on county road 6.3 mi (10.1 km) west of Stanton, 5.3 mi (8.5 km) northwest of Hazen, and 1.1 mi (1.8 km) upstream from mouth.

DRAINAGE AREA.--15.8 mi^2 (40.9 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1977 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,710 ft (521 m), from topographic map.

REMARKS.--Records fair except those for Mar. 5 to Apr. 15, which are poor.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 476 ft^3/s (13.5 m^3/s) Apr. 17, 1979, gage height, 8.40 ft (2.560 m); maximum gage height, 8.67 ft (2.643 m) Mar. 22, 1978, ice jam; no flow on many days each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 476 ft^3/s (13.5 m^3/s) Apr. 17, gage height, 8.40 ft (2.560 m) Apr. 17; only peak above base of 30 ft^3/s (0.85 m^3/s); no flow for several months.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.22	.20	.00	.00	.00	4.0	5.3	.28	.59	.36	.00
2	.00	.22	.14	.00	.00	.00	3.8	3.3	.29	1.6	.38	.00
3	.00	.25	.10	.00	.00	.00	3.6	2.4	.29	.51	.40	.00
4	.00	.25	.06	.00	.00	.00	3.5	1.9	.27	.30	.34	.00
5	.00	.25	.10	.00	.00	.00	3.3	1.9	.27	.25	.30	.00
6	.00	.25	.08	.00	.00	.05	3.2	3.5	.25	.22	.27	.00
7	.00	.25	.05	.00	.00	.20	3.0	3.0	.25	.18	.27	.00
8	.02	.25	.03	.00	.00	.40	4.0	2.3	.25	.15	.23	.00
9	.18	.28	.01	.00	.00	.60	5.0	1.7	.25	.12	.19	.00
10	.18	.30	.00	.00	.00	1.0	7.0	1.5	.23	.10	.06	.00
11	.18	.30	.00	.00	.00	1.5	10	1.3	.22	.02	.00	.00
12	.18	.28	.00	.00	.00	2.0	15	1.2	.22	.00	.00	.04
13	.18	.28	.00	.00	.00	3.0	20	.88	.23	.00	.00	.25
14	.18	.28	.00	.00	.00	2.5	25	.83	.20	.00	.00	.22
15	.18	.28	.00	.00	.00	2.0	40	.67	.15	.00	.00	.13
16	.18	.28	.00	.00	.00	3.0	86	.66	.13	.00	.00	.02
17	.18	.28	.00	.00	.00	5.0	179	.57	.07	.00	.00	.00
18	.18	.28	.00	.00	.00	6.0	176	.46	.00	.00	.00	.00
19	.18	.26	.00	.00	.00	7.0	77	.45	.02	.00	.00	.00
20	.18	.23	.00	.00	.00	8.0	35	.86	.10	.00	.00	.00
21	.18	.12	.00	.00	.00	9.0	21	1.1	.20	.00	.00	.00
22	.20	.10	.00	.00	.00	10	11	.91	.39	.00	.00	.00
23	.20	.08	.00	.00	.00	10	10	.86	2.1	.00	.00	.00
24	.20	.09	.00	.00	.00	9.5	6.6	.76	.97	.00	.00	.00
25	.20	.11	.00	.00	.00	7.5	4.5	.52	.67	.00	.00	.00
26	.20	.12	.00	.00	.00	6.0	4.1	.45	.86	.00	.00	.00
27	.22	.14	.00	.00	.00	5.5	3.6	.39	.45	.00	.00	.00
28	.22	.16	.00	.00	.00	5.0	3.6	.39	.30	.00	.00	.00
29	.22	.17	.00	.00	---	4.8	7.8	.30	.22	.03	.00	.00
30	.22	.18	.00	.00	---	4.5	10	.29	.20	.27	.00	.00
31	.22	---	.00	.00	---	4.3	---	.27	---	.63	.00	---
TOTAL	4.46	6.54	.77	.00	.00	118.35	785.8	40.92	10.33	4.97	2.80	.66
MEAN	.14	.22	.025	.000	.000	3.82	26.2	1.32	.34	.16	.090	.022
MAX	.22	.30	.20	.00	.00	10	179	5.3	2.1	1.6	.40	.25
MIN	.00	.08	.00	.00	.00	.00	3.0	.27	.00	.00	.00	.00
AC-FT	8.8	13	1.5	.00	.00	235	1560	81	20	9.9	5.6	1.3

CAL YR 1978 TOTAL 941.03 MEAN 2.58 MAX 90 MIN .00 AC-FT 1870
WTR YR 1979 TOTAL 975.60 MEAN 2.67 MAX 179 MIN .00 AC-FT 1940

06340580 COAL CREEK NEAR STANTON, ND--Continued

WATER-QUALITY RECORDS

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS (MG/L AS CACO3) (00900)
OCT											
11...	1115	.18	980	8.2	15.5	10.0	10.1	95	150	1300	160
NOV											
09...	1230	.31	2450	8.2	1.5	4.5	11.3	93	23	2000	490
APR											
17...	1800	463	--	--	12.0	2.0	--	--	--	--	--
19...	1515	60	400	7.9	6.0	6.0	10.1	86	K37	3800	99
MAY											
02...	0830	3.6	830	8.2	1.5	8.0	9.5	84	22	K50	200
22...	1100	.89	2120	8.4	9.5	13.0	7.6	75	100	160	430
JUN											
20...	1300	.10	2380	9.0	23.0	20.0	17.0	198	K630	1700	370

DATE	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE (MG/L AS HCO3) (00440)	CAR-BONATE (MG/L AS CO3) (00445)	ALKA-LINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)
OCT											
11...	0	31	20	170	68	5.9	13	373	0	310	3.8
NOV											
09...	0	86	68	470	66	9.2	17	903	0	740	9.1
APR											
17...	--	--	--	--	--	--	--	--	--	--	--
19...	0	20	12	50	51	2.2	5.0	128	0	110	2.6
MAY											
02...	0	42	22	120	56	3.7	6.9	271	0	220	2.7
22...	0	81	55	360	64	7.6	10	730	2	600	4.7
JUN											
20...	0	39	65	460	73	10	8.2	593	34	600	1.1

DATE	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)
OCT											
11...	210	8.1	.2	14	681	650	.88	.32	.03	.15	2.7
NOV											
09...	760	15	.2	12	1880	1870	2.54	1.57	.03	.01	1.1
APR											
17...	--	--	--	--	--	--	--	--	--	--	--
19...	95	1.8	.1	8.8	261	256	.35	41.6	.41	.09	.90
MAY											
02...	220	4.1	.1	9.9	556	559	.76	5.43	.31	.03	.72
22...	610	8.1	.3	5.5	1520	1490	2.03	3.58	.00	.05	.95
JUN											
20...	790	8.0	.3	1.5	1730	1700	2.31	.46	.01	.02	.47

K - Results based on colony count outside the acceptable range (non-ideal colony count).

06340580 COAL CREEK NEAR STANTON, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, TOTAL (MG/L AS N) (00600)	NITROGEN, TOTAL (MG/L AS NO3) (71887)	PHOSPHORUS, TOTAL (MG/L AS P) (00665)	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	ALUMINUM, DISSOLVED (UG/L AS AL) (01106)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DISSOLVED (UG/L AS AS) (01000)	ARSENIC TOTAL IN BOTTOM MATERIAL (UG/G AS AS) (01003)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA) (01007)	BARIUM, DISSOLVED (UG/L AS BA) (01005)
OCT											
11...	2.8	2.8	13	.47	.18	--	--	--	--	--	--
NOV											
09...	1.1	1.1	5.0	.13	.10	--	--	--	--	--	--
APR											
17...	--	--	--	--	--	--	--	--	--	--	--
19...	.99	1.4	6.2	.19	.00	40	2	1	14	0	50
MAY											
02...	.75	1.1	4.7	.09	.05	--	--	--	--	--	--
22...	1.0	1.0	4.4	.08	.01	--	--	--	--	--	--
JUN											
20...	.49	.50	2.2	.06	.03	--	--	--	--	--	--

DATE	BARIUM, RECOV. FM BOTTOM MATERIAL (UG/G AS BA) (01008)	BERYLLIUM, TOTAL RECOVERABLE (UG/L AS BE) (01012)	BERYLLIUM, DISSOLVED (UG/L AS BE) (01010)	BERYLLIUM, RECOV. FM BOTTOM MATERIAL (UG/G) (01013)	BORON, DISSOLVED (UG/L AS B) (01020)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) (01034)	CHROMIUM, DISSOLVED (UG/L AS CR) (01030)	CHROMIUM, RECOV. FM BOTTOM MATERIAL (UG/G) (01029)	COBALT, TOTAL RECOVERABLE (UG/L AS CO) (01037)	COBALT, DISSOLVED (UG/L AS CO) (01035)	COBALT, RECOV. FM BOTTOM MATERIAL (UG/G AS CO) (01038)
OCT											
11...	--	--	--	--	240	--	--	--	--	--	--
NOV											
09...	--	--	--	--	370	--	--	--	--	--	--
APR											
17...	--	--	--	--	--	--	--	--	--	--	--
19...	100	0	<1	1	90	0	0	8	0	<3	0
MAY											
02...	--	--	--	--	120	--	--	--	--	--	--
22...	--	--	--	--	250	--	--	--	--	--	--
JUN											
20...	--	--	--	--	360	--	--	--	--	--	--

DATE	COPPER, TOTAL RECOVERABLE (UG/L AS CU) (01042)	COPPER, DISSOLVED (UG/L AS CU) (01040)	COPPER, RECOV. FM BOTTOM MATERIAL (UG/G AS CU) (01043)	IRON, DISSOLVED (UG/L AS FE) (01046)	LITHIUM TOTAL RECOVERABLE (UG/L AS LI) (01132)	LITHIUM DISSOLVED (UG/L AS LI) (01130)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN) (01055)	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	MANGANESE, RECOV. FM BOTTOM MATERIAL (UG/G) (01053)	MERCURY TOTAL RECOVERABLE (UG/L AS HG) (71900)	MERCURY DISSOLVED (UG/L AS HG) (71890)
OCT											
11...	--	--	--	160	--	--	--	--	--	--	--
NOV											
09...	--	--	--	60	--	--	--	--	--	--	--
APR											
17...	--	--	--	--	--	--	--	--	--	--	--
19...	13	6	13	190	20	10	120	60	430	.4	.1
MAY											
02...	--	--	--	90	--	--	--	--	--	--	--
22...	--	--	--	40	--	--	--	--	--	--	--
JUN											
20...	--	--	--	30	--	--	--	--	--	--	--

06340580 COAL CREEK NEAR STANTON, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	MERCURY RECOV. FM BOTTOM MATERIAL (UG/G AS HG) (71921)	MOLYBDENUM, TOTAL RECOVERABLE (UG/L AS MO) (01062)	MOLYBDENUM, RECOV. FM BOTTOM MATERIAL (UG/G) (01063)	MOLYBDENUM, DISSOLVED (UG/L AS MO) (01060)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI) (01067)	NICKEL, DISSOLVED (UG/L AS NI) (01065)	NICKEL, RECOV. FM BOTTOM MATERIAL (UG/G AS NI) (01068)	SELENIUM, TOTAL (UG/L AS SE) (01147)	SELENIUM, DISSOLVED (UG/L AS SE) (01145)	SELENIUM, TOTAL IN BOTTOM MATERIAL (UG/G) (01148)	VANADIUM, DISSOLVED (UG/L AS V) (01085)
OCT											
11...	--	--	--	--	--	--	--	--	--	--	--
NOV											
09...	--	--	--	--	--	--	--	--	--	--	--
APR											
17...	--	--	--	--	--	--	--	--	--	--	--
19...	.03	0	2	<10	11	0	50	0	0	0	2.0
MAY											
02...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
JUN											
20...	--	--	--	--	--	--	--	--	--	--	--

DATE	ZINC, TOTAL RECOVERABLE (UG/L AS ZN) (01092)	ZINC, DISSOLVED (UG/L AS ZN) (01090)	ZINC, RECOV. FM BOTTOM MATERIAL (UG/G AS ZN) (01093)	GROSS ALPHA, DISSOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DISSOLVED (PCI/L AS CS-137) (03515)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)	CARBON, ORGANIC DISSOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUSPENDED TOTAL (MG/L AS C) (00689)	SEDIMENT, SUSPENDED (MG/L) (80154)	SEDIMENT DISCHARGE, SUSPENDED (T/DAY) (80155)
OCT											
11...	--	--	--	--	--	--	--	17	5.1	113	.05
NOV											
09...	--	--	--	--	--	--	--	20	.9	109	.09
APR											
17...	--	--	--	--	--	--	--	--	--	894	1120
19...	40	4	32	<4.1	<1.7	7.9	2.7	10	2.4	76	12
MAY											
02...	--	--	--	--	--	--	--	19	--	68	.66
22...	--	--	--	--	--	--	--	24	--	18	.04
JUN											
20...	--	--	--	--	--	--	--	28	.7	35	.01

DATE	BED MAT. FALL DIAM. % FINER THAN .062 MM (80158)	BED MAT. FALL DIAM. % FINER THAN .125 MM (80159)	BED MAT. FALL DIAM. % FINER THAN .250 MM (80160)	BED MAT. FALL DIAM. % FINER THAN .500 MM (80161)	BED MAT. FALL DIAM. % FINER THAN 1.00 MM (80162)	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM (80169)	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM (80170)	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM (80171)	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM (80172)	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM (80173)
APR										
19...	8	11	18	27	37	47	66	84	98	100

06340580 COAL CREEK NEAR STANTON, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1978 TO JUNE 1979

DATE	OCT 11,78		NOV 9,78		APR 19,79		MAY 2,79		MAY 22,79		JUN 30,79	
TIME	1115		1230		1515		0830		1100		1300	
TOTAL CELLS/ML	17000		6700		1300		950		270		540	
DIVERSITY: DIVISION	1.0		1.7		0.6		1.0		1.1		0.6	
.CLASS	1.0		1.7		0.6		1.0		1.1		0.6	
..ORDER	1.0		1.8		1.6		1.8		1.1		0.7	
...FAMILY	1.0		1.8		1.6		2.3		1.1		1.0	
....GENUS	1.8		2.5		0.0		3.0		1.1		1.0	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)												
.CHLOROPHYCEAE												
..CHLOROCOCCALES												
...MICRACTINIACEAE												
....GOLENKINIA	--	-	--	-	--	-	42	4	--	-	--	-
...OOCYSTACEAE												
....ANKISTRODESMUS	--	-	890	13	29	2	28	3	39	14	13	2
....DICTYOSPHAERIUM	--	-	--	-	--	-	140	15	--	-	--	-
....FRANCEIA	--	-	100	2	--	-	--	-	--	-	--	-
....KIRCHNERIELLA	--	-	680	10	--	-	--	-	--	-	--	-
....OOCYSTIS	--	-	--	-	--	-	56	6	--	-	--	-
....THEOBARIA	--	-	52	1	--	-	--	-	--	-	--	-
...SCENEDESMACEAE												
....ACTINASTRUM	--	-	--	-	--	-	56	6	--	-	--	-
..VOLVOCALES												
...CHLAMYDOMONADACEAE	--	-	--	-	72	5	--	-	--	-	--	-
....CARTERIA	--	-	--	-	--	-	42	4	--	-	--	-
....CHLAMYDOMONAS	6900#	40	--	-	--	-	380#	40	--	-	13	2
CHRYSOPHYTA												
.BACILLARIOPHYCEAE												
..CENTRALES												
...COSCINODISCACEAE												
....CYCLOTELLA	--	-	2700#	40	--	-	--	-	--	-	--	-
....MELOSIRA	--	-	470	7	--	-	--	-	--	-	--	-
..PENNALES												
...CYMBELLACEAE												
....CYMBELLA	--	-	--	-	14	1	--	-	--	-	--	-
...EUNOTIACEAE												
....EUNOTIA	--	-	--	-	14	1	--	-	--	-	--	-
...FRAGILARIACEAE												
....FRAGILARIA	--	-	100	2	--	-	--	-	--	-	--	-
....SYNEDRA	--	-	--	-	--	-	14	1	--	-	--	-
...NAVICULACEAE												
....NAVICULA	--	-	--	-	14	1	28	3	--	-	13	2
...NITZSCHIACEAE												
....NITZSCHIA	--	-	--	-	14	1	28	3	190#	71	26	5
CRYPTOPHYTA (CRYPTOMONADS)												
.CRYPTOPHYCEAE												
..CRYPTOMONADALES												
...CRYPTOCHRYSIDACEAE												
....CHROOMONAS	160	1	--	-	--	-	--	-	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)												
.CYANOPHYCEAE												
..CHROOCOCCALES												
...CHROOCOCCACEAE												
....ANACYSTIS	--	-	1400#	21	720#	55	--	-	39	14	--	-
..HORMOGONALES												
...NOSTOCACEAE												
....ANABAENA	--	-	--	-	430#	33	--	-	--	-	26	5
...OSCILLATORIACEAE												
....OSCILLATORIA	--	-	--	-	--	-	--	-	--	-	450#	83
EUGLENOPHYTA (EUGLENOIDS)												
.EUGLENOPHYCEAE												
..EUGLENALES												
...EUGLENACEAE												
....EUGLENA	4100#	24	52	1	--	-	84	9	--	-	--	-
....PHACUS	470	3	--	-	--	-	14	1	--	-	--	-
....TRACHELOMONAS	5500#	32	210	3	--	-	28	3	--	-	--	-
PYRRHOPHYTA (FIRE ALGAE)												
.DINOPHYCEAE												
..PERIDINIALES												
...GLENODINIACEAE												
....GLENODINIUM	--	-	--	-	--	-	14	1	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06340700 MISSOURI RIVER NEAR STANTON, ND

LOCATION.--Lat 47°17'14", long 101°20'25", in SW¼ sec.16, T.144 N., R.84 W., McLean County, Hydrologic Unit 10130101, on right bank 3 mi (5 km) southeast of Stanton, 0.1 mi (0.2 km) below Ft. Clark irrigation pumping station, 0.4 mi (0.6 km) above the United Power Association power plant, and at mile 1,372 (2,208 km).

DRAINAGE AREA.--182,000 mi^2 (471,400 km^2), approximately.

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

GAGE.--Water-stage recorder. Datum of gage is 1,650.00 ft (502.920 m) National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Prior to Sept. 30, 1964, at datum 50.00 ft (15.240 m) lower.

REMARKS.--Stage regulated by Lake Sakakawea (station 06338000).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily gage height recorded, 24.56 ft (7.486 m) Feb. 22, 1965; minimum daily recorded, 10.73 ft (3.270 m) May 7, 1978.

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16.06							---	17.18	15.58	13.87	13.58
2	14.92							---	17.18	15.45	13.95	13.13
3	14.77							---	17.18	15.65	14.03	12.92
4	14.85							---	17.18	15.35	14.08	13.05
5	14.77							---	17.20	15.12	13.88	12.78
6	14.79							---	17.17	15.63	14.09	12.87
7	14.79							---	17.16	15.01	14.07	13.09
8	14.83							---	17.18	15.19	13.85	13.07
9	14.83							---	17.19	15.21	13.82	13.03
10	14.83							---	17.18	15.10	13.73	12.74
11	14.80							15.90	17.19	14.94	13.80	12.82
12	14.80							16.90	17.20	15.31	13.40	12.82
13	14.81							17.03	17.21	15.00	13.60	12.68
14	14.80							17.07	17.19	14.73	13.69	12.81
15	14.79							17.10	17.18	14.78	---	12.43
16	---							17.08	17.18	14.73	---	12.85
17	---							17.07	17.17	14.74	---	12.52
18	---							17.08	17.18	14.76	---	12.84
19	---							17.12	17.19	14.46	---	12.79
20	---							17.14	16.76	14.57	---	12.73
21	---							17.17	16.20	14.38	---	12.82
22	---							17.15	15.88	14.26	---	12.83
23	---							17.14	15.65	14.33	---	12.76
24	---							17.15	15.58	14.46	---	12.78
25	---							17.16	15.74	14.53	---	12.56
26	---							17.16	15.67	14.32	---	12.93
27	---							17.18	15.64	14.34	---	12.72
28	---							17.19	15.77	14.08	---	12.52
29	---							17.16	15.59	14.00	13.55	12.59
30	---							17.15	15.45	13.90	13.61	12.65
31	---							17.17	---	14.55	13.53	---
TOTAL	---							---	500.42	458.46	---	384.71
MEAN	---							---	16.68	14.79	---	12.82
MAX	---							---	17.21	15.65	---	13.58
MIN	---							---	15.45	13.90	---	12.43

06340780 ALDERIN CREEK NEAR FORT CLARK, ND

LOCATION.--Lat 47°16'09", long 101°18'34", in NW¼NW¼NE¼ sec.27, T.144 N., R.84 W., Mercer County, Hydrologic Unit 10130101, on left bank 80 ft (24 m) upstream from box culvert on North Dakota Highway 200-A, 3.5 mi (5.6 km) northwest of Ft. Clark, and 2.3 mi (3.7 km) upstream from mouth.

DRAINAGE AREA.--21.9 mi^2 (56.7 km^2) of which 1.1 mi^2 (2.8 km^2) is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1977 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,690 ft (515 m), from topographic map.

REMARKS.--Records fair except those for March, which are poor. Discharge record includes about 115 acre-ft (142,000 m^3) that was pumped into the stream during the period May to September at a mining operation upstream from the gage.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,540 ft^3/s (43.6 m^3/s) Apr. 17, 1979, gage height, 9.95 ft (3.033 m), from rating curve extended above 200 ft^3/s (5.66 m^3/s) on basis of contracted-opening measurement of peak flow; no flow at times each year.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 75 ft^3/s (2.12 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Apr. 17	1945	[a]*1,540	43.6	9.95	3.033	Aug. 21	1830	305	8.64	5.17	1.576

No flow for several months.

a - From rating curve extended above 200 ft^3/s (5.66 m^3/s) on basis of contracted-opening measurement of peak flow.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.18	.00	.00	.00	.00	.02	5.6	.16	6.2	.34	.06
2	.00	.65	.00	.00	.00	.00	.03	3.8	.19	1.2	.42	.05
3	.00	.14	.00	.00	.00	.00	.03	1.8	.15	3.9	.71	.04
4	.00	.06	.00	.00	.00	.00	.02	1.2	.14	1.4	.36	.03
5	.69	.04	.00	.00	.00	.00	.01	1.1	.13	.39	.13	.03
6	.26	.03	.00	.00	.00	.00	.00	2.6	.10	.19	.08	.05
7	.12	.02	.00	.00	.00	.00	.02	2.6	.09	.34	.05	.05
8	.06	.01	.00	.00	.00	.30	.05	1.4	.06	.31	.05	1.2
9	.03	.01	.00	.00	.00	1.5	.10	.96	.05	.23	.04	5.0
10	.03	.01	.00	.00	.00	5.0	.20	.81	.13	1.2	.03	1.5
11	.02	.01	.00	.00	.00	10	.50	.79	.09	3.5	.02	1.3
12	.00	.01	.00	.00	.00	15	1.0	.67	.08	5.4	.00	.17
13	.00	.01	.00	.00	.00	20	2.0	.56	.06	48	.00	.21
14	.00	.01	.00	.00	.00	15	5.0	.51	.06	4.1	.00	.15
15	.00	.01	.00	.00	.00	10	10	.48	.03	1.4	.00	.14
16	.00	.01	.00	.00	.00	8.0	20	.41	.00	.90	.00	.15
17	.00	.01	.00	.00	.00	6.0	407	.37	.06	.47	.00	.17
18	.02	.00	.00	.00	.00	5.5	235	.33	.10	.85	.00	.17
19	.36	.00	.00	.00	.00	4.5	52	.32	.10	.67	.00	.17
20	.10	.00	.00	.00	.00	4.0	20	.44	.14	.47	.00	.16
21	.05	.00	.00	.00	.00	3.5	13	.44	.31	.22	47	.12
22	.03	.00	.00	.00	.00	8.0	7.8	.34	12	.18	25	.09
23	.02	.00	.00	.00	.00	13	6.2	.31	9.9	1.4	3.7	.07
24	.01	.00	.00	.00	.00	10	8.1	.26	1.8	.42	.76	.06
25	.00	.00	.00	.00	.00	5.0	6.9	.20	.90	.15	.19	.08
26	.00	.00	.00	.00	.00	2.0	3.9	.16	.50	1.1	.19	.16
27	.00	.00	.00	.00	.00	.50	3.0	.14	.42	3.9	2.2	.34
28	.00	.00	.00	.00	.00	.10	3.5	.13	.39	.80	5.2	.39
29	.00	.00	.00	.00	---	.05	3.7	.10	.28	2.2	.62	.57
30	.00	.00	.00	.00	---	.00	2.1	.09	.20	2.4	.18	.42
31	.00	---	.00	.00	---	.01	---	.09	---	.47	.09	---
TOTAL	1.80	1.22	.00	.00	.00	146.96	811.18	27.21	28.62	94.36	87.36	13.10
MEAN	.058	.041	.000	.000	.000	4.74	27.0	.88	.95	3.04	2.82	.44
MAX	.69	.65	.00	.00	.00	20	407	3.8	12	48	47	5.0
MIN	.00	.00	.00	.00	.00	.00	.00	.09	.00	.15	.00	.03
AC-FT	3.6	2.4	.00	.00	.00	291	1610	54	57	187	173	26

CAL YR 1978 TOTAL 1014.18 MEAN 2.78 MAX 110 MIN .00 AC-FT 2010
WTR YR 1979 TOTAL 1211.81 MEAN 3.32 MAX 407 MIN .00 AC-FT 2400

06340780 ALDERIN CREEK NEAR FORT CLARK, ND--Continued

WATER-QUALITY RECORDS

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	PH (UNITS) (00400)	TEMPERATURE, AIR (DEG C) (00020)	TEMPERATURE (DEG C) (00010)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARDNESS (MG/L AS CACO3) (00900)	HARDNESS, NONCARBONATE (MG/L CACO3) (00902)
OCT												
11...	0830	.02	2710	8.4	12.0	9.0	7.5	69	220	700	410	0
APR												
17...	1540	314	--	--	15.0	4.0	--	--	--	--	--	--
18...	0900	207	--	--	13.5	3.0	--	--	--	--	--	--
19...	0900	53	358	8.3	6.0	9.0	9.2	84	120	7300	74	0
MAY												
01...	1250	1.4	1460	8.4	14.5	10.0	10.8	102	K1	210	320	0
22...	1350	.31	2200	8.6	10.5	12.5	10.3	101	93	160	440	0
JUN												
20...	1515	.14	1290	8.4	24.5	18.0	9.7	110	K720	7300	280	0
JUL												
19...	1110	.71	1760	8.5	24.0	19.5	9.0	102	970	4700	250	0
SEP												
10...	1315	3.3	1130	8.3	15.0	15.0	8.7	91	2100	K12000	140	0

DATE	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM ADSORPTION RATIO (00931)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	BICARBONATE (MG/L AS HCO3) (00440)	CARBONATE (MG/L AS CO3) (00445)	ALKALINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DISSOLVED (MG/L AS CO2) (00405)	SULFATE DISSOLVED (MG/L AS SO4) (00945)
OCT											
11...	89	46	530	73	11	15	681	5	570	4.4	920
APR											
17...	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--
19...	16	8.2	47	55	2.4	6.9	137	0	110	1.1	78
MAY											
01...	69	36	230	60	5.6	10	447	5	380	2.9	430
22...	84	55	380	65	7.9	13	661	10	560	2.7	700
JUN											
20...	53	37	190	58	4.9	8.1	339	1	280	2.2	420
JUL											
19...	44	34	310	85	8.6	9.0	468	12	400	2.5	540
SEP											
10...	28	18	180	83	6.5	10	300	0	250	2.4	340

DATE	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)	SOLIDS, DISSOLVED (TONS PER DAY) (70302)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITROGEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)
OCT											
11...	9.5	.4	8.8	2020	1960	2.67	.11	.01	.06	1.5	1.6
APR											
17...	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--
19...	1.9	.1	5.4	237	232	.32	33.2	.34	.59	2.0	2.6
MAY											
01...	5.5	.2	11	1020	1020	1.39	3.86	.19	.03	.95	.98
22...	7.8	.3	2.6	1600	1580	2.15	1.32	.08	.04	1.1	1.1
JUN											
20...	9.3	.4	8.1	902	894	1.22	.34	.01	.02	1.6	1.6
JUL											
19...	4.8	.3	4.3	1220	1190	1.62	2.28	.03	.03	.78	.81
SEP											
10...	3.6	.3	9.3	749	737	1.00	6.57	.03	.09	1.6	1.7

K - Results based on colony count outside the acceptable range (non-ideal colony count).

06340780 ALDERIN CREEK NEAR FORT CLARK, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	NITROGEN, TOTAL (MG/L AS N) (00600)	NITROGEN, TOTAL (MG/L AS NO3) (71887)	PHOSPHORUS, TOTAL (MG/L AS P) (00665)	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	ALUMINUM, DISSOLVED (UG/L AS AL) (01106)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DISSOLVED (UG/L AS AS) (01000)	ARSENIC TOTAL IN BOTTOM MATERIAL (UG/G AS AS) (01003)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA) (01007)	BARIUM, DISSOLVED (UG/L AS BA) (01005)	BARIUM, RECOV. FM BOTTOM MATERIAL (UG/G AS BA) (01008)
OCT											
11...	1.6	7.1	.14	.05	--	--	--	--	--	--	--
APR											
17...	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--
19...	2.9	13	.28	.15	40	10	2	17	300	0	200
MAY											
01...	1.2	5.2	.08	.02	--	--	--	--	--	--	--
22...	1.2	5.2	.03	.03	--	--	--	--	--	--	--
JUN											
20...	1.6	7.1	.03	.00	--	--	--	--	--	--	--
JUL											
19...	.84	3.7	.08	.05	40	--	2	--	--	70	--
SEP											
10...	1.7	7.7	.19	.01	--	--	--	--	--	--	--

DATE	BERYLLIUM, TOTAL RECOVERABLE (UG/L AS BE) (01012)	BERYLLIUM, DISSOLVED (UG/L AS BE) (01010)	BERYLLIUM, RECOV. FM BOTTOM MATERIAL (UG/G) (01013)	BORON, DISSOLVED (UG/L AS B) (01020)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) (01034)	CHROMIUM, DISSOLVED (UG/L AS CR) (01030)	CHROMIUM, RECOV. FM BOTTOM MATERIAL (UG/G) (01029)	COBALT, TOTAL RECOVERABLE (UG/L AS CO) (01037)	COBALT, DISSOLVED (UG/L AS CO) (01035)	COBALT, RECOV. FM BOTTOM MATERIAL (UG/G AS CO) (01038)	COPPER, TOTAL RECOVERABLE (UG/L AS CU) (01042)
OCT											
11...	--	--	--	450	--	--	--	--	--	--	--
APR											
17...	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--
19...	10	0	0	80	20	10	12	8	0	0	53
MAY											
01...	--	--	--	170	--	--	--	--	--	--	--
22...	--	--	--	270	--	--	--	--	--	--	--
JUN											
20...	--	--	--	210	--	--	--	--	--	--	--
JUL											
19...	--	<1	--	210	--	0	--	--	<3	--	--
SEP											
10...	--	--	--	200	--	--	--	--	--	--	--

DATE	COPPER, DISSOLVED (UG/L AS CU) (01040)	COPPER, RECOV. FM BOTTOM MATERIAL (UG/G AS CU) (01043)	IRON, DISSOLVED (UG/L AS FE) (01046)	LITHIUM TOTAL RECOVERABLE (UG/L AS LI) (01132)	LITHIUM DISSOLVED (UG/L AS LI) (01130)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN) (01055)	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	MANGANESE, RECOV. FM BOTTOM MATERIAL (UG/G) (01053)	MERCURY TOTAL RECOVERABLE (UG/L AS HG) (71900)	MERCURY DISSOLVED (UG/L AS HG) (71890)	MERCURY RECOV. FM BOTTOM MATERIAL (UG/G AS HG) (71921)
OCT											
11...	--	--	190	--	--	--	--	--	--	--	--
APR											
17...	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--
19...	28	18	200	30	0	680	50	410	.7	.0	.05
MAY											
01...	--	--	70	--	--	--	--	--	--	--	--
22...	--	--	10	--	--	--	--	--	--	--	--
JUN											
20...	--	--	10	--	--	--	--	--	--	--	--
JUL											
19...	8	--	50	--	50	--	4	--	--	.5	--
SEP											
10...	--	--	120	--	--	--	--	--	--	--	--

06340780 ALDERIN CREEK NEAR FORT CLARK, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	MOLYB-DENUM, TOTAL RECOV-ERABLE (UG/L AS MO) (01062)	MOLYB-DENUM, RECOV. FM BOT-TOM MA-TERIAL (UG/G) (01063)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	NICKEL, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS NI) (01068)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SELE-NIUM, TOTAL IN BOT-TOM MA-TERIAL (UG/G) (01148)	VANA-DIUM, DIS-SOLVED (UG/L AS V) (01085)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)
OCT											
11...	--	--	--	--	--	--	--	--	--	--	--
APR											
17...	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--
19...	0	0	0	39	7	30	1	1	0	3.6	120
MAY											
01...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
JUN											
20...	--	--	--	--	--	--	--	--	--	--	--
JUL											
19...	--	--	<10	--	4	--	--	1	--	<1.0	--
SEP											
10...	--	--	--	--	--	--	--	--	--	--	--

DATE	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ZINC, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS ZN) (01093)	GROSS ALPHA, DIS-SOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DIS-SOLVED (PCI/L AS CS-137) (03515)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C) (00689)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70338)
OCT											
11...	--	--	--	--	--	--	27	--	109	.01	--
APR											
17...	--	--	--	--	--	--	--	--	6100	5170	46
18...	--	--	--	--	--	--	--	--	1730	967	55
19...	20	53	23	<11	18	15	14	8.4	890	127	--
MAY											
01...	--	--	--	--	--	--	25	3.1	155	.59	--
22...	--	--	--	--	--	--	33	--	98	.08	--
JUN											
20...	--	--	--	--	--	--	13	.8	9	.00	--
JUL											
19...	4	--	--	--	--	--	26	.6	106	.20	--
SEP											
10...	--	--	--	--	--	--	20	.5	162	1.4	--

DATE	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70340)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)	SED. SUSP. FALL DIAM. % FINER THAN .125 MM (70343)	BED MAT. FALL DIAM. % FINER THAN .062 MM (80158)	BED MAT. FALL DIAM. % FINER THAN .125 MM (80159)	BED MAT. FALL DIAM. % FINER THAN .250 MM (80160)	BED MAT. FALL DIAM. % FINER THAN .500 MM (80161)
APR							
17...	80	98	100	--	--	--	--
18...	85	99	100	--	--	--	--
19...	--	--	--	62	87	97	100

DATE	LENGTH OF EXPO-SURE (DAYS) (00022)	CHLOR-A PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70957)	CHLOR-B PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70958)	PERI-PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M (00573)	PERI-PHYTON BIOMASS ASH WEIGHT G/SQ M (00572)
JUL					
19...	29	4.68	2.87	2.52	2.52

06340780 ALDERIN CREEK NEAR FORT CLARK, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1978 TO SEPTEMBER 1979

DATE	OCT 11,78	APR 19,79	MAY 1,79	MAY 22,79
TIME	0830	0900	1250	1350
TOTAL CELLS/ML	100000	740	2900	210
DIVERSITY: DIVISION	0.0	0.5	1.5	1.4
.CLASS	0.0	0.5	1.5	1.4
..ORDER	0.0	0.6	1.8	1.6
...FAMILY	0.0	0.6	1.8	1.6
....GENUS	0.0	0.6	1.8	1.8

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)								
.CHLOROPHYCEAE								
..CHLOROCOCCALES								
...CHLOROCOCCACEAE								
....CHLOROCOCCUM	--	-	--	-	--	-	--	-
...OOCYSTACEAE								
....ANKISTRODESMUS	*	0	43	6	190	6	120#	56
....CHLORELLA	--	-	--	-	--	-	--	-
....DICTYOSPHAERIUM	--	-	--	-	--	-	--	-
....OOCYSTIS	--	-	--	-	--	-	--	-
....SELENASTRUM	--	-	--	-	--	-	--	-
...SCENEDESMACEAE								
....SCENEDESMUS	*	0	--	-	--	-	--	-
..VOLVOCALES								
...CHLAMYDOMONADACEAE								
....CHLAMYDOMONAS	*	0	--	-	1200#	41	--	-
..ZYGNEMATALES								
...DESMIDIACEAE								
....CLOSTERIUM	--	-	43	6	--	-	--	-
CHRYSOPHYTA								
.BACILLARIOPHYCEAE								
..CENTRALES								
...COSCINODISCACEAE								
....CYCLOTELLA	--	-	--	-	200	7	13	6
..PENNALES								
...FRAGILARIACEAE								
....SYNEDRA	--	-	--	-	--	-	--	-
...NAVICULACEAE								
....NAVICULA	*	0	--	-	--	-	--	-
...NITZSCHIACEAE								
....NITZSCHIA	--	-	--	-	--	-	26	13
...SURIRELLACEAE								
....SURIRELLA	--	-	--	-	16	1	--	-
CRYPTOPHYTA (CRYPTOMONADS)								
.CRYPTOPHYCEAE								
..CRYPTOMONADALES								
...CRYPTOMONADACEAE								
....CRYPTOMONAS	--	-	--	-	16	1	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)								
.CYANOPHYCEAE								
..CHROOCOCCALES								
...CHROOCOCCACEAE								
....ANACYSTIS	--	-	--	-	--	-	--	-
..HORMOGONALES								
...NOSTOCACEAE								
....ANABAENA	--	-	--	-	--	-	--	-
...OSCILLATORIACEAE								
....OSCILLATORIA	100000#	100	650#	88	1200#	42	--	-
EUGLENOPHYTA (EUGLENOIDS)								
.EUGLENOPHYCEAE								
..EUGLENALES								
...EUGLENACEAE								
....EUGLENA	*	0	--	-	31	1	13	6
....PHACUS	*	0	--	-	--	-	--	-
....TRACHELOMONAS	--	-	--	-	--	-	39#	19
PYRRHOPHYTA (FIRE ALGAE)								
.DINOPHYCEAE								
..PERIDINIALES								
...GLENODINIACEAE								
....GLENODINIUM	*	0	--	-	16	1	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06340780 ALDERIN CREEK NEAR FORT CLARK, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1978 TO SEPTEMBER 1979

DATE TIME	JUN 20,79 1515		JUL 19,79 1110		SEP 10,79 1315	
TOTAL CELLS/ML	710		170		1800	
DIVERSITY: DIVISION	1.4		1.9		0.4	
.CLASS	1.4		1.9		0.4	
..ORDER	1.7		2.3		0.4	
...FAMILY	1.9		2.3		0.5	
....GENUS	2.1		2.8		0.5	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)						
.CHLOROPHYCEAE						
..CHLOROCOCCALES						
...CHLOROCOCCACEAE						
....CHLOROCOCCUM	--	-	--	-	15	1
...OOCYSTACEAE						
....ANKISTRODESMUS	39	5	--	-	--	-
....CHLORELLA	--	-	--	-	10	1
....DICTYOSPHAERIUM	52	7	--	-	--	-
....OOCYSTIS	13	2	--	-	--	-
....SELENASTRUM	--	-	13	8	--	-
...SCENEDESMACEAE						
....SCENEDESMUS	26	4	--	-	30	2
..VOLVOCALES						
...CHLAMYDOMONADACEAE						
....CHLAMYDOMONAS	39	5	13	8	--	-
..ZYGNEMATALES						
...DESMIDIACEAE						
....CLOSTERIUM	--	-	--	-	--	-
CHRYSOPHYTA						
.BACILLARIOPHYCEAE						
..CENTRALES						
...COSCINODISCACEAE						
....CYCLOTELLA	39	5	26#	15	--	-
..PENNALES						
...FRAGILARIACEAE						
....SYNEDRA	--	-	--	-	*	0
...NAVICULACEAE						
....NAVICULA	--	-	--	-	20	1
...NITZSCHIACEAE						
....NITZSCHIA	13	2	13	8	25	1
...SURIRELLACEAE						
....SURIRELLA	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)						
.CRYPTOPHYCEAE						
..CRYPTOMONADALES						
...CRYPTOMONADACEAE						
....CRYPTOMONAS	13	2	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)						
.CYANOPHYCEAE						
..CHROOCOCCALES						
...CHROOCOCCACEAE						
....ANACYSTIS	13	2	39#	23	--	-
..HORMOGONALES						
...NOSTOCACEAE						
....ANABAENA	450#	64	--	-	--	-
...OSCILLATORIACEAE						
....OSCILLATORIA	--	-	--	-	1700#	94
EUGLENOPHYTA (EUGLENOIDS)						
.EUGLENOPHYCEAE						
..EUGLENALES						
...EUGLENACEAE						
....EUGLENA	--	-	39#	23	--	-
....PHACUS	--	-	13	8	--	-
....TRACHELOMONAS	13	2	13	8	--	-
PYRRHOPHYTA (FIRE ALGAE)						
.DINOPHYCEAE						
..PERIDINIALES						
...GLENODINIACEAE						
....GLENODINIUM	--	-	--	-	--	-

NOTE: # = DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* = OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06340890 MISSOURI RIVER TRIBUTARY NO. 2 NEAR HENSLER, ND

LOCATION.--Lat 47°16'31", long 101°11'49", in SW¼NE¼SE¼ sec.21, T.144 N., R.83 W., McLean County, Hydrologic Unit 10130101, on right bank 200 ft (61 m) upstream from culverts on county road, 7.9 mi (12.7 km) west of Washburn, 5.4 mi (8.7 km) northwest of Hensler and 0.5 mi (0.8 km) upstream from mouth.

DRAINAGE AREA.--9.8 mi^2 (25.4 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1978 to September 1979.

GAGE.--Water-stage recorder. Altitude of gage is 1,670 ft (509.02 m), from topographic map.

REMARKS.--Records fair except for period March 21 to April 16, which are poor.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 30 ft^3/s (0.85 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Apr. 17	1600	*455	12.9	9.45	2.880	Aug. 21	2200	43	1.22	4.00	1.219
July 3	0400	130	3.68	5.66	1.725	Aug. 28	0030	34	.96	3.77	1.149

No flow for many months.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.10	1.5	.23	.11	.09	.14
2	.00	.00	.00	.00	.00	.00	.00	1.4	.33	.25	.04	.12
3	.00	.00	.00	.00	.00	.00	.00	1.1	.25	19	.01	.10
4	.00	.00	.00	.00	.00	.00	.00	1.1	.22	.94	.00	.06
5	.00	.00	.00	.00	.00	.00	.00	1.3	.20	.33	.00	.02
6	.00	.00	.00	.00	.00	.00	.00	2.6	.19	.23	.00	.01
7	.00	.00	.00	.00	.00	.00	.10	2.2	.16	.20	.00	.00
8	.00	.00	.00	.00	.00	.00	.30	1.3	.15	.17	.00	.00
9	.00	.00	.00	.00	.00	.00	.50	.96	.15	.17	.00	.00
10	.00	.00	.00	.00	.00	.00	15	.96	.14	.12	.00	.00
11	.00	.00	.00	.00	.00	.00	40	1.2	.13	.10	.00	.00
12	.00	.00	.00	.00	.00	.00	20	1.0	.13	.12	.00	.00
13	.00	.00	.00	.00	.00	.00	15	.84	.13	.13	.00	.00
14	.00	.00	.00	.00	.00	.00	15	.77	.06	.11	.00	.00
15	.00	.00	.00	.00	.00	.00	35	.66	.02	.05	.00	.00
16	.00	.00	.00	.00	.00	.00	96	.66	.01	.01	.00	.00
17	.00	.00	.00	.00	.00	.00	170	.66	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	90	.50	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.50	20	.50	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	1.0	17	.45	.01	.00	.00	.00
21	.00	.00	.00	.00	.00	2.5	14	.50	.41	.00	7.3	.00
22	.00	.00	.00	.00	.00	15	11	.40	.64	.00	7.0	.00
23	.00	.00	.00	.00	.00	13	7.0	.34	2.0	.00	.31	.00
24	.00	.00	.00	.00	.00	5.0	4.7	.31	.44	.00	.16	.00
25	.00	.00	.00	.00	.00	2.5	2.8	.27	.27	.00	.14	.00
26	.00	.00	.00	.00	.00	1.0	2.0	.23	.20	.00	.11	.00
27	.00	.00	.00	.00	.00	.80	1.8	.23	.18	.03	2.5	.00
28	.00	.00	.00	.00	.00	.60	2.0	.20	.17	.27	7.4	.00
29	.00	.00	.00	.00	---	.60	2.2	.19	.15	.16	.29	.00
30	.00	.00	.00	.00	---	.60	1.4	.16	.09	.15	.17	.00
31	.00	---	.00	.00	---	.30	---	.17	---	.13	.15	---
TOTAL	.00	.00	.00	.00	.00	43.40	582.90	24.66	7.06	22.78	25.67	.45
MEAN	.000	.000	.000	.000	.000	1.40	19.4	.80	.24	.73	.83	.015
MAX	.00	.00	.00	.00	.00	15	170	2.6	2.0	19	7.4	.14
MIN	.00	.00	.00	.00	.00	.00	.00	.16	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	86	1160	49	14	45	51	.9

WTR YR 1979 TOTAL 706.92 MEAN 1.94 MAX 170 MIN .00 AC-FT 1400

06340890 MISSOURI RIVER TRIBUTARY NO. 2 NEAR HENSLER, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1978 to September 1979.

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)
APR												
18...	1730	128	--	--	17.5	12.0	--	--	--	--	--	--
24...	1045	4.9	1120	8.2	4.5	6.5	10.8	92	170	K91	310	0
30...	0820	1.4	1500	8.3	.0	4.5	11.4	92	K2	33	380	0
MAY												
23...	0835	.31	1920	8.4	10.0	11.5	9.5	90	63	41	430	0

DATE	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE (MG/L AS HCO3) (00440)	CAR-BONATE (MG/L AS CO3) (00445)	ALKA-LINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)
APR											
18...	--	--	--	--	--	--	--	--	--	--	--
24...	67	35	150	51	3.7	6.5	390	0	320	3.9	300
30...	78	46	220	55	4.9	6.1	517	0	420	4.1	410
MAY											
23...	89	50	310	61	6.5	6.9	673	5	570	4.4	540

DATE	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)
APR											
18...	--	--	--	--	--	--	--	--	--	--	--
24...	2.8	.1	14	778	768	1.04	10.2	.14	.09	.63	.72
30...	4.0	.2	13	1050	1030	1.40	3.89	.01	.04	.67	.71
MAY											
23...	4.9	.2	9.0	1350	1350	1.84	1.13	.01	.05	.72	.82

DATE	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	ARSENIC TOTAL IN BOT-TOM MA-TERIAL (UG/G AS AS) (01003)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BARIUM, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS BA) (01008)
APR											
18...	--	--	--	--	--	--	--	--	--	--	--
24...	.86	3.8	.08	.06	10	2	2	7	100	200	120
30...	.72	3.2	.05	.04	--	--	--	--	--	--	--
MAY											
23...	.83	3.7	.02	.06	--	--	--	--	--	--	--

K - Results based on colony count outside the acceptable range (non-ideal colony count).

06340890 MISSOURI RIVER TRIBUTARY NO. 2 NEAR HENSLER, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	BERYLLIUM, TOTAL RECOVERABLE (UG/L AS BE) (01012)	BERYLLIUM, DISSOLVED (UG/L AS BE) (01010)	BERYLLIUM, RECOV. FM BOTTOM MATERIAL (UG/G) (01013)	BORON, DISSOLVED (UG/L AS B) (01020)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) (01034)	CHROMIUM, DISSOLVED (UG/L AS CR) (01030)	CHROMIUM, RECOV. FM BOTTOM MATERIAL (UG/G) (01029)	COBALT, TOTAL RECOVERABLE (UG/L AS CO) (01037)	COBALT, DISSOLVED (UG/L AS CO) (01035)	COBALT, RECOV. FM BOTTOM MATERIAL (UG/G AS CO) (01038)	COPPER, TOTAL RECOVERABLE (UG/L AS CU) (01042)
APR											
18...	--	--	--	--	--	--	--	--	--	--	--
24...	0	0	0	150	0	0	7	0	0	0	9
30...	--	--	--	170	--	--	--	--	--	--	--
MAY											
23...	--	--	--	220	--	--	--	--	--	--	--

DATE	COPPER, DISSOLVED (UG/L AS CU) (01040)	COPPER, RECOV. FM BOTTOM MATERIAL (UG/G AS CU) (01043)	IRON, DISSOLVED (UG/L AS FE) (01046)	LITHIUM TOTAL RECOVERABLE (UG/L AS LI) (01132)	LITHIUM DISSOLVED (UG/L AS LI) (01130)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN) (01055)	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	MANGANESE, RECOV. FM BOTTOM MATERIAL (UG/G) (01053)	MERCURY TOTAL RECOVERABLE (UG/L AS HG) (71900)	MERCURY DISSOLVED (UG/L AS HG) (71890)	MERCURY RECOV. FM BOTTOM MATERIAL (UG/G AS HG) (71921)
APR											
18...	--	--	--	--	--	--	--	--	--	--	--
24...	11	12	100	40	50	40	30	420	.1	.1	.03
30...	--	--	80	--	--	--	--	--	--	--	--
MAY											
23...	--	--	10	--	--	--	--	--	--	--	--

DATE	MOLYBDENUM, TOTAL RECOVERABLE (UG/L AS MO) (01062)	MOLYBDENUM, RECOV. FM BOTTOM MATERIAL (UG/G) (01065)	MOLYBDENUM, DISSOLVED (UG/L AS MO) (01060)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI) (01067)	NICKEL, DISSOLVED (UG/L AS NI) (01065)	NICKEL, RECOV. FM BOTTOM MATERIAL (UG/G AS NI) (01068)	SELENIUM, TOTAL (UG/L AS SE) (01147)	SELENIUM, DISSOLVED (UG/L AS SE) (01145)	SELENIUM, TOTAL IN BOTTOM MATERIAL (UG/G) (01148)	VANADIUM, DISSOLVED (UG/L AS V) (01085)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN) (01092)
APR											
18...	--	--	--	--	--	--	--	--	--	--	--
24...	1	0	0	5	1	10	1	1	0	1.0	20
30...	--	--	--	--	--	--	--	--	--	--	--
MAY											
23...	--	--	--	--	--	--	--	--	--	--	--

DATE	ZINC, DISSOLVED (UG/L AS ZN) (01090)	ZINC, RECOV. FM BOTTOM MATERIAL (UG/G AS ZN) (01095)	GROSS ALPHA, DISSOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DISSOLVED (PCI/L AS CS-137) (03515)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)	CARBON, ORGANIC DISSOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUSPENDED TOTAL (MG/L AS C) (00689)	SEDIMENT, SUSPENDED (MG/L) (80154)	SEDIMENT DISCHARGE, SUSPENDED (T/DAY) (80155)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70338)
APR											
18...	--	--	--	--	--	--	--	--	678	234	54
24...	20	39	<14	<.4	6.9	.6	14	1.7	13	.17	--
30...	--	--	--	--	--	--	18	--	18	.07	--
MAY											
23...	--	--	--	--	--	--	--	--	17	.01	--

06340890 MISSOURI RIVER TRIBUTARY NO. 2 NEAR HENSLER, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70340)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)
APR 18...	78	100

PHYTOPLANKTON ANALYSES, OCTOBER 1978 TO MAY 1979

DATE	APR 24,79	APR 30,79	MAY 23,79
TIME	1045	0820	0835
TOTAL CELLS/ML	9000	170	230
DIVERSITY: DIVISION	0.1	0.0	0.9
.CLASS	0.1	0.0	0.9
..ORDER	0.1	1.0	0.9
...FAMILY	0.1	1.0	0.9
....GENUS	0.1	0.0	0.9

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)						
.CHLOROPHYCEAE						
..CHLOROCOCCALES						
...OOCYSTACEAE						
....ANKISTRODESMUS	*	0	14	8	190#	83
....OOCYSTIS	--	-	57#	33	--	-
..VOLVOCALES						
...CHLAMYDOMONADACEAE	--	-	100#	58	--	-
....CHLAMYDOMONAS	56	1	--	-	--	-
CHRYSOPHYTA						
.BACILLARIOPHYCEAE						
..CENTRALES						
...COSCINODISCACEAE						
....CYCLOTELLA	--	-	--	-	13	6
CRYPTOPHYTA (CRYPTOMONADS)						
.CRYPTOPHYCEAE						
..CRYPTOMONADALES						
...CRYPTOMONADACEAE						
....CRYPTOMONAS	--	-	--	-	13	6
CYANOPHYTA (BLUE-GREEN ALGAE)						
.CYANOPHYCEAE						
..CHROOCOCCALES						
...CHROOCOCCACEAE						
....ANACYSTIS	--	-	--	-	13	6
..HORMOGONALES						
...OSCILLATORIACEAE						
....OSCILLATORIA	9000#	99	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06340900 MISSOURI RIVER NEAR HENSLER, ND

LOCATION.--Lat 47°16'45", long 101°11'03", in SW¼ sec.22, T.144 N., R.83 W., McLean County, Hydrologic Unit 10130101, on left bank about 7.5 mi (12.1 km) west of Washburn, and at mile 1,362 (2,191 km).

DRAINAGE AREA.--183,000 mi^2 (474,000 km^2), approximately.

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

GAGE.--Water-stage recorder. Datum of gage is 1,640.00 ft (499.872 m) National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Prior to Sept. 30, 1964, at datum 40 ft (12.192 m) lower.

REMARKS.--Stage regulated by Lake Sakakawea (station 06338000).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily gage height recorded, 27.77 ft (8.464 m) Mar. 20, 1965; minimum daily recorded, 15.52 ft (4.730 m) May 10, 1966.

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21.13								---	19.51		
2	20.07								---	19.01		
3	19.87								---	19.54		
4	19.91								---	19.32		
5	19.88								---	18.70		
6	19.90								---	19.76		
7	19.92								---	18.61		
8	19.95								---	18.91		
9	19.94								---	18.66		
10	19.94								---	18.59		
11	19.93								---	18.27		
12	19.91								21.28	19.06		
13	19.94								21.27	18.88		
14	19.95								21.27	18.64		
15	19.94								21.24	18.54		
16	19.94								21.24	18.51		
17	19.96								21.22	18.49		
18	19.93								21.23	18.54		
19	19.94								21.24	18.15		
20	19.96								20.90	18.08		
21	19.95								20.16	17.98		
22	19.94								20.01	17.87		
23	19.95								19.69	17.56		
24	19.95								19.51	18.17		
25	19.93								19.78	18.13		
26	---								19.32	---		
27	---								19.48	---		
28	---								19.57	---		
29	---								19.32	---		
30	---								19.19	---		
31	---								---	---		
TOTAL	---								---	---		
MEAN	---								---	---		
MAX	---								---	---		
MIN	---								---	---		

06340905 COAL LAKE COULEE NEAR HENSLER, ND

LOCATION.--Lat 47°18'09", long 101°07'52", in SW¼SE¼SE¼ sec.12, T.144 N., R.83 W., McLean County, Hydrologic Unit 10130101, on right bank 100 ft (30 m) upstream from bridge, on county road 4.5 mi (7.2 km) west of Washburn, 3.6 mi (5.8 km) northwest of Hensler, and 0.3 mi (0.8 km) upstream from mouth.

DRAINAGE AREA.--7.5 mi^2 (19.5 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1977 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,690 ft (515 m), from topographic map.

REMARKS.--Records fair except those for March, which are poor. During period Apr. 25 to July 25 natural flow of stream affected by diversions into the stream of about 25 acre-ft (30,800 m^3) from unknown sources.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 592 ft^3/s (16.8 m^3/s) Apr. 17, 1979, gage height, 6.2 ft (1.89 m) from floodmark; no flow at times each year.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 40 ft^3/s (1.13 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Apr. 17	1600	*592	16.8	[a]6.2	1.89	May 13	0015	43	1.22	2.30	0.701

No flow for many months.

a - From floodmark

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.10	13	7.4	15	.00	.00
2	.00	.00	.00	.00	.00	.00	.10	13	5.8	15	.00	.00
3	.00	.00	.00	.00	.00	.00	.10	13	9.1	17	.00	.00
4	.00	.00	.00	.00	.00	.00	.05	13	9.6	14	.00	.00
5	.00	.00	.00	.00	.00	.00	.05	13	8.7	13	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	15	6.2	12	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	14	4.4	12	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	13	5.4	11	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	13	9.1	11	.00	.00
10	.00	.00	.00	.00	.00	.00	.20	13	11	10	.00	.00
11	.00	.00	.00	.00	.00	.00	1.0	14	12	10	.00	.00
12	.00	.00	.00	.00	.00	.00	1.5	16	12	10	.00	.00
13	.00	.00	.00	.00	.00	.00	2.0	40	11	10	.00	.00
14	.00	.00	.00	.00	.00	.00	2.5	34	11	7.4	.00	.00
15	.00	.00	.00	.00	.00	.00	7.0	29	12	6.6	.00	.00
16	.00	.00	.00	.00	.00	.10	73	26	13	5.8	.00	.00
17	.00	.00	.00	.00	.00	.40	226	24	13	5.4	.00	.00
18	.00	.00	.00	.00	.00	.30	162	25	12	3.7	.00	.00
19	.00	.00	.00	.00	.00	.20	28	30	13	3.1	.00	.00
20	.00	.00	.00	.00	.00	.10	9.6	31	14	2.5	.00	.00
21	.00	.00	.00	.00	.00	.00	5.1	29	13	1.4	.15	.00
22	.00	.00	.00	.00	.00	.20	2.8	26	14	.80	.02	.00
23	.00	.00	.00	.00	.00	1.0	2.3	24	14	.90	.00	.00
24	.00	.00	.00	.00	.00	.80	3.7	22	14	.30	.00	.00
25	.00	.00	.00	.00	.00	.70	3.7	20	13	.00	.00	.00
26	.00	.00	.00	.00	.00	.50	6.6	19	14	.10	.00	.00
27	.00	.00	.00	.00	.00	.30	8.2	16	15	1.0	.56	.00
28	.00	.00	.00	.00	.00	.20	10	14	15	.40	.08	.00
29	.00	.00	.00	.00	---	.15	12	12	15	.20	.00	.00
30	.00	.00	.00	.00	---	.10	12	10	14	.10	.00	.00
31	.00	---	.00	.00	---	.10	---	8.7	---	.00	.00	---
TOTAL	.00	.00	.00	.00	.00	5.15	579.60	602.7	340.7	199.70	.81	.00
MEAN	.000	.000	.000	.000	.000	.17	19.3	19.4	11.4	6.44	.026	.000
MAX	.00	.00	.00	.00	.00	1.0	226	40	15	17	.56	.00
MIN	.00	.00	.00	.00	.00	.00	.00	8.7	4.4	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	10	1150	1200	676	396	1.6	.00

CAL YR 1978 TOTAL 273.79 MEAN .75 MAX 40 MIN .00 AC-FT 543
WTR YR 1979 TOTAL 1728.66 MEAN 4.74 MAX 226 MIN .00 AC-FT 3430

06340905 COAL LAKE COULEE NEAR HENSLER, ND--Continued

WATER-QUALITY RECORDS

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)
APR												
18...	1415	216	--	--	22.5	7.0	--	--	--	--	--	--
24...	1030	2.5	820	8.1	3.0	4.0	12.1	98	K19	100	220	0
30...	1140	11	392	7.6	9.5	6.0	12.2	103	K4	55	110	0
MAY												
23...	1150	25	482	8.4	18.0	13.0	10.9	107	27	23	180	12
JUN												
19...	1745	15	610	8.4	16.0	20.5	7.9	92	620	690	180	0
JUL												
19...	1610	3.5	752	8.7	31.0	25.0	10.1	126	500	96	200	0

DATE	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE (MG/L AS HCO3) (00440)	CAR-BONATE (MG/L AS CO3) (00445)	ALKA-LINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)
APR											
18...	--	--	--	--	--	--	--	--	--	--	--
24...	52	21	94	48	2.8	6.9	307	0	250	3.9	180
30...	24	12	43	44	1.8	7.8	151	0	120	3.8	80
MAY											
23...	38	20	44	33	1.4	11	203	1	170	1.3	83
JUN											
19...	31	24	61	41	2.0	14	282	3	240	1.8	79
JUL											
19...	33	28	83	45	2.6	17	356	17	320	1.2	82

DATE	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)
APR											
18...	--	--	--	--	--	--	--	--	--	--	--
24...	2.7	.1	18	568	526	.72	3.27	.16	.04	.84	.88
30...	2.4	.1	12	266	256	.35	7.60	.26	.10	.78	.88
MAY											
23...	3.9	.1	14	310	315	.43	21.3	.00	.00	.96	.96
JUN											
19...	4.7	.1	15	387	371	.50	13.2	.01	.01	1.1	1.1
JUL											
19...	6.1	.2	3.3	488	446	.61	4.21	.01	.03	1.4	1.4

K - Results based on colony count outside the acceptable range (non-ideal colony count).

06340905 COAL LAKE COULEE NEAR HENSLER, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	NITROGEN, TOTAL (MG/L AS N) (00600)	NITROGEN, TOTAL (MG/L AS NO3) (71887)	PHOSPHORUS, TOTAL (MG/L AS P) (00665)	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	ALUMINUM, DISSOLVED (UG/L AS AL) (01106)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DISSOLVED (UG/L AS AS) (01000)	ARSENIC TOTAL IN BOTTOM MATERIAL (UG/G AS AS) (01003)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA) (01007)	BARIUM, DISSOLVED (UG/L AS BA) (01005)	BARIUM, RECOV. FM BOTTOM MATERIAL (UG/G AS BA) (01008)
APR											
18...	--	--	--	--	--	--	--	--	--	--	--
24...	1.0	4.6	.13	.13	20	3	2	22	100	90	76
30...	1.1	5.0	.09	.05	--	--	--	--	--	--	--
MAY											
23...	.96	4.3	.05	.04	--	--	--	--	--	--	--
JUN											
19...	1.1	4.9	.07	.05	--	--	--	--	--	--	--
JUL											
19...	1.4	6.2	.11	.12	20	--	4	--	--	90	--

DATE	BERYLLIUM, TOTAL RECOVERABLE (UG/L AS BE) (01012)	BERYLLIUM, DISSOLVED (UG/L AS BE) (01010)	BERYLLIUM, RECOV. FM BOTTOM MATERIAL (UG/G) (01013)	BORON, DISSOLVED (UG/L AS B) (01020)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) (01034)	CHROMIUM, DISSOLVED (UG/L AS CR) (01030)	CHROMIUM, RECOV. FM BOTTOM MATERIAL (UG/G) (01029)	COBALT, TOTAL RECOVERABLE (UG/L AS CO) (01037)	COBALT, DISSOLVED (UG/L AS CO) (01035)	COBALT, RECOV. FM BOTTOM MATERIAL (UG/G AS CO) (01038)	COPPER, TOTAL RECOVERABLE (UG/L AS CU) (01042)
APR											
18...	--	--	--	--	--	--	--	--	--	--	--
24...	0	<1	1	140	0	0	5	0	<3	0	7
30...	--	--	--	100	--	--	--	--	--	--	--
MAY											
23...	--	--	--	100	--	--	--	--	--	--	--
JUN											
19...	--	--	--	160	--	--	--	--	--	--	--
JUL											
19...	--	<1	--	190	--	0	--	--	<3	--	--

DATE	COPPER, DISSOLVED (UG/L AS CU) (01040)	COPPER, RECOV. FM BOTTOM MATERIAL (UG/G AS CU) (01043)	IRON, DISSOLVED (UG/L AS FE) (01046)	LITHIUM TOTAL RECOVERABLE (UG/L AS LI) (01132)	LITHIUM DISSOLVED (UG/L AS LI) (01130)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN) (01055)	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	MANGANESE, RECOV. FM BOTTOM MATERIAL (UG/G) (01053)	MERCURY TOTAL RECOVERABLE (UG/L AS HG) (71900)	MERCURY DISSOLVED (UG/L AS HG) (71890)	MERCURY RECOV. FM BOTTOM MATERIAL (UG/G AS HG) (71921)
APR											
18...	--	--	--	--	--	--	--	--	--	--	--
24...	7	7	150	20	30	40	20	790	.1	.0	.03
30...	--	--	120	--	--	--	--	--	--	--	--
MAY											
23...	--	--	40	--	--	--	--	--	--	--	--
JUN											
19...	--	--	60	--	--	--	--	--	--	--	--
JUL											
19...	8	--	30	--	40	--	6	--	--	.3	--

DATE	MOLYBDENUM, TOTAL RECOVERABLE (UG/L AS MO) (01062)	MOLYBDENUM, RECOV. FM BOTTOM MATERIAL (UG/G) (01063)	MOLYBDENUM, DISSOLVED (UG/L AS MO) (01060)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI) (01067)	NICKEL, DISSOLVED (UG/L AS NI) (01065)	NICKEL, RECOV. FM BOTTOM MATERIAL (UG/G AS NI) (01068)	SELENIUM, TOTAL (UG/L AS SE) (01147)	SELENIUM, DISSOLVED (UG/L AS SE) (01145)	SELENIUM, TOTAL IN BOTTOM MATERIAL (UG/G) (01148)	VANADIUM, DISSOLVED (UG/L AS V) (01085)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN) (01092)
APR											
18...	--	--	--	--	--	--	--	--	--	--	--
24...	2	0	<10	0	0	20	1	0	0	2.0	30
30...	--	--	--	--	--	--	--	--	--	--	--
MAY											
23...	--	--	--	--	--	--	--	--	--	--	--
JUN											
19...	--	--	--	--	--	--	--	--	--	--	--
JUL											
19...	--	--	<10	--	0	--	--	0	--	<1.0	--

06340905 COAL LAKE COULEE NEAR HENSLER, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ZINC, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS ZN) (01093)	GROSS ALPHA, DIS-SOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DIS-SOLVED (PCI/L AS CS-137) (03515)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C) (00689)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70338)
APR											
18...	--	--	--	--	--	--	--	--	887	517	39
24...	<3	28	<10	<.5	9.9	<.6	16	.4	9	.06	--
30...	--	--	--	--	--	--	19	1.0	30	.89	--
MAY											
23...	--	--	--	--	--	--	15	--	28	1.9	--
JUN											
19...	--	--	--	--	--	--	18	--	24	.86	--
JUL											
19...	5	--	--	--	--	--	29	.3	5	.05	--

DATE	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70340)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)	SED. SUSP. FALL DIAM. % FINER THAN .125 MM (70343)	SED. SUSP. FALL DIAM. % FINER THAN .250 MM (70344)	BED MAT. FALL DIAM. % FINER THAN .062 MM (80158)	BED MAT. FALL DIAM. % FINER THAN .125 MM (80159)	BED MAT. FALL DIAM. % FINER THAN .250 MM (80160)
APR							
18...	66	97	99	100	--	--	--
24...	--	--	--	--	7	12	25

DATE	BED MAT. FALL DIAM. % FINER THAN .500 MM (80161)	BED MAT. FALL DIAM. % FINER THAN 1.00 MM (80162)	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM (80169)	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM (80170)	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM (80171)	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM (80172)	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM (80173)
APR							
18...	--	--	--	--	--	--	--
24...	39	47	56	68	79	88	100

DATE	LENGTH OF EXPO-SURE (DAYS) (00022)	CHLOR-A PERI-PHYTON CHROMO-GRAPHIC FLUORUM (MG/M2) (70957)	CHLOR-B PERI-PHYTON CHROMO-GRAPHIC FLUORUM (MG/M2) (70958)	PERI-PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M (00573)	PERI-PHYTON BIOMASS ASH WEIGHT G/SQ M (00572)
JUL					
19...	30	.200	.020	.240	.240

06340905 COAL LAKE COULEE NEAR HENSLER, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1978 TO JULY 1979

DATE	APR 24,79	APR 30,79	MAY 23,79	JUN 19,79	JUL 19,79
TIME	1030	1140	1150	1745	1610
TOTAL CELLS/ML	2300	2000	150	90	1200
DIVERSITY: DIVISION	0.3	1.0	1.0	1.0	0.5
.CLASS	0.3	1.0	1.0	1.0	0.5
..ORDER	0.5	1.3	1.0	1.4	0.5
...FAMILY	0.5	2.0	1.0	1.8	2.1
....GENUS	0.5	0.0	1.0	1.8	2.1

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)										
.CHLOROPHYCEAE										
..CHLOROCOCCALES										
...COELASTRACEAE										
....COELASTRUM	--	-	--	-	--	-	--	-	410#	34
...HYDRODICTYACEAE										
....PEDIASTRUM	--	-	--	-	--	-	--	-	100	8
...MICRACTINIACEAE										
....MICRACTINIUM	--	-	14	1	--	-	--	-	--	-
...OOCYSTACEAE										
....ANKISTRODESMUS	--	-	110	6	26#	17	39#	43	77	6
....CHODATELLA	--	-	14	1	--	-	--	-	--	-
....FRANCEIA	--	-	29	1	--	-	--	-	--	-
....KIRCHNERIELLA	14	1	14	1	--	-	--	-	--	-
....SELENASTRUM	--	-	--	-	--	-	--	-	26	2
....TETRAEDRON	--	-	14	1	--	-	--	-	--	-
...SCENEDESMACEAE										
....SCENEDESMUS	--	-	--	-	--	-	--	-	520#	42
..VOLVOCALES										
...CHLAMYDOMONADACEAE	--	-	100	5	--	-	--	-	--	-
....CHLAMYDOMONAS	100	4	29	1	--	-	--	-	--	-
....CHLOROGONIUM	--	-	14	1	--	-	--	-	--	-
...VOLVOCACEAE										
....PANDORINA	--	-	230	11	--	-	--	-	--	-
..ZYGNEMATALES										
...DESMIDIACEAE										
....CLOSTERIUM	--	-	14	1	--	-	--	-	--	-
CHRYSOPHYTA										
.BACILLARIOPHYCEAE										
..CENTRALES										
...COSCINODISCACEAE										
....CYCLOTELLA	--	-	--	-	--	-	13	14	39	3
..PENNALES										
...GOMPHONEMATACEAE										
....GOMPHONEMA	--	-	--	-	--	-	13	14	--	-
...NITZSCHIACEAE										
....NITZSCHIA	--	-	--	-	120#	75	26#	29	--	-
CRYPTOPHYTA (CRYPTOMONADS)										
.CRYPTOPHYCEAE										
..CRYPTOMONADALES										
...CRYPTOMONADACEAE										
....CRYPTOMONAS	--	-	--	-	13	8	--	-	13	1
CYANOPHYTA (BLUE-GREEN ALGAE)										
.CYANOPHYCEAE										
..CHROOCOCCALES										
...CHROOCOCCACEAE										
....ANACYSTIS	57	3	--	-	--	-	--	-	26	2
..HORMOGONALES										
...NOSTOCACEAE										
....APHANIZOMENON	--	-	29	1	--	-	--	-	--	-
...OSCILLATORIACEAE										
....OSCILLATORIA	2100#	92	1200#	60	--	-	--	-	--	-
...RIVULARIACEAE										
....RAPHIDIOPSIS	--	-	160	8	--	-	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)										
.EUGLENOPHYCEAE										
..EUGLENALES										
...EUGLENACEAE										
....EUGLENA	--	-	29	1	--	-	--	-	13	1
....TRACHELOMONAS	--	-	14	1	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06340930 BUFFALO CREEK NEAR WASHBURN, ND

LOCATION.--Lat 47°18'12", long 101°05'20", in SE¼SE¼SE¼ sec.8, T.144 N., R.82 W., McLean County, Hydrologic Unit 10130101, on right bank 70 ft (21 m) upstream from culvert, on county road 1.2 mi (1.9 km) above mouth, and 2.7 mi (4.3 km) west of Washburn.

DRAINAGE AREA.--57.3 mi^2 (148 km^2) of which 30.0 mi^2 (77.7 km^2) is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1978 to September 1979.

GAGE.--Water-stage recorder. Altitude of gage is 1,660 ft (506 m) from topographic map.

REMARKS.--Records poor.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,800 ft^3/s (108 m^3/s) Apr. 19, by computation of peak flow through culvert and over road, gage height, 17.0 ft (5.182 m) from floodmark, only peak above base of 20 ft^3/s (0.57 m^3/s); no flow for several months.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.10	.15	.10	.00	.00	.00	.10	2.0	.63	.14	.14	.23
2	.10	.13	.10	.00	.00	.00	.10	1.4	.51	.14	.14	.21
3	.10	.15	.10	.00	.00	.00	.10	.60	.45	1.2	.14	.21
4	.10	.15	.10	.00	.00	.00	.10	.60	.45	.19	.16	.23
5	.10	.17	.10	.00	.00	.00	.10	.40	.39	.11	.14	.23
6	.10	.15	.10	.00	.00	.00	.10	3.0	.28	.09	.14	.23
7	.10	.15	.10	.00	.00	.00	.10	2.5	.26	.09	.14	.23
8	.10	.15	.10	.00	.00	.00	.50	2.0	.26	.09	.14	.23
9	.10	.15	.10	.00	.00	.00	1.0	1.5	.26	.09	.14	.23
10	.10	.15	.10	.00	.00	.00	1.5	2.0	.23	.09	.14	.45
11	.10	.10	.15	.00	.00	.20	2.0	1.5	.19	.11	.14	.31
12	.10	.10	.24	.00	.00	.50	4.0	1.0	.19	.11	.14	.21
13	.10	.10	.24	.00	.00	.50	6.0	.50	.16	.11	.14	.19
14	.11	.10	.24	.00	.00	.20	8.0	.50	.14	.11	.11	.19
15	.11	.10	.24	.00	.00	.10	15	.40	.09	.09	.11	.19
16	.11	.10	.24	.00	.00	.10	40	.40	.09	.09	.11	.19
17	.11	.10	.24	.00	.00	.20	50	.40	.09	.09	.11	.19
18	.11	.10	.24	.00	.00	.50	710	.40	.09	.09	.11	.19
19	.12	.10	.20	.00	.00	.60	918	3.0	.16	.09	.11	.19
20	.12	.10	.15	.00	.00	.70	170	3.5	.19	.09	.11	.19
21	.12	.10	.15	.00	.00	2.0	130	3.0	.11	.09	.98	.19
22	.12	.10	.15	.00	.00	2.5	80	2.5	.19	.09	.51	.19
23	.12	.10	.10	.00	.00	3.0	37	2.2	.21	.21	.23	.19
24	.13	.10	.05	.00	.00	2.5	29	1.8	.14	.14	.21	.19
25	.13	.15	.00	.00	.00	2.0	21	1.5	.11	.09	.19	.19
26	.13	.15	.00	.00	.00	1.0	13	1.2	.08	.14	.19	.21
27	.13	.15	.00	.00	.00	.50	5.0	1.2	.08	.64	.66	.21
28	.13	.10	.00	.00	.00	.20	4.0	1.1	.08	.21	4.9	.19
29	.13	.10	.00	.00	---	.20	3.0	.74	.09	.19	.68	.19
30	.13	.10	.00	.00	---	.20	2.4	.68	.11	.16	.31	.19
31	.13	---	.00	.00	---	.15	---	.68	---	.14	.26	---
TOTAL	3.49	3.65	3.63	.00	.00	17.65	2251.10	44.20	6.31	5.31	11.73	6.46
MEAN	.11	.12	.12	.000	.000	.58	75.0	1.43	.21	.17	.38	.22
MAX	.13	.17	.24	.00	.00	3.0	918	3.5	.63	1.2	4.9	.45
MIN	.10	.10	.00	.00	.00	.00	.10	.40	.08	.09	.11	.19
AC-FT	6.9	7.2	7.2	.00	.00	35	4470	88	13	11	23	13

WTR YR 1979 TOTAL 2353.71 MEAN 6.45 MAX 918 MIN .00 AC-FT 4670

06340930 BUFFALO CREEK NEAR WASHBURN, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1978 to September 1979.

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)
OCT												
10...	1315	.10	2350	8.5	25.5	16.0	11.2	120	K18	65	210	0
NOV												
08...	0915	.13	2400	8.4	12.5	3.0	13.4	106	52	470	210	0
DEC												
12...	1500	.24	4010	8.3	.0	.0	--	--	32	640	400	0
APR												
17...	1030	28	--	--	--	.0	--	--	--	--	--	--
20...	1000	174	345	8.0	6.0	4.0	12.4	100	K20	7500	78	8
24...	1415	28	1120	8.3	5.0	4.0	12.0	98	K2	1100	140	0
MAY												
23...	1435	2.1	2330	8.8	23.0	22.5	12.1	146	130	K40	340	0
JUN												
19...	1330	.19	2620	8.3	17.5	20.5	8.7	101	1700	<1000	250	0
JUL												
20...	0805	.10	2520	8.2	22.0	20.0	5.9	68	54	130	180	0
AUG												
21...	1030	.14	2430	8.2	23.0	20.0	6.4	74	360	1900	160	0
SEP												
10...	0845	.43	2120	8.3	15.0	15.5	6.1	62	K2700	12000	170	0

DATE	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE (MG/L AS HCO3) (00440)	CAR-BONATE (MG/L AS CO3) (00445)	ALKA-LINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)
OCT											
10...	45	23	530	84	16	9.0	976	16	850	5.0	490
NOV											
08...	46	24	550	84	16	6.1	1060	5	878	6.8	510
DEC											
12...	82	47	1000	84	22	15	2070	0	1700	17	1000
APR											
20...	19	7.4	40	49	2.0	9.2	85	0	70	1.4	93
24...	26	17	190	74	7.1	11	217	0	180	1.7	360
MAY											
23...	46	55	430	72	10	17	443	13	410	1.2	820
JUN											
19...	51	30	540	82	15	11	911	0	750	7.3	720
JUL											
20...	24	30	540	86	17	9.2	954	0	780	9.6	590
AUG											
21...	24	24	580	88	20	13	982	0	810	9.9	590
SEP											
10...	31	23	450	84	15	14	800	0	650	6.4	490

DATE	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)
OCT											
10...	6.4	.5	8.1	1650	1600	2.18	.43	.01	.01	.62	.63
NOV											
08...	6.4	.4	12	1660	1680	2.28	.59	.01	.01	.60	.61
DEC											
12...	14	.6	30	3120	3210	4.37	2.08	.32	.58	1.1	1.7
APR											
20...	2.0	.1	6.9	233	220	.30	103	1.8	.20	2.0	2.2
24...	6.6	.1	11	758	729	.99	56.1	.93	.23	1.4	1.6
MAY											
23...	14	.2	1.2	1650	1620	2.20	9.19	.00	.03	1.6	1.6
JUN											
19...	9.3	.4	9.9	1840	1820	2.48	.93	.01	.03	1.3	1.3
JUL											
20...	3.9	.5	6.3	1720	1680	2.28	.45	.02	.04	1.2	1.2
AUG											
21...	13	.5	7.3	1720	1740	2.37	.66	.02	.03	.86	.89
SEP											
10...	12	.4	7.5	1420	1420	1.93	1.65	.02	.01	1.4	1.4

K - Results based on colony count outside the acceptable range (non-ideal colony count).

06340930 BUFFALO CREEK NEAR WASHBURN, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	NITROGEN, TOTAL (MG/L AS N) (00600)	NITROGEN, TOTAL (MG/L AS NO3) (71887)	PHOSPHORUS, TOTAL (MG/L AS P) (00665)	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	ALUMINUM, DISSOLVED (UG/L AS AL) (01106)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DISSOLVED (UG/L AS AS) (01000)	ARSENIC TOTAL IN BOTTOM MATERIAL (UG/G AS AS) (01003)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA) (01007)	BARIUM, DISSOLVED (UG/L AS BA) (01005)	BARIUM, RECOV. FM BOTTOM MATERIAL (UG/G AS BA) (01008)
OCT											
10...	.64	2.8	.06	.04	--	--	--	--	--	--	--
NOV											
08...	.62	2.7	.04	.02	--	--	--	--	--	--	--
DEC											
12...	2.0	8.9	.08	.06	--	--	--	--	--	--	--
APR											
17...	--	--	--	--	--	--	--	--	--	--	--
20...	4.0	18	.52	.08	60	3	2	4	200	100	100
24...	2.5	11	.36	.33	--	--	--	--	--	--	--
MAY											
23...	1.6	7.1	.18	.15	--	--	--	--	--	--	--
JUN											
19...	1.3	5.8	.07	.04	--	--	--	--	--	--	--
JUL											
20...	1.2	5.4	.07	.05	0	3	3	7	100	0	100
AUG											
21...	.91	4.0	.12	.10	--	--	--	9	--	--	100
SEP											
10...	1.4	6.3	.17	.05	--	--	--	--	--	--	--

DATE	BERYLLIUM, TOTAL RECOVERABLE (UG/L AS BE) (01012)	BERYLLIUM, DISSOLVED (UG/L AS BE) (01010)	BERYLLIUM, RECOV. FM BOTTOM MATERIAL (UG/G) (01013)	BORON, DISSOLVED (UG/L AS B) (01020)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) (01034)	CHROMIUM, DISSOLVED (UG/L AS CR) (01030)	CHROMIUM, RECOV. FM BOTTOM MATERIAL (UG/G) (01029)	COBALT, TOTAL RECOVERABLE (UG/L AS CO) (01037)	COBALT, DISSOLVED (UG/L AS CO) (01035)	COBALT, RECOV. FM BOTTOM MATERIAL (UG/G AS CO) (01038)	COPPER, TOTAL RECOVERABLE (UG/L AS CU) (01042)
OCT											
10...	--	--	--	700	--	--	--	--	--	--	--
NOV											
08...	--	--	--	660	--	--	--	--	--	--	--
DEC											
12...	--	--	--	1100	--	--	--	--	--	--	--
APR											
17...	--	--	--	--	--	--	--	--	--	--	--
20...	10	0	0	70	20	0	10	7	0	9	28
24...	--	--	--	140	--	--	--	--	--	--	--
MAY											
23...	--	--	--	320	--	--	--	--	--	--	--
JUN											
19...	--	--	--	460	--	--	--	--	--	--	--
JUL											
20...	0	0	0	730	0	0	7	0	0	8	40
AUG											
21...	--	--	0	720	--	--	9	--	--	15	--
SEP											
10...	--	--	--	630	--	--	--	--	--	--	--

06340930 BUFFALO CREEK NEAR WASHBURN, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	COPPER, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS CU) (01043)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LITHIUM TOTAL RECOV-ERABLE (UG/L AS LI) (01132)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MANGA-NESE, RECOV. FM BOT-TOM MA-TERIAL (UG/G) (01053)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MERCURY RECOV. FM BOT-TOM MA-TERIAL (UG/G AS HG) (71921)
OCT											
10...	--	--	160	--	--	--	--	--	--	--	--
NOV											
08...	--	--	100	--	--	--	--	--	--	--	--
DEC											
12...	--	--	130	--	--	--	--	--	--	--	--
APR											
17...	--	--	--	--	--	--	--	--	--	--	--
20...	9	10	210	20	4	470	30	410	.3	.1	.02
24...	--	--	80	--	--	--	--	--	--	--	--
MAY											
23...	--	--	50	--	--	--	--	--	--	--	--
JUN											
19...	--	--	40	--	--	--	--	--	--	--	--
JUL											
20...	8	8	40	100	100	50	40	330	.3	.2	.02
AUG											
21...	--	12	70	--	--	--	--	480	--	--	.04
SEP											
10...	--	--	100	--	--	--	--	--	--	--	--

DATE	MOLYB-DENUM, TOTAL RECOV-ERABLE (UG/L AS MO) (01062)	MOLYB-DENUM, RECOV. FM BOT-TOM MA-TERIAL (UG/G) (01063)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	NICKEL, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS NI) (01068)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SELE-NIUM, TOTAL IN BOT-TOM MA-TERIAL (UG/G) (01148)	VANA-DIUM, DIS-SOLVED (UG/L AS V) (01085)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)
OCT											
10...	--	--	--	--	--	--	--	--	--	--	--
NOV											
08...	--	--	--	--	--	--	--	--	--	--	--
DEC											
12...	--	--	--	--	--	--	--	--	--	--	--
APR											
17...	--	--	--	--	--	--	--	--	--	--	--
20...	50	5	0	26	2	20	1	0	0	2.7	80
24...	--	--	--	--	--	--	--	--	--	--	--
MAY											
23...	--	--	--	--	--	--	--	--	--	--	--
JUN											
19...	--	--	--	--	--	--	--	--	--	--	--
JUL											
20...	2	1	2	6	3	20	0	0	0	<1.0	50
AUG											
21...	--	0	--	--	--	24	--	--	0	--	--
SEP											
10...	--	--	--	--	--	--	--	--	--	--	--

06340930 BUFFALO CREEK NEAR WASHBURN, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ZINC, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS ZN) (01093)	GROSS ALPHA, DIS-SOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DIS-SOLVED (PCI/L AS CS-137) (03515)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C) (00689)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70338)
OCT											
10...	--	--	--	--	--	--	14	.9	24	.01	--
NOV											
08...	--	--	--	--	--	--	12	.7	0	.00	--
DEC											
12...	--	--	--	--	--	--	21	1.0	102	.07	--
APR											
17...	--	--	--	--	--	--	--	--	303	23	46
20...	10	41	<4.1	22	9.7	16	11	9.7	824	387	31
24...	--	--	--	--	--	--	15	2.1	80	6.2	--
MAY											
23...	--	--	--	--	--	--	25	--	18	.10	--
JUN											
19...	--	--	--	--	--	--	31	--	131	.07	--
JUL											
20...	20	55	<32	<.4	<11	<.4	23	.4	8	.00	--
AUG											
21...	--	35	--	--	--	--	26	.3	27	.01	--
SEP											
10...	--	--	--	--	--	--	21	.5	20	.02	--

DATE	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70340)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)	SED. SUSP. FALL DIAM. % FINER THAN .125 MM (70343)	SED. SUSP. FALL DIAM. % FINER THAN .250 MM (70344)	BED MAT. FALL DIAM. % FINER THAN .062 MM (80158)	BED MAT. FALL DIAM. % FINER THAN .125 MM (80159)	BED MAT. FALL DIAM. % FINER THAN .250 MM (80160)
APR							
17...	71	100	--	--	--	--	--
20...	47	69	90	100	5	8	16

DATE	BED MAT. FALL DIAM. % FINER THAN .500 MM (80161)	BED MAT. FALL DIAM. % FINER THAN 1.00 MM (80162)	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM (80169)	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM (80170)	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM (80171)	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM (80172)
APR						
17...	--	--	--	--	--	--
20...	39	59	72	85	95	100

DATE	LENGTH OF EXPO-SURE (DAYS) (00022)	CHLOR-A PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70957)	CHLOR-B PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70958)	PERI-PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M (00573)	PERI-PHYTON BIOMASS ASH WEIGHT G/SQ M (00572)
JUL					
20...	31	2.56	.780	6.30	6.22
AUG					
21...	32	3.10	1.21	7.24	6.46

06340930 BUFFALO CREEK NEAR WASHBURN, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1978 TO SEPTEMBER 1979

DATE	OCT 10,78		NOV 8,78		DEC 12,78		APR 20,79		APR 24,79	
TIME	1315		0915		1500		1000		1415	
TOTAL CELLS/ML	4100		500		46		2700		9500	
DIVERSITY: DIVISION	1.6		0.9		0.7		0.7		1.2	
.CLASS	1.6		0.9		0.7		0.7		1.2	
..ORDER	2.2		1.3		0.7		0.7		1.8	
...FAMILY	3.0		1.7		0.7		0.7		2.5	
....GENUS	3.2		0.0		0.7		0.7		2.6	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)										
.CHLOROPHYCEAE										
..CHLOROCOCCALES										
...CHARACIACEAE										
....SCHROEDERIA	--	-	--	-	--	-	--	-	420	4
...CHLOROCOCCACEAE										
....CHLOROCOCCUM	--	-	--	-	--	-	--	-	--	-
...COELASTRACEAE										
....COELASTRUM	--	-	--	-	--	-	--	-	--	-
...OOCYSTACEAE										
....ANKISTRODESMUS	150	4	29	6	--	-	350	13	3000#	31
....CHLORELLA	--	-	--	-	--	-	--	-	--	-
....CHODATELLA	--	-	--	-	--	-	--	-	--	-
....DICTYOSPHAERIUM	--	-	--	-	--	-	--	-	--	-
....KIRCHNERIELLA	--	-	--	-	--	-	--	-	*	0
....OOCYSTIS	--	-	--	-	--	-	--	-	--	-
....SELENASTRUM	--	-	--	-	--	-	--	-	--	-
....TETRAEDRON	--	-	--	-	--	-	--	-	--	-
....TREUBARIA	--	-	--	-	--	-	--	-	--	-
...SCENEDESMACEAE										
....SCENEDESMUS	240	6	--	-	--	-	58	2	--	-
....TETRASTRUM	--	-	--	-	--	-	--	-	140	1
..TETRASPORALES										
...PALMELLACEAE										
....SPHAEROCYSTIS	--	-	--	-	--	-	--	-	420	4
..VOLVOCALES										
...CHLAMYDOMONADACEAE	--	-	140#	29	--	-	--	-	--	-
....CHLAMYDOMONAS	--	-	--	-	--	-	--	-	140	1
CHRYSOPHYTA										
.BACILLARIOPHYCEAE										
..CENTRALES										
...COSCINODISCACEAE										
....CYCLOTELLA	1100#	26	14	3	8#	17	--	-	*	0
..PENNALES										
...ACHNANTHACEAE										
....COCCONEIS	180	4	--	-	--	-	--	-	--	-
...CYMBELLACEAE										
....CYMBELLA	30	1	--	-	--	-	--	-	--	-
...FRAGILARIACEAE										
....FRAGILARIA	--	-	220#	43	--	-	--	-	--	-
....SYNEDRA	30	1	72	14	--	-	--	-	--	-
...GOMPHONEMATACEAE										
....GOMPHONEMA	60	1	--	-	--	-	--	-	--	-
...NAVICULACEAE										
....NAVICULA	210	5	14	3	--	-	--	-	170	2
....NEIDIUM	60	1	--	-	--	-	--	-	--	-
...NITZSCHIACEAE										
....NITZSCHIA	600	15	14	3	--	-	--	-	--	-
...SURIRELLACEAE										
....SURIRELLA	90	2	--	-	--	-	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)										
.CYANOPHYCEAE										
..CHROOCOCCALES										
...CHROOCOCCACEAE										
....AGMENELLUM	--	-	--	-	--	-	--	-	--	-
....ANACYSTIS	--	-	--	-	38#	83	--	-	700	7
..HORMOGONALES										
...NOSTOCACEAE										
....ANABAENA	--	-	--	-	--	-	2300#	84	2200#	23
...OSCILLATORIACEAE										
....OSCILLATORIA	600	15	--	-	--	-	--	-	2200#	23
....SCHIZOTHRIX	--	-	--	-	--	-	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)										
.EUGLENOPHYCEAE										
..EUGLENALES										
...EUGLENACEAE										
....EUGLENA	630#	15	--	-	--	-	14	1	*	0
....PHACUS	30	1	--	-	--	-	--	-	--	-
....TRACHELOMONAS	120	3	--	-	--	-	--	-	*	0
PYRRHOPHYTA (FIRE ALGAE)										
.DINOPHYCEAE										
..PERIDINIALES										
...GLENODINIACEAE										
....GLENODINIUM	--	-	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06340930 BUFFALO CREEK NEAR WASHBURN, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1978 TO SEPTEMBER 1979

DATE	MAY 23,79	JUN 19,79	JUL 20,79	AUG 21,79	SEP 10,79
TIME	1435	1330	0805	1030	0845
TOTAL CELLS/ML	64000	4300	52	130	1800
DIVERSITY: DIVISION	0.4	0.8	0.0	0.7	1.5
.CLASS	0.4	0.8	0.0	0.7	1.5
..ORDER	0.6	1.5	0.8	0.9	1.7
...FAMILY	0.8	1.7	1.5	0.9	2.6
....GENUS	0.9	1.8	1.5	0.9	3.1

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)										
.CHLOROPHYCEAE										
..CHLOROCOCCALES										
...CHARACIACEAE										
....SCHROEDERIA	--	-	--	-	--	-	--	-	--	-
...CHLOROCOCCACEAE										
....CHLOROCOCCUM	--	-	--	-	--	-	--	-	23	1
...COELASTRACEAE										
....COELASTRUM	--	-	--	-	--	-	--	-	94	5
...OOCYSTACEAE										
....ANKISTRODESMUS	4100	6	51	1	--	-	--	-	110	6
....CHLORELLA	--	-	--	-	--	-	--	-	340#	19
....CHODATELLA	350	1	--	-	--	-	--	-	*	0
....DICTYOSPHAERIUM	--	-	--	-	--	-	--	-	39	2
....KIRCHNERIELLA	--	-	--	-	--	-	--	-	--	-
....OOCYSTIS	--	-	51	1	--	-	--	-	--	-
....SELENASTRUM	380	1	64	1	--	-	--	-	--	-
....TETRAEDRON	--	-	*	0	--	-	--	-	--	-
....TREUBARIA	--	-	--	-	--	-	--	-	*	0
...SCENEDESMACEAE										
....SCENEDESMUS	--	-	460	11	--	-	--	-	250	14
....TETRASTRUM	--	-	51	1	--	-	--	-	63	3
..TETRASPORALES										
...PALMELLACEAE										
....SPHAEROCYSTIS	--	-	--	-	--	-	--	-	--	-
..VOLVOCALES										
...CHLAMYDOMONADACEAE	--	-	--	-	--	-	--	-	--	-
....CHLAMYDOMONAS	--	-	77	2	--	-	--	-	--	-
CHRYSOPHYTA										
.BACILLARIOPHYCEAE										
..CENTRALES										
...COSCINODISCACEAE										
....CYCLOTELLA	--	-	26	1	13#	25	13	10	86	5
..PENNALES										
...ACHNANTHACEAE										
....COCCONEIS	--	-	--	-	--	-	13	10	23	1
...CYMBELLACEAE										
....CYMBELLA	--	-	--	-	--	-	--	-	*	0
...FRAGILARIACEAE										
....FRAGILARIA	--	-	--	-	--	-	--	-	--	-
....SYNEDRA	--	-	--	-	--	-	--	-	--	-
...GOMPHONEMATACEAE										
....GOMPHONEMA	--	-	--	-	--	-	--	-	--	-
...NAVICULACEAE										
....NAVICULA	--	-	*	0	13#	25	--	-	23	1
....NEIDIUM	--	-	--	-	--	-	--	-	--	-
...NITZSCHIACEAE										
....NITZSCHIA	*	0	39	1	26#	50	--	-	55	3
...SURIRELLACEAE										
....SURIRELLA	--	-	--	-	--	-	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)										
.CYANOPHYCEAE										
..CHROOCOCCALES										
...CHROOCOCCACEAE										
....AGMENELLUM	--	-	--	-	--	-	100#	80	--	-
....ANACYSTIS	2200	3	770#	18	--	-	--	-	31	2
..HORMOGONALES										
...NOSTOCACEAE										
....ANABAENA	2100	3	--	-	--	-	--	-	--	-
...OSCILLATORIACEAE										
....OSCILLATORIA	54000#	85	2700#	63	--	-	--	-	--	-
....SCHIZOTHRIX	--	-	--	-	--	-	--	-	590#	33
EUGLENOPHYTA (EUGLENOIDS)										
.EUGLENOPHYCEAE										
..EUGLENALES										
...EUGLENACEAE										
....EUGLENA	*	0	--	-	--	-	--	-	16	1
....PHACUS	--	-	--	-	--	-	--	-	*	0
....TRACHELOMONAS	--	-	--	-	--	-	--	-	--	-
PYRRHOPHYTA (FIRE ALGAE)										
.DINOPHYCEAE										
..PERIDINIALES										
...GLENODINIACEAE										
....GLENODINIUM	--	-	--	-	--	-	--	-	*	0

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ONGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06341000 MISSOURI RIVER AT WASHBURN, ND

LOCATION.--Lat 47°17'20", long 101°02'15", in SE¼SW¼ sec.14, T.144 N., R.82 W., McLean County, Hydrologic Unit 10130101, on left bank near municipal water plant in Washburn, and at mile 1,355 (2,180 km).

DRAINAGE AREA.--184,000 mi^2 (476,600 km^2), approximately.

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

GAGE.--Water-stage recorder. Datum of gage is 1,640.00 ft (499.872 m) National Geodetic Vertical Datum of 1929. Prior to Sept. 30, 1964, at datum 40 ft (12.192 m) lower.

REMARKS.--Stage regulated by Lake Sakakawea (station 06338000).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily gage height recorded, 22.76 ft (6.937 m) Jan. 11, 1964; minimum daily recorded, 9.73 ft (2.966 m) May 7, 1978.

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15.94	14.87	15.59	20.63	21.38	20.20	13.52	14.35	15.86	14.18	12.61	12.48
2	14.97	14.88	14.38	20.85	21.32	20.16	13.41	14.36	15.86	14.06	12.59	12.05
3	14.65	14.88	14.36	21.07	21.22	20.03	13.47	14.37	15.85	14.38	12.63	11.81
4	14.69	14.86	14.25	21.09	21.20	19.94	13.43	14.41	15.84	14.07	12.78	11.89
5	14.64	14.85	14.20	21.41	21.30	19.93	13.60	14.43	15.84	13.66	12.65	11.64
6	14.65	14.84	14.49	21.37	21.15	19.82	13.86	14.44	15.83	14.35	12.68	11.71
7	14.68	14.88	14.15	21.43	21.15	19.64	13.52	14.43	15.80	13.60	12.74	11.87
8	14.71	14.89	12.65	21.36	21.16	19.52	13.63	14.35	15.80	13.82	12.57	11.87
9	14.70	14.89	13.06	21.52	21.18	19.16	14.12	14.35	15.82	13.88	12.53	11.93
10	14.71	14.89	11.92	21.54	20.80	18.38	13.59	14.37	15.81	13.67	12.31	11.66
11	14.71	---	12.04	21.86	20.79	19.26	13.93	14.41	15.80	13.57	12.57	11.64
12	14.66	---	12.17	21.21	20.93	18.24	13.83	15.36	15.82	13.95	12.43	11.71
13	14.70	---	11.77	21.65	20.98	18.06	14.06	15.67	15.82	13.68	12.16	11.65
14	14.71	---	11.95	21.37	21.02	17.83	14.51	15.76	15.80	13.49	12.55	11.72
15	14.70	---	11.95	21.58	20.69	17.31	14.28	15.79	15.77	13.37	12.17	11.40
16	14.70	---	12.55	21.67	20.78	16.61	12.65	15.81	15.77	13.36	12.13	11.59
17	14.71	---	12.60	21.65	20.65	16.20	14.52	15.81	15.76	13.38	12.16	11.44
18	14.69	---	13.35	21.87	20.80	14.73	15.06	15.79	15.76	13.42	12.30	11.71
19	14.69	---	14.02	21.79	20.99	13.80	15.73	15.82	15.78	13.14	12.39	11.63
20	14.70	---	14.57	21.53	20.67	14.01	15.47	15.84	15.51	13.13	---	11.65
21	14.70	14.94	15.55	21.55	20.50	14.04	14.84	15.87	14.88	13.12	---	11.61
22	14.68	14.95	15.22	21.63	20.56	13.80	14.94	15.87	14.54	12.90	---	11.76
23	14.71	14.96	16.06	21.60	20.39	13.73	14.87	15.87	14.30	12.94	---	11.70
24	14.72	14.96	17.90	21.44	20.41	13.52	14.41	15.86	14.19	13.16	---	11.68
25	14.68	15.43	19.39	21.67	20.29	13.62	14.60	15.87	14.34	13.10	---	11.59
26	14.81	15.32	19.54	21.53	20.23	13.50	14.59	15.87	14.28	13.10	---	11.77
27	14.75	15.22	19.56	21.55	20.13	14.01	14.52	15.87	14.27	13.01	---	11.75
28	14.72	15.30	19.57	21.64	19.91	13.39	14.45	15.89	14.39	12.72	---	11.47
29	14.84	15.13	19.66	21.50	---	13.54	14.41	15.85	14.23	12.71	12.29	11.52
30	14.87	15.56	20.06	21.38	---	13.83	14.35	15.83	14.09	12.55	12.40	11.67
31	14.86	---	20.49	21.64	---	13.42	---	15.84	---	12.91	12.45	---
TOTAL	457.65	---	469.04	665.58	582.58	513.23	426.17	474.41	459.41	416.38	---	351.57
MEAN	14.76	---	15.13	21.47	20.81	16.56	14.21	15.30	15.31	13.43	---	11.72
MAX	15.94	---	20.49	21.87	21.38	20.20	15.73	15.89	15.86	14.38	---	12.48
MIN	14.64	---	11.77	20.63	19.91	13.39	12.65	14.35	14.09	12.55	---	11.40

06341800 PAINTED WOODS CREEK NEAR WILTON, ND

LOCATION.--Lat 47°16'30", long 100°47'30", in SW¼SW¼ sec.23, T.144 N., R.80 W., McLean County, Hydrologic Unit 10130101, on right bank 600 ft (180 m) upstream from county highway bridge, 7 mi (11 km) upstream from Yanktonai Creek, and 8 mi (13 km) north of Wilton.

DRAINAGE AREA.--427 mi^2 (1,110 km^2), approximately, of which about 310 mi^2 (800 km^2) is probably noncontributing.

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Altitude of gage is 1,760 ft (536 m), from topographic map.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--22 years, 8.47 ft^3/s (0.240 m^3/s), 6,140 acre-ft/yr (7.57 hm^3/yr); median of yearly mean discharges, 7.5 ft^3/s (0.21 m^3/s), 5,400 acre-ft/yr (6.7 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,050 ft^3/s (115 m^3/s) Apr. 19, 1979, gage height, 9.64 ft (2.938 m); no flow for many days most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,050 ft^3/s (115 m^3/s) Apr. 19, gage height, 9.64 ft (2.938 m), only peak above base of 30 ft^3/s (0.85 m^3/s); minimum daily, 0.01 ft^3/s (<0.001 m^3/s) on several days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.06	.13	.27	.20	.11	.18	.27	50	4.1	.78	.23	.06
2	.09	.13	.27	.20	.11	.18	.28	43	3.6	.75	.23	.07
3	.12	.14	.27	.20	.11	.18	.28	37	3.6	.78	.25	.07
4	.12	.14	.27	.18	.12	.18	.28	32	3.7	.67	.25	.04
5	.12	.13	.27	.18	.12	.19	.29	29	3.4	.64	.27	.02
6	.16	.12	.22	.18	.12	.19	.29	26	3.2	.43	.24	.02
7	.20	.13	.22	.18	.12	.19	.28	25	2.8	.34	.24	.02
8	.18	.16	.22	.14	.13	.19	.28	23	2.9	.31	.17	.01
9	.18	.20	.22	.14	.13	.20	.28	22	2.8	.32	.14	.02
10	.18	.22	.22	.14	.14	.20	.29	20	2.4	.32	.13	.05
11	.14	.20	.22	.14	.14	.20	.36	18	2.3	.33	.14	.07
12	.13	.20	.24	.13	.15	.20	.34	17	2.1	.34	.12	.05
13	.12	.27	.24	.13	.15	.21	.33	16	2.0	.42	.10	.05
14	.11	.27	.20	.13	.16	.21	.34	14	1.6	.33	.09	.04
15	.13	.27	.22	.13	.16	.21	.40	12	1.4	.23	.09	.04
16	.16	.29	.22	.12	.16	.22	.50	11	1.2	.14	.09	.04
17	.18	.30	.22	.12	.16	.22	236	9.8	.96	.13	.09	.03
18	.13	.31	.22	.12	.16	.22	1460	9.0	.93	.15	.08	.01
19	.12	.32	.22	.12	.16	.23	3060	8.2	1.0	.15	.08	.02
20	.13	.32	.24	.11	.16	.23	1640	8.0	1.1	.11	.07	.01
21	.12	.32	.24	.11	.16	.23	1070	7.5	1.1	.10	.08	.01
22	.11	.32	.24	.11	.16	.23	566	6.8	1.2	.09	.08	.01
23	.11	.32	.22	.10	.16	.24	358	6.4	1.4	.09	.08	.01
24	.10	.32	.22	.10	.16	.24	260	6.1	1.3	.09	.08	.01
25	.09	.32	.22	.10	.17	.24	194	5.5	1.1	.11	.07	.01
26	.09	.30	.22	.10	.17	.25	141	5.1	1.1	.17	.09	.02
27	.10	.30	.20	.11	.17	.25	101	4.9	1.1	.22	.09	.01
28	.11	.30	.22	.10	.17	.25	82	4.5	1.0	.23	.09	.01
29	.13	.30	.22	.10	---	.26	69	4.3	.94	.21	.08	.01
30	.13	.27	.22	.11	---	.26	57	4.1	.79	.23	.08	.01
31	.12	---	.20	.10	---	.27	---	4.1	---	.24	.06	---
TOTAL	3.97	7.32	7.11	4.13	4.09	6.75	9299.09	489.3	58.12	9.45	3.94	.85
MEAN	.13	.24	.23	.13	.15	.22	310	15.8	1.94	.30	.13	.028
MAX	.20	.32	.27	.20	.17	.27	3060	50	4.1	.78	.27	.07
MIN	.06	.12	.20	.10	.11	.18	.27	4.1	.79	.09	.06	.01
AC-FT	7.9	15	14	8.2	8.1	13	18440	971	115	19	7.8	1.7

CAL YR 1978	TOTAL	5061.00	MEAN 13.9	MAX 830	MIN .00	AC-FT	10040	
WTR YR 1979	TOTAL	9894.12	MEAN 27.1	MAX 3060	MIN .01	AC-FT	19620	

06341800 PAINTED WOODS CREEK NEAR WILTON, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1958-64, 1970 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE (DEG C) (00010)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)
OCT										
26...	1415	.09	1300	8.5	7.5	280	0	45	41	220
NOV										
22...	1545	.32	1590	7.9	2.0	360	0	54	55	250
DEC										
19...	1540	.22	2140	--	.5	510	0	88	71	390
JAN										
25...	1020	.10	2550	7.7	.5	590	0	110	77	440
FEB										
21...	1645	.16	2080	7.6	.5	500	0	98	62	370
APR										
06...	1655	.29	1520	--	.5	--	--	--	--	--
18...	1200	1240	115	--	1.0	--	--	--	--	--
19...	1330	2900	180	8.2	4.0	64	5	12	8.3	16
23...	1630	323	340	--	8.0	--	--	--	--	--
MAY										
02...	1340	42	700	--	9.0	--	--	--	--	--
22...	1355	7.0	1400	--	12.0	--	--	--	--	--
JUN										
28...	1150	1.1	1600	--	23.0	--	--	--	--	--
JUL										
23...	1432	.09	1650	--	28.0	--	--	--	--	--
AUG										
28...	0850	.10	1500	8.9	18.0	270	0	21	53	330

DATE	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE (MG/L AS HCO3) (00440)	CAR-BONATE (MG/L AS CO3) (00445)	ALKA-LINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
OCT									
26...	62	5.7	8.7	502	0	412	2.5	320	9.7
NOV									
22...	59	5.7	9.7	627	0	514	13	400	11
DEC									
19...	62	7.5	12	926	0	760	--	560	18
JAN									
25...	61	7.9	11	1080	0	886	34	640	20
FEB									
21...	61	7.2	8.5	903	0	741	36	530	13
APR									
06...	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--
19...	33	.9	5.1	72	0	59	.7	35	1.9
23...	--	--	--	--	--	--	--	--	--
AUG									
28...	72	8.7	9.1	507	20	449	1.1	520	10

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
OCT									
26...	.1	1.4	882	893	1.20	.21	250	0	10
NOV									
22...	.1	3.6	1140	1090	1.55	.98	410	120	80
DEC									
19...	.1	30	1670	1630	2.27	.99	220	100	410
JAN									
25...	.2	39	1890	1870	2.57	.51	250	120	1200
FEB									
21...	.2	34	1580	1560	2.15	.68	0	410	620
APR									
06...	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--
19...	.1	6.0	148	122	.20	1160	90	1700	220
23...	--	--	--	--	--	--	--	--	--
AUG									
28...	.2	2.8	1240	1220	1.69	.33	0	1	0

06342020 MISSOURI RIVER AT PRICE, ND

LOCATION.--Lat 47°04'47", long 100°55'55", in NW¼ sec.34, T.142 N., R.81 W., Oliver County, Hydrologic Unit 10130101, on right bank 0.5 mi (0.8 km) south of Price, and at mile 1,338 (2,153 km).

DRAINAGE AREA.--185,000 mi² (479,200 km²), approximately.

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

GAGE.--Water-stage recorder. Datum of gage is 1,620.00 ft (493.776 m) National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Prior to Sept. 30, 1964, at datum 20 ft (6.096 m) lower.

REMARKS.--Stage regulated by Lake Sakakawea (station 06338000).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily gage height recorded, 30.12 ft (9.181 m) Jan. 22, 1967; minimum daily recorded, 17.76 ft (5.413 m) Mar. 31, 1968.

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24.10	22.97	23.73	29.08	29.52	28.67	22.47	22.50	23.99	22.49	20.95	20.50
2	23.35	22.98	22.73	29.14	29.39	28.28	21.86	22.52	23.98	22.25	20.76	20.30
3	22.68	22.98	22.17	29.02	29.49	28.33	21.61	22.53	23.97	22.45	20.88	20.02
4	22.62	22.96	22.20	28.96	29.27	28.72	21.47	22.59	23.96	22.31	20.84	19.99
5	22.61	22.97	21.77	28.89	29.32	28.58	21.54	22.60	23.97	22.02	20.90	19.84
6	22.61	22.92	22.59	29.18	29.33	28.68	21.92	22.66	23.97	22.39	20.85	20.00
7	22.64	22.97	22.70	29.16	29.33	28.50	21.68	22.65	23.94	22.00	20.94	19.77
8	22.68	22.96	21.70	29.28	29.29	28.74	21.64	22.57	23.93	21.97	20.78	19.69
9	22.70	22.97	21.80	29.28	29.24	28.68	21.91	22.55	23.93	22.19	20.71	19.65
10	22.71	22.98	21.71	29.28	29.07	27.75	21.84	22.58	23.95	22.17	20.63	19.75
11	22.71	22.96	21.45	29.40	28.89	28.42	21.85	22.61	23.93	22.06	20.06	19.86
12	22.68	22.97	20.70	29.41	28.87	28.24	21.88	23.23	23.96	22.13	20.74	19.85
13	22.71	23.02	20.34	29.13	29.09	28.24	22.08	23.78	23.97	22.07	20.27	19.99
14	22.72	22.97	21.04	29.13	29.18	28.36	22.41	23.90	23.97	21.93	20.38	19.58
15	22.73	22.99	20.96	29.13	29.14	28.60	22.64	23.94	23.94	21.81	20.70	---
16	22.72	23.01	21.05	29.26	29.15	28.50	20.97	23.97	23.93	21.64	20.36	---
17	22.74	23.00	21.34	29.10	29.15	28.36	22.31	23.99	23.93	21.71	19.96	---
18	22.72	22.99	21.75	29.42	29.15	28.28	23.46	23.97	23.93	21.87	20.55	---
19	22.73	22.99	23.61	29.49	29.06	27.19	24.59	23.98	23.96	21.80	20.34	---
20	22.74	23.01	25.61	29.48	28.94	26.94	23.96	24.01	23.85	21.53	20.44	---
21	22.74	23.01	26.24	29.37	28.86	26.71	23.38	24.02	23.48	21.43	20.24	---
22	22.73	23.03	27.64	29.47	28.86	25.78	23.11	23.79	22.97	21.18	20.57	---
23	22.76	23.03	29.42	29.57	28.68	25.21	23.02	23.96	22.87	21.26	20.41	---
24	22.78	23.03	28.69	29.34	28.76	25.16	22.77	23.96	22.65	21.37	20.47	---
25	22.75	23.30	27.95	29.36	28.66	25.09	22.65	23.96	22.55	21.20	20.46	---
26	22.85	23.44	28.10	29.36	28.35	25.03	22.68	23.95	22.41	21.38	20.38	19.86
27	22.89	23.34	28.18	29.37	28.78	24.39	22.63	23.96	22.49	20.77	20.45	19.76
28	22.80	23.32	28.17	29.46	28.94	24.06	22.53	23.99	22.50	20.97	20.35	19.66
29	22.87	23.25	28.23	29.53	---	24.44	22.49	23.95	22.45	20.97	20.08	19.81
30	22.95	23.36	28.39	29.40	---	24.51	22.43	23.95	22.46	20.41	20.69	19.63
31	22.96	---	28.73	29.50	---	24.24	---	23.96	---	20.98	20.75	---
TOTAL	706.98	691.68	750.69	907.95	813.74	840.68	671.78	726.58	705.79	672.51	636.89	---
MEAN	22.81	23.06	24.22	29.29	29.06	27.12	22.39	23.44	23.53	21.69	20.54	---
MAX	24.10	23.44	29.42	29.57	29.52	28.74	24.59	24.02	23.99	22.49	20.95	---
MIN	22.61	22.92	20.34	28.89	28.33	24.06	20.97	22.50	22.41	20.41	19.96	---

06342040 SQUARE BUTTE CREEK NEAR HANNOVER, ND

LOCATION.--Lat 47°08'06", long 101°25'31", in NW¼SW¼NW¼ sec.11, T.142 N., R.85 W., Oliver County, Hydrologic Unit 10130101, on left bank 100 ft (30 m) downstream from box culvert on North Dakota Highway 31, 1.5 mi (2.4 km) north of Hannover, and 2.6 mi (4.2 km) upstream from Brady Creek.

DRAINAGE AREA.--16.9 mi^2 (43.8 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1977 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 2,070 ft (631 m), from topographic map.

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

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,440 ft^3/s (40.8 m^3/s) Apr. 17, 1979, gage height, 9.08 ft (2.768 m); no flow for many days each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,440 ft^3/s (40.8 m^3/s) Apr. 17, gage height, 9.08 ft (2.768 m), only peak above base of 50 ft^3/s (1.42 m^3/s); no flow for many months.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	2.3	.75	8.2	1.2	.06
2	.00	.00	.00	.00	.00	.00	.00	2.2	.75	10	.67	.03
3	.00	.00	.00	.00	.00	.00	.00	1.9	.83	4.4	.60	.00
4	.00	.00	.00	.00	.00	.00	.00	1.8	.75	2.3	.44	.00
5	.00	.00	.00	.00	.00	.00	.00	1.7	.67	1.5	.38	.00
6	.00	.00	.00	.00	.00	.00	.00	2.0	.60	.74	.15	.00
7	.00	.00	.00	.00	.00	.00	.05	2.3	.52	.33	.08	.00
8	.00	.00	.00	.00	.00	.00	.10	1.8	.52	.13	.03	.00
9	.00	.00	.00	.00	.00	.00	.30	1.5	.75	.06	.00	.00
10	.00	.04	.00	.00	.00	.00	2.0	1.3	.67	.02	.00	.00
11	.00	.03	.00	.00	.00	.00	10	1.1	.52	.00	.00	.47
12	.00	.01	.00	.00	.00	.00	30	1.0	.60	.00	.00	1.1
13	.00	.00	.00	.00	.00	.00	27	1.0	.67	.00	.00	.65
14	.00	.00	.00	.00	.00	.00	23	1.0	.32	.00	.00	.33
15	.00	.00	.00	.00	.00	.00	20	1.0	.15	.00	.00	.22
16	.00	.00	.01	.00	.00	.00	50	.83	.06	.00	.00	.12
17	.00	.00	.02	.00	.00	.00	650	.75	.03	.00	.00	.04
18	.00	.00	.01	.00	.00	.00	430	.75	.01	.00	.00	.00
19	.00	.00	.00	.00	.00	.02	43	.83	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.04	10	1.0	.07	.00	.00	.00
21	.00	.00	.00	.00	.00	.03	7.4	1.1	.83	.00	.00	.00
22	.00	.00	.00	.00	.00	.02	5.7	1.0	1.4	.00	15	.00
23	.00	.01	.00	.00	.00	.04	5.0	.92	4.0	.00	5.6	.00
24	.00	.02	.00	.00	.00	.05	5.0	.92	3.4	1.7	1.7	.00
25	.00	.03	.00	.00	.00	.05	4.6	.83	2.5	.27	.38	.00
26	.00	.04	.00	.00	.00	.03	3.8	.75	1.9	.12	.19	.00
27	.00	.05	.00	.00	.00	.01	3.2	.83	1.3	3.9	.10	.00
28	.00	.03	.00	.00	.00	.00	2.9	.75	.69	5.1	.10	.00
29	.00	.01	.00	.00	---	.00	2.9	.52	.29	1.6	.22	.00
30	.00	.00	.00	.00	---	.00	2.6	.52	.08	1.6	.15	.00
31	.00	---	.00	.00	---	.00	---	.52	---	1.7	.10	---
TOTAL	.00	.27	.04	.00	.00	.29	1338.55	36.72	25.63	43.67	27.09	3.02
MEAN	.000	.009	.001	.000	.000	.009	44.6	1.18	.85	1.41	.87	.10
MAX	.00	.05	.02	.00	.00	.05	650	2.3	4.0	10	15	1.1
MIN	.00	.00	.00	.00	.00	.00	.00	.52	.00	.00	.00	.00
AC-FT	.00	.5	.08	.00	.00	.6	2660	73	51	87	54	6.0

CAL YR 1978 TOTAL 1093.35 MEAN 3.00 MAX 190 MIN .00 AC-FT 2170
WTR YR 1979 TOTAL 1475.28 MEAN 4.04 MAX 650 MIN .00 AC-FT 2930

06342040 SQUARE BUTTE CREEK NEAR HANNOVER, ND--Continued

WATER-QUALITY RECORDS

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS (MG/L AS CACO3) (00900)
APR											
17...	1545	1360	--	--	--	3.0	--	--	--	--	--
18...	1330	619	125	7.7	21.0	7.0	9.3	83	350	14000	42
MAY											
01...	0840	2.4	1220	8.0	13.0	7.0	9.6	86	K2	21	--
24...	0755	.82	1370	8.2	14.5	13.5	8.9	90	150	43	550
JUL											
24...	1710	1.7	1090	8.3	25.5	27.0	8.8	117	K660	1500	340
AUG											
*22...	1005	36	1020	7.7	19.0	18.0	4.6	52	>2000	>10000	--
SEP											
11...	1310	.39	1020	8.2	19.5	16.0	9.2	99	260	1200	340

DATE	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SURP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE (MG/L AS HCO3) (00440)	CAR-BONATE (MG/L AS CO3) (00445)	ALKA-LINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)
APR											
17...	--	--	--	--	--	--	--	--	--	--	--
18...	6	9.3	4.6	6.2	22	.4	4.4	44	0	36	1.3
MAY											
01...	--	110	9.9	98	40	2.4	8.2	--	--	--	--
24...	210	110	66	120	32	2.2	8.3	420	0	340	4.2
JUL											
24...	79	48	54	110	40	2.6	11	321	0	260	2.6
AUG											
22...	--	--	--	--	--	--	--	205	0	170	6.5
SEP											
11...	34	67	41	97	38	2.3	8.7	377	0	306	3.8

DATE	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)
APR											
17...	--	--	--	--	--	--	--	--	--	--	--
18...	25	1.3	.1	2.5	81	75	.10	125	.33	.52	1.5
MAY											
01...	420	7.6	.3	13	895	--	1.22	5.80	.03	.03	.49
24...	440	8.4	.5	8.3	989	969	1.32	2.15	.01	.05	.50
JUL											
24...	340	7.0	.4	3.9	790	733	1.00	3.36	.02	.04	1.3
AUG											
22...	--	--	--	--	--	--	--	--	--	--	--
SEP											
11...	250	5.1	.4	9.6	671	663	.90	.70	.03	.07	.87

* - Laboratory analysis incomplete at date of printing; data will be available via computer retrieval from WATSTORE files.

K - Results based on colony count outside the acceptable range (non-ideal colony count).

06342040 SQUARE BUTTE CREEK NEAR HANNOVER, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, TOTAL (MG/L AS N) (00600)	NITROGEN, TOTAL (MG/L AS NO3) (71887)	PHOSPHORUS, TOTAL (MG/L AS P) (00665)	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	ALUMINUM, DISSOLVED (UG/L AS AL) (01106)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DISSOLVED (UG/L AS AS) (01000)	ARSENIC TOTAL IN BOTTOM MATERIAL (UG/G AS AS) (01003)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA) (01007)	BARIUM, DISSOLVED (UG/L AS BA) (01005)
APR											
17...	--	--	--	--	--	--	--	--	--	--	--
18...	2.0	2.3	10	.46	.16	10	2	1	15	200	0
MAY											
01...	.52	.55	2.4	.03	.02	--	--	--	--	--	--
24...	.55	.56	2.5	.03	.02	--	--	--	--	--	--
JUL											
24...	1.3	1.3	5.8	.04	.11	0	--	1	--	--	80
AUG											
22...	1.2	--	--	.33	.39	--	--	--	5	--	--
SEP											
11...	.94	.97	4.3	.08	.05	--	--	--	--	--	--

DATE	BARIUM, RECOV. FM BOTTOM MATERIAL (UG/G AS BA) (01008)	BERYLLIUM, TOTAL RECOVERABLE (UG/L AS BE) (01012)	BERYLLIUM, DISSOLVED (UG/L AS BE) (01010)	BERYLLIUM, RECOV. FM BOTTOM MATERIAL (UG/G) (01013)	BORON, DISSOLVED (UG/L AS B) (01020)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) (01034)	CHROMIUM, DISSOLVED (UG/L AS CR) (01030)	CHROMIUM, RECOV. FM BOTTOM MATERIAL (UG/G) (01029)	COBALT, TOTAL RECOVERABLE (UG/L AS CO) (01037)	COBALT, DISSOLVED (UG/L AS CO) (01035)	COBALT, RECOV. FM BOTTOM MATERIAL (UG/G AS CO) (01038)
APR											
17...	--	--	--	--	--	--	--	--	--	--	--
18...	200	0	0	1	60	20	0	11	0	0	0
MAY											
01...	--	--	--	--	170	--	--	--	--	--	--
24...	--	--	--	--	220	--	--	--	--	--	--
JUL											
24...	--	--	<1	--	290	--	0	--	--	<3	--
AUG											
22...	100	--	--	0	--	--	--	3	--	--	2
SEP											
11...	--	--	--	--	230	--	--	--	--	--	--

DATE	COPPER, TOTAL RECOVERABLE (UG/L AS CU) (01042)	COPPER, DISSOLVED (UG/L AS CU) (01040)	COPPER, RECOV. FM BOTTOM MATERIAL (UG/G AS CU) (01043)	IRON, DISSOLVED (UG/L AS FE) (01046)	LITHIUM TOTAL RECOVERABLE (UG/L AS LI) (01132)	LITHIUM DISSOLVED (UG/L AS LI) (01130)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN) (01055)	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	MANGANESE, RECOV. FM BOTTOM MATERIAL (UG/G) (01053)	MERCURY TOTAL RECOVERABLE (UG/L AS HG) (71900)	MERCURY DISSOLVED (UG/L AS HG) (71890)
APR											
17...	--	--	--	--	--	--	--	--	--	--	--
18...	18	14	16	120	3	4	330	80	760	.4	.0
MAY											
01...	--	--	--	70	--	--	--	--	--	--	--
24...	--	--	--	20	--	--	--	--	--	--	--
JUL											
24...	--	3	--	30	--	70	--	20	--	--	.0
AUG											
22...	--	--	2	--	--	--	--	--	230	--	--
SEP											
11...	--	--	--	40	--	--	--	--	--	--	--

06342040 SQUARE BUTTE CREEK NEAR HANNOVER, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	MERCURY RECOV, FM BOTTOM MATERIAL (UG/G AS HG) (71921)	MOLYBDENUM, TOTAL RECOVERABLE (UG/L AS MO) (01062)	MOLYBDENUM, RECOV. FM BOTTOM MATERIAL (UG/G) (01063)	MOLYBDENUM, DISSOLVED (UG/L AS MO) (01060)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI) (01067)	NICKEL, DISSOLVED (UG/L AS NI) (01065)	NICKEL, RECOV. FM BOTTOM MATERIAL (UG/G AS NI) (01068)	SELENIUM, TOTAL (UG/L AS SE) (01147)	SELENIUM, DISSOLVED (UG/L AS SE) (01145)	SELENIUM, TOTAL IN BOTTOM MATERIAL (UG/G) (01148)	VANADIUM, DISSOLVED (UG/L AS V) (01085)
APR											
17...	--	--	--	--	--	--	--	--	--	--	--
18...	.02	0	0	0	17	2	30	0	0	0	1.5
MAY											
01...	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--
JUL											
24...	--	--	--	<10	--	3	--	--	0	--	<1.0
AUG											
22...	.01	--	0	--	--	--	3	--	--	0	--
SEP											
11...	--	--	--	--	--	--	--	--	--	--	--

DATE	ZINC, TOTAL RECOVERABLE (UG/L AS ZN) (01092)	ZINC, DISSOLVED (UG/L AS ZN) (01090)	ZINC, RECOV. FM BOTTOM MATERIAL (UG/G AS ZN) (01093)	GROSS ALPHA, DISSOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DISSOLVED (PCI/L AS CS-137) (03515)	GROSS BETA, SUSP, TOTAL (PCI/L AS CS-137) (03516)	CARBON, ORGANIC DISSOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUSPENDED TOTAL (MG/L AS C) (00689)	SEDIMENT, SUSPENDED (MG/L) (80154)	SEDIMENT DISCHARGE, SUSPENDED (T/DAY) (80155)
APR											
17...	--	--	--	--	--	--	--	--	--	425	1560
18...	60	20	48	<1.1	3.7	4.6	2.8	11	4.7	210	351
MAY											
01...	--	--	--	--	--	--	--	11	--	7	.05
24...	--	--	--	--	--	--	--	14	--	20	.04
JUL											
24...	--	6	--	--	--	--	--	21	.8	3	.01
AUG											
22...	--	--	21	<11	1.1	18	1.0	--	--	39	3.8
SEP											
11...	--	--	--	--	--	--	--	15	.4	8	.01

DATE	BED MAT. FALL DIAM. % FINER THAN .062 MM (80158)	BED MAT. FALL DIAM. % FINER THAN .125 MM (80159)	BED MAT. FALL DIAM. % FINER THAN .250 MM (80160)	BED MAT. FALL DIAM. % FINER THAN .500 MM (80161)	BED MAT. FALL DIAM. % FINER THAN 1.00 MM (80162)	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM (80169)	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM (80170)	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM (80171)	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM (80172)	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM (80173)
APR										
18...	47	57	77	85	87	91	96	99	100	--
AUG										
22...	17	24	43	54	56	60	72	90	94	100

DATE	LENGTH OF EXPOSURE (DAYS) (00022)	CHLOR-A PERIPHYTON CHROMOGRAPHIC FLUORUM (MG/M2) (70957)	CHLOR-B PERIPHYTON CHROMOGRAPHIC FLUORUM (MG/M2) (70958)	PERIPHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M (00573)	PERIPHYTON BIOMASS ASH WEIGHT G/SQ M (00572)
AUG					
22...	29	2.62	1.21	.870	.550
SEP					
11...	30	1.47	1.47	.470	.310

06342040 SQUARE BUTTE CREEK NEAR HANNOVER, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1978 TO SEPTEMBER 1979

DATE	APR 18,79	MAY 1,79	MAY 24,79	JUL 24,79	AUG 22,79	SEP 11,79
TIME	1330	0840	0755	1710	1005	1310
TOTAL CELLS/ML	6600	570	180	2300	610	2700
DIVERSITY: DIVISION	0.8	1.7	0.9	1.4	1.2	1.6
.CLASS	0.8	1.7	0.9	1.4	1.2	2.1
..ORDER	0.9	1.8	1.8	1.6	1.5	0.0
...FAMILY	1.5	1.8	2.1	1.9	1.8	0.0
....GENUS	1.6	1.8	2.1	1.9	1.9	0.0

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)												
.CHLOROPHYCEAE												
..CHLOROCOCCALES												
...CHLOROCOCCACEAE												
....CHLOROCOCCUM	--	-	--	-	--	-	--	-	--	-	42	2
...OOCYSTACEAE												
....ANKISTRODESMUS	98	1	14	2	26	14	52	2	13	2	31	1
....CHLORELLA	--	-	--	-	--	-	--	-	--	-	42	2
....OOCYSTIS	--	-	--	-	--	-	--	-	--	-	42	2
...SCENEDESMACEAE												
....SCENEDESMUS	*	0	--	-	--	-	52	2	--	-	--	-
..VOLVOCALES												
...CHLAMYDOMONADACEAE												
....CHLAMYDOMONAS	56	1	130#	22	26	14	150	7	13	2	--	-
..ZYGNEMATALES												
...DESMIDIACEAE												
....DESMIDIUM	42	1	--	-	--	-	--	-	--	-	--	-
CHRYSOPHYTA												
.BACILLARIOPHYCEAE												
..CENTRALES												
...COSCINODISCACEAE												
....CYCLOTELLA	*	0	--	-	39#	21	--	-	--	-	62	2
....MELOSIRA	*	0	--	-	--	-	--	-	--	-	--	-
....SKELETONEMA	--	-	--	-	--	-	--	-	--	-	21	1
..PENNALES												
...ACHNANTHACEAE												
....ACHNANTHES	--	-	--	-	--	-	--	-	13	2	*	0
....COCCONEIS	*	0	--	-	--	-	--	-	--	-	31	1
....RHOICOSPHENIA	*	0	--	-	--	-	--	-	--	-	--	-
...CYMBELLACEAE												
....AMPHORA	*	0	--	-	--	-	--	-	--	-	--	-
....CYMBELLA	*	0	--	-	--	-	--	-	--	-	--	-
....EPITHEMIA	42	1	--	-	--	-	--	-	--	-	--	-
...FRAGILARIACEAE												
....FRAGILARIA	180	3	--	-	13	7	--	-	--	-	--	-
....SYNEDRA	84	1	--	-	--	-	--	-	--	-	--	-
...GOMPHONEMATACEAE												
....GOMPHONEMA	70	1	56	10	--	-	--	-	--	-	--	-
...NAVICULACEAE												
....GYROSIGMA	--	-	--	-	--	-	--	-	26	4	--	-
....NAVICULA	200	3	--	-	--	-	26	1	77	13	310	12
...NITZSCHIACEAE												
....NITZSCHIA	98	1	--	-	77#	43	13	1	39	6	31	1
...SURIRELLACEAE												
....SURIRELLA	*	0	--	-	--	-	--	-	--	-	--	-
.CHRYSOPHYCEAE												
..CHRYSOMONADALES												
...OCHROMONADACEAE												
....DINOBRYON	--	-	--	-	--	-	--	-	--	-	1100#	41
.XANTHOPHYCEAE												
..HETEROTRICHALES												
...TRIBONEMATACEAE												
....TRIBONEMA	*	0	--	-	--	-	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)												
.CRYPTOPHYCEAE	--	-	--	-	--	-	--	-	--	-	260	10
..CRYPTOMONADALES												
...CRYPTOCHRYSIDACEAE												
....CHROOMONAS	--	-	--	-	--	-	400#	17	--	-	--	-
...CRYPTOMONADACEAE												
....CRYPTOMONAS	--	-	--	-	--	-	360#	15	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)												
.CYANOPHYCEAE												
..CHROOCOCCALES												
...CHROOCOCCACEAE												
....ANACYSTIS	--	-	--	-	--	-	--	-	26	4	--	-
..HORMOGONALES												
...NOSTOCACEAE												
....ANABAENA	--	-	--	-	--	-	1300#	55	--	-	--	-
...OSCILLATORIACEAE												
....OSCILLATORIA	5100#	77	310#	54	--	-	--	-	390#	64	660#	25
...RIVULARIACEAE												
....RAPHIDIOPSIS	420	6	--	-	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

CONTINUED

06342040 SQUARE BUTTE CREEK NEAR HANNOVER, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1978 TO SEPTEMBER 1979 (CONTINUED)

DATE TIME	APR 18,79 1330		MAY 1,79 0840		MAY 24,79 0755		JUL 24,79 1710		AUG 22,79 1005		SEP 11,79 1310	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
EUGLENOPHYTA (EUGLENOIDS)												
.EUGLENOPHYCEAE												
..EUGLENALES												
...EUGLENACEAE												
....EUGLENA	*	0	--	-	--	-	--	-	--	-	*	0
....PHACUS	--	-	--	-	--	-	--	-	13	2	*	0
....TRACHELOMONAS	*	0	70	12	--	-	--	-	--	-	--	-
PYRRHOPHYTA (FIRE ALGAE)												
.DINOPHYCEAE												
..PERIDINIALES												
...GLENODINIACEAE												
....GLENODINIUM	--	-	--	-	--	-	--	-	--	-	*	0

NOTE: # = DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* = OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06342200 SQUARE BUTTE CREEK ABOVE NELSON LAKE NEAR CENTER, ND

LOCATION.--Lat 47°06'08", long 101°15'22", in SW¼NW¼SW¼ sec.19, T.142 N., R.83 W., Oliver County, Hydrologic Unit 10130101, on left bank 30 ft (9 m) downstream from bridge on county road 2 mi (3.2 km) southeast of Center, and 2 mi (3.2 km) upstream from Nelson Lake.

DRAINAGE AREA.--75.8 mi^2 (196 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1977 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,930 ft (588 m), from topographic map.

REMARKS.--Records fair.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,670 ft^3/s (104 m^3/s) Apr. 17, 1979, gage height, 9.96 ft (3.036 m); minimum observed discharge, 0.01 ft^3/s (0.0003 m^3/s) Mar. 7, 1978.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,670 ft^3/s (104 m^3/s) Apr. 17, gage height, 9.96 ft (3.036 m), only peak above base of 70 ft^3/s (1.98 m^3/s); minimum daily, 0.57 ft^3/s (0.016 m^3/s) July 21.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.0	1.1	1.2	1.1	1.0	1.1	.99	22	4.7	9.0	3.0	4.6
2	1.0	1.1	1.2	1.1	1.0	1.1	.79	17	4.7	3.6	3.0	4.6
3	1.1	1.1	1.2	1.0	.97	1.1	.81	13	3.8	1.7	2.7	3.6
4	1.1	1.0	1.2	1.0	1.0	1.1	1.1	11	3.8	1.6	2.2	2.8
5	1.2	1.0	1.2	1.2	1.0	1.1	1.2	9.4	3.8	3.4	2.0	2.3
6	1.1	1.2	1.2	1.1	1.0	1.2	1.1	12	4.0	3.2	1.6	1.7
7	1.0	1.2	1.2	1.2	1.0	1.2	1.5	10	3.8	2.5	1.4	1.4
8	1.0	1.3	1.2	1.2	.97	1.2	2.1	8.8	4.0	2.2	1.3	1.3
9	.90	1.5	1.2	1.2	.97	1.2	4.0	8.3	3.8	1.9	1.1	1.4
10	.83	1.6	1.2	1.2	.95	1.2	7.0	8.2	3.8	1.6	.97	1.5
11	.90	1.5	1.2	1.4	.90	1.4	15	8.3	3.6	1.5	1.0	2.5
12	.90	1.5	1.3	1.4	.90	1.5	9.0	8.0	3.8	1.4	.97	2.5
13	.90	1.4	1.3	1.3	.94	1.6	5.9	7.5	3.5	1.4	.77	2.3
14	.90	1.3	1.3	.90	.97	1.4	8.6	7.5	2.5	1.2	.77	2.2
15	.97	1.2	1.3	1.1	1.0	1.1	17	6.1	2.1	1.1	.77	2.0
16	.90	1.1	1.2	1.1	1.0	1.2	39	5.6	3.0	1.1	.77	1.9
17	1.0	1.0	1.1	1.0	1.1	1.3	858	5.2	2.7	1.1	.77	1.1
18	.97	1.0	1.1	1.1	1.1	1.4	1370	5.0	2.2	.97	.77	1.1
19	.97	.90	1.1	.97	1.1	1.5	385	5.0	2.7	1.0	.77	1.0
20	1.1	.80	1.0	.90	1.2	1.6	134	5.5	4.3	.62	.62	1.1
21	1.1	.80	1.1	1.0	1.1	1.7	61	5.3	3.2	.57	1.2	.90
22	1.0	.90	1.1	1.0	1.1	1.7	47	4.7	5.6	.72	35	.90
23	1.0	1.0	1.1	1.0	1.3	1.7	42	4.7	6.7	1.3	12	.83
24	1.1	1.0	1.2	1.0	1.1	1.7	41	4.6	3.4	2.3	18	.72
25	1.0	1.1	1.3	1.1	1.1	1.6	37	4.2	2.7	1.7	17	.53
26	1.2	1.1	1.2	1.3	1.2	1.6	35	4.2	2.2	1.6	11	.53
27	1.2	1.2	1.1	1.4	1.2	1.6	32	4.2	2.2	2.3	10	.77
28	1.2	1.2	1.1	1.2	1.1	1.5	31	3.9	2.2	2.3	5.2	.77
29	1.2	1.2	.97	1.2	---	1.4	28	3.9	1.9	2.2	4.9	.83
30	1.2	1.2	1.1	1.0	---	1.2	24	3.8	1.6	2.5	4.6	.83
31	1.1	---	1.0	1.0	---	1.0	---	3.5	---	2.0	4.9	---
TOTAL	32.04	34.50	36.17	34.67	29.27	42.2	3240.29	230.4	102.3	61.58	151.05	50.51
MEAN	1.03	1.15	1.17	1.12	1.05	1.36	108	7.43	3.41	1.99	4.87	1.68
MAX	1.2	1.6	1.3	1.4	1.3	1.7	1370	22	6.7	9.0	35	4.6
MIN	.83	.80	.97	.90	.90	1.0	.79	3.5	1.6	.57	.62	.53
AC-FT	64	68	72	69	58	84	6430	457	203	122	300	100

CAL YR 1978 TOTAL 4386.17 MEAN 12.0 MAX 550 MIN .01 AC-FT 8700
WTR YR 1979 TOTAL 4044.98 MEAN 11.1 MAX 1370 MIN .53 AC-FT 8020

06342200 SQUARE BUTTE CREEK ABOVE NELSON LAKE NEAR CENTER, ND--Continued

WATER-QUALITY RECORDS

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS (MG/L AS CACO3) (00900)
OCT											
10...	1030	.82	1200	8.2	16.0	9.5	10.2	96	33	110	280
NOV											
09...	1615	1.6	1200	7.9	-.5	4.5	10.9	89	K16	130	310
DEC											
19...	1500	1.0	1360	8.1	-7.0	.5	10.0	75	10	K6	330
JAN											
10...	1415	1.2	1300	7.9	-14.0	.5	9.3	69	K3	K12	320
FEB											
07...	0930	1.0	1230	7.6	-15.0	.0	8.2	60	K13	K9	320
APR											
17...	1810	3240	--	--	--	3.0	--	--	--	--	--
19...	1500	274	--	--	6.0	5.0	--	--	--	--	--
20...	1445	115	245	7.7	8.0	10.5	9.2	89	42	1400	70
25...	1350	37	515	7.7	8.0	6.5	10.4	90	210	K92	160
MAY											
12...	1040	8.2	1240	8.3	11.5	6.0	12.0	103	K10	K14	330
JUN											
20...	1025	5.4	1140	8.2	11.5	16.5	6.9	77	--	1800	280
JUL											
24...	1400	2.3	1270	8.2	24.5	24.0	7.0	88	730	K570	290
AUG											
*23...	1410	6.1	990	8.3	21.5	20.0	7.7	90	350	520	--
SEP											
11...	0905	2.7	1010	8.2	14.0	15.5	8.9	73	190	340	260

DATE	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE (MG/L AS HCO3) (00440)	CAR-BONATE (MG/L AS CO3) (00445)	ALKA-LINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)
OCT											
10...	0	56	35	180	57	4.6	8.9	486	0	380	4.7
NOV											
09...	0	65	35	180	55	4.5	6.5	512	0	420	10
DEC											
19...	0	70	38	200	56	4.8	7.2	537	0	440	6.8
JAN											
10...	0	69	36	180	54	4.4	6.8	557	0	460	11
FEB											
07...	0	71	35	190	56	4.6	4.6	564	0	460	23
APR											
17...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
20...	0	16	7.4	20	36	1.0	4.9	89	0	73	2.8
25...	19	38	17	51	39	1.7	5.6	172	0	140	5.5
MAY											
12...	5	71	37	130	46	3.1	7.2	396	0	320	3.2
JUN											
20...	0	58	34	150	53	3.9	6.1	492	0	404	5.0
JUL											
24...	0	55	37	190	58	4.9	6.5	464	0	380	4.7
AUG											
23...	--	--	--	--	--	--	--	464	0	380	3.7
SEP											
11...	0	53	31	130	51	3.5	6.8	410	0	340	4.1

* - Laboratory analysis incomplete at date of printing; data will be available via computer retrieval from WATSTORE files.

K - Results based on colony count outside the acceptable range (non-ideal colony count).

06342200 SQUARE BUTTE CREEK ABOVE NELSON LAKE NEAR CENTER, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)
OCT											
10...	280	6.1	.2	7.4	806	806	1.10	1.78	2.1	.01	.66
NOV											
09...	240	7.1	.2	8.9	802	795	1.08	3.50	2.6	.04	.93
DEC											
19...	290	7.5	.3	18	917	896	1.22	2.47	3.3	.11	.99
JAN											
10...	230	7.1	.2	21	851	825	1.12	2.83	2.7	.38	.52
FEB											
07...	260	7.1	.2	25	824	871	1.18	2.35	2.7	.34	.43
APR											
17...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
20...	43	1.4	.1	5.2	143	142	.19	44.1	.47	.26	.84
25...	120	2.8	.1	7.3	340	327	.44	32.7	1.6	.24	.61
MAY											
12...	270	5.9	.3	9.2	737	726	.99	16.1	.78	.02	.77
JUN											
20...	230	5.8	.3	12	751	739	1.01	10.8	.54	.23	.73
JUL											
24...	300	7.4	.3	13	858	839	1.14	5.21	1.5	.09	.91
AUG											
23...	--	--	--	--	--	--	--	--	--	--	--
SEP											
11...	220	5.4	.3	12	656	661	.90	4.82	.58	.08	.92

DATE	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	ARSENIC TOTAL IN BOT-TOM MA-TERIAL (UG/G AS AS) (01003)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)
OCT											
10...	.67	2.8	12	.04	.02	--	--	--	--	--	--
NOV											
09...	.97	3.6	16	.03	.01	--	--	--	--	--	--
DEC											
19...	1.1	4.4	19	.03	.02	--	--	--	--	--	--
JAN											
10...	.90	3.6	16	.03	.02	--	--	--	--	--	--
FEB											
07...	.77	3.5	15	.03	.00	--	--	--	--	--	--
APR											
17...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
20...	1.1	1.6	7.0	.15	.07	20	1	1	19	0	50
25...	.85	2.5	11	.09	.05	--	--	--	--	--	--
MAY											
12...	.79	1.6	7.0	.05	.01	--	--	--	--	--	--
JUN											
20...	.96	1.5	6.6	.06	.01	--	--	--	--	--	--
JUL											
24...	1.0	2.5	11	.11	.07	10	--	1	--	--	200
AUG											
23...	--	--	--	--	--	--	--	--	7	--	--
SEP											
11...	1.0	1.6	7.0	.04	.04	--	--	--	--	--	--

06342200 SQUARE BUTTE CREEK ABOVE NELSON LAKE NEAR CENTER, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	BARIUM, RECOV. FM BOTTOM MATERIAL (UG/G AS BA) (01006)	BERYLLIUM, TOTAL RECOVERABLE (UG/L AS BE) (01012)	BERYLLIUM, DIS-SOLVED (UG/L AS BE) (01010)	BERYLLIUM, RECOV. FM BOTTOM MATERIAL (UG/G) (01015)	BORON, DIS-SOLVED (UG/L AS B) (01020)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) (01034)	CHROMIUM, DIS-SOLVED (UG/L AS CR) (01030)	CHROMIUM, RECOV. FM BOTTOM MATERIAL (UG/G) (01029)	COBALT, TOTAL RECOVERABLE (UG/L AS CO) (01037)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COBALT, RECOV. FM BOTTOM MATERIAL (UG/G AS CO) (01038)
OCT											
10...	--	--	--	--	380	--	--	--	--	--	--
NOV											
09...	--	--	--	--	330	--	--	--	--	--	--
DEC											
19...	--	--	--	--	340	--	--	--	--	--	--
JAN											
10...	--	--	--	--	510	--	--	--	--	--	--
FEB											
07...	--	--	--	--	280	--	--	--	--	--	--
APR											
17...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
20...	160	0	<1	1	60	10	0	9	0	<3	0
25...	--	--	--	--	150	--	--	--	--	--	--
MAY											
12...	--	--	--	--	260	--	--	--	--	--	--
JUN											
20...	--	--	--	--	270	--	--	--	--	--	--
JUL											
24...	--	--	<1	--	420	--	0	--	--	<3	--
AUG											
23...	100	--	--	0	--	--	--	12	--	--	10
SEP											
11...	--	--	--	--	300	--	--	--	--	--	--

DATE	COPPER, TOTAL RECOVERABLE (UG/L AS CU) (01042)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	COPPER, RECOV. FM BOTTOM MATERIAL (UG/G AS CU) (01043)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LITHIUM TOTAL RECOVERABLE (UG/L AS LI) (01132)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN) (01055)	MANGANESE, DIS-SOLVED (UG/L AS MN) (01056)	MANGANESE, RECOV. FM BOTTOM MATERIAL (UG/G) (01053)	MERCURY TOTAL RECOVERABLE (UG/L AS HG) (71900)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)
OCT											
10...	--	--	--	70	--	--	--	--	--	--	--
NOV											
09...	--	--	--	40	--	--	--	--	--	--	--
DEC											
19...	--	--	--	40	--	--	--	--	--	--	--
JAN											
10...	--	--	--	50	--	--	--	--	--	--	--
FEB											
07...	--	--	--	50	--	--	--	--	--	--	--
APR											
17...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
20...	31	9	17	120	10	8	130	90	740	.2	.1
25...	--	--	--	100	--	--	--	--	--	--	--
MAY											
12...	--	--	--	50	--	--	--	--	--	--	--
JUN											
20...	--	--	--	20	--	--	--	--	--	--	--
JUL											
24...	--	7	--	10	--	60	--	70	--	--	.0
AUG											
23...	--	--	12	--	--	--	--	--	360	--	--
SEP											
11...	--	--	--	20	--	--	--	--	--	--	--

DATE	MERCURY RECOV. FM BOTTOM MATERIAL (UG/G AS HG) (71921)	MOLYBDENUM, TOTAL RECOVERABLE (UG/L AS MO) (01062)	MOLYBDENUM, RECOV. FM BOTTOM MATERIAL (UG/G) (01063)	MOLYBDENUM, DIS-SOLVED (UG/L AS MO) (01060)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI) (01067)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	NICKEL, RECOV. FM BOTTOM MATERIAL (UG/G AS NI) (01068)	SELENIUM, TOTAL (UG/L AS SE) (01147)	SELENIUM, DIS-SOLVED (UG/L AS SE) (01145)	SELENIUM, TOTAL IN BOTTOM MATERIAL (UG/G) (01148)	VANADIUM, DIS-SOLVED (UG/L AS V) (01085)
APR											
17...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
20...	.03	2	2	<10	11	1	40	0	0	0	1.5
25...	--	--	--	--	--	--	--	--	--	--	--
JUL											
24...	--	--	--	11	--	4	--	--	1	--	<1.0
AUG											
23...	.03	--	0	--	--	--	18	--	--	0	--
SEP											
11...	--	--	--	--	--	--	--	--	--	--	--

06342200 SQUARE BUTTE CREEK ABOVE NELSON LAKE NEAR CENTER, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ZINC, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS ZN) (01093)	GROSS ALPHA, DIS-SOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DIS-SOLVED (PCI/L AS CS-137) (03515)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C) (00689)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
OCT											
10...	--	--	--	--	--	--	--	10	.8	25	.06
NOV											
09...	--	--	--	--	--	--	--	9.7	.7	29	.13
DEC											
19...	--	--	--	--	--	--	--	8.3	.3	24	.07
JAN											
10...	--	--	--	--	--	--	--	8.2	.4	59	.20
FEB											
07...	--	--	--	--	--	--	--	5.8	.5	6	.02
APR											
17...	--	--	--	--	--	--	--	--	--	2140	1e700
19...	--	--	--	--	--	--	--	--	--	140	104
20...	60	<3	42	<2.1	1.6	5.7	<1.6	13	1.7	44	14
25...	--	--	--	--	--	--	--	9.2	1.0	27	2.7
MAY											
12...	--	--	--	--	--	--	--	9.9	1.1	48	1.1
JUN											
20...	--	--	--	--	--	--	--	10	--	67	.98
JUL											
24...	--	5	--	--	--	--	--	16	--	66	.41
AUG											
23...	--	--	40	<9.2	.7	6.2	.6	--	--	43	.71
SEP											
11...	--	--	--	--	--	--	--	8.5	.7	--	--

DATE	BED MAT. FALL DIAM. % FINER THAN .062 MM (80158)	BED MAT. FALL DIAM. % FINER THAN .125 MM (80159)	BED MAT. FALL DIAM. % FINER THAN .250 MM (80160)	BED MAT. FALL DIAM. % FINER THAN .500 MM (80161)	BED MAT. FALL DIAM. % FINER THAN 1.00 MM (80162)	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM (80169)	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM (80170)	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM (80171)	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM (80172)	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM (80173)
APR										
20...	6	8	16	26	35	41	56	76	89	100
AUG										
23...	31	40	52	62	66	71	79	88	93	100

DATE	LENGTH OF EXPO-SURE (DAYS) (00022)	CHLOR-A PERI-PHYTON CHROMO-GRAPHIC FLUORUM (MG/M2) (70957)	CHLOR-B PERI-PHYTON CHROMO-GRAPHIC FLUORUM (MG/M2) (70958)	PERI-PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M (00573)	PERI-PHYTON BIOMASS ASH WEIGHT G/SQ M (00572)
OCT					
10...	23	11.8	1.15	--	--
JUL					
24...	24	5.02	.690	27.7	22.4
AUG					
23...	30	1.50	.000	.390	.390
SEP					
11...	19	1.89	.510	1.18	1.02

06342200 SQUARE BUTTE CREEK ABOVE NELSON LAKE NEAR CENTER, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1978 TO SEPTEMBER 1979

DATE	OCT 10,78	NOV 9,78	DEC 19,78	JAN 10,79	FEB 7,79	APR 20,79
TIME	1030	1615	1500	1415	0930	1445
TOTAL CELLS/ML	5200	3100	120	220	35	400
DIVERSITY: DIVISION	1.5	1.1	1.5	1.5	1.0	1.1
.CLASS	1.5	1.1	1.5	1.5	1.0	1.1
..ORDER	2.1	1.3	2.2	1.9	1.0	2.1
...FAMILY	2.2	1.5	2.2	2.1	1.4	2.2
....GENUS	2.2	1.5	2.2	2.1	1.4	0.0

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)												
.CHLOROPHYCEAE												
..CHLOROCOCCALES												
...CHARACIACEAE												
....SCHROEDERIA	--	-	--	-	--	-	--	-	--	-	--	-
...MICRACTINIACEAE												
....MICRACTINIUM	--	-	--	-	--	-	--	-	--	-	--	-
...OOCYSTACEAE												
....ANKISTRODESMUS	230	4	59	2	--	-	--	-	20#	57	130#	32
....CHLORELLA	--	-	--	-	--	-	--	-	--	-	--	-
....CHODATELLA	--	-	--	-	--	-	--	-	--	-	--	-
....CLOSTERIOPSIS	--	-	--	-	--	-	--	-	--	-	--	-
....OOCYSTIS	--	-	--	-	--	-	--	-	--	-	--	-
....SELENASTRUM	--	-	--	-	--	-	--	-	--	-	--	-
....TETRAEDRON	--	-	--	-	--	-	--	-	--	-	--	-
....TREUBARIA	--	-	--	-	--	-	--	-	--	-	--	-
...SCENEDESMACEAE												
....CRUCIGENIA	--	-	--	-	--	-	--	-	--	-	--	-
....SCENEDESMUS	77	1	29	1	--	-	--	-	--	-	--	-
....TETRASTRUM	--	-	--	-	23#	20	--	-	--	-	--	-
..TETRASPORALES												
...PALMELLACEAE												
....SPHAEROCYSTIS	--	-	--	-	--	-	--	-	--	-	--	-
..VOLVOCALES												
...CHLAMYDOMONADACEAE	--	-	--	-	--	-	--	-	--	-	43	11
....CHLAMYDOMONAS	380	7	--	-	46#	40	56#	25	--	-	14	4
...PHACOTACEAE												
....PHACOTUS	--	-	--	-	--	-	--	-	--	-	14	4
..ZYGNEMATALES												
...DESMIDIACEAE												
....CLOSTERIUM	--	-	--	-	--	-	--	-	--	-	72#	18
CHRYSOPHYTA												
.BACILLARIOPHYCEAE												
..CENTRALES												
...COSCINODISCACEAE												
....CYCLOTELLA	96	2	710#	23	8	7	91#	41	--	-	--	-
....SKELETONEMA	--	-	--	-	--	-	--	-	--	-	--	-
..PENNALES												
...ACHNANTHACEAE												
....ACHNANTHES	--	-	29	1	--	-	--	-	--	-	--	-
...CYMBELLACEAE												
....CYMBELLA	--	-	--	-	--	-	5	2	--	-	--	-
...DIATOMACEAE												
....DIATOMA	--	-	--	-	--	-	5	2	--	-	--	-
...FRAGILARIACEAE												
....FRAGILARIA	--	-	150	5	--	-	--	-	--	-	--	-
....SYNEDRA	*	0	--	-	--	-	--	-	--	-	--	-
...GOMPHONEMATACEAE												
....GOMPHONEMA	--	-	--	-	--	-	5	2	--	-	--	-
...NAVICULACEAE												
....NAVICULA	77	1	29	1	--	-	10	5	5	14	--	-
...NITZSCHIACEAE												
....NITZSCHIA	*	0	29	1	--	-	--	-	10#	29	--	-
.CHRYSOPHYCEAE												
..CHRYSOMONADALES												
...CHROMULINACEAE												
....AMPHICHRYSIS	--	-	--	-	--	-	--	-	--	-	14	4
CRYPTOPHYTA (CRYPTOMONADS)												
.CRYPTOPHYCEAE												
..CRYPTOMONADALES												
...CRYPTOCHRYSIDACEAE												
....CHROOMONAS	--	-	--	-	--	-	--	-	--	-	--	-
...CRYPTOMONADACEAE												
....CRYPTOMONAS	--	-	--	-	8	7	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

CONTINUED

06342200 SQUARE BUTTE CREEK ABOVE NELSON LAKE NEAR CENTER, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1978 TO SEPTEMBER 1979 (CONTINUED)

DATE / TIME	OCT 10,78 1030		NOV 9,78 1615		DEC 19,78 1500		JAN 10,79 1415		FEB 7,79 0930		APR 20,79 1445	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CYANOPHYTA (BLUE-GREEN ALGAE)												
.CYANOPHYCEAE												
..CHROOCOCCALES												
...CHROOCOCCACEAE												
....AGMENELLUM	--	-	--	-	--	-	--	-	--	-	--	-
....ANACYSTIS	580	11	--	-	--	-	--	-	--	-	--	-
....COCCOCHLORIS	--	-	--	-	8	7	--	-	--	-	--	-
..HORMOGONALES												
...NOSTOCACEAE												
....ANABAENA	--	-	--	-	23#	20	--	-	--	-	--	-
...OSCILLATORIACEAE												
....OSCILLATORIA	2500#	48	--	-	--	-	51#	23	--	-	110#	29
....SCHIZOTHRIX	--	-	--	-	--	-	--	-	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)												
.EUGLENOPHYCEAE												
..EUGLENALES												
...EUGLENACEAE												
....EUGLENA	58	1	--	-	--	-	--	-	--	-	--	-
....TRACHELOMONAS	1200#	23	2100#	67	--	-	--	-	--	-	--	-
PYRRHOPHYTA (FIRE ALGAE)												
.DINOPHYCEAE												
..PERIDINIALES												
...GLENODINIACEAE												
....GLENODINIUM	--	-	--	-	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06342200 SQUARE BUTTE CREEK ABOVE NELSON LAKE NEAR CENTER, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1978 TO SEPTEMBER 1979

DATE	APR 25,79	MAY 12,79	JUN 20,79	JUL 24,79	AUG 23,79	SEP 11,79
TIME	1350	1040	1025	1400	1410	0905
TOTAL CELLS/ML	1800	25000	1300	5000	1200	6500
DIVERSITY: DIVISION	1.0	0.7	1.7	2.1	1.5	1.3
.CLASS	1.0	0.7	1.7	2.1	1.5	1.3
..ORDER	1.2	1.0	2.2	2.4	2.5	1.4
...FAMILY	1.2	1.2	3.0	2.8	2.9	1.8
....GENUS	1.2	1.2	3.0	3.3	3.3	2.1

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)												
.CHLOROPHYCEAE												
..CHLOROCOCCALES												
...CHARACIACEAE												
....SCHROEDERIA	--	-	--	-	--	-	--	-	13	1	--	-
...MICRACTINIACEAE												
....MICRACTINIUM	--	-	430	2	--	-	--	-	--	-	--	-
...OOCYSTACEAE												
....ANKISTRODESMUS	400#	23	220	1	320#	26	270	5	13	1	--	-
....CHLORELLA	--	-	--	-	--	-	--	-	--	-	1300#	19
....CHODATELLA	--	-	--	-	--	-	39	1	--	-	--	-
....CLOSTERIOPSIS	--	-	--	-	--	-	77	2	--	-	--	-
....OOCYSTIS	--	-	--	-	--	-	39	1	--	-	--	-
....SELENASTRUM	--	-	--	-	--	-	--	-	39	3	--	-
....TETRAEDRON	--	-	--	-	--	-	39	1	26	2	--	-
....TREUBARIA	--	-	--	-	--	-	39	1	--	-	--	-
...SCENEDESMACEAE												
....CRUCIGENIA	--	-	--	-	--	-	150	3	--	-	200	3
....SCENEDESMUS	--	-	--	-	260#	20	700	14	230#	19	760	12
....TETRASTRUM	--	-	--	-	--	-	310	6	100	8	--	-
..TETRASPORALES												
...PALMELLACEAE												
....SPHAEROCYSTIS	--	-	--	-	--	-	--	-	100	8	--	-
..VOLVOCALES												
...CHLAMYDOMONADACEAE	--	-	--	-	--	-	--	-	--	-	--	-
....CHLAMYDOMONAS	70	4	220	1	65	5	350	7	260#	21	50	1
...PHACOTACEAE												
....PHACOTUS	--	-	--	-	--	-	--	-	--	-	--	-
..ZYGNEMATALES												
...DESMIDIACEAE												
....CLOSTERIUM	--	-	--	-	--	-	--	-	--	-	--	-
CHRYSOPHYTA												
.BACILLARIOPHYCEAE												
..CENTRALES												
...COSCINODISCACEAE												
....CYCLOTELLA	--	-	20000#	82	100	8	350	7	90	7	3500#	53
....SKELETONEMA	--	-	--	-	--	-	--	-	--	-	250	4
..PENNALES												
...ACHNANTHACEAE												
....ACHNANTHES	--	-	--	-	26	2	--	-	--	-	--	-
...CYMBELLACEAE												
....CYMBELLA	--	-	--	-	--	-	--	-	--	-	--	-
...DIATOMACEAE												
....DIATOMA	--	-	--	-	--	-	--	-	--	-	--	-
...FRAGILARIACEAE												
....FRAGILARIA	--	-	--	-	--	-	--	-	--	-	--	-
....SYNEDRA	--	-	430	2	--	-	--	-	13	1	50	1
...GOMPHONEMATACEAE												
....GOMPHONEMA	--	-	--	-	--	-	--	-	--	-	--	-
...NAVICULACEAE												
....NAVICULA	14	1	650	3	52	4	39	1	--	-	--	-
...NITZSCHIACEAE												
....NITZSCHIA	14	1	430	2	220#	17	77	2	120	9	50	1
.CHRYSOPHYCEAE												
..CHRYSOMONADALES												
...CHROMULINACEAE												
....AMPHICHRYSIS	--	-	--	-	--	-	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)												
.CRYPTOPHYCEAE												
..CRYPTOMONADALES												
...CRYPTOCHRYSIDACEAE												
....CHROOMONAS	--	-	--	-	26	2	39	1	--	-	--	-
...CRYPTOMONADACEAE												
....CRYPTOMONAS	--	-	430	2	26	2	350	7	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

CONTINUED

06342200 SQUARE BUTTE CREEK ABOVE NELSON LAKE NEAR CENTER, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1978 TO SEPTEMBER 1979 (CONTINUED)

DATE	APR 25,79		MAY 12,79		JUN 20,79		JUL 24,79		AUG 23,79		SEP 11,79	
TIME	1350		1040		1025		1400		1410		0905	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CYANOPHYTA (BLUE-GREEN ALGAE)												
.CYANOPHYCEAE												
..CHROOCOCCALES												
...CHROOCOCCACEAE												
....AGMENELLUM	--	-	--	-	--	-	--	-	51	4	--	-
....ANACYSTIS	--	-	--	-	90	7	1600#	33	140	11	--	-
....COCCOCHLORIS	--	-	--	-	--	-	--	-	--	-	--	-
..HORMOGONALES												
...NOSTOCACEAE												
....ANABAENA	--	-	--	-	--	-	--	-	--	-	--	-
...OSCILLATORIACEAE												
....OSCILLATORIA	1300#	71	--	-	--	-	--	-	--	-	--	-
....SCHIZOTHRIX	--	-	--	-	--	-	--	-	--	-	400	6
EUGLENOPHYTA (EUGLENOIDS)												
.EUGLENOPHYCEAE												
..EUGLENALES												
...EUGLENACEAE												
....EUGLENA	--	-	--	-	--	-	310	6	39	3	--	-
....TRACHELOMONAS	--	-	1700	7	78	6	120	2	13	1	--	-
PYRRHOPHYTA (FIRE ALGAE)												
.DINOPHYCEAE												
..PERIDINIALES												
...GLENODINIACEAE												
....GLENODINIUM	14	1	--	-	--	-	77	2	--	-	50	1

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06342230 HAGEL CREEK NEAR CENTER, ND

LOCATION.--Lat 47°03'58", long 101°14'11", in SE¼NE¼NE¼ sec.6, T.141 N., R.83 W., Oliver County, Hydrologic Unit 10130101, on right bank 1,200 ft (366 m) upstream from bridge on county road, 0.8 mi (1.3 km) upstream from Nelson Lake, 1 mi (1.6 km) west of Milton R. Young Powerplant, and 4.5 mi (7.2 km) southeast of Center.

DRAINAGE AREA.--45.6 mi^2 (118 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1977 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,950 ft (594 m), from topographic map.

REMARKS.--Records fair except those for period November to March, which are poor.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,150 ft^3/s (32.6 m^3/s) Apr. 17, 1979, gage height, 7.41 ft (2.259 m); no flow at times most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,150 ft^3/s (32.6 m^3/s) Apr. 17, gage height, 7.41 ft (2.259 m), only peak above base of 70 ft^3/s (1.98 m^3/s); no flow for several months.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	1.7	46	.62	22	.40	.02
2	.00	.00	.00	.00	.00	.00	1.8	42	.53	11	.43	.00
3	.00	.00	.00	.00	.00	.00	1.8	36	.53	3.3	.43	.00
4	.00	.00	.00	.00	.00	.00	1.9	32	.47	1.9	.38	.00
5	.00	.00	.00	.00	.00	.00	1.6	27	.47	1.3	.32	.00
6	.00	.00	.00	.00	.00	.01	1.7	22	.45	.94	.26	.00
7	.00	.00	.00	.00	.00	.05	2.0	17	.40	.73	.23	.00
8	.00	.01	.00	.00	.00	.10	2.1	13	.43	.66	.21	.00
9	.00	.02	.00	.00	.00	.10	2.6	10	.40	.56	.17	.00
10	.00	.02	.00	.00	.00	.14	5.5	8.5	.36	.43	.17	.00
11	.00	.02	.01	.00	.00	.30	15	7.3	.30	.50	.23	.00
12	.00	.02	.02	.00	.00	.60	16	6.3	.30	.56	.26	.00
13	.00	.02	.02	.00	.00	.90	13	4.7	.34	.56	.24	.00
14	.00	.02	.02	.00	.00	.80	14	3.9	.28	.53	.23	.00
15	.00	.01	.02	.00	.00	.76	21	3.4	.20	.50	.24	.00
16	.00	.00	.02	.00	.00	.80	57	3.1	.14	.38	.26	.00
17	.00	.00	.02	.00	.00	.96	335	2.7	.11	.28	.26	.00
18	.00	.00	.02	.00	.00	3.5	263	2.5	.07	.21	.24	.00
19	.00	.00	.02	.00	.00	2.4	125	2.1	.06	.15	.23	.01
20	.00	.00	.02	.00	.00	2.2	112	2.0	.17	.15	.21	.01
21	.00	.00	.02	.00	.00	2.2	96	2.0	.08	.17	.75	.01
22	.00	.00	.01	.00	.00	2.3	78	1.9	.08	.13	9.9	.01
23	.00	.00	.01	.00	.00	3.0	72	1.6	.47	.09	2.4	.01
24	.00	.00	.01	.00	.00	2.5	71	1.5	.59	.10	.45	.01
25	.00	.00	.01	.00	.00	2.4	68	1.3	.40	.09	.34	.01
26	.00	.00	.00	.00	.00	2.3	65	1.2	.28	.08	.26	.01
27	.00	.00	.00	.00	.00	2.4	61	.94	.18	.13	.23	.01
28	.00	.00	.00	.00	.00	2.5	57	.85	.12	.15	.18	.01
29	.00	.00	.00	.00	---	2.1	54	.73	.05	.20	.15	.01
30	.00	.00	.00	.00	---	2.0	49	.69	.03	.43	.08	.01
31	.00	---	.00	.00	---	1.9	---	.66	---	.36	.06	---
TOTAL	.00	.14	.25	.00	.00	59.22	1664.7	304.87	8.91	48.57	20.20	.14
MEAN	.000	.005	.008	.000	.000	1.27	55.5	9.83	.30	1.57	.65	.005
MAX	.00	.02	.02	.00	.00	3.5	335	46	.62	22	9.9	.02
MIN	.00	.00	.00	.00	.00	.00	1.6	.66	.03	.08	.06	.00
AC-FT	.00	.3	.5	.00	.00	78	3300	605	18	96	40	.3

CAL YR 1978 TOTAL 3338.07 MEAN 9.15 MAX 250 MIN .00 AC-FT 6620
WTR YR 1979 TOTAL 2087.00 MEAN 5.72 MAX 335 MIN .00 AC-FT 4140

06342230 HAGEL CREEK NEAR CENTER, ND--Continued

WATER-QUALITY RECORDS

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS (MG/L AS CACO3) (00900)
DEC											
20...	1000	.02	2130	8.0	-10.0	.5	--	--	62	K10	460
APR											
18...	1010	193	--	--	22.0	3.0	--	--	--	--	--
19...	1410	112	355	8.0	5.0	4.0	11.1	90	65	5300	68
25...	0855	68	275	7.7	4.5	4.0	11.5	12	K9	K180	63
MAY											
12...	1500	6.4	660	9.0	14.0	8.0	14.2	128	K3	K15	150
JUN											
20...	0645	.15	1120	9.1	16.0	17.0	7.5	84	57	1700	210
JUL											
24...	1100	.26	970	8.7	24.0	22.0	5.0	60	28	85	160
AUG											
* 23...	1145	2.4	1010	8.1	19.0	15.0	4.7	54	K7200	K73000	--

DATE	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE (MG/L AS HCO3) (00440)	CAR-BONATE (MG/L AS CO3) (00445)	ALKA-LINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)
DEC											
20...	0	110	45	400	64	8.1	18	1010	0	828	16
APR											
18...	--	--	--	--	--	--	--	--	--	--	--
19...	0	14	7.9	44	56	2.3	5.0	124	0	100	2.0
25...	0	14	6.8	35	53	1.9	4.4	102	0	84	3.3
MAY											
12...	0	35	16	89	55	3.1	6.0	184	9	170	.3
JUN											
20...	0	27	35	190	65	5.7	5.7	254	22	250	.4
JUL											
24...	0	23	26	170	68	5.8	7.7	334	16	300	1.2
AUG											
23...	--	--	--	--	--	--	--	425	0	350	5.4

DATE	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)
DEC											
20...	440	10	.2	5.1	1490	1530	2.08	.08	.02	.16	1.5
APR											
18...	--	--	--	--	--	--	--	--	--	--	--
19...	61	2.2	.1	5.6	215	201	.27	60.8	.46	.16	1.2
25...	53	1.7	.1	3.7	180	169	.23	31.0	.40	.23	.46
MAY											
12...	160	3.2	.1	2.3	424	412	.56	7.12	.01	.01	.97
JUN											
20...	320	2.9	.2	.4	761	729	.99	.30	.02	.02	1.5
JUL											
24...	99	3.2	.2	.9	641	512	.70	.36	.01	.06	5.1
AUG											
23...	--	--	--	--	--	--	--	--	.05	.13	.78

* - Laboratory analysis incomplete at date of printing; data will be available via computer retrieval from WATSTORE files.

K - Results based on colony count outside the acceptable range (non-ideal colony count).

06342230 HAGEL CREEK NEAR CENTER, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, TOTAL (MG/L AS N) (00600)	NITROGEN, TOTAL (MG/L AS NO3) (71887)	PHOSPHORUS, TOTAL (MG/L AS P) (00665)	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	ALUMINUM, DISSOLVED (UG/L AS AL) (01106)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DISSOLVED (UG/L AS AS) (01000)	ARSENIC TOTAL IN BOTTOM MATERIAL (UG/G AS AS) (01003)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA) (01007)	BARIUM, DISSOLVED (UG/L AS BA) (01005)
DEC											
20...	1.7	1.7	7.6	.13	.06	--	--	--	--	--	--
APR											
18...	--	--	--	--	--	--	--	--	--	--	--
19...	1.4	1.9	8.2	.04	.06	50	2	1	15	100	40
25...	.69	1.1	4.8	.14	.08	--	--	--	--	--	--
MAY											
12...	.98	.99	4.4	.07	.02	--	--	--	--	--	--
JUN											
20...	1.5	1.5	6.7	.03	.01	--	--	--	--	--	--
JUL											
24...	5.2	5.2	23	.11	.08	0	--	3	--	--	80
AUG											
23...	.91	.96	4.2	.16	.10	--	--	--	18	--	--

DATE	BARIUM, RECOV. FM BOTTOM MATERIAL (UG/G AS BA) (01008)	BERYLLIUM, TOTAL RECOVERABLE (UG/L AS BE) (01012)	BERYLLIUM, DISSOLVED (UG/L AS BE) (01010)	BERYLLIUM, RECOV. FM BOTTOM MATERIAL (UG/G) (01013)	BORON, DISSOLVED (UG/L AS B) (01020)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) (01034)	CHROMIUM, DISSOLVED (UG/L AS CR) (01030)	CHROMIUM, RECOV. FM BOTTOM MATERIAL (UG/G) (01029)	COBALT, TOTAL RECOVERABLE (UG/L AS CO) (01037)	COBALT, DISSOLVED (UG/L AS CO) (01035)	COBALT, RECOV. FM BOTTOM MATERIAL (UG/G AS CO) (01038)
DEC											
20...	--	--	--	--	750	--	--	--	--	--	--
APR											
18...	--	--	--	--	--	--	--	--	--	--	--
19...	160	0	<1	1	110	0	0	12	0	<3	0
25...	--	--	--	--	90	--	--	--	--	--	--
MAY											
12...	--	--	--	--	190	--	--	--	--	--	--
JUN											
20...	--	--	--	--	410	--	--	--	--	--	--
JUL											
24...	--	--	<1	--	370	--	0	--	--	<3	--
AUG											
23...	100	--	--	0	--	--	--	15	--	--	15

DATE	COPPER, TOTAL RECOVERABLE (UG/L AS CU) (01042)	COPPER, DISSOLVED (UG/L AS CU) (01040)	COPPER, RECOV. FM BOTTOM MATERIAL (UG/G AS CU) (01043)	IRON, DISSOLVED (UG/L AS FE) (01046)	LITHIUM TOTAL RECOVERABLE (UG/L AS LI) (01132)	LITHIUM DISSOLVED (UG/L AS LI) (01130)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN) (01055)	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	MANGANESE, RECOV. FM BOTTOM MATERIAL (UG/G) (01053)	MERCURY TOTAL RECOVERABLE (UG/L AS HG) (71900)	MERCURY DISSOLVED (UG/L AS HG) (71890)
DEC											
20...	--	--	--	570	--	--	--	--	--	--	--
APR											
18...	--	--	--	--	--	--	--	--	--	--	--
19...	21	11	21	240	10	10	200	130	510	.2	.0
25...	--	--	--	160	--	--	--	--	--	--	--
MAY											
12...	--	--	--	100	--	--	--	--	--	--	--
JUN											
20...	--	--	--	80	--	--	--	--	--	--	--
JUL											
24...	--	2	--	80	--	40	--	240	--	--	.0
AUG											
23...	--	--	16	--	--	--	--	--	1200	--	--

06342230 HAGEL CREEK NEAR CENTER, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	MERCURY RECOV. FM BOTTOM MATERIAL (UG/G AS HG) (71921)	MOLYB-DENUM, TOTAL RECOVERABLE (UG/L AS MO) (01062)	MOLYB-DENUM, RECOV. FM BOTTOM MATERIAL (UG/G) (01063)	MOLYB-DENUM, DISSOLVED (UG/L AS MO) (01060)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI) (01067)	NICKEL, DISSOLVED (UG/L AS NI) (01065)	NICKEL, RECOV. FM BOTTOM MATERIAL (UG/G AS NI) (01068)	SELENIUM, TOTAL (UG/L AS SE) (01147)	SELENIUM, DISSOLVED (UG/L AS SE) (01145)	SELENIUM, TOTAL IN BOTTOM MATERIAL (UG/G) (01148)	VANADIUM, DISSOLVED (UG/L AS V) (01085)
DEC											
20...	--	--	--	--	--	--	--	--	--	--	--
APR											
18...	--	--	--	--	--	--	--	--	--	--	--
19...	.03	2	1	<10	10	2	40	1	0	0	1.2
25...	--	--	--	--	--	--	--	--	--	--	--
MAY											
12...	--	--	--	--	--	--	--	--	--	--	--
JUN											
20...	--	--	--	--	--	--	--	--	--	--	--
JUL											
24...	--	--	--	<10	--	5	--	--	0	--	<1.0
AUG											
23...	.04	--	1	--	--	--	32	--	--	0	--

DATE	ZINC, TOTAL RECOVERABLE (UG/L AS ZN) (01092)	ZINC, DISSOLVED (UG/L AS ZN) (01090)	ZINC, RECOV. FM BOTTOM MATERIAL (UG/G AS ZN) (01093)	GROSS ALPHA, DISSOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DISSOLVED (PCI/L AS CS-137) (03515)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)	CARBON, ORGANIC DISSOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUSPENDED TOTAL (MG/L AS C) (00689)	SEDIMENT, SUSPENDED (MG/L) (80154)	SEDIMENT DISCHARGE, SUSPENDED (T/DAY) (80155)
DEC											
20...	--	--	--	--	--	--	--	25	1.4	75	.00
APR											
18...	--	--	--	--	--	--	--	--	--	153	80
19...	50	9	59	<2.5	5.4	5.8	4.2	15	2.2	76	23
25...	--	--	--	--	--	--	--	7.6	1.4	27	5.0
MAY											
12...	--	--	--	--	--	--	--	10	2.8	21	.36
JUN											
20...	--	--	--	--	--	--	--	16	1.1	4	.00
JUL											
24...	--	5	--	--	--	--	--	18	.4	6	.00
AUG											
23...	--	--	53	<9.1	1.1	11	1.4	--	--	44	.29

DATE	BED MAT. FALL DIAM. % FINER THAN .062 MM (80158)	BED MAT. FALL DIAM. % FINER THAN .125 MM (80159)	BED MAT. FALL DIAM. % FINER THAN .250 MM (80160)	BED MAT. FALL DIAM. % FINER THAN .500 MM (80161)	BED MAT. FALL DIAM. % FINER THAN 1.00 MM (80162)	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM (80169)	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM (80170)	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM (80171)	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM (80172)	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM (80173)
APR										
19...	72	82	93	96	96	99	100	--	--	--
19...	72	82	93	96	96	96	99	100	--	--
AUG										
23...	18	26	46	61	62	67	77	91	93	100

DATE	LENGTH OF EXPOSURE (DAYS) (00022)	CHLOR-A PERIPHYTON CHROMOGRAPHIC FLUORUM (MG/M2) (70957)	CHLOR-B PERIPHYTON CHROMOGRAPHIC FLUORUM (MG/M2) (70958)	PERIPHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M (00573)	PERIPHYTON BIOMASS ASH WEIGHT G/SQ M (00572)
JUL					
24...	34	27.3	2.84	4.80	3.62

06342230 HAGEL CREEK NEAR CENTER, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1978 TO AUGUST 1979

DATE	DEC 20,78		APR 19,79		APR 25,79		MAY 12,79	
TIME	1000		1410		0855		1500	
TOTAL CELLS/ML	3900		940		1700		58000	
DIVERSITY: DIVISION	0.4		1.4		1.1		1.3	
.CLASS	0.4		1.4		1.1		1.3	
..ORDER	0.5		1.9		1.4		1.5	
...FAMILY	0.5		2.1		1.6		1.6	
....GENUS	0.5		2.8		1.6		1.6	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)								
.CHLOROPHYCEAE								
..CHLOROCOCCALES								
...CUELASTRACEAE								
....CUELASTRUM	--	-	--	-	--	-	1600	3
...MICRACTINIACEAE								
....MICRACTINIUM	--	-	--	-	--	-	820	1
...OOCYSTACEAE								
....ANKISTRODESMUS	77	2	160#	17	390#	23	2700	5
....DICTYOSPHAERIUM	--	-	--	-	--	-	--	-
....KIRCHNERIELLA	--	-	29	3	--	-	--	-
....TETRAEDRON	*	0	--	-	--	-	--	-
...SCENEDESMACEAE								
....CRUCIGENIA	31	1	--	-	--	-	--	-
....SCENEDESMUS	*	0	29	3	56	3	--	-
..VOLVOCALES								
...CHLAMYDOMONADACEAE								
....CARTERIA	--	-	--	-	14	1	--	-
....CHLAMYDOMONAS	46	1	--	-	42	2	410	1
..ZYGNEMATALES								
...DESMIDIACEAE								
....CLOSTERIUM	--	-	14	2	--	-	--	-
CHRYSOPHYTA								
.BACILLARIOPHYCEAE								
..CENTRALES								
...COSCINODISCACEAE								
....CYCLOTELLA	*	0	--	-	14	1	38000#	66
..PENNALES								
...FRAGILARIACEAE								
....SYNEDRA	--	-	--	-	--	-	*	0
...NAVICULACEAE								
....NAVICULA	--	-	--	-	--	-	--	-
...NITZSCHIACEAE								
....NITZSCHIA	*	0	29	3	--	-	820	1
CYANOPHYTA (BLUE-GREEN ALGAE)								
.CYANOPHYCEAE								
..CHROOCOCCALES								
...CHROOCOCCACEAE								
....ANACYSTIS	23	1	72	8	56	3	--	-
....COCCOCHLORIS	--	-	29	3	--	-	--	-
..HORMOGONALES								
...NOSTOCACEAE								
....ANABAENA	--	-	--	-	--	-	--	-
...OSCILLATORIACEAE								
....OSCILLATORIA	3700#	94	230#	25	1100#	65	12000#	20
....PHORMIDIUM	--	-	250#	26	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)								
.EUGLENOPHYCEAE								
..EUGLENALES								
...EUGLENACEAE								
....EUGLENA	23	1	14	2	14	1	820	1
....TRACHELOMONAS	*	0	87	9	28	2	610	1
PYRRHOPHYTA (FIRE ALGAE)								
.DINOPHYCEAE								
..PERIDINIALES								
...GLENODINIACEAE								
....GLENODINIUM	--	-	--	-	--	-	--	-

NOTE: # = DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* = OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06342230 HAGEL CREEK NEAR CENTER, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1978 TO AUGUST 1979

DATE	JUN 20,79	JUL 24,79	AUG 23,79
TIME	0845	1100	1145
TOTAL CELLS/ML	64	17000	5700
DIVERSITY: DIVISION	0.7	0.0	1.1
.CLASS	0.7	0.0	1.1
..ORDER	0.7	0.0	1.4
...FAMILY	0.7	0.3	1.4
....GENUS	0.7	0.3	1.6

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)						
.CHLOROPHYCEAE						
..CHLOROCOCCALES						
...COELASTRACEAE						
....COELASTRUM	--	-	--	-	--	-
...MICRACTINIACEAE						
....MICRACTINIUM	--	-	--	-	--	-
...OOCYSTACEAE						
....ANKISTRODESMUS	--	-	--	-	260	5
....DICTYOSPHAERIUM	--	-	--	-	620	11
....KIRCHNERIELLA	--	-	--	-	--	-
....TETRAEDRON	--	-	--	-	--	-
...SCENEDESMACEAE						
....CRUCIGENIA	--	-	--	-	--	-
....SCENEDESMUS	--	-	--	-	--	-
..VOLVOCALES						
...CHLAMYDOMONADACEAE						
....CARTERIA	--	-	--	-	--	-
....CHLAMYDOMONAS	--	-	--	-	150	3
..ZYGNEMATALES						
...DESMIDIACEAE						
....CLOSTERIUM	--	-	--	-	--	-
CHRYSOPHYTA						
.BACILLARIOPHYCEAE						
..CENTRALES						
...COSCINODISCACEAE						
....CYCLOTELLA	--	-	--	-	100	2
..PENNALES						
...FRAGILARIACEAE						
....SYNEDRA	--	-	--	-	--	-
...NAVICULACEAE						
....NAVICULA	--	-	*	0	--	-
...NITZSCHIACEAE						
....NITZSCHIA	--	-	*	0	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)						
.CYANOPHYCEAE						
..CHROOCOCCALES						
...CHROOCOCCACEAE						
....ANACYSTIS	52#	80	--	-	100	2
....COCCOCHLORIS	--	-	--	-	--	-
..HORMOGONALES						
...NOSTOCACEAE						
....ANABAENA	--	-	1000	6	--	-
...OSCILLATORIACEAE						
....OSCILLATORIA	--	-	16000#	94	4100#	73
....PHORMIDIUM	--	-	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)						
.EUGLENOPHYCEAE						
..EUGLENALES						
...EUGLENACEAE						
....EUGLENA	--	-	--	-	100	2
....TRACHELOMONAS	13#	20	--	-	100	2
PYRRHOPHYTA (FIRE ALGAE)						
.DINOPHYCEAE						
..PERIDINIALES						
...GLENODINIACEAE						
....GLENODINIUM	--	-	--	-	100	2

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06342260 SQUARE BUTTE CREEK BELOW CENTER, ND

LOCATION.--Lat 47°03'25", long 101°11'35", in SE¼ sec.4, T.141 N., R.83 W., Oliver County, Hydrologic Unit 10130101, on right bank at southeast corner of farmyard, and 6 mi (10 km) southeast of Center.

DRAINAGE AREA.--146 mi^2 (378 km^2).

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

GAGE.--Water-stage recorder. Altitude of gage is 1,865 ft (568 m), from topographic map.

REMARKS.--Records fair. Flow regulated by Nelson Lake 1.5 mi (2.4 km) upstream beginning Aug. 24, 1967, capacity, 5,000 acre-ft (6.16 hm^3). The capacity of Nelson Lake was increased to 10,000 acre-ft (12.3 hm^3) in August 1975.

AVERAGE DISCHARGE.--14 years, 12.2 ft^3/s (0.346 m^3/s), 8,840 acre-ft/yr (10.9 hm^3/yr); median of yearly mean discharges, 14 ft^3/s (0.40 m^3/s), 10,100 acre-ft/yr (12 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,700 ft^3/s (275 m^3/s) June 24, 1966, gage height, 14.35 ft (4.374 m); no flow Feb. 14-26, 1966.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,000 ft^3/s (113 m^3/s) Apr. 18, gage height, about 12.0 ft (3.66 m); minimum daily, 0.53 ft^3/s (0.015 m^3/s) Sept. 18.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.4	.85	1.5	1.9	1.7	.90	1.4	67	5.8	3.1	1.2	1.3
2	2.3	.96	1.5	1.9	1.6	.90	1.4	66	5.7	1.7	1.2	.81
3	2.5	.97	1.4	1.9	1.6	.90	1.4	61	7.9	1.8	1.2	.97
4	2.4	.98	1.4	1.7	1.6	.90	1.6	13	7.2	1.1	1.4	.85
5	1.7	1.2	1.4	1.7	1.6	.90	1.6	13	6.9	1.3	.99	.79
6	1.7	1.2	1.4	1.7	1.5	1.1	1.6	14	7.1	1.3	1.2	.87
7	1.7	1.1	1.4	1.7	1.5	1.3	1.6	47	7.0	1.6	1.2	.80
8	1.4	1.0	1.4	1.9	1.4	1.3	1.7	78	7.0	1.6	1.2	.95
9	1.5	1.1	1.4	1.9	1.4	1.3	1.7	24	7.1	1.4	.98	.77
10	1.5	.99	1.4	1.7	1.4	2.0	1.7	13	7.7	1.9	1.1	1.5
11	1.6	.80	1.4	1.6	1.3	3.0	1.6	13	7.3	2.0	1.1	1.0
12	1.5	.89	1.5	1.7	1.3	5.0	1.4	13	7.7	1.7	1.1	.80
13	1.5	1.2	1.5	1.7	1.2	6.0	1.6	13	7.9	1.9	1.6	.78
14	1.6	1.1	1.5	1.6	1.2	7.0	1.9	12	2.1	1.6	1.8	.67
15	1.7	1.2	1.5	1.6	1.1	10	2.6	6.3	2.0	1.4	2.0	.60
16	1.7	.99	1.5	1.6	1.0	21	2.8	6.5	2.0	1.7	2.1	.69
17	1.9	.90	1.5	1.7	1.0	24	290	6.5	2.0	1.9	2.0	.72
18	2.1	1.2	1.5	1.5	.95	21	2600	6.5	1.5	1.8	2.5	.53
19	2.4	1.2	1.5	1.6	.90	15	880	6.6	1.5	1.4	2.5	.57
20	2.3	1.1	1.5	2.0	.90	1.2	50	6.5	1.5	1.4	2.6	.71
21	2.4	1.2	1.5	1.9	.90	2.3	162	6.4	1.5	1.6	16	.66
22	1.9	1.2	1.6	1.9	.90	2.7	91	6.4	1.0	1.4	2.5	.77
23	1.7	1.3	1.7	1.8	.90	2.7	104	6.4	1.0	1.6	1.7	.70
24	1.6	1.5	1.7	1.8	.90	1.9	155	6.3	1.0	1.4	1.6	.90
25	1.5	1.5	1.7	1.9	.90	1.7	25	6.5	1.0	1.3	1.8	.85
26	.81	1.4	1.7	1.8	.90	1.2	108	6.7	1.1	1.9	1.8	.86
27	.90	1.1	1.9	1.7	.90	1.0	96	6.9	1.4	2.2	1.8	1.0
28	.81	1.2	2.0	1.7	.90	1.2	70	6.9	1.1	1.6	1.7	1.1
29	.71	1.4	1.9	1.7	---	1.2	67	6.1	1.6	1.4	1.4	1.2
30	.77	1.4	1.9	1.7	---	1.6	67	6.1	1.2	1.3	1.2	1.3
31	.86	---	1.9	1.7	---	1.7	---	6.1	---	1.4	1.2	---
TOTAL	51.52	34.13	48.6	54.2	33.35	143.90	4750.6	556.7	116.8	50.7	63.67	26.02
MEAN	1.66	1.14	1.57	1.75	1.19	4.64	158	18.0	3.89	1.64	2.05	.87
MAX	2.5	1.5	2.0	2.0	1.7	24	2600	78	7.9	3.1	16	1.5
MIN	.71	.80	1.4	1.5	.90	.90	1.4	6.1	1.0	1.1	.98	.53
AC-FT	102	68	96	108	66	285	9420	1100	232	101	126	52

CAL YR 1978 TOTAL 8858.75 MEAN 24.2 MAX 1120 MIN .02 AC-FT 17530
WTR YR 1979 TOTAL 5930.19 MEAN 16.2 MAX 2600 MIN .53 AC-FT 11760

06342450 BURNT CREEK NEAR BISMARCK, ND

LOCATION.--Lat 46°54'54", long 100°48'48", in SW¼NW¼SW¼ sec.29, T.140 N., R.80 W., Burleigh County, Hydrologic Unit 10130101, on left bank on upstream side of county highway bridge, and 7 mi (11 km) northwest of Bismarck.

DRAINAGE AREA.--108 mi^2 (280 km^2).

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

GAGE.--Water-stage recorder. Altitude of gage is 1,690 ft (515 m), from topographic map.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--12 years, 8.65 ft^3/s (0.245 m^3/s), 6,270 acre-ft/yr (7.73 hm^3/yr); median of yearly mean discharge, 6.8 ft^3/s (0.19 m^3/s), 4,900 acre-ft/yr (6.0 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,000 ft^3/s (283 m^3/s) Apr. 18, 1979, gage height, 16.93 ft (5.160 m), from rating curve extended above 2,200 ft^3/s (62.3 m^3/s) on basis of culvert and flow-over-road measurement of peak flow; no flow for many days each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 10,000 ft^3/s (283 m^3/s) Apr. 18, gage height, 16.93 ft (5.160 m), from rating curve extended as explained above, only peak above base of 100 ft^3/s (2.83 m^3/s); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.03	.00	.49	.39	.31	2.0	16	3.0	.49	.32	.00
2	.00	.03	.00	.49	.39	.31	1.8	14	3.4	.32	.27	.00
3	.00	.01	.00	.49	.38	.31	1.8	14	2.9	7.8	.25	.00
4	.04	.00	.00	.48	.38	.32	1.6	14	2.6	1.4	.23	.00
5	.05	.00	.00	.48	.37	.34	1.6	13	2.6	.60	.20	.00
6	.03	.00	.00	.48	.37	.35	1.5	13	2.6	.34	.15	.00
7	.03	.00	.00	.48	.37	.38	2.6	15	2.4	.32	.12	.00
8	.05	.00	.00	.47	.36	.40	3.5	13	2.2	.30	.06	.00
9	.13	.00	.00	.47	.36	.45	4.5	10	2.2	.28	.04	.00
10	.15	.00	.05	.47	.36	.50	5.4	9.6	2.2	.27	.02	.00
11	.13	.00	.10	.46	.35	.57	8.2	9.2	1.9	2.6	.02	.00
12	.17	.00	.15	.46	.35	.62	11	9.0	1.9	2.9	.01	.00
13	.17	.00	.20	.46	.35	.70	12	8.6	1.8	3.9	.01	.00
14	.18	.00	.25	.46	.35	.79	14	7.9	1.7	4.3	.00	.00
15	.19	.00	.30	.46	.34	.88	21	7.2	1.4	3.3	.00	.00
16	.17	.00	.40	.45	.34	1.0	40	6.6	1.1	1.8	.00	.00
17	.20	.00	.45	.45	.34	1.2	270	6.2	1.0	1.7	.00	.00
18	.15	.00	.50	.45	.34	1.3	3900	5.8	.92	1.1	.00	.00
19	.18	.00	.60	.45	.33	1.4	2400	5.7	1.1	.76	.00	.00
20	.17	.00	.65	.45	.33	1.5	310	5.3	1.2	.52	.00	.00
21	.17	.00	.65	.44	.33	1.8	125	4.7	1.2	.34	.00	.00
22	.15	.00	.60	.44	.33	2.0	64	5.4	1.1	.32	.00	.00
23	.10	.00	.60	.44	.32	2.2	45	4.7	1.0	.34	.00	.00
24	.10	.00	.55	.44	.32	2.2	37	5.2	.97	.27	.00	.00
25	.04	.00	.55	.44	.32	2.4	35	4.1	.95	.17	.00	.00
26	.03	.00	.55	.43	.32	2.4	30	4.0	.90	.20	.00	.00
27	.01	.00	.50	.42	.31	2.4	24	3.8	.88	.34	.00	.00
28	.01	.00	.50	.42	.31	2.4	22	3.7	.84	.28	.00	.00
29	.01	.00	.50	.41	---	2.4	19	3.4	.88	.72	.00	.00
30	.14	.00	.50	.40	---	2.4	17	3.1	.80	1.1	.00	.00
31	.05	---	.49	.40	---	2.2	---	3.1	---	.49	.00	---
TOTAL	3.00	.07	9.64	14.03	9.71	38.43	7430.5	248.3	49.64	39.57	1.70	.00
MEAN	.097	.002	.31	.45	.35	1.24	248	8.01	1.65	1.28	.055	.000
MAX	.20	.03	.65	.49	.39	2.4	3900	16	3.4	7.8	.32	.00
MIN	.00	.00	.00	.40	.31	.31	1.5	3.1	.80	.17	.00	.00
AC-FT	6.0	.1	19	28	19	76	14740	493	98	78	3.4	.00

CAL YR 1978	TOTAL	3956.89	MEAN	10.8	MAX	520	MIN	.00	AC-FT	7850
WTR YR 1979	TOTAL	7844.59	MEAN	21.5	MAX	3900	MIN	.00	AC-FT	15560

06342500 MISSOURI RIVER AT BISMARCK, ND

LOCATION.--Lat 46°48'51", long 100°49'12", in SE¼NW¼SE¼ sec.31, T.139 N., R.80 W., Burleigh County, Hydrologic Unit 10130101, on left bank 40 ft (12 m) upstream from Bismarck city waterplant, 2,100 ft (640 m) downstream from Burlington Northern Railway bridge, 1.6 mi (2.6 km) northwest of Bismarck Post Office, 3.5 mi (5.6 km) upstream from Heart River, and at mile 1,314.5 (2,115.0 km).

DRAINAGE AREA.--186,400 mi^2 (482,800 km^2), approximately.

WATER-DISCHARGE RECORDS

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 1,618.28 ft (493.252 m), revised, National Geodetic Vertical Datum of 1929. See WSP 1729 or 1917 for history of changes prior to Sept. 30, 1937.

REMARKS.--Records good. Many diversions from tributaries. Flow regulated by Lake Sakakawea (station 06338000) 75.4 mi (121.3 km) upstream since November 1953.

AVERAGE DISCHARGE.--51 years (1928-79), 22,630 ft^3/s (640.9 m^3/s), 16,400,000 acre-ft/yr (20.2 km^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 500,000 ft^3/s (14,200 m^3/s) Apr. 6, 1952, gage height, 27.90 ft (8.504 m). Maximum discharge since construction of Garrison Dam in 1953, 68,900 ft^3/s (1,950 m^3/s) July 13, 1975, gage height, 14.24 ft (4.340 m). Minimum discharge, about 1,800 ft^3/s (51.0 m^3/s) Jan. 3, 1940; minimum gage height, 1.35 ft (0.411 m) Sept. 4, 1934, present site and datum.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known, 31.6 ft (9.632 m) Mar. 31, 1881 (ice jam), present site and datum.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 54,900 ft^3/s (1,550 m^3/s) Apr. 19, gage height, 12.37 ft (3.770 m); maximum gage height, 14.22 ft (4.334 m) Dec. 9, backwater from ice; minimum discharge, 15,600 ft^3/s (442 m^3/s) Sept. 18, gage height, 5.05 ft (1.539 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	43100	34600	39500	27000	34500	30000	26300	34200	43500	32600	25300	22300
2	41200	34600	37100	28000	34500	32000	26300	34500	43400	32900	24100	22200
3	35400	34600	31800	29000	34500	31800	27000	34700	43200	33400	24200	20400
4	34000	34600	31500	28500	34000	32000	26500	34800	43200	33500	24500	19500
5	34000	34700	30500	29500	34000	31700	27500	34900	43200	31700	24800	19700
6	33800	34400	30600	30000	34000	31700	28000	35100	43300	31200	24000	18800
7	33800	34500	30200	29000	34000	31700	27500	35000	43200	32800	24500	19000
8	33900	34600	22400	30000	34000	32000	28500	34800	43100	30300	24500	19600
9	34000	34700	20000	30500	34000	32000	27500	34500	43000	30700	23600	19700
10	33900	34800	18000	30500	34300	31000	29000	34500	43100	30700	23400	19700
11	34000	34800	18000	30500	31500	31500	29500	34600	43100	30300	22800	18800
12	33900	34800	18000	30000	31500	28000	30000	35900	43000	30100	23500	18600
13	33900	35100	18000	30000	34500	32000	31000	41200	43100	31200	22100	18800
14	34100	34900	18000	31000	33500	32000	34000	42800	43400	30000	21800	18400
15	34100	34800	18000	30500	32000	32000	34500	43300	43000	28700	22500	18500
16	33900	34700	18000	31500	32000	31700	30600	43400	42900	28500	23100	17300
17	34000	34700	20000	32000	31500	31500	32200	43600	43000	28400	21700	18200
18	33900	34800	21500	34000	32000	31000	45100	43600	42900	28400	22600	17400
19	33900	34700	22500	34500	31800	26000	53300	43600	43400	28300	22000	18500
20	33800	34600	23000	32500	31500	26500	48200	43800	43400	26900	21700	18200
21	33800	34600	23500	34000	31300	27000	43800	44000	40400	27100	22100	18200
22	33700	34600	24500	34000	31500	26500	40800	44100	36700	26500	22800	18300
23	33800	34600	25500	34000	31500	25800	40100	44000	35000	26000	21800	18600
24	34000	34500	25500	33500	31700	26000	38500	43900	33500	26200	22300	18400
25	33800	35500	25500	34000	31300	26000	35900	43800	33400	26900	21800	18300
26	33900	37200	25500	34000	30000	26000	36300	43700	34300	27200	22000	17900
27	34400	37000	25500	34300	31000	25500	35800	43500	33800	26400	21900	18700
28	33900	36400	25500	34300	29500	25500	35400	43500	33500	25900	21800	18400
29	33900	36800	25500	35000	---	25500	35000	43700	33900	25000	21500	17400
30	34500	36100	26500	33500	---	26500	34500	43300	33100	24600	22000	17600
31	34600	---	26500	34500	---	26300	---	43300	---	24400	22400	---
TOTAL	1070900	1051300	766100	983600	911400	904700	1018600	1243600	1211000	897000	709100	565400
MEAN	34550	35040	24710	31730	32550	29180	33950	40120	40370	28940	22870	18850
MAX	43100	37200	39500	35000	34500	32000	53300	44100	43500	33500	25300	22300
MIN	33700	34400	18000	27000	29500	25500	26300	34200	33100	24400	21500	17300
AC-FT	2124000	2085000	1520000	1951000	1808000	1794000	2020000	2467000	2402000	1779000	1406000	1121000

CAL YR 1978 TOTAL 11332900 MEAN 31050 MAX 43500 MIN 10900 AC-FT 22480000
WTR YR 1979 TOTAL 11332700 MEAN 31050 MAX 53300 MIN 17300 AC-FT 22480000

06342500 MISSOURI RIVER AT BISMARCK, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--
SEDIMENT RECORDS.--June 1946 to current year.

REMARKS.--Sediment records from June 1946 to September 1971 are available from Corps of Engineers, Omaha, NE. Sediment concentration data from Oct. 1, 1971 to June 30, 1972 were furnished by the Corps of Engineers.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SEDIMENT CONCENTRATIONS (July 1972 to current year): Maximum daily mean, about 1,000 mg/L Apr. 19, 1979; minimum daily mean, 14 mg/L Dec. 15-21, 1977.
SEDIMENT LOADS (July 1972 to current year): Maximum daily, 144,000 tons (131,000 metric tons) Apr. 19 1979; minimum daily, 718 tons (651 metric tons) Dec. 16-18, 1977.

EXTREMES FOR CURRENT YEAR.--
SEDIMENT CONCENTRATIONS: Maximum daily mean, about 1,000 mg/L Apr. 19, minimum daily mean, 20 mg/L Dec. 10-16.
SEDIMENT LOADS: Maximum daily, 144,000 tons (131,000 metric tons) Apr. 19; minimum daily, 972 tons (882 metric tons) Dec. 10-16.

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW (CFS) (00060)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	COLI-FORM, TOTAL, IMMED. (COLS. PER 100 ML) (31501)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	HARD-NESS (MG/L AS CACO3) (00900)
OCT												
12...	1630	33900	700	8.4	--	13.0	4.4	9.5	20	K20	K10	230
24...	1610	34000	700	8.3	--	11.5	6.8	9.7	47	K90	K4	--
NOV												
07...	1500	34500	723	8.5	17.0	8.5	3.2	10.6	30	K23	<2	230
22...	1515	34600	700	8.3	--	2.0	2.4	11.8	6	60	K8	--
DEC												
28...	1445	25500	700	8.4	--	.0	1.9	13.2	14	K18	<1	220
JAN												
09...	1115	30500	822	8.4	--	.0	2.4	13.1	10	190	K2	--
23...	1430	34000	690	7.8	--	.0	3.4	12.7	24	88	K6	220
FEB												
05...	1215	34000	660	8.3	--	.0	1.8	12.6	31	480	<2	--
20...	1200	31500	680	8.0	--	.0	2.5	12.3	13	80	K3	230
MAR												
06...	1550	31700	--	--	--	.0	--	--	--	--	--	--
08...	1500	32000	690	8.3	--	.0	8.6	12.7	7	176	K12	--
21...	1400	27000	690	8.1	8.0	--	7.0	--	11	110	--	230
APR												
02...	1130	26300	700	8.2	--	1.0	7.3	12.5	11	90	K7	--
27...	1415	35800	730	7.9	11.5	4.5	--	--	15	900	K100	210
MAY												
15...	1845	41800	690	8.3	--	6.5	9.5	12.2	14	K30	<2	--
31...	1530	43300	710	8.3	--	8.0	6.7	11.8	20	110	<2	230
JUN												
11...	1545	45100	725	8.2	--	11.0	6.1	10.8	8	K32	K1	--
JUL												
02...	1510	32900	715	8.2	--	13.0	6.0	10.0	11	K25	K8	230
17...	1545	28400	725	8.3	22.0	14.0	4.9	10.0	12	K14	K2	--
AUG												
03...	1500	24200	740	8.2	27.5	15.0	5.6	9.1	7	K10	K8	250
16...	1130	23100	720	8.4	22.5	13.5	5.4	8.8	10	K20	--	--
29...	1200	21500	720	8.2	--	14.0	4.4	8.9	12	K71	K11	240
SEP												
11...	1350	18800	725	8.3	18.5	12.5	3.4	9.4	15	K110	K3	--
24...	1745	18400	740	8.3	--	14.0	2.7	9.2	15	K5	<2	240

K - Results based on colony count outside the acceptable range (non-ideal colony count).

06342500 MISSOURI RIVER AT BISMARCK, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	HARDNESS, NONCARBONATE (MG/L CACO3) (00902)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM ADSORPTION RATIO (00931)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	ALKALINITY (MG/L AS CACO3) (00410)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, TOTAL (MG/L AS F) (00951)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)
OCT												
12...	83	57	22	67	38	1.9	4.4	150	200	9.2	--	.4
24...	--	--	--	--	--	--	--	--	--	--	--	--
NOV												
07...	80	56	22	65	37	1.9	4.5	150	210	9.8	--	.4
22...	--	--	--	--	--	--	--	--	--	--	--	--
DEC												
28...	83	55	22	65	38	1.9	4.6	140	210	9.9	--	.4
JAN												
09...	--	--	--	--	--	--	--	--	--	--	--	--
25...	80	52	22	67	39	2.0	4.7	140	220	11	--	.4
FEB												
05...	--	--	--	--	--	--	--	--	--	--	--	--
20...	86	55	22	71	40	2.0	4.5	140	230	10	--	.4
MAR												
06...	--	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--	--
21...	82	55	23	66	38	1.9	4.2	150	200	9.4	--	.5
APR												
02...	--	--	--	--	--	--	--	--	--	--	--	--
27...	62	47	23	65	39	1.9	4.4	150	200	9.4	.8	.5
MAY												
15...	--	--	--	--	--	--	--	--	--	--	--	--
31...	93	57	22	65	37	1.9	4.4	140	210	9.5	.1	.5
JUN												
11...	--	--	--	--	--	--	--	--	--	--	--	--
JUL												
02...	84	54	24	71	39	2.0	4.1	150	230	9.5	.5	.5
17...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
03...	96	59	24	80	41	2.2	4.4	150	230	9.8	.7	.5
16...	--	--	--	--	--	--	--	--	--	--	--	--
29...	87	57	23	69	38	2.0	4.3	150	240	9.9	.8	.5
SEP												
11...	--	--	--	--	--	--	--	--	--	--	--	--
24...	89	56	24	75	39	2.1	4.1	150	220	8.0	.6	.5

DATE	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)	SOLIDS, DISSOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L) (00530)	NITROGEN, NITRATE TOTAL (MG/L AS N) (00620)	NITROGEN, NITRITE TOTAL (MG/L AS N) (00615)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, AMMONIA TOTAL (MG/L AS N) (00610)
OCT											
12...	7.0	482	457	.66	44100	--	--	--	.20	--	.00
24...	--	476	--	.64	43100	--	--	--	.20	--	.01
NOV											
07...	7.5	471	466	.64	43900	--	--	--	.22	--	.01
22...	--	476	--	.65	44500	17	--	--	.22	--	.00
DEC											
28...	7.9	483	457	.66	33300	--	--	--	.21	--	.01
JAN											
09...	--	490	--	.67	40400	--	--	--	.22	--	.01
25...	8.1	472	469	.64	43300	--	--	--	.22	--	.00
FEB											
05...	--	476	--	.65	43700	--	--	--	.20	--	.01
20...	8.9	460	486	.65	40800	--	--	--	.20	--	.02
MAR											
06...	--	--	--	--	--	--	--	--	--	--	--
08...	--	454	--	.62	39200	--	--	--	.17	--	.03
21...	8.1	476	457	.65	34700	--	--	--	.15	--	.04
APR											
02...	--	488	--	.66	34700	--	--	--	.15	--	.02
27...	8.2	486	449	.66	47000	--	.15	.00	.15	.17	--
MAY											
15...	--	494	--	.67	55800	--	--	--	.11	--	.00
31...	6.6	464	459	.63	54200	--	.09	.02	.11	--	.01
JUN											
11...	--	485	--	.66	56200	--	--	--	.13	--	.02
JUL											
02...	8.2	488	492	.66	43300	--	.15	.00	.15	--	.00
17...	--	486	--	.66	37300	--	--	--	.11	--	.03
AUG											
03...	8.1	493	506	.67	32200	--	.16	.02	.18	--	.01
16...	--	488	--	.66	30400	--	--	--	.17	--	.00
29...	7.7	493	502	.67	28600	--	.20	.02	.22	--	.01
SEP											
11...	--	493	--	.67	25000	--	--	--	.24	--	.00
24...	7.5	494	484	.67	24500	--	.30	.00	.30	--	.00

06342500 MISSOURI RIVER AT BISMARCK, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHATE, TOTAL (MG/L AS PO4) (00650)	ALUM-INUM, TOTAL RECOV-ERABLE (UG/L AS AL) (01105)	ALUM-INUM, SUS-PENDED RECOV. (UG/L AS AL) (01107)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC SUS-PENDED TOTAL (UG/L AS AS) (01001)
OCT											
12...	.46	.46	.66	2.9	.02	--	630	620	10	2	--
24...	.63	.64	.84	3.7	.04	--	--	--	--	--	--
NOV											
07...	.27	.28	.50	2.2	.02	--	--	--	--	--	--
22...	.28	.28	.50	2.2	.02	--	--	--	--	--	--
DEC											
28...	.17	.18	.39	1.7	.01	--	--	--	--	--	--
JAN											
09...	.21	.22	.44	1.9	.02	--	--	--	--	--	--
23...	.24	.24	.46	2.0	.02	--	--	--	--	--	--
FEB											
05...	.21	.22	.42	1.9	.02	--	--	--	--	--	--
20...	.23	.25	.45	2.0	.03	--	--	--	--	--	--
MAR											
06...	--	--	--	--	--	--	--	--	--	--	--
08...	.16	.19	.36	1.6	.00	--	--	--	--	--	--
21...	.22	.26	.41	1.8	.01	--	--	--	--	--	--
APR											
02...	.18	.20	.35	1.6	.04	--	--	--	--	--	--
27...	--	--	--	--	--	--	650	650	0	3	1
MAY											
15...	.36	.36	.47	2.1	.03	.09	--	--	--	--	--
31...	.21	.22	.33	1.5	.03	.09	560	--	--	2	--
JUN											
11...	.27	.29	.42	1.9	.06	.18	--	--	--	--	--
JUL											
02...	.20	.20	.35	1.6	.01	.03	640	--	--	3	--
17...	.32	.35	.46	2.0	.03	--	--	--	--	--	--
AUG											
03...	.13	.14	.32	1.4	.29	--	360	--	--	3	--
16...	.10	.10	.27	1.2	.02	--	--	--	--	--	--
29...	.17	.18	.40	1.8	.05	--	290	--	--	1	--
SEP											
11...	.00	.00	.24	1.1	.01	--	--	--	--	--	--
24...	.30	.30	.60	2.7	.04	--	230	10	220	2	0

DATE	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE) (01012)	BERYL-LIUM, SUS-PENDED RECOV. (UG/L AS BE) (01011)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE) (01010)	BORON, TOTAL RECOV-ERABLE (UG/L AS B) (01022)	BORON, DIS-SOLVED (UG/L AS B) (01020)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD) (01027)	CADMIUM SUS-PENDED RECOV-ERABLE (UG/L AS CD) (01026)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)
OCT											
12...	2	--	0	0	0	--	150	1	1	0	0
24...	--	--	--	--	--	--	--	--	--	--	--
NOV											
07...	--	--	--	--	--	--	120	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
DEC											
28...	--	--	--	--	--	--	150	--	--	--	--
JAN											
09...	--	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	100	--	--	--	--
FEB											
05...	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	120	--	--	--	--
MAR											
06...	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	130	--	--	--	--
APR											
02...	--	--	--	--	--	--	--	--	--	--	--
27...	2	0	0	0	0	110	120	--	--	--	10
MAY											
15...	--	--	--	--	--	--	--	--	--	--	--
31...	--	0	0	--	--	120	120	1	--	--	10
JUN											
11...	--	--	--	--	--	--	--	--	--	--	--
JUL											
02...	--	100	0	--	--	170	150	1	--	--	0
17...	--	--	--	--	--	--	--	--	--	--	--
AUG											
03...	--	100	0	--	--	140	160	1	--	--	10
16...	--	--	--	--	--	--	--	--	--	--	--
29...	--	100	20	--	--	130	110	1	--	--	10
SEP											
11...	--	--	--	--	--	--	--	--	--	--	--
24...	2	100	0	0	10	70	540	0	0	0	--

06342500 MISSOURI RIVER AT BISMARCK, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	CHROMIUM, SUSPENDED RECOV. (UG/L AS CR) (01031)	CHROMIUM, DISSOLVED (UG/L AS CR) (01030)	COBALT, TOTAL RECOVERABLE (UG/L AS CO) (01037)	COPPER, TOTAL RECOVERABLE (UG/L AS CU) (01042)	COPPER, SUSPENDED RECOVERABLE (UG/L AS CU) (01041)	COPPER, DISSOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOVERABLE (UG/L AS FE) (01045)	IRON, DISSOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOVERABLE (UG/L AS PB) (01051)	LEAD, SUSPENDED RECOVERABLE (UG/L AS PB) (01050)	LEAD, DISSOLVED (UG/L AS PB) (01049)	LITHIUM TOTAL RECOVERABLE (UG/L AS LI) (01132)
OCT												
12...	0	0	--	5	3	2	1600	20	6	6	0	50
24...	--	--	--	--	--	--	--	--	--	--	--	--
NOV												
07...	--	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--	--
DEC												
28...	--	--	--	--	--	--	--	--	--	--	--	--
JAN												
09...	--	--	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--	--
FEB												
05...	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--
MAR												
08...	--	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--	--
APR												
02...	--	--	--	--	--	--	--	--	--	--	--	--
27...	10	0	0	7	5	2	1700	0	--	--	--	40
MAY												
15...	--	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	0	7	--	--	1300	--	12	--	--	--
JUN												
11...	--	--	--	--	--	--	--	--	--	--	--	--
JUL												
02...	--	--	0	10	--	--	1600	--	10	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
03...	--	--	0	6	--	--	1100	--	14	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	0	9	--	--	530	--	11	--	--	--
SEP												
11...	--	--	--	--	--	--	--	--	--	--	--	--
24...	--	10	0	2	1	1	370	400	11	11	0	30

DATE	LITHIUM DISSOLVED (UG/L AS LI) (01130)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN) (01055)	MANGANESE, SUSPENDED RECOV. (UG/L AS MN) (01054)	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOVERABLE (UG/L AS HG) (71900)	MERCURY SUSPENDED RECOVERABLE (UG/L AS HG) (71895)	MERCURY DISSOLVED (UG/L AS HG) (71890)	MOLYBDENUM, TOTAL RECOVERABLE (UG/L AS MO) (01062)	MOLYBDENUM, SUSPENDED RECOV. (UG/L AS MO) (01061)	MOLYBDENUM, DISSOLVED (UG/L AS MO) (01060)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI) (01067)	NICKEL, SUSPENDED RECOVERABLE (UG/L AS NI) (01066)
OCT												
12...	40	50	40	10	.0	.0	.0	5	2	3	4	4
24...	--	--	--	--	--	--	--	--	--	--	--	--
NOV												
07...	--	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--	--
DEC												
28...	--	--	--	--	--	--	--	--	--	--	--	--
JAN												
09...	--	--	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--	--
FEB												
05...	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--
MAR												
08...	--	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--	--
APR												
02...	--	--	--	--	--	--	--	--	--	--	--	--
27...	50	50	50	0	.2	.0	1.2	2	2	0	8	1
MAY												
15...	--	--	--	--	--	--	--	--	--	--	--	--
31...	--	40	--	--	.0	--	--	3	--	--	11	--
JUN												
11...	--	--	--	--	--	--	--	--	--	--	--	--
JUL												
02...	--	40	--	--	.1	--	--	1	--	--	9	--
17...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
03...	--	20	--	--	.0	--	--	3	--	--	3	--
16...	--	--	--	--	--	--	--	--	--	--	--	--
29...	--	20	--	--	.1	--	--	5	--	--	3	--
SEP												
11...	--	--	--	--	--	--	--	--	--	--	--	--
24...	40	10	0	30	.0	.0	.0	0	0	0	9	8

06342500 MISSOURI RIVER AT BISMARCK, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SELE-NIUM, SUS-PENDED TOTAL (UG/L AS SE) (01146)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	VANA-DIUM, DIS-SOLVED (UG/L AS V) (01085)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, SUS-PENDED RECOV-ERABLE (UG/L AS ZN) (01091)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C) (00689)
OCT											
12...	0	1	0	2	--	.0	10	0	10	3.3	.4
24...	--	--	--	--	--	--	--	--	--	3.9	.3
NOV											
07...	--	--	--	--	--	--	--	--	--	3.3	.3
22...	--	--	--	--	--	--	--	--	--	3.8	.3
DEC											
28...	--	--	--	--	--	--	--	--	--	3.4	.2
JAN											
09...	--	--	--	--	--	--	--	--	--	3.3	.2
23...	--	--	--	--	--	--	--	--	--	4.4	.4
FEB											
05...	--	--	--	--	--	--	--	--	--	4.3	.4
20...	--	--	--	--	--	--	--	--	--	3.5	.2
MAR											
08...	--	--	--	--	--	--	--	--	--	2.6	1.5
21...	--	--	--	--	--	--	--	--	--	2.6	.3
APR											
02...	--	--	--	--	--	--	--	--	--	2.9	.3
27...	7	1	0	1	0	.0	30	20	10	3.7	.5
MAY											
15...	--	--	--	--	--	--	--	--	--	3.8	.8
31...	--	1	--	--	0	--	20	--	--	5.4	.8
JUN											
11...	--	--	--	--	--	--	--	--	--	3.4	.4
JUL											
02...	--	1	--	--	0	--	20	--	--	3.8	.6
17...	--	--	--	--	--	--	--	--	--	3.7	.2
AUG											
03...	--	1	--	--	0	--	20	--	--	6.0	.3
16...	--	--	--	--	--	--	--	--	--	4.4	.2
29...	--	1	--	--	0	--	10	--	--	6.5	.2
SEP											
11...	--	--	--	--	--	--	--	--	--	3.2	.1
24...	1	1	0	1	0	<1.0	30	10	20	4.5	.2

DATE	PHYTO-PLANK-TON, TOTAL (CELLS PER ML) (60050)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)	SED. SUSP. FALL DIAM. % FINER THAN .125 MM (70343)	SED. SUSP. FALL DIAM. % FINER THAN .250 MM (70344)	SED. SUSP. FALL DIAM. % FINER THAN .500 MM (70345)	SED. SUSP. FALL DIAM. % FINER THAN 1.00 MM (70346)
OCT								
12...	770	129	11800	--	--	--	--	--
24...	--	158	14500	--	--	--	--	--
NOV								
07...	86	144	13400	--	--	--	--	--
DEC								
28...	54	--	--	--	--	--	--	--
JAN								
09...	--	66	5440	--	--	--	--	--
23...	19	108	9910	--	--	--	--	--
FEB								
05...	--	58	5320	--	--	--	--	--
20...	30	50	4250	--	--	--	--	--
MAR								
06...	--	63	5390	--	--	--	--	--
21...	61	124	9040	--	--	--	--	--
APR								
02...	--	80	5680	--	--	--	--	--
27...	2600	268	25900	17	47	98	100	--
MAY								
15...	--	284	32100	12	39	98	100	--
31...	8600	240	28100	--	--	--	--	--
JUN								
11...	--	209	24300	14	51	97	100	--
JUL								
02...	760	139	12300	--	--	--	--	--
17...	--	112	8590	--	--	--	--	--
AUG								
03...	3500	88	5750	--	--	--	--	--
16...	--	100	6240	--	--	--	--	--
29...	200	78	4530	27	65	96	96	100
SEP								
11...	--	79	4010	--	--	--	--	--
24...	660	79	3930	26	69	99	100	--

06342500 MISSOURI RIVER AT BISMARCK, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	BED MAT. FALL DIAM. % FINER THAN .062 MM (80158)	BED MAT. FALL DIAM. % FINER THAN .125 MM (80159)	BED MAT. FALL DIAM. % FINER THAN .250 MM (80160)	BED MAT. FALL DIAM. % FINER THAN .500 MM (80161)	BED MAT. FALL DIAM. % FINER THAN 1.00 MM (80162)	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM (80169)	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM (80170)	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM (80171)
OCT								
12...	--	--	--	--	--	--	--	--
24...	0	3	76	96	99	100	--	--
NOV								
07...	--	--	--	--	--	--	--	--
DEC								
26...	--	--	--	--	--	--	--	--
JAN								
09...	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--
FEB								
05...	--	--	--	--	--	--	--	-
20...	--	--	--	--	--	--	--	--
MAR								
06...	0	15	79	99	100	--	--	-
21...	--	--	--	--	--	--	--	--
APR								
02...	--	--	--	--	--	--	--	-
27...	--	--	--	--	--	--	--	--
MAY								
15...	0	5	79	97	97	98	99	100
31...	--	--	--	--	--	--	--	--
JUN								
11...	0	2	79	99	100	--	--	--
JUL								
02...	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--
AUG								
03...	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--
29...	1	5	66	92	96	98	99	100
SEP								
11...	--	--	--	--	--	--	--	--
24...	0	5	58	89	97	98	99	100

06342500 MISSOURI RIVER AT BISMARCK, ND--Continued

SUSPENDED-SEDIMENT, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DAY	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	160	18600	145	13500	180	19200	50	3650	70	6520	48	3890
2	155	17200	145	13500	170	17000	55	4160	65	6050	65	5620
3	140	13400	145	13500	140	12000	55	4310	65	6050	63	5410
4	130	11900	145	13500	140	11900	55	4230	60	5510	65	5620
5	130	11900	145	13600	120	9880	60	4780	58	5320	63	5390
6	125	11400	140	13300	120	9910	60	4860	58	5320	63	5390
7	125	11400	144	13400	100	8150	55	4310	58	5320	63	5390
8	130	11900	145	13500	50	3020	60	4860	58	5320	65	5620
9	130	11900	148	13900	30	1620	66	5440	58	5320	65	5620
10	130	11900	150	14100	20	972	66	5440	60	5560	60	5020
11	130	11900	150	14100	20	972	66	5440	50	4250	63	5360
12	130	11900	150	14100	20	972	60	4860	50	4250	60	4540
13	130	11900	155	14700	20	972	60	4860	65	6050	80	6910
14	135	12400	150	14100	20	972	65	5440	60	5430	80	6910
15	135	12400	150	14100	20	972	65	5350	55	4750	80	6910
16	135	12400	150	14100	20	972	65	5530	55	4750	80	6850
17	140	12900	150	14100	30	1620	65	5620	50	4250	80	6800
18	140	12800	150	14100	35	2030	70	6430	55	4750	80	6700
19	145	13300	150	14100	38	2310	70	6520	53	4550	70	4910
20	145	13200	150	14000	40	2480	70	6140	50	4250	75	5370
21	150	13700	150	14000	40	2540	70	6430	48	4060	80	5830
22	150	13600	150	14000	43	2840	70	6430	50	4250	80	5720
23	155	14100	150	14000	45	3100	70	6430	50	4250	75	5220
24	158	14500	150	14000	45	3100	65	5880	52	4450	75	5260
25	155	14100	155	14900	45	3100	65	5970	48	4060	75	5260
26	150	13700	170	17100	45	3100	65	5970	45	3650	75	5260
27	145	13500	170	17000	45	3100	65	6020	48	4020	70	4820
28	140	12800	160	15700	45	3100	65	6020	43	3420	70	4820
29	140	12800	160	15900	45	3100	70	6610	---	---	70	4820
30	145	13500	160	15600	50	3580	65	5880	---	---	80	5720
31	145	13500	---	---	50	3580	70	6520	---	---	80	5680
TOTAL	---	406400	---	429200	---	142164	---	170390	---	135730	---	172640

DAY	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	80	5680	250	23100	240	28200	140	12400	95	6490	90	5420
2	80	5680	250	23300	240	28100	140	12400	90	5860	90	5390
3	85	6200	260	24400	230	26800	145	13100	88	5750	90	4960
4	80	5720	260	24400	230	26800	145	13100	90	5950	85	4480
5	85	6310	260	24500	230	26800	135	11600	90	6030	85	4520
6	90	6800	260	24600	220	25700	130	11000	90	5830	85	4310
7	85	6310	260	24600	220	25700	140	12400	90	5950	85	4360
8	95	7310	255	24000	210	24400	120	9820	90	5950	85	4500
9	85	6310	255	23800	210	24400	120	9950	85	5420	85	4520
10	100	7830	255	23800	210	24400	120	9950	85	5370	85	4520
11	100	7960	255	23800	210	24400	120	9820	80	4920	80	4060
12	110	8910	260	25200	210	24400	120	9750	85	5390	80	4020
13	120	10000	270	30000	210	24400	125	10500	80	4770	80	4060
14	140	12900	280	32400	215	25200	120	9720	80	4710	80	3970
15	140	13000	285	33300	210	24400	115	8910	90	5470	80	4000
16	130	10700	285	33400	210	24300	115	8850	100	6240	75	3500
17	150	13000	280	33000	210	24400	112	8590	80	4690	80	3930
18	600	73100	280	33000	210	24300	112	8590	90	5490	75	3520
19	1000	144000	280	33000	220	25800	110	8410	85	5050	80	4000
20	800	104000	280	33100	220	25800	105	7630	80	4690	80	3930
21	600	71000	280	33300	200	21800	105	7680	80	4770	80	3930
22	300	33000	280	33300	180	17800	100	7150	90	5540	80	3950
23	280	30300	270	32100	165	15600	100	7020	80	4710	80	4020
24	270	28100	270	32000	160	14500	100	7070	85	5120	80	3970
25	260	25200	260	30700	160	14400	100	7260	80	4710	80	3950
26	270	26500	260	30700	160	14800	105	7710	80	4750	75	3620
27	268	25900	250	29400	150	13700	100	7130	80	4730	80	4040
28	265	25300	250	29400	145	13100	100	6990	80	4710	80	3970
29	260	24600	250	29500	145	13300	95	6410	78	4530	75	3520
30	255	23800	240	28100	145	13000	95	6310	80	4750	75	3560
31	---	---	240	28100	---	---	95	6260	85	5140	---	---
TOTAL	---	775420	---	887300	---	660700	---	283480	---	163480	---	124500

TOTAL LOAD FOR YEAR: 4351404 TONS.

06342500 MISSOURI RIVER AT BISMARCK, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1978 TO SEPTEMBER 1979

DATE	OCT 12,78	NOV 7,78	DEC 28,78	JAN 23,79	FEB 20,79	MAR 21,79
TIME	1630	1500	1445	1430	1200	1400
TOTAL CELLS/ML	770	86	54	19	30	61
DIVERSITY: DIVISION	2.0	0.9	2.0	1.5	0.0	0.4
.CLASS	2.0	0.9	2.0	1.5	0.0	0.4
..ORDER	2.5	1.6	2.2	2.1	0.0	1.2
...FAMILY	2.9	1.9	2.2	2.4	0.9	2.1
....GENUS	3.4	1.9	2.2	2.4	0.9	2.6

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)												
.CHLOROPHYCEAE												
..CHLOROCOCCALES												
...CHARACIACEAE												
....SCHROEDERIA	--	-	14#	17	--	-	--	-	--	-	--	-
...OOCYSTACEAE												
....ANKISTRODESMUS	38	5	14#	17	8	14	1	8	--	-	--	-
....CHODATELLA	--	-	--	-	--	-	--	-	--	-	--	-
....DICTYOSPHAERIUM	--	-	--	-	--	-	--	-	--	-	--	-
....OOCYSTIS	31	4	--	-	--	-	--	-	--	-	--	-
....SELENASTRUM	--	-	--	-	--	-	--	-	--	-	--	-
...SCENEDESMACEAE												
....SCENEDESMUS	15	2	--	-	--	-	--	-	--	-	--	-
....TETRASTRUM	--	-	--	-	--	-	--	-	--	-	--	-
..VOLVOCALES												
...CHLAMYDOMONADACEAE												
....CHLAMYDOMONAS	31	4	--	-	8	14	4#	23	--	-	--	-
CHRYSOPHYTA												
.BACILLARIOPHYCEAE												
..CENTRALES												
...COSCINODISCACEAE												
....CYCLOTELLA	31	4	29#	33	--	-	1	8	--	-	15#	25
....MELOSIRA	120	15	--	-	--	-	--	-	--	-	--	-
....STEPHANODISCUS	--	-	--	-	--	-	--	-	--	-	--	-
..PENNALES												
...ACHNANTHACEAE												
....COCCONEIS	--	-	--	-	--	-	1	8	--	-	--	-
....RHOICOSPHENIA	--	-	--	-	--	-	--	-	--	-	5	8
...DIATOMACEAE												
....DIATOMA	8	1	--	-	8	14	--	-	10#	33	15#	25
...FRAGILARIACEAE												
....ASTERIONELLA	--	-	--	-	--	-	6#	31	20#	67	10#	17
....FRAGILARIA	--	-	--	-	--	-	--	-	--	-	5	8
....SYNEDRA	31	4	--	-	--	-	--	-	--	-	5	8
...NAVICULACEAE												
....GYROSIGMA	8	1	--	-	--	-	--	-	--	-	--	-
....NAVICULA	46	6	--	-	--	-	--	-	--	-	--	-
...NITZSCHIACEAE												
....NITZSCHIA	46	6	29#	33	--	-	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)												
.CRYPTOPHYCEAE												
..CRYPTOMONADALES												
...CRYPTOCHRYSIDACEAE												
....CHROOMONAS	190#	25	--	-	--	-	--	-	--	-	--	-
...CRYPTOMONADACEAE												
....CRYPTOMONAS	--	-	--	-	--	-	--	-	--	-	5	8
CYANOPHYTA (BLUE-GREEN ALGAE)												
.CYANOPHYCEAE												
..CHROOCOCCALES												
...CHROOCOCCACEAE												
....AGMENELLUM	120#	16	--	-	--	-	--	-	--	-	--	-
....ANACYSTIS	38	5	--	-	15#	29	4#	23	--	-	--	-
..HORMOGONALES												
...NOSTOCACEAE												
....ANABAENOPSIS	--	-	--	-	--	-	--	-	--	-	--	-
...OSCILLATORIACEAE												
....OSCILLATORIA	--	-	--	-	--	-	--	-	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)												
.EUGLENOPHYCEAE												
..EUGLENALES												
...EUGLENACEAE												
....TRACHELOMONAS	--	-	--	-	--	-	--	-	--	-	--	-
PYRRHOPHYTA (FIRE ALGAE)												
.DINOPHYCEAE												
..GYMNODINIALES												
...GYMNODINIACEAE												
....GYMNODINIUM	--	-	--	-	15#	29	--	-	--	-	--	-
..PERIDINIALES												
...GLENODINIACEAE												
....GLENODINIUM	15	2	--	-	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06342500 MISSOURI RIVER AT BISMARCK, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1978 TO SEPTEMBER 1979

DATE	APR 27,79	MAY 31,79	JUL 2,79	AUG 3,79	AUG 29,79	SEP 24,79
TIME	1415	1530	1510	1500	1200	1745
TOTAL CELLS/ML	2600	8600	760	3500	200	660
DIVERSITY: DIVISION	0.8	0.0	1.4	1.4	1.0	1.6
.CLASS	0.8	0.0	1.4	1.4	1.0	1.6
..ORDER	1.1	0.0	1.9	1.8	1.4	1.9
...FAMILY	1.1	0.0	1.9	2.0	2.1	2.6
....GENUS	1.1	0.0	2.0	2.2	2.1	2.7

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)												
.CHLOROPHYCEAE												
..CHLOROCOCCALES												
...CHARACIACEAE												
....SCHROEDERIA	--	-	--	-	--	-	--	-	--	-	--	-
...OOCYSTACEAE												
....ANKISTRODESMUS	--	-	--	-	52	7	43	1	29	14	--	-
....CHODATELLA	--	-	--	-	--	-	*	0	--	-	--	-
....DICTYOSPHAERIUM	--	-	--	-	--	-	270	8	--	-	170#	26
....OOCYSTIS	64	2	--	-	--	-	--	-	--	-	--	-
....SELENASTRUM	--	-	--	-	13	2	--	-	--	-	--	-
...SCENEDESMACEAE												
....SCENEDESMUS	--	-	--	-	--	-	120	3	--	-	200#	30
....TETRASTRUM	--	-	--	-	--	-	--	-	57#	29	--	-
..VOLVOCALES												
...CHLAMYDOMONADACEAE												
....CHLAMYDOMONAS	64	2	--	-	26	3	--	-	--	-	--	-
CHRYSOPHYTA												
.BACILLARIOPHYCEAE												
..CENTRALES												
...COSCINODISCACEAE												
....CYCLOTELLA	2000#	79	--	-	65	8	390	11	29	14	14	2
....MELOSIRA	--	-	--	-	--	-	100	3	--	-	14	2
....STEPHANODISCUS	--	-	8600#	100	26	3	--	-	--	-	14	2
..PENNALES												
...ACHNANTHACEAE												
....COCCONEIS	--	-	--	-	--	-	--	-	--	-	--	-
....RHOICOSPHENIA	--	-	--	-	--	-	--	-	--	-	--	-
...DIATOMACEAE												
....DIATOMA	16	1	--	-	--	-	*	0	--	-	--	-
...FRAGILARIACEAE												
....ASTERIONELLA	16	1	--	-	--	-	--	-	--	-	--	-
....FRAGILARIA	--	-	--	-	260#	34	520	15	14	7	29	4
....SYNEDRA	--	-	--	-	--	-	--	-	--	-	--	-
...NAVICULACEAE												
....GYROSIGMA	--	-	--	-	--	-	--	-	--	-	--	-
....NAVICULA	--	-	--	-	--	-	*	0	--	-	--	-
...NITZSCHIACEAE												
....NITZSCHIA	48	2	--	-	--	-	58	2	72#	36	29	4
CRYPTOPHYTA (CRYPTOMONADS)												
.CRYPTOPHYCEAE												
..CRYPTOMONADALES												
...CRYPTOCHRYSIDACEAE												
....CHROOMONAS	--	-	--	-	--	-	--	-	--	-	--	-
...CRYPTOMONADACEAE												
....CRYPTOMONAS	--	-	--	-	--	-	--	-	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)												
.CYANOPHYCEAE												
..CHROOCOCCALES												
...CHROOCOCCACEAE												
....AGMENELLUM	--	-	--	-	--	-	--	-	--	-	--	-
....ANACYSTIS	320	13	--	-	--	-	58	2	--	-	57	9
..HORMOGONALES												
...NOSTOCACEAE												
....ANABAENOPSIS	--	-	--	-	--	-	--	-	--	-	100#	15
...OSCILLATORIACEAE												
....OSCILLATORIA	--	-	--	-	320#	42	1900#	54	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)												
.EUGLENOPHYCEAE												
..EUGLENALES												
...EUGLENACEAE												
....TRACHELOMONAS	--	-	--	-	--	-	--	-	--	-	29	4
PYRRHOPHYTA (FIRE ALGAE)												
.DINOPHYCEAE												
..GYMNODINIALES												
...GYMNODINIACEAE												
....GYMNODINIUM	--	-	--	-	--	-	--	-	--	-	--	-
..PERIDINIALES												
...GLENODINIACEAE												
....GLENODINIUM	--	-	--	-	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06342850 NORWEGIAN CREEK NEAR BELFIELD, ND

LOCATION.--Lat 46°51'12", long 103°08'51", in NW¼NW¼SW¼ sec.14, T.139 N., R.99 W., Stark County, Hydrologic Unit 10130202, on left bank 60 ft (18 m) downstream from bridge on township road, 3.4 mi (5.5 km) southeast of Belfield, and 5.4 mi (8.7 km) upstream from mouth.

DRAINAGE AREA.--39.8 mi^2 (103 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1978 to September 1979.

GAGE.--Water-stage recorder. Altitude of gage is 2,550 ft (777 m), from topographic map.

REMARKS.--Records fair except those for period of March to June, which are poor.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 30 ft^3/s (0.85 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Mar. 25	--	150	4.25	[a,b]*8.6	2.62	Apr. 16	--	140	3.96	Ice jam	
Apr. 9	--	*180	5.10	Ice jam							

No flow for many months.

a - From floodmark.
b - Ice jam.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	45	1.7	.26	.00	.02	.00
2	.00	.00	.00	.00	.00	.00	56	1.7	.24	.00	.02	.00
3	.00	.00	.00	.00	.00	.00	60	1.7	.22	.00	.01	.00
4	.00	.00	.00	.00	.00	.00	56	1.6	.21	.00	.00	.00
5	.00	.00	.00	.00	.00	.01	50	1.7	.20	.00	.00	.00
6	.00	.00	.00	.00	.00	.01	60	2.4	.18	.00	.00	.00
7	.00	.00	.00	.00	.00	.02	90	2.2	.16	.00	.00	.00
8	.00	.00	.00	.00	.00	.02	120	2.0	.18	.00	.00	.00
9	.00	.00	.00	.00	.00	.01	146	1.9	.18	.00	.00	.00
10	.00	.00	.00	.00	.00	.01	100	1.7	.16	.00	.00	.00
11	.00	.00	.00	.00	.00	.02	53	1.7	.14	.00	.00	.00
12	.00	.00	.00	.00	.00	.03	30	1.5	.09	.00	.00	.00
13	.00	.00	.00	.00	.00	.02	12	.93	.09	.02	.00	.00
14	.00	.00	.00	.00	.00	.01	15	1.2	.08	.02	.00	.00
15	.00	.00	.00	.00	.00	.02	20	1.4	.06	.02	.00	.00
16	.00	.00	.00	.00	.00	.10	70	1.2	.04	.01	.00	.00
17	.00	.00	.00	.00	.00	.25	120	1.0	.04	.01	.00	.00
18	.00	.00	.00	.00	.00	.35	117	.84	.04	.00	.00	.00
19	.00	.00	.00	.00	.00	.45	46	.76	.20	.00	.00	.00
20	.00	.00	.00	.00	.00	.55	30	.76	.14	.00	.00	.00
21	.00	.00	.00	.00	.00	.70	12	.68	.10	.00	.00	.00
22	.00	.00	.00	.00	.00	1.5	4.4	.61	.07	.00	.00	.00
23	.00	.00	.00	.00	.00	10	2.4	.55	.04	.00	.00	.00
24	.00	.00	.00	.00	.00	60	2.4	.52	.02	.00	.00	.00
25	.00	.00	.00	.00	.00	120	3.2	.46	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	100	2.0	.42	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	80	1.9	.38	.00	.06	.00	.00
28	.00	.00	.00	.00	.00	75	1.8	.35	.00	.05	.00	.00
29	.00	.00	.00	.00	---	70	1.7	.33	.00	.04	.00	.00
30	.00	.00	.00	.00	---	62	1.8	.30	.00	.02	.00	.00
31	.00	---	.00	.00	---	56	---	.28	---	.02	.00	---
TOTAL	.00	.00	.00	.00	.00	637.08	1329.6	34.77	3.14	.27	.05	.00
MEAN	.000	.000	.000	.000	.000	20.6	44.3	1.12	.10	.009	.002	.000
MAX	.00	.00	.00	.00	.00	120	146	2.4	.26	.06	.02	.00
MIN	.00	.00	.00	.00	.00	.00	1.7	.28	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	1260	2640	69	6.2	.5	.10	.00

WTR YR 1979 TOTAL 2004.91 MEAN 5.49 MAX 146 MIN .00 AC-FT 3980

06342850 NORWEGIAN CREEK NEAR BELFIELD, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1978 to September 1979.

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS (MG/L AS CACO3) (00900)
APR											
11...	1030	53	645	7.8	-.5	.0	9.6	76	K16	1700	130
MAY											
04...	0830	1.6	2600	8.1	.0	6.0	9.1	83	K870	410	570
11...	1120	1.7	3240	8.2	5.0	4.0	11.6	96	410	K170	670
JUN											
12...	1430	.06	4250	8.0	24.0	15.0	62.0	87	K810	5100	1000

DATE	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE (MG/L AS HCO3) (00440)	CAR-BONATE (MG/L AS CO3) (00445)	ALKA-LINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)
APR											
11...	44	24	16	86	59	3.3	5.2	105	0	86	2.7
MAY											
04...	290	120	65	420	61	7.7	7.4	346	0	280	4.4
11...	350	120	90	500	62	8.4	8.0	396	0	320	4.0
JUN											
12...	580	170	140	630	58	8.7	10	509	0	420	8.1

DATE	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)
APR											
11...	220	3.1	.1	7.5	445	414	.56	59.2	.58	.18	.92
MAY											
04...	1200	7.5	.3	5.7	2060	2000	2.72	8.69	.02	.08	.90
11...	990	8.5	.4	3.4	2460	1920	2.61	8.81	.01	.06	1.1
JUN											
12...	1800	6.9	.4	2.1	3500	3010	4.09	.49	.02	.18	1.6

DATE	NITRO-GEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	ARSENIC TOTAL IN BOT-TOM MA-TERIAL (UG/G AS AS) (01003)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)
APR											
11...	1.1	1.7	7.4	.16	.08	80	2	1	22	100	50
MAY											
04...	.98	1.0	4.4	.08	.02	--	--	--	--	--	--
11...	1.2	1.2	5.4	.07	.02	--	--	--	--	--	--
JUN											
12...	1.8	1.8	8.1	.11	.05	--	--	--	--	--	--

K - Results based on colony count outside the acceptable range (non-ideal colony count).

06342850 NORWEGIAN CREEK NEAR BELFIELD, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	BARIUM, RECOV. FM BOTTOM MATERIAL (UG/G AS BA) (01008)	BERYLLIUM, TOTAL RECOVERABLE (UG/L AS BE) (01012)	BERYLLIUM, DISSOLVED (UG/L AS BE) (01010)	BERYLLIUM, RECOV. FM BOTTOM MATERIAL (UG/G) (01015)	BORON, DISSOLVED (UG/L AS B) (01020)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) (01034)	CHROMIUM, DISSOLVED (UG/L AS CR) (01030)	CHROMIUM, RECOV. FM BOTTOM MATERIAL (UG/G) (01029)	COBALT, TOTAL RECOVERABLE (UG/L AS CO) (01037)	COBALT, DISSOLVED (UG/L AS CO) (01035)	COBALT, RECOV. FM BOTTOM MATERIAL (UG/G AS CO) (01038)
APR											
11...	140	0	<1	1	210	10	0	8	2	<3	10
MAY											
04...	--	--	--	--	990	--	--	--	--	--	--
11...	--	--	--	--	1300	--	--	--	--	--	--
JUN											
12...	--	--	--	--	1	--	--	--	--	--	--

DATE	COPPER, TOTAL RECOVERABLE (UG/L AS CU) (01042)	COPPER, DISSOLVED (UG/L AS CU) (01040)	COPPER, RECOV. FM BOTTOM MATERIAL (UG/G AS CU) (01043)	IRON, DISSOLVED (UG/L AS FE) (01046)	LITHIUM TOTAL RECOVERABLE (UG/L AS LI) (01132)	LITHIUM DISSOLVED (UG/L AS LI) (01130)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN) (01055)	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	MANGANESE, RECOV. FM BOTTOM MATERIAL (UG/G) (01053)	MERCURY TOTAL RECOVERABLE (UG/L AS HG) (71900)	MERCURY DISSOLVED (UG/L AS HG) (71890)
APR											
11...	13	9	12	260	4	8	180	120	410	.1	.1
MAY											
04...	--	--	--	70	--	--	--	--	--	--	--
11...	--	--	--	70	--	--	--	--	--	--	--
JUN											
12...	--	--	--	60	--	--	--	--	--	--	--

DATE	MERCURY RECOV. FM BOTTOM MATERIAL (UG/G AS HG) (71921)	MOLYBDENUM, TOTAL RECOVERABLE (UG/L AS MO) (01062)	MOLYBDENUM, RECOV. FM BOTTOM MATERIAL (UG/G) (01063)	MOLYBDENUM, DISSOLVED (UG/L AS MO) (01060)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI) (01067)	NICKEL, DISSOLVED (UG/L AS NI) (01065)	NICKEL, RECOV. FM BOTTOM MATERIAL (UG/G AS NI) (01068)	SELENIUM, TOTAL (UG/L AS SE) (01147)	SELENIUM, DISSOLVED (UG/L AS SE) (01145)	SELENIUM, TOTAL IN BOTTOM MATERIAL (UG/G) (01148)	VANADIUM, DISSOLVED (UG/L AS V) (01085)
APR											
11...	.07	3	0	<10	8	3	10	0	0	0	1.4
MAY											
04...	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--
JUN											
12...	--	--	--	--	--	--	--	--	--	--	--

DATE	ZINC, TOTAL RECOVERABLE (UG/L AS ZN) (01092)	ZINC, DISSOLVED (UG/L AS ZN) (01090)	ZINC, RECOV. FM BOTTOM MATERIAL (UG/G AS ZN) (01093)	GROSS ALPHA, DISSOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DISSOLVED (PCI/L AS CS-137) (03515)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)	CARBON, ORGANIC DISSOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUSPENDED TOTAL (MG/L AS C) (00689)	SEDIMENT, SUSPENDED (MG/L) (80154)	SEDIMENT DISCHARGE, SUSPENDED (T/DAY) (80155)
APR											
11...	50	6	34	<7.0	2.1	6.7	1.6	18	--	62	8.9
MAY											
04...	--	--	--	--	--	--	--	22	2.0	35	.15
11...	--	--	--	--	--	--	--	43	1.5	40	.18
JUN											
12...	--	--	--	--	--	--	--	38	2.0	41	.01

06342850 NORWEGIAN CREEK NEAR BELFIELD, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	BED MAT. FALL DIAM. % FINER THAN .062 MM (80158)	BED MAT. FALL DIAM. % FINER THAN .125 MM (80159)	BED MAT. FALL DIAM. % FINER THAN .250 MM (80160)	BED MAT. FALL DIAM. % FINER THAN .500 MM (80161)	BED MAT. FALL DIAM. % FINER THAN 1.00 MM (80162)	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM (80169)	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM (80170)	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM (80171)	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM (80172)	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM (80173)
APR 11...	44	50	55	60	62	74	88	97	99	100

PHYTOPLANKTON ANALYSES, OCTOBER 1978 TO JUNE 1979

DATE	APR 11,79	MAY 4,79	MAY 11,79	JUN 12,79
TIME	1030	0830	1120	1430
TOTAL CELLS/ML	220	13000	1800	5400
DIVERSITY: DIVISION	1.0	1.7	1.5	1.6
.CLASS	1.0	1.7	1.5	1.6
..ORDER	1.6	1.7	1.9	1.9
...FAMILY	2.1	1.8	1.9	2.4
....GENUS	2.1	2.1	1.9	2.9

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)								
.CHLOROPHYCEAE								
..CHLOROCOCCALES								
...OOCYSTACEAE								
....ANKISTRODESMUS	72#	33	2900#	23	97	5	740	14
....DICTYOSPHAERIUM	--	-	--	-	--	-	150	3
....FRANCEIA	--	-	180	1	--	-	--	-
....KIRCHNERIELLA	--	-	240	2	--	-	--	-
....SELENASTRUM	--	-	--	-	14	1	--	-
....TREUBARIA	--	-	--	-	--	-	31	1
...SCENEDESMACEAE								
....CRUCIGENIA	--	-	--	-	--	-	620	11
....SCENEDESMUS	--	-	120	1	--	-	560	10
....TETRASTRUM	--	-	--	-	--	-	250	5
..VOLVOCALES								
...CHLAMYDOMONADACEAE								
....CHLAMYDOMONAS	58#	27	*	0	190	11	280	5
...PHACOTACEAE								
....PHACOTUS	--	-	120	1	--	-	--	-
CHRYSOPHYTA								
.BACILLARIOPHYCEAE								
..CENTRALES								
...COSCINODISCACEAE								
....CYCLOTELLA	--	-	1600	13	130	7	310	6
..PENNALES								
...ACHNANTHACEAE								
....COCCONEIS	14	7	--	-	--	-	--	-
...FRAGILARIACEAE								
....SYNEDRA	--	-	--	-	14	1	--	-
...NAVICULACEAE								
....NAVICULA	43#	20	--	-	--	-	--	-
...NITZSCHIACEAE								
....NITZSCHIA	29	13	--	-	310#	17	280	5
CYANOPHYTA (BLUE-GREEN ALGAE)								
.CYANOPHYCEAE								
..CHROOCOCCALES								
...CHROOCOCCACEAE								
....ANACYSTIS	--	-	--	-	--	-	1900#	36
..HORMOGONALES								
...OSCILLATORIACEAE								
....OSCILLATORIA	--	-	6600#	52	1000#	57	--	-
EUGLENOPHYTA (EUGLENOIDS)								
.EUGLENOPHYCEAE								
..EUGLENALES								
...EUGLENACEAE								
....EUGLENA	--	-	420	3	28	2	150	3
....TRACHELOMONAS	--	-	480	4	--	-	93	2

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06342900 SOUTH BRANCH HEART RIVER NEAR SOUTH HEART, ND

LOCATION.--Lat 46°50'24", long 103°01'12", in NE¼NE¼SE¼ sec.22, T.139 N., R.98 W., Stark County, Hydrologic Unit 10130202, on left bank 20 ft (6.1 m) upstream from bridge on county road, 4.1 mi (6.6 km) upstream from mouth and 2.1 mi (3.4 km) southwest of South Heart.

DRAINAGE AREA.--132 mi^2 (342 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1978 to September 1979.

GAGE.--Water-stage recorder. Altitude of gage is 2,490 ft (759 m), from topographic map.

REMARKS.--Records fair except those for March and April, which are poor.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 100 ft^3/s (2.83 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Mar. 25	2000	340	9.63	7.60	2.317	July 27	0500	103	2.92	4.52	1.378
Apr. 10	1800	*520	14.7	9.14	2.786	Aug. 22	0200	108	3.06	4.62	1.408
Apr. 17	--	490	13.9	--	--						

No flow for many months.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	180	7.0	.32	.00	.45	.04
2	.00	.00	.00	.00	.00	.00	180	5.5	.25	.00	.15	2.5
3	.00	.00	.00	.00	.00	.00	120	4.0	.20	.00	.06	1.0
4	.00	.00	.00	.00	.00	.00	100	3.2	.12	.00	.03	.26
5	.00	.00	.00	.00	.00	.02	90	2.9	.06	.00	.03	.12
6	.00	.00	.00	.00	.00	.05	90	6.7	.05	.00	.02	.06
7	.00	.00	.00	.00	.00	.15	100	4.2	.03	.00	.01	.02
8	.00	.00	.00	.00	.00	.20	285	3.2	.05	.00	.00	.00
9	.00	.10	.00	.00	.00	.10	426	3.2	.23	.00	.00	.00
10	.00	.07	.00	.00	.00	.10	492	3.1	.06	.00	.00	.08
11	.00	.03	.00	.00	.00	.15	381	2.8	.03	.00	.00	30
12	.00	.00	.00	.00	.00	.20	200	2.8	.02	.05	.00	2.6
13	.00	.00	.00	.00	.00	.50	66	2.5	.03	1.7	.00	.73
14	.00	.00	.00	.00	.00	.45	48	2.2	.02	.40	.00	.26
15	.00	.00	.00	.00	.00	.60	74	2.1	.00	.07	.00	.20
16	.00	.00	.00	.00	.00	1.0	300	1.8	.00	.02	.00	.12
17	.00	.00	.00	.00	.00	3.0	450	1.6	.00	.00	.00	.03
18	.00	.00	.00	.00	.00	10	350	1.3	.00	.00	.00	.01
19	.00	.00	.00	.00	.00	25	200	1.3	3.7	.00	.00	.05
20	.00	.00	.00	.00	.00	20	100	1.0	2.5	.00	.00	.04
21	.00	.00	.00	.00	.00	21	60	.92	.45	.00	7.3	.02
22	.00	.00	.00	.00	.00	23	35	.88	.12	.00	44	.01
23	.00	.00	.00	.00	.00	70	20	.85	.07	.00	7.4	.00
24	.00	.00	.00	.00	.00	150	18	.82	.06	.00	2.8	.00
25	.00	.00	.00	.00	.00	270	15	.80	.01	37	1.3	.00
26	.00	.00	.00	.00	.00	230	13	.75	.00	4.1	.83	.00
27	.00	.00	.00	.00	.00	200	12	.70	.00	6.1	1.1	.00
28	.00	.00	.00	.00	.00	160	11	.60	.00	5.8	4.5	.00
29	.00	.00	.00	.00	---	150	10	.54	.00	2.4	1.0	.00
30	.00	.00	.00	.00	---	110	8.0	.45	.00	10	.36	.00
31	.00	---	.00	.00	---	130	---	.40	---	2.3	.17	---
TOTAL	.00	.20	.00	.00	.00	1555.52	4434.0	70.11	8.38	69.94	71.51	38.15
MEAN	.000	.007	.000	.000	.000	50.2	148	2.26	.28	2.26	2.31	1.27
MAX	.00	.10	.00	.00	.00	270	492	7.0	3.7	37	44	30
MIN	.00	.00	.00	.00	.00	.00	8.0	.40	.00	.00	.00	.00
AC-FT	.00	.4	.00	.00	.00	3090	8790	139	17	139	142	76

WTR YR 1979 TOTAL 6247.81 MEAN 17.1 MAX 492 MIN .00 AC-FT 12390

06342900 SOUTH BRANCH HEART RIVER NEAR SOUTH HEART, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1978 to September 1979.

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS (MG/L AS CACO3) (00900)
MAR											
27...	0940	202	500	7.4	-2.0	.0	11.2	85	K13	K1300	93
APR											
10...	1655	517	--	--	1.0	1.5	--	--	--	--	--
13...	1030	68	448	7.9	1.0	.0	12.4	95	K4	1200	79
MAY											
15...	0915	2.1	2050	8.4	17.0	8.0	12.2	113	K11	53	400
JUN											
12...	1600	.02	2460	8.4	30.5	19.0	5.4	64	100	200	470
AUG											
07...	1410	.01	695	8.8	26.0	19.5	9.3	109	330	1100	16
SEP											
05...	1215	.08	892	8.3	22.0	15.5	8.1	84	320	1900	56

DATE	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE (MG/L AS HCO3) (00440)	CAR-BONATE (MG/L AS CO3) (00445)	ALKA-LINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)
MAR											
27...	24	19	11	65	58	2.9	8.2	84	0	69	5.4
APR											
13...	5	17	8.9	65	63	3.2	4.5	90	0	74	1.8
MAY											
15...	93	87	45	320	63	6.9	7.5	372	1	310	2.4
JUN											
12...	120	94	56	380	63	7.7	10	422	2	350	2.7
AUG											
07...	0	4.7	1.0	160	94	17	3.5	185	10	170	.5
SEP											
05...	0	--	--	--	89	--	4.9	199	0	163	1.6

DATE	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)
MAR											
27...	150	4.8	.1	6.5	338	307	.42	167	1.8	.08	1.1
APR											
13...	140	5.5	.1	6.9	265	293	.40	53.8	.30	.09	.79
MAY											
15...	770	15	.3	6.3	1480	1440	1.96	8.16	.00	.01	.75
JUN											
12...	910	13	.3	1.6	1720	1680	2.28	.09	.00	.08	1.0
AUG											
07...	200	3.8	.4	20	462	495	.67	.01	.02	.06	1.1
SEP											
05...	280	4.2	.3	--	593	--	.81	.13	.00	.05	.09

DATE	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE) (01012)
MAR											
27...	1.2	3.0	13	.25	.20	80	2	2	0	0	0
APR											
13...	.88	1.2	5.2	.20	.09	--	--	--	--	--	--
MAY											
15...	.76	.76	3.4	.06	.02	--	--	--	--	--	--
JUN											
12...	1.1	1.1	4.9	.07	.01	--	--	--	--	--	--
AUG											
07...	1.2	1.2	5.4	.29	.12	50	14	17	100	50	0
SEP											
05...	.14	.14	.62	.15	.07	--	--	--	--	--	--

E/ Results based on colony count outside the acceptable range (non-ideal colony count).

06342900 SOUTH BRANCH HEART RIVER NEAR SOUTH HEART, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	BERYLLIUM, DIS-SOLVED (UG/L AS BE) (01010)	BORON, DIS-SOLVED (UG/L AS B) (01020)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) (01034)	CHROMIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, TOTAL RECOVERABLE (UG/L AS CO) (01037)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, TOTAL RECOVERABLE (UG/L AS CU) (01042)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LITHIUM TOTAL RECOVERABLE (UG/L AS LI) (01132)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)
MAR											
27...	0	120	10	0	0	0	30	16	320	7	9
APR											
10...	--	--	--	--	--	--	--	--	--	--	--
13...	--	110	--	--	--	--	--	--	250	--	--
MAY											
15...	--	310	--	--	--	--	--	--	20	--	--
JUN											
12...	--	420	--	--	--	--	--	--	20	--	--
AUG											
07...	<1	120	0	0	3	<3	15	25	70	10	10
SEP											
05...	--	190	--	--	--	--	--	--	--	--	--

DATE	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN) (01055)	MANGANESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOVERABLE (UG/L AS HG) (71900)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYBDENUM, TOTAL RECOVERABLE (UG/L AS MO) (01062)	MOLYBDENUM, DIS-SOLVED (UG/L AS MO) (01060)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI) (01067)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELENIUM, TOTAL (UG/L AS SE) (01147)	SELENIUM, DIS-SOLVED (UG/L AS SE) (01145)	VANADIUM, DIS-SOLVED (UG/L AS V) (01085)
MAR											
27...	120	80	.0	.0	2	0	8	0	1	1	1.9
APR											
10...	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--
MAY											
15...	--	--	--	--	--	--	--	--	--	--	--
JUN											
12...	--	--	--	--	--	--	--	--	--	--	--
AUG											
07...	60	2	.2	.1	0	<10	8	4	3	4	28
SEP											
05...	--	--	--	--	--	--	--	--	--	--	--

DATE	ZINC, TOTAL RECOVERABLE (UG/L AS ZN) (01092)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	GROSS ALPHA, DIS-SOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DIS-SOLVED (PCI/L AS CS-137) (03515)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C) (00689)	SEDIMENT, SUS-PENDED (MG/L) (80154)	SEDIMENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
MAR										
27...	30	30	<4.3	2.6	11	3.2	14	--	59	32
APR										
10...	--	--	--	--	--	--	--	--	447	624
13...	--	--	--	--	--	--	8.4	1.9	157	29
MAY										
15...	--	--	--	--	--	--	15	.6	29	.16
JUN										
12...	--	--	--	--	--	--	15	.7	21	.00
AUG										
07...	10	<3	9.0	16	7.0	8.3	13	--	200	.01
SEP										
05...	--	--	--	--	--	--	11	1.1	28	.01

06342900 SOUTH BRANCH HEART RIVER NEAR SOUTH HEART, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1978 TO SEPTEMBER 1979

DATE	MAR 27,79	APR 13,79	MAY 15,79	JUN 12,79	AUG 7,79	SEP 5,79
TIME	0940	1030	0915	1600	1410	1215
TOTAL CELLS/ML	60	290	1900	1400	18000	160000
DIVERSITY: DIVISION	0.0	1.2	1.0	1.4	0.8	0.5
.CLASS	0.0	1.2	1.0	1.4	0.8	0.5
..ORDER	0.9	1.3	1.0	1.4	1.8	1.3
...FAMILY	0.9	1.3	1.3	1.6	2.0	1.5
....GENUS	0.9	1.3	1.7	2.2	2.4	2.0

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)												
.CHLOROPHYCEAE												
..CHLOROCOCCALES												
...CHLOROCOCCACEAE												
....CHLOROCOCCUM	--	-	--	-	--	-	--	-	*	0	--	-
...MICRACTINIACEAE												
....GOLENKINIA	--	-	--	-	--	-	--	-	310	2	--	-
....MICRACTINIUM	--	-	--	-	--	-	--	-	360	2	--	-
...OOCYSTACEAE												
....ANKISTRODESMUS	--	-	--	-	400#	21	280#	21	1300	8	2900	2
....CHLORELLA	--	-	--	-	--	-	--	-	--	-	1400	1
....CHODATELLA	--	-	--	-	--	-	--	-	--	-	*	0
....DICTYOSPHAERIUM	--	-	43	15	70	4	90	7	--	-	--	-
....KIRCHNERIELLA	--	-	--	-	70	4	--	-	--	-	--	-
....OOCYSTIS	--	-	--	-	--	-	--	-	210	1	*	0
....SELENASTRUM	--	-	--	-	--	-	120	9	*	0	*	0
....TREUBARIA	--	-	--	-	--	-	26	2	--	-	--	-
...SCENEDESMACEAE												
....CRUCIGENIA	--	-	--	-	--	-	--	-	--	-	1100	1
....SCENEDESMUS	--	-	--	-	140	7	26	2	410	2	2000	1
....TETRASTRUM	--	-	--	-	70	4	--	-	--	-	--	-
..VOLVOCALES												
...CHLAMYDOMONADACEAE												
....CHLAMYDOMONAS	--	-	14	5	--	-	--	-	930	5	--	-
CHRYSOPHYTA												
.BACILLARIOPHYCEAE												
..CENTRALES												
...COSCINODISCACEAE												
....CYCLOTELLA	20#	33	--	-	--	-	64	5	100	1	4300	3
....SKELETONEMA	--	-	--	-	--	-	--	-	--	-	*	0
..PENNALES												
...NAVICULACEAE												
....NAVICULA	40#	67	--	-	--	-	--	-	--	-	--	-
...NITZSCHIACEAE												
....NITZSCHIA	--	-	29	10	--	-	13	1	--	-	*	0
...SURIRELLACEAE												
....SURIRELLA	--	-	--	-	--	-	--	-	--	-	*	0
CYANOPHYTA (BLUE-GREEN ALGAE)												
.CYANOPHYCEAE												
..CHROOCOCCALES												
...CHROOCOCCACEAE												
....ANACYSTIS	--	-	--	-	--	-	700#	51	6500#	37	41000#	25
..HORMOGONALES												
...NOSTOCACEAE												
....ANABAENA	--	-	200#	70	--	-	--	-	1100	6	6000	4
....ANABAENOPSIS	--	-	--	-	--	-	--	-	6200#	35	--	-
...OSCILLATORIACEAE												
....OSCILLATORIA	--	-	--	-	--	-	--	-	--	-	87000#	53
....SCHIZOTHRIX	--	-	--	-	--	-	--	-	--	-	16000	10
EUGLENOPHYTA (EUGLENOIDS)												
.EUGLENOPHYCEAE												
..EUGLENALES												
...EUGLENACEAE												
....TRACHELOMONAS	--	-	--	-	1200#	61	39	3	*	0	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06342970 NORTH CREEK NEAR SOUTH HEART, ND

LOCATION.--Lat 46°53'44", long 102°59'55", in SE¼NE¼SE¼ sec.35, T.140 N., R.98 W., Stark County, Hydrologic Unit 10130202, on left bank 120 ft (36 m) downstream from culvert on county road, 5.4 mi (8.7 km) upstream from mouth and 2.2 mi (3.5 km) north of South Heart.

DRAINAGE AREA.--40.8 mi^2 (106 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1978 to September 1979.

GAGE.--Water-stage recorder. Altitude of gage is 2,470 ft (753 m), from topographic map.

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

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 40 ft^3/s (1.13 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Mar. 25	--	130	3.68	[a,b]*8.8	2.68
Apr. 1	--	60	1.70	Ice jam	
Apr. 9	--	100	2.83	Ice jam	
Apr. 16	1600	*260	7.36	5.09	1.551
July 25	1000	53	15.66	3.21	0.978

No flow for many days.

a - From floodmark.
b - Ice jam.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.07	.07	.02	.00	.00	.04	40	2.0	.03	.00	.06	.04
2	.07	.07	.01	.00	.00	.03	35	1.1	.04	.00	.04	.03
3	.06	.07	.03	.00	.00	.02	30	.82	.06	.00	.03	.03
4	.06	.07	.03	.00	.00	.04	25	.62	.05	.00	.01	.02
5	.06	.07	.01	.00	.00	.09	30	.50	.04	.00	.00	.01
6	.05	.06	.01	.00	.00	.15	25	1.0	.04	.00	.00	.00
7	.05	.07	.01	.00	.00	.01	40	1.7	.04	.00	.00	.00
8	.05	.07	.01	.00	.00	.01	70	1.4	.04	.00	.00	.00
9	.05	.06	.02	.00	.00	.00	80	1.1	.03	.00	.00	.00
10	.05	.07	.02	.00	.00	.00	75	.90	.03	.00	.00	.17
11	.05	.06	.03	.00	.00	.01	40	.75	.04	19	.00	3.8
12	.05	.05	.04	.00	.00	.02	20	.62	.06	3.6	.00	1.1
13	.04	.04	.04	.00	.00	.05	17	.50	.06	.90	.00	.19
14	.04	.03	.04	.00	.00	.02	15	.32	.04	.24	.00	.09
15	.04	.03	.03	.00	.00	.08	50	.29	.02	.10	.00	.06
16	.05	.02	.03	.00	.00	.45	220	.24	.01	.08	.00	.05
17	.05	.02	.03	.00	.00	4.1	203	.15	.00	.07	.00	.03
18	.04	.02	.03	.00	.00	21	139	.12	.00	.06	.00	.02
19	.05	.01	.02	.00	.00	26	93	.12	.01	.04	.00	.02
20	.06	.01	.02	.00	.00	21	62	.09	.00	.03	.00	.02
21	.06	.01	.02	.00	.00	25	39	.10	.00	.01	.00	.01
22	.05	.01	.02	.00	.00	55	24	.09	.00	.00	.00	.00
23	.05	.02	.02	.00	.00	65	16	.07	.02	.00	.00	.00
24	.05	.02	.01	.00	.00	80	13	.07	.03	.01	.00	.00
25	.05	.02	.01	.00	.00	100	11	.06	.03	29	.00	.00
26	.06	.02	.01	.00	.00	50	8.0	.06	.03	7.4	.00	.00
27	.06	.03	.01	.00	.00	30	5.9	.05	.03	1.1	.00	.00
28	.05	.03	.01	.00	.00	20	4.5	.04	.01	.29	.00	.00
29	.05	.03	.00	.00	---	15	3.9	.03	.00	.15	.00	.00
30	.05	.02	.00	.00	---	20	3.1	.02	.00	.09	.00	.00
31	.06	---	.00	.00	---	45	---	.03	---	.08	.02	---
TOTAL	1.63	1.20	.59	.00	.00	578.12	1437.4	14.96	.79	62.25	.16	5.69
MEAN	.053	.040	.019	.000	.000	18.6	47.9	.48	.026	2.01	.005	.19
MAX	.07	.08	.04	.00	.00	100	220	2.0	.06	29	.06	3.8
MIN	.04	.01	.00	.00	.00	.00	3.1	.02	.00	.00	.00	.00
AC-FT	3.2	2.4	1.2	.00	.00	1150	2850	30	1.6	123	.3	11

WTR YR 1979 TOTAL 2102.79 MEAN 5.76 MAX 220 MIN .00 AC-FT 4170

06342970 NORTH CREEK NEAR SOUTH HEART, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1978 to September 1979.

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)
OCT												
03...	0745	.06	1055	7.8	6.5	9.0	7.6	72	150	230	240	22
NOV												
07...	1145	.07	3040	8.2	15.0	5.0	11.6	102	20	K12	710	410
APR												
10...	1600	74	337	7.6	6.5	.0	11.7	89	K30	4600	65	11
MAY												
03...	1215	.88	1340	8.2	13.5	11.0	10.1	99	87	82	290	72
11...	0930	.73	2060	8.5	.0	5.0	11.4	95	500	K100	340	10
JUN												
11...	1630	.04	3010	8.6	30.0	24.0	8.3	108	500	K2300	540	79

DATE	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE (MG/L AS HCO3) (00440)	CAR-BONATE (MG/L AS CO3) (00445)	ALKA-LINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)
OCT											
03...	48	28	180	61	5.1	11	266	0	220	6.7	400
NOV											
07...	120	100	490	59	8.0	14	361	0	300	5.6	1400
APR											
10...	12	8.6	41	55	2.2	4.9	66	0	54	2.7	100
MAY											
03...	55	36	210	61	5.4	7.7	266	0	220	2.7	500
11...	62	46	340	66	8.0	8.9	396	3	330	2.0	730
JUN											
11...	84	80	570	69	11	11	546	8	460	2.3	1200

DATE	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)
OCT											
03...	5.7	.2	8.6	832	813	1.11	.13	.00	.06	1.6	1.7
NOV											
07...	8.7	.3	3.7	2400	2320	3.16	.44	.00	.04	1.4	1.4
APR											
10...	1.8	.1	7.2	235	209	.28	41.8	.24	.12	1.4	1.5
MAY											
03...	4.4	.2	5.5	959	950	1.29	2.26	.02	.03	.97	1.0
11...	5.2	.2	2.2	1430	1390	1.89	2.74	.00	.05	.95	1.0
JUN											
11...	6.7	.3	.4	2250	2230	3.03	.24	.01	.06	1.2	1.3

DATE	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	ARSENIC TOTAL IN BOT-TOM MA-TERIAL (UG/G AS AS) (01003)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BARIUM, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS BA) (01008)
OCT											
03...	1.7	7.5	.14	.03	--	--	--	--	--	--	--
NOV											
07...	1.4	6.2	.08	.02	--	--	--	--	--	--	--
APR											
10...	1.7	7.7	.29	.10	230	2	1	26	100	40	200
MAY											
03...	1.0	4.5	.07	.02	--	--	--	--	--	--	--
11...	1.0	4.4	.07	.02	--	--	--	--	--	--	--
JUN											
11...	1.3	5.8	.05	.04	--	--	--	--	--	--	--

K - Results based on colony count outside the acceptable range (non-ideal colony count).

06342970 NORTH CREEK NEAR SOUTH HEART, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	BERYLLIUM, TOTAL RECOVERABLE (UG/L AS BE) (01012)	BERYLLIUM, DISSOLVED (UG/L AS BE) (01010)	BERYLLIUM, RECOV. FM BOTTOM MATERIAL (UG/G) (01013)	BORON, DISSOLVED (UG/L AS B) (01020)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) (01034)	CHROMIUM, DISSOLVED (UG/L AS CR) (01030)	CHROMIUM, RECOV. FM BOTTOM MATERIAL (UG/G) (01029)	COBALT, TOTAL RECOVERABLE (UG/L AS CO) (01037)	COBALT, DISSOLVED (UG/L AS CO) (01035)	COBALT, RECOV. FM BOTTOM MATERIAL (UG/G AS CO) (01038)	COPPER, TOTAL RECOVERABLE (UG/L AS CU) (01042)
OCT											
03...	--	--	--	440	--	--	--	--	--	--	--
NOV											
07...	--	--	--	1600	--	--	--	--	--	--	--
APR											
10...	0	<1	1	150	20	0	9	3	<3	10	8
MAY											
03...	--	--	--	570	--	--	--	--	--	--	--
11...	--	--	--	550	--	--	--	--	--	--	--
JUN											
11...	--	--	--	860	--	--	--	--	--	--	--

DATE	COPPER, DISSOLVED (UG/L AS CU) (01040)	COPPER, RECOV. FM BOTTOM MATERIAL (UG/G AS CU) (01043)	IRON, DISSOLVED (UG/L AS FE) (01046)	LITHIUM TOTAL RECOVERABLE (UG/L AS LI) (01132)	LITHIUM DISSOLVED (UG/L AS LI) (01130)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN) (01055)	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	MANGANESE, RECOV. FM BOTTOM MATERIAL (UG/G) (01053)	MERCURY TOTAL RECOVERABLE (UG/L AS HG) (71900)	MERCURY DISSOLVED (UG/L AS HG) (71890)	MERCURY RECOV. FM BOTTOM MATERIAL (UG/G AS HG) (71921)
OCT											
03...	--	--	110	--	--	--	--	--	--	--	--
NOV											
07...	--	--	60	--	--	--	--	--	--	--	--
APR											
10...	13	33	430	4	6	200	70	880	.1	.0	.12
MAY											
03...	--	--	110	--	--	--	--	--	--	--	--
11...	--	--	70	--	--	--	--	--	--	--	--
JUN											
11...	--	--	10	--	--	--	--	--	--	--	--

DATE	MOLYBDENUM, TOTAL RECOVERABLE (UG/L AS MO) (01062)	MOLYBDENUM, RECOV. FM BOTTOM MATERIAL (UG/G) (01063)	MOLYBDENUM, DISSOLVED (UG/L AS MO) (01060)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI) (01067)	NICKEL, DISSOLVED (UG/L AS NI) (01065)	NICKEL, RECOV. FM BOTTOM MATERIAL (UG/G AS NI) (01068)	SELENIUM, TOTAL (UG/L AS SE) (01147)	SELENIUM, DISSOLVED (UG/L AS SE) (01145)	SELENIUM, TOTAL IN BOTTOM MATERIAL (UG/G) (01148)	VANADIUM, DISSOLVED (UG/L AS V) (01085)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN) (01092)
APR											
10...	2	0	<10	12	4	20	0	0	0	2.3	40

DATE	ZINC, DISSOLVED (UG/L AS ZN) (01090)	ZINC, RECOV. FM BOTTOM MATERIAL (UG/G AS ZN) (01093)	GROSS ALPHA, DISSOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DISSOLVED (PCI/L AS CS-137) (03515)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)	CARBON, ORGANIC DISSOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUSPENDED TOTAL (MG/L AS C) (00689)	SEDIMENT, SUSPENDED (MG/L) (80154)	SEDIMENT DISCHARGE, SUSPENDED (T/DAY) (80155)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70338)
OCT											
03...	--	--	--	--	--	--	8.9	2.6	78	.01	--
NOV											
07...	--	--	--	--	--	--	26	1.6	21	.00	--
APR											
10...	9	48	<3.6	4.4	6.2	6.5	9.2	4.6	136	27	72
MAY											
03...	--	--	--	--	--	--	14	1.9	62	.15	--
11...	--	--	--	--	--	--	19	2.3	68	.13	--
JUN											
11...	--	--	--	--	--	--	20	1.1	53	.01	--

DATE	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70340)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)	BED MAT. FALL DIAM. % FINER THAN .062 MM (80158)	BED MAT. FALL DIAM. % FINER THAN .125 MM (80159)	BED MAT. FALL DIAM. % FINER THAN .250 MM (80160)	BED MAT. FALL DIAM. % FINER THAN .500 MM (80161)	BED MAT. FALL DIAM. % FINER THAN 1.00 MM (80162)
APR							
10...	93	100	81	88	94	99	100

06342970 NORTH CREEK NEAR SOUTH HEART, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1978 TO JUNE 1979

DATE	OCT 3,78	NOV 7,78	APR 10,79	MAY 3,79	MAY 11,79	JUN 11,79
TIME	0745	1145	1600	1215	0930	1630
TOTAL CELLS/ML	120000	14000	710	6200	24000	3000
DIVERSITY: DIVISION	0.1	1.4	1.3	1.9	1.5	0.5
.CLASS	0.1	1.4	1.3	1.9	1.5	0.5
..ORDER	0.1	1.9	1.4	2.3	1.8	0.8
...FAMILY	0.1	2.3	2.1	2.5	0.0	0.8
....GENUS	0.1	2.5	2.1	3.1	0.0	0.9

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)												
.CHLOROPHYCEAE												
..CHLOROCOCCALES	--	-	--	-	--	-	--	-	1900	8	--	-
...CHARACIACEAE												
....SCHROEDERIA	--	-	130	1	--	-	--	-	--	-	--	-
...MICRACTINIACEAE												
....GOLENKINIA	--	-	130	1	--	-	--	-	--	-	--	-
...OOCYSTACEAE												
....ANKISTRODESMUS	*	0	780	6	130#	18	1600#	27	1600	7	120	4
....CHODATELLA	--	-	130	1	--	-	--	-	--	-	*	0
....DICTYOSPHAERIUM	--	-	--	-	--	-	--	-	--	-	51	2
....FRANCEIA	--	-	--	-	--	-	85	1	--	-	--	-
....KIRCHNERIELLA	--	-	260	2	--	-	210	3	--	-	--	-
....OOCYSTIS	--	-	--	-	--	-	340	5	--	-	--	-
....TETRAEDRON	*	0	--	-	--	-	--	-	--	-	--	-
...SCENEDESMACEAE												
....CRUCIGENIA	--	-	390	3	--	-	--	-	--	-	--	-
....SCENEDESMUS	*	0	--	-	--	-	420	7	460	2	--	-
..TETRASPURALES												
...PALMELLACEAE												
....SPHAEROCYSTIS	--	-	--	-	--	-	--	-	310	1	--	-
..VOLVOCALES												
...CHLAMYDOMONADACEAE												
....CHLAMYDOMONAS	*	0	--	-	--	-	42	1	390	2	*	0
..ZYGNEMATALES												
...DESMIDIACEAE												
....CLOSTERIUM	--	-	--	-	29	4	--	-	--	-	--	-
CHRYSOPHYTA												
.BACILLARIOPHYCEAE												
..CENTRALES												
...COSCINODISCACEAE												
....CYCLOTELLA	*	0	4500#	33	58	8	550	9	4600#	19	*	0
..PENNALES												
...ACHNANTHACEAE												
....ACHNANTHES	--	-	--	-	--	-	--	-	--	-	*	0
...FRAGILARIACEAE												
....FRAGILARIA	--	-	900	7	--	-	--	-	--	-	--	-
...NAVICULACEAE												
....NAVICULA	*	0	--	-	--	-	--	-	--	-	--	-
...NITZSCHIACEAE												
....NITZSCHIA	--	-	2100#	15	--	-	680	11	310	1	--	-
CRYPTOPHYTA (CRYPTOMONADS)												
.CRYPTOPHYCEAE												
..CRYPTOMONADALES												
...CRYPTOCHRYSIDACEAE												
....CHROOMONAS	--	-	--	-	--	-	--	-	--	-	*	0
...CRYPTOMONADACEAE												
....CRYPTOMONAS	*	0	--	-	--	-	--	-	--	-	*	0
CYANOPHYTA (BLUE-GREEN ALGAE)												
.CYANOPHYCEAE												
..CHROOCOCCALES												
...CHROOCOCCACEAE												
....ANACYSTIS	--	-	--	-	--	-	170	3	620	3	130	4
..HORMOGONALES												
...NOSTOCACEAE												
....ANABAENA	--	-	--	-	270#	39	--	-	--	-	--	-
...OSCILLATORIACEAE												
....OSCILLATORIA	120000#	99	--	-	200#	29	1300#	21	11000#	48	2600#	87
...RIVULARIACEAE												
....RAPHIDIOPSIS	--	-	--	-	--	-	--	-	1900	8	--	-
EUGLENOPHYTA (EUGLENOIDS)												
.EUGLENOPHYCEAE												
..EUGLENALES												
...EUGLENACEAE												
....EUGLENA	*	0	130	1	14	2	250	4	150	1	*	0
....PHACUS	*	0	--	-	--	-	--	-	--	-	--	-
....TRACHELOMONAS	*	0	4300#	31	--	-	460	8	*	0	--	-
PYRRHOPHYTA (FIRE ALGAE)												
.DINOPHYCEAE												
..GYMNODINIALES												
...GYMNODINIACEAE												
....GYMNODINIUM	--	-	--	-	--	-	42	1	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06343000 HEART RIVER NEAR SOUTH HEART, ND

LOCATION.--Lat 46°51'56", long 102°56'53", in NE¼SE¼SW¼ sec.8, T.139 N., R.97 W., Stark County, Hydrologic Unit 10130202, on left bank 1.7 mi (2.7 km) downstream from North Creek, 2 mi (3.2 km) east of South Heart, and 5.5 mi (8.8 km) upstream from Edward Arthur Patterson Lake.

DRAINAGE AREA.--311 mi^2 (805 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1947 to September 1970, October 1977 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,429.45 ft (740.496 m) National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers).

REMARKS.--Records good except those for Mar. 12 to Apr. 16, which are poor.

AVERAGE DISCHARGE.--26 years, 29.6 ft^3/s (0.838 m^3/s), 21,440 acre-ft/yr (26.4 hm/yr); median of yearly mean discharges, 28 ft^3/s (0.79 m^3/s), 20,300 acre-ft/yr (25.0 hm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,080 ft^3/s (229 m^3/s) May 9, 1970, gage height, 22.77 ft (6.940 m); no flow at times in some years.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 200 ft^3/s (5.66 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Mar. 25	--	800	22.7	Ice jam		Apr. 10	--	*950	26.9	[a]10.98	3.347
Apr. 2	--	300	8.50	Ice jam		Apr. 17	1800	925	26.2	10.02	3.054

Minimum discharge, 0.05 ft^3/s (0.001 m^3/s) Aug. 11, 12.

a - Ice jam.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.66	.70	.76	.65	.82	.94	320	16	2.4	.88	2.5	.87
2	.30	.69	.73	.68	.82	.94	330	15	2.1	.88	1.5	.82
3	.36	.68	.70	.68	.82	.94	200	13	2.1	1.0	1.0	1.3
4	.49	.65	.71	.68	.82	.95	150	12	1.9	.88	.76	1.7
5	.44	.65	.76	.66	.82	1.0	130	11	1.8	.68	.68	1.1
6	.49	.66	.73	.68	.88	1.0	130	11	1.8	.70	.44	.86
7	.36	.69	.70	.65	.88	1.0	170	16	1.9	.63	.38	.69
8	.53	.69	.70	.63	.94	1.2	300	12	1.8	.63	.30	.64
9	.49	1.0	.70	.63	.94	1.2	650	11	1.7	.63	.30	.59
10	.53	.90	.70	.65	.94	1.1	900	9.9	1.6	.76	.30	.72
11	.60	.70	.71	.65	.94	1.1	750	9.1	1.7	.88	.16	17
12	.56	.65	.80	.63	.93	1.4	300	8.8	1.6	.88	.16	12
13	.56	.70	.82	.65	.93	1.7	140	8.3	1.4	.88	.30	2.6
14	.60	.70	.82	.60	.95	1.6	110	7.3	1.2	1.3	.23	1.7
15	.56	.70	.82	.65	.99	1.8	140	6.6	1.2	1.3	.23	1.2
16	.60	.70	.82	.63	1.0	3.0	507	6.2	1.1	1.1	.23	.75
17	.60	.70	.81	.63	1.0	20	841	5.6	1.0	.88	.23	.65
18	.65	.76	.82	.65	1.0	100	694	5.1	1.0	.76	.16	.57
19	.63	.73	.80	.65	.95	120	365	4.9	1.3	.68	.23	.44
20	.65	.70	.74	.68	.94	90	206	4.7	3.3	.65	.23	.38
21	.65	.70	.72	.68	.94	100	112	4.9	2.5	.60	.56	.38
22	.65	.70	.74	.66	.96	160	71	4.5	1.8	.56	36	.38
23	.68	.70	.76	.70	1.0	300	48	4.5	1.4	.49	9.7	.33
24	.68	.70	.77	.70	1.0	500	39	4.5	1.1	.53	5.4	.40
25	.65	.70	.76	.70	.94	700	34	4.2	.88	29	2.9	.44
26	.68	.74	.76	.70	.94	550	29	3.9	.88	18	2.2	.43
27	.65	.82	.76	.76	.94	450	25	3.6	.88	6.8	1.8	.33
28	.65	.82	.76	.76	.94	350	24	3.2	.88	7.7	2.0	.30
29	.68	.87	.76	.76	---	250	22	3.1	.82	5.4	3.6	.30
30	.68	.74	.68	.76	---	190	18	2.8	.76	3.3	2.1	.30
31	.70	---	.65	.82	---	240	---	2.6	---	7.6	1.1	---
TOTAL	18.41	21.87	23.25	20.95	25.97	4140.87	7755	235.3	45.80	96.96	77.68	50.17
MEAN	.59	.73	.75	.68	.93	134	259	7.59	1.53	3.13	2.51	1.67
MAX	.88	1.0	.82	.82	1.0	700	900	16	3.3	29	36	17
MIN	.30	.65	.63	.60	.82	.94	18	2.6	.76	.49	.16	.30
AC-FT	37	43	46	42	52	8210	15380	467	91	192	154	100

CAL YR 1978 TOTAL 23633.15 MEAN 64.7 MAX 3820 MIN .30 AC-FT 46880
WTR YR 1979 TOTAL 12512.23 MEAN 34.3 MAX 900 MIN .16 AC-FT 24820

06343000 HEART RIVER NEAR SOUTH HEART, ND--Continued

WATER-QUALITY RECORDS

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS (MG/L AS CACO3) (00900)
OCT											
05...	0730	.37	1850	8.2	4.5	7.5	8.0	73	72	110	130
NOV											
07...	0825	.73	2550	8.2	7.0	3.0	10.3	84	K10	780	260
DEC											
12...	1215	.84	3470	7.4	-5.0	.5	8.1	62	K5	38	380
JAN											
11...	0955	.63	3900	8.1	-12.0	.0	8.2	61	K3	K19	460
FEB											
10...	1310	.93	3500	7.9	-4.0	.0	8.6	65	K4	49	350
MAR											
26...	0910	556	--	--	-10.0	.0	--	--	--	--	--
30...	0900	191	587	7.5	4.5	.0	11.0	83	K11	K1700	110
MAY											
04...	0745	12	2120	8.3	1.0	8.0	10.7	98	<2	K9	400
15...	0815	6.8	2600	8.4	9.0	12.0	9.4	95	K6	K16	510
JUN											
13...	1000	1.4	2910	8.5	21.0	21.0	8.5	100	200	140	460
JUL											
10...	1300	.65	2580	8.5	23.5	24.0	7.5	97	130	130	300
AUG											
07...	0925	.36	1490	8.8	27.0	20.5	8.3	99	170	130	84
SEP											
06...	0920	.84	2110	8.5	15.0	13.0	7.8	79	270	580	220

DATE	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE (MG/L AS HCO3) (00440)	CAR-BONATE (MG/L AS CO3) (00445)	ALKA-LINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)
OCT											
05...	0	27	15	400	86	15	6.7	586	0	480	5.9
NOV											
07...	0	54	30	510	81	14	8.1	732	0	600	7.4
DEC											
12...	0	70	50	750	81	17	11	1120	0	920	71
JAN											
11...	0	110	46	750	77	15	9.8	1160	0	950	15
FEB											
10...	0	65	46	790	83	18	8.8	976	0	800	20
MAR											
26...	--	--	--	--	--	--	--	--	--	--	--
30...	32	21	13	72	57	3.0	8.3	95	0	78	4.8
MAY											
04...	98	89	43	330	64	7.2	7.5	368	0	300	3.0
15...	130	100	64	450	65	8.6	8.7	464	2	390	3.0
JUN											
13...	0	84	60	530	71	11	8.7	668	7	560	3.5
JUL											
10...	0	53	40	510	78	13	9.1	644	0	530	3.3
AUG											
07...	0	21	7.7	330	92	16	5.6	383	22	350	1.1
SEP											
06...	0	47	24	410	88	12	7.1	447	10	380	2.4

K - Results based on colony count outside the acceptable range (non-ideal colony count).

06343000 HEART RIVER NEAR SOUTH HEART, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)
OCT											
05...	490	27	1.1	11	1280	1270	1.73	1.27	.01	.12	1.1
NOV											
07...	700	26	.9	10	1750	1700	2.31	5.35	.01	.03	.85
DEC											
12...	1200	34	1.1	14	2580	2680	3.64	6.08	.08	.13	.84
JAN											
11...	1200	32	1.1	17	2720	2740	3.73	4.66	.19	.18	.92
FEB											
10...	1100	34	.9	17	2610	2540	3.45	6.38	.54	.33	.59
MAR											
26...	--	--	--	--	--	--	--	--	--	--	--
30...	180	5.6	.1	8.7	392	356	.48	184	1.4	.08	1.2
MAY											
04...	810	12	.3	7.6	1500	1480	2.01	48.0	.02	.03	.93
15...	1000	21	.4	6.1	1950	1880	2.56	34.5	.01	.02	.60
JUN											
13...	930	27	.7	3.4	2130	1980	2.69	7.48	.02	.06	.94
JUL											
10...	820	20	.9	5.3	1640	1780	2.42	3.12	.01	.01	.83
AUG											
07...	420	8.8	.7	24	994	1030	1.40	1.00	.02	.01	.81
SEP											
06...	720	12	.6	9.1	1470	1460	1.99	3.31	.01	.03	.57

DATE	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	ARSENIC TOTAL IN BOT-TOM MA-TERIAL (UG/G AS AS) (01003)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)
OCT											
05...	1.2	1.2	5.4	.31	.23	--	--	--	--	--	--
NOV											
07...	.88	.89	3.9	.16	.10	--	--	--	--	--	--
DEC											
12...	.97	1.1	4.6	.19	.14	--	--	--	--	--	--
JAN											
11...	1.1	1.3	5.7	.21	.12	--	--	--	--	--	--
FEB											
10...	.92	1.5	6.5	.18	.09	--	--	--	--	--	--
MAR											
26...	--	--	--	--	--	--	--	--	--	--	--
30...	1.3	2.7	12	.22	.14	50	2	1	--	100	60
MAY											
04...	.96	.98	4.3	.08	.02	--	--	--	--	--	--
15...	.62	.63	2.8	.06	.02	--	--	--	--	--	--
JUN											
13...	1.0	1.0	4.5	.41	.02	--	--	--	--	--	--
JUL											
10...	.84	.85	3.8	.07	.03	30	--	3	--	--	0
AUG											
07...	.82	.84	3.7	.12	.06	0	14	14	90	100	100
SEP											
06...	.60	.61	2.7	.10	.04	--	--	--	--	--	--

06343000 HEART RIVER NEAR SOUTH HEART, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	BARIUM, RECOV. FM BOTTOM MATERIAL (UG/G AS BA) (01008)	BERYLLIUM, TOTAL RECOVERABLE (UG/L AS BE) (01012)	BERYLLIUM, DISSOLVED (UG/L AS BE) (01010)	BERYLLIUM, RECOV. FM BOTTOM MATERIAL (UG/G) (01013)	BORON, DISSOLVED (UG/L AS B) (01020)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) (01034)	CHROMIUM, DISSOLVED (UG/L AS CR) (01030)	CHROMIUM, RECOV. FM BOTTOM MATERIAL (UG/G) (01029)	COBALT, TOTAL RECOVERABLE (UG/L AS CO) (01037)	COBALT, DISSOLVED (UG/L AS CO) (01035)	COBALT, RECOV. FM BOTTOM MATERIAL (UG/G AS CO) (01038)
OCT											
05...	--	--	--	--	600	--	--	--	--	--	--
NOV											
07...	--	--	--	--	770	--	--	--	--	--	--
DEC											
12...	--	--	--	--	1100	--	--	--	--	--	--
JAN											
11...	--	--	--	--	1100	--	--	--	--	--	--
FEB											
10...	--	--	--	--	1100	--	--	--	--	--	--
MAR											
26...	--	--	--	--	--	--	--	--	--	--	--
30...	--	0	<1	--	150	0	0	--	3	<3	--
MAY											
04...	--	--	--	--	450	--	--	--	--	--	--
15...	--	--	--	--	620	--	--	--	--	--	--
JUN											
13...	--	--	--	--	800	--	--	--	--	--	--
JUL											
10...	--	--	0	--	930	--	10	--	--	0	--
AUG											
07...	200	0	<1	0	400	0	0	5	0	<3	15
SEP											
06...	--	--	--	--	540	--	--	--	--	--	--

DATE	COPPER, TOTAL RECOVERABLE (UG/L AS CU) (01042)	COPPER, DISSOLVED (UG/L AS CU) (01040)	COPPER, RECOV. FM BOTTOM MATERIAL (UG/G AS CU) (01043)	IRON, DISSOLVED (UG/L AS FE) (01046)	LITHIUM TOTAL RECOVERABLE (UG/L AS LI) (01132)	LITHIUM DISSOLVED (UG/L AS LI) (01130)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN) (01055)	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	MANGANESE, RECOV. FM BOTTOM MATERIAL (UG/G) (01053)	MERCURY TOTAL RECOVERABLE (UG/L AS HG) (71900)	MERCURY DISSOLVED (UG/L AS HG) (71890)
OCT											
05...	--	--	--	140	--	--	--	--	--	--	--
NOV											
07...	--	--	--	100	--	--	--	--	--	--	--
DEC											
12...	--	--	--	100	--	--	--	--	--	--	--
JAN											
11...	--	--	--	100	--	--	--	--	--	--	--
FEB											
10...	--	--	--	70	--	--	--	--	--	--	--
MAR											
26...	--	--	--	--	--	--	--	--	--	--	--
30...	16	8	--	220	9	9	90	60	--	.0	.0
MAY											
04...	--	--	--	50	--	--	--	--	--	--	--
15...	--	--	--	10	--	--	--	--	--	--	--
JUN											
13...	--	--	--	10	--	--	--	--	--	--	--
JUL											
10...	--	2	--	40	--	40	--	30	--	--	.1
AUG											
07...	5	16	15	30	20	30	110	4	1400	.1	.1
SEP											
06...	--	--	--	20	--	--	--	--	--	--	--

DATE	MERCURY RECOV. FM BOTTOM MATERIAL (UG/G AS HG) (71921)	MOLYBDENUM, TOTAL RECOVERABLE (UG/L AS MO) (01062)	MOLYBDENUM, RECOV. FM BOTTOM MATERIAL (UG/G) (01063)	MOLYBDENUM, DISSOLVED (UG/L AS MO) (01060)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI) (01067)	NICKEL, DISSOLVED (UG/L AS NI) (01065)	NICKEL, RECOV. FM BOTTOM MATERIAL (UG/G AS NI) (01068)	SELENIUM, TOTAL (UG/L AS SE) (01147)	SELENIUM, DISSOLVED (UG/L AS SE) (01145)	SELENIUM, TOTAL IN BOTTOM MATERIAL (UG/G) (01148)	VANADIUM, DISSOLVED (UG/L AS V) (01085)
MAR											
26...	--	--	--	--	--	--	--	--	--	--	--
30...	--	2	--	<10	9	4	--	0	0	--	2.9
MAY											
04...	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
JUN											
13...	--	--	--	--	--	--	--	--	--	--	--
JUL											
10...	--	--	--	5	--	4	--	--	1	--	.0
AUG											
07...	.08	0	0	<10	4	5	35	1	1	0	.32
SEP											
06...	--	--	--	--	--	--	--	--	--	--	--

06343000 HEART RIVER NEAR SOUTH HEART, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ZINC, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS ZN) (01093)	GROSS ALPHA, DIS-SOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DIS-SOLVED (PCI/L AS CS-137) (03515)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C) (00689)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
OCT											
05...	--	--	--	--	--	--	--	17	2.2	98	.10
NOV											
07...	--	--	--	--	--	--	--	13	1.7	110	.22
DEC											
12...	--	--	--	--	--	--	--	18	2.4	161	.37
JAN											
11...	--	--	--	--	--	--	--	16	.9	164	.28
FEB											
10...	--	--	--	--	--	--	--	16	1.1	124	.31
MAR											
26...	--	--	--	--	--	--	--	--	--	98	147
30...	20	20	--	<5.8	2.7	9.5	2.5	17	1.0	68	35
MAY											
04...	--	--	--	--	--	--	--	14	2.7	36	1.2
15...	--	--	--	--	--	--	--	14	1.8	29	.53
JUN											
13...	--	--	--	--	--	--	--	22	1.1	44	.17
JUL											
10...	--	10	--	--	--	--	--	15	.4	63	.11
AUG											
07...	10	<3	43	<16	<1.0	7.7	2.7	15	1.2	22	.02
SEP											
06...	--	--	--	--	--	--	--	18	1.2	21	.05

DATE	BED MAT. FALL DIAM. % FINER THAN .062 MM (80158)	BED MAT. FALL DIAM. % FINER THAN .125 MM (80159)	BED MAT. FALL DIAM. % FINER THAN .250 MM (80160)	BED MAT. FALL DIAM. % FINER THAN .500 MM (80161)
MAR				
30...	60	79	97	100

DATE	LENGTH OF EXPO-SURE (DAYS) (00022)	CHLOR-A PERI-PHYTON CHROMO-GRAPHIC FLUORUM (MG/M2) (70957)	CHLOR-B PERI-PHYTON CHROMO-GRAPHIC FLUORUM (MG/M2) (70958)	PERI-PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M (00573)	PERI-PHYTON BIOMASS ASH WEIGHT G/SQ M (00572)
NOV					
07...	56	40.9	2.30	16.2	12.5
JUN					
13...	29	.040	.000	.160	.160
JUL					
10...	27	18.1	.650	30.9	27.3
AUG					
07...	28	1.46	.000	1.89	1.57
SEP					
06...	30	.200	.000	.240	.160

06343000 HEART RIVER NEAR SOUTH HEART, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1978 TO SEPTEMBER 1979

DATE	OCT 5,78	NOV 7,78	DEC 12,78	JAN 11,79	FEB 10,79	MAR 79,79
TIME	0730	0825	1215	0955	1310	0900
TOTAL CELLS/ML	3100	13000	3200	91	440	130
DIVERSITY: DIVISION	0.9	1.0	1.5	1.0	1.2	1.2
.CLASS	0.9	1.0	1.5	1.0	1.2	1.2
..ORDER	1.0	1.2	1.8	1.6	1.6	1.8
...FAMILY	1.1	1.6	2.6	2.4	1.9	1.8
....GENUS	1.2	2.1	3.2	2.5	2.1	1.8

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)												
.CHLOROPHYCEAE												
..CHLOROCOCCALES												
...CHARACIACEAE												
....SCHROEDERIA	62	2	230	2	--	-	--	-	--	-	--	-
...CHLOROCOCCACEAE												
....CHLOROCOCCUM	--	-	--	-	--	-	--	-	--	-	--	-
...OOCYSTACEAE												
....ANKISTRODESMUS	36	1	2400#	18	310	10	5	6	20	5	--	-
....CHLORELLA	--	-	--	-	--	-	--	-	--	-	--	-
....CHODATELLA	--	-	--	-	--	-	--	-	--	-	--	-
....DICTYOSPHAERIUM	--	-	450	3	--	-	--	-	--	-	--	-
....KIRCHNERIELLA	--	-	--	-	*	0	--	-	--	-	--	-
....OOCYSTIS	--	-	--	-	--	-	--	-	--	-	--	-
....SELENASTRUM	--	-	340	3	--	-	10	11	--	-	--	-
....TETRAEDRON	--	-	--	-	--	-	--	-	--	-	--	-
....TREUBARIA	--	-	--	-	57	2	--	-	--	-	--	-
...SCENEDESMACEAE												
....ACTINASTRUM	--	-	--	-	--	-	--	-	--	-	--	-
....CRUCIGENIA	36	1	--	-	170	5	--	-	20	5	--	-
....SCENEDESMUS	430	14	1000	8	1100#	36	10	11	76#	17	52#	40
....TETRASTRUM	--	-	--	-	230	7	--	-	--	-	--	-
..TETRASPORALES												
...COCCOMYXACEAE												
....ELAKATOTHRIX	--	-	--	-	--	-	--	-	--	-	--	-
..VOLVOCALES												
...CHLAMYDOMONADACEAE												
....CHLAMYDOMONAS	53	2	--	-	57	2	10	11	--	-	39#	30
CHRYSOPHYTA												
.BACILLARIOPHYCEAE												
..CENTRALES												
...COSCINODISCACEAE												
....CYCLOTELLA	53	2	7700#	58	29	1	5	6	--	-	13	10
....MELOSIRA	--	-	560	4	--	-	--	-	--	-	--	-
....STEPHANODISCUS	--	-	--	-	--	-	--	-	--	-	--	-
..PENNALES												
...ACHNANTHACEAE												
....COCCONEIS	--	-	--	-	--	-	--	-	--	-	--	-
...FRAGILARIACEAE												
....FRAGILARIA	--	-	--	-	--	-	40#	44	--	-	--	-
....SYNEDRA	--	-	110	1	*	0	--	-	5	1	--	-
...NAVICULACEAE												
....GYROSIGMA	--	-	--	-	--	-	--	-	15	3	--	-
....NAVICULA	--	-	--	-	57	2	5	6	--	-	--	-
...NITZSCHIACEAE												
....NITZSCHIA	--	-	230	2	43	1	--	-	10	2	--	-
...SURIRELLACEAE												
....SURIRELLA	--	-	110	1	140	5	5	6	--	-	--	-
...TABELLARIACEAE												
....TABELLARIA	--	-	--	-	270	9	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)												
.CRYPTOPHYCEAE												
..CRYPTOMONADALES												
...CRYPTOCHRYSIDACEAE												
....CHROOMONAS	--	-	--	-	*	0	--	-	--	-	--	-
...CRYPTOMONADACEAE												
....CRYPTOMONAS	--	-	--	-	--	-	--	-	--	-	26#	20
CYANOPHYTA (BLUE-GREEN ALGAE)												
.CYANOPHYCEAE												
..CHROOCOCCALES												
...CHROOCOCCACEAE												
....ANACYSTIS	--	-	--	-	170	5	--	-	40	9	--	-
..HORMOGONALES												
...NOSTOCACEAE												
....ANABAENA	--	-	--	-	--	-	--	-	--	-	--	-
....ANABAENOPSIS	--	-	--	-	--	-	--	-	--	-	--	-
...OSCILLATORIACEAE												
....OSCILLATORIA	2400#	78	--	-	210	7	--	-	250#	57	--	-
....SCHIZOTHRIX	--	-	--	-	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

CONTINUED

06343000 HEART RIVER NEAR SOUTH HEART, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1978 TO SEPTEMBER 1979 (CONTINUED)

DATE TIME		OCT 5,78 0730		NOV 7,78 0825		DEC 12,78 1215		JAN 11,79 0955		FEB 10,79 1310		MAR 79,79 0900	
ORGANISM		CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
EUGLENOPHYTA (EUGLENOIDS)													
.EUGLENOPHYCEAE													
..EUGLENALES													
...EUGLENACEAE													
....EUGLENA		18	1	230	2	--	-	--	-	5	1	--	-
....PHACUS		--	-	--	-	*	0	--	-	--	-	--	-
....TRACHELOMONAS		*	0	--	-	200	6	--	-	--	-	--	-
PYRRHOPHYTA (FIRE ALGAE)													
.DINOPHYCEAE													
..GYMNODINIALES													
...GYMNODINIACEAE													
....GYMNODINIUM		--	-	--	-	--	-	--	-	--	-	--	-
..PERIDINIALES													
...GLENODINIACEAE													
....GLENODINIUM		--	-	--	-	--	-	--	-	--	-	--	-
UNKNOWN	8	--	-	--	-	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06343000 HEART RIVER NEAR SOUTH HEART, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1978 TO SEPTEMBER 1979

DATE	MAY 15,79	JUN 13,79	JUL 10,79	AUG 7,79	SEP 6,79
TIME	0815	1000	1300	0925	0920
TOTAL CELLS/ML	16000	1200	3800	39000	340000
DIVERSITY: DIVISION	1.1	1.5	1.1	0.4	1.0
.CLASS	1.1	1.5	1.1	0.4	0.0
..ORDER	1.8	1.9	1.4	0.5	0.0
...FAMILY	2.1	2.5	2.0	1.2	0.0
....GENUS	2.2	3.0	2.8	1.3	0.0

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)										
.CHLOROPHYCEAE										
..CHLOROCOCCALES										
...CHARACIACEAE										
....SCHROEDERIA	--	-	--	-	--	-	--	-	--	-
...CHLOROCOCCACEAE										
....CHLOROCOCCUM	--	-	--	-	--	-	--	-	*	0
...OOCYSTACEAE										
....ANKISTRODESMUS	4700#	30	490#	40	710#	19	500	1	4200	1
....CHLORELLA	--	-	--	-	--	-	--	-	2400	1
....CHODATELLA	--	-	--	-	--	-	--	-	*	0
....DICTYOSPHAERIUM	--	-	--	-	660#	17	300	1	*	0
....KIRCHNERIELLA	--	-	--	-	--	-	--	-	--	-
....OOCYSTIS	--	-	--	-	51	1	*	0	--	-
....SELENASTRUM	160	1	77	6	*	0	*	0	--	-
....TETRAEDRON	--	-	--	-	*	0	--	-	--	-
....TREUBARIA	80	1	13	1	*	0	--	-	--	-
...SCENEDESMACEAE										
....ACTINASTRUM	--	-	51	4	--	-	--	-	--	-
....CRUCIGENIA	--	-	--	-	460	12	--	-	--	-
....SCENEDESMUS	1100	7	100	8	280	8	300	1	--	-
....TETRASTRUM	--	-	--	-	100	3	200	1	--	-
..TETRASPORALES										
...COCCOMYXACEAE										
....ELAKATOTHRIX	--	-	--	-	--	-	*	0	--	-
..VOLVOCALES										
...CHLAMYDOMONADACEAE										
....CHLAMYDOMONAS	240	2	13	1	77	2	*	0	--	-
CHRYSOPHYTA										
.BACILLARIOPHYCEAE										
..CENTRALES										
...COSCINODISCACEAE										
....CYCLOTELLA	--	-	38	3	--	-	*	0	*	0
....MELOSIRA	--	-	--	-	--	-	--	-	--	-
....STEPHANODISCUS	80	1	--	-	--	-	*	0	--	-
..PENNALES										
...ACHNANTHACEAE										
....COCCONEIS	--	-	13	1	--	-	--	-	--	-
...FRAGILARIACEAE										
....FRAGILARIA	--	-	--	-	--	-	--	-	--	-
....SYNEDRA	--	-	--	-	--	-	--	-	--	-
...NAVICULACEAE										
....GYROSIGMA	--	-	--	-	--	-	--	-	--	-
....NAVICULA	--	-	13	1	--	-	--	-	--	-
...NITZSCHIACEAE										
....NITZSCHIA	80	1	13	1	*	0	*	0	--	-
...SURIRELLACEAE										
....SURIRELLA	--	-	--	-	--	-	--	-	--	-
...TABELLARIACEAE										
....TABELLARIA	--	-	--	-	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)										
.CRYPTOPHYCEAE										
..CRYPTOMONADALES										
...CRYPTOCHRYSIDACEAE										
....CHROOMONAS	--	-	--	-	--	-	--	-	--	-
...CRYPTOMONADACEAE										
....CRYPTOMONAS	--	-	13	1	--	-	*	0	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)										
.CYANOPHYCEAE										
..CHROOCOCCALES										
...CHROOCOCCACEAE										
....ANACYSTIS	4200#	27	64	5	140	4	600	2	22000	7
..NOSTOCALES										
...NOSTOCACEAE										
....ANABAENA	--	-	190#	16	--	-	--	-	8900	3
....ANABAENOPSIS	--	-	--	-	--	-	6800#	18	4200	1
...OSCILLATORIACEAE										
....OSCILLATORIA	4800#	31	51	4	1200#	31	29000#	75	--	-
....SCHIZOTHRIX	--	-	--	-	--	-	--	-	40000	12

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

CONTINUED

06343000 HEART RIVER NEAR SOUTH HEART, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1978 TO SEPTEMBER 1979 (CONTINUED)

DATE / TIME		MAY 15,79 0815		JUN 13,79 1000		JUL 10,79 1300		AUG 7,79 0925		SEP 6,79 0920	
ORGANISM		CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
EUGLENOPHYTA (EUGLENOIDS)											
.EUGLENOPHYCEAE											
..EUGLENALES											
...EUGLENACEAE											
....EUGLENA		160	1	38	3	39	1	*	0	--	-
....PHACUS		--	-	--	-	--	-	--	-	--	-
....TRACHELOMONAS		80	1	26	2	26	1	*	0	*	0
PYRRHOPHYTA (FIRE ALGAE)											
.DINOPHYCEAE											
..GYMNODINIALES											
...GYMNODINIACEAE											
....GYMNODINIUM		--	-	13	1	--	-	--	-	--	-
..PERIDINIALES											
...GLENODINIACEAE											
....GLENODINIUM		--	-	--	-	*	0	*	0	--	-
UNKNOWN	8	--	-	--	-	--	-	--	-	250000#	75

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06343500 EDWARD ARTHUR PATTERSON LAKE NEAR DICKINSON, ND

LOCATION.--Lat 46°52'11", long 102°49'37", in NE¼NW¼SW¼ sec.8, T.139 N., R.96 W., Stark County, Hydrologic Unit 10130202, at left edge of spillway, and 2 mi (3 km) southwest of Dickinson.

DRAINAGE AREA.--400 mi^2 (1,040 km^2), 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 (731.520 m) National Geodetic Vertical Datum of 1929 (levels by Bureau of Reclamation); gage readings have been reduced to elevations NGVD. Prior to Jan. 4, 1961, nonrecording gage at same site and datum.

REMARKS.--Reservoir is formed by earthfill dam; storage began May 23, 1950; dam completed Aug. 9, 1950. Total capacity is 24,600 acre-ft (30.3 hm^3) at maximum pool, elevation, 2,428.9 ft (740.329 m). Dead storage is 1,000 acre-ft (1.23 hm^3) below lowest point of outlet, elevation, 2,404.0 ft (732.739 m). Conservation storage is 5,600 acre-ft (6.90 hm^3) between elevation 2,404.0 ft (732.739 m) and 2,416.5 ft (736.549 m), 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.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 11,180 acre-ft (13.8 hm^3) May 9, 1970, elevation, 2,420.81 ft (737.863 m); minimum since initial filling of reservoir, 2,950 acre-ft (3.64 hm^3) Mar. 16, 1962, elevation, 2,410.41 ft (734.693 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 7,910 acre-ft (9.75 hm^3) Apr. 10, elevation, 2,417.90 ft (736.976 m); minimum, 5,170 acre-ft (6.37 hm^3) Sept. 30, elevation 2,414.43 ft (735.918 m).

MONTHEND ELEVATION AND CONTENTS AT 2400, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30	2,415.54	5,930	--
Oct. 31	2,415.27	5,740	-190
Nov. 30	2,415.38	5,820	+80
Dec. 31	2,415.39	5,820	--
CAL YR 1978	--	--	-920
Jan. 31	2,415.36	5,800	-20
Feb. 28	2,415.36	5,800	--
Mar. 31	2,417.21	7,280	+1,480
Apr. 30	2,416.66	6,810	-470
May 31	2,416.52	6,690	-120
June 30	2,416.03	6,290	-400
July 31	2,415.50	5,900	-390
Aug. 31	2,414.94	5,500	-400
Sept. 30	2,414.43	5,170	-330
WTR YR 1979	--	--	-760

06344600 GREEN RIVER NEAR NEW HRADEC, ND

LOCATION.--Lat 47°01'40", long 103°03'10", on line between secs.13 and 14, T.141 N., R.98 W., Billings County, Hydrologic Unit 10130202, on left bank below county highway bridge, and 8 mi (13 km) west of New Hradec.

DRAINAGE AREA.--152 mi^2 (394 km^2), approximately.

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--15 years, 18.7 ft^3/s (0.530 m^3/s), 13,550 acre-ft/yr (16.7 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,120 ft^3/s (117 m^3/s) May 9, 1970, gage height, 16.88 ft (5.145 m); maximum gage height, 17.60 ft (5.364 m) Mar. 22, 1978, backwater from ice; no flow at times.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 100 ft^3/s (2.83 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Mar. 25	--	650	18.4	Backwater from ice		Apr. 10	0800	940	26.6	[a]*14.12	4.304
Apr. 1	--	240	6.80	Backwater from ice		Apr. 17	0915	*1,420	40.2	13.77	4.197

Minimum daily discharge, 0.26 ft^3/s (0.007 m^3/s) Sept. 9.

a - Backwater from ice.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.7	1.4	2.3	2.0	1.9	1.6	200	13	3.6	2.0	3.1	1.3
2	2.6	1.4	2.2	2.0	1.8	1.6	140	11	3.9	1.9	2.2	1.2
3	2.5	1.3	2.2	2.0	1.8	1.6	120	10	4.3	1.8	1.7	1.1
4	2.6	1.3	2.2	2.0	1.8	1.6	70	9.0	5.4	1.8	1.2	.66
5	2.6	1.3	2.2	2.0	1.8	1.6	50	8.4	4.9	1.7	.78	.29
6	2.5	1.3	2.1	2.0	1.8	1.6	40	9.0	4.9	1.7	.73	.41
7	2.4	1.3	2.0	2.0	1.8	1.6	80	9.7	5.4	1.7	.41	.33
8	2.4	1.5	2.0	2.0	1.8	1.8	520	9.8	5.6	1.6	.35	.35
9	2.3	2.0	2.0	2.0	1.7	1.8	630	9.3	5.2	1.6	.35	.26
10	2.3	2.5	2.0	2.0	1.7	1.8	800	8.9	4.3	1.6	.35	.61
11	2.2	2.9	2.1	2.0	1.7	1.8	460	8.3	4.1	1.7	.35	.77
12	2.2	2.8	2.2	2.0	1.7	2.0	150	8.1	4.5	2.0	.47	.70
13	2.1	2.7	2.2	2.0	1.7	3.0	55	7.7	3.9	2.5	.38	.61
14	2.1	2.7	2.3	2.0	1.7	3.0	42	7.0	3.4	2.5	.41	.58
15	2.0	2.7	2.3	2.0	1.7	4.0	63	6.8	2.9	2.5	.35	.50
16	1.9	2.7	2.2	2.0	1.7	5.0	294	6.2	2.5	2.4	.35	.56
17	1.8	2.7	2.2	2.0	1.6	21	1040	6.2	2.1	2.3	.50	.68
18	1.8	2.7	2.2	2.0	1.6	33	452	5.2	1.7	2.3	.47	.68
19	1.8	2.6	2.1	2.0	1.6	18	348	5.6	1.8	2.2	.50	.73
20	1.7	2.6	2.1	2.0	1.6	37	78	5.5	1.8	2.1	.50	.71
21	1.7	2.5	2.1	2.0	1.6	70	38	4.9	1.8	2.1	1.0	.68
22	1.7	2.5	2.1	2.0	1.6	200	29	4.7	3.4	2.1	1.1	.64
23	1.6	2.4	2.1	2.0	1.6	240	24	4.7	3.7	2.1	1.4	.60
24	1.6	2.4	2.1	2.0	1.6	400	22	4.5	3.6	2.5	1.4	.60
25	1.6	2.4	2.1	2.0	1.6	620	23	4.1	2.5	2.4	1.4	.60
26	1.6	2.4	2.1	2.0	1.6	430	23	3.7	2.2	2.0	1.5	.73
27	1.5	2.4	2.1	2.0	1.6	310	21	3.2	2.6	3.4	1.6	.56
28	1.5	2.4	2.1	2.0	1.6	170	19	2.7	2.5	2.4	2.0	.47
29	1.5	2.4	2.1	1.9	---	100	17	2.8	2.6	3.2	1.8	.53
30	1.5	2.3	2.1	1.9	---	80	15	3.1	2.2	3.4	1.5	.78
31	1.4	---	2.0	1.9	---	110	---	3.2	---	3.7	1.4	---
TOTAL	61.7	66.5	66.1	61.7	47.3	2874.4	5863	206.3	103.3	69.2	31.55	19.16
MEAN	1.99	2.22	2.13	1.99	1.69	92.7	195	6.65	3.44	2.23	1.02	.64
MAX	2.7	2.9	2.3	2.0	1.9	620	1040	13	5.6	3.7	3.1	1.3
MIN	1.4	1.3	2.0	1.9	1.6	1.6	15	2.7	1.7	1.6	.35	.26
AC-FT	122	132	131	122	94	5700	11630	409	205	137	63	38

CAL YR 1978 TOTAL 11132.50 MEAN 30.5 MAX 1380 MIN .80 AC-FT 22080
WTR YR 1979 TOTAL 9470.21 MEAN 25.9 MAX 1040 MIN .26 AC-FT 18780

06344600 GREEN RIVER NEAR NEW HRADEC, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1972 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS (MG/L AS CACO3) (00900)
OCT											
03...	1030	2.5	915	8.0	8.0	10.0	9.0	87	120	380	210
17...	1230	1.8	1040	--	11.0	7.5	--	--	--	--	--
NOV											
10...	0830	2.5	1090	8.2	5.5	1.0	12.9	92	K5	39	270
14...	1215	2.7	1060	--	7.0	.0	--	--	--	--	--
20...	1235	2.6	1480	--	.0	.0	--	--	--	--	--
DEC											
12...	1445	2.2	1440	7.3	-5.5	.0	10.6	81	37	42	320
26...	1200	1.5	1460	--	--	.5	--	--	--	--	--
JAN											
10...	1500	2.0	1440	7.6	-15.0	.0	9.2	69	26	K16	330
24...	1055	2.0	1390	--	-8.0	.0	--	--	--	--	--
FEB											
10...	0830	1.7	1260	8.0	-17.0	.0	10.0	75	53	27	300
20...	1150	1.6	1270	--	--	1.0	--	--	--	--	--
MAR											
17...	1400	53	770	--	2.0	2.0	--	--	--	--	--
21...	1115	43	585	--	.0	2.0	--	--	--	--	--
27...	1730	281	365	--	4.0	2.0	--	--	--	--	--
29...	1100	100	364	7.6	-1.0	.0	8.4	64	K1	K91	84
30...	1305	73	435	--	4.0	2.0	--	--	--	--	--
APR											
09...	1650	721	250	--	10.0	5.5	--	--	--	--	--
10...	1145	690	205	7.4	2.0	3.0	--	--	--	--	42
16...	1645	395	405	--	12.0	5.0	--	--	--	--	--
24...	1215	22	695	--	2.5	5.5	--	--	--	--	--
MAY											
03...	1350	10	1020	8.2	14.0	10.0	11.2	108	K13	82	260
15...	1220	6.8	1200	8.4	21.5	13.5	9.9	102	K8	17	300
24...	1315	4.2	1260	--	21.0	17.0	--	--	--	--	--
JUN											
21...	1130	1.8	1180	8.5	20.0	21.0	7.2	88	180	95	280
28...	1200	2.4	1390	--	24.0	21.0	--	--	--	--	--
JUL											
10...	0800	1.6	1260	8.3	19.5	22.0	6.0	74	120	360	340
24...	1145	2.0	1080	--	--	24.0	--	--	--	--	--
AUG											
09...	1215	.55	1600	8.3	21.0	21.0	6.4	77	830	980	240
21...	1510	1.0	1340	7.8	--	20.0	--	--	--	--	230
SEP											
06...	1225	.41	1160	8.5	22.5	17.5	7.2	82	96	190	220
19...	1255	.75	1040	--	--	15.0	--	--	--	--	--

K - Results based on colony count outside the acceptable range (non-ideal colony count).

06344600 GREEN RIVER NEAR NEW HRADEC, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	HARDNESS, NONCARBONATE (MG/L CACO3) (00902)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM ADSORPTION RATIO (00931)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	BICARBONATE (MG/L AS HCO3) (00440)	CARBONATE (MG/L AS CO3) (00445)	ALKALINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DISSOLVED (MG/L AS CO2) (00405)
OCT											
03...	0	45	24	130	56	3.9	7.5	503	0	250	4.8
17...	--	--	--	--	--	--	--	--	--	--	--
NOV											
10...	0	57	31	160	56	4.2	5.3	586	0	320	3.9
14...	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
DEC											
12...	0	63	39	220	60	5.4	6.2	454	0	370	36
20...	--	--	--	--	--	--	--	--	--	--	--
JAN											
10...	0	68	40	220	56	5.2	7.7	481	0	390	12
24...	--	--	--	--	--	--	--	--	--	--	--
FEB											
10...	0	60	36	180	56	4.5	4.8	449	0	370	7.2
20...	--	--	--	--	--	--	--	--	--	--	--
MAR											
29...	2	16	9.5	42	49	2.0	8.1	100	0	82	2.5
30...	--	--	--	--	--	--	--	--	--	--	--
APR											
09...	--	--	--	--	--	--	--	--	--	--	--
10...	0	7.8	5.5	23	51	1.5	4.5	61	0	50	5.9
16...	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--
MAY											
03...	2	58	29	140	53	3.7	6.1	515	0	260	5.2
15...	0	66	34	170	54	4.2	6.3	578	4	320	2.5
24...	--	--	--	--	--	--	--	--	--	--	--
JUN											
21...	0	54	36	170	56	4.4	5.8	422	7	370	2.2
28...	--	--	--	--	--	--	--	--	--	--	--
JUL											
10...	0	63	32	180	65	5.0	6.2	442	0	360	3.5
24...	--	--	--	--	--	--	--	--	--	--	--
AUG											
09...	0	42	32	320	74	9.1	7.5	466	0	380	3.7
21...	0	38	33	250	70	7.2	5.1	478	0	392	12
SEP											
06...	0	42	29	160	60	4.7	5.4	425	7	400	2.2
19...	--	--	--	--	--	--	--	--	--	--	--

DATE	SULFATE DISSOLVED (MG/L AS SO4) (00945)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)	SOLIDS, DISSOLVED (TONS PER DAY) (70302)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITROGEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)
OCT											
03...	240	5.0	.5	10	630	611	.83	4.12	.00	.01	1.1
17...	--	--	--	--	--	--	--	--	--	--	--
NOV											
10...	260	5.7	.5	7.4	731	737	1.00	4.97	.02	.04	.57
14...	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
DEC											
12...	430	6.9	.4	14	1020	1000	1.36	5.94	.25	.07	.53
20...	--	--	--	--	--	--	--	--	--	--	--
JAN											
10...	390	7.9	.4	16	1020	987	1.34	5.53	.39	.09	.64
24...	--	--	--	--	--	--	--	--	--	--	--
FEB											
10...	320	5.9	.3	16	825	845	1.15	3.88	.49	.07	.28
20...	--	--	--	--	--	--	--	--	--	--	--
MAR											
29...	100	2.6	.1	6.8	256	237	.32	64.0	.64	.12	.85
30...	--	--	--	--	--	--	--	--	--	--	--
APR											
09...	--	--	--	--	--	--	--	--	--	--	--
10...	47	1.7	.0	3.8	116	124	.17	298	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--
MAY											
03...	290	4.4	.2	9.4	688	693	.94	18.7	.08	.06	.94
15...	340	5.0	.3	6.4	831	819	1.11	15.0	.06	.02	.42
24...	--	--	--	--	--	--	--	--	--	--	--
JUN											
21...	280	5.4	.4	4.8	790	772	1.05	3.75	.01	.03	.64
28...	--	--	--	--	--	--	--	--	--	--	--
JUL											
10...	350	5.1	.4	5.9	877	881	1.20	3.81	.01	.02	.87
24...	--	--	--	--	--	--	--	--	--	--	--
AUG											
09...	510	5.7	.4	8.0	1120	1160	1.58	1.10	.03	.02	1.4
21...	360	3.9	.5	7.6	954	934	1.27	2.75	--	--	--
SEP											
06...	260	5.6	.5	6.5	757	726	.99	.80	.00	.03	.18
19...	--	--	--	--	--	--	--	--	--	--	--

06344600 GREEN RIVER NEAR NEW HRADEC, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, TOTAL (MG/L AS N) (00600)	NITROGEN, TOTAL (MG/L AS NO3) (71887)	PHOSPHORUS, TOTAL (MG/L AS P) (00665)	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	ALUMINUM, DISSOLVED (UG/L AS AL) (01106)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DISSOLVED (UG/L AS AS) (01000)	ARSENIC TOTAL IN BOTTOM MATERIAL (UG/G AS AS) (01003)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA) (01007)	BARIUM, DISSOLVED (UG/L AS BA) (01005)
OCT											
03...	1.1	1.1	4.9	.11	.02	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--
NOV											
10...	.61	.63	2.8	.04	.01	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
DEC											
12...	.60	.65	3.8	.00	.01	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
JAN											
10...	.73	1.1	5.0	.05	.03	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--
FEB											
10...	.35	.84	3.7	.05	.03	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
MAR											
17...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
29...	.97	1.6	7.1	.12	.10	80	1	1	8	0	100
30...	--	--	--	--	--	--	--	--	--	--	--
MAY											
03...	1.0	1.1	4.8	.08	.01	--	--	--	--	--	--
15...	.44	.50	2.2	.05	.01	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--
JUN											
21...	.67	.68	3.0	.04	.01	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--
JUL											
10...	.89	.90	4.0	.05	.01	40	--	2	--	--	100
24...	--	--	--	--	--	--	--	--	--	--	--
AUG											
09...	1.4	1.4	6.3	.12	.11	0	3	3	6	100	100
21...	--	--	--	--	--	--	--	--	--	--	--
SEP											
06...	.17	.17	.75	.07	.02	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--

DATE	BARIUM, RECOV. FM BOTTOM MATERIAL (UG/G AS BA) (01008)	BERYLLIUM, TOTAL RECOVERABLE (UG/L AS BE) (01012)	BERYLLIUM, DISSOLVED (UG/L AS BE) (01010)	BERYLLIUM, RECOV. FM BOTTOM MATERIAL (UG/G) (01013)	BORON, DISSOLVED (UG/L AS B) (01020)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) (01034)	CHROMIUM, DISSOLVED (UG/L AS CR) (01030)	CHROMIUM, RECOV. FM BOTTOM MATERIAL (UG/G) (01029)	COBALT, TOTAL RECOVERABLE (UG/L AS CO) (01037)	COBALT, DISSOLVED (UG/L AS CO) (01035)	COBALT, RECOV. FM BOTTOM MATERIAL (UG/G AS CO) (01038)
OCT											
03...	--	--	--	--	370	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--
NOV											
10...	--	--	--	--	380	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
DEC											
12...	--	--	--	--	480	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
JAN											
10...	--	--	--	--	460	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--
FEB											
10...	--	--	--	--	380	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
MAR											
29...	1000	0	0	1	130	10	0	6	0	0	0
30...	--	--	--	--	--	--	--	--	--	--	--
APR											
09...	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	90	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--
MAY											
03...	--	--	--	--	270	--	--	--	--	--	--
15...	--	--	--	--	330	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--
JUN											
21...	--	--	--	--	360	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--
JUL											
10...	--	--	<1	--	500	--	0	--	--	<3	--
24...	--	--	--	--	--	--	--	--	--	--	--
AUG											
09...	200	0	<1	0	640	10	0	11	2	<3	10
21...	--	--	--	--	0	--	--	--	--	--	--
SEP											
06...	--	--	--	--	440	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--

06344600 GREEN RIVER NEAR NEW HRADEC, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	COPPER, RECOV, FM BOT-TOM MA-TERIAL (UG/G AS CU) (01043)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LITHIUM TOTAL RECOV-ERABLE (UG/L AS LI) (01132)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MANGA-NESE, RECOV, FM BOT-TOM MA-TERIAL (UG/G) (01053)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)
OCT											
03...	--	--	--	60	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--
NOV											
10...	--	--	--	50	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
DEC											
12...	--	--	--	30	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
JAN											
10...	--	--	--	30	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--
FEB											
10...	--	--	--	20	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
MAR											
17...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
29...	14	2	22	430	9	9	90	50	1000	.2	.0
30...	--	--	--	--	--	--	--	--	--	--	--
APR											
09...	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	590	--	--	--	100	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--
MAY											
03...	--	--	--	90	--	--	--	--	--	--	--
15...	--	--	--	10	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--
JUN											
21...	--	--	--	10	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--
JUL											
10...	--	3	--	20	--	30	--	10	--	--	.1
24...	--	--	--	--	--	--	--	--	--	--	--
AUG											
09...	6	7	18	10	30	30	300	30	600	.1	.0
21...	--	--	--	100	--	--	--	120	--	--	--
SEP											
06...	--	--	--	20	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--

DATE	MERCURY RECOV, FM BOT-TOM MA-TERIAL (UG/G AS HG) (71921)	MOLYB-DENUM, TOTAL RECOV-ERABLE (UG/L AS MO) (01062)	MOLYB-DENUM, RECOV, FM BOT-TOM MA-TERIAL (UG/G) (01063)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	NICKEL, RECOV, FM BOT-TOM MA-TERIAL (UG/G AS NI) (01068)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SELE-NIUM, TOTAL IN BOT-TOM MA-TERIAL (UG/G) (01148)	VANA-DIUM, DIS-SOLVED (UG/L AS V) (01085)
MAR											
17...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
29...	.30	1	1	0	6	0	10	0	0	0	2.6
30...	--	--	--	--	--	--	--	--	--	--	--
APR											
09...	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--
MAY											
03...	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--
JUN											
21...	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--
JUL											
10...	--	--	--	15	--	5	--	--	0	--	.0
24...	--	--	--	--	--	--	--	--	--	--	--
AUG											
09...	.05	1	1	<10	10	4	15	0	0	0	1.0
21...	--	--	--	--	--	--	--	--	--	--	--
SEP											
06...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--

06344600 GREEN RIVER NEAR NEW HRADEC, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	ZINC, TOTAL RECOVERABLE (UG/L AS ZN) (01092)	ZINC, DISSOLVED (UG/L AS ZN) (01090)	ZINC, RECOV. FM BOTTOM MATERIAL (UG/G AS ZN) (01093)	GROSS ALPHA, DISSOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DISSOLVED (PCI/L AS CS-137) (03515)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)	CARBON, ORGANIC DISSOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUSPENDED TOTAL (MG/L AS C) (00689)	SEDIMENT, SUSPENDED (MG/L) (80154)	SEDIMENT DISCHARGE, SUSPENDED (T/DAY) (80155)
OCT											
03...	--	--	--	--	--	--	--	14	1.8	50	.34
17...	--	--	--	--	--	--	--	--	--	--	--
NOV											
10...	--	--	--	--	--	--	--	5.4	.9	38	.26
14...	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
DEC											
12...	--	--	--	--	--	--	--	9.9	1.1	49	.29
20...	--	--	--	--	--	--	--	--	--	--	--
JAN											
10...	--	--	--	--	--	--	--	8.8	.5	55	.30
24...	--	--	--	--	--	--	--	--	--	--	--
FEB											
10...	--	--	--	--	--	--	--	6.1	.5	76	.35
20...	--	--	--	--	--	--	--	--	--	--	--
MAR											
17...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
29...	30	10	39	<3.5	1.2	10	2.1	16	1.5	24	6.5
30...	--	--	--	--	--	--	--	--	--	--	--
MAY											
03...	--	--	--	--	--	--	--	15	1.3	33	.89
15...	--	--	--	--	--	--	--	12	--	25	.46
24...	--	--	--	--	--	--	--	--	--	--	--
JUN											
21...	--	--	--	--	--	--	--	12	--	32	.16
28...	--	--	--	--	--	--	--	--	--	--	--
JUL											
10...	--	9	--	--	--	--	--	14	--	28	.12
24...	--	--	--	--	--	--	--	--	--	--	--
AUG											
09...	20	<3	40	<21	2.1	12	3.6	23	1.4	98	.09
21...	--	--	--	--	--	--	--	--	--	--	--
SEP											
06...	--	--	--	--	--	--	--	12	1.0	32	.04
19...	--	--	--	--	--	--	--	--	--	--	--

DATE	BED MAT. FALL DIAM. % FINER THAN .062 MM (80158)	BED MAT. FALL DIAM. % FINER THAN .125 MM (80159)	BED MAT. FALL DIAM. % FINER THAN .250 MM (80160)	BED MAT. FALL DIAM. % FINER THAN .500 MM (80161)	BED MAT. FALL DIAM. % FINER THAN 1.00 MM (80162)	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM (80169)	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM (80170)	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM (80171)
MAR								
29...	21	27	41	60	72	85	96	100

DATE	LENGTH OF EXPOSURE (DAYS) (00022)	CHLOR-A PERIPHYTON CHROMOGRAPHIC FLUOROM (MG/M2) (70957)	CHLOR-B PERIPHYTON CHROMOGRAPHIC FLUOROM (MG/M2) (70958)	PERIPHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M (00573)	PERIPHYTON BIOMASS ASH WEIGHT G/SQ M (00572)
NOV					
10...	27	20.6	.000	39.1	34.6
JUL					
10...	19	1.53	.110	7.56	6.93
AUG					
09...	30	2.99	1.18	5.43	4.57
SEP					
06...	28	5.68	1.89	2.28	1.97

06344600 GREEN RIVER NEAR NEW HRADEC, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1978 TO SEPTEMBER 1979

DATE	OCT 3,78		NOV 10,78		DEC 12,78		JAN 10,79		MAR 29,79		MAY 3,79	
TIME	1130		0830		1445		1500		1100		1350	
TOTAL CELLS/ML	4400		2100		930		440		200		9100	
DIVERSITY: DIVISION	1.4		1.7		1.7		1.2		1.7		0.9	
.CLASS	1.4		1.7		2.2		1.2		1.7		0.9	
..ORDER	1.8		1.8		2.6		1.8		2.5		1.5	
...FAMILY	1.8		1.8		2.9		2.2		3.3		1.6	
....GENUS	1.9		2.5		3.0		2.2		3.3		1.8	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)												
.CHLOROPHYCEAE												
..CHLOROCOCCALES												
...CHLOROCOCCACEAE												
....CHLOROCOCCUM	--	-	--	-	--	-	--	-	--	-	--	-
...HYDRODICTYACEAE												
....PEDIASTRUM	--	-	--	-	--	-	--	-	--	-	--	-
...OOCYSTACEAE												
....ANKISTRODESMUS	--	-	160	7	140	15	8	2	20	10	350	4
....CHLORELLA	--	-	45	2	--	-	--	-	--	-	--	-
....CHODATELLA	--	-	--	-	--	-	--	-	--	-	--	-
....DICTYOSPHAERIUM	--	-	--	-	--	-	--	-	--	-	--	-
....KIRCHNERIELLA	--	-	--	-	--	-	--	-	--	-	--	-
....OOCYSTIS	--	-	22	1	--	-	--	-	--	-	1100	12
....SELENASTRUM	--	-	22	1	--	-	--	-	--	-	--	-
....TETRAEDRON	--	-	22	1	--	-	--	-	--	-	--	-
....TREUBARIA	--	-	22	1	--	-	--	-	--	-	--	-
....WESTELLA	--	-	--	-	31	3	--	-	--	-	--	-
...SCENEDESMACEAE												
....CRUCIGENIA	--	-	--	-	--	-	--	-	--	-	--	-
....SCENEDESMUS	140	3	--	-	31	3	--	-	20	10	210	2
....TETRASTRUM	--	-	--	-	--	-	--	-	--	-	--	-
..VOLVOCALES												
...CHLAMYDOMONADACEAE												
....CARTERIA	--	-	--	-	--	-	--	-	--	-	140	2
....CHLAMYDOMONAS	2700#	62	45	2	23	2	--	-	30	15	5000#	55
...VOLVOCACEAE												
....PANDORINA	--	-	--	-	--	-	--	-	--	-	--	-
CHRYSOPHYTA												
.BACILLARIOPHYCEAE												
..CENTRALES												
...COSCINODISCACEAE												
....CYCLOTELLA	320	7	670#	32	130	14	8	2	45#	22	2200#	25
....SKELETONEMA	--	-	130	6	--	-	--	-	--	-	--	-
....STEPHANODISCUS	--	-	--	-	--	-	--	-	--	-	--	-
..PENNALES												
...ACHNANTHACEAE												
....COCCONEIS	--	-	--	-	--	-	--	-	5	2	--	-
...CYMBELLACEAE												
....CYMBELLA	--	-	--	-	--	-	--	-	5	2	--	-
...DIATOMACEAE												
....DIATOMA	--	-	--	-	--	-	8	2	--	-	--	-
...FRAGILARIACEAE												
....ASTERIONELLA	--	-	--	-	--	-	--	-	5	2	--	-
....SYNEDRA	--	-	--	-	15	2	--	-	--	-	--	-
...GOMPHONEMATACEAE												
....GOMPHONEMA	--	-	--	-	--	-	8	2	5	2	--	-
...NAVICULACEAE												
....NAVICULA	210	5	--	-	38	4	85#	19	10	5	--	-
...NITZSCHIACEAE												
....NITZSCHIA	71	2	--	-	38	4	8	2	5	2	--	-
...SURIRELLACEAE												
....SURIRELLA	--	-	--	-	8	1	15	4	10	5	--	-
.CHRYSOPHYCEAE												
..CHRYSOMONADALES												
...SYNURACEAE												
....SYNURA	--	-	--	-	290#	31	--	-	--	-	--	-
.XANTHOPHYCEAE												
..HETEROCOCCALES												
...CENTRITRACTACEAE												
....CENTRITRACTUS	--	-	--	-	--	-	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)												
.CRYPTOPHYCEAE												
..CRYPTOMONADALES												
...CRYPTOCHRYSIDACEAE												
....CHROOMONAS	--	-	--	-	--	-	8	2	--	-	--	-
...CRYPTOMONADACEAE												
....CRYPTOMONAS	--	-	--	-	8	1	--	-	5	2	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

CONTINUED

06344600 GREEN RIVER NEAR NEW HRADEC, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1978 TO SEPTEMBER 1979 (CONTINUED)

DATE TIME	OCT 3,78 1130		NOV 10,78 0830		DEC 12,78 1445		JAN 10,79 1500		MAR 29,79 1100		MAY 3,79 1350	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CYANOPHYTA (BLUE-GREEN ALGAE)												
.CYANOPHYCEAE												
..CHROOCOCCALES												
...CHROOCOCCACEAE												
....ANACYSTIS	--	-	89	4	62	7	54	12	--	-	--	-
..HORMOGONALES												
...NOSTOCACEAE												
....ANABAENA	--	-	--	-	--	-	--	-	30	15	--	-
...OSCILLATORIACEAE												
....LYNGBYA	--	-	--	-	--	-	--	-	--	-	--	-
....OSCILLATORIA	640	15	--	-	--	-	230#	53	--	-	--	-
....SCHIZOTHRIX	--	-	--	-	--	-	--	-	--	-	--	-
...RIVULARIACEAE												
....RAPHIDIOPSIS	--	-	--	-	--	-	--	-	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)												
.EUGLENOPHYCEAE												
..EUGLENALES												
...EUGLENACEAE												
....EUGLENA	210	5	22	1	--	-	8	2	--	-	--	-
....LEPOCINCLIS	--	-	--	-	--	-	--	-	--	-	--	-
....PHACUS	36	1	45	2	--	-	--	-	--	-	--	-
....TRACHELOMONAS	--	-	800#	38	120	12	--	-	5	2	70	1
PYRRHOPHYTA (FIRE ALGAE)												
.DINOPHYCEAE												
..GYMNODINIALES												
...GYMNODINIACEAE												
....GYMNODINIUM	--	-	--	-	--	-	--	-	--	-	--	-
..PERIDINIALES												
...GLENODINIACEAE												
....GLENODINIUM	--	-	--	-	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06344600 GREEN RIVER NEAR NEW HRADEC, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1978 TO SEPTEMBER 1979

DATE	MAY 15,79	JUN 21,79	JUL 10,79	AUG 9,79	SEP 6,79
TIME	1220	1130	0800	1215	1225
TOTAL CELLS/ML	2200	1100	2400	15000	15000
DIVERSITY: DIVISION	1.7	1.9	1.5	1.6	1.6
.CLASS	1.7	1.9	1.5	1.6	1.6
..ORDER	2.5	2.3	1.8	2.2	2.1
...FAMILY	2.6	2.5	2.3	2.5	2.6
....GENUS	2.7	3.1	2.7	3.3	3.1

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)										
.CHLOROPHYCEAE										
..CHLOROCOCCALES										
...CHLOROCOCCACEAE										
....CHLOROCOCCUM	--	-	--	-	--	-	--	-	740	5
...HYDRODICTYACEAE										
....PEDIASTRUM	--	-	--	-	100	4	270	2	420	3
...OOCYSTACEAE										
....ANKISTRODESMUS	470#	21	39	4	210	9	400	3	790	5
....CHLORELLA	--	-	--	-	--	-	--	-	790	5
....CHODATELLA	17	1	--	-	--	-	--	-	--	-
....DICTYOSPHAERIUM	--	-	--	-	--	-	540	3	--	-
....KIRCHNERIELLA	--	-	--	-	--	-	370	2	110	1
....OOCYSTIS	--	-	--	-	51	2	270	2	--	-
....SELENASTRUM	--	-	--	-	--	-	--	-	--	-
....TETRAEDRON	17	1	--	-	13	1	--	-	--	-
....TREUBARIA	--	-	--	-	13	1	--	-	--	-
....WESTELLA	--	-	--	-	--	-	--	-	--	-
...SCENEDESMACEAE										
....CRUCIGENIA	--	-	100	10	51	2	270	2	420	3
....SCENEDESMUS	67	3	150	14	330	14	870	6	530	3
....TETRASTRUM	--	-	--	-	51	2	--	-	420	3
..VOLVOCALES										
...CHLAMYDOMONADACEAE										
....CARTERIA	--	-	--	-	--	-	--	-	--	-
....CHLAMYDOMONAS	230	10	140	13	39	2	240	2	--	-
...VOLVOCACEAE										
....PANDORINA	--	-	--	-	--	-	270	2	--	-
CHRYSOPHYTA										
.BACILLARIOPHYCEAE										
..CENTRALES										
...COSCINODISCACEAE										
....CYCLOTELLA	--	-	26	2	--	-	640	4	530	3
....SKELETONEMA	--	-	--	-	--	-	--	-	--	-
....STEPHANODISCUS	810#	36	--	-	--	-	--	-	--	-
..PENNALES										
...ACHNANTHACEAE										
....COCCONEIS	--	-	--	-	--	-	--	-	--	-
...CYMBELLACEAE										
....CYMBELLA	--	-	--	-	--	-	--	-	--	-
...DIATOMACEAE										
....DIATOMA	--	-	--	-	--	-	--	-	--	-
...FRAGILARIACEAE										
....ASTERIONELLA	--	-	--	-	--	-	--	-	--	-
....SYNEDRA	--	-	--	-	--	-	--	-	--	-
...GOMPHONEMATACEAE										
....GOMPHONEMA	--	-	--	-	--	-	--	-	--	-
...NAVICULACEAE										
....NAVICULA	--	-	--	-	--	-	100	1	--	-
...NITZSCHIACEAE										
....NITZSCHIA	250	11	13	1	39	2	300	2	--	-
...SURIRELLACEAE										
....SURIRELLA	--	-	--	-	--	-	--	-	--	-
.CHRYSOPHYCEAE										
..CHRYSOMONADALES										
...SYNURACEAE										
....SYNURA	--	-	--	-	--	-	--	-	--	-
.XANTHOPHYCEAE										
..HETEROCOCCALES										
...CENTRITRACTACEAE										
....CENTRITRACTUS	--	-	--	-	--	-	*	0	--	-
CRYPTOPHYTA (CRYPTOMONADS)										
.CRYPTOPHYCEAE										
..CRYPTOMONADALES										
...CRYPTOCHRYSIDACEAE										
....CHROOMONAS	17	1	--	-	--	-	--	-	--	-
...CRYPTOMONADACEAE										
....CRYPTOMONAS	50	2	13	1	--	-	*	0	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

CONTINUED

06344600 GREEN RIVER NEAR NEW HRADEC, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1978 TO SEPTEMBER 1979 (CONTINUED)

DATE TIME	MAY 15,79 1220		JUN 21,79 1130		JUL 10,79 0800		AUG 9,79 1215		SEP 6,79 1225	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CYANOPHYTA (BLUE-GREEN ALGAE)										
.CYANOPHYCEAE										
..CHROOCOCCALES										
...CHROOCOCCACEAE										
....ANACYSTIS	170	7	150	14	120	5	1600	11	5300#	34
..NOSTOCALES										
...NOSTOCACEAE										
....ANABAENA	--	-	--	-	--	-	--	-	--	-
...OSCILLATORIACEAE										
....LYNGBYA	--	-	--	-	--	-	1700	11	--	-
....OSCILLATORIA	--	-	--	-	1200#	48	5900#	38	--	-
....SCHIZOTHRIX	--	-	--	-	--	-	--	-	3100#	20
...RIVULARIACEAE										
....RAPHIDIOPSIS	120	5	--	-	--	-	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)										
.EUGLENOPHYCEAE										
..EUGLENALES										
...EUGLENACEAE										
....EUGLENA	17	1	140	13	90	4	540	3	740	5
....LEPOCINCLIS	--	-	--	-	--	-	200	1	110	1
....PHACUS	--	-	13	1	26	1	130	1	--	-
....TRACHELOMONAS	17	1	220#	20	90	4	740	5	1400	9
PYRRHOPHYTA (FIRE ALGAE)										
.DINOPHYCEAE										
..GYMNODINIALES										
...GYMNODINIACEAE										
....GYMNODINIUM	--	-	64	6	--	-	--	-	--	-
..PERIDINIALES										
...GLENODINIACEAE										
....GLENODINIUM	--	-	--	-	13	1	--	-	*	0

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06344610 GREEN RIVER TRIBUTARY NEAR NEW HRADEC, ND

LOCATION.--Lat 47°00'25", long 102°59'24", in the SE¼NE¼NE¼, sec.29, T.141 N., R.97 W., Dunn County, Hydrologic Unit 10130201, on the left bank upstream from county highway culvert, and 5 mi (8.0 km) west of New Hradec.

DRAINAGE AREA.--22.4 mi^2 (58.00 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1978 to September 1979.

GAGE.--Water-stage recorder.

REMARKS.--Records poor.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 40 ft^3/s (1.13 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Mar. 23	--	*600	17.0	[a]7.29	2.22
Apr. 9	--	200	5.66	Backwater from ice	
Apr. 15	--	353	10.0	Backwater from ice	

Minimum discharge, 0.08 ft^3/s (0.002 m^3/s) Oct. 1, 2, and Sept. 6.

a - Backwater from ice.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.08	.30	.15	.16	.09	.09	25	.70	.34	.55	.44	.15
2	.08	.29	.15	.16	.09	.09	10	.65	.34	.52	.34	.14
3	.10	.26	.15	.16	.09	.09	4.0	.60	.33	.42	.33	.14
4	.10	.26	.15	.16	.09	.09	4.0	.55	.32	.39	.33	.13
5	.10	.26	.15	.16	.09	.09	3.0	.75	.30	.39	.33	.11
6	.10	.25	.15	.16	.09	.09	2.0	.70	.30	.40	.33	.09
7	.12	.25	.15	.16	.09	.09	40	.65	.32	.45	.32	.10
8	.15	.25	.15	.16	.09	.09	100	.65	.32	.40	.32	.10
9	.20	.27	.16	.15	.09	.09	120	.60	.32	.44	.32	.10
10	.25	.28	.16	.15	.09	.09	90	.55	.30	.48	.32	.24
11	.25	.24	.17	.14	.09	.09	40	.55	.29	.60	.32	.59
12	.25	.24	.18	.13	.09	.09	5.4	.50	.32	.68	.30	.36
13	.26	.23	.18	.13	.09	.09	5.1	.50	.28	.56	.29	.24
14	.26	.22	.17	.13	.09	.09	4.5	.45	.25	.55	.29	.18
15	.27	.22	.16	.13	.09	.10	54	.50	.24	.53	.29	.17
16	.27	.21	.16	.13	.09	15	205	.35	.25	.48	.29	.16
17	.29	.20	.16	.13	.09	50	123	.35	.25	.48	.29	.16
18	.29	.20	.16	.13	.09	50	32	.30	.26	.48	.29	.14
19	.30	.19	.16	.13	.09	50	8.1	.33	.32	.48	.28	.15
20	.30	.18	.16	.13	.09	60	2.0	.33	.32	.48	.26	.14
21	.29	.17	.16	.13	.09	70	.90	.32	.29	.45	.25	.14
22	.29	.16	.16	.14	.09	80	.85	.30	.72	.45	.24	.14
23	.29	.16	.16	.14	.09	230	.80	.32	.50	.50	.22	.14
24	.29	.16	.16	.14	.09	290	1.0	.32	.34	.53	.18	.15
25	.29	.16	.16	.13	.09	260	.90	.30	.29	.58	.17	.15
26	.29	.16	.16	.13	.09	210	.90	.30	.29	.58	.18	.15
27	.29	.16	.16	.12	.09	150	.87	.29	.63	1.0	.20	.14
28	.29	.16	.16	.11	.09	60	.85	.28	1.7	.95	.21	.15
29	.31	.15	.16	.10	---	30	.80	.29	.53	.74	.18	.14
30	.32	.15	.16	.09	---	35	.75	.32	.39	2.8	.17	.10
31	.29	---	.16	.09	---	30	---	.33	---	.68	.16	---
TOTAL	7.26	6.39	4.94	4.21	2.52	1671.36	885.72	13.93	11.65	19.02	8.44	4.99
MEAN	.23	.21	.16	.14	.090	53.9	29.5	.45	.39	.61	.27	.17
MAX	.32	.30	.18	.16	.09	290	205	.75	1.7	2.8	.44	.59
MIN	.08	.15	.15	.09	.09	.09	.75	.28	.24	.39	.16	.09
AC-FT	14	13	9.8	8.4	5.0	3320	1760	28	23	38	17	9.9

WTR YR 1979 TOTAL 2640.43 MEAN 7.23 MAX 290 MIN .08 AC-FT 5240

06344610 GREEN RIVER TRIBUTARY NEAR NEW HRADEC, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1978 to September 1979.

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE (DEG C) (00010)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)
NOV									
07...	1150	.30	2500	8.5	5.0	290	0	55	39
JAN									
08...	1045	.16	1700	--	.0	--	--	--	--
FEB									
12...	1250	.09	1700	--	.0	--	--	--	--
MAR									
17...	1455	50	455	--	1.0	--	--	--	--
20...	0900	58	500	--	.5	--	--	--	--
24...	1200	244	675	--	.5	--	--	--	--
APR									
02...	1445	10	510	--	.0	--	--	--	--
12...	1200	5.2	660	--	1.0	--	--	--	--
19...	1415	7.5	700	--	10.0	--	--	--	--
27...	1405	.67	1700	--	10.5	--	--	--	--
AUG									
08...	1600	.31	2200	--	20.0	--	--	--	--

DATE	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)
NOV									
07...	510	79	15	7.6	620	710	5.8	.4	8.9
JAN									
08...	--	--	--	--	--	--	--	--	--
FEB									
12...	--	--	--	--	--	--	--	--	--
MAR									
17...	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--
APR									
02...	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--
AUG									
08...	--	--	--	--	--	--	--	--	--

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)
NOV									
07...	1710	2.33	1.39	.82	1100	50	100	3	900
JAN									
08...	--	--	--	--	--	--	--	--	--
FEB									
12...	--	--	--	--	--	--	--	--	--
MAR									
17...	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--
APR									
02...	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--
AUG									
08...	--	--	--	--	--	--	--	--	--

06345500 HEART RIVER NEAR RICHARDTON, ND

LOCATION.--Lat 46°44'46", long 102°18'27", in NE¼ sec.29, T.138 N., R.92 W., Stark County, Hydrologic Unit 10130202, on right bank 5 ft (2 m) upstream from bridge on State Highway 8, 0.5 mi (0.8 km) downstream from Plum Creek, and 9.5 mi (15.3 km) south of Richardton.

DRAINAGE AREA.--1,240 mi^2 (3,210 km^2), approximately.

PERIOD OF RECORD.--May 1903 to September 1922, April 1943 to current year. Monthly discharge only for some periods, published in WSP 1309.

REVISED RECORDS (WATER YEARS).--WSP 1209: Drainage area. WSP 1239: 1906, 1918(M), 1947(M).

GAGE.--Water-stage recorder. Datum of gage is 2,153.67 ft (656.439 m) National Geodetic Vertical Datum of 1929. May 18, 1903, to Sept. 30, 1922, nonrecording gage at 3 sites in 1 mi (2 km) reach below present site at different datums. Apr. 14, 1943, to July 7, 1947, nonrecording gage at present site and datum.

REMARKS.--Records good except those for the winter period, which are fair. Flow regulated by Edward Arthur Patterson Lake (station 06343500) 59 mi (95 km) upstream.

AVERAGE DISCHARGE.--55 years, 106 ft^3/s (3.002 m^3/s), 76,800 acre-ft/yr (94.7 hm^3/yr); median of yearly mean discharges, 99 ft^3/s (2.80 m^3/s), 71,700 acre-ft/yr (88 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 23,400 ft^3/s (663 m^3/s) Apr. 16, 1950, gage height, 28.05 ft (8.550 m), from high-water mark in gage well; no flow at times in some years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of July 5, 1938, reached a stage of about 26 ft (7.9 m), from information by local residents, discharge, 16,000 ft^3/s (453 m^3/s); flood of Mar. 25, 1943, reached a stage of 24.2 ft (7.38 m) from floodmarks, discharge, 11,700 ft^3/s (331 m^3/s).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,300 ft^3/s (93.5 m^3/s) Apr. 11, gage height, 17.76 ft (5.413 m); minimum daily, 5.0 ft^3/s (0.14 m^3/s) Feb. 17, 18.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19	19	28	14	9.9	6.2	860	129	35	27	24	15
2	18	19	27	13	9.7	6.2	920	121	34	24	26	13
3	19	19	27	12	8.2	6.4	900	106	33	27	24	9.9
4	18	19	28	11	8.2	6.4	820	95	33	25	30	7.4
5	18	19	28	10	8.0	7.1	650	88	33	23	27	8.5
6	18	19	28	9.0	6.7	7.3	540	95	32	21	25	8.0
7	18	20	26	8.0	6.7	7.6	580	102	29	21	18	9.2
8	16	25	24	8.0	6.7	7.6	910	105	29	20	16	8.9
9	18	30	22	7.8	6.4	8.0	1620	112	29	20	14	8.5
10	18	30	21	7.6	6.0	8.2	2620	85	28	18	12	10
11	18	28	21	7.6	5.8	9.7	3240	79	27	21	11	14
12	19	28	22	7.6	5.6	17	2420	75	27	23	9.7	13
13	19	27	22	7.1	5.8	30	1540	73	26	32	9.7	18
14	19	27	24	7.1	6.0	80	906	74	24	32	9.2	14
15	19	27	27	6.9	6.2	180	666	73	22	27	8.9	11
16	19	26	28	6.9	5.3	140	1010	63	22	24	8.9	11
17	19	26	27	6.7	5.0	560	1700	57	21	21	9.2	9.7
18	19	26	27	6.7	5.0	810	2140	57	21	19	8.7	8.5
19	19	26	26	6.4	5.5	360	2400	63	22	18	7.8	8.0
20	19	25	26	6.9	5.8	260	1400	62	24	16	7.6	7.8
21	19	25	26	7.3	6.0	280	925	56	29	15	9.2	6.9
22	19	25	26	7.6	5.8	360	575	55	47	15	10	8.0
23	19	25	26	7.6	5.8	720	396	50	202	15	13	8.0
24	19	25	26	7.8	5.8	1030	310	46	262	15	14	7.3
25	19	26	25	7.8	5.6	2240	251	44	97	16	14	7.1
26	19	26	24	8.0	5.6	2430	220	43	55	22	12	6.9
27	19	26	23	8.0	6.0	2060	192	41	44	31	10	6.7
28	19	26	21	8.5	6.2	1730	166	37	37	29	10	6.9
29	19	28	19	8.9	---	1240	154	37	32	28	12	7.1
30	19	28	17	9.4	---	1220	143	37	30	28	20	6.7
31	19	---	15	9.7	---	790	---	37	---	26	21	---
TOTAL	580	745	757	260.9	179.3	16607.7	31176	2197	1386	699	449.9	285.0
MEAN	18.7	24.8	24.4	8.42	6.40	536	1039	70.9	46.2	22.5	14.5	9.50
MAX	19	30	28	14	9.9	2430	3240	129	262	32	30	18
MIN	18	19	15	6.4	5.0	6.2	143	37	21	15	7.6	6.7
AC-FT	1150	1480	1500	517	356	32940	61840	4360	2750	1390	892	565

CAL YR 1978 TOTAL 92220.0 MEAN 253 MAX 9460 MIN 9.0 AC-FT 182900
WTR YR 1979 TOTAL 55322.8 MEAN 152 MAX 3240 MIN 5.0 AC-FT 109700

06346000 LAKE TSCHIDA NEAR GLEN ULLIN, ND

LOCATION.--Lat 46°35'48", long 101°48'34", in SW¼NE¼ sec.13, T.136 N., R.89 W., Grant County, 10 mi (16 km) upstream from Heart Butte Creek, and 14 mi (23 km) north of Elgin.

DRAINAGE AREA.--1,710 mi^2 (4,430 km^2), 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 National Geodetic Vertical Datum of 1929, levels by Bureau of Reclamation.

REMARKS.--Reservoir is formed by earthfill dam; storage began Sept. 29, 1949; dam completed Dec. 9, 1949. Total capacity is 430,000 acre-ft (530 hm^3) at maximum pool, elevation 2,118.2 ft (645.627 m). Dead storage is 6,750 acre-ft (8.32 hm^3) below lowest point of outlet, elevation 2,030.0 ft (618.744 m). Active conservation storage is 69,030 acre-ft (85.1 hm^3) between elevation 2,030.0 ft (618.744 m) and 2,064.5 ft (629.260 m), crest of spillway. Figures given herein represent total contents. Controlled releases are through 4 by 5 ft (1.219 by 1.524 m) slide gate. The spillway is uncontrolled "glory hole" type and discharges through a conduit 14 ft (4.27 m) in diameter. The reservoir is for flood control, irrigation, and incidental water supply.

COOPERATION.--Record of elevations and contents furnished by Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 174,000 acre-ft (215 hm^3) Apr. 9, 1952, elevation, 2,086.23 ft (635.883 m); minimum since first reaching spillway level, 40,840 acre-ft (50.4 hm^3) Mar. 6, 1962, elevation, 2,052.5 ft (625.60 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 93,000 acre-ft (115 hm^3) Apr. 13, elevation, 2,069.30 ft (630.723 m); minimum, 65,100 acre-ft (80.3 hm^3) Sept. 30, elevation, 2,061.24 ft (628.266 m).

MONTHEND ELEVATION AND CONTENTS, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30	2,062.37	68,700	--
Oct. 31	2,062.51	69,200	+500
Nov. 30	2,062.67	69,700	+500
Dec. 31	2,062.30	68,500	-1,200
CAL YR 1978	--	--	-8,500
Jan. 31	2,061.77	66,800	-1,700
Feb. 28	2,061.13	64,700	-2,100
Mar. 31	2,067.80	87,400	+22,700
Apr. 30	2,066.00	81,000	-6,400
May 31	2,065.04	77,600	-3,400
June 30	2,064.70	76,500	-1,100
July 31	2,064.01	74,100	-2,400
Aug. 31	2,062.53	69,200	-4,900
Sept. 30	2,061.24	65,100	-4,100
WTR YR 1979	--	--	-3,600

06348000 HEART RIVER NEAR LARK, ND

LOCATION.--Lat 46°36'37", long 101°22'54", in NW¼NW¼SW¼ sec.9, T.136 N., R.85 W., Grant County, Hydrologic Unit 10130203, on right bank 20 ft (6 m) downstream from county highway bridge, 0.6 mi (1.0 km) downstream from Big Muddy Creek, and 10 mi (16 km) north of Lark.

DRAINAGE AREA.--2,750 mi^2 (7,120 km^2), approximately.

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

GAGE.--Water-stage recorder. Datum of gage is 1,802.83 ft (549.503 m) National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Prior to Nov. 16, 1948, nonrecording gage at same site and datum.

REMARKS.--Records good except those for the winter period, which are fair. Flow regulated by Lake Tschida 45 mi (72 km) upstream (station 06346000).

AVERAGE DISCHARGE.--33 years, 222 ft^3/s (6.287 m^3/s), 160,800 acre-ft/yr (198 hm^3/yr); median of yearly mean discharges, 170 ft^3/s (4.81 m^3/s), 123,000 acre-ft/yr (150 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 29,200 ft^3/s (827 m^3/s) Apr. 17, 1950, gage height, 20.70 ft (6.309 m), from rating curve extended above 11,000 ft^3/s (312 m^3/s) on basis of contracted-opening measurement of peak flow; no flow Jan. 16 to Mar. 4, 1950, Jan. 17-26, 1962.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,760 ft^3/s (106 m^3/s) Apr. 18, gage height, 10.26 ft (3.127 m); minimum daily, 11.0 ft^3/s (0.31 m^3/s) Nov. 6-9.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22	14	51	40	41	32	2000	547	93	131	126	96
2	21	14	49	40	40	32	1900	500	87	121	128	95
3	21	13	48	40	39	32	1760	458	85	115	126	95
4	20	12	46	40	39	32	1630	422	78	110	119	94
5	20	12	46	40	38	33	1080	388	74	103	111	92
6	20	11	45	40	37	34	1000	383	67	98	109	92
7	20	11	45	40	37	35	948	376	67	88	106	93
8	20	11	43	40	37	38	1060	366	60	75	99	94
9	19	11	43	40	36	40	1320	330	57	78	92	94
10	19	12	43	40	35	45	1790	306	52	74	86	101
11	19	12	44	40	35	50	2840	293	48	69	83	108
12	18	12	44	40	35	55	3340	275	45	90	85	104
13	18	12	45	40	35	200	3440	258	36	149	81	100
14	18	20	45	40	34	170	2980	240	31	151	77	102
15	18	22	45	40	33	160	2520	226	60	114	75	101
16	18	25	45	40	34	120	2490	210	85	106	65	100
17	18	38	45	41	34	140	2550	196	88	107	63	96
18	18	40	45	42	34	400	3600	196	81	98	59	93
19	18	42	45	43	34	690	3480	171	92	95	63	92
20	19	44	44	44	34	630	3140	167	117	87	70	51
21	18	49	44	45	33	450	2790	144	131	81	101	37
22	18	52	42	46	32	360	2240	134	106	79	136	33
23	18	52	42	46	32	500	1800	134	148	90	115	32
24	17	52	42	48	32	750	1510	126	900	95	116	35
25	17	53	42	48	32	800	1250	118	840	82	119	36
26	17	54	41	48	32	1000	1010	115	350	84	129	35
27	16	53	40	48	32	1400	855	112	227	113	123	35
28	16	53	40	48	32	2260	760	105	190	196	114	35
29	15	53	40	47	---	2400	681	98	165	141	106	33
30	15	52	40	45	---	2100	609	102	145	142	103	33
31	14	---	40	42	---	1900	---	93	---	151	98	---
TOTAL	565	911	1359	1321	978	16888	58373	7589	4605	3313	3083	2237
MEAN	18.2	30.4	43.8	42.6	34.9	545	1946	245	154	107	99.5	74.6
MAX	22	54	51	48	41	2400	3600	547	900	196	136	108
MIN	14	11	40	40	32	32	609	93	31	69	59	32
AC-FT	1120	1810	2700	2620	1940	33500	115800	15050	9130	6570	6120	4440

CAL YR 1978 TOTAL 179809 MEAN 493 MAX 12000 MIN 11 AC-FT 356700
WTR YR 1979 TOTAL 101222 MEAN 277 MAX 3600 MIN 11 AC-FT 200800

06348490 SWEETBRIAR RESERVOIR NEAR JUDSON, ND

LOCATION.--Lat 46°51'55", long 101°15'35", in SE¼SE¼ sec.10, T.139 N., R.84 W., Morton County, Hydrologic Unit 10130203, on south shore of reservoir 700 ft (210 m) west of spillway, and 2.5 mi (4.0 km) northeast of Judson.

DRAINAGE AREA.--152 mi^2 (394 km^2).

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

GAGE.--Water-stage recorder. Datum of gage is 1,900.00 ft (579.120 m) National Geodetic Vertical Datum of 1929; gage readings have been reduced to elevations NGVD.

REMARKS.--Reservoir is formed by an earth-fill dam on Interstate 94; storage began April 1964. Capacity at spillway elevation, 1,940.00 ft (591.312 m) is 3,320 acre-ft (4.09 hm^3). Controlled releases are through a 12-inch (0.305 m) 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.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 5,220 acre-ft (6.46 hm^3) Apr. 7, 1969, elevation, 1,944.97 ft (592.827 m); minimum since initial filling of reservoir, 2,500 acre-ft (3.08 hm^3) Dec. 8, 1974, elevation, 1,936.93 ft (590.376 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 4,880 acre-ft (6.02 hm^3) Apr. 18, elevation, 1,944.3 ft (592.62 m); minimum, 2,740 acre-ft (3.38 hm^3) Nov. 6, elevation, 1,937.86 ft (590.660 m).

MONTHEND ELEVATION AND CONTENTS, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30	1,938.29	2,860	--
Oct. 31	1,937.89	2,750	-110
Nov. 30	*1,937.96	2,770	+20
Dec. 31	*1,937.98	2,770	0
CAL YR 1978	--	--	-540
Jan. 31	*1,938.00	2,780	+10
Feb. 28	*1,938.10	2,810	+30
Mar. 31	*1,939.00	3,040	+230
Apr. 30	1,940.13	3,360	+320
May 31	1,939.89	3,290	-70
June 30	1,939.60	3,210	-80
July 31	1,939.69	3,230	+20
Aug. 31	1,939.55	3,190	-40
Sept. 30	1,939.01	3,040	-150
WTR YR 1979	--	--	+180

* Estimated

06348500 SWEETBRIAR CREEK NEAR JUDSON, ND

LOCATION.--Lat 46°51'06", long 101°15'10", in SW¼ sec.14, T.139 N., R.84 W., Morton County, Hydrologic Unit 10130203, on right bank 80 ft (24 m) downstream from bridge on county highway, 2 mi (3 km) northeast of Judson, and 16 mi (26 km) upstream from mouth.

DRAINAGE AREA.--157 mi^2 (407 km^2).

PERIOD OF RECORD.--July 1951 to September 1979 (discontinued).

REVISED RECORDS.--WSP 1439: 1955(M).

GAGE.--Water-stage recorder. Datum of gage is 1,886.42 ft (574.981 m) National Geodetic Vertical Datum of 1929. Prior to July 20, 1955, nonrecording gage 80 ft (24 m) upstream at same datum.

REMARKS.--Records good except those for the winter period, which are fair. Flow regulated by Sweetbriar Reservoir (station 06348490) 2 mi (3 km) upstream since April 1964.

AVERAGE DISCHARGE.--28 years, 11.3 ft^3/s (0.320 m^3/s), 8,190 acre-ft/yr (10.1 hm^3/yr); median of yearly mean discharges, 8.8 ft^3/s (0.25 m^3/s), 6,400 acre-ft/yr (7.9 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,200 ft^3/s (119 m^3/s) Apr. 7, 1969, gage height, 11.28 ft (3.438 m); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known, 12.5 ft (3.81 m) Apr. 17, 1950, from floodmarks at present site, discharge, 5,910 ft^3/s (167 m^3/s) from rating curve extended above 2,000 ft^3/s (56.6 m^3/s) on basis of contracted-opening measurement of peak flow.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,920 ft^3/s (82.7 m^3/s) Apr. 18, gage height, 9.95 ft (3.033 m); minimum daily, 0.40 ft^3/s (0.011 m^3/s) Dec. 9 to Mar. 7.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.86	.52	.48	.40	.40	.40	1.5	10	1.3	.87	.76	.86
2	.95	.52	.48	.40	.40	.40	1.3	8.7	1.2	.54	.81	.96
3	.99	.58	.52	.40	.40	.40	1.1	7.6	1.2	.51	.81	.96
4	1.1	.58	.45	.40	.40	.40	1.1	6.7	1.3	.53	.91	.96
5	1.3	.55	.49	.40	.40	.40	1.1	6.7	1.2	.52	.79	.86
6	1.2	.60	.50	.40	.40	.40	1.2	8.1	.98	.49	.95	.96
7	1.4	.64	.50	.40	.40	.40	1.2	9.9	.76	.57	.95	.96
8	1.4	.54	.50	.40	.40	.90	1.2	7.5	.72	.54	1.0	1.1
9	1.4	.85	.40	.40	.40	.80	1.3	6.3	.64	.61	.96	1.1
10	1.4	.79	.40	.40	.40	.60	2.0	6.5	.61	1.1	1.1	1.7
11	1.2	.66	.40	.40	.40	.50	95	6.0	.64	1.4	.95	1.4
12	1.2	.72	.40	.40	.40	.60	145	5.7	.70	.95	.96	.96
13	1.3	.80	.40	.40	.40	.60	125	5.7	.61	1.1	.99	.93
14	1.2	.69	.40	.40	.40	.60	131	5.2	.57	.84	.92	.99
15	1.1	.68	.40	.40	.40	.70	157	4.4	.70	.75	1.1	.93
16	1.1	.61	.40	.40	.40	1.0	272	4.4	.58	.81	1.1	.87
17	1.1	.60	.40	.40	.40	1.2	763	6.2	.66	.92	1.1	.81
18	1.1	.70	.40	.40	.40	1.3	2060	4.1	.60	.89	1.1	.84
19	1.1	.68	.40	.40	.40	1.4	694	4.3	.77	.70	1.1	.85
20	1.0	.71	.40	.40	.40	1.4	238	3.7	1.3	.73	1.1	.86
21	.96	.73	.40	.40	.40	1.4	111	3.6	.86	.93	2.1	.87
22	1.0	.68	.40	.40	.40	1.4	69	3.7	1.2	.75	1.4	.91
23	1.0	.58	.40	.40	.40	1.4	51	3.3	1.1	1.1	1.2	.98
24	.95	.50	.40	.40	.40	1.4	41	3.2	.85	1.1	1.1	.95
25	.91	.52	.40	.40	.40	1.4	29	3.3	.80	.97	1.1	.96
26	.96	.52	.40	.40	.40	1.4	23	3.1	.75	1.2	1.3	.96
27	.97	.47	.40	.40	.40	1.4	18	2.8	.74	1.2	.96	1.1
28	.85	.47	.40	.40	.40	1.4	17	1.5	.63	.95	.96	1.3
29	.69	.52	.40	.40	---	1.4	16	1.8	.52	.82	1.1	1.2
30	.57	.48	.40	.40	---	1.5	9.9	1.7	.54	.94	.96	1.2
31	.53	---	.40	.40	---	1.7	---	1.4	---	.90	.96	---
TOTAL	32.79	18.49	13.12	12.40	11.20	30.20	5077.9	157.1	25.03	26.23	32.60	30.29
MEAN	1.06	.62	.42	.40	.40	.97	169	5.07	.83	.85	1.05	1.01
MAX	1.4	.85	.52	.40	.40	1.7	2060	10	1.3	1.4	2.1	1.7
MIN	.53	.47	.40	.40	.40	.40	1.1	1.4	.52	.49	.76	.81
AC-FT	65	37	26	25	22	60	10070	312	50	52	65	60

CAL YR 1978 TOTAL 12028.90 MEAN 33.0 MAX 2140 MIN .27 AC-FT 23860
WTR YR 1979 TOTAL 5467.35 MEAN 15.0 MAX 2060 MIN .40 AC-FT 10840

06349000 HEART RIVER NEAR MANDAN, ND

LOCATION.--Lat 46°50'02", long 100°58'27", in NW¼NE¼ sec.25, T.139 N., R.82 W., Morton County, Hydrologic Unit 10130203, on left bank near downstream wingwall of bridge on county highway, 3 mi (5 km) west of Mandan, and 4 mi (6 km) downstream from Sweetbriar Creek.

DRAINAGE AREA.--3,310 mi^2 (8,570 km^2), approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April to September 1924, March 1928 to June 1933, August 1937 to current year. Published as "at Sunny" 1924, 1928-33.

REVISED RECORDS.--WSP 926: 1938. WSP 1209: Drainage area. WSP 1239: 1924, 1928-29, 1948.

GAGE.--Water-stage recorder. Datum of gage is 1,638.70 ft (499.476 m) National Geodetic Vertical Datum of 1929, and 1,623.03 ft (494.700 m) above Burlington Northern Railway datum. See WSP 1729 or 1917 for history of changes prior to June 30, 1958.

REMARKS.--Records good except those for the winter period, which are fair. Flow regulated by Lake Tschida (station 06346000) 105 mi (169 km) upstream since 1949. Some diversions above station.

AVERAGE DISCHARGE.--46 years (1928-32, 1937-79), 263 ft^3/s (7.448 m^3/s), 190,500 acre-ft/yr (235 hm^3/yr); median of yearly mean discharges, 200 ft^3/s (5.66 m^3/s), 145,000 acre-ft/yr (180 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, about 30,500 ft^3/s (864 m^3/s) Apr. 19, 1950, gage height, 23.64 ft (7.205 m); maximum gage height, 25.75 ft (7.849 m) Apr. 4, 1952, ice jam; no flow for many days in some years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 7,860 ft^3/s (223 m^3/s) Apr. 18, gage height, 13.05 ft (3.978 m); maximum gage height, 14.62 ft (4.456 m) Apr. 11, backwater from ice; minimum daily discharge, 28 ft^3/s (0.79 m^3/s) Feb. 23 to Mar. 5.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	59	36	49	40	52	28	1900	1080	142	164	148	110
2	53	38	49	36	50	28	1800	1000	126	135	145	110
3	53	39	49	36	50	28	1700	900	114	486	130	114
4	50	39	49	38	50	28	1600	800	98	194	126	112
5	49	38	49	38	50	28	1500	700	90	164	128	108
6	47	38	49	38	50	30	1400	685	82	152	126	104
7	46	38	49	38	50	30	1400	680	78	140	110	104
8	46	39	49	38	50	30	1400	675	75	124	104	106
9	45	40	48	38	50	30	1500	635	74	114	98	108
10	44	42	46	36	50	30	2500	599	68	112	96	118
11	42	42	48	36	50	30	4000	554	65	104	90	128
12	41	43	48	36	50	40	4500	518	59	100	87	128
13	41	44	46	36	50	50	4000	486	55	102	81	126
14	40	44	48	36	50	60	3860	454	52	120	84	122
15	40	45	48	36	50	80	3620	423	46	167	84	120
16	40	46	48	36	50	100	3740	385	42	161	81	120
17	40	47	48	36	29	150	4900	357	40	126	77	116
18	40	48	48	36	29	300	7420	325	60	114	68	116
19	40	48	46	36	29	350	5410	321	71	114	63	114
20	40	48	48	36	29	400	4640	317	74	96	61	108
21	40	49	48	36	29	700	4010	274	90	86	80	106
22	40	49	48	36	29	700	3580	260	100	76	100	80
23	40	49	48	34	28	650	3030	229	120	76	124	63
24	40	49	48	34	28	600	2650	218	110	81	150	60
25	40	49	46	34	28	550	2340	203	660	84	130	55
26	39	49	48	34	28	500	2090	191	1510	89	140	54
27	39	49	46	35	28	450	1810	179	720	90	148	55
28	39	49	44	33	28	400	1590	170	549	89	150	54
29	39	49	42	33	---	900	1330	161	226	120	140	58
30	40	49	40	33	---	1500	1220	150	185	203	122	56
31	38	---	40	33	---	2000	---	142	---	145	114	---
TOTAL	1330	1354	1466	1113	824	10800	86420	14071	5579	4128	3385	2933
MEAN	42.9	44.5	47.4	35.9	29.4	348	2881	454	186	133	109	97.8
MAX	59	49	49	40	52	2000	7420	1080	1510	486	150	128
MIN	38	38	40	33	28	28	1220	142	40	76	61	54
AC-FT	2640	2650	2910	2210	1650	21420	171400	27910	11070	8190	6710	5820

CAL YR 1978 TOTAL 248496.0 MEAN 681 MAX 16500 MIN 8.0 AC-FT 492900
WTR YR 1979 TOTAL 133585.0 MEAN 365 MAX 7420 MIN 28 AC-FT 264800

06349000 HEART RIVER NEAR MANDAN, ND--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1946-50, 1971-76, 1978 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: January 1978 to current year.
WATER TEMPERATURES: January 1978 to current year.

REMARKS.--Sediment records from May 1948 to September 1971 available from U.S. Corps of Engineers, Omaha, Neb.
Some chemical analyses furnished by North Dakota State Water Commission.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,850 micromhos Jan. 19, 1979; minimum daily, 390 micromhos Mar. 28, 1978.
WATER TEMPERATURES: Maximum daily, 33.0°C July 22, 1979; 0.0°C on many days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,850 micromhos Jan. 19; minimum daily, 440 micromhos Apr. 18.
WATER TEMPERATURES: Maximum daily, 33.0°C July 22; 0.0°C on many days during winter months.

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)
OCT											
27...	1005	38	1620	8.5	4.5	2.5	2.4	12.0	95	70	28
NOV											
21...	1445	50	1830	8.1	-12.0	.0	1.6	11.8	--	K10	84
DEC											
26...	1345	49	1640	7.9	-3.0	.0	1.2	9.8	--	K4	K18
JAN											
29...	1315	53	1680	8.0	-19.0	.0	2.4	7.2	--	K3	21
FEB											
22...	1340	29	1600	7.9	-8.0	.0	2.6	7.4	--	<1	K4
APR											
03...	1618	1720	850	--	--	.0	--	--	--	--	--
12...	1430	4580	640	8.0	--	.0	260	11.8	--	K30	5100
19...	1730	6080	522	7.8	5.5	7.5	320	9.5	87	K100	3100
MAY											
25...	1200	204	1220	8.4	18.0	15.5	6.0	9.1	21	K20	--
JUN											
28...	1345	334	819	8.2	--	24.0	240	--	50	770	1050
JUL											
31...	1235	145	1040	8.5	23.0	23.5	14	8.5	23	K60	90
AUG											
31...	1250	124	1240	8.5	29.0	25.0	2.7	8.1	22	K33	110
31...	1505	124	1240	--	--	--	--	--	--	--	--
SEP											
28...	1100	56	1385	8.6	--	13.5	--	9.7	--	7	121

DATE	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
OCT											
27...	340	0	66	43	250	61	5.9	8.8	380	460	15
NOV											
21...	430	0	83	54	260	56	5.5	8.6	500	510	10
DEC											
26...	440	120	86	54	220	52	4.6	11	320	520	18
JAN											
29...	440	79	85	55	220	51	4.6	11	360	560	10
FEB											
22...	430	160	91	49	190	48	4.0	9.6	270	520	12
APR											
03...	--	--	--	--	--	--	--	--	--	--	--
12...	190	56	40	21	70	44	2.2	7.7	130	210	3.8
19...	140	29	31	15	56	45	2.1	6.4	110	160	3.0
MAY											
25...	320	54	67	38	160	51	3.9	8.7	270	380	8.4
JUN											
28...	180	6	39	19	130	60	4.3	9.1	170	260	4.4
JUL											
31...	270	38	53	33	130	50	3.5	8.9	230	--	7.8
AUG											
31...	290	2	56	37	180	72	4.6	8.1	290	410	9.5
31...	--	--	--	--	--	--	--	--	--	--	--
SEP											
28...	--	--	--	--	--	--	--	--	--	--	--

K - Results based on colony count outside the acceptable range (non-ideal colony count).

06349000 HEART RIVER NEAR MANDAN, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	FLUO-RIDE, TOTAL (MG/L AS F) (00951)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NITRATE TOTAL (MG/L AS N) (00620)	NITRO-GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)
OCT											
27...	.3	.4	7.2	1080	1080	1.47	111	.02	.01	.03	.01
NOV											
21...	--	.4	6.4	1240	1240	1.69	167	--	--	.17	.03
DEC											
26...	--	.3	4.9	1140	1110	1.55	151	--	--	.14	.01
JAN											
29...	--	.3	5.0	1190	1160	1.62	106	--	--	.29	.07
FEB											
22...	--	.3	5.2	1110	1040	1.51	86.9	--	--	.28	.06
APR											
03...	--	--	--	--	--	--	--	--	--	--	--
12...	--	.2	5.7	464	437	.63	5740	--	--	.81	.16
19...	.6	.2	5.5	341	343	.46	5600	.64	.14	.78	.24
MAY											
25...	.2	.3	4.1	839	829	1.14	462	.03	.02	.05	.08
JUN											
28...	--	.3	6.5	579	572	.79	522	.57	.02	.39	.04
JUL											
31...	.4	.3	6.0	742	587	1.01	291	.00	.02	.00	.00
AUG											
31...	.8	.4	6.7	829	882	1.13	278	.00	.00	.00	.01
31...	--	--	--	--	--	--	--	--	--	--	--
SEP											
28...	--	--	--	--	--	--	--	--	--	--	--

DATE	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, NH4 + ORG. SUSP. TOTAL (MG/L AS N) (00624)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHATE, TOTAL (MG/L AS PO4) (00650)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	ALUM-INUM, TOTAL RECOV-ERABLE (UG/L AS AL) (01105)
OCT										
27...	.42	.43	.01	.42	.46	2.0	.02	--	.01	80
NOV										
21...	.52	.55	.04	.51	.72	3.2	.02	--	.01	--
DEC										
26...	.57	.58	.00	.60	.72	3.2	.04	--	.03	--
JAN										
29...	.68	.75	.18	.57	1.0	4.6	.02	--	.01	--
FEB										
22...	.44	.50	.04	.46	.78	3.5	.02	--	.01	--
APR										
03...	--	--	--	--	--	--	--	--	--	--
12...	1.9	2.1	1.4	.69	2.9	13	.36	1.1	.04	--
19...	2.0	2.2	1.5	.69	3.0	13	.53	1.6	.03	13000
MAY										
25...	.44	.52	.00	.66	.57	2.5	.03	--	.01	250
JUN										
28...	1.5	1.5	.92	.58	1.9	8.4	.31	.95	.01	7700
JUL										
31...	.73	.73	.05	.68	.73	3.2	.13	--	.02	540
AUG										
31...	.47	.48	.00	.55	.48	2.1	.18	--	.02	330
31...	--	--	--	--	--	--	--	--	--	--
SEP										
28...	--	--	--	--	--	--	--	--	--	--

06349000 HEART RIVER NEAR MANDAN, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BARIUM, SUS-PENDED RECOV-ERABLE (UG/L AS BA) (01006)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE) (01012)	BORON, TOTAL RECOV-ERABLE (UG/L AS B) (01022)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD) (01027)	CADMIUM SUS-PENDED RECOV-ERABLE (UG/L AS CD) (01026)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)
OCT										
27...	1	--	0	--	--	0	580	1	--	--
NOV										
21...	--	--	--	--	--	--	--	--	--	--
DEC										
26...	1	1	100	0	100	--	--	0	0	<1
APR										
03...	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--
19...	10	1	400	400	0	0	150	--	--	--
MAY										
25...	1	--	100	--	--	0	260	0	--	--
JUN										
28...	4	1	200	200	0	0	290	1	1	0
JUL										
31...	1	--	100	--	--	0	270	0	--	--
AUG										
31...	1	--	0	--	--	10	360	0	--	--
31...	--	--	--	--	--	--	--	--	--	--
SEP										
28...	--	--	--	--	--	--	--	--	--	--

DATE	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	CHRO-MIUM, SUS-PENDED RECOV, (UG/L AS CR) (01031)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO) (01037)	COBALT, SUS-PENDED RECOV-ERABLE (UG/L AS CO) (01036)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	COPPER, SUS-PENDED RECOV-ERABLE (UG/L AS CU) (01041)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)
OCT										
27...	0	--	--	0	--	--	3	--	--	250
NOV										
21...	--	--	--	--	--	--	--	--	--	--
DEC										
26...	30	30	0	2	0	<3	4	2	2	200
APR										
03...	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--
19...	30	30	0	12	12	0	42	40	2	29000
MAY										
25...	10	--	--	0	--	--	6	--	--	420
JUN										
28...	10	10	0	7	7	0	18	16	2	13000
JUL										
31...	0	--	--	1	--	--	4	--	--	900
AUG										
31...	10	--	--	0	--	--	2	--	--	500
31...	--	--	--	--	--	--	--	--	--	--
SEP										
28...	--	--	--	--	--	--	--	--	--	--

DATE	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	LEAD, SUS-PENDED RECOV-ERABLE (UG/L AS PB) (01050)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM TOTAL RECOV-ERABLE (UG/L AS LI) (01132)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MANGA-NESE, SUS-PENDED RECOV, (UG/L AS MN) (01054)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	MERCURY SUS-PENDED RECOV-ERABLE (UG/L AS HG) (71895)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, TOTAL RECOV-ERABLE (UG/L AS MO) (01062)
OCT												
27...	--	0	--	--	70	40	--	--	.0	--	--	1
NOV												
21...	--	--	--	--	--	--	--	--	--	--	--	--
DEC												
26...	10	1	0	2	--	10	0	20	.0	.0	.0	--
APR												
12...	--	--	--	--	--	--	--	--	--	--	--	--
19...	130	--	--	--	40	900	890	10	.2	.1	.1	1
MAY												
25...	--	16	--	--	40	70	--	--	.2	--	--	2
JUN												
28...	20	38	37	1	20	370	360	10	.2	.1	.1	3
JUL												
31...	--	5	--	--	30	50	--	--	.1	--	--	0
AUG												
31...	--	1	--	--	550	60	--	--	.1	--	--	7

06349000 HEART RIVER NEAR MANDAN, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SELE-NIUM, SUS-PENDED TOTAL (UG/L AS SE) (01146)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	SILVER, SUS-PENDED RECOV-ERABLE (UG/L AS AG) (01076)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, SUS-PENDED RECOV-ERABLE (UG/L AS ZN) (01091)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C) (00689)
OCT												
27...	7	0	--	--	0	--	--	10	--	--	3.7	.3
NOV												
21...	--	--	--	--	--	--	--	--	--	--	7.1	.3
DEC												
26...	--	1	0	1	2	2	0	20	20	0	7.9	.2
JAN												
29...	--	--	--	--	--	--	--	--	--	--	8.0	--
FEB												
22...	--	--	--	--	--	--	--	--	--	--	8.8	--
APR												
12...	--	--	--	--	--	--	--	--	--	--	12	48
19...	36	1	1	0	0	0	0	120	110	10	7.7	--
MAY												
25...	9	1	--	--	0	--	--	10	--	--	11	--
JUN												
28...	24	1	0	1	0	0	0	70	60	10	9.8	3.2
JUL												
31...	9	0	--	--	0	--	--	30	--	--	6.6	1.2
AUG												
31...	26	1	--	--	0	--	--	0	--	--	24	1.4

DATE	PCB, TOTAL (UG/L) (39516)	ALDRIN, TOTAL (UG/L) (39330)	CHLOR-DANE, TOTAL (UG/L) (39350)	DDD, TOTAL (UG/L) (39360)	DDE, TOTAL (UG/L) (39365)	DDT, TOTAL (UG/L) (39370)	DI-AZINON, TOTAL (UG/L) (39570)	DI-ELDRIN TOTAL (UG/L) (39380)	ENDO-SULFAN, TOTAL (UG/L) (39388)	ENDRIN, TOTAL (UG/L) (39390)	ETHION, TOTAL (UG/L) (39398)	HEPTA-CHLOR, TOTAL (UG/L) (39410)
JUL												
31...	.0	.00	.0	.00	.00	.00	.00	.00	.00	.00	.00	.00

DATE	HEPTA-CHLOR EPOXIDE TOTAL (UG/L) (39420)	LINDANE TOTAL (UG/L) (39340)	MALA-THION, TOTAL (UG/L) (39530)	METHYL PARA-THION, TOTAL (UG/L) (39600)	METHYL TRI-THION, TOTAL (UG/L) (39790)	PARA-THION, TOTAL (UG/L) (39540)	PER-THANE TOTAL (UG/L) (39034)	TOX-APHENE, TOTAL (UG/L) (39400)	TOTAL TRI-THION (UG/L) (39786)	PHYTO-PLANK-TON, TOTAL (CELLS PER ML) (60050)	PERI-PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M (00573)	PERI-PHYTON BIOMASS ASH WEIGHT G/SQ M (00572)
OCT												
27...	--	--	--	--	--	--	--	--	--	--	61.6	58.3
NOV												
21...	--	--	--	--	--	--	--	--	--	4600	--	--
MAY												
25...	--	--	--	--	--	--	--	--	--	3000	--	--
JUN												
28...	--	--	--	--	--	--	--	--	--	4500	--	--
JUL												
31...	.00	.00	.00	.00	.00	.00	.00	0	.00	3400	2.99	2.68
AUG												
31...	--	--	--	--	--	--	--	--	--	83000	--	--

DATE	CHLOR-A PERI-PHYTON CHROMO-GRAPHIC FLUORUM (MG/M2) (70957)	CHLOR-B PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70958)	LENGTH OF EXPO-SURE (DAYS) (00022)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)
OCT						
27...	2.23	.000	29	12	1.2	48
NOV						
21...	--	--	--	19	2.6	74
DEC						
26...	--	--	--	11	1.5	82
JAN						
29...	--	--	--	4	.36	65
FEB						
22...	--	--	--	16	1.3	74
APR						
12...	--	--	--	1010	12500	77
19...	--	--	--	2690	44200	47
MAY						
25...	--	--	--	22	12	81
JUN						
28...	--	--	--	364	328	98
JUL						
31...	.610	.000	33	58	23	74
AUG						
31...	--	--	--	38	13	62
SEP						
28...	--	--	--	12	1.8	75

06349000 HEART RIVER NEAR MANDAN, ND--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1520	1610	1620	1600	1680	1550	960	800	1300	1080	1060	1260
2	1450	1610	1630	1600	1700	1600	950	810	1300	1140	1020	1260
3	1410	1580	1650	1660	1680	1550	900	820	1280	780	1110	1280
4	1450	1530	1680	1640	1700	1520	850	840	1300	1150	1130	1290
5	1460	1580	1700	1660	1730	1590	850	910	1320	1160	1180	1300
6	1490	1610	1680	1650	1750	1500	830	920	1310	1220	1210	1280
7	1500	1650	1650	1700	1650	1550	820	980	1330	1200	1220	1270
8	1540	1420	1700	1760	1600	1540	740	1000	1340	1200	1240	1250
9	1460	1610	1750	1750	1650	1530	750	1040	1360	1220	1160	1280
10	1500	1600	1760	1760	1700	1530	675	1060	1380	1280	1200	1200
11	1530	1600	1800	1760	1600	1600	580	1080	1490	1100	1300	1210
12	1550	1620	1750	1700	1650	1650	700	1120	1400	1210	1300	1180
13	1520	1620	1730	1750	1650	1640	750	1090	1400	1180	1300	1200
14	1600	1650	1780	1800	1700	1620	825	1080	1400	1200	1340	1200
15	1600	1620	1690	1750	1650	1610	800	1110	1410	1160	1320	1250
16	1600	1700	1640	1760	1750	1550	700	1060	1410	1110	1380	1220
17	1600	1650	1780	1840	1770	1550	580	1150	1450	1110	1400	1180
18	1620	1680	1700	---	1640	1500	440	1200	1440	1100	1400	1170
19	1620	1720	---	1650	1700	1150	---	1220	1410	1100	1380	1190
20	1600	1680	---	1780	1650	900	575	1250	1300	1180	1390	1200
21	1540	1650	---	1700	1650	1110	700	1230	1300	1200	1340	1200
22	1610	1700	---	1750	1700	700	750	1200	1200	1220	1280	1240
23	1470	1730	---	1700	1650	650	750	1200	1300	1220	1200	1300
24	1600	1650	1680	1650	1700	780	800	1220	1200	1230	1250	1280
25	1620	1600	1680	1700	1640	760	825	1230	1250	1260	1240	1360
26	1600	1510	1650	1660	1600	770	800	1270	640	1230	1230	1390
27	1640	1580	1640	1700	1580	660	770	1300	750	1140	1240	1390
28	1630	1600	---	1740	1550	680	750	1400	920	1120	1200	1400
29	1620	1620	---	1730	---	900	775	1260	1000	1100	1300	1410
30	1620	1630	1640	1650	---	970	800	1280	1010	1110	1320	1450
31	1620	---	1600	1700	---	975	---	1270	---	1110	1260	---
MEAN	1550	1620	1690	1720	1670	1260	758	1110	1260	1160	1250	1270

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16.0	9.0	.0	.0	.0	.0	1.0	12.0	18.0	27.0	28.0	29.0
2	15.0	10.0	.0	.0	.0	.0	1.0	12.0	22.0	29.0	29.0	29.0
3	14.0	9.0	.0	.0	.0	.0	.5	12.0	23.0	24.0	30.0	28.0
4	15.0	8.5	.0	.0	.0	.0	1.0	10.0	23.5	25.0	26.0	27.0
5	10.0	6.0	.0	.0	.0	.0	.5	8.0	24.0	27.0	30.0	25.0
6	13.0	3.0	.0	.0	.0	.0	.5	8.0	25.0	26.0	27.0	23.0
7	14.0	6.0	.0	.0	.0	.0	.5	9.0	18.0	27.0	28.0	24.0
8	13.0	9.0	.0	.0	.0	.0	.5	8.0	20.0	29.0	25.5	25.0
9	16.0	2.0	.0	.0	.0	.0	1.0	7.0	21.0	29.0	25.0	25.0
10	14.0	1.0	.0	.0	.0	.0	1.0	5.0	26.0	31.0	26.0	19.0
11	13.0	1.0	.0	.0	.0	.0	1.0	11.0	28.0	27.0	26.0	21.0
12	12.0	1.0	.0	.0	.0	.0	1.0	12.0	28.0	30.0	25.0	17.0
13	11.0	.5	.0	.0	.0	.0	1.5	15.0	28.0	27.0	24.0	15.0
14	11.0	.5	.0	.0	.0	.0	4.0	15.0	25.0	26.0	21.0	19.0
15	10.0	.5	.0	.0	.0	.0	4.5	18.0	26.0	24.0	23.0	21.0
16	11.0	.5	.0	.0	.0	.0	5.0	22.0	19.0	25.0	25.5	24.0
17	11.0	.5	.0	.0	.0	.0	5.0	17.0	21.0	27.0	27.0	21.0
18	12.0	.5	.0	---	.0	.0	12.0	18.0	24.0	30.0	28.0	22.0
19	15.0	.5	---	.0	.0	.0	---	18.0	20.5	30.0	27.0	21.0
20	15.0	.5	---	.0	.0	.0	8.0	17.0	21.0	31.0	23.0	20.0
21	13.0	.5	---	.0	.0	.0	8.5	19.0	26.0	32.0	22.0	19.0
22	11.0	.0	---	.0	.0	.0	8.0	15.0	20.0	33.0	24.0	20.0
23	9.5	.0	---	.0	.0	.0	8.0	20.0	20.0	30.0	23.0	13.5
24	11.0	.0	.0	.0	.0	.0	8.0	20.0	26.0	30.0	24.0	20.0
25	8.0	.0	.0	.0	.0	.0	8.0	20.0	22.0	27.0	25.0	21.0
26	10.0	.0	.0	.0	.0	.0	7.0	23.0	22.0	25.5	25.0	22.0
27	10.0	.0	.0	.0	.0	.0	7.0	25.0	24.0	27.0	23.5	18.0
28	10.0	.0	---	.0	.0	.0	7.0	25.0	25.5	28.0	25.0	20.0
29	8.0	.0	---	.0	---	1.0	8.0	17.0	28.0	25.0	26.0	16.0
30	8.0	.0	.0	.0	---	1.0	11.0	18.0	27.5	24.0	25.0	16.0
31	10.0	---	.0	.0	---	1.0	---	17.0	---	27.0	29.0	---
MEAN	12.0	2.5	.0	.0	.0	.0	4.5	15.5	23.5	27.5	25.5	21.5

06349000 HEART RIVER NEAR MANDAN, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1978 TO AUGUST 1979

DATE	NOV 21,78	MAY 25,79	JUN 28,79	JUL 31,79	AUG 31,79
TIME	1445	1200	1345	1235	1250
TOTAL CELLS/ML	4600	3000	4500	3400	83000
DIVERSITY: DIVISION	1.7	1.0	0.8	0.6	1.0
.CLASS	1.7	1.0	0.8	0.6	1.0
..ORDER	1.9	1.7	0.9	1.2	1.8
...FAMILY	2.0	1.8	0.9	2.3	2.1
....GENUS	2.0	2.2	0.9	3.3	3.0

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)										
.CHLOROPHYCEAE										
..CHLOROCOCCALES										
...CHARACIACEAE										
....SCHROEDERIA	--	-	--	-	--	-	60	2	--	-
...CHLOROCOCCACEAE										
....CHLOROCOCCUM	--	-	--	-	--	-	--	-	*	0
...MICRACTINIACEAE										
....GOLENKINIA	--	-	--	-	--	-	100	3	*	0
...OOCYSTACEAE										
....ANKISTRODESMUS	1100#	24	680#	22	--	-	780#	23	4200	5
....CHLORELLA	--	-	--	-	--	-	--	-	2600	3
....CHODATELLA	--	-	--	-	--	-	--	-	*	0
....DICTYOSPHAERIUM	--	-	--	-	--	-	360	11	5700	7
....KIRCHNERIELLA	--	-	--	-	--	-	--	-	970	1
....OOCYSTIS	--	-	--	-	--	-	80	2	1600	2
....SELENASTRUM	41	1	--	-	--	-	100	3	--	-
....TETRAEDRON	--	-	--	-	--	-	--	-	490	1
....TREUBARIA	--	-	--	-	--	-	80	2	--	-
...SCENEDESMACEAE										
....ACTINASTRUM	--	-	--	-	--	-	--	-	1300	2
....CRUCIGENIA	--	-	--	-	--	-	80	2	3900	5
....SCENEDESMUS	--	-	100	3	--	-	930#	27	1900	2
....TETRASTRUM	--	-	--	-	--	-	80	2	--	-
..TETRASPORALES										
...COCCOMYXACEAE										
....ELAKATOTHRIX	--	-	--	-	--	-	40	1	--	-
...PALMELLACEAE										
....SPHAEROCYSTIS	--	-	--	-	--	-	160	5	--	-
..VOLVOCALES										
...CHLAMYDOMONADACEAE										
....CHLAMYDOMONAS	83	2	75	2	130	3	140	4	650	1
CHRYSOPHYTA										
.BACILLARIOPHYCEAE										
..CENTRALES										
...COSCINODISCACEAE										
....CYCLOTELLA	350	7	1200#	40	130	3	20	1	490	1
....STEPHANODISCUS	--	-	380	13	--	-	--	-	--	-
...RHIZOSOLENIACEAE										
....RHIZOSOLENIA	--	-	--	-	--	-	--	-	*	0
..PENNALES										
...DIATOMACEAE										
....DIATOMA	--	-	--	-	260	6	--	-	--	-
...NAVICULACEAE										
....NAVICULA	83	2	--	-	--	-	60	2	*	0
...NITZSCHIACEAE										
....NITZSCHIA	170	4	530#	17	--	-	260	8	650	1
.XANTHOPHYCEAE										
..HETEROCOCCALES										
...CHLOROTHECIACEAE										
....OPHIOCYTIUM	--	-	--	-	--	-	20	1	--	-
CRYPTOPHYTA (CRYPTOMONADS)										
.CRYPTOPHYCEAE										
..CRYPTOMONADALES										
...CRYPTOMONADACEAE										
....CRYPTOMONAS	--	-	--	-	--	-	40	1	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)										
.CYANOPHYCEAE										
..CHROOCOCCALES										
...CHROOCOCCACEAE										
....ANACYSTIS	--	-	--	-	--	-	--	-	23000#	27
..HORMOGONALES										
...OSCILLATORIACEAE										
....OSCILLATORIA	410	9	--	-	3900#	86	--	-	25000#	30
....SCHIZOTHRIX	--	-	--	-	--	-	--	-	9700	12
EUGLENOPHYTA (EUGLENOIDS)										
.EUGLENOPHYCEAE										
..EUGLENALES										
...EUGLENACEAE										
....EUGLENA	--	-	--	-	130	3	--	-	--	-
....EUTREPTIA	--	-	--	-	--	-	--	-	*	0
....TRACHELOMONAS	2400#	51	50	2	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06349070 MISSOURI RIVER BELOW MANDAN, ND

LOCATION.--Lat 46°44'32", long 100°49'54", at midsection of west half sec.30, T.138 N., R.80 W., Morton County, Hydrologic Unit 10130102, on right bank 1 mi (2 km) south of Fort Lincoln State Park, 6 mi (10 km) southeast of Mandan, and at mile 1,309 (2,106 km).

DRAINAGE AREA.--189,800 mi^2 (491,600 km^2), approximately.

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

GAGE.--Water-stage recorder. Datum of gage is 1,600.00 ft (487.680 m) National Geodetic Vertical Datum of 1929 (Corps of Engineers bench mark).

REMARKS.--Stage regulated by Lake Sakakawea (station 06338000).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily gage height recorded, 29.71 ft (9.056 m) Mar. 17, 1972; minimum daily recorded, 17.40 ft (5.304 m) Apr. 1, 1968.

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26.26	24.99	25.56	---				---	26.02	24.47	23.21	22.55
2	26.06	24.99	25.31	---				---	26.02	24.49	23.02	22.53
3	25.24	24.99	24.45	---				---	25.99	24.56	23.01	22.20
4	24.89	24.96	24.40	---				---	25.98	24.59	23.04	22.04
5	24.88	24.95	24.14	---				24.68	25.99	24.36	23.09	22.04
6	24.85	24.95	24.25	27.72				24.73	26.00	24.21	22.98	21.86
7	24.83	24.96	25.10	27.72				24.69	25.98	24.51	23.03	21.87
8	24.85	24.97	26.72	27.70				24.64	25.98	24.09	23.04	21.98
9	24.87	25.01	27.30	27.60				24.60	25.95	24.13	22.89	22.00
10	24.86	25.02	27.12	---				24.60	25.95	24.15	22.84	22.00
11	24.85	25.00	27.14	---				24.62	25.95	24.08	22.73	21.82
12	24.84	24.99	27.33	---				24.79	25.94	24.03	22.84	21.77
13	24.83	25.01	27.36	---				25.51	25.96	24.21	22.61	21.79
14	24.86	25.00	26.81	---				25.81	25.98	24.05	22.52	21.71
15	24.88	24.95	26.68	---				25.93	25.96	23.85	22.64	21.75
16	24.86	24.94	26.72	---				25.97	25.94	23.79	22.77	21.53
17	24.90	24.97	26.75	---				25.96	25.95	23.76	22.50	21.68
18	24.89	24.96	26.46	---				26.00	25.97	23.76	22.65	21.52
19	24.89	24.95	26.36	---				26.02	26.01	23.75	22.55	21.70
20	24.88	24.95	26.51	---				26.07	26.00	23.55	22.49	21.66
21	24.89	24.94	26.61	---				26.12	25.68	23.54	22.56	21.64
22	24.88	24.93	26.98	---				26.15	25.15	23.46	22.66	21.67
23	24.86	24.91	26.44	---				26.14	24.83	23.36	22.49	21.73
24	24.90	24.89	26.22	---				26.13	24.63	23.37	22.57	21.68
25	24.88	25.00	26.03	---				26.11	24.62	23.48	22.48	21.66
26	24.86	25.26	26.30	---				26.10	24.64	23.54	22.50	21.57
27	24.96	25.26	26.51	---				26.07	24.64	23.43	22.48	21.72
28	24.89	25.15	26.64	---				26.08	24.67	23.34	22.47	21.66
29	24.87	25.22	---	---				26.05	24.62	23.19	22.40	21.46
30	24.95	25.10	---	---				26.01	24.52	23.13	22.48	21.48
31	24.98	---	---	---				26.01	---	23.05	22.56	---
TOTAL	774.19	750.17	---	---				---	767.52	739.28	704.10	654.27
MEAN	24.97	25.01	---	---				---	25.58	23.85	22.71	21.81
MAX	26.26	25.26	---	---				---	26.02	24.59	23.21	22.55
MIN	24.83	24.89	---	---				---	24.52	23.05	22.40	21.46

06349500 APPLE CREEK NEAR MENOKEN, ND

LOCATION.--Lat 46°47'40", long 100°39'25", in NW¼NE¼ sec.9, T.138 N., R.79 W., Burleigh County, Hydrologic Unit 10130103, on left bank 75 ft (23 m) downstream from bridge on county highway, 4 mi (6 km) upstream from Hay Creek, 6.3 mi (10.1 km) west of Menoken, and 6.4 mi (10.3 km) east of Bismarck.

DRAINAGE AREA.--1,680 mi^2 (4,350 km^2), approximately, of which about 500 mi^2 (1,300 km^2) is probably non-contributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March to June 1905, October 1945 to current year. Published as "near Bismarck" 1905.

REVISED RECORDS.--WSP 1209: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,638.61 ft (499.448 m) National Geodetic Vertical Datum of 1929. See WSP 1729 or 1917 for history of changes prior to Sept. 30, 1953.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--34 years, 34.7 ft^3/s (0.983 m^3/s), 25,140 acre-ft/yr (31.0 hm^3/yr); median of yearly mean discharges, 20 ft^3/s (0.57 m^3/s), 14,500 acre-ft/yr (18 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,750 ft^3/s (191 m^3/s) Apr. 18, 1950, gage height, 17.07 ft (5.203 m); maximum gage height, 17.46 ft (5.322 m) Apr. 19, 1979; no flow at times in some years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,980 ft^3/s (169 m^3/s) Apr. 19, gage height, 17.46 ft (5.322 m), only peak above base of 200 ft^3/s (5.66 m^3/s); minimum daily, 0.25 ft^3/s (0.007 m^3/s) Sept. 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.0	.97	1.3	1.1	1.1	1.4	2.0	439	39	12	4.8	1.3
2	.97	.97	1.2	1.1	1.1	1.4	1.9	413	38	12	4.4	1.2
3	1.0	1.0	1.1	1.1	1.1	1.4	1.8	360	37	11	4.4	1.1
4	1.3	1.0	1.1	1.1	1.1	1.4	1.8	327	36	11	4.3	1.0
5	1.3	1.3	1.3	1.1	1.1	1.4	2.0	299	33	10	3.9	.84
6	1.2	1.1	1.2	1.1	1.1	1.4	1.7	282	32	9.3	3.6	.63
7	1.1	1.2	1.1	1.1	1.1	1.4	2.0	258	32	8.6	3.2	.60
8	1.1	1.4	1.0	1.3	1.2	1.6	2.4	223	31	8.1	2.6	.57
9	1.3	1.9	1.0	1.3	1.2	1.6	3.0	206	29	7.8	2.5	.57
10	1.4	2.1	.96	1.1	1.3	1.3	4.4	193	28	7.8	2.4	.57
11	1.3	1.7	1.2	1.1	1.2	1.4	7.6	179	27	7.6	2.3	.60
12	.93	1.3	1.1	1.1	1.2	1.7	11	164	25	7.9	2.2	.57
13	.86	1.9	1.3	1.1	1.2	1.6	11	156	24	8.5	2.0	.50
14	.93	1.9	1.3	1.2	1.1	1.4	18	147	22	8.4	2.0	.43
15	1.2	1.6	1.4	1.2	1.1	1.4	34	138	21	8.0	1.9	.36
16	1.1	1.4	1.4	1.3	1.2	1.7	56	133	20	7.5	1.6	.40
17	1.1	1.4	1.4	1.3	1.3	2.0	228	128	19	7.3	1.6	.43
18	1.0	1.6	1.3	1.3	1.3	2.4	1140	117	18	6.8	1.5	.43
19	.97	1.5	1.3	1.3	1.4	2.2	4700	112	20	6.4	1.4	.50
20	.97	1.4	1.4	1.3	1.4	2.1	3750	109	21	5.8	1.2	.60
21	.97	1.3	1.4	1.3	1.4	2.1	2190	99	20	5.2	1.2	.63
22	.93	1.2	1.3	1.4	1.5	2.5	1520	93	18	4.8	1.5	.78
23	.86	1.3	1.3	1.3	1.8	2.8	1140	89	18	5.4	1.4	1.2
24	.82	1.3	1.3	1.3	1.5	2.5	892	85	17	5.7	1.8	.60
25	.71	1.3	1.2	1.2	1.4	4.6	772	79	16	5.5	2.1	.40
26	.67	1.3	1.2	1.2	1.4	3.6	662	76	15	5.4	2.2	.36
27	.71	1.3	1.2	1.3	1.4	2.6	601	71	14	6.2	2.0	.30
28	.78	1.4	1.2	1.3	1.4	2.5	554	62	13	6.3	1.8	.28
29	.86	1.4	1.1	1.2	---	2.1	520	47	13	6.1	1.8	.30
30	.97	1.3	1.1	1.2	---	2.0	469	44	12	5.6	1.5	.28
31	.97	---	1.1	1.1	---	2.2	---	40	---	4.8	1.4	---
TOTAL	31.28	41.74	37.76	37.4	35.6	61.7	19298.6	5168	708	232.8	72.5	18.33
MEAN	1.01	1.39	1.22	1.21	1.27	1.99	643	167	23.6	7.51	2.34	.61
MAX	1.4	2.1	1.4	1.4	1.8	4.6	4700	439	39	12	4.8	1.3
MIN	.67	.97	.96	1.1	1.1	1.3	1.7	40	12	4.8	1.2	.28
AC-FT	62	83	75	74	71	122	38280	10250	1400	462	144	36

CAL YR 1978 TOTAL 20846.24 MEAN 57.1 MAX 1600 MIN .06 AC-FT 41350
WTR YR 1979 TOTAL 25743.71 MEAN 70.5 MAX 4700 MIN .28 AC-FT 51060

06349500 APPLE CREEK NEAR MENOKEN, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1974 to current year.

REMARKS.--Some chemical data furnished by North Dakota State Water Commission.

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE (DEG C) (00010)	COLOR (PLAT-INUM-COBALT UNITS) (00080)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)
OCT										
23...	1500	.88	1300	8.2	7.0	40	1.6	7.7	260	0
NOV										
20...	1500	1.4	1470	8.3	1.5	38	2.0	10.0	310	0
DEC										
21...	1500	1.3	1720	8.1	2.0	35	2.2	5.3	390	0
JAN										
22...	1430	1.5	1950	7.8	1.0	42	2.5	9.0	420	0
FEB										
20...	1510	1.2	1830	7.7	.0	30	7.9	3.8	460	0
MAR										
30...	1610	1.9	1350	7.7	.5	30	--	5.8	320	0
APR										
12...	1505	11	1120	--	.0	--	--	--	--	--
18...	1705	1420	150	--	4.0	--	--	--	--	--
20...	1100	3700	120	--	3.0	--	--	--	--	--
21...	1000	2180	135	8.1	5.0	80	48	--	45	6
25...	1040	767	260	--	6.0	--	--	--	--	--
MAY										
22...	1415	94	650	7.9	14.5	40	31	8.8	150	0
JUN										
21...	1530	20	820	--	21.0	--	--	--	--	--
26...	1600	14	890	8.1	22.0	11	10	7.4	200	0
JUL										
30...	1500	6.1	975	8.2	23.0	40	14	6.0	190	0
AUG										
27...	1425	2.0	1120	8.7	20.5	10	9.7	7.6	200	0
SEP										
25...	1045	.43	1420	8.2	12.0	--	--	9.3	--	--

DATE	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)
OCT										
23...	41	39	250	67	6.7	8.7	420	320	32	.4
NOV										
20...	53	43	270	65	6.7	8.8	530	320	32	.4
DEC										
21...	66	54	280	60	6.2	12	500	390	36	.3
JAN										
22...	76	56	320	61	6.8	13	660	420	38	.4
FEB										
20...	100	50	310	59	6.3	10	710	330	48	.5
MAR										
30...	66	37	240	62	5.9	7.6	570	230	42	.5
APR										
12...	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--
21...	11	4.3	8.8	27	.6	4.8	39	19	1.0	.1
25...	--	--	--	--	--	--	--	--	--	--
MAY										
22...	33	17	83	53	2.9	8.2	210	100	6.9	.2
JUN										
21...	--	--	--	--	--	--	--	--	--	--
26...	39	24	140	60	4.4	8.6	340	140	11	.2
JUL										
30...	38	22	150	76	4.8	7.8	370	200	19	.7
AUG										
27...	39	26	190	80	5.8	7.0	420	210	25	.5
SEP										
25...	--	--	--	--	--	--	--	--	--	--

06349500 APPLE CREEK NEAR MENOKEN, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS NO3) (71851)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS NO2) (71856)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)
OCT										
23...	11	1030	956	1.40	2.45	--	--	--	--	.07
NOV										
20...	8.6	1050	1060	1.43	3.97	.02	.09	.03	.10	.03
DEC										
21...	20	1230	1160	1.67	4.32	.09	.40	.01	.03	.11
JAN										
22...	15	1370	1340	1.86	5.55	.21	.93	.02	.07	.24
FEB										
20...	26	1280	1300	1.74	4.15	.24	1.1	.01	.03	.27
MAR										
30...	28	997	996	1.36	5.11	.32	1.4	.01	.03	.29
APR										
12...	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--
21...	3.9	93	77	.13	547	.44	1.9	.16	.53	.68
25...	--	--	--	--	--	--	--	--	--	--
MAY										
22...	12	406	387	.55	103	.03	.13	.00	.00	.01
JUN										
21...	--	--	--	--	--	--	--	--	--	--
26...	13	610	582	.83	23.1	.00	.00	.01	.03	.01
JUL										
30...	6.6	673	667	.92	11.1	.04	.18	.00	.00	1.4
AUG										
27...	6.0	778	757	1.06	4.20	.01	.04	.00	.00	.00
SEP										
25...	--	--	--	--	--	.00	.00	.00	.00	--

DATE	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS NH4) (71846)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, NH4 + ORG. SUSP. TOTAL (MG/L AS N) (00624)	NITRO-GEN, AMMONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, DIS-SOLVED (MG/L AS N) (00602)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)
OCT										
23...	--	--	--	--	1.4	--	--	1.5	--	6.5
NOV										
20...	.05	.06	.08	.76	1.1	--	.82	1.1	--	5.0
DEC										
21...	.10	.32	.41	.98	1.6	--	1.3	1.7	--	7.6
JAN										
22...	.23	.45	.58	.75	1.2	--	1.2	1.4	1.4	6.4
FEB										
20...	.25	.39	.50	.91	1.6	.30	1.3	1.9	1.6	8.3
MAR										
30...	.33	.56	.72	.33	1.0	.11	.89	1.3	1.2	5.7
APR										
12...	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--
21...	.60	.14	.18	.40	1.2	.66	.54	1.9	1.1	8.3
25...	--	--	--	--	--	--	--	--	--	--
MAY										
22...	.03	.02	.03	.74	1.1	.34	.76	1.1	.79	4.9
JUN										
21...	--	--	--	--	--	--	--	--	--	--
26...	.01	.01	.01	.87	1.2	.32	.88	1.2	.89	5.4
JUL										
30...	.04	.13	.17	.79	1.9	.98	.92	3.3	.96	15
AUG										
27...	.01	.02	.03	--	1.6	--	--	1.6	--	7.1
SEP										
25...	.00	.01	.01	.64	--	--	.65	--	.65	--

06349500 APPLE CREEK NEAR MENOKEN, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHATE, TOTAL (MG/L AS PO4) (00650)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BORON, DIS-SOLVED (UG/L AS B) (01020)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)
OCT										
23...	.35	--	--	--	--	--	--	--	980	--
NOV										
20...	.21	--	.17	.14	.43	--	--	--	970	--
DEC										
21...	.27	--	.25	.21	.64	5	4	100	1000	1
JAN										
22...	.34	--	.25	.23	.71	--	--	--	1100	--
FEB										
20...	.55	--	.31	.24	.74	--	--	--	1100	--
MAR										
30...	.66	--	.45	.44	1.4	--	--	--	900	--
APR										
12...	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--
21...	.16	.49	.07	.06	.18	30	1	20	80	<1
25...	--	--	--	--	--	--	--	--	--	--
MAY										
22...	.28	.86	.16	.15	.46	--	--	--	250	--
JUN										
21...	--	--	--	--	--	--	--	--	--	--
26...	.36	1.1	.28	.23	.71	0	5	0	480	0
JUL										
30...	.48	--	.35	.30	.92	--	--	--	660	--
AUG										
27...	.32	--	.22	.16	.49	--	--	--	800	--
SEP										
25...	--	--	.21	.16	.49	--	--	--	--	--

DATE	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)
OCT									
23...	--	--	--	70	--	--	160	--	--
NOV									
20...	--	--	--	20	--	--	40	--	--
DEC									
21...	0	2	2	40	32	160	340	.0	5
JAN									
22...	--	--	--	30	--	--	760	--	--
FEB									
20...	--	--	--	30	--	--	1900	--	--
MAR									
30...	--	--	--	30	--	--	1400	--	--
APR									
21...	0	<3	1	50	0	5	70	.1	<10
MAY									
22...	--	--	--	50	--	--	20	--	--
JUN									
26...	0	0	1	720	0	80	40	.0	0
JUL									
30...	--	--	--	10	--	--	30	--	--
AUG									
27...	--	--	--	20	--	--	10	--	--

06349500 APPLE CREEK NEAR MENOKEN, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)	VANA-DIUM, DIS-SOLVED (UG/L AS V) (01085)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C) (00689)	CYANIDE TOTAL (MG/L AS CN) (00720)
OCT								
23...	--	--	--	--	--	--	--	--
NOV								
20...	--	--	--	--	--	--	--	--
DEC								
21...	8	1	600	.0	20	15	.6	.00
JAN								
22...	--	--	--	--	--	--	--	--
FEB								
20...	--	--	--	--	--	--	--	--
MAR								
30...	--	--	--	--	--	--	--	--
APR								
21...	0	0	60	2.1	4	9.5	2.2	.00
MAY								
22...	--	--	--	--	--	--	--	--
JUN								
26...	5	0	350	.0	10	20	1.4	.00
JUL								
30...	--	--	--	--	--	--	--	--
AUG								
27...	--	--	--	--	--	--	--	--

DATE	PHYTO-PLANK-TON, TOTAL (CELLS PER ML) (60050)	ALGAL GROWTH POTEN-TIAL, BOTTLE TEST (MG/L) (85209)
OCT		
23...	35000	--
NOV		
20...	18000	--
DEC		
21...	1700	17
JAN		
22...	180	--
FEB		
20...	100	--
MAR		
30...	330	--
APR		
21...	500	22
MAY		
22...	5100	--
JUN		
26...	4100	2.5
JUL		
30...	5700	--
AUG		
27...	9900	--
SEP		
25...	--	5.8

06349500 APPLE CREEK NEAR MENOKEN, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1978 TO AUGUST 1979

DATE	OCT 23,78	NOV 20,78	DEC 21,78	JAN 22,79	FEB 20,79	MAR 30,79
TIME	1500	1500	1500	1430	1510	1610
TOTAL CELLS/ML	55000	18000	1700	180	100	330
DIVERSITY: DIVISION	1.7	1.5	1.8	1.0	1.9	0.8
.CLASS	1.7	1.5	1.8	1.0	1.9	0.8
..ORDER	2.1	1.7	2.6	1.2	1.9	1.5
...FAMILY	2.5	2.0	3.1	1.5	2.7	1.9
....GENUS	3.1	2.2	3.1	2.2	2.8	1.9

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)												
.CHLOROPHYCEAE												
..CHLOROCOCCALES												
...COELASTRACEAE												
....COELASTRUM	--	-	--	-	--	-	--	-	--	-	--	-
...MICRACTINIACEAE												
....GOLENKINIA	*	0	--	-	--	-	--	-	--	-	--	-
...OOCYSTACEAE												
....ANKISTRODESMUS	2900	8	8500#	45	400#	23	5	3	5	5	--	-
....DICTYOSPHAERIUM	550	2	--	-	--	-	--	-	--	-	--	-
....GLOEOACTINIUM	--	-	--	-	--	-	--	-	--	-	--	-
....KIRCHNERIELLA	--	-	510	3	--	-	--	-	--	-	--	-
....OOCYSTIS	550	2	--	-	--	-	--	-	--	-	--	-
....SELENASTRUM	550	2	--	-	--	-	--	-	--	-	--	-
....TETRAEDRON	--	-	--	-	--	-	--	-	--	-	--	-
...SCENEDESMACEAE												
....CRUCIGENIA	2700	8	1000	6	--	-	75#	43	--	-	--	-
....SCENEDESMUS	3000	9	--	-	160	9	50#	29	30#	30	57#	17
....TETRASTRUM	2200	6	510	3	--	-	--	-	--	-	--	-
..VOLVOCALES												
...CHLAMYDOMONADACEAE												
....CHLAMYDOMONAS	550	2	--	-	390#	22	--	-	--	-	29	9
..ZYGNEMATALES												
...DESMIDIACEAE												
....CLOSTERIUM	--	-	--	-	--	-	--	-	--	-	--	-
....COSMARIUM	--	-	--	-	--	-	--	-	--	-	--	-
CHRYSOPHYTA												
.BACILLARIOPHYCEAE												
..CENTRALES												
...COSCINODISCACEAE												
....CYCLOTELLA	3100	9	4100#	22	67	4	20	11	--	-	29	9
....MELOSIRA	--	-	--	-	--	-	--	-	--	-	--	-
..PENNALES												
...ACHNANTHACEAE												
....COCCONEIS	--	-	--	-	13	1	5	3	--	-	--	-
...CYMBELLACEAE												
....CYMBELLA	--	-	--	-	--	-	5	3	--	-	--	-
...DIATOMACEAE												
....DIATOMA	--	-	--	-	--	-	--	-	10	10	190#	57
...FRAGILARIACEAE												
....SYNEDRA	--	-	580	2	40	2	--	-	5	5	14	4
...GOMPHONEMATACEAE												
....GOMPHONEMA	--	-	--	-	13	1	--	-	--	-	--	-
...NAVICULACEAE												
....NAVICULA	--	-	--	-	40	2	--	-	5	5	14	4
...NITZSCHIACEAE												
....NITZSCHIA	1100	3	130	1	54	3	10	6	15	15	--	-
.CHRYSOPHYCEAE												
..CHRYSOMONADALES												
...OCHROMONADACEAE												
....OCHROMONAS	270	1	--	-	--	-	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)												
.CRYPTOPHYCEAE												
..CRYPTOMONADALES												
...CRYPTOCHRYSIDACEAE												
....CHROOMONAS	--	-	--	-	13	1	--	-	--	-	--	-
...CRYPTOMONADACEAE												
....CRYPTOMONAS	--	-	--	-	--	-	--	-	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)												
.CYANOPHYCEAE												
..CHROOCOCCALES												
...CHROOCOCCACEAE												
....ANACYSTIS	1200	4	510	3	290#	17	5	3	5	5	--	-
....COCCOCHLORIS	--	-	--	-	--	-	--	-	5	5	--	-
..HORMOGONALES												
...NOSTOCACEAE												
....ANABAENA	--	-	--	-	67	4	--	-	--	-	--	-
...OSCILLATORIACEAE												
....OSCILLATORIA	14000#	39	--	-	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

CONTINUED

06349500 APPLE CREEK NEAR MENOKEN, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1978 TO AUGUST 1979 (CONTINUED)

DATE	OCT 23,78		NOV 20,78		DEC 21,78		JAN 22,79		FEB 20,79		MAR 30,79	
TIME	1500		1500		1500		1430		1510		1610	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
EUGLENOPHYTA (EUGLENOIDS)												
.EUGLENOPHYCEAE												
..EUGLENALES												
...EUGLENACEAE												
....EUGLENA	270	1	--	-	--	-	--	-	--	-	--	-
....PHACUS	*	0	--	-	13	1	--	-	--	-	--	-
....TRACHELOMONAS	1900	6	2800#	15	150	8	--	-	20#	20	--	-
PYRRHOPHYTA (FIRE ALGAE)												
.DINOPHYCEAE												
..PERIDINIALES												
...GLENODINIACEAE												
....GLENODINIUM	--	-	--	-	27	2	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06349500 APPLE CREEK NEAR MENOKEN, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1978 TO AUGUST 1979

DATE	APR 21,79	MAY 22,79	JUN 26,79	JUL 30,79	AUG 27,79
TIME	1000	1415	1600	1500	1425
TOTAL CELLS/ML	500	5100	4100	5700	9900
DIVERSITY: DIVISION	1.2	1.0	1.7	2.0	1.3
.CLASS	1.2	1.0	1.7	2.0	1.3
..ORDER	1.6	1.2	2.4	2.4	1.8
...FAMILY	1.8	1.7	2.6	2.7	2.5
....GENUS	1.8	2.1	2.8	3.2	3.6

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)										
.CHLOROPHYCEAE										
..CHLOROCOCCALES										
...COELASTRACEAE										
....COELASTRUM	--	-	--	-	--	-	--	-	350	4
...MICRACTINIACEAE										
....GOLENKINIA	--	-	--	-	--	-	--	-	--	-
...OOCYSTACEAE										
....ANKISTRODESMUS	100#	20	2500#	48	1300#	31	170	3	1500#	15
....DICTYOSPHAERIUM	--	-	--	-	--	-	--	-	550	6
....GLOEOACTINIUM	--	-	--	-	--	-	--	-	1800#	18
....KIRCHNERIELLA	--	-	--	-	--	-	--	-	--	-
....OOCYSTIS	--	-	--	-	--	-	270	5	200	2
....SELENASTRUM	--	-	620	12	--	-	--	-	50	1
....TETRAEDRON	--	-	--	-	--	-	--	-	50	1
...SCENEDESMACEAE										
....CRUCIGENIA	--	-	--	-	100	2	130	2	200	2
....SCENEDESMUS	29	6	580	11	100	2	1300#	24	1600#	16
....TETRASTRUM	--	-	--	-	--	-	130	2	200	2
..VOLVOCALES										
...CHLAMYDOMONADACEAE										
....CHLAMYDOMONAS	--	-	110	2	330	8	440	8	860	9
..ZYGNEMATALES										
...DESMIDIACEAE										
....CLOSTERIUM	58	11	--	-	--	-	--	-	--	-
....COSMARIUM	--	-	--	-	--	-	--	-	50	1
CHRYSOPHYTA										
.BACILLARIOPHYCEAE										
..CENTRALES										
...COSCINODISCACEAE										
....CYCLOTELLA	--	-	73	1	460	11	440	8	610	6
....MELOSIRA	--	-	--	-	200	5	--	-	--	-
..PENNALES										
...ACHNANTHACEAE										
....COCCONEIS	--	-	--	-	--	-	--	-	--	-
...CYMBELLACEAE										
....CYMBELLA	--	-	--	-	--	-	--	-	--	-
...DIATOMACEAE										
....DIATOMA	--	-	--	-	--	-	--	-	--	-
...FRAGILARIACEAE										
....SYNEDRA	--	-	--	-	--	-	--	-	--	-
...GOMPHONEMATACEAE										
....GOMPHONEMA	--	-	--	-	--	-	--	-	--	-
...NAVICULACEAE										
....NAVICULA	14	3	--	-	--	-	--	-	--	-
...NITZSCHIACEAE										
....NITZSCHIA	14	3	73	1	200	5	370	6	200	2
.CHRYSOPHYCEAE										
..CHRYSOMONADALES										
...OCHROMONADACEAE										
....OCHROMONAS	--	-	--	-	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)										
.CRYPTOPHYCEAE										
..CRYPTOMONADALES										
...CRYPTOCHRYSIDACEAE										
....CHROOMONAS	--	-	--	-	--	-	--	-	--	-
...CRYPTOMONADACEAE										
....CRYPTOMONAS	--	-	73	1	25	1	--	-	100	1
CYANOPHYTA (BLUE-GREEN ALGAE)										
.CYANOPHYCEAE										
..CHROOCOCCALES										
...CHROOCOCCACEAE										
....ANACYSTIS	--	-	1100#	22	280	7	--	-	660	7
....COCCOCHLORIS	--	-	--	-	--	-	--	-	--	-
..HORMOGONALES										
...NOSTOCACEAE										
....ANABAENA	--	-	--	-	--	-	1000#	18	--	-
...OSCILLATORIACEAE										
....OSCILLATORIA	290#	57	--	-	1000#	25	--	-	--	-

NOTE: # = DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* = OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

CONTINUED

06349500 APPLE CREEK NEAR MENOKEN, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1978 TO AUGUST 1979 (CONTINUED)

DATE TIME	APR 21,79 1000		MAY 22,79 1415		JUN 26,79 1600		JUL 30,79 1500		AUG 27,79 1425	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
EUGLENOPHYTA (EUGLENOIDS)										
.EUGLENOPHYCEAE										
..EUGLENALES										
...EUGLENACEAE										
....EUGLENA	--	-	--	-	100	2	440	8	300	3
....PHACUS	--	-	--	-	--	-	--	-	--	-
....TRACHELOMONAS	--	-	--	-	25	1	840	15	550	6
PYRRHOPHYTA (FIRE ALGAE)										
.DINOPHYCEAE										
..PERIDINIALES										
...GLENODINIACEAE										
....GLENODINIUM	--	-	--	-	--	-	130	2	50	1

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

DISSOLVED OXYGEN AND WATER TEMPERATURE PROFILE, WATER YEAR SEPTEMBER 1978 TO SEPTEMBER 1979

DATE	MG/L	DEGREES, C	DATE	MG/L	DEGREES, C	DATE	MG/L	DEGREES, C
Sept. 28, 1978			2300	5.2	1.5	0400	4.7	0.0
1200	6.1	12.5	2400	5.2	1.5	0500	4.7	.0
1300	6.3	13.0				0600	4.8	.0
1400	6.8	13.5	Dec. 22, 1978			0700	4.8	.0
1500	7.2	13.5	0100	5.2	1.5	0800	4.8	.0
1600	7.9	14.0	0200	5.2	1.5	0900	4.8	.0
1700	8.4	14.0	0300	5.2	1.5	1000	4.8	.0
1800	8.5	14.0	0400	5.2	1.5	1100	4.8	.0
1900	8.3	14.0	0500	5.2	1.5	1200	4.7	.0
2000	7.9	13.5	0600	5.2	1.5			
2100	7.5	13.5	0700	5.2	1.5	June 26, 1979		
2200	7.0	13.5	0800	5.2	1.5	1300	7.2	21.0
2300	6.9	13.5	0900	5.2	1.5	1400	7.2	21.0
2400	6.8	13.5	1000	5.2	1.5	1500	7.3	21.5
			1100	5.3	1.5	1600	7.4	22.0
Sept. 29, 1978			1200	5.2	1.5	1700	7.6	22.0
0100	6.9	13.5	1300	5.2	1.5	1800	7.7	22.0
0200	6.9	13.5	1400	5.2	1.5	1900	7.6	21.5
0300	6.8	13.5				2000	7.6	21.5
0400	6.7	13.0	Mar. 15, 1979			2100	7.3	21.5
0500	6.5	13.0	1200	4.6	.0	2200	7.0	21.0
0600	6.4	13.0	1300	4.6	.0	2300	6.8	21.0
0700	6.3	13.0	1400	4.6	.0	2400	6.7	21.0
0800	6.1	13.0	1500	4.6	.0			
0900	5.9	13.0	1600	4.6	.0	June 27, 1979		
1000	5.8	13.0	1700	4.5	.0	0100	6.6	21.0
1100	5.6	13.0	1800	4.5	.0	0200	6.6	20.5
1200	5.5	13.0	1900	4.5	.0	0300	6.6	20.5
			2000	4.5	.0	0400	6.4	20.0
Dec. 21, 1978			2100	4.5	.0	0500	6.4	20.0
1400	5.3	1.5	2200	4.5	.0	0600	6.3	19.5
1500	5.3	1.5	2300	4.5	.0	0700	6.3	19.5
1600	5.3	1.5	2400	4.5	.0	0800	6.3	19.5
1700	5.3	1.5				0900	6.5	20.0
1800	5.3	1.5	Mar. 16, 1979			1000	6.6	20.0
1900	5.3	1.5	0100	4.5	.0	1100	6.7	20.5
2000	5.3	1.5	0200	4.6	.0	1200	7.0	21.0
2100	5.3	1.5	0300	4.7	.0	1300	7.1	21.5
2200	5.1	1.5						

RESULTS OF ALGAL GROWTH POTENTIAL (AGP) DETERMINATIONS

DATE	AGP mg/L	SPIKE
Dec. 21, 1978	17.1	None
	18.0	0.05 mg/L P
	39.3	1.0 mg/L N
	39.5	1.0 mg/L N + 0.05 mg/L P
April 21, 1979	22.6	None
	24.2	0.05 mg/L P
	34.7	1.0 mg/L N
	59.1	1.0 mg/L N + 0.05 mg/L P
June 26, 1979	2.5	None
	2.9	0.05 mg/L P
	38.0	1.0 mg/L N
	43.0	1.0 mg/L N + 0.05 mg/L P
Sept. 25, 1979	5.8	None
	1.1	0.05 mg/L P
	31.0	1.0 mg/L N

06349700 MISSOURI RIVER NEAR SCHMIDT, ND

LOCATION.--Lat 46°39'22", long 100°44'18", in SW¼NE¼ sec.26, T.137 N., R.80 W., Morton County, Hydrologic Unit 10130102, on right bank 2 mi (3 km) southeast of abandoned townsite of Schmidt, 13 mi (21 km) southeast of Mandan, and at mile 1,298 (2,088 km).

DRAINAGE AREA.--191,700 mi² (496,500 km²), approximately.

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Datum of gage is 1,600.00 ft (487.680 km) National Geodetic Vertical Datum of 1929.

REMARKS.--Stage regulated by Lake Sakakawea (station 06338000).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily gage height recorded, 23.56 ft (7.181 m) Dec. 9, 1976; minimum daily recorded, 7.92 ft (2.414 m) May 30, 1967.

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	17.41	17.92	21.03	21.26	20.32	21.26	---	19.68	18.96	17.85	16.50
2	---	17.40	17.97	21.16	21.14	20.53	21.12	---	19.69	18.93	17.57	16.46
3	---	17.39	17.38	21.26	21.09	20.69	21.01	---	19.67	18.94	17.57	16.28
4	---	17.38	17.43	21.35	21.04	20.71	21.10	18.38	19.62	18.95	17.46	16.07
5	---	17.35	17.33	21.39	21.00	20.71	21.06	18.46	19.73	18.99	17.48	15.96
6	---	17.36	17.63	21.56	21.04	20.75	20.70	18.50	19.67	18.92	17.48	15.77
7	---	17.34	20.32	21.56	21.00	20.75	20.87	18.44	19.64	19.17	17.36	15.90
8	---	17.33	22.03	21.51	20.97	20.82	20.51	18.39	19.68	18.68	17.42	15.98
9	---	17.37	21.09	21.45	20.79	20.99	19.60	18.53	19.68	18.61	17.25	---
10	---	17.39	20.64	21.52	20.68	20.85	19.05	18.30	19.67	18.66	17.14	---
11	---	17.37	20.62	21.59	20.60	20.39	18.43	18.38	19.67	18.57	17.15	---
12	---	17.36	20.75	21.51	20.76	20.80	18.28	18.47	19.67	18.53	17.32	---
13	---	17.33	20.87	21.20	20.80	20.70	---	19.00	19.80	18.64	17.07	---
14	---	17.34	20.55	21.32	20.77	20.86	---	19.39	19.77	18.58	16.97	---
15	---	17.30	20.26	21.20	20.60	21.08	---	19.56	19.64	18.45	17.28	---
16	---	17.28	20.24	21.26	20.55	21.19	---	19.69	19.66	18.39	17.46	---
17	---	17.28	20.35	21.18	20.57	21.18	---	19.60	19.71	18.44	16.94	---
18	---	17.28	20.14	21.29	20.64	21.44	---	19.61	19.80	18.41	16.98	---
19	---	17.29	20.05	21.40	20.73	21.18	---	19.62	19.85	18.38	16.90	---
20	---	17.28	20.22	21.41	---	20.62	---	19.63	19.68	18.26	16.80	---
21	---	17.31	20.33	21.27	20.67	20.70	---	19.79	19.64	18.17	16.90	---
22	---	17.32	20.66	21.29	20.60	20.97	---	19.71	19.28	18.11	16.89	---
23	---	17.32	20.44	21.40	20.63	20.97	---	19.70	19.01	18.03	16.70	---
24	---	17.32	20.23	21.37	20.56	20.87	---	19.74	18.92	17.93	16.75	---
25	17.32	17.37	19.92	21.17	20.66	20.76	---	19.75	18.88	18.03	16.63	---
26	17.29	17.68	20.12	21.18	20.49	20.82	---	19.67	18.92	18.04	16.61	---
27	17.37	17.74	20.37	21.20	20.37	20.66	---	19.66	18.96	18.06	16.66	---
28	17.35	17.69	20.57	21.22	20.41	20.99	---	19.73	18.93	17.92	16.65	---
29	17.29	17.70	20.39	21.31	---	20.85	---	19.65	18.91	17.80	16.52	---
30	17.34	17.64	20.28	21.24	---	21.06	---	19.60	18.91	17.67	16.56	---
31	17.40	---	20.66	21.29	---	21.38	---	19.67	---	17.59	16.65	---
TOTAL	---	521.92	617.76	661.09	---	646.59	---	---	584.34	570.81	528.97	---
MEAN	---	17.40	19.93	21.33	---	20.86	---	---	19.48	18.41	17.06	---
MAX	---	17.74	22.03	21.59	---	21.44	---	---	19.85	19.17	17.85	---
MIN	---	17.28	17.33	21.03	---	20.32	---	---	18.88	17.59	16.52	---

06349700 MISSOURI RIVER NEAR SCHMIDT, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1974 to current year.

CORRECTIONS.--Streamflow data published with the 1978 water year water-quality data were incorrect. The following data should be substituted for the previously published figures.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM-FLOW (CFS) (00060)	DATE	TIME	STREAM-FLOW (CFS) (00060)
OCT			APR		
12...	1030	14000	14...	1515	26000
26...	1115	13300	25...	1730	19300
NOV			MAY		
08...	1045	12500	09...	1030	14900
DEC			22...	1715	15600
12...	1130	22000	JUN		
21...	1145	21000	07...	1130	25500
JAN			19...	1330	36100
05...	1120	26000	JUL		
12...	1125	27000	06...	1200	41600
24...	1400	29000	20...	1245	42700
FEB			AUG		
02...	1015	31000	09...	1515	42700
14...	1445	30000	22...	1045	42600
MAR			SEP		
01...	1040	28000	13...	1230	54200
14...	1110	24200	26...	1115	53100
31...	1615	42700			

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW (CFS) (00060)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	PH (UNITS) (00400)	TEMPERATURE, AIR (DEG C) (00020)	TEMPERATURE (DEG C) (00010)	TURBIDITY (NTU) (00076)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN DEMAND, CHEMICAL (HIGH LEVEL) (MG/L) (00340)	COLIFORM, TOTAL, IMMED. (COLS. PER 100 ML) (31501)	COLIFORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)
OCT											
12...	1030	33900	690	8.4	--	13.0	4.0	9.3	37	K170	K20
24...	1100	34000	700	8.3	--	11.0	4.7	10.0	53	160	K4
NOV											
07...	1100	34500	723	8.5	--	7.5	5.1	10.7	16	K53	K2
22...	0930	34600	700	8.3	--	2.5	4.0	12.2	10	300	K20
DEC											
28...	1220	29500	700	8.4	--	.0	1.9	13.0	14	100	K4
JAN											
09...	1415	30500	740	8.5	--	.0	2.9	13.1	10	60	K2
24...	1200	33500	700	7.8	--	.0	2.3	12.4	15	190	K10
FEB											
05...	1500	34000	680	8.2	--	.0	2.6	12.6	21	670	<4
20...	1515	31500	660	8.0	--	.0	2.1	12.3	16	104	K10
MAR											
08...	1115	32000	700	8.4	--	.0	3.5	12.3	59	188	K5
21...	1100	27400	690	8.0	--	.0	7.1	12.7	12	145	--
APR											
02...	1415	28200	720	8.1	--	.0	15	12.3	16	190	<3
27...	1100	38500	720	8.0	--	4.5	10	--	15	690	K5
MAY											
15...	1230	43900	700	8.1	--	6.0	8.0	12.1	15	KA	<5
31...	1130	43500	725	8.3	--	8.0	7.3	11.7	16	K105	K1
JUN											
11...	1130	43200	740	8.3	--	11.0	8.2	10.8	9	K40	K5
JUL											
02...	1130	33100	710	8.1	--	13.0	6.2	10.0	12	K25	K10
17...	1145	28600	725	8.2	--	13.5	4.4	9.9	12	4000	700
AUG											
02...	1100	24300	718	8.2	--	14.5	3.9	9.5	8	950	K13
15...	1130	22600	750	8.3	23.0	13.0	5.5	8.9	11	K50	--
29...	1620	21700	725	8.0	--	15.0	9.2	9.0	12	K200	K29
SEP											
11...	1045	18900	752	8.3	--	13.0	4.2	9.2	25	K16000	K97
24...	1230	18500	740	8.4	--	13.5	3.8	9.6	19	K13	K5

K - Results based on colony count outside the acceptable range (non-ideal colony count).

06349700 MISSOURI RIVER NEAR SCHMIDT, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	HARDNESS (MG/L AS CACO3) (00900)	HARDNESS, NONCARBONATE (MG/L CACO3) (00902)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM ADSORPTION RATIO (00931)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	ALKALINITY (MG/L AS CACO3) (00410)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)
OCT											
12...	240	77	57	23	67	38	1.9	4.4	160	190	9.2
24...	--	--	--	--	--	--	--	--	--	--	--
NOV											
07...	240	88	59	22	65	37	1.8	4.5	150	200	18
22...	--	--	--	--	--	--	--	--	--	--	--
DEC											
28...	220	83	53	22	67	39	2.0	4.8	140	210	9.9
JAN											
09...	--	--	--	--	--	--	--	--	--	--	--
24...	220	83	53	22	68	39	2.0	4.8	140	210	11
FEB											
05...	--	--	--	--	--	--	--	--	--	--	--
20...	230	88	55	22	71	40	2.0	4.5	140	230	9.8
MAR											
08...	--	--	--	--	--	--	--	--	--	--	--
21...	230	82	55	23	70	39	2.0	4.3	150	200	9.4
APR											
02...	--	--	--	--	--	--	--	--	--	--	--
27...	210	55	46	22	65	40	2.0	4.6	150	200	9.1
MAY											
15...	--	--	--	--	--	--	--	--	--	--	--
31...	240	87	57	23	64	36	1.8	4.3	150	220	10
JUN											
11...	--	--	--	--	--	--	--	--	--	--	--
JUL											
02...	240	90	60	22	71	39	2.0	4.3	150	220	9.8
17...	--	--	--	--	--	--	--	--	--	--	--
AUG											
02...	250	96	59	24	69	37	1.9	4.4	150	230	9.9
15...	--	--	--	--	--	--	--	--	--	--	--
29...	230	75	56	23	70	51	2.0	4.2	160	230	9.9
SEP											
11...	--	--	--	--	--	--	--	--	--	--	--
24...	240	89	56	24	74	52	2.1	4.9	150	220	8.0

DATE	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)	SOLIDS, DISSOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L) (00530)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, AMMONIA TOTAL (MG/L AS N) (00610)
OCT										
12...	.4	6.9	444	454	.60	40600	38	.20	--	.00
24...	--	--	467	--	.64	42900	36	.18	--	.01
NOV										
07...	.4	7.5	469	467	.64	43700	31	.22	--	.01
22...	--	--	483	--	.66	45100	32	.22	--	.00
DEC										
28...	.4	7.9	469	460	.67	43700	8	--	.26	--
JAN										
09...	--	--	483	--	.66	39800	11	.22	--	.01
24...	.4	8.3	477	462	.65	43100	4	.22	--	.00
FEB										
05...	--	--	476	--	.65	43700	16	.24	--	.02
20...	.4	8.7	473	486	.64	40200	7	.22	--	.03
MAR										
08...	--	--	452	--	.61	39100	0	.18	--	.03
21...	.5	8.1	483	461	.66	35700	31	.15	--	.04
APR										
02...	--	--	492	--	.67	37500	52	.21	--	.05
27...	.5	8.1	479	446	.65	49800	84	.19	--	.02
MAY										
15...	--	--	488	--	.66	57800	32	.11	--	.01
31...	.5	6.6	475	476	.65	55800	24	.08	--	.01
JUN										
11...	--	--	482	--	.66	56200	17	.15	--	.03
JUL										
02...	.5	7.6	486	486	.66	43400	20	.14	--	.00
17...	--	--	483	--	.66	37300	11	.15	--	.03
AUG										
02...	.5	8.0	494	495	.67	32400	23	.18	--	.01
15...	--	--	499	--	.68	30400	18	.19	--	.00
29...	.5	7.6	498	498	.68	29200	50	.23	--	.01
SEP										
11...	--	--	494	--	.67	25200	15	.23	--	.01
24...	.5	7.6	489	485	.67	24400	--	.25	--	.00

06349700 MISSOURI RIVER NEAR SCHMIDT, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHATE, TOTAL (MG/L AS PO4) (00650)	ALUM-INUM, TOTAL RECOV-ERABLE (UG/L AS AL) (01105)	ALUM-INUM, SUS-PENDED RECOV. (UG/L AS AL) (01107)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ARSENIC TOTAL (UG/L AS AS) (01002)
OCT										
12...	.55	.55	.55	2.4	.06	--	720	710	10	2
24...	.57	.58	.76	3.4	.04	--	--	--	--	--
NOV										
07...	.28	.29	.51	2.3	.02	--	--	--	--	--
22...	.25	.25	.47	2.1	.04	--	--	--	--	--
DEC										
28...	--	--	--	--	--	--	--	--	--	--
JAN										
09...	.19	.20	.42	1.9	.02	--	--	--	--	--
24...	.20	.20	.42	1.9	.02	--	--	--	--	--
FEB										
05...	.27	.29	.53	2.3	.02	--	--	--	--	--
20...	.19	.22	.44	1.9	.04	--	--	--	--	--
MAR										
08...	.11	.14	.32	1.4	.00	--	--	--	--	--
21...	.21	.25	.40	1.8	.01	--	--	--	--	--
APR										
02...	.25	.30	.51	2.3	.09	--	--	--	--	--
27...	.30	.32	.51	2.3	.04	.12	740	740	0	3
MAY										
15...	.40	.41	.52	2.3	.04	.12	--	--	--	--
31...	.30	.31	.39	1.7	.03	.09	--	--	--	--
JUN										
11...	.34	.37	.52	2.3	.06	.18	--	--	--	--
JUL										
02...	.29	.29	.43	1.9	.01	.03	--	--	--	--
17...	.37	.40	.55	2.4	.18	--	--	--	--	--
AUG										
02...	.16	.17	.35	1.6	.01	--	--	--	--	--
15...	.08	.08	.27	1.2	.02	--	--	--	--	--
29...	.23	.24	.47	2.1	.04	--	--	--	--	--
SEP										
11...	.04	.05	.28	1.2	.01	--	--	--	--	--
24...	.43	.43	.68	3.0	.04	--	420	420	0	2

DATE	ARSENIC SUS-PENDED TOTAL (UG/L AS AS) (01001)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE) (01012)	BERYL-LIUM, SUS-PENDED RECOV. (UG/L AS BE) (01011)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE) (01010)	BORON, DIS-SOLVED (UG/L AS B) (01020)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD) (01027)	CADMIUM SUS-PENDED RECOV-ERABLE (UG/L AS CD) (01026)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)
OCT										
12...	--	2	0	0	0	130	1	1	0	0
24...	--	--	--	--	--	--	--	--	--	--
NOV										
07...	--	--	--	--	--	120	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
DEC										
28...	--	--	--	--	--	150	--	--	--	--
JAN										
09...	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	110	--	--	--	--
FEB										
05...	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	110	--	--	--	--
MAR										
08...	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	130	--	--	--	--
APR										
02...	--	--	--	--	--	--	--	--	--	--
27...	2	1	0	0	<1	120	--	--	--	0
MAY										
15...	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	100	--	--	--	--
JUN										
11...	--	--	--	--	--	--	--	--	--	--
JUL										
02...	--	--	--	--	--	120	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--
AUG										
02...	--	--	--	--	--	140	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	120	--	--	--	--
SEP										
11...	--	--	--	--	--	--	--	--	--	--
24...	0	2	0	0	<1	130	0	0	<1	10

06349700 MISSOURI RIVER NEAR SCHMIDT, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	CHRO-MIUM, SUS-PENDED RECOV. (UG/L AS CR) (01031)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	COPPER, SUS-PENDED RECOV-ERABLE (UG/L AS CU) (01041)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	LEAD, SUS-PENDED RECOV-ERABLE (UG/L AS PB) (01050)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM TOTAL RECOV-ERABLE (UG/L AS LI) (01132)
OCT											
12...	0	0	6	3	3	2100	20	--	--	0	50
24...	--	--	--	--	--	--	--	--	--	--	--
NOV											
07...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
DEC											
28...	--	--	--	--	--	--	<0	--	--	--	--
JAN											
09...	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--
FEB											
05...	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
MAR											
08...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
APR											
02...	--	--	--	--	--	--	--	--	--	--	--
27...	0	0	6	6	0	1600	10	--	--	--	40
MAY											
15...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
JUN											
11...	--	--	--	--	--	--	--	--	--	--	--
JUL											
02...	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--
AUG											
02...	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
SEP											
11...	--	--	--	--	--	--	--	--	--	--	--
24...	0	10	5	4	1	720	<10	6	6	0	60

DATE	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MANGA-NESE, SUS-PENDED RECOV. (UG/L AS MN) (01054)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	MERCURY SUS-PENDED RECOV-ERABLE (UG/L AS HG) (71895)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, TOTAL RECOV-ERABLE (UG/L AS MO) (01062)	MOLYB-DENUM, SUS-PENDED RECOV. (UG/L AS MO) (01061)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)
OCT											
12...	40	60	50	10	.0	.0	.0	6	4	2	6
24...	--	--	--	--	--	--	--	--	--	--	--
NOV											
07...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
DEC											
28...	--	--	--	--	--	--	--	--	--	--	--
JAN											
09...	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--
FEB											
05...	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
MAR											
08...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
APR											
02...	--	--	--	--	--	--	--	--	--	--	--
27...	40	40	40	5	.1	.1	.0	2	0	<10	7
MAY											
15...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
JUN											
11...	--	--	--	--	--	--	--	--	--	--	--
JUL											
02...	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--
AUG											
02...	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
SEP											
11...	--	--	--	--	--	--	--	--	--	--	--
24...	50	20	20	2	.1	.1	.0	0	0	<10	4

06349700 MISSOURI RIVER NEAR SCHMIDT, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	NICKEL, SUSPENDED RECOVERABLE (UG/L AS NI) (01066)	NICKEL, DISSOLVED (UG/L AS NI) (01065)	SELENIUM, TOTAL (UG/L AS SE) (01147)	SELENIUM, SUSPENDED TOTAL (UG/L AS SE) (01146)	SELENIUM, DISSOLVED (UG/L AS SE) (01145)	VANADIUM, DISSOLVED (UG/L AS V) (01085)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN) (01092)	ZINC, SUSPENDED RECOVERABLE (UG/L AS ZN) (01091)	ZINC, DISSOLVED (UG/L AS ZN) (01090)	CARBON, ORGANIC DISSOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUSPENDED TOTAL (MG/L AS C) (00689)
OCT											
12...	5	1	1	0	2	.0	20	10	10	3.5	.4
24...	--	--	--	--	--	--	--	--	--	4.0	.4
NOV											
07...	--	--	--	--	--	--	--	--	--	8.3	.2
22...	--	--	--	--	--	--	--	--	--	6.8	.4
DEC											
28...	--	--	--	--	--	--	--	--	--	3.3	--
JAN											
09...	--	--	--	--	--	--	--	--	--	3.7	.2
24...	--	--	--	--	--	--	--	--	--	4.1	.2
FEB											
05...	--	--	--	--	--	--	--	--	--	4.5	.3
20...	--	--	--	--	--	--	--	--	--	3.8	.5
MAR											
08...	--	--	--	--	--	--	--	--	--	4.1	.2
21...	--	--	--	--	--	--	--	--	--	2.9	.6
APR											
02...	--	--	--	--	--	--	--	--	--	10	--
27...	1	6	1	0	1	.0	30	30	<3	3.8	.6
MAY											
15...	--	--	--	--	--	--	--	--	--	3.4	.6
31...	--	--	--	--	--	--	--	--	--	3.1	.7
JUN											
11...	--	--	--	--	--	--	--	--	--	8.7	.5
JUL											
02...	--	--	--	--	--	--	--	--	--	3.6	--
17...	--	--	--	--	--	--	--	--	--	3.2	.2
AUG											
02...	--	--	--	--	--	--	--	--	--	3.8	.9
15...	--	--	--	--	--	--	--	--	--	4.3	--
29...	--	--	--	--	--	--	--	--	--	5.1	.3
SEP											
11...	--	--	--	--	--	--	--	--	--	3.2	.1
24...	2	2	1	0	1	1.0	20	20	<3	4.4	.2

DATE	PHYTOPLANKTON, TOTAL (CELLS PER ML) (60050)
OCT	
12...	810
NOV	
07...	130
DEC	
28...	39
JAN	
24...	69
FEB	
20...	66
MAR	
21...	230
APR	
27...	1300
MAY	
31...	17000
JUL	
02...	850
AUG	
02...	570
29...	1200
SEP	
24...	370

06349700 MISSOURI RIVER NEAR SCHMIDT, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1978 TO SEPTEMBER 1979

DATE	OCT 12,78	NOV 7,78	DEC 28,78	JAN 24,79	FEB 20,79	MAR 21,79
TIME	1030	1100	1220	1200	1515	1100
TOTAL CELLS/ML	810	130	39	69	66	230
DIVERSITY: DIVISION	2.0	0.8	0.7	0.9	0.6	0.6
.CLASS	2.0	1.2	0.7	0.9	0.6	0.6
..ORDER	2.5	1.7	1.5	1.4	1.5	0.8
...FAMILY	3.1	1.7	1.5	1.4	1.3	1.8
....GENUS	3.2	1.7	1.5	1.9	1.3	2.5

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)												
.CHLOROPHYCEAE												
..CHLOROCOCCALES												
...HYDRODICTYACEAE												
....PEDIASTRUM	--	-	--	-	--	-	--	-	--	-	--	-
...OOCYSTACEAE												
....ANKISTRODESMUS	8	1	29#	22	--	-	--	-	--	-	--	-
....CHODATELLA	--	-	--	-	--	-	--	-	--	-	--	-
....DICTYOSPHAERIUM	--	-	--	-	--	-	--	-	--	-	--	-
....KIRCHNERIELLA	--	-	--	-	--	-	--	-	--	-	--	-
....OOCYSTIS	8	1	--	-	--	-	--	-	--	-	--	-
....TREUBARIA	--	-	--	-	--	-	--	-	--	-	--	-
...SCENEDESMACEAE												
....ACTINASTRUM	--	-	--	-	--	-	--	-	--	-	--	-
....CRUCIGENIA	--	-	--	-	--	-	--	-	--	-	--	-
....SCENEDESMUS	31	4	--	-	--	-	--	-	--	-	--	-
....TETRASTRUM	--	-	--	-	--	-	--	-	--	-	--	-
..TETRASPORALES												
...COCCOMYXACEAE												
....ELAKATOTHRIX	23	3	--	-	--	-	--	-	--	-	--	-
...PALMELLACEAE												
....SPHAEROCYSTIS	62	8	--	-	--	-	--	-	--	-	--	-
..VOLVOCALES												
...CHLAMYDOMONADACEAE												
....CHLAMYDOMONAS	69	9	--	-	--	-	--	-	--	-	5	2
CHRYSOPHYTA												
.BACILLARIOPHYCEAE												
..CENTRALES												
...COSCINODISCACEAE												
....CYCLOTELLA	15	2	72#	56	15#	40	15#	22	15#	23	10	4
....MELOSIRA	15	2	--	-	--	-	23#	33	--	-	--	-
....STEPHANODISCUS	--	-	--	-	--	-	--	-	--	-	--	-
..PENNALES												
...ACHNANTHACEAE												
....RHOICOSPHENIA	--	-	--	-	--	-	--	-	--	-	--	-
...DIATOMACEAE												
....DIATOMA	--	-	--	-	--	-	--	-	--	-	15	7
...FRAGILARIACEAE												
....ASTERIONELLA	--	-	--	-	--	-	--	-	40#	62	100#	44
....FRAGILARIA	--	-	--	-	--	-	--	-	--	-	50#	22
....SYNEDRA	54	7	--	-	15#	40	--	-	--	-	--	-
...GOMPHONEMATACEAE												
....GOMPHONEMA	--	-	--	-	--	-	--	-	--	-	5	2
...NAVICULACEAE												
....GYROSIGMA	--	-	--	-	--	-	--	-	--	-	5	2
....NAVICULA	8	1	--	-	--	-	8	11	--	-	10	4
...NITZSCHIACEAE												
....NITZSCHIA	46	6	14	11	--	-	--	-	--	-	5	2
.CHRYSOPHYCEAE												
..CHRYSOMONADALES												
...MALLOMONADACEAE												
....MALLOMONAS	--	-	14	11	--	-	--	-	--	-	--	-
...OCHROMONADACEAE												
....OCHROMONAS	--	-	--	-	--	-	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)												
.CRYPTOPHYCEAE												
..CRYPTOMONADALES												
...CRYPTOCHRYSIDACEAE												
....CHROOMONAS	150#	19	--	-	--	-	--	-	--	-	--	-
...CRYPTOMONADACEAE												
....CRYPTOMONAS	110	13	--	-	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

CONTINUED

06349700 MISSOURI RIVER NEAR SCHMIDT, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1978 TO SEPTEMBER 1979 (CONTINUED)

DATE / TIME	OCT 12,78 1030		NOV 7,78 1100		DEC 28,78 1220		JAN 24,79 1200		FEB 20,79 1515		MAR 21,79 1100	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CYANOPHYTA (BLUE-GREEN ALGAE)												
.CYANOPHYCEAE												
..CHROOCOCCALES												
...CHROOCOCCACEAE												
....ANACYSTIS	200#	25	--	-	--	-	23#	33	--	-	20	9
....COCCOCHLORIS	8	1	--	-	--	-	--	-	--	-	--	-
..HORMOGONALES												
...OSCILLATORIACEAE												
....LYNGBYA	--	-	--	-	--	-	--	-	--	-	--	-
....OSCILLATORIA	--	-	--	-	--	-	--	-	--	-	--	-
...RIVULARIACEAE												
....RAPHIDIOPSIS	--	-	--	-	--	-	--	-	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)												
.EUGLENOPHYCEAE												
..EUGLENALES												
...EUGLENACEAE												
....TRACHELOMONAS	--	-	--	-	--	-	--	-	10#	15	--	-
PYRRHOPHYTA (FIRE ALGAE)												
.DINOPHYCEAE												
..GYMNODINIALES												
...GYMNODINIACEAE												
....GYMNODINIUM	--	-	--	-	8#	20	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06349700 MISSOURI RIVER NEAR SCHMIDT, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1978 TO SEPTEMBER 1979

DATE	APR 27,79	MAY 31,79	JUL 2,79	AUG 2,79	AUG 29,79	SEP 24,79
TIME	1100	1130	1130	1100	1620	1230
TOTAL CELLS/ML	1300	17000	850	570	1200	370
DIVERSITY: DIVISION	1.1	0.0	1.4	1.4	1.5	1.0
.CLASS	1.2	0.0	1.4	1.4	1.5	1.0
..ORDER	1.6	0.2	1.9	1.7	2.1	1.7
...FAMILY	1.8	0.2	2.2	2.3	2.5	2.5
....GENUS	1.8	0.2	2.4	2.8	3.0	2.6

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)												
.CHLOROPHYCEAE												
..CHLOROCOCCALES												
...HYDRODICTYACEAE												
....PEDIASTRUM	--	-	--	-	--	-	--	-	--	-	43	12
...OOCYSTACEAE												
....ANKISTRODESMUS	42	3	--	-	77	9	100#	17	110	9	29	8
....CHODATELLA	--	-	--	-	--	-	--	-	14	1	--	-
....DICTYOSPHAERIUM	--	-	--	-	--	-	86	15	--	-	--	-
....KIRCHNERIELLA	--	-	--	-	--	-	14	2	--	-	14	4
....OOCYSTIS	--	-	--	-	--	-	--	-	--	-	--	-
....TREUBARIA	--	-	--	-	--	-	--	-	14	1	--	-
...SCENEDESMACEAE												
....ACTINASTRUM	--	-	--	-	--	-	--	-	110	9	--	-
....CRUCIGENIA	--	-	--	-	--	-	--	-	--	-	57#	15
....SCENEDESMUS	--	-	--	-	52	6	110#	20	57	5	--	-
....TETRASTRUM	--	-	--	-	52	6	--	-	--	-	--	-
..TETRASPORALES												
...COCCOMYXACEAE												
....ELAKATOTHRIX	--	-	--	-	--	-	--	-	--	-	--	-
...PALMELLACEAE												
....SPHAEROCYSTIS	--	-	--	-	--	-	--	-	--	-	--	-
..VOLVOCALES												
...CHLAMYDOMONADACEAE												
....CHLAMYDOMONAS	56	4	--	-	13	2	--	-	--	-	14	4
CHRYSOPHYTA												
.BACILLARIOPHYCEAE												
..CENTRALES												
...COSCINODISCACEAE												
....CYCLOTELLA	820#	62	--	-	26	3	14	2	43	3	72#	19
....MELOSIRA	--	-	--	-	--	-	140#	25	29	2	--	-
....STEPHANODISCUS	--	-	16000#	96	90	11	--	-	--	-	--	-
..PENNALES												
...ACHNANTHACEAE												
....RHOICOSPHENIA	--	-	--	-	13	2	--	-	--	-	--	-
...DIATOMACEAE												
....DIATOMA	14	1	--	-	13	2	--	-	--	-	--	-
...FRAGILARIACEAE												
....ASTERIONELLA	70	5	600	4	--	-	--	-	100	8	--	-
....FRAGILARIA	--	-	--	-	--	-	--	-	160	13	--	-
....SYNEDRA	--	-	--	-	13	2	--	-	--	-	--	-
...GOMPHONEMATACEAE												
....GOMPHONEMA	--	-	--	-	--	-	--	-	--	-	--	-
...NAVICULACEAE												
....GYROSIGMA	--	-	--	-	--	-	--	-	--	-	--	-
....NAVICULA	14	1	--	-	--	-	--	-	--	-	14	4
...NITZSCHIACEAE												
....NITZSCHIA	14	1	--	-	--	-	43	7	29	2	130#	35
.CHRYSOPHYCEAE												
..CHRYSOMONADALES												
...MALLOMONADACEAE												
....MALLOMONAS	--	-	--	-	--	-	--	-	--	-	--	-
...OCHROMONADACEAE												
....OCHROMONAS	14	1	--	-	--	-	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)												
.CRYPTOPHYCEAE												
..CRYPTOMONADALES												
...CRYPTOCHRYSIDACEAE												
....CHROOMONAS	--	-	--	-	--	-	--	-	--	-	--	-
...CRYPTOMONADACEAE												
....CRYPTOMONAS	--	-	--	-	--	-	14	2	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

CONTINUED

06349700 MISSOURI RIVER NEAR SCHMIDT, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1978 TO SEPTEMBER 1979 (CONTINUED)

DATE	APR 27,79		MAY 31,79		JUL 2,79		AUG 2,79		AUG 29,79		SEP 24,79	
TIME	1100		1130		1130		1100		1620		1230	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CYANOPHYTA (BLUE-GREEN ALGAE)												
.CYANOPHYCEAE												
..CHROOCOCCALES												
...CHROOCOCCACEAE												
....ANACYSTIS	--	-	--	-	52	6	29	5	410#	34	--	-
....COCCOCHLORIS	--	-	--	-	--	-	--	-	--	-	--	-
..HORMOGONALES												
...OSCILLATORIACEAE												
....LYNGBYA	--	-	--	-	--	-	--	-	140	12	--	-
....OSCILLATORIA	280#	21	--	-	450#	53	--	-	--	-	--	-
...RIVULARIACEAE												
....RAPHIDIOPSIS	--	-	--	-	--	-	14	2	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)												
.EUGLENOPHYCEAE												
..EUGLENALES												
...EUGLENACEAE												
....TRACHELOMONAS	--	-	--	-	--	-	--	-	--	-	--	-
PYRRHOPHYTA (FIRE ALGAE)												
.DINOPHYCEAE												
..GYMNODINIALES												
...GYMNODINIACEAE												
....GYMNODINIUM	--	-	--	-	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06349900 CANNONBALL RIVER AT NEW ENGLAND, ND

LOCATION.--Lat 46°32'35", long 102°53'16", in SW¼SE¼SE¼ sec.32, T.136 N., R.97 W., Hettinger County, Hydrologic Unit 10130204, on left bank 70 ft (21 m) upstream from bridge on county road, 1.0 mi (1.6 km) west of New England, 0.3 mi (0.5 km) above Coon Creek and 17 mi (27 km) below confluence of North Fork Cannonball River and Philbrick Creek.

DRAINAGE AREA.--285 mi^2 (738 km^2), approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1978 to September 1979.

GAGE.--Water-stage recorder. Altitude of gage is 2,560 ft (780 m), from topographic map.

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

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 150 ft^3/s (4.25 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Mar. 23	--	250	7.08	Ice jam	
Apr. 1	--	300	8.50	Ice jam	
Apr. 10	--	*1,450	41.1	[a,b]10.50	3.200
Apr. 17	0630	675	19.1	7.23	2.204

Minimum daily discharge, 0.03 ft^3/s (0.001 m^3/s) Oct. 21, 22.

a - Backwater from ice.
b - From floodmark.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.11	.17	.60	.60	.50	.70	280	19	2.9	.39	.54	.06
2	.11	.20	.60	.60	.50	.80	240	18	2.7	.39	.22	.06
3	.11	.20	.60	.60	.50	1.1	210	17	2.5	.22	.17	.06
4	.11	.23	.60	.60	.50	1.4	140	15	2.2	.17	.17	.06
5	.11	.25	.60	.60	.50	1.9	90	14	2.0	.17	.11	.06
6	.11	.25	.60	.60	.60	1.8	75	15	1.9	.14	.11	.06
7	.10	.28	.60	.60	.50	1.6	105	15	1.6	.14	.11	.06
8	.10	.28	.60	.60	.50	1.5	295	15	1.6	.17	.11	.06
9	.09	.39	.60	.60	.47	1.4	795	14	2.7	.22	.11	.06
10	.09	.44	.80	.60	.44	1.6	1250	15	2.5	.28	.14	.06
11	.08	.49	1.4	.60	.44	2.0	1300	15	1.9	.39	.14	.06
12	.08	.51	1.8	.60	.44	5.3	584	14	1.6	.45	.14	.06
13	.08	.51	1.2	.50	.49	5.6	246	13	1.4	.80	.17	.06
14	.07	.51	1.4	.50	.60	3.8	128	12	1.1	.65	.17	.06
15	.07	.51	1.6	.50	.50	4.9	156	11	.69	1.2	.17	.06
16	.06	.51	1.5	.60	.50	6.7	462	11	.54	.17	.17	.06
17	.06	.51	1.4	.60	.50	14	617	9.9	.32	.11	.14	.06
18	.05	.54	1.2	.70	.50	69	447	8.4	.32	.14	.11	.06
19	.05	.54	1.0	.70	.60	58	279	8.1	4.2	.14	.09	.06
20	.06	.54	.90	.80	.65	35	158	7.6	10	.11	.11	.06
21	.03	.54	.80	.80	.60	40	95	7.3	8.7	.14	.11	.06
22	.03	.54	.70	.90	.60	62	63	7.0	6.4	.14	.11	.06
23	.06	.54	.60	.80	.60	100	47	6.4	4.0	.11	.09	.06
24	.09	.60	.60	.80	.60	135	38	6.1	2.7	.11	.06	.06
25	.11	.60	.60	.70	.70	213	32	5.6	2.0	.11	.06	.06
26	.17	.60	.60	.70	.75	110	27	5.1	1.9	.14	.06	.06
27	.17	.60	.60	.70	.70	75	26	4.3	1.4	.11	.06	.06
28	.17	.60	.60	.70	.70	65	23	3.8	1.1	.14	.06	.06
29	.17	.60	.60	.60	---	90	22	2.9	.80	.11	.06	.06
30	.17	.60	.60	.60	---	75	20	3.1	.54	.17	.06	.06
31	.17	---	.60	.60	---	165	---	3.1	---	.65	.06	---
TOTAL	3.04	13.68	26.50	20.00	15.48	1326.10	8250	321.7	74.21	8.38	3.99	1.80
MEAN	.098	.46	.85	.65	.55	42.8	275	10.4	2.47	.27	.13	.060
MAX	.17	.60	1.8	.90	.75	213	1300	19	10	1.2	.54	.06
MIN	.03	.17	.60	.50	.44	.70	20	2.9	.32	.11	.06	.06
AC-FT	6.0	27	53	40	31	2630	16360	638	147	17	7.9	3.6

WTR YR 1979 TOTAL 10064.88 MEAN 27.6 MAX 1300 MIN .03 AC-FT 19960

06349900 CANNONBALL RIVER AT NEW ENGLAND, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1978 to September 1979.

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)
OCT												
04...	1515	.11	2350	8.2	12.5	11.5	13.5	130	160	690	500	80
NOV												
15...	0935	.51	2710	8.4	13.0	2.0	11.4	90	K7	59	650	190
DEC												
15...	0845	1.6	3750	7.8	-2.0	.0	11.6	87	<1	K14	940	460
JAN												
11...	1300	.60	4220	7.9	-12.0	.0	8.8	66	K3	K12	930	310
FEB												
09...	0940	.47	4240	8.0	-20.0	.0	7.4	56	K3	K12	1200	520
MAR												
25...	1430	213	--	--	-6.0	.0	--	--	--	--	--	--
27...	1100	93	760	7.7	-2.5	.5	12.2	94	K2	1400	230	150
APR												
10...	1015	1090	405	8.1	1.5	.0	8.8	67	K53	4500	92	26
MAY												
10...	1600	15	2500	8.5	-2.5	3.0	11.8	97	K2	38	650	330
JUN												
13...	1500	1.4	2940	8.4	34.5	24.0	7.5	97	K680	1300	780	370
JUL												
25...	1315	.14	3000	8.2	17.5	22.0	8.6	106	>2000	>3300	690	270
AUG												
24...	1130	.04	2480	8.1	21.0	19.0	8.2	97	>2000	>3300	510	62
SEP												
13...	1340	.06	2450	8.5	14.5	15.0	11.2	119	380	540	450	4

DATE	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE (MG/L AS HCO3) (00440)	CAR-BONATE (MG/L AS CO3) (00445)	ALKA-LINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)
OCT											
04...	89	68	400	63	7.8	8.6	512	0	420	5.2	870
NOV											
15...	110	92	420	58	7.2	9.6	559	4	470	3.6	1100
DEC											
15...	130	150	630	59	8.9	15	661	0	540	17	1700
JAN											
11...	140	140	740	63	11	14	752	0	620	15	1800
FEB											
09...	170	180	810	60	10	15	824	0	680	13	2200
MAR											
25...	--	--	--	--	--	--	--	--	--	--	--
27...	38	32	77	41	2.2	11	93	0	76	3.0	290
APR											
10...	17	12	46	50	2.1	5.4	81	0	66	1.0	120
MAY											
10...	120	85	360	54	6.1	8.3	379	6	320	2.0	1100
JUN											
13...	130	110	500	58	7.8	9.4	503	1	420	3.2	1300
JUL											
25...	110	100	500	79	8.3	10	517	0	420	5.2	1300
AUG											
24...	93	67	450	65	8.7	9.4	546	0	450	6.9	950
SEP											
13...	83	60	440	67	9.0	10	495	24	450	2.8	960

K - Results based on colony count outside the acceptable range (non-ideal colony count).

06349900 CANNONBALL RIVER AT NEW ENGLAND, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)	SOLIDS, DISSOLVED (TONS PER DAY) (70302)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITROGEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)
OCT											
04...	8.1	.5	5.9	1710	1700	2.31	.50	.01	.00	.89	.89
NOV											
15...	4.2	.3	3.9	2060	2020	2.75	2.78	.01	.02	.63	.65
DEC											
15...	18	.5	4.5	3090	2970	4.04	13.2	.15	.05	.95	1.0
JAN											
11...	19	.5	6.4	3270	3230	4.39	5.23	.34	.23	2.4	2.6
FEB											
09...	33	.5	7.9	4070	3820	5.20	4.85	.80	.28	1.2	1.5
MAR											
25...	--	--	--	--	--	--	--	--	--	--	--
27...	4.5	.1	7.9	537	507	.69	128	2.0	.16	.69	.85
APR											
10...	2.0	.1	7.6	281	251	.34	739	.70	.09	1.7	1.8
MAY											
10...	7.6	.3	5.8	1850	1880	2.56	77.7	.00	.02	1.4	1.4
JUN											
13...	9.6	.3	4.6	2330	2310	3.14	8.73	.02	.07	.86	.93
JUL											
25...	9.6	.5	5.1	2250	2290	3.11	.87	.10	.07	.93	1.0
AUG											
24...	8.3	.5	8.9	1790	1860	2.53	.20	.02	.18	.82	1.0
SEP											
13...	7.6	.4	8.4	--	1840	2.50	.30	.09	.00	.74	.74

DATE	NITROGEN, TOTAL (MG/L AS N) (00600)	NITROGEN, TOTAL (MG/L AS NO3) (71887)	PHOSPHORUS, TOTAL (MG/L AS P) (00665)	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	ALUMINUM, DISSOLVED (UG/L AS AL) (01106)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DISSOLVED (UG/L AS AS) (01000)	ARSENIC TOTAL IN BOTTOM MATERIAL (UG/G AS AS) (01003)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA) (01007)	BARIUM, DISSOLVED (UG/L AS BA) (01005)	BARIUM, RECOV, FM BOTTOM MATERIAL (UG/G AS BA) (01008)
OCT											
04...	.90	4.0	.03	.02	--	--	--	--	--	--	--
NOV											
15...	.66	2.9	.04	.02	--	--	--	--	--	--	--
DEC											
15...	1.2	5.1	.00	.02	--	--	--	--	--	--	--
JAN											
11...	2.9	13	.04	.03	--	--	--	--	--	--	--
FEB											
09...	2.3	10	.04	.03	--	--	--	--	--	--	--
MAR											
25...	--	--	--	--	--	--	--	--	--	--	--
27...	2.9	13	.22	.16	80	2	1	28	0	100	120
APR											
10...	2.5	11	.42	.05	--	--	--	--	--	--	--
MAY											
10...	1.4	6.2	.04	.02	--	--	--	--	--	--	--
JUN											
13...	.95	4.2	.01	.01	--	--	--	--	--	--	--
JUL											
25...	1.1	4.9	.11	.10	30	--	1	--	--	100	--
AUG											
24...	1.0	4.5	.04	.03	0	1	1	30	0	100	100
SEP											
13...	.83	3.7	.02	.01	--	--	--	--	--	--	--

06349900 CANNONBALL RIVER AT NEW ENGLAND, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	BERYLLIUM, TOTAL RECOVERABLE (UG/L AS BE) (01012)	BERYLLIUM, DISSOLVED (UG/L AS BE) (01010)	BERYLLIUM, RECOV. FM BOTTOM MATERIAL (UG/G) (01013)	BORON, DISSOLVED (UG/L AS B) (01020)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) (01034)	CHROMIUM, DISSOLVED (UG/L AS CR) (01030)	CHROMIUM, RECOV. FM BOTTOM MATERIAL (UG/G) (01029)	COBALT, TOTAL RECOVERABLE (UG/L AS CO) (01037)	COBALT, DISSOLVED (UG/L AS CO) (01035)	COBALT, RECOV. FM BOTTOM MATERIAL (UG/G AS CO) (01038)	COPPER, TOTAL RECOVERABLE (UG/L AS CU) (01042)
OCT											
04...	--	--	--	580	--	--	--	--	--	--	--
NOV											
15...	--	--	--	570	--	--	--	--	--	--	--
DEC											
15...	--	--	--	710	--	--	--	--	--	--	--
JAN											
11...	--	--	--	730	--	--	--	--	--	--	--
FEB											
09...	--	--	--	930	--	--	--	--	--	--	--
MAR											
25...	--	--	--	--	--	--	--	--	--	--	--
27...	0	0	0	130	10	0	4	0	0	10	11
APR											
10...	--	--	--	130	--	--	--	--	--	--	--
MAY											
10...	--	--	--	400	--	--	--	--	--	--	--
JUN											
13...	--	--	--	540	--	--	--	--	--	--	--
JUL											
25...	--	10	--	630	--	0	--	--	0	--	--
AUG											
24...	0	0	0	600	20	0	10	0	0	12	4
SEP											
13...	--	--	--	640	--	--	--	--	--	--	--

DATE	COPPER, DISSOLVED (UG/L AS CU) (01040)	COPPER, RECOV. FM BOTTOM MATERIAL (UG/G AS CU) (01043)	IRON, DISSOLVED (UG/L AS FE) (01046)	LITHIUM TOTAL RECOVERABLE (UG/L AS LI) (01132)	LITHIUM DISSOLVED (UG/L AS LI) (01130)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN) (01055)	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	MANGANESE, RECOV. FM BOTTOM MATERIAL (UG/G) (01053)	MERCURY TOTAL RECOVERABLE (UG/L AS HG) (71900)	MERCURY DISSOLVED (UG/L AS HG) (71890)	MERCURY RECOV. FM BOTTOM MATERIAL (UG/G AS HG) (71921)
OCT											
04...	--	--	50	--	--	--	--	--	--	--	--
NOV											
15...	--	--	20	--	--	--	--	--	--	--	--
DEC											
15...	--	--	40	--	--	--	--	--	--	--	--
JAN											
11...	--	--	0	--	--	--	--	--	--	--	--
FEB											
09...	--	--	70	--	--	--	--	--	--	--	--
MAR											
25...	--	--	--	--	--	--	--	--	--	--	--
27...	0	12	320	20	20	160	110	940	.0	.1	.03
APR											
10...	--	--	440	--	--	--	--	--	--	--	--
MAY											
10...	--	--	20	--	--	--	--	--	--	--	--
JUN											
13...	--	--	20	--	--	--	--	--	--	--	--
JUL											
25...	2	--	10	--	60	--	170	--	--	.0	--
AUG											
24...	1	15	10	40	60	310	220	800	.1	.0	.05
SEP											
13...	--	--	10	--	--	--	--	--	--	--	--

DATE	MOLYBDENUM, TOTAL RECOVERABLE (UG/L AS MO) (01062)	MOLYBDENUM, RECOV. FM BOTTOM MATERIAL (UG/G) (01063)	MOLYBDENUM, DISSOLVED (UG/L AS MO) (01060)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI) (01067)	NICKEL, DISSOLVED (UG/L AS NI) (01065)	NICKEL, RECOV. FM BOTTOM MATERIAL (UG/G AS NI) (01068)	SELENIUM, TOTAL (UG/L AS SE) (01147)	SELENIUM, DISSOLVED (UG/L AS SE) (01145)	SELENIUM, TOTAL IN BOTTOM MATERIAL (UG/G) (01148)	VANADIUM, DISSOLVED (UG/L AS V) (01085)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN) (01092)
MAR											
25...	--	--	--	--	--	--	--	--	--	--	--
27...	1	4	0	13	0	10	1	2	0	1.2	50
JUL											
25...	--	--	3	--	5	--	--	1	--	<1.0	--
AUG											
24...	3	1	0	5	3	26	0	0	0	<1.0	10
SEP											
13...	--	--	--	--	--	--	--	--	--	--	--

06349900 CANNONBALL RIVER AT NEW ENGLAND, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ZINC, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS ZN) (01093)	GROSS ALPHA, DIS-SOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DIS-SOLVED (PCI/L AS CS-137) (03515)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C) (00689)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70338)
OCT											
04...	--	--	--	--	--	--	10	.8	36	.01	--
NOV											
15...	--	--	--	--	--	--	13	--	84	.12	--
DEC											
15...	--	--	--	--	--	--	18	.5	35	.15	--
JAN											
11...	--	--	--	--	--	--	19	.4	44	.07	--
FEB											
09...	--	--	--	--	--	--	22	.5	184	.23	--
MAR											
25...	--	--	--	--	--	--	--	--	199	114	--
27...	10	26	<8.3	3.0	15	2.9	13	--	57	14	--
APR											
10...	--	--	--	--	--	--	7.5	9.7	700	2060	50
MAY											
10...	--	--	--	--	--	--	16	1.5	33	1.4	--
JUN											
13...	--	--	--	--	--	--	66	1.0	50	.19	--
JUL											
25...	30	--	--	--	--	--	17	.6	114	.04	--
AUG											
24...	10	43	<33	.5	12	1.2	13	1.0	83	.01	--
SEP											
13...	--	--	--	--	--	--	10	.4	19	.00	--

DATE	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70340)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)	SED. SUSP. FALL DIAM. % FINER THAN .125 MM (70343)	SED. SUSP. FALL DIAM. % FINER THAN .250 MM (70344)	BED MAT. FALL DIAM. % FINER THAN .062 MM (80158)	BED MAT. FALL DIAM. % FINER THAN .125 MM (80159)	BED MAT. FALL DIAM. % FINER THAN .250 MM (80160)
MAR							
27...	--	--	--	--	14	23	39
APR							
10...	68	85	93	100	--	--	--
AUG							
24...	--	--	--	--	7	10	19

DATE	BED MAT. FALL DIAM. % FINER THAN .500 MM (80161)	BED MAT. FALL DIAM. % FINER THAN 1.00 MM (80162)	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM (60169)	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM (80170)	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM (80171)	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM (80172)	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM (80173)
MAR							
27...	49	53	60	71	81	87	100
APR							
10...	--	--	--	--	--	--	--
AUG							
24...	28	38	50	70	87	90	100

DATE	LENGTH OF EXPO-SURE (DAYS) (00022)	CHLOR-A PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70957)	CHLOR-B PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70958)	PERI-PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M (00573)	PERI-PHYTON BIOMASS ASH WEIGHT G/SQ M (00572)
JUL					
25...	42	.190	.000	2.20	1.10
AUG					
24...	30	5.83	.820	5.75	4.88
SEP					
13...	20	5.31	.630	5.91	4.96

06349900 CANNONBALL RIVER AT NEW ENGLAND, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1978 TO SEPTEMBER 1979

DATE	OCT 4,78		NOV 15,78		DEC 15,78		JAN 11,79		FEB 9,79		MAR 27,79	
TIME	1515		0935		0845		1300		0940		1100	
TOTAL CELLS/ML	2500		620		3000		110		550		730	
DIVERSITY: DIVISION	1.1		1.2		1.4		1.5		1.5		0.7	
.CLASS	1.1		1.2		1.4		1.5		1.5		0.7	
..ORDER	2.0		1.4		2.2		2.0		1.6		1.1	
...FAMILY	2.6		1.4		2.4		2.3		2.2		1.2	
....GENUS	3.2		0.0		2.8		2.6		2.6		1.2	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)												
.CHLOROPHYCEAE												
..CHLOROCOCCALES												
...CHARACIACEAE												
....SCHROEDERIA	*	0	--	-	--	-	--	-	--	-	--	-
...OOCYSTACEAE												
....ANKISTRODESMUS	--	-	72	12	170	6	--	-	170#	31	--	-
....CHODATELLA	--	-	--	-	20	1	--	-	--	-	--	-
....CLOSTERIOPSIS	--	-	--	-	--	-	5	5	--	-	--	-
....DICTYOSPHAERIUM	--	-	--	-	--	-	--	-	--	-	--	-
....KIRCHNERIELLA	--	-	--	-	20	1	--	-	--	-	--	-
....OOCYSTIS	--	-	14	2	--	-	--	-	--	-	--	-
....SELENASTRUM	180	8	14	2	--	-	--	-	--	-	--	-
....TETRAEDRON	*	0	--	-	--	-	--	-	--	-	--	-
....TREUBARIA	--	-	--	-	--	-	--	-	--	-	--	-
....WESTELLA	110	5	--	-	--	-	--	-	--	-	--	-
...SCENEDESMACEAE												
....ACTINASTRUM	--	-	--	-	--	-	--	-	--	-	--	-
....CRUCIGENIA	820#	36	--	-	440	14	20#	19	100#	18	81	11
....SCENEDESMUS	300	13	--	-	79	3	20#	19	40	7	--	-
....TETRASTRUM	--	-	--	-	--	-	--	-	20	4	--	-
..TETRASPORALES												
...PALMELLACEAE												
....SPHAEROCYSTIS	110	5	--	-	--	-	--	-	--	-	--	-
...TETRASPORACEAE												
....TETRASPORA	36	2	--	-	--	-	--	-	--	-	--	-
..VOLVOCALES												
...CHLAMYDOMONADACEAE	--	-	14	2	--	-	--	-	--	-	--	-
....CHLAMYDOMONAS	140	6	--	-	160	5	20#	19	--	-	--	-
CHRYSOPHYTA												
.BACILLARIOPHYCEAE												
..CENTRALES												
...COSCINODISCACEAE												
....CYCLOTELLA	63	3	43	7	60	2	15	14	20	4	560#	78
....MELOSIRA	--	-	--	-	--	-	--	-	--	-	--	-
..PENNALES												
...ACHNANTHACEAE												
....COCCONEIS	*	0	--	-	--	-	--	-	--	-	--	-
....RHOICOSPHENIA	--	-	--	-	--	-	--	-	--	-	--	-
...CYMBELLACEAE												
....AMPHORA	*	0	--	-	--	-	--	-	--	-	--	-
...FRAGILARIACEAE												
....SYNEDRA	--	-	14	2	--	-	--	-	5	1	--	-
...GOMPHONEMATACEAE												
....GOMPHONEMA	--	-	--	-	--	-	--	-	--	-	20	3
...NAVICULACEAE												
....GYROSIGMA	45	2	--	-	--	-	--	-	--	-	--	-
....NAVICULA	36	2	14	2	--	-	--	-	5	1	--	-
...NITZSCHIACEAE												
....NITZSCHIA	27	1	--	-	20	1	--	-	--	-	40	6
.CHRYSOPHYCEAE												
..CHRYSOMONADALES												
...CHROMULINACEAE												
....CHRYSOCOCCUS	--	-	--	-	--	-	--	-	--	-	--	-
.XANTHOPHYCEAE												
..HETEROCOCCALES												
...CENTRITRACTACEAE												
....CENTRITRACTUS	--	-	--	-	--	-	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)												
.CRYPTOPHYCEAE												
..CRYPTOMONADALES												
...CRYPTOCHRYSIDACEAE												
....CHROOMONAS	--	-	--	-	--	-	--	-	--	-	--	-
...CRYPTOMONADACEAE												
....CRYPTOMONAS	--	-	--	-	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

CONTINUED

06349900 CANNONBALL RIVER AT NEW ENGLAND, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1978 TO SEPTEMBER 1979 (CONTINUED)

DATE TIME	OCT 4,78 1515		NOV 15,78 0955		DEC 15,78 0845		JAN 11,79 1300		FEB 9,79 0940		MAR 27,79 1100	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CYANOPHYTA (BLUE-GREEN ALGAE)												
.CYANOPHYCEAE												
..CHROOCOCCALES												
...CHROOCOCCACEAE												
....AGMENELLUM	--	-	--	-	--	-	--	-	--	-	--	-
....ANACYSTIS	210	9	--	-	870#	29	--	-	45	8	--	-
..HORMOGONALES												
...OSCILLATORIACEAE												
....OSCILLATORIA	180	6	--	-	890#	30	--	-	--	-	--	-
....SPIRULINA	--	-	--	-	79	3	--	-	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)												
.EUGLENOPHYCEAE												
..EUGLENALES												
...EUGLENACEAE												
....EUGLENA	*	0	--	-	50	2	5	5	5	1	20	3
....PHACUS	--	-	--	-	--	-	--	-	--	-	--	-
....TRACHELOMONAS	*	0	430#	70	120	4	--	-	--	-	--	-
PYRRHOPHYTA (FIRE ALGAE)												
.DINOPHYCEAE												
..GYMNODINIALES												
...GYMNODINIACEAE												
....GYMNODINIUM	--	-	--	-	40	1	--	-	--	-	--	-
..PERIDINIALES												
...GLENODINIACEAE												
....GLENODINIUM	--	-	--	-	--	-	20#	19	140#	25	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06349900 CANNONBALL RIVER AT NEW ENGLAND, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1978 TO SEPTEMBER 1979

DATE	APR 10,79	MAY 10,79	JUN 13,79	JUL 25,79	AUG 24,79	SEP 13,79
TIME	1015	1600	1500	1315	1130	1340
TOTAL CELLS/ML	450	1800	3400	4000	3600	5800
DIVERSITY: DIVISION	0.0	1.7	0.7	1.5	1.5	1.5
.CLASS	0.0	1.7	0.7	1.5	1.5	1.6
..ORDER	0.9	2.1	1.1	2.1	2.2	1.7
...FAMILY	0.9	2.4	1.2	2.4	2.6	1.9
....GENUS	0.9	2.7	1.3	2.9	3.2	2.4

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)												
.CHLOROPHYCEAE												
..CHLOROCOCCALES												
...CHARACIACEAE												
....SCHROEDERIA	--	-	--	-	--	-	--	-	--	-	--	-
...OOCYSTACEAE												
....ANKISTRODESMUS	--	-	450#	24	410	12	100	3	150	4	190	3
....CHODATELLA	--	-	--	-	--	-	--	-	--	-	--	-
....CLOSTERIOPSIS	--	-	--	-	--	-	--	-	--	-	--	-
....DICTYOSPHAERIUM	--	-	56	3	--	-	--	-	--	-	--	-
....KIRCHNERIELLA	--	-	--	-	--	-	--	-	--	-	130	2
....OOCYSTIS	--	-	--	-	--	-	300	7	230	6	--	-
....SELENASTRUM	--	-	14	1	--	-	--	-	25	1	--	-
....TETRAEDRON	--	-	--	-	--	-	26	1	--	-	--	-
....TREUBARIA	--	-	--	-	39	1	--	-	--	-	--	-
....WESTELLA	--	-	--	-	--	-	--	-	--	-	--	-
...SCENEDESMACEAE												
....ACTINASTRUM	--	-	56	3	--	-	--	-	--	-	--	-
....CHODIGENIA	--	-	--	-	--	-	510	13	700#	19	170	3
....SCENEDESMUS	--	-	83	5	130	4	460	11	300	8	640	11
....TETRASTRUM	--	-	--	-	--	-	100	3	100	3	--	-
..TETRASPORALES												
...PALMELLACEAE												
....SPHAEROCYSTIS	--	-	--	-	--	-	--	-	--	-	--	-
...TETRASPORACEAE												
....TETRASPORA	--	-	--	-	--	-	--	-	--	-	--	-
..VOLVOCALES												
...CHLAMYDOMONADACEAE	--	-	--	-	--	-	--	-	--	-	--	-
....CHLAMYDOMONAS	--	-	240	13	26	1	64	2	1100#	29	--	-
CHRYSOPHYTA												
.BACILLARIOPHYCEAE												
..CENTRALES												
...COSCINODISCACEAE												
....CYCLOTELLA	140#	33	180	10	--	-	*	0	280	7	130	2
....MELOSIRA	--	-	--	-	--	-	--	-	--	-	42	1
..PENNALES												
...ACHNANTHACEAE												
....COCCONEIS	--	-	--	-	--	-	--	-	--	-	--	-
....RHOICOSPHENIA	290#	67	--	-	--	-	--	-	--	-	--	-
...CYMBELLACEAE												
....AMPHORA	--	-	--	-	--	-	--	-	--	-	--	-
...FRAGILARIACEAE												
....SYNEDRA	--	-	--	-	--	-	--	-	--	-	--	-
...GOMPHONEMATACEAE												
....GOMPHONEMA	--	-	--	-	--	-	--	-	--	-	--	-
...NAVICULACEAE												
....GYROSIGMA	--	-	--	-	--	-	--	-	--	-	--	-
....NAVICULA	--	-	--	-	--	-	--	-	--	-	*	0
...NITZSCHIACEAE												
....NITZSCHIA	--	-	14	1	--	-	150	4	25	1	170	3
.CHRYSOPHYCEAE												
..CHRYSOMONADALES												
...CHROMULINACEAE												
....CHRYSOCOCCUS	--	-	--	-	--	-	--	-	--	-	420	7
.XANTHOPHYCEAE												
..HETEROCOCCALES												
...CENTRITRACTACEAE												
....CENTRITRACTUS	--	-	--	-	--	-	--	-	--	-	*	0
CRYPTOPHYTA (CRYPTOMONADS)												
.CRYPTOPHYCEAE												
..CRYPTOMONADALES												
...CRYPTOCHRYSIDACEAE												
....CHROOMONAS	--	-	--	-	--	-	26	1	25	1	--	-
...CRYPTOMONADACEAE												
....CRYPTOMONAS	--	-	--	-	--	-	*	0	230	6	*	0

NOTE: # = DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* = OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

CONTINUED

06349900 CANNONBALL RIVER AT NEW ENGLAND, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1978 TO SEPTEMBER 1979 (CONTINUED)

DATE TIME	APR 10,79 1015		MAY 10,79 1600		JUN 13,79 1500		JUL 25,79 1315		AUG 24,79 1130		SEP 13,79 1340	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CYANOPHYTA (BLUE-GREEN ALGAE)												
.CYANOPHYCEAE												
..CHROOCOCCALES												
...CHROOCOCCACEAE												
....AGMENELLUM	--	-	--	-	--	-	--	-	--	-	510	9
....ANACYSTIS	--	-	600#	33	260	7	820#	20	230	6	3100#	54
..HORMOGONALES												
...OSCILLATORIACEAE												
....OSCILLATORIA	--	-	--	-	2600#	75	1300#	32	--	-	--	-
....SPIRULINA	--	-	--	-	--	-	--	-	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)												
.EUGLENOPHYCEAE												
..EUGLENALES												
...EUGLENACEAE												
....EUGLENA	--	-	83	5	*	0	39	1	50	1	*	0
....PHACUS	--	-	--	-	--	-	*	0	25	1	--	-
....TRACHELOMONAS	--	-	56	3	--	-	100	3	330	9	170	3
PYRRHOPHYTA (FIRE ALGAE)												
.DINOPHYCEAE												
..GYMNODINIALES												
...GYMNODINIACEAE												
....GYMNODINIUM	--	-	--	-	--	-	--	-	--	-	--	-
..PERIDINIALES												
...GLENODINIACEAE												
....GLENODINIUM	--	-	--	-	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06349930 COAL BANK CREEK NEAR HAVELOCK, ND

LOCATION.--Lat 46°27'50", long 102°44'20", in NW¼SW¼ sec.34, T.135 N., R.96 W., Hettinger County, Hydrologic Unit 10130204, one mile south of Havelock, and at county highway bridge.

DRAINAGE AREA.--70.0 mi^2 (181.3 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1974 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 2,505 ft (764 m), from topographic map.

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

AVERAGE DISCHARGE.--5 years, 6.56 ft^3/s (0.186 m^3/s), 4,750 acre-ft/yr (5.86 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,400 ft^3/s (39.5 m^3/s) May 9, 1975, gage height, 10.15 ft (3.094 m); no flow at times.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 100 ft^3/s (2.83 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Apr. 16	1415	348	9.86	7.44	2.268	Apr. 10	--	*390	11.0	[a]10.23	3.118

No flow Oct. 3-20.

a - Backwater from ice.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.07	.13	.18	.12	.14	.14	15	2.7	.64	.18	.12	.08
2	.04	.13	.18	.12	.14	.14	12	2.0	.59	.11	.11	.08
3	.00	.14	.18	.12	.14	.14	10	1.8	.57	.12	.10	.08
4	.00	.16	.18	.12	.14	.14	5.0	1.7	.54	.10	.08	.07
5	.00	.13	.18	.12	.16	.14	3.0	1.6	.49	.11	.08	.07
6	.00	.13	.16	.12	.16	.14	3.0	2.0	.46	.26	.08	.06
7	.00	.16	.14	.12	.16	.14	35	2.3	.46	.19	.07	.05
8	.00	.19	.12	.12	.16	.14	140	2.5	.46	.15	.07	.06
9	.00	.24	.10	.12	.16	.14	340	2.4	.42	.17	.06	.06
10	.00	.24	.11	.12	.16	.14	240	2.3	.41	.16	.05	.19
11	.00	.24	.11	.12	.16	.14	140	2.1	.39	.14	.05	.25
12	.00	.20	.12	.12	.16	.16	100	1.9	.35	.16	.04	.12
13	.00	.20	.14	.12	.16	.16	42	1.6	.31	.49	.03	.08
14	.00	.20	.16	.12	.16	.16	40	1.5	.27	.40	.03	.08
15	.00	.20	.16	.12	.16	.16	129	1.4	.20	.26	.03	.08
16	.00	.18	.16	.12	.14	.18	248	1.3	.19	.17	.03	.08
17	.00	.18	.16	.12	.14	.18	89	1.2	.17	.15	.04	.08
18	.00	.18	.16	.12	.14	.20	54	1.1	.20	.13	.05	.07
19	.00	.16	.16	.12	.14	.20	27	1.1	.34	.11	.05	.07
20	.00	.16	.16	.12	.14	.30	14	.98	.36	.10	.06	.06
21	.03	.16	.16	.14	.14	5.0	9.2	.96	.41	.10	.08	.06
22	.07	.16	.16	.14	.14	10	7.2	.94	.32	.10	.09	.08
23	.08	.16	.16	.14	.14	15	5.9	.92	.37	.11	.08	.08
24	.10	.18	.16	.14	.14	30	4.9	.90	.29	.11	.06	.08
25	.11	.18	.16	.14	.14	25	4.4	.85	.25	.15	.06	.08
26	.11	.18	.14	.14	.14	20	4.1	.82	.28	.27	.07	.11
27	.11	.18	.14	.14	.14	20	4.0	.76	.21	.25	.08	.12
28	.11	.18	.14	.14	.14	10	3.5	.70	.21	.19	.12	.15
29	.11	.20	.14	.14	---	2.0	3.0	.67	.20	.14	.13	.16
30	.11	.20	.12	.14	---	3.0	3.0	.69	.21	.12	.10	.19
31	.12	---	.12	.14	---	15	---	.64	---	.12	.09	---
TOTAL	1.17	5.33	4.62	3.94	4.14	158.24	1735.2	44.33	10.57	5.32	2.19	2.88
MEAN	.038	.18	.15	.13	.15	5.10	57.8	1.43	.35	.17	.071	.096
MAX	.12	.24	.18	.14	.16	30	340	2.7	.64	.49	.13	.25
MIN	.00	.13	.10	.12	.14	.14	3.0	.64	.17	.10	.03	.05
AC-FT	2.3	11	9.2	7.8	8.2	314	3440	88	21	11	4.3	5.7

CAL YR 1978 TOTAL 4324.10 MEAN 11.8 MAX 820 MIN .00 AC-FT 8580
WTR YR 1979 TOTAL 1977.93 MEAN 5.42 MAX 340 MIN .00 AC-FT 3920

06349930 COAL BANK CREEK NEAR HAVELOCK, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1975 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L) (00310)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)
OCT											
02...	1415	.12	2020	8.1	10.5	11.1	1.6	130	70	260	48
30...	1450	.13	2350	8.0	5.5	9.0	1.8	130	74	290	49
DEC											
11...	1500	.11	4800	7.9	1.0	4.0	1.8	180	87	270	42
JAN											
08...	1350	.12	2300	7.3	.0	2.6	.6	160	93	270	42
FEB											
05...	1450	.16	2010	7.2	.0	5.2	2.1	160	78	240	42
MAR											
05...	1525	.14	2000	7.1	.0	4.0	1.0	160	75	220	40
24...	1510	22	545	--	.5	--	--	--	--	--	--
APR											
12...	1710	82	575	7.8	.0	10.4	2.5	33	18	52	41
14...	1425	29	815	--	3.5	--	--	--	--	--	--
17...	1315	83	815	--	9.0	--	--	--	--	--	--
30...	1600	3.5	1890	8.4	9.5	15.2	3.1	97	75	220	46
JUN											
04...	1200	.56	2450	9.4	19.0	9.0	1.4	170	100	330	46
JUL											
10...	1000	.18	2200	8.7	22.0	12.0	1.2	85	90	340	56
30...	1400	.13	2000	8.3	22.0	8.0	1.9	67	75	290	56
SEP											
11...	1235	.23	1990	8.0	17.0	5.6	1.5	84	71	300	56

DATE	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)
OCT											
02...	4.6	8.8	350	800	9.5	.3	3.3	1510	2.05	.49	.00
30...	5.0	12	360	690	10	.3	5.2	1680	2.28	.59	.00
DEC											
11...	4.1	10	490	890	12	.3	10	1790	2.43	.53	.03
JAN											
08...	4.2	11	450	930	11	.2	13	1830	2.49	.59	.10
FEB											
05...	3.9	9.5	430	780	14	.3	13	1620	2.20	.70	.08
MAR											
05...	3.6	9.1	300	740	10	1.0	13	1500	2.04	.57	.17
24...	--	--	--	--	--	--	--	--	--	--	--
APR											
12...	1.8	6.5	67	200	3.2	.2	8.2	396	.54	87.7	2.9
14...	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--
30...	4.1	9.3	240	760	9.6	.2	9.1	1520	2.07	14.4	.74
JUN											
04...	5.0	9.2	340	1200	17	.3	.9	2070	2.82	3.13	.02
JUL											
10...	6.1	8.0	230	1100	10	.2	.5	1750	2.38	.85	.04
30...	5.8	8.4	250	880	11	.9	.4	1580	2.15	.55	.01
SEP											
11...	5.8	7.6	320	860	9.2	.3	.9	1570	2.14	.98	.01

06349930 COAL BANK CREEK NEAR HAVELOCK, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, NH4 + ORG. SUSP. TOTAL (MG/L AS N) (00624)	PHOSPHORUS, TOTAL (MG/L AS P) (00665)	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	ALUMINUM, DISSOLVED (UG/L AS AL) (01106)	ARSENIC DISSOLVED (UG/L AS AS) (01000)	BARIUM, DISSOLVED (UG/L AS BA) (01005)	BORON, DISSOLVED (UG/L AS B) (01020)	CADMIUM DISSOLVED (UG/L AS CD) (01025)	CHROMIUM, DISSOLVED (UG/L AS CR) (01030)
OCT										
02...	.80	.34	.03	.02	--	--	--	--	--	--
30...	.66	.12	.04	.03	--	--	--	--	--	--
DEC										
11...	.52	.14	.06	.03	5	1	0	1200	0	10
JAN										
08...	.83	.08	.06	.03	--	--	--	--	--	--
FEB										
05...	.75	.07	.03	.02	--	--	--	--	--	--
MAR										
05...	.74	.02	.04	.04	10	1	0	930	0	0
24...	--	--	--	--	--	--	--	--	--	--
APR										
12...	1.5	.50	.24	.07	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--
30...	1.3	.44	.07	.02	--	--	--	--	--	--
JUN										
04...	.76	.08	.03	.01	10	1	100	1000	1	10
JUL										
10...	.71	.04	.03	.02	--	--	--	--	--	--
30...	.71	.50	.05	.03	--	--	--	--	--	--
SEP										
11...	.40	.31	.02	.01	0	2	0	1400	1	10

DATE	COPPER, DISSOLVED (UG/L AS CU) (01040)	IRON, DISSOLVED (UG/L AS FE) (01046)	LEAD, DISSOLVED (UG/L AS PB) (01049)	LITHIUM DISSOLVED (UG/L AS LI) (01130)	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	MERCURY DISSOLVED (UG/L AS HG) (71890)	MOLYBDENUM, DISSOLVED (UG/L AS MO) (01060)	SELENIUM, DISSOLVED (UG/L AS SE) (01145)	STRONTIUM, DISSOLVED (UG/L AS SR) (01080)	ZINC, DISSOLVED (UG/L AS ZN) (01090)
OCT										
02...	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--
DEC										
11...	1	70	1	60	820	.4	0	2	3600	20
JAN										
08...	--	--	--	--	--	--	--	--	--	--
FEB										
05...	--	--	--	--	--	--	--	--	--	--
MAR										
05...	0	60	0	50	1200	.0	0	2	--	10
24...	--	--	--	--	--	--	--	--	--	--
APR										
12...	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--
JUN										
04...	0	20	0	50	40	.2	0	1	2300	20
JUL										
10...	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--
SEP										
11...	1	10	0	50	60	.1	0	0	2200	340

06349930 COAL BANK CREEK NEAR HAVELOCK, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	GROSS ALPHA, DIS-SOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DIS-SOLVED (PCI/L AS CS-137) (03515)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)	GROSS BETA, DIS-SOLVED (PCI/L AS SR/YT-90) (80050)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90) (80060)	RADIUM 226, DIS-SOLVED, RADON METHOD (PCI/L) (09511)	URANIUM DIS-SOLVED, EXTRAC-TION (UG/L) (80020)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C) (00689)
OCT										
02...	<12	<.4	<5.8	<.4	<5.3	<.4	.08	1.8	14	.3
30...	--	--	--	--	--	--	--	--	16	.6
DEC										
11...	--	--	--	--	--	--	--	--	13	.4
JAN										
08...	--	--	--	--	--	--	--	--	15	.6
FEB										
05...	--	--	--	--	--	--	--	--	11	.6
MAR										
05...	--	--	--	--	--	--	--	--	11	.6
24...	--	--	--	--	--	--	--	--	--	--
APR										
12...	--	--	--	--	--	--	--	--	10	--
14...	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	16	4.3
JUN										
04...	--	--	--	--	--	--	--	--	17	.5
JUL										
10...	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	13	.3
SEP										
11...	--	--	--	--	--	--	--	--	17	.4

DATE	CYANIDE TOTAL (MG/L AS CN) (00720)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	BED MAT. FALL DIAM. % FINER THAN .062 MM (80158)	BED MAT. FALL DIAM. % FINER THAN .125 MM (80159)	BED MAT. FALL DIAM. % FINER THAN .250 MM (80160)	BED MAT. FALL DIAM. % FINER THAN .500 MM (80161)	BED MAT. FALL DIAM. % FINER THAN 1.00 MM (80162)	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM (80169)	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM (80170)
OCT										
02...	--	6	.00	--	--	--	--	--	--	--
30...	--	32	.01	--	--	--	--	--	--	--
DEC										
11...	.01	20	.01	--	--	--	--	--	--	--
JAN										
08...	--	21	.01	--	--	--	--	--	--	--
FEB										
05...	--	42	.02	--	--	--	--	--	--	--
MAR										
05...	.01	46	.02	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--
APR										
12...	--	186	41	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--
30...	--	28	.26	--	--	--	--	--	--	--
JUN										
04...	.00	32	.05	--	--	--	--	--	--	--
JUL										
10...	--	3	.00	--	--	--	--	--	--	--
30...	--	5	.00	--	--	--	--	--	--	--
SEP										
11...	.00	9	.01	83	89	92	94	96	99	100

06350000 CANNONBALL RIVER AT REGENT, ND

LOCATION.--Lat 46°25'36", long 102°33'05", in NE¼NE¼ sec.13, T.134 N., R.95 W., Hettinger County, Hydrologic Unit 10130204, on right bank 400 ft (120 m) upstream from bridge on county highway, and 0.3 mi (0.5 km) north of Regent.

DRAINAGE AREA.--580 mi^2 (1,500 km^2), approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1950 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,422.90 ft (738.500 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for period December to April, which are fair.

AVERAGE DISCHARGE.--29 years, 46.5 ft^3/s (1.317 m^3/s), 33,690 acre-ft/yr (41.5 hm^3/yr); median of yearly mean discharges, 26 ft^3/s (0.74 m^3/s), 18,800 acre-ft/yr (23 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,000 ft^3/s (283 m^3/s) Mar. 27, 1978, gage height, 20.55 ft (6.264 m); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known since 1914, 26.1 ft (7.96 m) Apr. 16, 1950, from floodmarks, discharge, 20,300 ft^3/s (575 m^3/s), on basis of slope-area measurement at site 4 mi (6 km) downstream.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 400 ft^3/s (11.3 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Mar. 25	--	1,060	30.0	Backwater from ice	
Apr. 2	--	470	13.3	Backwater from ice	
Apr. 10	--	*2,500	70.8	[a]13.26	4.042
Apr. 16	0945	957	27.1	7.49	2.283

Minimum daily discharge, 2.5 ft^3/s (0.071 m^3/s) Jan. 10-22.

a - Backwater from ice.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.0	6.4	7.0	5.0	3.0	5.5	428	50	16	8.0	5.2	4.9
2	6.0	6.4	7.0	5.0	3.0	5.5	457	45	15	8.0	4.5	5.1
3	6.2	6.4	7.0	4.5	3.0	5.5	437	42	14	8.0	4.6	5.2
4	6.2	6.4	7.0	4.0	3.0	5.5	383	40	14	7.7	4.6	5.4
5	6.2	6.6	7.0	4.0	3.5	6.0	287	38	13	7.7	4.5	4.5
6	6.2	6.6	7.0	3.5	4.0	7.5	310	40	13	7.4	4.1	5.0
7	6.2	6.6	7.0	3.5	4.0	7.5	340	43	13	6.9	4.1	4.6
8	6.2	6.6	7.0	3.0	4.0	8.0	660	44	13	7.4	3.8	4.6
9	6.2	7.2	7.0	3.0	4.0	8.0	1240	44	12	7.4	3.9	5.0
10	6.2	9.0	7.0	2.5	4.0	8.0	1840	42	12	6.6	3.7	6.4
11	6.2	9.5	7.0	2.5	4.0	8.0	2190	39	11	8.0	3.8	7.5
12	6.2	9.5	7.0	2.5	4.0	10	1430	38	12	11	4.5	7.7
13	6.2	9.0	7.0	2.5	4.0	10	642	35	12	13	3.7	7.3
14	6.2	9.0	7.0	2.5	4.5	10	383	33	10	10	3.8	7.1
15	6.2	9.0	7.0	2.5	4.5	10	472	31	9.5	7.2	4.0	6.6
16	6.2	8.5	7.0	2.5	4.0	10	850	28	8.9	7.7	3.9	6.2
17	6.2	8.5	7.0	2.5	4.0	15	913	27	8.5	7.4	4.1	5.6
18	6.2	8.5	7.0	2.5	4.0	20	846	25	8.2	7.2	3.9	4.9
19	6.2	8.5	7.0	2.5	4.0	40	623	25	8.6	6.2	3.9	4.0
20	6.2	8.0	7.0	2.5	4.0	70	422	23	12	5.5	4.1	4.0
21	6.2	8.0	6.5	2.5	4.0	42	280	23	12	5.0	6.5	3.8
22	6.2	8.0	6.5	2.5	4.0	93	201	23	15	4.7	7.5	3.7
23	6.2	8.0	6.5	3.0	4.0	166	148	21	15	4.5	6.6	3.5
24	6.2	7.5	6.5	3.0	4.5	542	120	20	17	4.7	6.1	3.6
25	6.4	7.5	6.5	3.0	5.0	1000	104	20	15	4.9	5.7	3.6
26	6.4	7.5	6.5	3.0	5.5	593	90	19	13	6.0	6.0	3.7
27	6.4	7.5	6.5	3.0	6.0	420	76	18	12	6.6	6.9	3.5
28	6.4	7.0	6.0	3.0	6.0	360	68	17	11	6.9	6.9	3.7
29	6.4	7.0	6.0	3.0	---	300	59	17	10	6.4	6.6	3.5
30	6.4	7.0	5.5	3.0	---	256	54	17	8.9	7.0	5.5	3.5
31	6.4	---	5.5	3.0	---	325	---	16	---	6.2	5.2	---
TOTAL	193.2	231.2	208.5	95.0	115.5	4367.0	16353	943	364.6	221.2	152.2	147.7
MEAN	6.23	7.71	6.73	3.06	4.13	141	545	30.4	12.2	7.14	4.91	4.92
MAX	6.4	9.5	7.0	5.0	6.0	1000	2190	50	17	13	7.5	7.7
MIN	6.0	6.4	5.5	2.5	3.0	5.5	54	16	8.2	4.5	3.7	3.5
AC-FT	383	459	414	188	229	8660	32440	1870	723	439	302	293

CAL YR 1978	TOTAL	39387.0	MEAN	108	MAX	7880	MIN	4.0	AC-FT	78120
WTR YR 1979	TOTAL	23392.1	MEAN	64.1	MAX	2190	MIN	2.5	AC-FT	46400

06350000 CANNONBALL RIVER AT REGENT, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1964-66, 1971 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS (MG/L AS CACO3) (00900)
OCT											
03...	1355	6.2	1970	--	--	11.5	--	--	--	--	--
04...	1200	6.2	1890	8.2	12.5	10.5	8.2	80	72	97	530
31...	1220	6.5	1890	--	--	4.5	--	--	--	--	--
NOV											
14...	1320	9.0	1890	8.1	5.0	1.0	12.8	99	K2	800	570
DEC											
12...	1440	7.0	2410	--	--	.0	--	--	--	--	--
14...	1400	7.0	2380	7.7	4.5	.0	10.4	78	K6	70	710
JAN											
09...	1435	3.1	2780	--	--	.0	--	--	--	--	--
25...	0830	3.0	2800	7.8	-10.0	.0	5.9	44	K2	K1	890
FEB											
06...	1340	4.0	2680	7.8	-8.0	.0	6.2	46	K2	K10	720
06...	1545	4.6	2790	--	--	.0	--	--	--	--	--
MAR											
06...	1315	7.6	2250	--	--	.0	--	--	--	--	--
20...	1250	74	745	--	--	.0	--	--	--	--	--
24...	1215	504	700	--	--	.5	--	--	--	--	--
26...	1445	462	555	--	--	.0	--	--	--	--	--
APR											
06...	1830	236	885	--	--	.0	--	--	--	--	--
14...	1150	350	650	7.8	--	2.5	--	--	--	--	170
17...	1635	965	920	--	--	6.0	--	--	--	--	--
26...	1045	91	1310	8.0	6.0	6.0	10.1	89	80	250	360
MAY											
01...	1430	50	1500	8.4	15.0	10.5	13.0	127	K1	K28	430
08...	1305	45	1800	--	--	7.5	--	--	--	--	--
09...	1415	44	1850	8.3	5.5	6.0	11.4	100	K14	45	540
JUN											
07...	1540	13	1980	--	--	17.0	--	--	--	--	--
14...	1215	10	2020	8.2	22.5	22.0	8.2	102	97	80	590
JUL											
10...	1215	7.1	1980	--	--	25.0	--	--	--	--	--
25...	1130	5.1	1970	8.3	17.0	21.0	7.7	92	200	210	440
30...	1800	7.2	1900	8.1	--	25.0	--	--	--	--	500
AUG											
09...	1500	3.9	2000	8.5	22.0	23.0	9.1	115	130	150	--
SEP											
11...	1645	7.6	1700	--	--	19.0	--	--	--	--	--
13...	1950	7.3	1700	8.5	12.0	15.0	8.4	89	150	130	410

DATE	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE (MG/L AS HCO3) (00440)	CAR-BONATE (MG/L AS CO3) (00445)	ALKA-LINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)
OCT											
03...	--	--	--	--	--	--	--	--	--	--	--
04...	190	100	68	260	51	4.9	7.5	417	0	340	4.2
31...	--	--	--	--	--	--	--	--	--	--	--
NOV											
14...	160	110	72	250	48	4.6	6.7	503	0	410	6.4
DEC											
12...	--	--	--	--	--	--	--	--	--	--	--
14...	0	140	87	360	52	5.9	9.4	869	0	710	28
JAN											
09...	--	--	--	--	--	--	--	--	--	--	--
25...	380	190	100	370	47	5.4	8.9	621	0	510	16
FEB											
06...	180	150	85	390	54	6.3	9.4	659	0	540	17
APR											
06...	--	--	--	--	--	--	--	--	--	--	--
14...	74	28	24	66	45	2.2	5.2	115	0	94	2.9
17...	--	--	--	--	--	--	--	--	--	--	--
26...	150	62	49	170	50	3.9	7.2	254	0	210	4.1
MAY											
01...	180	85	52	190	49	4.0	7.3	293	4	250	1.9
08...	--	--	--	--	--	--	--	--	--	--	--
09...	240	110	65	230	48	4.3	7.5	362	3	300	3.0
JUN											
14...	210	120	71	290	51	5.2	8.1	460	0	380	4.6
JUL											
10...	--	--	--	--	--	--	--	--	--	--	--
25...	85	74	63	290	58	6.0	8.4	438	0	360	3.5
30...	160	90	67	280	54	5.4	6.9	417	0	342	5.3
AUG											
09...	--	--	--	--	--	--	--	434	7	370	2.3
SEP											
13...	65	73	56	270	58	5.8	7.6	390	17	350	2.1

K - Results based on colony count outside the acceptable range (non-ideal colony count).

06350000 CANNONBALL RIVER AT REGENT, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)
OCT											
03...	--	--	--	--	--	--	--	--	--	--	--
04...	730	11	.5	3.6	1390	1390	1.89	23.3	.05	.02	.76
31...	--	--	--	--	--	--	--	--	--	--	--
NOV											
14...	680	4.3	.4	6.3	1400	1380	1.88	33.5	.35	.03	.52
DEC											
12...	--	--	--	--	--	--	--	--	--	--	--
14...	910	13	.4	11	1810	1960	2.67	37.0	.52	.12	.56
JAN											
09...	--	--	--	--	--	--	--	--	--	--	--
25...	1100	15	.4	13	2120	2100	2.86	17.0	.72	.44	.47
FEB											
06...	1000	14	.4	13	2000	1990	2.71	21.5	.55	.33	.37
06...	--	--	--	--	--	--	--	--	--	--	--
APR											
06...	--	--	--	--	--	--	--	--	--	--	--
14...	220	3.3	.1	7.0	428	411	.56	388	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--
26...	500	5.7	.2	11	950	931	1.27	229	.59	.06	.78
MAY											
01...	560	7.1	.3	8.0	1110	1060	1.44	143	.08	.08	.86
08...	--	--	--	--	--	--	--	--	--	--	--
09...	710	8.6	.3	6.2	1350	1320	1.80	157	.05	.02	1.2
JUN											
07...	--	--	--	--	--	--	--	--	--	--	--
14...	780	9.5	.3	6.5	1520	1510	2.05	40.8	.02	.09	1.1
JUL											
10...	--	--	--	--	--	--	--	--	--	--	--
25...	760	9.9	.5	5.1	1470	1430	1.94	19.7	.04	.05	.95
30...	760	9.9	.4	5.3	1460	1430	1.94	27.8	--	--	--
AUG											
09...	--	--	--	--	--	--	--	--	--	--	--
SEP											
11...	--	--	--	--	--	--	--	--	--	--	--
13...	660	9.1	.5	4.7	1240	1290	1.75	25.4	.08	.02	.55

DATE	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE) (01012)
OCT											
03...	--	--	--	--	--	--	--	--	--	--	--
04...	.78	.83	3.7	.03	.02	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
NOV											
14...	.55	.90	4.0	.02	.01	--	--	--	--	--	--
DEC											
12...	--	--	--	--	--	--	--	--	--	--	--
14...	.68	1.2	5.3	.00	.01	--	--	--	--	--	--
JAN											
09...	--	--	--	--	--	--	--	--	--	--	--
25...	.91	1.6	7.2	.01	.01	--	--	--	--	--	--
FEB											
06...	.70	1.3	5.5	.03	.02	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--	--
APR											
06...	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--
26...	.84	1.4	6.3	.08	.02	0	2	1	100	70	0
MAY											
01...	.94	1.0	4.5	.07	.02	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--
09...	1.2	1.3	5.5	.04	.01	--	--	--	--	--	--
JUN											
07...	--	--	--	--	--	--	--	--	--	--	--
14...	1.2	1.2	5.4	.05	.00	--	--	--	--	--	--
JUL											
10...	--	--	--	--	--	--	--	--	--	--	--
25...	1.0	1.0	4.6	.05	.08	30	--	1	--	90	--
30...	--	--	--	--	--	--	--	--	--	--	--
AUG											
09...	--	--	--	--	--	--	--	--	--	--	--
SEP											
11...	--	--	--	--	--	--	--	--	--	--	--
13...	.57	.65	2.9	.02	.01	--	--	--	--	--	--

06350000 CANNONBALL RIVER AT REGENT, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	BERYLLIUM, DISSOLVED (UG/L AS BE) (01010)	BORON, DISSOLVED (UG/L AS B) (01020)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) (01034)	CHROMIUM, DISSOLVED (UG/L AS CR) (01030)	COBALT, TOTAL RECOVERABLE (UG/L AS CO) (01037)	COBALT, DISSOLVED (UG/L AS CO) (01035)	COPPER, TOTAL RECOVERABLE (UG/L AS CU) (01042)	COPPER, DISSOLVED (UG/L AS CU) (01040)	IRON, DISSOLVED (UG/L AS FE) (01046)	LITHIUM TOTAL RECOVERABLE (UG/L AS LI) (01132)	LITHIUM DISSOLVED (UG/L AS LI) (01130)
OCT											
03...	--	--	--	--	--	--	--	--	--	--	--
04...	--	730	--	--	--	--	--	--	20	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
NOV											
14...	--	690	--	--	--	--	--	--	50	--	--
DEC											
12...	--	--	--	--	--	--	--	--	--	--	--
14...	--	810	--	--	--	--	--	--	60	--	--
JAN											
09...	--	--	--	--	--	--	--	--	--	--	--
25...	--	950	--	--	--	--	--	--	70	--	--
FEB											
06...	--	740	--	--	--	--	--	--	30	--	--
08...	--	--	--	--	--	--	--	--	--	--	--
MAR											
06...	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--
APR											
06...	--	--	--	--	--	--	--	--	--	--	--
14...	--	150	--	--	--	--	--	--	260	--	--
17...	--	--	--	--	--	--	--	--	--	--	--
26...	<1	320	10	0	0	<3	9	6	40	20	30
MAY											
01...	--	370	--	--	--	--	--	--	40	--	--
08...	--	--	--	--	--	--	--	--	--	--	--
09...	--	430	--	--	--	--	--	--	20	--	--
JUN											
07...	--	--	--	--	--	--	--	--	--	--	--
14...	--	630	--	--	--	--	--	--	10	--	--
JUL											
10...	--	--	--	--	--	--	--	--	--	--	--
25...	<1	680	--	0	--	<3	--	2	10	--	60
30...	--	550	--	--	--	--	--	--	120	--	--
AUG											
09...	--	--	--	--	--	--	--	--	--	--	--
SEP											
11...	--	--	--	--	--	--	--	--	--	--	--
13...	--	660	--	--	--	--	--	--	20	--	--

DATE	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN) (01055)	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOVERABLE (UG/L AS HG) (71900)	MERCURY DISSOLVED (UG/L AS HG) (71890)	MOLYBDENUM, TOTAL RECOVERABLE (UG/L AS MO) (01062)	MOLYBDENUM, DISSOLVED (UG/L AS MO) (01060)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI) (01067)	NICKEL, DISSOLVED (UG/L AS NI) (01065)	SELENIUM, TOTAL (UG/L AS SE) (01147)	SELENIUM, DISSOLVED (UG/L AS SE) (01145)	VANADIUM, DISSOLVED (UG/L AS V) (01085)
APR											
06...	--	--	--	--	--	--	--	--	--	--	--
14...	--	10	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--
26...	310	250	.1	.1	2	<10	6	3	1	0	.0
MAY											
01...	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--
JUN											
07...	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--
JUL											
10...	--	--	--	--	--	--	--	--	--	--	--
25...	--	50	--	.0	--	12	--	4	--	1	<1.0
30...	--	20	--	--	--	--	--	--	--	--	--
AUG											
09...	--	--	--	--	--	--	--	--	--	--	--
SEP											
11...	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--

06350000 CANNONBALL RIVER AT REGENT, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	ZINC, TOTAL RECOVERABLE (UG/L AS ZN) (01092)	ZINC, DISSOLVED (UG/L AS ZN) (01090)	GROSS ALPHA, DISSOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DISSOLVED (PCI/L AS CS-137) (03515)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)	CARBON, ORGANIC DISSOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUSPENDED TOTAL (MG/L AS C) (00689)	SEDIMENT, SUSPENDED (MG/L) (80154)	SEDIMENT DISCHARGE, SUSPENDED (T/DAY) (80155)
OCT										
03...	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	12	.8	60	1.0
31...	--	--	--	--	--	--	--	--	--	--
NOV										
14...	--	--	--	--	--	--	12	.6	112	2.7
DEC										
12...	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	11	.8	86	1.6
JAN										
09...	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	13	.5	123	1.0
FEB										
06...	--	--	--	--	--	--	10	.4	132	1.4
06...	--	--	--	--	--	--	--	--	--	--
MAR										
06...	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--
APR										
06...	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--
26...	40	<3	--	--	--	--	13	5.7	64	16
MAY										
01...	--	--	--	--	--	--	120	1.3	116	16
08...	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	14	1.1	21	2.5
JUN										
07...	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	20	--	71	1.9
JUL										
10...	--	--	--	--	--	--	--	--	--	--
25...	--	<3	--	--	--	--	15	.6	108	1.5
30...	--	--	--	--	--	--	--	--	--	--
AUG										
09...	--	--	<24	<.4	11	.8	--	--	46	.48
SEP										
11...	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	9.9	.4	128	2.5

DATE	BED MAT. FALL DIAM. % FINER THAN .062 MM (80158)	BED MAT. FALL DIAM. % FINER THAN .125 MM (80159)	BED MAT. FALL DIAM. % FINER THAN .250 MM (80160)	BED MAT. FALL DIAM. % FINER THAN .500 MM (80161)	BED MAT. FALL DIAM. % FINER THAN 1.00 MM (80162)	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM (80169)	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM (80170)	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM (80171)	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM (80172)
APR									
26...	10	16	48	73	78	85	92	98	100

DATE	LENGTH OF EXPOSURE (DAYS) (00022)	CHLOR-A PERIPHYTON CHROMOGRAPHIC FLUOROM (MG/M2) (70957)	CHLOR-B PERIPHYTON CHROMOGRAPHIC FLUOROM (MG/M2) (70958)	PERIPHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M (00573)	PERIPHYTON BIOMASS ASH WEIGHT G/SQ M (00572)
OCT					
04...	21	.880	.090	3.15	2.00
JUL					
25...	42	1.21	.140	4.49	3.07

06350000 CANNONBALL RIVER AT REGENT, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1978 TO SEPTEMBER 1979

DATE	OCT 4,78	NOV 14,78	DEC 14,78	JAN 25,79	FEB 6,79	APR 26,79
TIME	1200	1320	1400	0830	1340	1045
TOTAL CELLS/ML	3100	3300	700	340	350	8400
DIVERSITY: DIVISION	1.6	1.4	1.2	0.3	0.7	1.3
.CLASS	1.6	1.4	1.2	0.3	0.7	1.3
..ORDER	2.2	1.7	1.5	0.4	0.8	1.8
...FAMILY	2.6	2.2	2.0	1.0	1.9	2.1
....GENUS	2.9	0.0	2.1	1.0	1.9	2.3

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)												
.CHLOROPHYCEAE												
..CHLOROCOCCALES												
...HYDRODICTYACEAE												
....PEDIASTRUM	--	-	--	-	--	-	--	-	--	-	--	-
...MICRACTINIACEAE												
....GOLENKINIA	--	-	--	-	--	-	--	-	--	-	--	-
....MICRACTINIUM	--	-	--	-	--	-	--	-	--	-	330	4
...OOCYSTACEAE												
....ANKISTRODESMUS	150	5	160	5	62	9	5	1	20	6	460	6
....CHODATELLA	--	-	--	-	--	-	--	-	5	1	--	-
....DICTYOSPHAERIUM	--	-	--	-	--	-	--	-	--	-	--	-
....KIRCHNERIELLA	17	1	--	-	--	-	--	-	--	-	--	-
....OOCYSTIS	--	-	--	-	--	-	--	-	--	-	420	5
....SELENASTRUM	--	-	--	-	--	-	--	-	--	-	--	-
....TREUBARIA	--	-	--	-	--	-	--	-	--	-	--	-
...SCENEDESMACEAE												
....ACTINASTRUM	--	-	--	-	--	-	--	-	--	-	--	-
....CRUCIGENIA	340	11	120	4	--	-	--	-	20	6	--	-
....SCENEDESMUS	34	1	--	-	31	4	--	-	--	-	460	6
....TETRASTRUM	--	-	--	-	31	4	--	-	--	-	--	-
..VOLVOCALES												
...CHLAMYDOMONADACEAE	--	-	120	4	--	-	--	-	--	-	--	-
....CARTERIA	--	-	--	-	--	-	--	-	--	-	140	2
....CHLAMYDOMONAS	50	2	--	-	23	3	--	-	--	-	1000	12
CHRYSOPHYTA												
.BACILLARIOPHYCEAE												
..CENTRALES												
...COSCINODISCACEAE												
....CYCLOTELLA	760#	24	93	3	23	3	5	1	5	1	4700#	56
..PENNALES												
...ACHNANTHACEAE												
....ACHNANTHES	--	-	--	-	8	1	--	-	--	-	--	-
....COCCONEIS	--	-	--	-	--	-	5	1	--	-	--	-
...FRAGILARIACEAE												
....SYNEDRA	67	2	340	10	--	-	20	6	120#	33	--	-
...NAVICULACEAE												
....GYROSIGMA	--	-	31	1	--	-	--	-	--	-	--	-
....NAVICULA	84	3	31	1	23	3	5	1	5	1	93	1
...NITZSCHIACEAE												
....NITZSCHIA	740#	24	1200#	36	450#	64	290#	85	170#	49	46	1
.XANTHOPHYCEAE												
..HETEROCOCCALES												
...CHLOROTHECIACEAE												
....OPHIOCYTIUM	--	-	--	-	--	-	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)												
.CRYPTOPHYCEAE												
..CRYPTOMONADALES												
...CRYPTOCHRYSIDACEAE												
....CHROOMONAS	--	-	--	-	--	-	--	-	--	-	--	-
...CRYPTOMONADACEAE												
....CRYPTOMONAS	--	-	--	-	15	2	--	-	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)												
.CYANOPHYCEAE												
..CHROOCOCCALES												
...CHROOCOCCACEAE												
....AGMENELLUM	--	-	--	-	--	-	--	-	--	-	190	2
....ANACYSTIS	--	-	--	-	8	1	--	-	--	-	510	6
..HORMOGONALES												
...NOSTOCACEAE												
....ANABAENOPSIS	--	-	--	-	--	-	--	-	--	-	--	-
...OSCILLATORIACEAE												
....LYNGBYA	420	13	--	-	--	-	--	-	--	-	--	-
....OSCILLATORIA	420	13	--	-	--	-	--	-	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)												
.EUGLENOPHYCEAE												
..EUGLENALES												
...EUGLENACEAE												
....EUGLENA	--	-	--	-	--	-	--	-	--	-	--	-
....TRACHELOMONAS	67	2	1200#	36	31	4	--	-	10	3	46	1
PYRRHOPHYTA (FIRE ALGAE)												
.DINOPHYCEAE												
..PERIDINIALES												
...GLENODINIACEAE												
....GLENODINIUM	--	-	--	-	--	-	10	3	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06350000 CANNONBALL RIVER AT REGENT, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1978 TO SEPTEMBER 1979

DATE	MAY 1,79	MAY 9,79	JUN 14,79	JUL 25,79	AUG 9,79	SEP 13,79
TIME	1430	1415	1215	1130	1500	1950
TOTAL CELLS/ML	20000	16000	17000	1500	9500	630
DIVERSITY: DIVISION	1.2	0.9	1.3	1.2	1.4	1.4
.CLASS	1.2	0.9	1.4	1.2	1.4	1.4
..ORDER	1.5	1.1	1.5	1.3	1.8	2.0
...FAMILY	1.6	1.2	2.1	2.0	2.5	2.5
....GENUS	1.7	0.0	3.1	2.8	3.1	2.7

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)												
.CHLOROPHYCEAE												
..CHLOROCOCCALES												
...HYDRODICTYACEAE												
....PEDIASTRUM	--	-	--	-	--	-	--	-	550	6	--	-
...MICRACTINIACEAE												
....GOLENKINIA	--	-	140	1	--	-	--	-	--	-	--	-
....MICRACTINIUM	340	2	--	-	--	-	--	-	--	-	--	-
...OOCYSTACEAE												
....ANKISTRODESMUS	1700	8	1600	10	4000#	24	130	9	500	5	65	10
....CHODATELLA	--	-	--	-	550	3	--	-	*	0	--	-
....DICTYOSPHAERIUM	--	-	1100	7	3000#	18	150	11	500	5	--	-
....KIRCHNERIELLA	--	-	--	-	--	-	--	-	--	-	--	-
....OOCYSTIS	450	2	--	-	--	-	13	1	--	-	52	8
....SELENASTRUM	--	-	--	-	--	-	--	-	*	0	--	-
....TREUBARIA	--	-	--	-	*	0	--	-	--	-	--	-
...SCENEDESMACEAE												
....ACTINASTRUM	--	-	--	-	930	6	--	-	--	-	--	-
....CRUCIGENIA	--	-	--	-	310	2	210	14	180	2	--	-
....SCENEDESMUS	--	-	--	-	1700	10	390#	27	350	4	100#	16
....TETRASTRUM	--	-	--	-	620	4	51	4	100	1	--	-
..VOLVOCALES												
...CHLAMYDOMONADACEAE	--	-	140	1	--	-	--	-	--	-	--	-
....CARTERIA	--	-	--	-	--	-	--	-	--	-	--	-
....CHLAMYDOMONAS	1800	9	--	-	*	0	--	-	100	1	39	6
CHRYSOPHYTA												
.BACILLARIOPHYCEAE												
..CENTRALES												
...COSCINODISCACEAE												
....CYCLOTELLA	14000#	68	12000#	75	470	3	13	1	100	1	52	8
..PENNALES												
...ACHNANTHACEAE												
....ACHNANTHES	--	-	--	-	--	-	--	-	*	0	--	-
....COCCONEIS	--	-	--	-	--	-	--	-	--	-	--	-
...FRAGILARIACEAE												
....SYNEDRA	--	-	--	-	--	-	--	-	--	-	--	-
...NAVICULACEAE												
....GYROSIGMA	--	-	--	-	--	-	--	-	--	-	--	-
....NAVICULA	110	1	--	-	--	-	26	2	100	1	26	4
...NITZSCHIACEAE												
....NITZSCHIA	220	1	570	4	700	4	390#	27	1100	11	230#	37
.XANTHOPHYCEAE												
..HETEROCOCCALES												
...CHLOROTHECIACEAE												
....OPHIOCYTIUM	--	-	--	-	160	1	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)												
.CRYPTOPHYCEAE												
..CRYPTOMONADALES												
...CRYPTOCHRYSIDACEAE												
....CHROOMONAS	--	-	--	-	--	-	--	-	*	0	--	-
...CRYPTOMONADACEAE												
....CRYPTOMONAS	--	-	--	-	*	0	--	-	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)												
.CYANOPHYCEAE												
..CHROOCOCCALES												
...CHROOCOCCACEAE												
....AGMENELLUM	--	-	--	-	--	-	--	-	--	-	--	-
....ANACYSTIS	1700	8	--	-	3400#	21	39	3	350	4	52	8
..HORMOGONALES												
...NOSTOCACEAE												
....ANABAENOPSIS	--	-	--	-	--	-	--	-	660	7	--	-
...OSCILLATORIACEAE												
....LYNGBYA	--	-	--	-	--	-	--	-	1200	12	--	-
....OSCILLATORIA	--	-	--	-	--	-	--	-	3500#	37	--	-
EUGLENOPHYTA (EUGLENOIDS)												
.EUGLENOPHYCEAE												
..EUGLENALES												
...EUGLENACEAE												
....EUGLENA	110	1	140	1	--	-	26	2	76	1	--	-
....TRACHELOMONAS	--	-	290	2	470	3	26	2	50	1	--	-
PYRRHOPHYTA (FIRE ALGAE)												
.DINOPHYCEAE												
..PERIDINIALES												
...GLENODINIACEAE												
....GLENODINIUM	--	-	--	-	--	-	--	-	--	-	13	2

NOTES # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06351000 CANNONBALL RIVER BELOW BENTLEY, ND

LOCATION.--Lat 46°21'30", long 102°02'30", in SW¼SW¼ sec.6, T.133 N., R.90 W., Grant County, Hydrologic Unit 10130204, on left bank 0.25 mi (0.4 km) downstream from Thirty Mile Creek, and 2 mi (3 km) northeast of Bentley.

DRAINAGE AREA.--1,140 mi^2 (2,950 km^2), 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.

REVISED RECORDS.--WSP 1729: Drainage area.

GAGE.--Water-stage recorder at present site and datum since Oct. 1, 1951. Datum of gage is 2,252.09 ft (686.437 m) National Geodetic Vertical Datum of 1929. Prior to Nov. 7, 1947, nonrecording gage and Nov. 7, 1947, to June 16, 1952, water-stage recorder, at site 8 mi (13 km) downstream at different datum.

REMARKS.--Records good except those for the winter period, which are fair. Some diversions and some storage in small lakes above the station.

AVERAGE DISCHARGE.--36 years, 92.4 ft^3/s (2.617 m^3/s), 66,940 acre-ft/yr (82.5 hm^3/yr); median of yearly mean discharges, 69 ft^3/s (1.95 m^3/s), 50,000 acre-ft/yr (62 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 51,800 ft^3/s (1,467 m^3/s) Apr. 17, 1950, gage height, 34.0 ft (10.363 m), from floodmark in well, site and datum then in use, from rating curve extended above 12,000 ft^3/s (340 m^3/s) on basis of slope-area measurement at gage height 26.9 ft (8.199 m) and slope-area and contracted-opening measurements at gage height 34.0 ft (10.363 m); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--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 (8.199 m), site and datum then in use, discharge 15,000 ft^3/s (425 m^3/s) by slope-area measurement.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 500 ft^3/s (14.2 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Mar. 26	--	1,850	52.4	Backwater from ice		Apr. 17	1415	1,820	51.5	9.00	2.743
Apr. 11	2100	*4,190	119	13.78	4.200	July 13	0845	800	22.7	6.31	1.923

Minimum daily discharge, 7.5 ft^3/s (2.286 m^3/s) Sept. 29-30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16	16	14	11	10	10	910	143	42	24	36	12
2	16	16	14	10	10	10	960	130	41	23	41	12
3	16	16	14	10	10	10	1030	122	40	22	37	12
4	16	16	15	10	10	10	890	111	39	21	31	12
5	16	15	16	10	10	12	825	104	37	20	26	12
6	16	15	14	10	10	15	700	112	36	19	22	11
7	16	15	14	10	10	17	700	118	36	18	19	11
8	16	18	15	10	10	20	1500	121	35	18	18	11
9	16	18	15	10	10	20	2000	117	34	18	17	11
10	16	18	16	10	10	18	2500	113	33	18	16	12
11	17	18	17	10	10	20	3640	105	33	21	16	12
12	16	17	22	10	10	22	3470	97	31	121	16	12
13	16	16	20	10	10	22	1990	91	29	491	16	12
14	16	16	18	10	10	21	1150	85	27	340	15	12
15	16	17	17	10	10	21	1040	83	26	200	15	11
16	16	17	16	10	10	21	1330	79	28	86	14	11
17	17	16	15	10	10	21	1760	75	27	59	14	11
18	16	16	14	10	10	39	1670	73	26	44	14	10
19	16	15	14	10	10	150	1600	67	28	37	14	10
20	16	16	14	10	10	122	1220	53	40	32	14	9.6
21	16	16	14	10	10	313	880	60	45	28	15	9.3
22	16	16	14	10	10	314	603	59	37	26	15	9.1
23	16	16	14	10	10	322	439	57	81	24	15	8.8
24	16	15	14	10	10	546	345	55	56	22	14	8.6
25	16	15	14	10	10	911	287	52	49	21	14	8.2
26	17	15	13	10	10	1650	275	51	38	21	16	8.1
27	17	15	12	10	10	1670	241	50	33	26	15	7.9
28	17	14	11	10	10	1390	208	47	31	52	14	7.8
29	17	15	11	10	---	1050	181	45	28	51	13	7.5
30	17	14	11	10	---	931	160	44	27	45	13	7.5
31	17	---	11	10	---	864	---	43	---	38	13	---
TOTAL	504	478	453	311	280	10562	34504	2562	1093	1986	568	309.4
MEAN	16.3	15.9	14.6	10.0	10.0	341	1150	82.6	36.4	64.1	18.3	10.3
MAX	17	18	22	11	10	1670	3640	143	81	491	41	12
MIN	16	14	11	10	10	10	160	43	26	18	13	7.5
AC-FT	1000	948	899	617	555	20950	68440	5080	2170	3940	1130	614

CAL YR 1978 TOTAL 80431.0 MEAN 220 MAX 10700 MIN 10 AC-FT 159500
WTR YR 1979 TOTAL 53610.4 MEAN 147 MAX 3640 MIN 7.5 AC-FT 106300

06351680 WHITE BUTTE FORK CEDAR CREEK NEAR SCRANTON, ND

LOCATION.--Lat 46°19'20", long 102°59'45", in NW¼ sec.21, T.133 N., R.98 W., Slope County, Hydrologic Unit 10130205, on left bank 1,200 ft (366 m) downstream from county highway bridge, and 13 mi (21 km) northeast of Scranton.

DRAINAGE AREA.--42.9 mi^2 (111 km^2).

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

GAGE.--Water-stage recorder. Altitude of gage is 2,825 ft (861 m), from topographic map.

REMARKS.--Records good except those for the winter period and period of missing record, which are fair.

AVERAGE DISCHARGE.--14 years, 4.76 ft^3/s (0.135 m^3/s), 3,450 acre-ft/yr (4.25 hm^3/yr), median of yearly mean discharges, 4.54 ft^3/s (0.129 m^3/s), 3,290 acre-ft/yr (4.1 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 645 ft^3/s (18.3 m^3/s) May 8, 1970, gage height, 7.20 ft (2.19 m); maximum gage height, 7.76 ft (2.365 m) May 8, 1967; no flow for many days each year.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 50 ft^3/s (1.42 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Mar. 29	1400	--	--	[a]*7.26	2.213	Apr. 16	0500	129	3.65	4.93	1.503
Apr. 8	1800	*330	9.35	[a]7.15	2.179						

No flow for many days.

a - Backwater from ice.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.01	.10	.16	.12	.12	40	5.2	.65	.04	.02	.00
2	.00	.02	.10	.16	.12	.12	40	4.4	.60	.04	.01	.00
3	.00	.02	.10	.16	.12	.12	25	3.9	.60	.03	.01	.00
4	.00	.03	.10	.16	.12	.12	10	3.2	.60	.02	.01	.00
5	.00	.03	.10	.16	.13	.12	6.0	3.1	.55	.02	.01	.00
6	.00	.09	.10	.15	.14	.12	4.0	4.0	.55	.02	.01	.00
7	.00	.05	.10	.15	.14	.13	10	4.0	.55	.01	.00	.00
8	.00	.09	.10	.15	.14	.14	180	4.8	.55	.02	.00	.00
9	.00	.12	.10	.14	.14	.14	250	5.2	.60	.02	.00	.00
10	.00	.10	.10	.14	.14	.14	180	4.8	.47	.02	.00	.00
11	.00	.10	.12	.13	.16	.15	60	3.7	.43	.01	.00	.00
12	.00	.10	.14	.13	.16	.16	50	3.4	.39	.02	.00	.00
13	.00	.10	.13	.13	.16	.18	20	2.6	.24	.12	.00	.00
14	.00	.10	.20	.12	.20	.18	22	2.5	.12	.39	.00	.00
15	.00	.10	.22	.12	.22	.20	42	2.5	.12	.09	.00	.01
16	.00	.10	.22	.12	.20	.25	103	1.9	.12	.09	.00	.01
17	.00	.10	.22	.12	.18	.30	86	1.5	.09	.07	.00	.01
18	.00	.10	.21	.12	.15	.35	93	1.4	.09	.04	.00	.01
19	.00	.09	.21	.12	.14	.40	62	1.4	.31	.03	.00	.00
20	.00	.08	.20	.12	.14	.40	32	1.3	.60	.02	.00	.00
21	.00	.06	.20	.13	.14	.45	25	1.2	.51	.01	.00	.00
22	.00	.06	.20	.14	.14	.50	16	1.2	.39	.01	.00	.00
23	.00	.08	.20	.14	.14	.60	11	1.1	.27	.01	.00	.00
24	.00	.08	.20	.14	.13	.70	11	.98	.21	.01	.00	.00
25	.00	.09	.20	.14	.13	.80	8.5	.92	.18	.07	.00	.00
26	.00	.09	.20	.14	.13	.90	7.6	.80	.27	.35	.01	.00
27	.00	.09	.20	.14	.13	1.0	7.4	.65	.39	.31	.01	.00
28	.00	.09	.19	.14	.13	2.0	6.7	.60	.21	.21	.01	.00
29	.00	.09	.19	.13	---	20	6.3	.60	.18	.12	.01	.00
30	.00	.10	.18	.12	---	30	5.8	.65	.09	.09	.00	.00
31	.00	---	.17	.12	---	35	---	.65	---	.04	.00	---
TOTAL	.00	2.42	5.05	4.24	4.13	95.79	1420.1	74.55	10.93	2.35	.11	.04
MEAN	.000	.081	.16	.14	.15	3.09	47.3	2.40	.36	.076	.004	.001
MAX	.00	.12	.22	.16	.22	35	250	5.2	.65	.39	.02	.01
MIN	.00	.01	.10	.12	.12	.12	4.0	.60	.09	.01	.00	.00
AC-FT	.00	4.8	10	8.4	8.2	190	2820	148	22	4.7	.2	.08

CAL YR 1978 TOTAL 2834.01 MEAN 7.76 MAX 453 MIN .00 AC-FT 5620
WTR YR 1979 TOTAL 1619.71 MEAN 4.44 MAX 250 MIN .00 AC-FT 3210

06352000 CEDAR CREEK NEAR HAYNES, ND

LOCATION.--Lat 46°09'15", long 102°28'25", in W½ sec.20, T.131 N., R.94 W., Adams County, Hydrologic Unit 10130205, on left bank 30 ft (9 m) downstream from bridge on State Highway 8, and 12.5 mi (20 km) north of Haynes.

DRAINAGE AREA.--553 mi^2 (1,430 km^2).

PERIOD OF RECORD.--October 1950 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,472.90 ft (753.740 m) National Geodetic Vertical Datum of 1929, North Dakota Highway Department benchmark. Prior to May 20, 1951, nonrecording gage on former bridge 400 ft (120 m) upstream at same datum.

REMARKS.--Records good.

AVERAGE DISCHARGE.--29 years, 36.7 ft^3/s (1.039 m^3/s), 26,590 acre-ft/yr (32.8 hm^3/yr); median of yearly mean discharges, 30 ft^3/s (0.85 m^3/s), 21,700 acre-ft/yr (27 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,870 ft^3/s (223 m^3/s) Apr. 7, 1952, gage height, 21.25 ft (6.477 m); maximum gage height, 22.05 ft (6.721 m) Mar. 28, 1978, backwater from ice and snow; no flow at times in some years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Apr. 17, 1950 reached a stage of about 23 ft (7.0 m), discharge, 26,900 ft^3/s (762 m^3/s), by slope-area measurement at site 9 mi (14 km) upstream.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 400 ft^3/s (11.3 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Apr. 2 or 3	--	700	20	Backwater from ice		Apr. 18	1030	900	25.5	12.27	3.740
Apr. 11	1415	*3,840	109	[a]19.47	5.934						

Minimum daily discharge, 1.5 ft^3/s (0.042 m^3/s) Jan. 16-21.

a - Backwater from ice.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.9	4.0	4.4	4.5	2.5	4.5	520	83	15	11	3.6	2.8
2	2.9	3.8	4.4	4.0	2.5	4.5	490	75	14	9.6	4.1	2.7
3	2.9	3.8	4.2	3.5	2.5	4.5	460	65	13	8.9	4.6	2.5
4	3.0	4.1	4.4	3.0	2.5	4.5	430	58	13	7.7	4.3	2.5
5	2.8	4.1	4.6	2.5	3.0	4.5	410	53	12	6.8	3.9	2.4
6	2.9	4.1	4.6	2.0	4.0	4.5	532	55	12	6.3	3.6	2.4
7	2.9	4.1	4.4	2.0	4.5	4.5	414	53	12	5.9	3.5	2.4
8	2.9	4.3	4.4	2.0	4.5	5.0	643	53	11	5.7	3.5	2.4
9	3.0	4.8	4.4	2.0	4.5	5.5	1260	58	11	5.6	3.5	2.4
10	3.0	6.4	4.6	2.0	4.5	5.5	2120	57	11	5.3	3.3	3.5
11	3.1	6.6	6.0	2.0	4.5	5.5	3580	49	11	5.4	3.1	4.4
12	3.1	6.8	6.6	2.0	4.5	5.5	2830	51	10	5.4	3.0	4.0
13	3.2	6.6	7.0	2.0	4.5	6.0	1040	52	9.4	27	2.9	3.4
14	3.2	6.6	7.5	2.0	5.0	6.0	572	49	8.7	12	2.9	3.1
15	5.0	6.4	7.5	2.0	5.0	6.0	492	45	8.1	6.1	2.8	3.0
16	4.9	6.4	7.5	1.5	4.5	6.0	632	40	7.5	5.0	2.8	2.8
17	4.1	4.4	7.5	1.5	4.5	6.5	798	36	7.1	4.8	2.6	2.7
18	4.0	4.4	7.5	1.5	4.5	15	882	32	6.8	4.5	2.5	2.4
19	3.8	4.2	7.0	1.5	4.5	14	771	31	7.2	4.3	2.5	2.4
20	3.8	4.2	7.0	1.5	4.5	12	572	29	9.3	4.3	2.5	2.3
21	3.6	4.0	7.0	1.5	4.5	25	424	27	9.2	4.3	3.1	2.3
22	3.5	4.0	7.0	2.0	4.5	40	307	25	8.8	4.0	3.3	2.1
23	3.5	4.0	7.0	2.5	4.5	45	232	24	8.7	3.8	3.2	2.0
24	3.7	4.0	7.0	2.5	4.5	35	181	21	8.0	3.5	2.9	2.4
25	4.0	4.0	7.0	2.5	4.5	93	164	20	7.4	3.7	3.2	2.6
26	4.0	4.0	7.0	2.5	4.5	119	139	18	6.9	4.2	5.3	2.3
27	3.8	4.0	6.5	2.5	4.5	111	118	18	6.6	4.3	4.5	2.3
28	3.8	4.0	6.5	2.5	4.5	329	108	17	17	4.2	4.0	2.2
29	3.8	4.2	6.0	2.5	---	341	97	16	16	4.1	3.7	2.0
30	4.5	4.2	5.5	2.5	---	391	87	15	13	3.9	3.3	1.8
31	4.2	---	5.0	2.5	---	550	---	15	---	3.7	3.0	---
TOTAL	109.8	140.5	187.0	71.0	117.0	2207.0	21305	1240	310.7	195.3	105.0	78.5
MEAN	3.54	4.68	6.03	2.29	4.18	71.2	710	40.0	10.4	6.30	3.39	2.62
MAX	5.0	6.8	7.5	4.5	5.0	550	3580	83	17	27	5.3	4.4
MIN	2.8	3.8	4.2	1.5	2.5	4.5	87	15	6.6	3.5	2.5	1.8
AC-FT	218	279	371	141	232	4380	42260	2460	616	387	208	156

CAL YR 1978	TOTAL	39780.7	MEAN	109	MAX 6540	MIN 2.0	AC-FT	78900
WTR YR 1979	TOTAL	26066.8	MEAN	71.4	MAX 3580	MIN 1.5	AC-FT	51700

06352400 TIMBER CREEK NEAR BENTLEY, ND

LOCATION.--Lat 46°06'05", long 101°57'26", in NE¼NE¼NE¼ sec.8, T.130 N., R.90 W., Grant County, Hydrologic Unit 10130205, on left bank 100 ft (30 m) upstream from bridge on North Dakota Highway 49, 17 mi (27 km) southeast of Bentley, and 7 mi (11 km) upstream from mouth.

DRAINAGE AREA.--100 mi² (260 km²), approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1977 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 2,280 ft (695 m), from topographic map.

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

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,680 ft³/s (75.9 m³/s) July 13, 1979, gage height, 13.15 ft (4.008 m); no flow Feb. 15 to Mar. 5, 1978.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 110 ft³/s (3.12 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Mar. 31	--	200	5.66	Ice jam		Apr. 16	1930	216	6.12	5.96	1.817
Apr. 9	--	500	14.2	Ice jam		July 13	0545	*2,680	75.9	13.15	4.008

Minimum daily discharge, 0.32 ft³/s (0.009 m³/s) Oct. 2, 4, 5.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.38	1.1	1.4	.50	.50	.70	155	14	4.7	5.5	4.7	1.0
2	.32	1.2	1.4	.50	.50	.70	145	13	4.7	4.3	4.3	.90
3	.38	1.2	1.4	.50	.50	.70	130	12	4.5	3.4	4.0	.90
4	.32	1.3	1.2	.60	.50	1.0	120	11	3.9	3.1	3.4	.90
5	.32	1.4	1.0	.70	.60	1.7	115	10	3.7	2.8	3.1	.90
6	.38	1.3	1.0	.80	.70	2.0	110	18	3.5	2.3	3.0	.90
7	.38	1.3	1.0	1.0	.80	2.1	130	32	3.8	2.2	2.7	.84
8	.38	1.3	1.0	1.1	.80	2.0	250	25	3.4	1.9	2.4	.78
9	.38	1.5	1.1	1.1	.80	1.6	400	21	3.4	1.6	2.0	.76
10	.38	1.0	1.2	1.1	.80	1.2	430	20	2.8	1.6	1.9	.99
11	.38	.90	1.3	1.0	.80	2.0	300	19	2.2	42	1.9	1.5
12	.38	.80	1.4	.80	.80	3.2	200	17	2.2	254	1.5	1.3
13	.38	2.0	1.5	.70	.90	2.6	130	15	2.2	1670	1.2	1.0
14	.43	2.9	1.6	.80	.90	2.5	120	14	1.5	561	1.2	1.1
15	.43	2.8	1.7	.80	1.0	3.0	135	13	1.1	249	1.2	.86
16	.66	2.8	1.8	.90	1.0	5.0	179	12	.78	146	1.1	.89
17	.66	2.8	1.8	1.0	1.0	9.0	196	11	.84	98	.99	.89
18	.71	2.2	1.8	1.2	1.0	8.5	170	10	.84	61	.91	.88
19	1.1	1.0	1.8	1.4	1.0	7.1	121	9.7	5.7	42	.90	.85
20	1.9	.80	1.8	1.5	1.0	6.8	138	9.4	17	31	1.0	.79
21	1.1	1.0	1.8	1.6	1.0	10	125	8.9	7.8	23	2.0	.77
22	.71	1.2	1.7	1.6	1.0	20	75	8.7	8.1	17	4.5	.70
23	.60	1.3	1.6	1.4	1.0	27	44	8.5	23	13	2.5	.67
24	.60	1.4	1.5	1.3	1.0	33	32	8.9	35	9.6	2.0	.66
25	.66	1.5	1.4	1.1	1.0	36	27	8.9	34	7.5	1.4	.59
26	3.4	1.5	1.2	1.0	.90	30	23	8.5	27	6.4	1.1	.58
27	1.7	1.5	1.1	.80	.80	25	21	7.8	19	5.6	1.1	.56
28	1.1	1.5	1.0	.80	.80	23	19	8.2	13	5.0	1.1	.54
29	.99	1.5	.80	.60	---	21	17	6.2	10	4.3	1.0	.54
30	.99	1.5	.60	.60	---	70	15	5.6	7.4	5.4	1.0	.52
31	.99	---	.50	.50	---	170	---	4.7	---	5.7	1.0	---
TOTAL	23.49	45.50	41.40	29.30	23.40	528.60	4072	391.0	257.06	3285.2	62.10	25.06
MEAN	.76	1.52	1.34	.95	.84	17.1	136	12.6	8.57	106	2.00	.84
MAX	3.4	2.9	1.8	1.6	1.0	170	430	32	35	1670	4.7	1.5
MIN	.32	.80	.50	.50	.50	.70	15	4.7	.78	1.6	.90	.52
AC-FT	47	90	82	58	46	1050	8080	776	510	6520	123	50

CAL YR 1978 TOTAL 11485.05 MEAN 31.5 MAX 1980 MIN .00 AC-FT 22780
WTR YR 1979 TOTAL 8784.11 MEAN 24.1 MAX 1670 MIN .32 AC-FT 17420

06352400 TIMBER CREEK NEAR BENTLEY, ND--Continued

WATER-QUALITY RECORDS

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS (MG/L AS CACO3) (00900)
OCT											
04...	0930	.32	2240	8.3	10.0	9.0	11.0	105	560	170	630
NOV											
14...	0930	2.9	4250	8.2	10.0	.0	11.5	85	K3	120	1100
DEC											
14...	1000	1.6	3530	7.5	-2.0	-.5	10.0	75	K1	34	880
JAN											
23...	0920	1.4	3780	7.9	-25.0	.0	--	--	K3	K4	1000
FEB											
06...	0900	.72	3690	7.8	-20.0	.0	6.8	51	K5	K10	940
MAR											
28...	1130	23	--	--	-3.5	.0	--	--	--	--	--
APR											
11...	1140	293	810	7.8	5.0	.0	10.3	77	153	6100	230
MAY											
01...	1030	15	2610	8.2	9.0	8.0	11.4	106	K8	54	880
09...	0915	21	3400	8.2	-2.5	5.5	11.5	100	190	270	950
JUN											
14...	1605	1.5	3690	8.4	23.0	26.0	132	176	440	290	1100
JUL											
17...	1135	102	1040	7.9	26.5	20.5	6.1	71	200	370	290
AUG											
06...	1815	3.2	--	--	33.5	28.0	--	--	--	--	--
*09...	1030	2.4	2410	8.2	23.5	21.0	8.5	101	210	480	--
SEP											
07...	0910	1.1	2670	8.2	15.0	15.5	7.4	80	K600	490	710

DATE	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE (MG/L AS HCO3) (00440)	CAR-BONATE (MG/L AS CO3) (00445)	ALKA-LINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)
OCT											
04...	250	100	93	310	51	5.4	9.9	464	0	380	3.7
NOV											
14...	700	150	170	660	57	8.8	15	483	0	400	4.9
DEC											
14...	330	140	130	600	59	8.8	15	670	0	820	34
JAN											
23...	580	170	140	550	54	7.6	13	515	0	420	10
FEB											
06...	330	180	120	560	56	7.9	12	750	0	620	19
MAR											
28...	--	--	--	--	--	--	--	--	--	--	--
APR											
11...	130	39	32	70	39	2.0	9.0	124	0	100	3.1
MAY											
01...	570	140	130	330	66	4.8	18	386	0	320	3.9
09...	580	150	140	430	49	6.1	17	451	0	370	4.6
JUN											
14...	670	160	170	550	52	7.2	15	512	8	433	3.5
JUL											
17...	140	53	38	92	41	2.4	1.2	183	0	150	3.7
AUG											
06...	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	498	0	410	5.0
SEP											
07...	310	120	100	350	51	5.7	12	490	0	400	4.9

* - Laboratory analysis incomplete at date of printing; data will be available via computer retrieval from WATSTORE files.

K - Results based on colony count outside the acceptable range (non-ideal colony count).

06352400 TIMBER CREEK NEAR BENTLEY, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)
OCT											
04...	890	15	.3	5.4	1660	1650	2.24	1.43	.01	.00	.62
NOV											
14...	2100	24	.3	2.9	3480	3360	4.57	26.3	2.1	.05	1.2
DEC											
14...	1600	16	.4	7.7	2880	2840	3.86	12.5	2.3	.14	.85
JAN											
23...	1600	19	.4	13	3010	2760	3.75	10.4	4.8	.37	1.0
FEB											
06...	1500	18	.4	14	3040	2780	3.78	5.40	4.0	.18	.59
MAR											
28...	--	--	--	--	--	--	--	--	--	--	--
APR											
11...	270	3.4	.1	8.3	531	494	.67	391	.96	.15	.78
MAY											
01...	600	510	.2	7.3	2170	1930	2.62	78.2	.08	.05	1.1
09...	1400	16	.3	4.5	2770	2380	3.24	136	.07	.08	1.2
JUN											
14...	1700	13	.3	.9	3000	2870	3.90	11.6	.27	.08	1.1
JUL											
17...	380	4.5	.2	13	730	673	.92	185	.06	.07	1.3
AUG											
06...	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	.10	.03	1.1
SEP											
07...	1000	14	.3	.9	1990	1840	2.50	5.46	.02	.05	.53

DATE	NITRO-GEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	ARSENIC TOTAL IN BOT-TOM MA-TERIAL (UG/G AS AS) (01003)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)
OCT											
04...	.62	.63	2.8	.02	.01	--	--	--	--	--	--
NOV											
14...	1.2	3.3	15	.04	.02	--	--	--	--	--	--
DEC											
14...	.99	3.3	15	.03	.02	--	--	--	--	--	--
JAN											
23...	1.4	6.2	27	.02	.01	--	--	--	--	--	--
FEB											
06...	.77	4.8	21	.03	.02	--	--	--	--	--	--
MAR											
28...	--	--	--	--	--	--	--	--	--	--	--
APR											
11...	.93	1.9	8.4	1.3	.05	50	2	1	13	70	40
MAY											
01...	1.1	1.2	5.2	.05	.03	--	--	--	--	--	--
09...	1.3	1.4	6.1	.06	.02	--	--	--	--	--	--
JUN											
14...	1.2	1.5	6.5	.01	.01	--	--	--	--	--	--
JUL											
17...	1.4	1.5	6.5	.18	.08	30	--	2	--	--	80
AUG											
06...	--	--	--	--	--	--	--	--	--	--	--
09...	1.1	1.2	5.3	.06	.02	--	--	--	18	--	--
SEP											
07...	.58	.60	2.7	.03	.00	--	--	--	--	--	--

06352400 TIMBER CREEK NEAR BENTLEY, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	BARIUM, RECOV. FM BOTTOM MATERIAL (UG/G AS BA) (01008)	BERYLLIUM, TOTAL RECOVERABLE (UG/L AS BE) (01012)	BERYLLIUM, DISSOLVED (UG/L AS BE) (01010)	BERYLLIUM, RECOV. FM BOTTOM MATERIAL (UG/G) (01013)	BORON, DISSOLVED (UG/L AS B) (01020)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) (01034)	CHROMIUM, DISSOLVED (UG/L AS CR) (01030)	CHROMIUM, RECOV. FM BOTTOM MATERIAL (UG/G) (01029)	COBALT, TOTAL RECOVERABLE (UG/L AS CO) (01037)	COBALT, DISSOLVED (UG/L AS CO) (01035)	COBALT, RECOV. FM BOTTOM MATERIAL (UG/G AS CO) (01038)
OCT											
04...	--	--	--	--	650	--	--	--	--	--	--
NOV											
14...	--	--	--	--	1300	--	--	--	--	--	--
DEC											
14...	--	--	--	--	890	--	--	--	--	--	--
JAN											
23...	--	--	--	--	780	--	--	--	--	--	--
FEB											
06...	--	--	--	--	--	--	--	--	--	--	--
MAR											
28...	--	--	--	--	--	--	--	--	--	--	--
APR											
11...	84	0	<1	1	230	10	0	4	3	<3	10
MAY											
01...	--	--	--	--	780	--	--	--	--	--	--
09...	--	--	--	--	700	--	--	--	--	--	--
JUN											
14...	--	--	--	--	980	--	--	--	--	--	--
JUL											
17...	--	--	<1	--	470	--	0	--	--	<3	--
AUG											
06...	--	--	--	--	--	--	--	--	--	--	--
09...	100	--	--	0	--	--	--	10	--	--	5
SEP											
07...	--	--	--	--	560	--	--	--	--	--	--

DATE	COPPER, TOTAL RECOVERABLE (UG/L AS CU) (01042)	COPPER, DISSOLVED (UG/L AS CU) (01040)	COPPER, RECOV. FM BOTTOM MATERIAL (UG/G AS CU) (01043)	IRON, DISSOLVED (UG/L AS FE) (01046)	LITHIUM TOTAL RECOVERABLE (UG/L AS LI) (01132)	LITHIUM DISSOLVED (UG/L AS LI) (01130)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN) (01055)	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	MANGANESE, RECOV. FM BOTTOM MATERIAL (UG/G) (01053)	MERCURY TOTAL RECOVERABLE (UG/L AS HG) (71900)	MERCURY DISSOLVED (UG/L AS HG) (71890)
OCT											
04...	--	--	--	20	--	--	--	--	--	--	--
NOV											
14...	--	--	--	30	--	--	--	--	--	--	--
DEC											
14...	--	--	--	10	--	--	--	--	--	--	--
JAN											
23...	--	--	--	50	--	--	--	--	--	--	--
FEB											
06...	--	--	--	--	--	--	--	--	--	--	--
MAR											
28...	--	--	--	--	--	--	--	--	--	--	--
APR											
11...	10	4	7	200	20	20	370	230	200	.1	.1
MAY											
01...	--	--	--	50	--	--	--	--	--	--	--
09...	--	--	--	190	--	--	--	--	--	--	--
JUN											
14...	--	--	--	10	--	--	--	--	--	--	--
JUL											
17...	--	4	--	70	--	30	--	110	--	--	.3
AUG											
06...	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	9	--	--	--	--	--	550	--	--
SEP											
07...	--	--	--	10	--	--	--	--	--	--	--

DATE	MERCURY RECOV. FM BOTTOM MATERIAL (UG/G AS HG) (71921)	MOLYBDENUM, TOTAL RECOVERABLE (UG/L AS MO) (01062)	MOLYBDENUM, RECOV. FM BOTTOM MATERIAL (UG/G) (01063)	MOLYBDENUM, DISSOLVED (UG/L AS MO) (01060)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI) (01067)	NICKEL, DISSOLVED (UG/L AS NI) (01065)	NICKEL, RECOV. FM BOTTOM MATERIAL (UG/G AS NI) (01068)	SELENIUM, TOTAL (UG/L AS SE) (01147)	SELENIUM, DISSOLVED (UG/L AS SE) (01145)	SELENIUM, TOTAL IN BOTTOM MATERIAL (UG/G) (01148)	VANADIUM, DISSOLVED (UG/L AS V) (01085)
APR											
11...	.02	3	1	<10	8	2	0	1	1	0	.2
JUL											
17...	--	--	--	<10	--	2	--	--	1	--	<1.0
AUG											
06...	--	--	--	--	--	--	--	--	--	--	--
09...	.04	--	0	--	--	--	10	--	--	0	--
SEP											
07...	--	--	--	--	--	--	--	--	--	--	--

06352400 TIMBER CREEK NEAR BENTLEY, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ZINC, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS ZN) (01093)	GROSS ALPHA, DIS-SOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DIS-SOLVED (PCI/L AS CS-137) (03515)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C) (00689)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
OCT											
04...	--	--	--	<17	<.4	14	.5	5.5	.4	46	.04
NOV											
14...	--	--	--	--	--	--	--	19	.7	12	.09
DEC											
14...	--	--	--	<29	<.4	18	.4	12	.5	42	.18
JAN											
23...	--	--	--	--	--	--	--	13	.7	66	.25
FEB											
06...	--	--	--	--	--	--	--	--	--	100	.19
MAR											
28...	--	--	--	--	--	--	--	--	--	19	1.2
APR											
11...	30	<3	20	--	--	--	--	25	2.7	120	95
MAY											
01...	--	--	--	<38	.4	16	1.0	20	1.8	16	.65
09...	--	--	--	--	--	--	--	23	1.3	50	2.8
JUN											
14...	--	--	--	--	--	--	--	26	.7	17	.07
JUL											
17...	--	<3	--	--	--	--	--	14	1.7	106	29
AUG											
06...	--	--	--	--	--	--	--	--	--	31	.27
09...	--	--	33	<32	.5	23	.9	--	--	77	.50
SEP											
07...	--	--	--	--	--	--	--	12	.2	17	.05

DATE	BED MAT. FALL DIAM. % FINER THAN .062 MM (80158)	BED MAT. FALL DIAM. % FINER THAN .125 MM (80159)	BED MAT. FALL DIAM. % FINER THAN .250 MM (80160)	BED MAT. FALL DIAM. % FINER THAN .500 MM (80161)	BED MAT. FALL DIAM. % FINER THAN 1.00 MM (80162)	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM (80169)
APR						
11...	54	76	97	98	99	100

DATE	LENGTH OF EXPO-SURE (DAYS) (00022)	CHLOR-A PERI-PHYTON CHROMO-GRAPHIC FLUORUM (MG/M2) (70957)	CHLOR-B PERI-PHYTON CHROMO-GRAPHIC FLUORUM (MG/M2) (70958)	PERI-PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M (00573)	PERI-PHYTON BIOMASS ASH WEIGHT G/SQ M (00572)
OCT					
04...	21	2.11	.370	2.05	1.20
AUG					
09...	14	5.15	.000	17.6	15.8
SEP					
07...	29	13.5	5.82	3.54	2.68

06352400 TIMBER CREEK NEAR BENTLEY, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1978 TO SEPTEMBER 1979

DATE	OCT 4,78	NOV 14,78	DEC 14,78	JAN 23,79	FEB 6,79	APR 11,79
TIME	0930	0930	1000	0920	0900	1140
TOTAL CELLS/ML	200	13000	2100	350	110	970
DIVERSITY: DIVISION	1.0	1.6	1.1	1.1	0.7	1.5
.CLASS	1.0	1.6	1.1	1.1	0.7	1.5
..ORDER	1.6	1.8	1.2	1.7	0.7	2.1
...FAMILY	2.5	1.8	1.4	2.5	1.6	2.5
....GENUS	2.6	1.8	1.4	2.7	1.6	0.0

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)												
.CHLOROPHYCEAE												
..CHLOROCOCCALES												
...CHLOROCOCCACEAE												
....CHLOROCOCCUM	--	-	--	-	--	-	--	-	--	-	--	-
...OOCYSTACEAE												
....ANKISTRODESMUS	4	2	6300#	47	1500#	71	86#	25	50#	45	350#	36
....CHLORELLA	--	-	--	-	--	-	--	-	--	-	--	-
....DICTYOSPHAERIUM	--	-	--	-	--	-	--	-	--	-	--	-
....KIRCHNERIELLA	--	-	--	-	--	-	--	-	--	-	14	1
....SELENASTRUM	--	-	--	-	--	-	--	-	--	-	--	-
....TETRAEDRON	--	-	--	-	--	-	--	-	--	-	--	-
....TREUBARIA	--	-	--	-	--	-	--	-	--	-	--	-
...SCENEDESMACEAE												
....ACTINASTRUM	--	-	--	-	--	-	--	-	--	-	--	-
....CRUCIGENIA	--	-	--	-	--	-	20	6	--	-	--	-
....SCENEDESMUS	21	11	--	-	73	4	110#	32	45#	41	87	9
....TETRASTRUM	--	-	--	-	--	-	--	-	--	-	--	-
..VOLVOCALES												
...CHLAMYDOMONADACEAE	--	-	--	-	--	-	--	-	--	-	87	9
....CARTERIA	--	-	--	-	--	-	--	-	--	-	--	-
....CHLAMYDOMONAS	57#	29	--	-	--	-	30	9	--	-	--	-
..ZYGNEMATALES												
...DESMIDIACEAE												
....CLOSTERIUM	--	-	--	-	--	-	--	-	--	-	43	4
....STAURASTRUM	--	-	120	1	--	-	--	-	--	-	--	-
CHRYSOPHYTA												
.BACILLARIOPHYCEAE												
..CENTRALES												
...COSCINODISCACEAE												
....CYCLOTELLA	11	5	4100#	31	18	1	25	7	--	-	14	1
....MELOSIRA	--	-	--	-	--	-	--	-	--	-	--	-
..PENNALES												
...ACHNANTHACEAE												
....COCCONEIS	11	5	120	1	--	-	--	-	--	-	--	-
....RHOICOSPHENIA	7	4	--	-	--	-	--	-	--	-	--	-
...FRAGILARIACEAE												
....FRAGILARIA	--	-	--	-	--	-	--	-	--	-	--	-
....SYNEDRA	--	-	--	-	--	-	10	3	--	-	--	-
...GOMPHONEMATACEAE												
....GOMPHONEMA	4	2	--	-	--	-	--	-	--	-	--	-
...NAVICULACEAE												
....GYROSIGMA	--	-	--	-	--	-	--	-	--	-	--	-
....NAVICULA	21	11	--	-	18	1	10	3	--	-	29	3
...NITZSCHIACEAE												
....NITZSCHIA	60#	31	--	-	18	1	35	10	10	9	58	6
CRYPTOPHYTA (CRYPTOMONADS)												
.CRYPTOPHYCEAE												
..CRYPTOMONADALES												
...CRYPTOMONADACEAE												
....CRYPTOMONAS	--	-	--	-	--	-	--	-	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)												
.CYANOPHYCEAE												
..CHROOCOCCALES												
...CHROOCOCCACEAE												
....ANACYSTIS	--	-	500	4	36	2	20	6	--	-	--	-
..NOSTOCALES												
...OSCILLATORIACEAE												
....LYNGBYA	--	-	--	-	91	4	--	-	--	-	230#	24
....OSCILLATORIA	--	-	--	-	--	-	--	-	--	-	--	-
....SPIRULINA	--	-	--	-	--	-	--	-	--	-	14	1
EUGLENOPHYTA (EUGLENOIDS)												
.EUGLENOPHYCEAE												
..EUGLENALES												
...EUGLENACEAE												
....EUGLENA	--	-	--	-	--	-	--	-	--	-	--	-
....EUTREPTIA	--	-	--	-	--	-	--	-	--	-	--	-
....PHACUS	--	-	--	-	--	-	--	-	--	-	--	-
....TRACHELOMONAS	--	-	2200#	17	350#	17	--	-	5	5	43	4
PYRRHOPHYTA (FIRE ALGAE)												
.DINOPHYCEAE												
..PERIDINIALES												
...GLENODINIACEAE												
....GLENODINIUM	--	-	--	-	--	-	--	-	--	-	--	-

NOTE: # = DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* = OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06352400 TIMBER CREEK NEAR BENTLEY, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1978 TO SEPTEMBER 1979

DATE	MAY 1,79	MAY 9,79	JUN 14,79	JUL 17,79	AUG 9,79	SEP 7,79
TIME	1030	0915	1605	1135	1030	0910
TOTAL CELLS/ML	1900	2000	1900	140	29000	1400
DIVERSITY: DIVISION	1.9	1.3	1.2	1.1	1.7	1.6
.CLASS	1.9	1.3	1.2	1.1	1.7	1.6
..ORDER	2.4	1.7	1.7	1.2	2.1	2.0
...FAMILY	2.5	1.7	1.9	1.4	2.4	2.9
....GENUS	2.7	2.2	2.0	1.5	2.7	3.0

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)												
.CHLOROPHYCEAE												
..CHLOROCOCCALES												
...CHLOROCOCCACEAE												
....CHLOROCOCCUM	--	-	--	-	--	-	--	-	--	-	46	3
...GOCYSTACEAE												
....ANKISTRODESMUS	70	4	120	6	39	2	--	-	860	3	73	5
....CHLORELLA	--	-	--	-	--	-	--	-	--	-	55	4
....DICTYOSPHAERIUM	--	-	--	-	51	3	--	-	--	-	--	-
....KIRCHNERIELLA	--	-	370#	18	--	-	--	-	--	-	--	-
....SELENASTRUM	--	-	210	11	120	6	--	-	--	-	--	-
....TETRAEDRON	--	-	--	-	--	-	--	-	350	1	--	-
....TREUBARIA	--	-	--	-	--	-	--	-	520	2	--	-
...SCENEDESMACEAE												
....ACTINASTRUM	--	-	--	-	--	-	--	-	1400	5	--	-
....CRUCIGENIA	--	-	--	-	--	-	--	-	--	-	--	-
....SCENEDESMUS	--	-	--	-	150	8	8	6	3100	11	200	15
....TETRASTRUM	--	-	--	-	--	-	5	4	--	-	--	-
..VOLVOCALES												
...CHLAMYDOMONADACEAE	--	-	--	-	--	-	--	-	--	-	--	-
....CARTERIA	28	1	--	-	--	-	--	-	--	-	--	-
....CHLAMYDOMONAS	210	11	97	5	--	-	--	-	690	2	--	-
..ZYGNEMATALES												
...DESMIDIACEAE												
....CLOSTERIUM	--	-	--	-	--	-	--	-	--	-	--	-
....STAURASTRUM	--	-	--	-	--	-	--	-	--	-	--	-
CHRYSOPHYTA												
.BACILLARIOPHYCEAE												
..CENTRALES												
...COSCINODISCACEAE												
....CYCLOTELLA	280	14	39	2	100	6	5	4	13000#	45	180	13
....MELOSIRA	56	3	--	-	--	-	--	-	--	-	--	-
..PENNALES												
...ACHNANTHACEAE												
....COCCONEIS	--	-	--	-	--	-	--	-	350	1	270#	20
....RHOICOSPHENIA	--	-	--	-	--	-	--	-	--	-	--	-
...FRAGILARIACEAE												
....FRAGILARIA	--	-	--	-	--	-	3	2	--	-	--	-
....SYNEDRA	--	-	--	-	--	-	--	-	--	-	--	-
...GOMPHONEMATACEAE												
....GOMPHONEMA	--	-	--	-	--	-	--	-	--	-	18	1
...NAVICULACEAE												
....GYROSIGMA	--	-	--	-	--	-	1	1	--	-	--	-
....NAVICULA	28	1	19	1	--	-	4	3	170	1	46	3
...NITZSCHIACEAE												
....NITZSCHIA	400#	21	970#	48	39	2	9	7	860	3	130	9
CRYPTOPHYTA (CRYPTOMONADS)												
.CRYPTOPHYCEAE												
..CRYPTOMONADALES												
...CRYPTOMONADACEAE												
....CRYPTOMONAS	--	-	--	-	26	1	--	-	170	1	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)												
.CYANOPHYCEAE												
..CHROOCOCCALES												
...CHROOCOCCACEAE												
....ANACYSTIS	--	-	--	-	170	9	--	-	520	2	--	-
..HORMOGONALES												
...OSCILLATORIACEAE												
....LYNGBYA	--	-	--	-	--	-	--	-	--	-	--	-
....OSCILLATORIA	430#	22	--	-	1200#	62	100#	75	5500#	19	330#	24
....SPIRULINA	--	-	--	-	--	-	--	-	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)												
.EUGLENOPHYCEAE												
..EUGLENALES												
...EUGLENACEAE												
....EUGLENA	--	-	--	-	--	-	--	-	350	1	--	-
....EUTREPTIA	--	-	--	-	--	-	--	-	--	-	9	1
....PHACUS	--	-	--	-	--	-	--	-	170	1	--	-
....TRACHELOMONAS	420#	22	190	10	13	1	--	-	860	3	--	-
PYRRHOPHYTA (FIRE ALGAE)												
.DINOPHYCEAE												
..PERIDINIALES												
...GLENODINIACEAE												
....GLENODINIUM	--	-	--	-	--	-	--	-	--	-	9	1

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06353000 CEDAR CREEK NEAR RALEIGH, ND

LOCATION.--Lat 46°05'30", long 101°20'00", in NE¼SE¼ sec.8, T.130 N., R.85 W., Grant County, Hydrologic Unit 10130205, on left bank at upstream side of bridge on N.D. Highway 31, 6 mi (10 km) upstream from mouth, and 19 mi (30 km) south of Raleigh.

DRAINAGE AREA.--1,750 mi^2 (4,530 km^2), 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 (573.399 m) National Geodetic Vertical Datum of 1929. Prior to June 6, 1962, nonrecording gage at same site and datum, and June 6, 1962, to Sept. 7, 1972, at site 1 mi (2 km) upstream at datum 9.58 ft (2.920 m) higher.

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

AVERAGE DISCHARGE.--17 years (1962-79), 104 ft^3/s (2.945 m^3/s), 75,350 acre-ft/yr (92.9 hm^3/yr); median of yearly mean discharges, 82 ft^3/s (2.32 m^3/s), 59,400 acre-ft/yr (73 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,400 ft^3/s (379 m^3/s) Mar. 28, 1978, gage height, 13.70 ft (4.176 m); no flow at times in most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known since 1950, about 18 ft (5.486 m) Apr. 18, 1950, discharge 45,000 ft^3/s (1,270 m^3/s), on basis of slope-area measurement 5 mi (8 km) upstream.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 700 ft^3/s (19.8 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Apr. 8	--	1,500	42.5	Backwater from ice		July 13	1300	*3,810	108	*8.71	2.655
Apr. 15	1100	3,200	90.6	8.14	2.481						

Minimum daily discharge, 1.6 ft^3/s (0.045 m^3/s) Mar. 4-8.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.6	9.6	9.0	6.0	2.6	2.0	160	236	45	45	38	15
2	9.0	10	8.5	5.5	2.6	1.8	180	216	44	40	36	14
3	9.0	11	8.5	5.0	2.6	1.8	300	196	42	36	34	13
4	8.6	10	8.5	5.0	2.6	1.6	510	178	40	36	33	12
5	8.4	10	8.5	5.0	2.6	1.6	680	168	39	34	33	11
6	8.4	10	8.0	4.5	2.5	1.6	680	183	37	32	34	10
7	8.4	10	8.0	4.5	2.5	1.6	1100	160	37	30	34	10
8	8.4	10	8.0	4.5	2.5	1.6	1430	156	36	36	34	10
9	8.2	10	7.0	4.5	2.5	3.0	1360	178	35	40	34	10
10	8.2	10	8.0	4.0	2.5	3.0	830	180	34	60	33	10
11	7.8	10	9.0	4.0	2.4	4.0	940	166	34	79	32	10
12	7.8	10	10	4.0	2.4	3.8	1000	151	33	746	32	10
13	8.4	10	10	4.0	2.4	3.8	2000	139	32	2400	32	10
14	8.4	11	10	4.0	2.4	3.8	2550	130	32	1580	32	10
15	8.4	11	10	4.0	2.4	3.5	2920	120	30	1240	31	10
16	8.2	11	12	4.0	2.3	3.5	1780	112	28	557	30	9.5
17	8.0	11	11	4.0	2.3	3.5	1270	107	28	380	29	9.0
18	8.0	11	10	3.5	2.3	100	1360	102	28	286	29	9.0
19	8.2	11	9.5	3.5	2.3	80	1360	93	28	226	28	8.5
20	8.4	11	9.5	3.5	2.3	60	1270	89	33	166	28	8.5
21	8.4	11	9.0	3.5	2.2	70	1290	81	61	120	201	8.5
22	8.4	10	9.0	3.0	2.2	90	1080	76	66	92	220	8.0
23	8.6	10	9.0	3.0	2.2	90	780	73	65	73	62	8.0
24	8.6	10	9.0	3.0	2.1	90	600	66	49	58	35	7.5
25	8.8	10	8.5	2.9	2.1	100	485	61	42	49	25	7.5
26	8.8	10	8.0	2.9	2.1	70	423	57	110	46	25	7.0
27	9.0	10	8.0	2.8	2.0	70	353	55	148	93	25	7.0
28	10	9.0	7.5	2.8	2.0	50	311	52	105	57	22	6.5
29	10	9.5	7.5	2.8	---	50	289	49	76	54	20	6.5
30	10	9.0	7.0	2.7	---	350	263	48	55	103	18	6.0
31	9.6	---	6.0	2.7	---	400	---	46	---	44	16	---
TOTAL	269.0	306.3	271.5	119.1	65.9	1715.1	29574	3724	1472	8818	1315	282.0
MEAN	8.68	10.2	8.76	3.84	2.35	55.3	986	120	49.1	284	42.4	9.40
MAX	10	11	12	6.0	2.6	400	2920	236	148	2400	220	15
MIN	7.8	9.0	6.0	2.7	2.0	1.6	160	46	28	30	16	6.0
AC-FT	534	608	539	236	131	3400	58660	7390	2920	17490	2610	559

CAL YR 1978 TOTAL 99561.90 MEAN 273 MAX 10900 MIN .10 AC-FT 197500
WTR YR 1979 TOTAL 47931.90 MEAN 131 MAX 2920 MIN 1.6 AC-FT 95070

CANNONBALL RIVER BASIN

06354000 CANNONBALL RIVER AT BREIEN, ND

LOCATION.--Lat 46°22'33", long 100°56'03", in sec.36, T.134 N., R.82 W., Morton County, Hydrologic Unit 10130206, on left bank at downstream side of bridge on State Highway 6, 1,500 ft (460 m) downstream from Louise Creek, and 0.6 mi (1.0 km) southeast of Breien. Prior to June 12, 1973, at site 600 ft (180 m) upstream on right bank.

DRAINAGE AREA.--4,100 mi^2 (10,600 km^2), approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1934 to current year.

REVISED RECORDS.--WSP 786: 1934. WSP 1146: 1943. WSP 1279: 1936-37(M), 1947(M). WSP 1509: 1955(M).

GAGE.--Water-stage recorder. Datum of gage is 1,675.54 ft (510.705 m) National Geodetic Vertical Datum of 1929. Prior to June 12, 1973, at site 600 ft (180 m) upstream at datum 1.00 ft (0.305 m) higher.

REMARKS.--Records good except those for the winter period, which are fair. Some storage in several small lakes above station.

AVERAGE DISCHARGE.--45 years, 253 ft^3/s (7.165 m^3/s), 183,300 acre-ft/yr (226 hm^3/yr); median of yearly mean discharges, 190 ft^3/s (5.38 m^3/s), 138,000 acre-ft/yr (170 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 94,800 ft^3/s (2,680 m^3/s) Apr. 19, 1950, gage height, 22.30 ft (6.797 m), from floodmarks, from rating curve extended above 16,000 ft^3/s (453 m^3/s) on basis of slope-area and contracted-opening of peak flow, site and datum then in use; no flow at times in some years.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,000 ft^3/s (28.3 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Apr. 13	0630	*6,770	192	9.62	2.932	July 14	0700	4,330	123	7.63	2.326
Apr. 18	1800	6,150	174	9.18	2.798						

Minimum daily discharge, 8.0 ft^3/s (0.226 m^3/s) Feb. 16 to Mar. 11.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	42	40	48	26	9.5	8.0	1690	658	135	124	246	60
2	40	42	44	24	9.5	8.0	1520	604	131	103	177	58
3	39	43	40	24	9.5	8.0	1700	550	126	90	140	53
4	39	43	40	24	9.0	8.0	1940	505	122	81	119	49
5	39	42	40	24	9.0	8.0	1970	470	117	73	105	45
6	38	42	38	24	9.0	8.0	1790	515	111	66	92	44
7	37	44	38	24	9.0	8.0	1800	515	107	63	92	42
8	36	44	36	24	8.5	8.0	2040	480	105	62	88	42
9	36	44	36	22	8.5	8.0	2100	460	103	62	77	40
10	36	51	36	20	8.5	8.0	3000	475	101	62	71	42
11	35	34	36	19	8.5	8.0	5180	465	97	62	63	42
12	33	48	36	18	8.5	9.0	5930	430	95	640	58	42
13	33	51	36	17	8.5	10	6560	405	90	2220	53	42
14	33	59	36	16	8.5	12	5770	376	83	3510	55	42
15	33	56	36	15	8.5	15	5250	353	79	2620	55	42
16	35	52	36	14	8.0	50	4470	331	76	1730	53	42
17	35	52	36	14	8.0	80	4180	303	73	1110	50	39
18	36	52	36	14	8.0	120	5500	284	71	796	50	38
19	37	50	36	14	8.0	280	4860	267	71	570	48	38
20	38	50	36	14	8.0	230	3760	256	97	435	49	37
21	39	48	36	14	8.0	190	3240	242	119	327	74	37
22	38	48	36	14	8.0	250	2690	225	135	256	317	37
23	37	48	36	14	8.0	230	2160	213	158	222	315	35
24	37	48	34	13	8.0	210	1700	195	145	171	158	35
25	38	48	34	13	8.0	200	1380	183	142	145	107	34
26	39	48	32	13	8.0	190	1180	177	126	129	86	31
27	39	48	32	12	8.0	450	1020	168	186	150	76	28
28	39	48	32	12	8.0	1000	904	160	242	216	90	27
29	39	48	30	11	---	1300	832	150	186	242	97	26
30	39	48	30	11	---	1660	748	148	150	250	69	26
31	40	---	28	10	---	1590	---	140	---	400	62	---
TOTAL	1154	1419	1116	528	236.5	8164.0	86864	10703	3579	16987	3192	1195
MEAN	37.2	47.3	36.0	17.0	8.45	263	2895	345	119	548	103	39.8
MAX	42	59	48	26	9.5	1660	6560	658	242	3510	317	60
MIN	33	34	28	10	8.0	8.0	748	140	71	62	48	26
AC-FT	2290	2810	2210	1050	469	16190	172300	21230	7100	33690	6330	2370

CAL YR 1978 TOTAL 255758.5 MEAN 701 MAX 21900 MIN 7.5 AC-FT 507300
WTR YR 1979 TOTAL 135137.5 MEAN 370 MAX 6560 MIN 8.0 AC-FT 268000

06354000 CANNONBALL RIVER AT BREIEN, ND--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1946-50 (partial-record station), 1970-72, 1974 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: July 1972 to September 1974 (weekly); October 1974 to current year.
WATER TEMPERATURES: July 1972 to September 1974 (weekly); October 1974 to current year.

REMARKS.--Sediment records from May 1948 to September 1951, July 1959 to September 1971 are available from U.S. Corps of Engineers, Omaha, NE

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 4,500 micromhos Jan. 12, 1977; minimum daily, 300 micromhos Sept. 23, 1977 and March 23, 1978.
WATER TEMPERATURES: Maximum daily, 30.0°C on July 23, 1977, July 3, 8, 10, 21, 1979; minimum daily, 0.0°C on many days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 3,400 micromhos Feb. 4-6; minimum daily, 560 micromhos Apr. 18.
WATER TEMPERATURES: Maximum daily, 30.0°C July 3, 8, 10, 21; minimum daily, 0.0°C on many days during winter months.

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)
OCT											
26...	1230	39	1980	8.5	10.0	6.0	4.5	11.6	120	K11	48
NOV											
28...	1230	46	2300	8.2	-6.0	.0	2.0	12.0	--	28	51
DEC											
29...	1250	30	2720	7.6	--	.0	1.0	9.0	--	K9	K18
JAN											
25...	1330	13	2780	7.6	-5.0	.0	17	6.4	--	K8	K12
FEB											
26...	1545	8.1	3030	7.7	-2.0	.0	1.1	8.6	--	K6	K9
APR											
02...	1640	1510	780	--	--	1.0	--	--	--	--	--
06...	1435	1640	960	--	--	.0	--	--	--	--	--
13...	1440	6500	650	7.9	--	2.0	860	11.3	--	--	--
20...	1410	3830	898	8.0	15.5	10.5	420	9.6	72	K40	830
MAY											
22...	1330	229	2070	8.4	11.0	14.0	27	9.4	32	K47	--
JUN											
25...	1330	140	1890	8.5	31.0	24.0	78	8.5	93	K460	820
JUL											
30...	1400	355	810	8.2	20.5	23.5	530	7.4	63	3800	8700
AUG											
27...	1320	76	1300	8.5	25.0	21.0	28	8.7	33	200	280
SEP											
25...	1015	33	--	--	--	15.0	--	--	--	--	--
25...	1025	--	--	--	--	--	--	9.3	--	K30	170

DATE	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
OCT											
26...	440	120	74	62	270	56	5.6	10	320	710	13
NOV											
28...	540	170	86	80	340	57	6.3	9.3	370	860	19
DEC											
29...	760	220	140	100	400	53	6.3	13	540	970	31
JAN											
25...	740	140	140	94	410	54	6.6	11	600	950	23
FEB											
26...	810	380	160	100	440	54	6.7	12	430	1300	23
APR											
13...	180	97	41	20	61	41	2.0	6.8	88	220	3.2
20...	280	160	53	35	88	40	2.3	7.8	120	330	4.0
MAY											
22...	570	250	110	71	270	50	4.9	11	320	850	12
JUN											
25...	450	160	70	68	290	57	5.9	9.7	290	760	11
JUL											
30...	140	0	39	11	120	71	4.4	7.4	160	230	4.3
AUG											
27...	290	61	54	38	180	73	4.6	8.8	230	480	7.3

K - Results based on colony count outside the acceptable range (non-ideal colony count).

06354000 CANNONBALL RIVER AT BREIEN, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	FLUO-RIDE, TOTAL (MG/L AS F) (00951)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NITRATE TOTAL (MG/L AS N) (00620)	NITRO-GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)
OCT											
26...	.6	.4	4.3	1380	1340	1.88	145	.00	.01	.01	.00
NOV											
28...	--	.4	6.3	1660	1620	2.26	210	--	--	.07	.02
DEC											
29...	--	.4	7.6	2080	1990	2.83	168	--	--	.37	.07
JAN											
25...	--	.4	11	2040	2000	2.77	72.7	--	--	.39	.12
FEB											
26...	--	.4	11	2280	2310	3.10	50.0	--	--	.53	.19
APR											
02...	--	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--	--
13...	--	.2	5.8	417	411	.57	7320	--	--	1.1	.22
20...	.6	.2	7.5	616	598	.84	6370	.73	.08	.81	.11
MAY											
22...	.2	.4	6.1	1570	1520	2.14	971	.04	.00	.04	.05
JUN											
25...	.3	.4	6.7	1470	1390	2.00	556	.00	.02	.01	.02
JUL											
30...	1.0	.3	9.6	579	518	.79	555	.31	.02	.33	.06
AUG											
27...	.3	.4	7.9	942	915	1.28	193	.00	.02	.02	.01
SEP											
25...	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--

DATE	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, NH4 + ORG. SUSP. TOTAL (MG/L AS N) (00624)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHATE, TOTAL (MG/L AS PO4) (00650)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	ALUM-INUM, TOTAL RECOV-ERABLE (UG/L AS AL) (01105)
OCT										
26...	.79	.79	.00	.82	.80	3.5	.03	--	.01	130
NOV										
28...	.52	.54	.00	.55	.61	2.7	.02	--	.01	--
DEC										
29...	.49	.56	.00	.57	.93	4.1	.00	--	.00	--
JAN										
25...	.52	.64	.00	.64	1.0	4.6	.01	--	.00	--
FEB										
26...	.43	.62	.00	.66	1.2	5.1	.02	--	.01	--
APR										
02...	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--
13...	4.2	4.4	3.7	.72	5.5	24	.82	2.5	.03	--
20...	1.8	1.9	1.3	.65	2.7	12	.48	1.5	.03	9800
MAY										
22...	.73	.78	.27	.51	.82	3.6	.05	.15	.01	290
JUN										
25...	.98	1.0	.59	.41	1.0	4.5	.02	.06	.01	2800
JUL										
30...	1.8	1.9	1.2	.71	2.2	9.9	.27	--	.06	150
AUG										
27...	.67	.68	.00	1.5	.70	3.1	.07	--	.01	600
SEP										
25...	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--

06354000 CANNONBALL RIVER AT BREIEN, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BARIUM, SUS-PENDED RECOV-ERABLE (UG/L AS BA) (01006)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE) (01012)	BORON, TOTAL RECOV-ERABLE (UG/L AS B) (01022)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD) (01027)	CADMIUM SUS-PENDED RECOV-ERABLE (UG/L AS CD) (01026)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)
OCT										
26...	1	--	100	--	--	0	580	2	--	--
NOV										
28...	--	--	--	--	--	--	--	--	--	--
DEC										
29...	1	1	100	0	100	--	--	0	0	0
APR										
02...	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--
20...	7	1	200	200	0	0	200	0	0	0
MAY										
22...	1	--	0	--	--	0	440	--	--	--
JUN										
25...	1	1	100	20	80	0	570	0	0	<1
JUL										
30...	5	--	200	--	--	0	290	0	--	--
AUG										
27...	2	--	0	--	--	0	430	1	--	--
SEP										
25...	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--

DATE	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	CHRO-MIUM, SUS-PENDED RECOV. (UG/L AS CR) (01031)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO) (01037)	COBALT, SUS-PENDED RECOV-ERABLE (UG/L AS CO) (01036)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	COPPER, SUS-PENDED RECOV-ERABLE (UG/L AS CU) (01041)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)
OCT										
26...	0	--	--	0	--	--	3	--	--	220
NOV										
28...	--	--	--	--	--	--	--	--	--	--
DEC										
29...	10	10	0	2	0	2	4	3	1	130
APR										
02...	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--
20...	20	20	0	11	11	0	37	35	2	23000
MAY										
22...	10	--	--	0	--	--	11	--	--	590
JUN										
25...	10	10	0	4	1	<3	11	9	2	1800
JUL										
30...	30	--	--	12	--	--	36	--	--	19000
AUG										
27...	20	--	--	0	--	--	8	--	28	990
SEP										
25...	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--

DATE	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	LEAD, SUS-PENDED RECOV-ERABLE (UG/L AS PB) (01050)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM TOTAL RECOV-ERABLE (UG/L AS LI) (01132)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MANGA-NESE, SUS-PENDED RECOV. (UG/L AS MN) (01054)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)
OCT										
26...	--	0	--	--	80	--	70	--	--	.0
NOV										
28...	--	--	--	--	--	--	--	--	--	--
DEC										
29...	20	2	0	2	--	--	70	0	70	.0
APR										
13...	--	--	--	--	--	--	--	--	--	--
20...	90	86	86	0	40	--	820	800	20	.1
MAY										
22...	--	--	--	--	80	--	130	--	--	.2
JUN										
25...	<0	12	12	0	70	80	160	160	2	.4
JUL										
30...	--	21	--	--	50	--	420	--	--	.3
AUG										
27...	--	14	--	--	50	--	110	--	--	.0

06354000 CANNONBALL RIVER AT BREIEN, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	MERCURY SUS-PENDED RECOV-ERABLE (UG/L AS HG) (71895)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, TOTAL RECOV-ERABLE (UG/L AS MO) (01062)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SELE-NIUM, SUS-PENDED TOTAL (UG/L AS SE) (01146)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	SILVER, SUS-PENDED RECOV-ERABLE (UG/L AS AG) (01076)
OCT									
26...	--	--	3	5	0	--	--	0	--
NOV									
28...	--	--	--	--	--	--	--	--	--
DEC									
29...	.0	.0	--	--	3	1	2	1	1
APR									
13...	--	--	--	--	--	--	--	--	--
20...	.0	.1	0	40	1	1	0	0	0
MAY									
22...	--	--	2	11	1	--	--	0	--
JUN									
25...	.2	.2	3	17	1	0	1	0	0
JUL									
30...	--	--	0	49	2	--	--	0	--
AUG									
27...	--	--	5	22	1	--	--	0	--

DATE	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, SUS-PENDED RECOV-ERABLE (UG/L AS ZN) (01091)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C) (00689)	PHYTO-PLANK-TON, TOTAL (CELLS PER ML) (60050)	PERI-PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M (00573)	PERI-PHYTON BIOMASS ASH WEIGHT G/SQ M (00572)
OCT									
26...	--	10	--	--	9.7	.7	--	59.9	55.0
NOV									
28...	--	--	--	--	8.8	.3	3300	--	--
DEC									
29...	0	20	0	20	9.8	.3	--	--	--
JAN									
25...	--	--	--	--	9.3	.3	--	--	--
FEB									
26...	--	--	--	--	--	.8	--	--	--
APR									
13...	--	--	--	--	8.9	--	690	--	--
20...	0	100	90	10	9.4	9.5	--	--	--
MAY									
22...	--	20	--	--	10	1.1	7700	--	--
JUN									
25...	0	40	40	<3	9.0	--	27000	65.7	63.2
JUL									
30...	--	120	--	--	7.6	6.5	390	--	--
AUG									
27...	--	20	--	--	11	1.4	40000	.790	.710
SEP									
25...	--	--	--	--	--	--	16000	--	--

DATE	CHLOR-A PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70957)	CHLOR-B PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70958)	LENGTH OF EXPO-SURE (DAYS) (00022)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)
OCT						
26...	5.12	.000	31	21	2.2	86
NOV						
28...	--	--	--	16	2.0	78
DEC						
29...	--	--	--	17	1.4	70
JAN						
25...	--	--	--	20	.71	40
FEB						
26...	--	--	--	18	.40	40
APR						
13...	--	--	--	2900	50900	80
20...	--	--	--	1420	14700	69
MAY						
22...	--	--	--	74	46	94
JUN						
25...	4.93	.030	34	198	75	99
JUL						
30...	--	--	--	1130	1080	99
AUG						
27...	.020	.000	28	60	12	92
SEP						
25...	--	--	--	24	2.1	94

06354000 CANNONBALL RIVER AT BREIEN, ND--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1800	1800	2400	2800	2900	3000	900	1400	2000	2050	900	1450
2	1800	1900	2500	2800	3000	3000	850	1500	2000	2050	950	1500
3	1750	1800	2500	2800	3000	3000	875	1500	2000	2050	1200	1550
4	1750	1800	2400	3000	3400	3000	900	1500	2000	2050	1250	1550
5	1700	1800	2500	3000	3400	3000	900	1600	2000	2050	1300	1550
6	1700	1800	2500	3000	3400	2900	950	1550	2000	2050	1300	1600
7	1750	1850	2500	3000	3100	2900	950	1500	2000	2050	1400	1600
8	1800	1900	2600	3000	3100	2900	1030	1600	2000	2050	1400	1700
9	1800	1900	2700	3000	3100	3000	950	1600	2000	2050	1400	1700
10	1800	1900	2700	3000	3100	3000	850	1600	2000	2050	1400	1700
11	1850	1900	2800	3000	3000	2800	825	1600	2000	2050	1450	1650
12	1900	1800	2800	3000	3000	2800	750	1600	2000	900	1500	1600
13	1800	1900	2400	3000	3000	2800	650	1700	2000	1100	1500	1600
14	1800	2000	2600	3000	3100	2800	650	1750	2000	850	1500	1600
15	1800	2000	2600	3000	---	2800	625	1750	2000	1000	1550	1600
16	1800	2100	2600	3000	3200	2400	625	1750	2000	800	1550	1700
17	1800	2100	2700	3000	3000	2600	625	1800	2000	1000	1550	1700
18	1850	2100	2600	3000	3000	2100	560	1800	2000	1000	1550	1700
19	1800	2100	2700	3000	3000	950	750	1900	2000	1050	1550	1700
20	1800	2150	2700	3000	2900	1000	900	1950	1900	1150	1600	1700
21	1900	2200	2700	3000	2900	1100	950	2000	1900	1200	1550	1700
22	1800	2200	2700	2900	2900	1100	1000	2000	1700	1200	1600	1750
23	1700	2200	2800	2900	3000	1000	1100	2000	1700	1250	1000	1750
24	1700	2200	2800	2900	3000	850	1150	2000	1900	1300	1100	1800
25	1600	2200	2800	2900	3000	900	1050	2000	1900	1300	1150	1850
26	1750	2100	2800	2900	3000	950	1150	2000	1850	1300	1200	1850
27	1800	2400	3000	2900	3000	1100	1300	2000	1900	1200	1300	1900
28	1850	2400	3000	2900	3000	1100	1250	2000	1850	1300	1300	1900
29	1900	2400	2800	2900	---	1100	1300	2000	1900	1000	1500	1900
30	1900	2400	2800	2900	---	950	1400	2000	2000	800	1400	1900
31	1900	---	2800	2900	---	1000	---	2000	---	700	1500	---
MEAN	1800	2040	2670	2950	3060	2060	926	1770	1950	1420	1370	1690

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14.5	1.5	.0	.0	.0	.0	1.0	9.0	18.0	28.0	23.5	20.0
2	12.5	5.0	.0	.0	.0	.0	1.0	10.0	22.0	29.0	25.0	25.5
3	10.0	7.0	.0	.0	.0	.0	.0	14.0	25.0	30.0	28.0	23.0
4	9.0	1.5	.0	.0	.0	.0	1.5	11.0	18.5	24.0	26.0	26.0
5	7.5	5.0	.0	.0	.0	.0	.0	8.5	25.0	25.5	27.0	24.0
6	7.0	6.5	.0	.0	.0	.0	.0	9.5	19.0	25.0	25.0	18.5
7	8.5	5.5	.0	.0	.0	.0	2.0	11.5	18.0	23.5	26.0	21.5
8	9.0	7.5	.0	.0	.0	.0	1.0	11.0	20.0	30.0	24.0	25.0
9	10.5	4.5	.0	.0	.0	.0	.0	8.0	21.0	29.0	24.0	25.5
10	10.0	.0	.0	.0	.0	.0	2.5	5.0	24.0	30.0	24.0	19.0
11	10.5	.0	.0	.0	.0	.0	.0	7.0	26.0	22.0	26.0	21.0
12	10.0	.0	.0	.0	.0	.0	1.0	10.0	29.0	22.0	24.0	18.5
13	9.5	.0	.0	.0	.0	.0	2.0	12.0	29.0	22.0	22.5	17.0
14	8.0	.0	.0	.0	.0	.0	1.5	15.0	25.0	23.0	20.0	18.0
15	7.5	.0	.0	.0	---	.0	3.5	18.0	26.0	23.0	21.0	19.0
16	7.5	.0	.0	.0	.0	.0	4.0	22.0	22.0	20.0	24.0	23.0
17	7.0	.0	.0	.0	.0	.0	5.0	17.0	20.0	20.0	21.5	24.0
18	10.5	.0	.0	.0	.0	.0	9.0	19.0	21.5	25.0	27.5	25.0
19	12.5	.0	.0	.0	.0	.0	11.0	16.5	20.0	27.0	26.5	24.0
20	13.0	.0	.0	.0	.0	.0	10.0	18.0	21.0	26.0	21.5	23.0
21	11.5	.0	.0	.0	.0	.0	10.0	18.0	25.0	30.0	23.5	20.0
22	7.5	.0	.0	.0	.0	.0	12.0	14.5	19.0	21.0	24.0	18.0
23	8.5	.0	.0	.0	.0	.0	11.0	13.0	20.0	27.0	22.0	20.0
24	8.5	.0	.0	.0	.0	.0	10.0	19.0	18.0	25.0	23.5	20.0
25	6.5	.0	.0	.0	.0	.0	10.0	13.5	25.0	24.0	23.0	21.0
26	8.5	.0	.0	.0	.0	.0	8.0	16.5	26.0	22.0	21.5	20.0
27	7.5	.0	.0	.0	.0	.0	10.0	22.0	25.0	21.0	23.0	20.0
28	5.5	.0	.0	.0	.0	.0	9.0	25.0	25.0	22.0	20.0	21.0
29	5.0	.0	.0	.0	---	.0	8.0	19.0	22.0	27.0	19.0	19.0
30	4.5	.0	.0	.0	---	.0	11.0	18.0	25.0	22.0	18.5	15.0
31	6.5	---	.0	.0	---	.0	---	17.0	---	24.0	24.0	---
MEAN	9.0	.5	.0	.0	.0	.0	5.0	14.5	22.5	25.0	23.5	21.0

06354000 CANNONBALL RIVER AT BREIEN, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1978 TO SEPTEMBER 1979

DATE	NOV 28,78		APR 13,79		MAY 22,79		JUN 25,79	
TIME	1230		1440		1330		1330	
TOTAL CELLS/ML	3300		690		7700		27000	
DIVERSITY: DIVISION	1.2		0.7		1.8		1.4	
.CLASS	1.2		0.7		1.8		1.4	
..ORDER	1.2		0.7		2.1		1.8	
...FAMILY	1.4		1.3		2.5		2.3	
....GENUS	1.8		1.3		2.6		2.6	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)								
.CHLOROPHYCEAE								
..CHLOROCOCCALES								
...CHARACIACEAE								
....SCHROEDERIA	--	-	--	-	--	-	*	0
...OOCYSTACEAE								
....ANKISTRODESMUS	1800#	54	120#	17	1700#	22	6200#	23
....CHODATELLA	--	-	--	-	--	-	--	-
....DICTYOSPHAERIUM	--	-	--	-	--	-	--	-
....KIRCHNERIELLA	36	1	--	-	--	-	--	-
....OOCYSTIS	--	-	--	-	--	-	--	-
....SELENASTRUM	--	-	--	-	390	5	--	-
....TETRAEDRON	--	-	--	-	--	-	--	-
...SCENEDESMACEAE								
....ACTINASTRUM	--	-	--	-	--	-	1600	6
....CRUCIGENIA	--	-	--	-	--	-	1600	6
....SCENEDESMUS	110	3	460#	67	770	10	2200	8
....TETRASTRUM	--	-	--	-	--	-	--	-
..VOLVOCALES								
...CHLAMYDOMONADACEAE								
....CHLAMYDOMONAS	--	-	--	-	55	1	--	-
CHRYSOPHYTA								
.BACILLARIOPHYCEAE								
..CENTRALES								
...COSCINODISCACEAE								
....CYCLOTELLA	18	1	--	-	--	-	200	1
....MELOSIRA	--	-	--	-	--	-	--	-
....STEPHANODISCUS	--	-	--	-	1900#	24	--	-
..PENNALES								
...ACHNANTHACEAE								
....COCCONEIS	--	-	--	-	--	-	--	-
...CYMBELLACEAE								
....CYMBELLA	18	1	--	-	--	-	--	-
...FRAGILARIACEAE								
....FRAGILARIA	18	1	--	-	170	2	--	-
...NAVICULACEAE								
....NAVICULA	18	1	--	-	--	-	390	1
...NITZSCHIACEAE								
....NITZSCHIA	--	-	120#	17	440	6	1400	5
CRYPTOPHYTA (CRYPTOMONADS)								
.CRYPTOPHYCEAE								
..CRYPTOMONADALES								
...CRYPTOCHRYSIDACEAE								
....CHROOMONAS	--	-	--	-	55	1	--	-
...CRYPTOMONADACEAE								
....CRYPTOMONAS	--	-	--	-	--	-	*	0
CYANOPHYTA (BLUE-GREEN ALGAE)								
.CYANOPHYCEAE								
..CHROOCOCCALES								
...CHROOCOCCACEAE								
....AGMENELLUM	290	9	--	-	--	-	--	-
....ANACYSTIS	980#	30	--	-	2000#	27	2900	11
..HORMOGONALES								
...NOSTOCACEAE								
....ANABAENA	--	-	--	-	--	-	--	-
....ANABAENOPSIS	--	-	--	-	--	-	--	-
...OSCILLATORIACEAE								
....OSCILLATORIA	--	-	--	-	--	-	9900#	37
EUGLENOPHYTA (EUGLENOIDS)								
.EUGLENOPHYCEAE								
..EUGLENALES								
...EUGLENACEAE								
....TRACHELOMONAS	54	2	--	-	220	3	--	-
PYRRHOPHYTA (FIRE ALGAE)								
.DINOPHYCEAE								
..GYMNODINIALES								
...GYMNODINIACEAE								
....GYMNODINIUM	--	-	--	-	--	-	*	0
..PERIDINIALES								
...GLENODINIACEAE								
....GLENODINIUM	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06354000 CANNONBALL RIVER AT BREIEN, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1978 TO SEPTEMBER 1979

DATE	JUL 30,79	AUG 27,79	SEP 25,79
TIME	1400	1320	1025
TOTAL CELLS/ML	390	40000	16000
DIVERSITY: DIVISION	0.0	0.8	1.0
.CLASS	0.0	0.8	1.0
..ORDER	0.9	1.6	1.4
...FAMILY	0.9	2.1	1.7
....GENUS	0.9	2.6	2.6

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)						
.CHLOROPHYCEAE						
..CHLOROCOCCALES						
...CHARACIACEAE						
....SCHROEDERIA	--	-	--	-	*	0
...OOCYSTACEAE						
....ANKISTRODESMUS	--	-	3100	8	1800	11
....CHODATELLA	--	-	240	1	200	1
....DICTYOSPHAERIUM	--	-	1800	5	1500	9
....KIRCHNERIELLA	--	-	*	0	--	-
....OOCYSTIS	--	-	480	1	600	4
....SELENASTRUM	--	-	--	-	*	0
....TETRAEDRON	--	-	*	0	--	-
...SCENEDESMACEAE						
....ACTINASTRUM	--	-	--	-	--	-
....CRUCIGENIA	--	-	--	-	320	2
....SCENEDESMUS	--	-	2400	6	810	5
....TETRASTRUM	--	-	320	1	--	-
..VOLVOCALES						
...CHLAMYDOMONADACEAE						
....CHLAMYDOMONAS	--	-	240	1	*	0
CHRYSOPHYTA						
.BACILLARIOPHYCEAE						
..CENTRALES						
...COSCINODISCACEAE						
....CYCLOTELLA	--	-	--	-	--	-
....MELOSIRA	260#	67	--	-	--	-
....STEPHANODISCUS	--	-	--	-	--	-
..PENNALES						
...ACHNANTHACEAE						
....COCCONEIS	--	-	--	-	*	0
...CYMBELLACEAE						
....CYMBELLA	--	-	--	-	--	-
...FRAGILARIACEAE						
....FRAGILARIA	--	-	--	-	--	-
...NAVICULACEAE						
....NAVICULA	--	-	--	-	--	-
...NITZSCHIACEAE						
....NITZSCHIA	130#	33	240	1	*	0
CRYPTOPHYTA (CRYPTOMONADS)						
.CRYPTOPHYCEAE						
..CRYPTOMONADALES						
...CRYPTOCHRYSIDACEAE						
....CHROOMONAS	--	-	--	-	--	-
...CRYPTOMONADACEAE						
....CRYPTOMONAS	--	-	*	0	*	0
CYANOPHYTA (BLUE-GREEN ALGAE)						
.CYANOPHYCEAE						
..CHROOCOCCALES						
...CHROOCOCCACEAE						
....AGMENELLUM	--	-	1900	5	1900	12
....ANACYSTIS	--	-	16000#	41	7200#	44
..NOSTOCALES						
...NOSTOCACEAE						
....ANABAENA	--	-	--	-	1600	10
....ANABAENOPSIS	--	-	3500	9	--	-
...OSCILLATORIACEAE						
....OSCILLATORIA	--	-	8800#	22	--	-
EUGLENOPHYTA (EUGLENOIDS)						
.EUGLENOPHYCEAE						
..EUGLENALES						
...EUGLENACEAE						
....TRACHELOMONAS	--	-	--	-	--	-
PYRRHOPHYTA (FIRE ALGAE)						
.DINOPHYCEAE						
..GYMNODINIALES						
...GYMNODINIACEAE						
....GYMNODINIUM	--	-	--	-	--	-
..PERIDINIALES						
...GLENODINIACEAE						
....GLENODINIUM	--	-	--	-	*	0

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06354500 BEAVER CREEK AT LINTON, ND

LOCATION.--Lat 46°15'27", long 100°13'58", on line between secs.17 and 18, T.132 N., R.76 W., Emmons County, Hydrologic Unit 10130104, on left bank 60 ft (18 m) downstream from bridge on U.S. Highway 83, 0.7 mi (1.1 km) south of railway station in Linton, and 1 mi (2 km) upstream from Spring Creek.

DRAINAGE AREA.--717 mi^2 (1,857 km^2), of which about 100 mi^2 (260 km^2) is probably noncontributing.

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

REVISED RECORDS.--WSP 1209: Drainage area. WSP 1239: 1950(M).

GAGE.--Water-stage recorder. Datum of gage is 1,690.55 ft (515.280 m) National Geodetic Vertical Datum of 1929. Prior to June 18, 1958, nonrecording gage at site 60 ft (18 m) upstream at same datum.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--30 years, 42.4 ft^3/s (1.201 m^3/s), 30,720 acre-ft/yr (37.9 hm^3/yr); median of yearly mean discharges, 29 ft^3/s (0.82 m^3/s), 21,000 acre-ft/yr (26 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,800 ft^3/s (278 m^3/s) Apr. 8, 1952, gage height, 17.50 ft (5.334 m); no flow at times in some years.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 200 ft^3/s (5.66 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Apr. 13	--	860	24.4	Backwater from ice		June 23	0300	370	10.5	9.63	2.935
Apr. 19	0800	*2,300	65.1	15.28	4.657						

Minimum daily discharge, 0.30 ft^3/s (0.0085 m^3/s) Sept. 20-22.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.6	4.0	6.2	4.0	2.5	1.7	56	194	28	37	13	2.8
2	2.3	3.6	5.6	3.8	2.5	1.7	62	162	27	31	13	2.6
3	3.0	3.4	5.1	3.6	2.3	1.7	94	193	26	26	14	2.5
4	2.8	3.2	4.9	3.4	2.1	1.7	111	212	24	23	13	2.1
5	3.0	2.8	5.1	3.3	2.1	1.7	111	196	23	21	9.9	1.7
6	3.2	2.5	4.9	3.2	2.1	1.8	130	189	22	20	7.6	1.3
7	4.0	2.5	4.3	3.1	1.9	1.8	149	181	22	18	7.2	1.1
8	4.2	3.3	4.0	3.0	1.8	1.9	148	171	21	17	8.0	.99
9	3.8	4.2	3.6	3.0	1.8	2.1	176	166	21	16	8.0	.99
10	3.6	5.9	3.4	2.8	1.8	1.8	254	155	20	16	6.9	.99
11	4.3	5.7	3.4	2.8	1.8	2.1	412	142	19	14	6.0	1.1
12	4.7	5.5	3.6	2.7	1.7	3.1	678	123	19	19	5.8	1.1
13	4.9	5.3	4.0	2.7	1.7	3.7	772	118	18	17	5.4	.78
14	4.3	5.2	4.5	2.7	1.7	3.4	732	111	16	17	5.0	.78
15	4.5	5.1	4.9	2.6	1.7	3.8	497	106	15	18	4.8	.78
16	4.3	5.1	5.1	2.5	1.7	7.2	566	98	14	16	4.5	.78
17	4.2	5.0	5.1	2.4	1.6	14	909	87	13	14	4.2	.66
18	4.9	5.0	4.9	2.4	1.6	15	1710	78	12	13	4.2	.42
19	4.9	5.3	4.9	2.5	1.6	14	2170	72	12	11	3.7	.38
20	5.1	5.9	4.9	2.6	1.6	15	1510	62	16	8.8	3.4	.30
21	6.9	5.9	4.5	2.6	1.5	16	815	52	36	8.0	3.7	.30
22	4.3	5.9	4.5	2.6	1.6	17	668	48	285	8.4	3.6	.30
23	4.2	6.2	4.5	2.7	1.7	20	590	45	327	12	2.7	.32
24	4.2	6.5	4.5	2.7	1.7	72	507	43	222	16	2.2	.32
25	3.6	6.9	4.5	2.7	1.7	70	437	41	161	11	2.0	.34
26	3.1	6.9	4.3	2.7	1.8	51	384	38	128	12	2.1	.36
27	2.7	7.6	4.3	2.7	1.8	58	328	35	103	12	2.6	.36
28	3.2	7.2	4.3	2.5	1.8	68	285	32	81	13	4.9	.38
29	4.2	6.9	4.3	2.7	---	50	251	31	61	13	3.8	.38
30	4.5	6.5	4.3	2.5	---	60	217	32	45	13	3.7	.40
31	4.0	---	4.2	2.5	---	42	---	30	---	13	3.6	---
TOTAL	123.5	155.0	140.6	88.0	51.2	623.2	15729	3243	1837	504.2	182.5	27.61
MEAN	3.98	5.17	4.54	2.84	1.83	20.1	524	105	61.2	16.3	5.89	.92
MAX	6.9	7.6	6.2	4.0	2.5	72	2170	212	327	37	14	2.8
MIN	2.3	2.5	3.4	2.4	1.5	1.7	56	30	12	8.0	2.0	.30
AC-FT	245	307	279	175	102	1240	31200	6430	3640	1000	362	55

CAL YR 1978 TOTAL 34831.32 MEAN 95.4 MAX 4630 MIN .46 AC-FT 69090
WTR YR 1979 TOTAL 22704.81 MEAN 62.2 MAX 2170 MIN .30 AC-FT 45030

06354825 ONE-MILE CREEK NEAR FORT YATES, ND

LOCATION.--Lat 46°03'56", long 100°40'10", in NE¼NE¼SE¼ sec.22, T.130 N., R.80 W., Sioux County, Hydrologic Unit 10130102, on left bank at upstream end of bridge on North Dakota State Highway 24 0.9 mi (1.5 km) above mouth, and 2.2 mi (3.5 km) southwest of Fort Yates.

DRAINAGE AREA.--19.8 mi^2 (51.3 km^2), corrected.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1978 to September 1979 (discontinued).

GAGE.--Non-recording gage. Altitude of gage is 1,650 ft (503 m), from topographic map.

REMARKS.--Records fair.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 24 ft^3/s (0.68 m^3/s) Apr. 17; gage height, 1.14 ft (0.347 m); no flow for several months.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.03	.07	.00	.00	.00	.00	1.0	.50	.17	.11	.20	.05
2	.03	.07	.00	.00	.00	.00	2.0	.43	.17	.11	.07	.05
3	.05	.07	.00	.00	.00	.00	2.0	.36	.17	.09	.05	.05
4	.05	.07	.00	.00	.00	.00	2.1	.30	.17	.09	.03	.05
5	.07	.07	.00	.00	.00	.00	2.2	.25	.11	.09	.03	.05
6	.09	.05	.00	.00	.00	.00	2.3	.66	.17	.07	.01	.03
7	.09	.05	.00	.00	.00	.00	2.5	.90	.25	.07	.05	.01
8	.09	.05	.00	.00	.00	.00	3.0	.83	.17	.07	.05	.01
9	.09	.05	.00	.00	.00	.00	5.0	.74	.17	.07	.05	.01
10	.09	.05	.00	.00	.00	.00	10	.66	.17	.07	.05	.03
11	.09	.05	.00	.00	.00	.00	7.0	.58	.14	.36	.07	.03
12	.09	.05	.00	.00	.00	.05	5.0	1.0	.14	.43	.09	.03
13	.09	.05	.00	.00	.00	.10	4.0	.36	.14	.50	.05	.03
14	.09	.05	.00	.00	.00	.20	5.0	.30	.14	.36	.05	.03
15	.09	.05	.00	.00	.00	.30	6.0	.25	.14	.43	.09	.03
16	.09	.03	.00	.00	.00	.50	7.8	.25	.14	.30	.09	.03
17	.09	.03	.00	.00	.00	6.0	12	.25	.14	.14	.09	.03
18	.09	.03	.00	.00	.00	4.0	24	.25	.09	.09	.07	.03
19	.09	.03	.00	.00	.00	3.0	10	.25	.20	.09	.07	.03
20	.09	.03	.00	.00	.00	2.6	11	.25	.30	.09	.11	.03
21	.09	.03	.00	.00	.00	2.1	12	.20	.30	.09	.17	.05
22	.09	.01	.00	.00	.00	2.0	1.5	.17	.36	.09	.11	.07
23	.09	.01	.00	.00	.00	1.6	1.0	.66	.30	.09	.05	.07
24	.09	.01	.00	.00	.00	1.0	.66	.36	.25	.09	.03	.05
25	.09	.01	.00	.00	.00	.50	.66	.25	.17	.09	.03	.05
26	.07	.01	.00	.00	.00	.50	.83	.20	.14	.11	.05	.05
27	.07	.01	.00	.00	.00	.40	.50	.17	.17	.20	.08	.05
28	.07	.00	.00	.00	.00	.40	.50	.14	.11	.17	.08	.05
29	.07	.00	.00	.00	---	.30	.66	.14	.11	.30	.08	.05
30	.07	.00	.00	.00	---	.40	.50	.20	.11	.66	.05	.05
31	.07	---	.00	.00	---	.50	---	.20	---	.50	.05	---
TOTAL	2.45	1.09	.00	.00	.00	26.45	142.71	12.06	5.31	6.02	2.15	1.18
MEAN	.079	.036	.000	.000	.000	.85	4.76	.39	.18	.19	.069	.039
MAX	.09	.07	.00	.00	.00	6.0	24	1.0	.36	.66	.20	.07
MIN	.03	.00	.00	.00	.00	.00	.50	.14	.09	.07	.01	.01
AC-FT	4.9	2.2	.00	.00	.00	52	283	24	11	12	4.3	2.3

WTR YR 1979 TOTAL 199.42 MEAN .55 MAX 24 MIN .00 AC-FT 396

06354825 ONE-MILE CREEK NEAR FORT YATES, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--March 1978 to September 1979 (discontinued).

REMARKS.--Samples for nutrient analysis were collected by the North Dakota State Health Department at this site and a site above the rodeo grounds, 1.5 mi (2.4 km) upstream (station 06354824). Laboratory analyses were performed by the Central Laboratory.

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE (DEG C) (00010)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)
OCT						
24...	1030	.08	1600	--	7.0	--
NOV						
07...	1145	--	--	--	4.0	.96
20...	1030	E.02	1700	--	.0	--
MAR						
16...	1445	--	--	--	.5	9.3
16...	1700	--	--	--	.5	4.5
17...	1430	--	--	7.6	.5	1.6
18...	1725	--	--	--	3.5	1.1
20...	1400	--	--	--	3.0	1.0
21...	1255	2.1	500	--	.5	--
21...	1530	--	--	--	--	.75
22...	1445	--	--	--	--	1.3
23...	1500	--	--	--	1.0	.86
24...	1400	--	--	--	--	.91
30...	1515	--	--	--	--	.92
APR						
01...	1600	--	--	--	--	1.1
02...	1410	2.0	525	--	.5	--
02...	1500	--	--	--	--	.94
03...	1500	--	--	--	--	.75
04...	1500	--	--	--	--	.86
05...	1445	--	--	--	--	1.1
06...	1040	2.3	760	--	.0	--
06...	1515	--	--	7.9	.5	.98
07...	1300	--	--	--	.5	.99
08...	1700	--	--	--	.5	1.6
09...	1500	--	--	7.7	--	.97
10...	1500	--	--	7.9	--	1.0
10...	1610	10	350	--	.5	--
11...	1430	--	--	--	.5	1.6
13...	1030	4.0	390	--	.0	--
14...	1300	--	--	--	--	.75
15...	1530	--	--	--	--	2.0
16...	1515	--	--	7.6	--	.73
17...	1340	14	270	--	6.0	--
17...	1400	--	--	7.5	--	.71
18...	1500	--	--	7.6	--	1.1
19...	1515	--	--	7.5	--	.76
20...	1500	--	--	7.5	--	.95
23...	1500	--	--	7.9	--	.71
24...	1100	--	--	8.0	--	.66
25...	1245	--	--	8.0	--	.68
26...	1055	.84	1150	--	6.5	--
26...	1245	--	--	7.9	--	.66
MAY						
11...	1340	--	--	8.2	--	.75
16...	1050	.23	1900	--	17.0	--
29...	1115	--	--	8.4	--	.63
JUN						
19...	1300	--	--	--	--	.48
20...	1200	--	--	--	--	.42
27...	1350	.17	2100	--	25.0	--
JUL						
11...	1045	--	--	--	--	.98
25...	1320	.11	1400	--	26.0	--
26...	1140	--	--	--	--	.12
AUG						
27...	1100	.08	1500	8.3	17.0	--
SEP						
10...	1700	--	--	--	--	2.3
25...	1055	.04	1600	--	12.5	--

E - Estimated.

06354988 BOWMAN-HALEY LAKE NEAR HALEY, ND

LOCATION.--Lat 45°59'06", long 103°14'43", in NE¼ sec.24, T.129 N., R.101 W., Bowman County, Hydrologic Unit, at dam on North Fork Grand River, and 6 mi (10 km) west of Haley.

DRAINAGE AREA.--446 mi^2 (1,155 km^2), approximately.

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

GAGE.--Water-stage recorder. Datum of gage is at National Geodetic Vertical Datum of 1929.

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 (115 hm^3) at maximum pool, elevation, 2,777.0 ft (846.430 m). Dead storage is 4,280 acre-ft (5.28 hm^3) below lowest point of outlet, elevation, 2,740.0 ft (835.152 m). Normal operating storage is 20,100 acre-ft (24.8 hm^3) at elevation 2,755.0 ft (839.724 m), crest of spillway. Figures given herein represent total contents. Controlled releases are through a 30-inch (0.762 m) or 8-inch (0.203 m) gate valve. The spillway is uncontrolled "glory hole" type and discharges through a conduit 9 ft (2.743 m) in diameter. The reservoir is for flood control, water supply, and recreation.

COOPERATION.--Records of elevations and contents furnished by Corps of Engineers from capacity table dated August 1966. Elevations affected by wind.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 37,540 acre-ft (46.3 hm^3) Mar. 28, 1978 (corrected), elevation, 2,762.66 ft (842.059 m); minimum since first reaching spillway level, 16,500 acre-ft (20.3 hm^3) Mar. 8-10, 1975, elevation, 2,752.78 ft (839.047 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 22,760 acre-ft (28.1 hm^3) Apr. 11, elevation, 2,756.41 ft (840.154 m); minimum, 18,090 acre-ft (22.3 hm^3) Nov, 7, 8, elevation, 2,753.80 ft (839.358 m).

MONTHEND ELEVATION AND CONTENTS AT 2400, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30	2,754.12	18,620	--
Oct. 31	2,753.83	18,140	-480
Nov. 30	2,753.93	18,300	+160
Dec. 31	2,754.00	18,410	+110
CAL YR 1978	--	--	0
Jan. 31	2,754.04	18,480	+70
Feb. 28	2,754.17	18,700	+220
Mar. 31	2,755.98	21,920	+3,220
Apr. 30	2,755.42	20,890	-1,030
May 31	2,754.96	20,050	-840
June 30	2,754.94	20,020	-30
July 31	2,754.81	19,800	-220
Aug. 31	2,754.51	19,280	-520
Sept. 30	2,754.59	19,420	+140
WTR YR 1979	--	--	+800

06355000 NORTH FORK GRAND RIVER AT HALEY, ND

LOCATION.--Lat 45°57'39", long 103°07'09", at southwest corner of sec.30, T.129 N., R.99 W., Bowman County, Hydrologic Unit 10130301, on left bank 10 ft (3 m) downstream from county highway bridge, 300 ft (91 m) south of post office at Haley, and 1 mi (1.6 km) north of South Dakota state line.

DRAINAGE AREA.--509 mi^2 (1,318 km^2).

PERIOD OF RECORD.--May 1908 to September 1917, October 1945 to current year. Monthly discharge only for some periods, published in WSP 1309.

REVISED RECORDS (WATER YEARS).--WSP 1239: 1908-10, 1913-15(M), 1917(M).

GAGE.--Water-stage recorder. Datum of gage is 2,658.60 ft (810.341 m) National Geodetic Vertical Datum of 1929. 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.

REMARKS.--Records good except those for the winter period, which are fair. Flow regulated since August 1966 by Bowman-Haley Lake (station 06354988) 8 mi (13 km) upstream.

AVERAGE DISCHARGE.--43 years, 28.9 ft^3/s (0.818 m^3/s), 20,940 acre-ft/yr (25.8 hm^3/yr); median of yearly mean discharges, 23 ft^3/s (0.65 m^3/s), 16,700 acre-ft/yr (21 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,100 ft^3/s (399 m^3/s) Apr. 7, 1952, gage height, 17.03 ft (5.191 m), from rating curve extended above 4,500 ft^3/s (127 m^3/s) on basis of discharge measurement at gage height, 15.09 ft (4.599 m), half of which was indirect measurement of flow over roadway outside of main channel; maximum gage height, 17.10 ft (5.212 m) Apr. 15, 1950; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 360 ft^3/s (10 m^3/s) Apr. 18, gage height, 7.95 ft (2.423 m); maximum gage height, 9.56 ft (29.14 m) Apr. 1, backwater from ice; minimum daily discharge, 0.30 ft^3/s (0.008 m^3/s) Jan. 10-21.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.5	1.6	1.6	1.2	.40	1.3	150	67	10	4.3	2.6	1.3
2	1.6	1.7	1.6	1.0	.40	1.4	200	60	10	4.9	2.2	1.3
3	1.6	2.1	1.6	1.0	.40	1.4	190	54	8.8	4.0	1.9	1.8
4	2.0	1.9	1.6	.80	.40	1.4	175	48	7.5	3.7	1.8	1.6
5	2.2	1.8	1.6	.80	.40	1.5	155	45	7.5	3.5	1.8	1.5
6	2.2	1.9	1.6	.60	.40	2.0	175	47	6.0	3.3	1.6	1.4
7	2.2	2.1	1.6	.60	.50	2.5	120	52	6.3	3.1	1.8	1.3
8	1.9	1.9	1.6	.40	.50	2.5	55	48	8.2	3.0	1.8	1.4
9	1.8	2.1	1.6	.40	.70	2.5	60	42	6.2	2.7	1.7	1.4
10	1.7	2.4	1.6	.30	1.0	2.0	130	41	4.9	2.4	1.6	3.3
11	1.7	2.4	1.6	.30	1.3	2.0	260	39	5.0	2.4	1.6	3.5
12	1.7	2.1	1.6	.30	1.3	2.0	340	36	4.6	2.3	1.6	2.9
13	1.6	1.9	2.0	.30	1.3	2.0	346	36	4.0	2.4	1.5	2.1
14	1.7	2.2	2.1	.30	1.6	2.0	316	32	3.9	2.2	1.3	2.5
15	1.7	2.2	2.3	.30	2.0	2.0	296	32	4.0	2.5	1.2	2.1
16	1.7	2.0	2.5	.30	1.5	2.5	306	30	3.9	2.5	1.2	1.9
17	1.7	1.8	2.5	.30	1.3	2.5	336	30	3.7	2.6	1.2	1.8
18	1.9	2.1	2.5	.30	1.0	2.5	350	32	3.6	2.3	1.1	1.7
19	2.0	2.2	2.5	.30	1.3	2.5	356	26	4.3	2.1	1.1	1.4
20	1.8	2.2	2.0	.30	1.5	2.5	336	29	6.5	2.0	1.1	1.5
21	1.7	2.2	2.0	.30	1.5	2.5	294	21	9.8	1.8	1.8	1.6
22	1.7	2.1	2.0	.40	1.5	3.0	258	20	5.3	1.8	1.7	1.5
23	1.7	1.9	2.0	.40	1.3	5.0	192	19	5.0	1.8	1.5	1.6
24	1.9	1.8	2.0	.40	1.0	7.0	162	16	4.9	2.1	1.4	1.6
25	1.8	1.8	2.0	.40	1.0	10	135	15	4.9	2.3	1.3	1.8
26	1.5	1.8	2.0	.40	1.3	6.5	114	14	5.3	2.7	1.3	1.8
27	1.7	1.6	1.8	.40	1.5	5.4	99	13	4.5	2.5	1.4	1.7
28	1.7	1.6	1.6	.40	1.5	52	90	12	5.1	2.2	1.5	1.8
29	1.7	1.6	1.6	.40	---	125	82	13	6.4	2.0	1.3	2.6
30	1.6	1.6	1.4	.40	---	120	74	13	4.8	1.9	1.4	2.1
31	1.6	---	1.2	.40	---	125	---	11	---	2.5	1.4	---
TOTAL	54.7	58.6	57.4	14.40	29.80	502.6	6152	995	176.9	81.6	47.7	55.8
MEAN	1.76	1.95	1.85	.46	1.06	16.2	205	32.1	5.90	2.63	1.54	1.86
MAX	2.2	2.4	2.5	1.2	2.0	125	356	67	10	4.9	2.6	3.5
MIN	1.5	1.6	1.2	.30	.40	1.4	55	11	3.6	1.8	1.1	1.3
AC-FT	108	116	114	29	59	997	12200	1970	351	162	95	111

CAL YR 1978 TOTAL 25521.86 MEAN 69.9 MAX 2250 MIN .35 AC-FT 50620
WTR YR 1979 TOTAL 8226.50 MEAN 22.5 MAX 356 MIN .30 AC-FT 16320

06355310 BUFFALO CREEK TRIBUTARY NEAR GASCOYNE, ND

LOCATION.--Lat 46°06'40", long 103°02'20", in SE¼NE¼ sec.3, T.130 N., R.99 W., Bowman County, Hydrologic Unit 10130301, on left bank 46 ft (14 m) downstream from Chicago, Milwaukee, St. Paul, Pacific Railway bridge, and 1.8 mi (2.9 km) east of Gascoyne.

DRAINAGE AREA.--15.7 mi^2 (40.7 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1974 to current year.

REVISED RECORDS.--WDR ND-76-1: 1975.

GAGE.--Water-stage recorder. Altitude of gage is 2,725 ft (831 m), from topographic map.

REMARKS.--Records fair. Some regulation by strip mine above station.

AVERAGE DISCHARGE.--5 years, 1.78 ft^3/s (0.050 m^3/s), 1,290 acre-ft/yr (1.59 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 100 ft^3/s (2.83 m^3/s) May 9, 1975, gage height, 8.41 ft (2.563 m); no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, about 50 ft^3/s (1.42 m^3/s) Mar. 25; no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.09	.14	.06	.00	.00	.50	14	2.9	2.1	.16	.17	.28
2	.09	.14	.06	.00	.00	1.0	12	2.3	1.6	.14	.20	.23
3	.09	.12	.06	.00	.00	2.0	10	2.7	1.4	.17	.27	.26
4	.09	.12	.05	.00	.00	3.0	8.0	3.0	1.4	.13	.22	.23
5	.10	.11	.05	.00	.00	4.0	7.5	3.0	1.6	.15	.16	.18
6	.08	.09	.04	.00	.00	5.0	6.5	5.2	1.3	.15	.18	.14
7	.08	.12	.03	.00	.00	10	14	2.7	1.3	.19	.14	1.6
8	.07	.14	.03	.00	.00	15	16	1.5	1.5	.18	.18	1.5
9	.07	.15	.02	.00	.00	20	14	3.6	4.9	.21	.21	1.4
10	.06	.15	.02	.00	.00	15	13	2.3	3.6	.21	.18	1.3
11	.05	.15	.02	.00	.00	10	12	2.0	2.4	.21	.12	1.2
12	.02	.10	.02	.00	.00	10	8.7	2.0	2.1	1.4	.11	.97
13	.02	.10	.02	.00	.00	8.0	5.5	2.1	1.5	3.8	.12	.81
14	.02	.09	.02	.00	.00	6.0	5.8	2.1	.69	.69	.14	.60
15	.06	.09	.02	.00	.00	4.0	8.5	2.3	.32	.34	.14	.42
16	.11	.09	.02	.00	.00	6.0	9.7	2.3	.26	.29	.16	.44
17	.11	.08	.02	.00	.00	10	7.1	2.0	.23	.30	.16	.51
18	.17	.08	.02	.00	.00	10	6.6	1.9	.26	.26	.11	.36
19	.82	.08	.02	.00	.00	10	4.7	2.6	.96	.19	.08	.28
20	.76	.08	.02	.00	.00	10	4.0	2.1	1.5	.12	.10	.23
21	.58	.08	.02	.00	.00	12	3.3	1.9	.52	.12	.38	.28
22	.28	.07	.02	.00	.00	15	3.2	1.6	.38	.11	.63	.28
23	.14	.07	.02	.00	.00	40	2.7	1.6	.34	.11	.35	.18
24	.14	.07	.02	.00	.00	45	2.9	1.2	.25	.21	.21	.18
25	.10	.07	.02	.00	.00	50	3.3	1.4	.20	.32	.17	.29
26	.10	.06	.02	.00	.00	40	2.7	1.6	.14	.43	.18	.31
27	.09	.06	.01	.00	.00	30	2.5	2.3	.28	.38	1.0	.26
28	.09	.06	.01	.00	.00	25	3.0	1.2	.56	.51	2.0	.17
29	.09	.06	.01	.00	---	20	2.1	1.4	.27	.24	.71	.14
30	.11	.06	.00	.00	---	15	2.8	2.4	.18	.21	.48	.16
31	.14	---	.00	.00	---	16	---	2.8	---	.21	.43	---
TOTAL	4.82	2.88	.77	.00	.00	467.50	214.1	70.0	34.04	11.94	9.69	15.19
MEAN	.16	.096	.025	.000	.000	15.1	7.14	2.26	1.13	.39	.31	.51
MAX	.82	.15	.06	.00	.00	50	16	5.2	4.9	3.8	2.0	1.6
MIN	.02	.06	.00	.00	.00	.50	2.1	1.2	.14	.11	.08	.14
AC-FT	9.6	5.7	1.5	.00	.00	927	425	139	68	24	19	30

CAL YR 1978 TOTAL 845.18 MEAN 2.32 MAX 80 MIN .00 AC-FT 1680
WTR YR 1979 TOTAL 830.93 MEAN 2.28 MAX 50 MIN .00 AC-FT 1650

06355310 BUFFALO CREEK TRIBUTARY NEAR GASCOYNE, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water year 1974 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L) (00310)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)
OCT											
04...	1055	.12	6990	8.0	10.0	9.0	2.1	120	250	130	17
NOV											
01...	1050	.14	6500	8.0	7.5	10.4	2.7	120	230	1200	67
DEC											
13...	1110	.02	>8000	7.2	.0	4.2	2.3	150	460	1900	64
MAR											
07...	1805	15	1700	8.2	.0	11.0	8.7	30	51	320	70
14...	1335	4.0	2400	--	.5	--	--	--	--	--	--
22...	1700	15	1300	8.0	.5	10.2	2.6	51	39	180	57
22...	1701	15	1300	8.0	.5	--	--	44	36	170	58
23...	1110	38	1190	--	.0	--	--	--	--	--	--
29...	1420	17	1040	--	1.0	--	--	--	--	--	--
APR											
05...	1730	7.1	1790	--	.0	--	--	--	--	--	--
11...	1620	11	1700	8.1	1.5	10.1	1.2	67	76	280	55
20...	1250	3.9	2850	--	9.0	--	--	--	--	--	--
MAY											
01...	1135	2.8	3500	8.5	10.0	11.1	1.9	97	120	550	61
JUN											
05...	1025	1.5	3400	8.1	20.0	7.4	3.1	100	110	650	66
JUL											
11...	0820	.18	5700	8.3	20.5	6.8	1.9	150	230	1100	64
AUG											
01...	1040	.19	5500	8.5	25.0	10.8	2.7	80	250	1200	92
SEP											
13...	1045	.92	4710	8.3	13.0	8.4	--	120	170	950	67

DATE	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)
OCT											
04...	1.6	16	560	1000	18	.9	1.2	5300	7.21	1.72	.01
NOV											
01...	15	18	610	3100	18	.9	1.9	5280	7.18	2.00	.01
DEC											
13...	17	32	930	5400	34	1.0	15	9280	12.6	.50	.01
MAR											
07...	8.3	12	170	600	5.6	.5	4.8	1170	1.59	47.4	1.2
14...	--	--	--	--	--	--	--	--	--	--	--
22...	4.6	10	120	530	3.9	.3	7.4	901	1.23	36.5	3.0
22...	4.6	8.1	125	460	4.8	.1	7.5	848	1.15	34.3	--
23...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
APR											
05...	--	--	--	--	--	--	--	--	--	--	--
11...	5.6	8.5	200	810	5.9	.4	9.2	1410	1.92	41.9	.52
20...	--	--	--	--	--	--	--	--	--	--	--
MAY											
01...	8.8	11	380	1500	13	.7	2.2	2830	3.85	21.4	.05
JUN											
05...	11	11	390	1600	15	.9	.4	2860	3.89	11.6	.09
JUL											
11...	13	17	470	3200	13	.9	.4	5030	6.84	2.44	.04
AUG											
01...	14	18	470	3100	14	.4	15	5250	7.14	2.69	.01
SEP											
13...	13	16	460	2500	18	.8	4.1	4420	6.01	11.0	.01

06355310 BUFFALO CREEK TRIBUTARY NEAR GASCOYNE, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	NITRO-GEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, NH4 + ORG, SUSP, TOTAL (MG/L AS N) (00624)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BORON, DIS-SOLVED (UG/L AS B) (01020)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)
OCT											
04...	2.7	1.2	.12	.03	--	--	--	--	--	--	--
NOV											
01...	1.4	.20	.04	.02	--	--	--	--	--	--	--
DEC											
13...	2.4	.10	.22	.09	10	4	100	5100	0	10	1
MAR											
07...	1.4	.00	.27	.14	40	1	0	720	0	10	1
14...	--	--	--	--	--	--	--	--	--	--	--
22...	1.1	.12	.17	.11	--	--	--	360	--	--	--
22...	--	--	--	--	--	--	--	3	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
APR											
05...	--	--	--	--	--	--	--	--	--	--	--
11...	1.0	.28	.10	.06	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
MAY											
01...	.69	.00	.04	.02	--	--	--	--	--	--	--
JUN											
05...	1.1	.16	.04	.01	30	2	0	2000	0	0	0
JUL											
11...	2.0	.10	.08	.06	--	--	--	--	--	--	--
AUG											
01...	2.2	1.5	.11	.07	--	--	--	--	--	--	--
SEP											
13...	.56	.12	.10	.04	0	5	0	3400	0	0	2

DATE	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	GROSS ALPHA, DIS-SOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP, TOTAL (UG/L AS U-NAT) (80040)
OCT											
04...	--	--	--	--	--	--	--	--	--	<56	5.5
NOV											
01...	--	--	--	--	--	--	--	--	--	--	--
DEC											
13...	400	1	210	2100	.1	4	1	8500	40	--	--
MAR											
07...	140	0	40	110	.2	0	0	800	10	--	--
14...	--	--	--	--	--	--	--	--	--	--	--
22...	60	--	--	170	--	--	--	--	--	--	--
22...	0	--	--	1	--	--	--	--	--	--	--
JUN											
05...	40	0	70	50	.1	0	1	2200	20	--	--
SEP											
13...	70	0	90	120	.2	0	0	3700	20	--	--

DATE	GROSS BETA, DIS-SOLVED (PCI/L AS CS-137) (03515)	GROSS BETA, SUSP, TOTAL (PCI/L AS CS-137) (03516)	GROSS BETA, DIS-SOLVED (PCI/L AS SR/YT-90) (80050)	GROSS BETA, SUSP, TOTAL (PCI/L AS SR/YT-90) (80060)	RADIUM 226, DIS-SOLVED, RADON METHOD (PCI/L) (09511)	URANIUM DIS-SOLVED, EXTRAC-TION (UG/L) (80020)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C) (00689)	CYANIDE TOTAL (MG/L AS CN) (00720)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
OCT											
04...	<20	4.5	<18	4.4	.19	11	37	2.5	--	156	.05
NOV											
01...	--	--	--	--	--	--	36	1.7	--	102	.04
DEC											
13...	--	--	--	--	--	--	56	.8	.02	137	.01
MAR											
07...	--	--	--	--	--	--	20	6.7	.00	232	9.4
14...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	15	1.9	--	66	2.7
APR											
05...	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	17	13	--	10	.30
20...	--	--	--	--	--	--	--	--	--	--	--
MAY											
01...	--	--	--	--	--	--	22	2.2	--	34	.26
JUN											
05...	--	--	--	--	--	--	23	--	.00	37	.15
JUL											
11...	--	--	--	--	--	--	--	--	--	4	.00
AUG											
01...	--	--	--	--	--	--	71	.3	--	10	.01
SEP											
13...	--	--	--	--	--	--	43	.8	.01	11	.03

06439980 LAKE OAHE NEAR PIERRE, SD

LOCATION.--Lat 44°27'30", long 100°23'29", in NE¼ sec.1, T.111 N., R.80 W., 5th principal meridian, Hughes County, Hydrologic Unit 10130105, in Pier A of Control Tower No. 1 of powerhouse intake structure of dam on Missouri River, 6.0 mi (9.7 km) northwest of Pierre, 7.1 mi (11.4 km) upstream from Bad River, and at mile 1,072.3 (1,725.3 km).

DRAINAGE AREA.--243,500 mi^2 (630,700 km^2), approximately.

PERIOD OF RECORD.--August 1958 to current year (monthend contents only). Prior to October 1967, published as Oahe Reservoir near Pierre.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. 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.

REMARKS.--Reservoir is formed by an earthfill dam; storage began in August 1958. Maximum capacity, 23,630,000 acre-ft (29,100 hm^3) below elevation 1,620.0 ft (493.78 m), top of spillway gates. Normal maximum, 22,530,000 acre-ft (27,800 hm^3) below 1,617.0 ft (492.86 m), of which about 2,390,000 acre-ft (2,950 hm^3) is designated for flood control. Inactive storage, 5,538,000 acre-ft (6,830 hm^3) below elevation 1,540.0 ft (469.39 m). Dead storage, 2,000 acre-ft (2.47 hm^3) below elevation 1,425.0 ft (434.34 m), 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 (486.61 m), 8 gates, 50 by 23.5 ft (15.2 x 7.2 m) each; design capacity, 300,000 ft^3/s (8,500 m^3/s). 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.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 22,681,000 acre-ft (28,000 hm^3) Aug. 22, 1975, elevation, 1,617.6 ft (493.14 m); minimum since first reaching normal maximum, 15,112,000 acre-ft (18,600 hm^3) Dec. 13, 1977, elevation, 1,593.0 ft (485.55 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 22,104,000 acre-ft (27,300 hm^3) July 8, elevation, 1,615.94 ft (492.54 m); maximum elevation, 1,616.21 ft (492.62 m) July 4; minimum contents, 18,120,000 acre-ft (22,300 hm^3) Jan. 14-16, elevation, 1,603.9 ft (488.87 m).

MONTHEND ELEVATION AND CONTENTS AT 2400, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30	1,610.4	20,208,000	--
Oct. 31	1,607.0	19,099,000	-1,109,000
Nov. 30	1,605.6	18,623,000	-476,000
Dec. 31	1,604.6	18,342,000	-281,000
CAL YR 1978	--	--	+2,782,000
Jan. 31	1,605.9	18,765,000	+423,000
Feb. 28	1,607.1	19,115,000	+350,000
Mar. 31	1,610.0	20,032,000	+917,000
Apr. 30	1,614.30	21,479,000	+1,447,000
May 31	1,615.25	21,808,000	+329,000
June 30	1,615.88	22,068,000	+260,000
July 31	1,615.22	21,863,000	-205,000
Aug. 31	1,613.36	21,120,000	-743,000
Sept. 30	1,611.55	20,390,000	-730,000
WTR YR 1979	--	--	+182,000

Note.--Reservoir frozen over Jan. 3 to Apr. 15.

06467600 JAMES RIVER NEAR MANFRED, ND

LOCATION.--Lat 47°38'40", long 99°49'40", near midpoint of north line sec.15, T.148 N., R.72 W., Wells County, Hydrologic Unit 10160001, on right upstream wingwall of bridge on county highway, and 5 mi (8 km) southwest of Manfred.

DRAINAGE AREA.--253 mi^2 (655 km^2), of which about 197 mi^2 (510 km^2) 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 (489.427 m) National Geodetic Vertical Datum of 1929. Prior to Sept. 16, 1957, crest-stage gage only on downstream side of bridge at same datum.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--22 years (1957-79), 3.28 ft^3/s (0.0929 m^3/s), 2,380 acre-ft/yr (2.93 hm^3/yr); median of yearly mean discharges, 2.5 ft^3/s (0.071 m^3/s), 1,800 acre-ft/yr (2.2 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, about 2,000 ft^3/s (56.6 m^3/s) Apr. 18 or 19, 1979, gage height, 9.2 ft (2.80 m), from highwater mark, backwater from snow; no flow for long periods each year.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 30 ft^3/s (0.85 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Apr. 18 or 19	--	*2,000	56.6	[a]9.2	2.80	July 7	1300	35	0.99	3.17	0.966

No flow for many months.

a - Backwater from snow.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	36	3.0	5.6	.66	.32
2	.00	.00	.00	.00	.00	.00	.00	27	3.2	3.9	.50	.24
3	.00	.00	.00	.00	.00	.00	.00	26	3.0	4.8	.46	.16
4	.00	.00	.00	.00	.00	.00	.00	18	2.9	9.7	.46	.12
5	.00	.00	.00	.00	.00	.00	.00	19	2.6	7.5	.38	.10
6	.00	.00	.00	.00	.00	.00	.00	15	2.3	5.7	.32	.09
7	.00	.00	.00	.00	.00	.00	.00	14	1.8	30	.26	.08
8	.00	.00	.00	.00	.00	.00	.00	13	1.3	30	.24	.08
9	.00	.00	.00	.00	.00	.00	.00	13	1.2	23	.20	.08
10	.00	.00	.00	.00	.00	.00	.00	12	.94	17	.18	.09
11	.00	.00	.00	.00	.00	.00	.00	11	.82	12	.16	.09
12	.00	.00	.00	.00	.00	.00	.00	9.6	.58	8.7	.14	.08
13	.00	.00	.00	.00	.00	.00	.00	7.6	.38	6.8	.12	.07
14	.00	.00	.00	.00	.00	.00	.00	7.2	.20	5.3	.10	.07
15	.00	.00	.00	.00	.00	.00	.00	5.6	.08	3.7	.10	.06
16	.00	.00	.00	.00	.00	.00	.00	5.7	.06	3.4	.10	.06
17	.00	.00	.00	.00	.00	.00	.00	4.9	.04	3.0	.10	.06
18	.00	.00	.00	.00	.00	.00	300	4.3	.01	2.5	.10	.05
19	.00	.00	.00	.00	.00	.00	1000	4.3	.04	2.1	.10	.05
20	.00	.00	.00	.00	.00	.00	700	4.8	.50	1.8	.09	.05
21	.00	.00	.00	.00	.00	.00	420	4.1	3.5	1.3	.09	.04
22	.00	.00	.00	.00	.00	.00	300	3.4	8.5	1.1	.10	.05
23	.00	.00	.00	.00	.00	.00	221	3.1	7.8	.98	.09	.05
24	.00	.00	.00	.00	.00	.00	144	2.8	5.5	.86	.09	.03
25	.00	.00	.00	.00	.00	.00	109	2.8	8.7	.66	.08	.02
26	.00	.00	.00	.00	.00	.00	99	2.6	27	.62	.09	.02
27	.00	.00	.00	.00	.00	.00	87	2.4	23	.66	.10	.01
28	.00	.00	.00	.00	.00	.00	69	2.8	18	.82	.14	.00
29	.00	.00	.00	.00	---	.00	52	3.0	12	.74	.10	.00
30	.00	.00	.00	.00	---	.00	47	2.8	8.5	.74	.09	.00
31	.00	---	.00	.00	---	.00	---	2.9	---	.70	.22	---
TOTAL	.00	.00	.00	.00	.00	.00	3548.00	290.7	147.45	195.68	5.96	2.22
MEAN	.000	.000	.000	.000	.000	.000	118	9.38	4.92	6.31	.19	.074
MAX	.00	.00	.00	.00	.00	.00	1000	36	27	30	.66	.32
MIN	.00	.00	.00	.00	.00	.00	.00	2.4	.01	.62	.08	.00
AC-FT	.00	.00	.00	.00	.00	.00	7040	577	292	388	12	4.4

CAL YR 1978 TOTAL 2003.59 MEAN 5.49 MAX 200 MIN .00 AC-FT 3970
WTR YR 1979 TOTAL 4190.01 MEAN 11.5 MAX 1000 MIN .00 AC-FT 8310

06468170 JAMES RIVER NEAR GRACE CITY, ND

LOCATION.--Lat 47°33'29", long 98°51'45", in NW¼NW¼NW¼ sec.17, T.147 N., R.64 W., Foster County, Hydrologic Unit 10160001, on left bank on downstream side of county highway bridge, and 2.5 mi (4.0 km) northwest of Grace City.

DRAINAGE AREA.--1,060 mi² (2,750 km²), approximately, of which about 650 mi² (1,680 km²) is probably non-contributing.

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

GAGE.--Water-stage recorder. Datum of gage is 1,457.60 ft (444.276 m), National Geodetic Vertical Datum of 1929.

REMARKS.--Records good.

AVERAGE DISCHARGE.--11 years, 29.2 ft³/s (0.827 m³/s), 21,160 acre-ft/yr (26.1 hm³/yr); median of yearly mean discharges, 18 ft³/s (0.51 m³/s), 13,000 acre-ft/yr (16 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,100 ft³/s (87.8 m³/s) Apr. 13, 1969, gage height, 12.00 ft (3.658 m); no flow at times most years.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 200 ft³/s (5.66 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Apr. 25	0500	*2,200	62.3	[a]11.77	3.587	July 4	1630	286	8.10	7.37	2.246

No flow for many months.

a - Backwater from ice.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.03	.05	.01	.00	.00	.00	.00	606	44	41	39	4.1
2	.04	.05	.00	.00	.00	.00	.00	725	41	46	32	3.7
3	.04	.05	.00	.00	.00	.00	.00	669	38	138	30	3.2
4	.05	.05	.00	.00	.00	.00	.00	702	37	284	33	2.8
5	.07	.06	.00	.00	.00	.00	.00	650	35	254	31	2.2
6	.08	.05	.00	.00	.00	.00	.00	507	28	199	26	1.8
7	.07	.05	.00	.00	.00	.00	.00	417	25	165	23	1.4
8	.07	.06	.00	.00	.00	.00	.00	376	22	151	21	1.1
9	.06	.06	.00	.00	.00	.00	.00	331	19	142	17	.81
10	.05	.06	.00	.00	.00	.00	.00	296	18	139	16	.91
11	.06	.06	.00	.00	.00	.00	.00	279	17	138	15	.87
12	.05	.06	.00	.00	.00	.00	.00	257	15	139	13	.81
13	.05	.07	.00	.00	.00	.00	.00	229	14	140	12	.65
14	.06	.07	.00	.00	.00	.00	.00	204	10	136	11	.56
15	.06	.07	.00	.00	.00	.00	.00	185	9.1	130	10	.44
16	.06	.06	.00	.00	.00	.00	.00	165	8.1	124	9.3	.40
17	.05	.06	.00	.00	.00	.00	.00	141	6.9	119	8.4	.35
18	.05	.06	.00	.00	.00	.00	.00	125	5.8	111	8.5	.36
19	.06	.05	.00	.00	.00	.00	100	127	5.8	101	8.6	.42
20	.05	.05	.00	.00	.00	.00	202	122	10	94	8.2	.34
21	.05	.04	.00	.00	.00	.00	316	119	17	86	8.7	.30
22	.05	.04	.00	.00	.00	.00	422	109	22	81	8.2	.33
23	.05	.03	.00	.00	.00	.00	547	98	36	76	7.5	.31
24	.05	.02	.00	.00	.00	.00	1370	90	37	70	7.2	.27
25	.05	.02	.00	.00	.00	.00	1960	85	36	62	6.4	.30
26	.05	.02	.00	.00	.00	.00	1620	76	39	57	6.9	.39
27	.05	.01	.00	.00	.00	.00	1330	68	38	52	7.0	.38
28	.05	.01	.00	.00	.00	.00	1130	61	34	48	6.4	.37
29	.05	.01	.00	.00	---	.00	970	53	33	45	5.5	.33
30	.05	.01	.00	.00	---	.00	865	51	35	48	5.1	.31
31	.05	---	.00	.00	---	.00	---	48	---	46	4.8	---
TOTAL	1.66	1.36	.01	.00	.00	.00	10832.00	8151	733.7	3462	445.7	30.51
MEAN	.054	.045	.000	.000	.000	.000	361	263	24.5	112	14.4	1.02
MAX	.08	.07	.01	.00	.00	.00	1960	806	44	284	39	4.1
MIN	.03	.01	.00	.00	.00	.00	.00	48	5.8	41	4.8	.27
AC-FT	3.3	2.7	.02	.00	.00	.00	21490	16170	1460	6870	884	61

CAL YR 1978 TOTAL 6519.37 MEAN 17.9 MAX 880 MIN .00 AC-FT 12930
WTR YR 1979 TOTAL 23657.94 MEAN 64.8 MAX 1960 MIN .00 AC-FT 46930

06468500 JAMES RIVER NEAR PINGREE, ND

LOCATION.--Lat 47°08'30", long 98°47'00", in SW¼SW¼ sec.3, T.142 N., R.64 W., Stutsman County, Hydrologic Unit 10160001, on right bank 500 ft (152 m) upstream from dam at outlet of DePuy Marsh, 6.5 mi (10.5 km) southeast of Pingree, and 6.25 mi (10.06 km) northeast of Buchanan.

DRAINAGE AREA.--1,670 mi^2 (4,330 km^2), approximately, of which about 990 mi^2 (2,560 km^2) is probably noncontributing.

PERIOD OF RECORD.--Water year 1965, October 1978 to current year.

REMARKS.--Current sampling site is located at bridge 2 mi (3 km) upstream from former stream gaging station.

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	PH (UNITS) (00400)	TEMPERATURE (DEG C) (00010)	COLOR (PLATINUM-COBALT UNITS) (00080)	HARDNESS (MG/L AS CACO3) (00900)	HARDNESS, NONCARBONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNESIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)
OCT											
05...	1600	595	--	10.0	60	210	0	43	26	53	33
JAN											
04...	1150	1410	7.6	.0	50	580	0	110	73	140	33
APR											
22...	1830	295	7.9	2.0	10	100	5	20	12	23	32
JUL											
03...	1625	470	7.9	24.5	35	160	2	35	18	26	24

DATE	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)
OCT											
05...	1.6	14	260	59	13	.1	29	408	--	.55	.49
JAN											
04...	2.5	35	620	190	54	.3	30	1130	1010	1.54	.03
APR											
22...	1.0	6.4	95	39	6.7	.1	11	191	178	.26	.42
JUL											
03...	.9	11	160	64	6.4	.1	19	294	277	.40	.13

DATE	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BORON, DIS-SOLVED (UG/L AS B) (01020)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, DIS-SOLVED (UG/L AS FE) (01046)
OCT										
05...	.30	0	7	0	160	1	0	0	3	20
JAN										
04...	.50	20	5	200	300	<1	10	<3	1	40
APR										
22...	.28	0	2	30	70	<1	0	<3	0	30
JUL										
03...	.07	0	2	60	90	2	0	<3	1	10

DATE	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)	VANA-DIUM, DIS-SOLVED (UG/L AS V) (01085)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)
OCT										
05...	0	40	10	.0	2	0	0	250	.0	10
JAN										
04...	1	90	5500	.0	5	6	0	560	.0	8
APR										
22...	0	10	500	.5	<10	0	0	100	.0	<3
JUL										
03...	0	20	150	.0	15	2	0	190	.0	8

06469000 JAMESTOWN RESERVOIR NEAR JAMESTOWN, ND

LOCATION.--Lat 46°55'50", long 98°42'23", in SE¼NW¼ sec.24, T.140 N., R.64 W., Stutsman County, Hydrologic Unit 10160001, on left bank in control house below Jamestown Dam on James River, 1.7 mi (2.7 km) north of Jamestown Post Office, and 3.3 mi (5.3 km) upstream from Pipestem Creek.

DRAINAGE AREA.--1,760 mi^2 (4,560 km^2), approximately, of which about 1,010 mi^2 (2,620 km^2) is probably noncontributing.

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

GAGE.--Water-stage recorder. Datum of gage is 1,400.00 ft (426.720 m) National Geodetic Vertical Datum of 1929; gage readings have been reduced to elevations NGVD. June 22, 1959 to June 3, 1971 at site 0.2 mi (0.3 km) upstream at same datum. Prior to June 22, 1959, nonrecording gages at different locations.

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 (283 hm^3) between elevations 1,400 ft (426.720 m), sill of outlet and 1,454 ft (443.179 m), crest of spillway. Dead storage below elevation 1,400 ft (426.720 m), 820 acre-ft (1.01 hm^3). Maximum design pool, 389,000 acre-ft (480 hm^3), elevation, 1,464.6 ft (446.410 m). Figures given herein represent total contents based on capacity table dated Oct. 1, 1965. Reservoir is used for flood control and municipal supply. Elevations are adjusted for wind effect.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 103,100 acre-ft (127 hm^3) May 1, 1969, elevation, 1,443.60 ft (440.009 m); minimum since initial filling of reservoir, 18,220 acre-ft (22.5 hm^3) Mar. 4, 5, 1965, elevation, 1,423.66 ft (433.932 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 76,120 acre-ft (93.9 hm^3) May 14, elevation, 1,440.58 ft (439.089 m); minimum, 27,580 acre-ft (34.0 hm^3) Feb. 9-10, elevation, 1,429.15 ft (435.605 m).

MONTHEND ELEVATION AND CONTENTS AT 2400, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30	1,429.75	28,810	-
Oct. 31	1,429.40	28,090	-720
Nov. 30	1,429.29	27,870	-220
Dec. 31	1,429.22	27,720	-150
CAL YR 1978	--	--	+1,020
Jan. 31	1,429.17	27,620	-100
Feb. 28	1,429.23	27,740	+120
Mar. 31	1,429.27	27,830	+90
Apr. 30	1,435.94	45,050	+17,220
May 31	*1,439.55	67,800	+22,750
June 30	1,437.54	53,360	-14,440
July 31	1,435.32	43,070	-10,290
Aug. 31	1,432.75	35,740	-7,330
Sept. 30	1,432.12	34,160	-1,580
WTR YR 1979	--	--	+5,350

* Estimated

06469400 PIPESTEM CREEK NEAR PINGREE, ND

LOCATION.--Lat 47°10'03", long 98°58'07", in NE¼NE¼NW¼ sec.31, T.143 N., R.65 W., Stutsman County, Hydrologic Unit 10160002, on right bank on downstream side of State Highway 36 bridge, and 3 mi (5 km) west of Pingree.

DRAINAGE AREA.--700 mi^2 (1,810 km^2), of which about 440 mi^2 (1,140 km^2) is probably noncontributing.

PERIOD OF RECORD.--October 1973 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,500.63 ft (457.392 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good.

AVERAGE DISCHARGE.--6 years, 25.5 ft^3/s (0.722 m^3/s), 18,470 acre-ft/yr (22.8 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,520 ft^3/s (71.37 m^3/s) Apr. 20, 1979, gage height, 11.60 ft (3.536 m), backwater from ice; no flow at times.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 100 ft^3/s (2.83 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Apr. 20	0815	*2,520	71.4	11.60	3.536	June 28	1700	125	3.54	6.79	2.070

No flow for many months.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	6.6	306	17	109	16	1.8
2	.00	.00	.00	.00	.00	.00	6.6	259	16	98	15	1.7
3	.01	.00	.00	.00	.00	.00	6.8	229	15	89	14	1.4
4	.01	.00	.00	.00	.00	.00	7.1	210	14	81	14	1.3
5	.05	.00	.00	.00	.00	.00	7.2	176	12	74	13	1.1
6	.02	.00	.00	.00	.00	.00	7.1	158	12	67	11	.94
7	.01	.00	.00	.00	.00	.00	7.3	147	11	61	11	.78
8	.00	.00	.00	.00	.00	.00	7.7	137	9.7	58	9.8	.62
9	.00	.00	.00	.00	.00	.00	8.1	127	9.4	52	8.9	.62
10	.00	.00	.00	.00	.00	.00	9.5	119	9.0	48	7.3	.62
11	.00	.00	.00	.00	.00	.00	12	109	8.3	45	6.7	.56
12	.00	.00	.00	.00	.00	.00	12	101	8.3	46	6.3	.50
13	.00	.00	.00	.00	.00	.00	12	92	7.3	43	6.3	.50
14	.00	.00	.00	.00	.00	.00	12	81	7.3	40	5.2	.40
15	.00	.00	.00	.00	.00	.00	13	74	6.5	38	4.4	.40
16	.00	.00	.00	.00	.00	.00	17	64	5.4	35	3.7	.40
17	.00	.00	.00	.00	.00	.00	32	61	4.9	33	3.5	.40
18	.00	.00	.00	.00	.00	.00	260	51	3.9	31	3.3	.35
19	.00	.00	.00	.00	.00	.00	1140	47	4.4	30	2.9	.30
20	.00	.00	.00	.00	.00	.00	2010	47	20	28	2.6	.30
21	.00	.00	.00	.00	.00	.00	1220	47	40	26	2.6	.25
22	.00	.00	.00	.00	.00	.00	1540	49	42	26	2.6	.25
23	.00	.00	.00	.00	.00	.00	1610	42	34	24	2.3	.30
24	.00	.00	.00	.00	.00	.00	1190	37	28	24	2.2	.30
25	.00	.00	.00	.00	.00	.00	1010	32	26	22	1.9	.25
26	.00	.00	.00	.00	.00	.00	826	29	24	20	1.8	.30
27	.00	.00	.00	.00	.00	.00	714	24	49	18	1.8	.35
28	.00	.00	.00	.00	.00	5.9	602	21	116	16	2.2	.30
29	.00	.00	.00	.00	---	6.2	490	20	121	16	2.2	.30
30	.00	.00	.00	.00	---	6.3	389	20	117	21	2.0	.30
31	.00	---	.00	.00	---	6.5	---	17	---	17	2.0	---
TOTAL	.10	.00	.00	.00	.00	24.90	13185.0	2933	798.2	1336	188.5	17.89
MEAN	.003	.000	.000	.000	.000	.80	440	94.6	26.6	43.1	6.08	.60
MAX	.05	.00	.00	.00	.00	6.5	2010	306	121	109	16	1.8
MIN	.00	.00	.00	.00	.00	.00	6.6	17	3.9	16	1.8	.25
AC-FT	.2	.00	.00	.00	.00	49	26150	5820	1580	2650	374	35

CAL YR 1978 TOTAL 7861.23 MEAN 21.5 MAX 605 MIN .00 AC-FT 15590
WTR YR 1979 TOTAL 18483.59 MEAN 50.6 MAX 2010 MIN .00 AC-FT 36660

06470000 JAMES RIVER AT JAMESTOWN, ND

LOCATION.--Lat 46°53'22", long 98°40'58", in NW¼NE¼ sec.6, T.139 N., R.63 W., Stutsman County, Hydrologic Unit 10160003, on left bank 200 ft (60 m) upstream from Interstate 94 bridge at southeast corner of Jamestown, and 3 mi (5 km) downstream from Pipestem Creek.

DRAINAGE AREA.--2,820 mi^2 (7,300 km^2), approximately, of which about 1,650 mi^2 (4,270 km^2) is probably non-contributing.

PERIOD OF RECORD.--June 1928 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.

REVISED RECORDS.--WSP 1239: 1938(M). WSP 1917: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,373.27 ft (418.573 m) National Geodetic Vertical Datum of 1929. Oct. 1, 1949 to Sept. 30, 1965, at former bridge 0.5 mi (0.8 km) upstream at datum 2.00 ft (0.610 m) higher. See WSP 1729 or 1917 for history of changes prior to Oct. 1, 1949.

REMARKS.--Records good. Flow regulated by Arrowwood, Jim, and Pipestem Lakes, and Jamestown Reservoir, combined capacity, 393,000 acre-ft (485 hm^3). Regulation by Jamestown Reservoir (station 06469000) 6 mi (10 km) upstream since 1953 and by Pipestem Lake, capacity 147,000 acre-ft (181 hm^3), since 1973.

AVERAGE DISCHARGE.--44 years (water years 1929-34, 1938-39, 1944-79), 59.2 ft^3/s (1.677 m^3/s), 42,890 acre-ft/yr (52.9 hm^3/yr); median of yearly mean discharges, 27 ft^3/s (0.76 m^3/s), 19,600 acre-ft/yr (24 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,390 ft^3/s (181 m^3/s) May 13, 1950, gage height, 15.82 ft (4.822 m), site and datum then in use; no flow at times in 1933.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 580 ft^3/s (16.4 m^3/s) Apr. 12, gage height, 7.97 ft (2.429 m); minimum daily, 1.8 ft^3/s (0.051 m^3/s) Oct. 1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.8	5.7	5.5	5.4	5.5	5.5	5.6	503	463	305	246	258
2	2.1	5.8	5.6	5.5	5.5	5.6	2.1	497	482	305	249	259
3	2.5	4.1	5.6	5.5	5.3	5.5	2.2	469	481	307	251	259
4	5.1	4.2	5.6	5.5	5.2	5.5	2.2	485	482	307	252	259
5	5.4	4.4	5.6	5.5	5.2	5.5	2.5	477	478	308	255	261
6	2.1	4.5	5.6	5.5	5.2	5.5	2.5	487	479	308	253	258
7	5.4	4.5	5.4	5.5	5.2	2.6	2.5	490	480	311	252	254
8	5.9	4.5	5.4	5.5	5.2	5.4	5.7	490	479	312	252	248
9	5.9	5.1	5.4	5.5	5.2	4.0	4.0	488	481	312	252	248
10	4.8	4.8	5.4	5.5	5.2	2.8	5.2	489	484	258	252	250
11	5.2	4.8	5.4	5.5	5.2	5.2	25	490	485	250	252	247
12	5.8	4.5	5.4	5.5	5.2	10	30	484	493	287	250	243
13	7.0	4.5	5.5	5.5	5.5	19	27	486	490	255	250	242
14	7.0	4.2	5.5	5.5	5.5	16	21	486	491	250	247	241
15	6.4	4.1	5.5	5.6	5.5	9.9	15	484	486	249	248	240
16	7.2	4.0	5.5	5.7	5.5	16	67	483	488	246	250	239
17	6.0	4.0	5.5	5.9	5.5	38	342	472	486	243	250	239
18	6.6	4.0	5.5	4.0	5.5	61	526	470	484	243	250	239
19	6.5	4.0	5.5	4.2	5.4	93	400	475	445	245	250	240
20	15	4.0	5.5	4.6	5.4	93	278	468	190	243	247	239
21	16	4.0	5.5	4.6	5.4	60	195	466	101	241	268	236
22	11	4.0	5.5	4.2	5.4	51	159	466	269	240	259	237
23	11	4.0	5.5	5.9	5.5	58	166	464	306	243	260	238
24	10	5.9	5.4	5.9	5.5	40	233	464	305	248	254	238
25	9.5	5.9	5.5	5.9	5.5	32	188	474	305	249	256	235
26	8.5	5.9	5.5	5.6	5.6	25	236	482	304	249	264	225
27	7.0	5.9	5.5	5.5	5.6	17	273	482	305	249	253	236
28	5.7	5.8	5.4	5.6	5.7	8.2	335	481	304	249	120	239
29	5.1	5.8	5.4	5.5	---	4.6	332	501	305	256	87	239
30	4.7	5.7	5.4	5.6	---	4.1	364	491	304	268	182	249
31	5.9	---	5.4	5.6	---	5.3	---	483	---	251	256	---
TOTAL	200.1	124.2	167.3	163.8	93.7	696.8	4242.5	14927	12155	8267	7445	7335
MEAN	6.45	4.14	5.40	5.67	5.35	22.5	141	482	405	267	240	245
MAX	16	5.1	5.6	6.6	5.7	93	526	503	493	312	268	261
MIN	1.8	3.7	5.3	5.5	5.2	2.8	2.1	464	101	240	87	225
AC-FT	397	246	213	226	186	1380	8410	29610	24110	16440	14770	14550

CAL YR 1978 TOTAL 20929.5 MEAN 57.5 MAX 520 MIN 1.1 AC-FT 41510
WTR YR 1979 TOTAL 55727.4 MEAN 153 MAX 526 MIN 1.8 AC-FT 110500

06470500 JAMES RIVER AT LA MOURE, ND

LOCATION.--Lat 46°21'20", long 98°18'15", in NE¼NE¼ sec.11, T.133 N., R.61 W., LaMoure County, Hydrologic Unit 10160003, on left bank 80 ft (24 m) downstream from bridge on State Highway 13, 0.5 mi (0.8 km) west of LaMoure, and 12 mi (19 km) upstream from Cottonwood Creek.

DRAINAGE AREA.--4,390 mi^2 (11,370 km^2), approximately, of which about 2,600 mi^2 (6,730 km^2) is probably non-contributing.

WATER-DISCHARGE RECORDS

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.

REVISED RECORDS.--WSP 1917: Drainage area.

GAGE.--Water-stage recorder and rubble-masonry control. Datum of gage is 1,290.00 ft (393.192 m) National Geodetic Vertical Datum of 1929. See WSP 1729 or 1917 for history of changes prior to Apr. 19, 1950.

REMARKS.--Records good except those below 50 ft^3/s (1.42 m^3/s), which are fair. Flow regulated by Arrowwood, Jim, and Pipestem Lakes, and Jamestown Reservoir, combined capacity, 393,000 acre-ft (485 hm^3). Regulation by Jamestown Reservoir (station 06469000) 85 mi (137 km) upstream since 1953 and by Pipestem Lake, capacity 147,000 acre-ft (181 hm^3), since 1973.

AVERAGE DISCHARGE.--29 years (water years 1951-79), 94.0 ft^3/s (2.662 m^3/s), 68,100 acre-ft/yr (84.0 hm^3/yr); median of yearly mean discharges, 61 ft^3/s (1.73 m^3/s), 44,200 acre-ft/yr (54 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,800 ft^3/s (193 m^3/s) Apr. 14, 1969, gage height, 16.17 ft (4.929 m); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--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.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,830 ft^3/s (108 m^3/s) Apr. 18; maximum gage height, 14.35 ft (4.374 m), Apr. 21 and 22; minimum daily discharge, 4.8 ft^3/s (0.136 m^3/s) Oct. 23.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20	11	7.2	9.1	10	13	93	664	545	384	287	165
2	22	14	6.7	9.1	9.2	15	87	640	533	381	287	227
3	22	17	7.2	9.0	9.6	16	78	666	526	373	274	271
4	20	14	7.6	8.6	11	16	75	682	521	360	279	284
5	18	19	7.8	8.2	10	14	89	659	510	359	268	288
6	12	10	7.3	8.4	9.2	14	87	650	518	351	272	278
7	14	13	6.9	8.5	9.2	16	87	653	514	348	267	278
8	14	16	6.6	8.2	9.2	16	141	655	506	347	263	284
9	16	17	6.8	8.3	9.2	18	220	661	506	344	268	284
10	12	22	6.6	8.4	9.2	32	279	651	509	344	255	278
11	21	8.6	6.9	8.2	9.2	18	500	628	505	340	252	278
12	12	14	7.5	8.2	9.2	14	880	614	512	330	257	272
13	11	17	7.8	8.3	10	15	940	608	503	305	255	267
14	11	16	8.0	7.9	10	13	960	597	522	304	251	278
15	16	12	9.2	7.7	9.2	15	980	585	495	309	246	284
16	7.1	11	9.1	7.4	10	12	1000	567	494	288	254	278
17	14	11	8.9	7.5	11	14	1570	580	492	282	262	284
18	9.4	10	8.7	7.6	11	17	2610	555	484	280	261	284
19	10	9.3	8.9	7.8	11	27	3690	556	511	276	262	284
20	10	8.7	9.1	8.5	12	26	3530	555	540	274	260	284
21	14	8.0	9.9	8.4	12	45	3340	548	540	274	261	289
22	9.3	7.8	10	8.6	12	136	3100	560	475	267	257	284
23	4.8	7.9	9.9	8.8	12	148	2590	532	373	270	256	284
24	15	8.0	9.2	8.5	13	124	1780	532	407	268	255	272
25	13	8.5	9.2	8.5	13	155	1480	538	462	269	250	262
26	9.2	8.0	9.3	8.6	14	166	1400	542	465	277	250	262
27	11	8.6	10	9.2	14	154	1100	528	441	274	245	262
28	9.5	7.8	10	8.9	14	163	826	527	433	274	245	256
29	11	8.1	10	8.5	---	151	742	532	410	275	243	240
30	15	7.5	10	8.5	---	129	694	530	401	282	236	230
31	8.6	---	9.2	10	---	113	---	539	---	278	181	---
TOTAL	411.9	350.8	261.5	261.4	302.4	1825	34948	18334	14653	9587	7959	8071
MEAN	13.3	11.7	8.44	8.43	10.8	58.9	1165	591	488	309	257	269
MAX	22	22	10	10	14	166	3690	682	545	384	287	289
MIN	4.8	7.5	6.6	7.4	9.2	12	75	527	373	267	181	165
AC-FT	817	696	519	518	600	3620	69320	36370	29060	19020	15790	16010

CAL YR 1978	TOTAL	43991.7	MEAN 121	MAX 1700	MIN 3.0	AC-FT	87260	
WTR YR 1979	TOTAL	96965.0	MEAN 266	MAX 3690	MIN 4.8	AC-FT	192300	

06470500 JAMES RIVER AT LA MOURE, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1957 to current year.

PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: June 1953 to September 1975, October 1976 to current year.
SPECIFIC CONDUCTANCE: October 1976 to current year.

INSTRUMENTATION.--Temperature recorder from June 1953 to September 1975, November 1976 to September 1978.

REMARKS.--Due to recorder malfunctions, continuous water temperature data does not conform to acceptable accuracy standards. Once daily observations recorded by a local observer are being published in lieu of the recorder data.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: Maximum, 33.0°C July 12, 13, 1957; July 23, 1977; minimum, 0.0°C on many days during winter months.
SPECIFIC CONDUCTANCE: Maximum daily, 1,880 micromhos Jan. 31, 1979; minimum daily, 200 micromhos Mar. 24, 25, and 26, 1978.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURES: Maximum daily, 26.5°C Aug. 8; minimum, 0.0°C Jan. 14, 15.
SPECIFIC CONDUCTANCE: Maximum daily, 1,880 micromhos Jan. 31; minimum daily, 250 micromhos Apr. 18, 20, 21.

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE (DEG C) (00010)	COLOR (PLAT-INUM-COBALT UNITS) (00080)	OXYGEN, DIS-SOLVED (MG/L) (00300)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)
OCT												
04...	1800	27	680	--	11.5	30	11.0	230	--	51	26	64
31...	1120	6.6	905	8.4	6.0	20	11.0	320	--	72	34	83
NOV												
30...	1345	7.2	1000	8.1	2.0	10	11.2	480	--	110	50	120
JAN												
04...	1430	8.5	1500	7.5	1.0	5	4.4	580	160	140	55	150
30...	1430	8.5	1420	7.1	.5	4	3.7	620	92	160	54	140
MAR												
01...	1200	13	1220	7.7	.0	9	2.0	480	51	120	44	130
APR												
17...	1355	1340	200	--	.5	--	--	--	--	--	--	--
19...	1315	3670	230	8.1	5.5	160	8.7	83	23	20	8.1	9.7
23...	1830	2540	300	--	9.0	--	--	--	--	--	--	--
24...	1630	1670	320	--	8.5	--	--	--	--	--	--	--
MAY												
03...	1200	648	560	8.0	7.5	40	9.9	230	59	52	24	38
JUN												
06...	1615	511	510	8.5	19.0	25	9.0	160	3	39	16	38
JUL												
10...	1700	337	510	7.7	26.0	25	5.2	170	24	40	18	33
AUG												
09...	1010	267	485	8.0	24.0	40	6.0	170	5	42	17	35
SEP												
06...	1615	269	480	8.4	20.5	20	9.5	160	3	39	16	29

DATE	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)
OCT												
04...	36	1.8	12	230	120	23	.3	11	459	--	.62	35.7
31...	35	2.0	11	290	150	40	.2	16	599	--	.81	--
NOV												
30...	35	2.4	12	410	260	61	.3	18	878	--	1.19	--
JAN												
04...	35	2.7	15	420	330	87	.4	29	1140	1060	1.55	--
30...	32	2.4	13	530	290	69	.3	29	1080	1080	1.47	--
MAR												
01...	36	2.6	9.9	430	230	67	.3	29	880	890	1.20	--
APR												
17...	--	--	--	--	--	--	--	--	--	--	--	--
19...	18	.5	8.7	60	35	3.8	.1	9.3	150	136	.20	1490
23...	--	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--	--
MAY												
03...	26	1.1	10	170	110	16	.2	11	386	366	.53	675
JUN												
06...	32	1.3	8.9	160	81	15	.2	3.7	311	299	.42	429
JUL												
10...	28	1.1	8.7	150	75	10	.2	10	303	288	.41	276
AUG												
09...	39	1.2	9.6	170	80	9.9	.2	16	314	314	.43	226
SEP												
06...	37	1.0	9.2	160	86	8.4	.2	3.6	302	288	.41	219

06470500 JAMES RIVER AT LA MOURE, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BORON, DIS-SOLVED (UG/L AS B) (01020)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)
OCT												
04...	.01	.04	0	3	0	190	1	0	0	1	50	2
31...	.02	.08	--	--	--	280	--	--	--	--	--	--
NOV												
30...	.09	.09	--	--	--	410	--	--	--	--	--	--
JAN												
04...	.40	.22	--	--	--	540	--	--	--	--	--	--
30...	.20	.11	--	--	--	460	--	--	--	--	--	--
MAR												
01...	.22	.21	--	--	--	420	--	--	--	--	--	--
APR												
17...	--	--	--	--	--	--	--	--	--	--	--	--
19...	1.1	.11	40	1	30	80	<1	10	<3	2	50	0
23...	--	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--	--
MAY												
03...	.53	.01	--	--	--	80	--	--	--	--	--	--
JUN												
06...	.11	.13	--	--	--	110	--	--	--	--	--	--
JUL												
10...	.58	.09	--	--	--	90	--	--	--	--	--	--
AUG												
09...	.47	.27	--	--	--	150	--	--	--	--	--	--
SEP												
06...	.05	.08	--	--	--	110	--	--	--	--	--	--

DATE	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)	VANA-DIUM, DIS-SOLVED (UG/L AS V) (01085)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70338)
OCT												
04...	50	120	.0	4	0	0	330	.0	20	32	2.4	--
31...	--	--	--	--	--	--	--	--	--	--	--	--
NOV												
30...	--	--	--	--	--	--	--	--	--	20	--	--
JAN												
04...	--	--	--	--	--	--	--	--	--	25	--	--
30...	--	--	--	--	--	--	--	--	--	30	--	--
MAR												
01...	--	--	--	--	--	--	--	--	--	--	--	--
APR												
17...	--	--	--	--	--	--	--	--	--	--	--	--
19...	5	250	.1	<10	0	0	70	2.0	7	330	3270	59
23...	--	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--	--
MAY												
03...	--	--	--	--	--	--	--	--	--	--	--	--
JUN												
06...	--	--	--	--	--	--	--	--	--	26	36	--
JUL												
10...	--	--	--	--	--	--	--	--	--	68	62	--
AUG												
09...	--	--	--	--	--	--	--	--	--	69	50	--
SEP												
06...	--	--	--	--	--	--	--	--	--	75	54	--

DATE	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70340)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)	BED MAT. FALL DIAM. % FINER THAN .062 MM (80158)	BED MAT. FALL DIAM. % FINER THAN .125 MM (80159)	BED MAT. FALL DIAM. % FINER THAN .250 MM (80160)	BED MAT. FALL DIAM. % FINER THAN .500 MM (80161)	BED MAT. FALL DIAM. % FINER THAN 1.00 MM (80162)	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM (80169)	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM (80170)	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM (80171)	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM (80172)	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM (80173)
OCT												
04...	--	--	28	32	40	56	69	80	89	94	98	100
APR												
17...	--	--	--	--	--	--	--	--	--	--	--	--
19...	83	100	--	--	--	--	--	--	--	--	--	--
JUL												
10...	--	--	17	21	25	36	45	61	87	97	100	--
AUG												
09...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
06...	--	--	13	14	17	22	30	44	67	90	100	--

06470500 JAMES RIVER AT LA MOURE, ND--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	680	700	1220	1550	1700	1280	400	400	540	700	500	520
2	690	750	1250	1580	1600	1280	400	480	520	680	500	540
3	695	770	1280	1580	1600	1280	480	560	520	640	510	520
4	700	850	1300	1600	1600	1260	580	620	520	500	510	520
5	700	850	1330	1600	1550	1260	580	660	510	540	520	500
6	700	880	1380	1600	1540	1260	560	680	510	520	530	500
7	710	900	1450	1600	1540	1240	560	680	490	500	540	490
8	720	940	1550	1640	1520	1240	540	680	490	480	550	490
9	740	950	1500	1680	1500	1220	500	690	480	470	550	500
10	740	950	1520	1700	1500	1220	480	660	470	470	550	490
11	740	975	1500	1700	1480	1200	480	660	470	465	560	490
12	750	1000	1480	1750	1450	1200	410	660	470	470	560	490
13	750	1000	1550	1780	1420	1200	410	640	470	470	560	485
14	750	1020	1500	1780	1400	1180	380	640	470	500	540	490
15	760	1040	1520	1750	1400	1180	360	640	470	500	540	490
16	760	1060	1500	1750	1380	1180	340	620	500	500	550	500
17	780	1090	1480	1750	1380	1160	300	610	540	500	540	500
18	780	1100	1500	1750	1360	1160	250	610	560	480	520	490
19	780	1100	1500	1750	1350	1160	260	600	580	500	530	500
20	790	1120	1500	1750	1350	1100	250	600	580	510	530	510
21	800	1120	1500	1780	1360	1050	250	600	590	510	520	500
22	810	1120	1520	1780	1350	1000	260	590	610	510	520	500
23	810	1140	1520	1780	1320	900	300	590	630	520	530	500
24	840	1150	1530	1800	1340	800	320	560	650	510	520	490
25	840	1150	1530	1810	1320	800	320	540	670	500	500	490
26	860	1160	1540	1810	1320	850	320	530	700	500	520	500
27	880	1180	1550	1820	1300	500	340	520	710	520	530	500
28	880	1180	1550	1840	1300	500	360	540	720	520	500	490
29	910	1180	1580	1840	---	500	380	560	740	500	510	490
30	940	1200	1600	1850	---	480	420	550	720	500	520	480
31	970	---	1600	1880	---	680	---	540	---	500	---	---
MEAN	782	1020	1480	1730	1440	1040	393	597	563	516	529	499

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14.5	9.0	1.0	.5	1.0	1.5	1.5	7.0	14.0	24.0	21.0	20.0
2	12.0	8.0	1.0	.5	1.0	1.0	1.0	8.0	13.0	24.0	22.0	22.0
3	11.0	8.0	1.0	.5	1.0	1.0	1.5	9.0	12.5	23.0	23.0	21.0
4	10.0	8.0	1.0	.5	1.0	1.0	1.0	9.0	14.0	23.0	23.0	20.0
5	10.0	7.0	.5	.5	1.0	1.0	1.0	9.5	16.0	22.0	23.0	20.0
6	10.0	7.0	1.0	.5	1.0	1.0	1.0	10.0	16.0	21.0	24.0	20.0
7	11.0	6.0	1.0	.5	1.0	.5	1.0	9.0	17.0	21.0	25.0	18.0
8	10.0	6.0	1.0	.5	1.0	.5	1.0	8.0	17.0	21.0	26.5	19.0
9	11.0	4.0	1.0	.5	1.0	1.0	1.0	8.0	18.5	22.0	25.0	19.0
10	11.0	2.0	1.5	.5	1.5	1.0	1.0	8.0	19.0	23.0	24.0	18.0
11	11.0	2.0	1.5	.5	1.5	1.0	1.0	8.0	20.0	25.0	22.0	18.0
12	11.0	1.5	1.5	.5	1.5	1.0	1.0	8.0	22.0	26.0	22.0	17.0
13	11.0	1.5	1.5	.5	1.5	1.0	1.0	10.0	23.0	26.0	23.0	16.0
14	10.0	1.5	1.5	.0	1.0	1.5	1.0	10.0	23.0	25.0	22.0	16.0
15	8.0	1.5	1.5	.0	1.0	1.0	1.0	11.0	22.0	24.0	22.0	16.0
16	8.0	1.5	1.5	.5	1.0	2.0	2.0	11.0	23.0	22.0	22.0	16.0
17	8.0	1.5	1.5	1.0	1.0	2.5	5.0	10.0	24.0	22.0	23.0	17.0
18	9.0	1.0	1.5	1.5	1.0	2.5	6.0	10.0	24.0	23.0	24.5	17.0
19	9.0	1.0	1.0	2.0	1.0	2.5	7.0	10.0	24.0	24.0	22.5	17.0
20	9.0	1.0	1.0	1.0	1.0	2.5	7.0	10.0	23.0	24.0	23.0	17.5
21	9.0	1.0	1.0	1.0	1.5	2.0	9.0	9.0	23.0	24.0	22.0	17.5
22	9.5	1.0	1.0	.5	1.5	2.0	11.0	9.0	22.0	23.0	21.0	18.0
23	9.0	1.0	1.0	.5	1.5	1.5	11.0	9.0	22.0	24.0	22.0	18.0
24	9.0	1.0	1.0	1.0	1.5	1.5	11.0	10.0	23.0	23.0	22.0	19.0
25	9.0	1.0	1.0	1.0	1.5	1.5	10.0	11.0	23.0	23.0	21.0	19.0
26	9.0	1.0	.5	1.0	1.5	1.0	10.0	11.0	23.0	23.0	21.0	19.0
27	9.0	1.0	.5	1.0	1.5	1.0	9.0	11.5	24.0	24.0	22.0	19.0
28	9.0	1.0	.5	1.0	1.5	1.0	7.0	14.0	23.0	23.0	21.0	18.0
29	9.0	1.0	.5	1.0	---	1.0	7.0	20.0	23.0	23.0	20.0	17.0
30	9.0	1.0	.5	1.0	---	1.0	7.0	14.0	24.0	21.0	19.5	14.0
31	9.0	---	.5	1.0	---	.5	---	13.0	---	21.0	---	---
MEAN	10.0	3.0	1.0	.5	1.0	1.5	4.5	10.0	20.5	23.0	22.5	18.0

06470500 JAMES RIVER AT LA MOURE, ND--Continued

DISSOLVED OXYGEN AND WATER TEMPERATURE PROFILE, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	MG/L	DEGREES, C
Oct. 3, 1978		
2000	11.3	12.5
2100	11.3	-
2200	11.3	-
2300	11.3	-
2400	11.1	12.0
Oct. 4, 1978		
0100	11.1	-
0200	11.0	-
0300	11.0	-
0400	11.0	-
0500	11.0	-
0600	10.9	12.0
0700	10.8	-
0800	10.7	-
0900	10.5	-
1000	10.8	-
1100	11.0	-
1200	11.0	12.0
1300	11.2	-
1400	11.2	-
1500	11.2	-
1600	11.2	-
1700	11.2	-
1800	11.0	11.5
1900	10.8	-
2000	10.6	11.0
Jan. 30, 1979		
1430	3.7	.5
1700	3.9	.5
2100	3.2	.5
Jan. 31, 1979		
0300	3.6	.5
0800	1.4	.5
1100	2.9	.5
May 2, 1979		
1900	10.5	8.1
2200	10.4	7.8
May 3, 1979		
0400	10.1	7.2
0800	9.9	6.7
1200	9.9	7.4
1700	10.2	9.0
1900	10.1	9.0
July 9, 1979		
1900	5.3	24.0
2000	5.3	-
2100	5.2	24.0
2200	5.1	-
2300	5.0	-
2400	5.0	23.5
July 10, 1979		
0100	5.0	-
0200	4.9	-
0300	4.9	-
0400	4.9	-
0500	4.9	-
0600	4.8	-
0700	4.8	-
0800	4.8	-
0900	4.8	23.0
1000	4.9	-
1100	5.0	-
1200	5.0	24.0
1300	5.0	-
1400	5.2	-
1500	5.1	-
1600	5.0	-
1700	5.2	26.0
1800	5.2	-
1900	5.3	26.0

06470800 BEAR CREEK NEAR OAKES, ND

LOCATION.--Lat 46°13'31", long 98°04'17", in NE¼NE¼ sec.28, T.132 N., R.59 W., Dickey County, Hydrologic Unit 10160003, on right bank 80 ft downstream from bridge on ND Highway 13, 6 mi (10 km) north, and 1 mi (2 km) east of Oakes.

DRAINAGE AREA.--About 437 mi^2 (1,132 km^2) contributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1976 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,291.30 ft (393.588 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Record fair.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,170 ft^3/s (33.1 m^3/s) Apr. 15, 1979, gage height, 11.47 ft (3.496 m); no flow for long periods each year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of July 1, 1975, reached a stage of 15.00 ft (4.572 m) present datum, from floodmark, discharge, 4,590 ft^3/s (130 m^3/s).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 50 ft^3/s (1.42 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Mar. 24	--	130	3.68	Backwater from ice	
Apr. 8	--	110	3.12	Backwater from ice	
Apr. 15	1915	*1,170	33.1	11.47	3.496

No flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.0	.10	.65	.10	.00	.00	24	82	14	5.4	.07	.45
2	3.0	.10	.55	.10	.00	.00	21	74	12	5.6	.04	.41
3	1.9	.10	.50	.09	.00	.00	21	67	10	5.8	.04	.25
4	9.6	.10	.45	.08	.00	.00	28	60	8.1	5.8	.28	.15
5	2.4	.10	.38	.06	.00	.00	45	57	7.0	5.0	.32	.14
6	.57	.10	.30	.05	.00	.00	40	55	6.5	3.8	.44	.01
7	.55	.10	.25	.05	.00	.00	45	56	5.0	2.8	.50	.01
8	.50	.10	.22	.04	.00	.00	93	54	4.8	2.5	.90	.02
9	.48	.10	.21	.04	.00	.00	55	50	4.6	2.3	1.4	.01
10	.44	.10	.20	.02	.00	.00	56	47	4.8	1.5	1.8	.00
11	.40	.10	.20	.01	.00	.00	81	44	4.1	1.3	2.0	.00
12	.38	.10	.20	.00	.00	.00	259	41	4.2	1.0	2.1	.00
13	.36	.10	.20	.00	.00	.00	339	39	3.7	1.0	1.6	.00
14	.35	.10	.20	.00	.00	.00	478	37	3.1	1.0	1.5	.00
15	.34	.10	.20	.00	.00	.00	1030	35	2.1	.91	1.3	.00
16	.32	.09	.20	.00	.00	.00	1060	33	1.7	.67	1.6	.00
17	.30	.08	.18	.00	.00	.00	1090	30	1.1	.44	1.4	.00
18	.28	.06	.16	.00	.00	.00	1080	29	.85	.32	1.3	.00
19	.26	.06	.16	.00	.00	16	853	27	.99	.15	1.0	.00
20	.24	.05	.15	.00	.00	28	622	25	8.0	.07	.77	.00
21	.30	.05	.15	.00	.00	52	498	24	13	.04	.57	.00
22	.28	.05	.15	.00	.00	70	397	23	11	.00	.62	.00
23	.26	.05	.14	.00	.00	85	316	22	9.0	.00	.70	.00
24	.22	.40	.13	.00	.00	119	257	21	7.3	.00	.56	.00
25	.20	.35	.12	.00	.00	106	225	19	6.2	.01	.34	.00
26	.20	.30	.12	.00	.00	49	192	18	5.7	.04	.31	.00
27	.15	.25	.12	.00	.00	24	164	16	4.7	.07	.29	.00
28	.15	.50	.12	.00	.00	19	133	15	4.7	.07	.36	.00
29	.15	.84	.11	.00	---	17	108	14	4.6	.04	.43	.00
30	.15	.75	.10	.00	---	19	94	14	5.1	.13	.38	.00
31	.10	---	.10	.00	---	20	---	15	---	.16	.44	---
TOTAL	30.13	5.38	6.92	.64	.00	624.00	9664	1143	177.94	47.90	25.36	1.45
MEAN	.97	.18	.22	.021	.000	20.1	323	36.9	5.93	1.55	.82	.048
MAX	9.6	.84	.65	.10	.00	119	1090	82	14	5.8	2.1	.45
MIN	.10	.05	.10	.00	.00	.00	21	14	.85	.00	.04	.00
AC-FT	60	11	14	1.3	.00	1240	19210	2270	353	95	50	2.9

CAL YR 1978 TOTAL 5754.10 MEAN 15.8 MAX 550 MIN .00 AC-FT 11410
WTR YR 1979 TOTAL 11746.72 MEAN 32.2 MAX 1090 MIN .00 AC-FT 23300

06470800 BEAR CREEK NEAR OAKES, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1976 to current year.

REMARKS.--Some chemical data furnished by North Dakota State Water Commission.

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE (DEG C) (00010)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)
OCT										
03...	1030	1.2	800	--	11.0	300	54	67	32	56
31...	0800	.11	850	8.6	4.0	330	0	71	37	110
NOV										
29...	1000	.84	1500	7.6	.0	760	240	160	88	120
JAN										
05...	1600	E.09	1600	--	.0	--	--	--	--	--
MAR										
25...	1355	104	405	--	.5	--	--	--	--	--
27...	1750	24	725	--	.0	--	--	--	--	--
APR										
09...	1715	49	375	--	.0	--	--	--	--	--
16...	1710	1040	225	8.0	3.0	82	17	20	7.8	11
19...	1710	869	260	--	11.0	--	--	--	--	--
24...	1015	258	360	--	10.0	--	--	--	--	--
MAY										
04...	1710	61	520	7.9	12.5	220	65	47	25	31
JUN										
07...	1320	4.7	1000	7.9	17.0	380	110	80	44	74
JUL										
11...	1830	1.3	1080	8.0	26.0	310	89	50	45	110
AUG										
09...	1800	1.9	1050	8.1	26.0	300	50	47	44	120
SEP										
06...	1830	.01	1230	8.7	20.0	340	64	58	47	150

DATE	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE (MG/L AS HCO3) (00440)	CAR-BONATE (MG/L AS CO3) (00445)	ALKA-LINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
OCT									
03...	28	1.4	14	299	0	245	--	140	31
31...	41	2.6	13	408	0	335	1.6	180	55
NOV									
29...	25.	1.9	21	638	0	525	26	390	66
APR									
09...	--	--	--	--	--	--	--	--	--
16...	21	.5	7.1	79	0	65	1.3	36	8.3
MAY									
04...	23	.9	8.8	189	0	155	3.8	100	18
JUN									
07...	29	1.7	12	331	0	271	6.7	220	40
JUL									
11...	42	2.7	13	270	0	221	4.3	230	66
AUG									
09...	45	3.0	15	303	0	249	3.9	230	73
SEP									
06...	48	3.5	17	335	0	275	1.1	280	94

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
OCT									
03...	.2	9.6	523	498	.71	1.69	0	40	480
31...	.2	4.4	657	652	.89	.20	350	60	60
NOV									
29...	.2	16	1240	1180	1.69	2.81	60	120	1400
APR									
09...	--	--	--	--	--	--	--	--	--
16...	.1	7.3	138	137	.19	388	270	100	160
MAY									
04...	.1	15	372	338	.51	61.3	60	40	130
JUN									
07...	.2	4.4	661	638	.90	8.39	0	80	460
JUL									
11...	.3	6.7	690	655	.94	2.42	200	300	320
AUG									
09...	.3	7.3	721	686	.98	3.70	200	100	200
SEP									
06...	.3	8.1	793	820	1.08	.02	320	80	80

E - Estimated.

06470833 PILOT DRAIN AT OAKES, ND

LOCATION.--Lat 46°07'30", long 98°05'49", in SW¼SE¼ sec.29, T.131 N., R.59 W., Dickey County, Hydrologic Unit 10160003, and on left bank 1 mi (2 km) southwest of Oakes.

DRAINAGE AREA.--5.1 mi^2 (13.2 km^2).

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Datum of gage is 1,294.94 ft (394.698 m) National Geodetic Vertical Datum of 1929 (levels by Bureau of Reclamation).

REMARKS.--Records good. The flow is primarily due to ground water.

AVERAGE DISCHARGE.--8 years, 1.23 ft^3/s (0.035 m^3/s), 891 acre-ft/yr (1.10 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11 ft^3/s (0.31 m^3/s) Apr. 18, 1979, gage height, 2.36 ft (0.719 m); no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 11 ft^3/s (0.31 m^3/s) Apr. 18, gage height, 2.36 ft (0.719 m); minimum daily, 0.06 ft^3/s (0.002 m^3/s) Feb. 5 - Mar. 9.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.0	2.0	1.7	.21	.07	.06	.21	6.2	4.0	4.0	2.1	1.2
2	2.3	1.7	1.7	.21	.07	.06	.21	6.3	3.9	3.9	2.0	.98
3	2.1	2.0	1.7	.21	.07	.06	.26	6.2	3.9	3.9	2.0	.98
4	2.0	1.8	1.7	.21	.07	.06	.33	5.9	3.9	3.9	1.9	.98
5	2.0	1.8	1.7	.32	.06	.06	.33	5.6	4.5	3.8	1.7	.98
6	2.0	1.7	1.7	.21	.06	.06	.37	5.6	4.2	3.8	1.7	.92
7	2.0	1.7	1.7	.21	.06	.06	.76	5.4	3.8	3.7	1.7	.89
8	2.0	1.7	.26	.21	.06	.06	1.0	5.0	3.7	3.5	1.6	.77
9	2.0	1.7	.26	.21	.06	.06	.69	4.9	3.5	3.5	1.6	.73
10	2.0	1.7	.26	.21	.06	.06	1.2	4.9	3.5	3.5	1.6	.73
11	2.0	1.7	.26	.16	.06	.08	5.8	4.9	3.5	3.5	1.6	.68
12	1.9	1.7	.26	.16	.06	.08	5.5	4.9	3.5	3.4	1.6	.79
13	1.8	1.7	.51	.21	.06	.08	3.6	4.8	3.7	3.3	1.5	1.0
14	1.8	1.7	.51	.21	.06	.08	5.2	4.8	3.7	3.3	1.3	.98
15	1.8	1.7	.51	.21	.06	.08	7.2	4.6	3.8	4.0	1.3	.98
16	1.7	1.7	.51	.21	.06	.06	6.0	4.6	3.8	5.0	1.3	.96
17	1.7	1.7	.58	.16	.06	.06	6.1	4.5	3.7	3.3	1.5	.69
18	1.7	1.7	.58	.11	.06	.11	9.9	4.5	3.6	3.0	1.2	.65
19	1.7	1.7	.32	.11	.06	.11	9.8	4.4	3.6	3.0	1.2	.65
20	1.7	1.7	.32	.11	.06	.11	8.9	4.4	4.0	3.6	1.2	.73
21	1.7	1.7	.32	.11	.06	.11	8.3	4.4	3.8	2.9	1.2	.61
22	1.7	1.7	.32	.11	.06	.11	7.8	4.5	3.8	2.7	1.2	.58
23	1.7	1.7	.32	.11	.06	.11	7.5	4.5	3.9	2.7	1.2	.58
24	1.7	1.7	.32	.11	.06	.11	7.2	4.3	3.9	2.6	1.2	.58
25	1.7	1.7	.32	.07	.06	.11	7.0	4.2	4.0	3.4	1.2	.58
26	1.7	1.7	.32	.07	.06	.11	6.9	4.2	4.1	3.0	1.2	.63
27	1.7	1.7	.32	.07	.06	.11	6.6	4.2	4.1	2.3	1.2	.65
28	1.7	1.7	.32	.11	.06	.11	6.5	4.2	4.1	2.2	1.2	.65
29	1.6	1.7	.32	.07	---	.11	6.4	4.2	4.1	2.2	1.2	.65
30	1.6	1.7	.32	.07	---	.16	6.2	4.2	4.1	2.2	1.2	.65
31	1.7	---	.26	.07	---	.21	---	4.2	---	2.1	1.2	---
TOTAL	56.7	51.8	20.50	4.83	1.72	2.87	139.78	149.5	115.7	101.2	44.6	23.83
MEAN	1.83	1.73	.66	.16	.061	.093	4.66	4.82	3.86	3.26	1.44	.79
MAX	2.3	2.0	1.7	.32	.07	.21	9.9	6.3	4.5	5.0	2.1	1.2
MIN	1.6	1.7	.26	.07	.06	.06	.21	4.2	3.5	2.1	1.2	.58
AC-FT	112	103	41	9.6	3.4	5.7	277	297	229	201	88	47

CAL YR 1978 TOTAL 512.15 MEAN .66 MAX 2.3 MIN .00 AC-FT 619
WTR YR 1979 TOTAL 715.03 MEAN 1.95 MAX 9.9 MIN .06 AC-FT 1410

06470833 PILOT DRAIN AT OAKES, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1971 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1971 to current year.
WATER TEMPERATURES: October 1971 to current year.

INSTRUMENTATION.--Temperature recorder November 1976 to September 1978.

REMARKS.--Due to recorder malfunctions, continuous water temperature data does not conform to acceptable accuracy standards. Once daily observations recorded by a local observer are being published in lieu of the recorder data.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 830 micromhos Apr. 5, 10, and 12, 1973; minimum daily, 320 micromhos Mar. 16, 1972.
WATER TEMPERATURES: Maximum daily, 26.5°C Aug. 18, 1972; minimum daily, 0.0°C on many days during winter months.

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE (DEG C) (00010)	COLOR (PLAT-INUM-COBALT UNITS) (00080)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)
OCT											
03...	1415	2.0	740	8.0	11.0	20	370	--	94	32	20
30...	1600	1.8	--	8.0	8.0	4	370	--	92	33	22
NOV											
28...	1540	1.7	750	7.8	.5	4	380	--	96	34	21
JAN											
03...	1100	.20	--	7.4	0.0	2	350	87	91	29	15
29...	1630	.06	--	7.4	5.0	6	320	68	78	30	15
MAR											
06...	1315	.06	620	7.7	5.5	6	330	130	85	28	15
27...	1600	.13	595	--	6.0	--	--	--	--	--	--
APR											
09...	1515	1.0	565	--	6.0	--	--	--	--	--	--
17...	0810	4.9	490	7.4	3.0	30	240	64	63	21	12
MAY											
04...	1230	5.6	655	7.5	7.5	20	370	97	94	32	17
JUN											
07...	1120	3.8	740	7.6	9.0	8	370	92	98	31	20
JUL											
11...	1530	3.4	750	7.6	13.5	20	380	97	98	32	20
AUG											
10...	0955	1.6	710	7.8	15.0	10	360	78	94	30	20
SEP											
07...	1410	.92	695	7.8	14.0	5	320	44	82	29	19

DATE	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)
OCT											
03...	10	.5	6.4	280	120	12	.3	29	486	--	.66
30...	11	.5	6.6	260	130	13	.2	28	490	--	.67
NOV											
28...	11	.5	6.2	290	110	17	.3	29	491	--	.67
JAN											
03...	8	.4	4.8	260	93	13	.2	30	432	443	.59
29...	9	.4	4.5	250	93	12	.2	28	431	421	.59
MAR											
06...	9	.4	3.8	200	94	17	.6	28	402	402	.55
27...	--	--	--	--	--	--	--	--	--	--	--
APR											
09...	--	--	--	--	--	--	--	--	--	--	--
17...	9	.3	7.6	180	66	9.3	.2	21	321	315	.44
MAY											
04...	9	.4	8.8	270	110	13	.2	24	469	465	.64
JUN											
07...	10	.5	6.0	280	110	12	.3	24	463	472	.63
JUL											
11...	10	.4	5.9	280	130	10	.3	28	459	495	.62
AUG											
10...	15	.5	5.8	280	140	15	.3	33	472	508	.64
SEP											
07...	11	.5	6.0	280	130	13	.3	27	418	476	.57

06470833 PILOT DRAIN AT OAKES, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BORON, DIS-SOLVED (UG/L AS B) (01020)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)
OCT											
03...	2.66	.38	.01	10	10	200	90	0	0	0	0
30...	2.38	.60	.01	--	--	--	100	--	--	--	--
NOV											
28...	2.25	.67	.00	--	--	--	100	--	--	--	--
JAN											
03...	.23	2.3	.03	--	--	--	90	--	--	--	--
29...	.07	2.2	.02	--	--	--	90	--	--	--	--
MAR											
06...	.07	2.3	.02	--	--	--	100	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
APR											
09...	--	--	--	--	--	--	--	--	--	--	--
17...	4.25	1.1	.11	20	7	100	100	<1	10	<3	2
MAY											
04...	7.09	.73	.11	--	--	--	60	--	--	--	--
JUN											
07...	4.75	.57	.01	--	--	--	90	--	--	--	--
JUL											
11...	4.21	.56	.01	--	--	--	90	--	--	--	--
AUG											
10...	2.04	.24	.25	--	--	--	70	--	--	--	--
SEP											
07...	1.04	.33	1.4	--	--	--	90	--	--	--	--

DATE	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)	VANA-DIUM, DIS-SOLVED (UG/L AS V) (01085)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)
OCT											
03...	20	0	30	840	.0	4	0	0	350	.0	20
30...	--	--	--	--	--	--	--	--	--	--	--
NOV											
28...	--	--	--	--	--	--	--	--	--	--	--
JAN											
03...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
MAR											
06...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
APR											
09...	--	--	--	--	--	--	--	--	--	--	--
17...	260	0	20	1100	.1	<10	0	0	200	.6	6
MAY											
04...	--	--	--	--	--	--	--	--	--	--	--
JUN											
07...	--	--	--	--	--	--	--	--	--	--	--
JUL											
11...	--	--	--	--	--	--	--	--	--	--	--
AUG											
10...	--	--	--	--	--	--	--	--	--	--	--
SEP											
07...	--	--	--	--	--	--	--	--	--	--	--

06470833 PILOT DRAIN AT OAKES, ND--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	750	790	---	660	650	---	590	740	---	725	---
2	700	750	---	700	660	650	580	640	---	700	750	---
3	750	760	---	665	---	---	590	640	---	700	730	---
4	745	---	800	675	---	---	560	600	---	---	---	700
5	750	---	800	650	650	650	580	---	710	700	---	700
6	760	750	800	---	620	640	560	---	750	700	740	660
7	---	---	720	---	640	650	---	750	725	---	740	680
8	---	---	700	700	640	650	---	740	710	---	740	---
9	---	760	---	690	640	---	500	740	---	700	740	---
10	760	---	---	650	---	---	580	745	---	---	740	700
11	760	---	700	670	---	---	190	745	700	---	---	700
12	745	---	780	670	610	650	270	---	700	700	---	700
13	750	760	775	---	620	630	280	---	700	---	725	740
14	---	800	775	---	630	650	---	750	710	---	740	725
15	---	800	800	670	---	650	---	750	700	---	725	---
16	750	790	---	650	---	650	380	750	---	700	725	---
17	770	775	---	690	---	---	460	750	---	700	740	750
18	720	---	700	680	---	---	520	725	710	710	---	740
19	750	---	700	660	---	650	425	---	715	750	---	730
20	740	800	700	---	650	650	480	---	650	750	725	730
21	---	810	670	---	640	650	---	725	650	---	740	700
22	---	800	700	660	640	650	---	725	650	---	740	---
23	730	---	---	660	640	650	590	730	---	760	---	---
24	725	750	---	660	---	---	590	730	---	---	710	700
25	750	---	---	670	---	---	590	730	720	750	---	700
26	760	---	700	670	650	575	590	---	700	700	---	710
27	750	760	670	---	640	575	590	---	700	725	660	710
28	---	800	690	---	650	599	---	---	700	---	740	700
29	---	750	700	660	---	580	---	720	700	---	740	---
30	750	800	---	660	---	580	---	720	---	705	720	---
31	750	---	---	650	---	---	---	710	---	730	710	---
MEAN	746	776	734	669	640	632	485	714	702	718	729	709

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	4.0	.0	---	4.0	4.0	---	5.0	8.0	---	13.0	---
2	10.0	4.5	---	3.0	4.0	5.0	5.0	9.0	---	12.0	14.0	---
3	10.0	5.0	---	4.0	---	---	6.0	8.0	---	12.0	15.0	---
4	9.0	---	.0	4.0	---	---	6.0	5.0	---	---	---	18.0
5	8.5	---	.0	4.0	4.0	4.0	5.0	---	8.0	10.0	---	17.0
6	8.0	2.0	.0	---	4.0	5.0	5.0	---	10.0	10.0	17.0	14.0
7	---	---	3.0	---	4.0	5.0	---	6.0	9.0	---	17.0	11.0
8	---	---	4.0	4.0	4.0	4.0	---	5.0	8.0	---	15.0	---
9	---	6.0	---	4.0	4.0	---	3.0	5.0	---	10.0	16.0	---
10	8.0	---	---	4.0	---	---	3.0	4.0	---	---	15.0	15.0
11	10.0	---	5.0	4.0	---	---	.0	6.0	9.0	---	---	14.0
12	7.5	---	2.0	4.0	4.0	5.0	.0	---	17.0	13.0	---	14.0
13	7.0	3.0	2.0	---	4.0	3.0	.0	---	10.0	---	15.0	10.0
14	---	.0	2.0	---	5.0	3.0	---	7.0	12.0	---	13.0	9.0
15	---	1.0	2.0	4.0	---	3.0	---	5.0	10.5	---	13.0	---
16	5.0	.0	---	4.0	---	5.0	4.0	7.0	---	9.0	14.0	---
17	6.0	2.0	---	4.0	---	---	4.0	8.0	---	9.5	13.0	13.0
18	6.0	---	4.0	4.0	---	---	4.0	8.0	9.0	11.0	---	12.0
19	6.0	---	5.0	4.0	---	5.0	4.0	---	10.0	10.0	---	10.0
20	8.0	.0	4.0	---	4.0	5.0	5.0	---	12.0	13.0	17.0	12.0
21	---	.0	5.0	---	4.0	5.0	---	7.0	10.0	---	16.0	9.0
22	---	.0	4.0	4.0	4.0	6.0	---	8.0	9.0	---	19.0	---
23	4.0	---	---	4.0	4.0	5.0	4.0	8.0	---	12.0	---	---
24	6.0	1.0	---	4.0	---	---	6.0	8.0	---	---	17.0	11.0
25	7.0	---	---	5.0	---	---	6.0	8.0	10.0	11.0	---	10.0
26	6.0	---	3.0	5.0	4.0	4.0	4.0	---	10.0	12.0	---	11.0
27	5.0	1.0	4.0	---	4.0	4.0	4.0	---	9.0	11.0	13.0	14.0
28	---	1.0	3.0	4.0	4.0	5.5	---	---	10.0	---	15.0	11.0
29	---	.0	2.0	4.0	---	5.0	---	12.0	9.0	---	15.0	---
30	7.0	.0	---	4.0	---	5.0	---	8.0	---	13.0	15.0	---
31	4.0	---	---	---	---	---	---	8.0	---	12.0	17.0	---
MEAN	7.0	1.5	2.5	4.0	4.0	4.5	4.0	7.0	10.0	11.0	15.0	12.5

06470878 JAMES RIVER AT NORTH DAKOTA-SOUTH DAKOTA STATE LINE

LOCATION.--Lat 45°56'10", long 98°10'26", in SE¼SE¼ sec.34, T.129 N., R. 60 W., Dickey County, Hydrologic Unit 10160003, at bridge on North Dakota-South Dakota State line road 6.5 mi (9.8 km) south, and 1 mi (1.6 km) west from Ludden, ND.

DRAINAGE AREA.--6,650 mi^2 (17,200 km^2), approximately, of which about 2,800 mi^2 (7,300 km^3) is probably noncontributing.

PERIOD OF RECORD.--Water years 1974 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1974 to current year.
WATER TEMPERATURES: October 1974 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 4,000 micromhos Mar. 15, 16, 1979; minimum daily, 242 micromhos Apr. 25, 1975.
WATER TEMPERATURES: Maximum daily, 28.5°C June 12, 1976, July 5, 1977; minimum daily, 0.0°C on many days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 4,000 micromhos Mar. 15, 16; minimum daily, 300 micromhos Apr. 24-26.
WATER TEMPERATURES: Maximum daily, 27.5°C July 21, 23; minimum daily, 0.0°C on many days during winter months.

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	PH (UNITS) (00400)	TEMPERATURE (DEG C) (00010)	COLOR (PLATINUM-COBALT UNITS) (00080)	OXYGEN, DISSOLVED (MG/L) (00300)	HARDNESS (MG/L AS CACO3) (00900)	HARDNESS, NONCARBONATE (MG/L CACO3) (00902)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	SODIUM, DISSOLVED (MG/L AS NA) (00930)
OCT											
02...	1600	720	--	15.0	28	8.9	260	36	56	28	60
30...	1220	835	8.3	7.5	6	10.6	290	--	62	33	76
NOV											
28...	0940	950	8.6	.5	12	--	340	33	73	39	92
JAN											
02...	1720	1180	7.9	.0	30	11.2	540	32	110	65	160
29...	1315	2600	7.6	.0	30	--	1100	220	230	120	270
MAR											
07...	1130	3900	7.5	.0	46	--	1700	1000	380	190	450
APR											
24...	1125	255	7.6	10.0	--	8.6	95	16	23	9.1	12
MAY											
04...	0900	420	8.1	7.0	50	11.1	170	40	40	17	24
JUN											
07...	1530	580	8.4	18.0	20	7.9	210	25	46	22	44
JUL											
11...	0900	650	8.1	24.0	40	5.0	210	19	44	24	48
AUG											
10...	1245	525	8.0	22.5	40	5.6	190	9	46	18	41
SEP											
07...	0930	515	8.4	18.0	20	6.1	170	2	39	18	35

DATE	SODIUM PERCENT (00932)	SODIUM ADSORPTION RATIO (00931)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	ALKALINITY (MG/L AS CACO3) (00410)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)
OCT											
02...	33	1.6	12	220	120	29	.2	13	482	--	.66
30...	35	1.9	12	240	180	31	.2	13	551	--	.75
NOV											
28...	36	2.2	15	310	180	39	.2	17	671	--	.91
JAN											
02...	38	3.0	26	510	300	75	.3	25	1100	1070	1.50
29...	35	3.6	29	850	560	140	.5	34	1870	1900	2.54
MAR											
07...	35	4.7	40	700	1000	250	.6	38	2960	2770	4.03
APR											
24...	20	.5	8.9	79	36	5.5	.1	11	177	157	.24
MAY											
04...	22	.8	10	130	75	11	.1	12	294	269	.40
JUN											
07...	31	1.3	9.8	180	90	18	.2	1.9	352	340	.48
JUL											
11...	32	1.4	10	190	140	14	.2	6.4	392	401	.53
AUG											
10...	41	1.3	10	180	91	17	.2	16	350	348	.48
SEP											
07...	41	1.2	9.4	170	87	13	.2	2.3	324	306	.44

06470878 JAMES RIVER AT NORTH DAKOTA-SOUTH DAKOTA STATE LINE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BORON, DIS-SOLVED (UG/L AS B) (01020)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, DIS-SOLVED (UG/L AS FE) (01046)
OCT											
02...	.01	.07	10	3	100	170	0	0	0	1	20
30...	.01	.04	--	--	--	260	--	--	--	--	--
NOV											
28...	.06	.07	--	--	--	290	--	--	--	--	--
JAN											
02...	.13	.37	--	--	--	420	--	--	--	--	--
29...	.10	.48	--	--	--	650	--	--	--	--	--
MAR											
07...	.03	.59	--	--	--	1100	--	--	--	--	--
APR											
24...	.91	.13	0	2	30	70	<1	0	<3	1	40
MAY											
04...	.40	.14	--	--	--	70	--	--	--	--	--
JUN											
07...	.00	.16	--	--	--	140	--	--	--	--	--
JUL											
11...	.00	.12	--	--	--	150	--	--	--	--	--
AUG											
10...	.02	.25	--	--	--	140	--	--	--	--	--
SEP											
07...	.03	.11	--	--	--	140	--	--	--	--	--

DATE	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)	VANA-DIUM, DIS-SOLVED (UG/L AS V) (01085)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)
OCT										
02...	0	50	20	.0	3	0	0	350	.0	20
APR										
24...	0	10	10	.1	<10	1	0	100	.6	<3

DISSOLVED OXYGEN AND WATER TEMPERATURE PROFILE, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	MG/L	DEGREES, C	DATE	MG/L	DEGREES, C	DATE	MG/L	DEGREES, C
Oct. 2, 1978			2100	6.3	0.5	1800	13.5	9.8
1700	9.3	15.0	2200	6.0	.5	2100	14.4	10.7
1800	9.4	-	2300	5.8	.5			
1900	9.0	-	2400	5.7	.5	July 10, 1979		
2000	8.9	-				2200	7.8	25.5
2100	8.9	-	Jan. 3, 1979			2300	7.6	-
2200	8.8	-	0100	5.7	.5	2400	7.5	-
2300	8.6	-	0200	5.6	.5			
2400	8.0	13.8	0300	5.6	.5	July 11, 1979		
			0400	5.6	.5	0100	7.3	-
Oct. 3, 1978			0500	5.5	.5	0200	6.6	25.0
0100	7.7	-	0600	5.6	.5	0300	6.2	-
0200	7.5	-	0700	5.4	.5	0400	5.6	-
0300	7.3	-	0800	5.5	.5	0500	5.4	-
0400	7.1	-	0900	5.8	.5	0600	5.3	-
0500	7.0	-	1000	6.1	.5	0700	5.3	-
0600	7.2	13.0	1100	6.3	.5	0800	5.0	-
0700	7.4	-	1200	6.5	.5	0900	5.0	24.0
0800	7.4	-	1300	6.6	.5	1000	4.9	-
0900	7.4	-	1400	6.2	.5	1100	4.9	-
1000	7.4	-	1500	6.9	.5	1200	5.0	-
1100	7.5	-	1600	7.4	.5	1300	5.6	-
1200	8.1	-	1700	7.4	.5	1400	6.2	-
1300	8.4	12.5	1800	7.0	.5	1500	6.7	25.0
1400	8.6	-	1900	6.5	.5	1600	7.0	-
1500	8.8	-				1700	7.0	-
1600	9.2	-	May 3, 1979			1800	7.8	-
1700	9.2	-	2100	12.8	9.4	1900	8.2	-
						2000	7.3	-
Jan. 2, 1979			May 4, 1979			2100	6.6	-
1900	6.3	.5	0300	11.3	7.8	2200	6.3	25.5
2000	6.2	.5	0900	11.1	6.8			
			1400	13.0	8.7			

06470878 JAMES RIVER AT NORTH DAKOTA-SOUTH DAKOTA STATE LINE--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	740	880	990	1320	2400	2950	730	400	600	520	570	520
2	750	880	1000	1380	2410	2980	660	410	600	520	570	520
3	760	880	1010	---	2410	2990	640	460	600	610	560	520
4	760	860	1010	1480	2440	3000	620	460	600	650	550	520
5	760	870	1030	1600	2460	3100	610	470	600	650	550	520
6	770	870	1040	1640	2490	3500	600	480	590	640	550	520
7	780	860	1050	1690	2500	3600	600	500	590	640	540	520
8	790	870	1160	1700	2570	3600	590	520	590	640	540	520
9	790	850	1160	1710	2620	3700	570	550	580	630	530	520
10	800	840	1170	1750	2780	3800	540	570	570	630	530	530
11	800	850	1160	1790	2830	3900	510	630	560	620	530	540
12	800	860	1160	1820	2880	3900	510	630	550	600	530	550
13	790	860	1170	1860	2890	3900	500	620	550	600	530	550
14	810	860	1190	1980	3000	3900	490	620	550	590	530	580
15	820	860	1190	2000	2950	4000	450	630	550	580	540	580
16	810	860	1190	2150	2900	4000	420	610	550	570	540	580
17	810	890	1190	2150	2880	3500	380	630	550	570	530	560
18	820	920	1200	2190	2850	3100	390	640	550	550	540	560
19	840	930	1190	2200	2850	2500	340	640	540	550	540	550
20	840	940	1190	2210	2840	1750	340	640	540	550	540	550
21	850	950	1180	2200	2840	1800	340	630	530	540	540	550
22	850	950	1180	2200	2840	1720	330	630	530	530	530	540
23	840	960	1180	2200	2840	1450	320	630	530	530	530	540
24	850	970	1180	2200	2830	1250	300	630	520	520	530	540
25	850	960	1180	2200	2830	950	300	640	520	520	530	540
26	850	960	1190	2220	2830	900	300	630	510	520	530	540
27	850	960	1280	2230	2860	850	315	620	510	520	530	540
28	850	970	1290	2240	2900	720	335	610	510	550	530	540
29	850	970	1300	2260	---	640	360	610	510	560	520	540
30	860	980	1330	2300	---	650	380	620	510	570	530	550
31	860	---	1310	2340	---	690	---	620	---	570	535	---
MEAN	813	904	1160	1970	2740	2560	459	580	553	575	538	541

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13.5	4.5	1.5	.0	.0	.0	1.0	8.0	17.0	24.5	23.0	22.5
2	13.5	7.0	1.0	.0	.0	.0	1.0	7.5	16.5	26.0	24.0	23.0
3	12.0	7.0	.5	---	.0	.0	2.0	8.5	17.0	25.5	24.0	22.5
4	10.0	7.5	1.0	.0	.0	.0	1.5	9.5	18.5	25.0	23.5	23.0
5	9.5	3.0	.5	.0	.0	.0	1.0	9.5	18.5	24.0	23.0	22.5
6	10.0	2.5	.0	.0	.0	.0	1.0	9.0	20.0	23.5	25.0	21.0
7	8.5	3.0	.5	.0	.0	.0	1.5	10.0	18.5	22.5	24.5	18.5
8	8.5	5.5	.0	.0	.0	.0	1.0	10.0	17.0	21.0	26.5	20.5
9	10.5	3.0	.0	.0	.0	.0	1.0	8.5	16.0	23.5	24.5	20.5
10	10.5	2.0	.0	.0	.0	.0	2.0	7.0	16.5	27.0	23.0	20.0
11	11.0	.5	1.0	.0	.0	.0	1.5	5.0	18.5	24.0	22.5	20.5
12	10.0	1.5	2.0	.0	.0	.0	1.5	5.5	21.5	25.0	21.0	18.0
13	9.0	2.0	1.0	.0	.0	.0	1.0	10.5	21.5	25.5	20.5	16.0
14	8.0	1.0	.5	.0	.0	.0	1.5	11.0	23.0	24.5	18.5	15.0
15	7.5	2.5	1.0	.0	.0	.0	1.5	17.0	22.0	22.0	20.5	16.0
16	6.5	3.0	1.5	.0	.0	.0	1.0	14.5	21.0	22.5	18.5	16.5
17	6.5	1.5	.0	.0	.0	.5	2.5	16.5	20.0	24.0	18.5	17.0
18	7.0	1.0	.0	.0	.0	.5	3.0	15.5	20.0	23.5	21.0	16.0
19	7.0	.0	1.0	.0	.0	1.0	6.0	15.0	19.5	25.0	22.0	16.0
20	8.5	1.0	.0	.0	.0	1.5	9.0	14.5	17.0	26.0	22.5	16.5
21	10.5	1.0	.5	.0	.0	2.0	9.0	14.0	21.0	27.5	22.5	15.0
22	8.0	1.0	1.0	.0	.0	1.5	9.0	12.5	18.0	26.5	22.0	14.5
23	5.5	1.5	.0	.0	.0	1.5	10.0	13.0	19.0	27.5	19.5	14.5
24	6.0	2.0	.0	.0	.0	1.5	11.0	14.5	19.5	26.0	20.0	16.0
25	6.5	3.0	.0	.0	.0	1.0	10.0	15.0	23.0	26.5	19.5	16.5
26	6.0	1.0	.0	.0	.0	1.0	8.5	17.5	21.5	23.5	19.5	17.0
27	6.5	.0	.0	.0	.0	1.0	7.5	21.0	23.5	23.5	20.0	19.0
28	8.0	.0	.0	.0	.0	1.5	8.5	21.0	23.5	24.0	22.5	15.5
29	5.5	.5	.0	.0	---	2.5	8.5	20.5	23.5	23.0	21.0	16.0
30	6.5	1.0	.0	.0	---	1.5	8.5	21.0	25.5	23.5	21.0	15.5
31	8.5	---	.0	.0	---	1.0	---	16.0	---	22.5	22.5	---
MEAN	8.5	2.5	.5	.0	.0	.5	4.5	13.0	20.0	24.5	22.0	18.0

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., Hydrologic Unit 10160004, on left bank 0.4 mi (0.6 km) upstream from State line, 7.8 mi (12.6 km) northeast of Frederick, SD, and 15.7 mi (25.3 km) upstream from mouth.

DRAINAGE AREA.--750 mi^2 (1,940 km^2), approximately, of which about 270 mi^2 (699 km^2) is probably noncontributing.

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

GAGE.--Water-stage recorder. Altitude of gage is 1,365 ft (416 m), from topographic map. Prior to June 14, 1962, nonrecording gage at site 0.4 mi (0.6 km) downstream at datum 0.94 ft (0.287 m) lower.

REMARKS.--Records good. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--23 years, 20.8 ft^3/s (0.589 m^3/s), 15,070 acre-ft/yr (18.6 hm^3/yr); median of yearly mean discharges, 11 ft^3/s (0.31 m^3/s), 8,000 acre-ft/yr (9.1 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,930 ft^3/s (168 m^3/s) Apr. 11, 1969, gage height, 15.22 ft (4.639 m); maximum gage height, 16.05 ft (4.892 m) Apr. 11, 1969, backwater from ice; no flow for long periods each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,340 ft^3/s (66.3 m^3/s) Apr. 20, gage height, 11.32 ft (3.450 m), only peak above base of 50 ft^3/s (1.42 m^3/s); no flow for many months.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.33	.00	.00	.00	.00	.00	.02	105	13	24	2.9	.09
2	.33	.00	.00	.00	.00	.00	.05	100	13	20	2.6	.00
3	.29	.00	.00	.00	.00	.00	.50	110	12	19	2.2	.00
4	.25	.00	.00	.00	.00	.00	2.0	105	12	17	2.1	.00
5	.15	.00	.00	.00	.00	.00	5.0	100	9.2	15	1.8	.00
6	.12	.00	.00	.00	.00	.00	10	95	11	13	1.7	.00
7	.09	.00	.00	.00	.00	.00	20	85	10	12	1.6	.00
8	.06	.00	.00	.00	.00	.00	40	80	9.2	11	1.4	.00
9	.04	.00	.00	.00	.00	.00	80	75	9.9	9.6	1.4	.00
10	.03	.00	.00	.00	.00	.00	150	70	9.6	8.2	1.3	.01
11	.06	.00	.00	.00	.00	.00	250	75	8.5	6.4	1.1	.02
12	.11	.00	.00	.00	.00	.00	455	80	8.2	6.1	1.1	.05
13	.09	.00	.00	.00	.00	.00	550	72	7.0	6.7	.90	.04
14	.07	.00	.00	.00	.00	.00	500	65	7.0	7.0	.82	.04
15	.09	.00	.00	.00	.00	.00	435	60	6.7	6.4	.53	.01
16	.04	.00	.00	.00	.00	.00	597	55	5.3	5.3	.53	.00
17	.05	.00	.00	.00	.00	.00	844	49	4.8	5.1	.53	.00
18	.05	.00	.00	.00	.00	.00	1240	45	3.3	4.4	.53	.00
19	.05	.00	.00	.00	.00	.00	1920	39	3.5	3.7	.47	.00
20	.04	.00	.00	.00	.00	.00	2280	35	7.2	2.9	.42	.00
21	.05	.00	.00	.00	.00	.00	2000	29	7.5	2.6	.42	.00
22	.05	.00	.00	.00	.00	.00	1570	30	8.2	2.2	.67	.00
23	.00	.00	.00	.00	.00	.00	860	27	7.2	2.6	.67	.00
24	.00	.00	.00	.00	.00	.00	333	23	6.1	3.7	.42	.00
25	.03	.00	.00	.00	.00	.00	216	20	6.1	3.5	.42	.00
26	.00	.00	.00	.00	.00	.00	159	20	5.9	6.4	.37	.00
27	.00	.00	.00	.00	.00	.00	130	18	6.1	5.6	.29	.00
28	.00	.00	.00	.00	.00	.00	125	15	7.8	5.6	.29	.00
29	.00	.00	.00	.00	---	.00	120	15	19	5.9	.22	.00
30	.00	.00	.00	.00	---	.00	110	16	26	5.1	.19	.00
31	.00	---	.00	.00	---	.00	---	15	---	4.4	.19	---
TOTAL	2.47	.00	.00	.00	.00	.00	15001.57	1728	270.3	250.4	30.08	.26
MEAN	.080	.000	.000	.000	.000	.000	500	55.7	9.01	8.08	.97	.009
MAX	.33	.00	.00	.00	.00	.00	2280	110	26	24	2.9	.09
MIN	.00	.00	.00	.00	.00	.00	.02	15	3.3	2.2	.19	.00
AC-FT	4.9	.00	.00	.00	.00	.00	29760	3430	536	497	60	.5

CAL YR 1978 TOTAL 18774.13 MEAN 51.4 MAX 1600 MIN .00 AC-FT 37240
WTR YR 1979 TOTAL 17283.08 MEAN 47.4 MAX 2280 MIN .00 AC-FT 34280

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. These measurements are generally made in times of drought or flood to give better areal coverage to those events. Those measurements and others collected for some special reason are called measurements at miscellaneous sites.

Stream	Tributary to	Location	Drainage area (mi^2)	Measured previously (water years)	Measurements Date	Measurements Discharge (ft^3/s)
		Red River of the North basin				
Red River of the North	Hudson Bay	Lat 48°11'40", long 97°08'30", SW¼SW¼ sec.31, T.155 N., R.50 W., in Marshall County, at bridge on Minn. Highway 1 at Oslo, MN, and at mile 271.2.	31,200	1936-37, 1941-43, 1945-49, 1965-68	4-26-79	91,000
Unnamed Spring	Sheyenne River	Lat 47°47'47", long 98°35'43", in SE¼SW¼NE¼ sec.21, T.150 N., R.62 W., Eddy County, 3½ miles southwest of Hamar.	--	1978	4-24-79 8-23-79	7.30 .05
Middle Branch Park River	Red River of the North	Lat 48°30'12", long 97°45'53", in SE¼NE¼SW¼ sec.17, T.158 N., R.55 W., Walsh County, 4 miles east of Edinburg.	83.6	1978	4-22-79 4-25-79 4-27-79 5-4-79 8-10-79	a490 307 258 120 .83
North Branch Park River	Red River of the North	Lat 48°35'14, long 97°54'20", in SW¼SW¼SW¼ sec.17, T.159 N., R.56 W., Pembina County, 1 mile west of Gardar, 1 mile upstream from 05089200 North Branch Park River at Gardar.	54.1	1978	8-10-79	a.12
North Branch Park River	Red River of the North	Lat 48°34'41", long 97°46'21", in NW¼NW¼SW¼ sec.20, T.159 N., R.55 W., Pembina County, 5 miles west of Crystal.	65	1978	4-22-79 4-25-79 4-27-79 5-4-79 8-10-79	978 363 138 32.7 0
North Branch Park River	Red River of the North	Lat 48°32'09", long 97°37'24", in SE¼SE¼NE¼ sec.5, T.158 N., R.54 W., Walsh County, at bridge on N. Dak. Highway 18 at Hoople.	93.2	1978	8-9-79	a.03
Cart Creek	Red River of the North	Lat 48°36'06", long 97°41'28", in SW¼SE¼SE¼ sec.11, T.159 N., R.55 W., Pembina County, at bridge on N. Dak. Highway 66, ½ mile west of Crystal.	83.6	1978	8-9-79	a.01
Cart Creek	Red River of the North	Lat 48°32'36", long 97°35'16", in SW¼SW¼SE¼ sec.34, T.159 N., R.54 W., Pembina County, 2 miles east of Hoople.	a105	1978	8-9-79	0
North Branch Park River	Red River of the North	Lat 48°28'14", long 97°28'57", in SE¼SE¼SW¼ sec.28, T.158 N., R.53 W., Walsh County, 1 mile east of Nash.	208	1978	4-19-79 4-24-79 4-26-79 5-2-79 8-9-79	185 1,700 888 187 a.27
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.	--	1962,66, 1970,72, 1975,77, 1978	10-26-78 11-29-78 12-20-78 2-1-79 3-21-79 4-20-79 4-24-79 5-2-79 5-16-79 5-30-79 6-27-79 7-25-79 8-28-79	9.97 a6.0 a.5 a.02 a.40 4,520 4,280 5,620 2,750 1,420 416 103 34.2

a - Estimated.

Stream	Tributary to	Location	Drainage area (mi^2)	Measured previously (water years)	Measurements Date	Measurements Discharge (ft^3/s)
		Red River of the North basin				
Souris River	Red River of the North	Lat 48°16'34", long 101°24'55", near center of sec.1, T.155 N., R.84 W., Ward County, at bridge on county highway 0.5 mile east of Burlington.	--	--	4-20-79	4,650
Gassman Coulee	Souris River	Lat 48°13'54", long 101°22'20", in NE¼SW¼ 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	1969-73, 1975,76	3-24-79 4-18-79 4-18-79 4-19-79	0 115 3,330 1,160
Souris River	Red River of the North	Lat 48°14'23", long 101°17'30", in NE¼NW¼NW¼ sec.24, T.155 N., R.83 W., Ward County, at bridge on Main Street in Minot.	--	1968-76, 1978	4-19-79 4-20-79 4-26-79 4-30-79 5-8-79 5-11-79	3,990 4,620 4,380 4,800 5,890 6,010
Souris River	Red River of the North	Lat 48°21'05", long 100°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.	--	1971-76	4-26-79	5,760
		James River basin				
Pipestem Creek	James River	Lat 46°57'00", long 98°45'26", on south line sec.9, T.140 N., R. 64 W., Stutsman County, at bridge on county highway, 3 miles northwest of Jamestown.	--	1974-76, 1978	5-1-79 7-9-79 9-5-79	101 96.6 196
		Grand River basin				
North Fork Grand River above Bowman-Haley Lake	Missouri River	Lat 45°57'09", long 103°18'23", on west line of sec.34, T.129 N., R.101 W., Bowman County, at bridge on county highway, 9 miles west of Haley.	--	--	11-4-76 4-7-77 5-17-77 7-7-77 8-9-77 10-14-77 5-11-78 7-6-78 8-8-78 10-6-78 5-3-79 5-16-79 7-17-79 8-17-79	.23 12.5 .15 1.19 .08 3.12 45.1 5.76 .81 .19 9.95 8.34 .77 .49
Spring Creek	North Fork Grand River	Lat 46°01'04", long 103°17'29", on south line of sec.3, T.129 N., R.101 W., Bowman County, at bridge on county highway, 9 miles northwest of Haley.	--	--	11-4-76 4-6-77 5-17-77 7-7-77 8-9-77 10-14-77 5-11-78 7-6-78 8-8-78 10-6-78 5-3-79 5-16-79 7-17-79 8-17-79	.60 12.8 .44 .18 .03 5.51 37.1 2.85 .54 .48 7.94 5.76 2.63 .36
Alkali Creek	North Fork Grand River	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	1965-73, 1977	10-14-77 5-11-78 7-6-78 8-8-78 10-6-78	.2 10.8 .30 .58 .16

a - Estimated.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM STAGE (FT ABOVE DATUM) (00065)	ELEV. OF LAND SURFACE DATUM (FT, NGVD) (72000)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	PH (UNITS) (00400)	TEMPERATURE (DEG C) (00010)	COLOR (PLATINUM-COBALT UNITS) (00080)	HARDNESS (MG/L AS CACO3) (00900)	HARDNESS, NONCARBONATE (MG/L CACO3) (00902)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)
PART 5. HUDSON BAY BASIN											
RED RIVER OF THE NORTH BASIN											
05056220 - SWEETWATER LAKE AT SWEETWATER, ND (LAT 48 12 37 LONG 098 52 15)											
OCT , 1978											
18...	1300	58.85	1400.00	910	8.8	7.0	27	320	--	54	45
MAY , 1979											
17...	1500	61.58	1400.00	845	8.6	10.0	25	300	45	57	37
05056250 - LAKE ALICE NR CHURCHS FERRY, ND (LAT 48 21 07 LONG 099 05 42)											
OCT , 1978											
18...	0830	42.42	1400.00	1200	8.3	4.0	120	430	87	90	49
MAY , 1979											
17...	1300	--	1400.00	394	8.5	15.5	40	170	70	43	14
05056260 - LAKE IRVINE NR CHURCHS FERRY, ND (LAT 48 16 57 LONG 099 10 25)											
OCT , 1978											
18...	1000	39.53	1400.00	1050	8.8	4.0	160	390	90	80	46
MAY , 1979											
17...	0930	46.33	1400.00	370	8.9	11.0	40	170	80	45	15
05056500 - DEVILS LAKE NR DEVILS LAKE, ND (LAT 48 04 00 LONG 098 56 07)											
OCT , 1978											
19...	0845	22.31	1400.00	4700	9.0	7.0	20	840	--	71	160
JAN , 1979											
18...	0900	22.10	1400.00	5400	8.7	.0	13	900	390	79	170
MAY											
18...	0840	26.44	1400.00	1950	8.4	6.0	15	400	200	44	70
JUL											
08...	1515	--	1400.00	2820	8.8	24.0	25	610	280	62	110
AUG											
07...	1515	56.51	1400.00	2820	8.8	24.0	25	610	280	62	110
05056505 - NARROWS OF DEVILS LAKE NR DEVILS LAKE, ND (LAT 48 01 36 LONG 098 53 44)											
OCT , 1978											
19...	0950	22.31	1400.00	4700	9.0	7.5	20	790	340	70	150
JAN , 1979											
18...	1130	22.10	1400.00	5400	8.8	.0	17	940	430	78	180
MAY											
18...	0945	26.44	1400.00	1680	8.5	1.5	20	270	97	44	38
AUG											
07...	1630	26.51	1400.00	2850	8.8	24.5	40	570	240	62	100
05056506 - MISSION BAY OF DEVILS LAKE NR DEVILS LAKE, ND (LAT 48 01 36 LONG 098 53 43)											
OCT , 1978											
19...	1030	21.07	1400.00	7900	8.9	7.0	43	1100	--	44	230
JAN , 1979											
18...	1250	21.00	1400.00	8000	8.7	.0	70	1300	710	61	280
MAY											
18...	1020	24.39	1400.00	2600	8.6	5.5	30	480	250	45	90
AUG											
08...	0845	26.31	1400.00	2850	8.8	22.0	30	620	280	65	110

ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD WATER-QUALITY LAKE STATIONS

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY AS (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)
PART 5. HUDSON BAY BASIN											
RED RIVER OF THE NORTH BASIN											
05056220 - SWEETWATER LAKE AT SWEETWATER, ND (LAT 48 12 37 LONG 098 52 15)											
OCT , 1978											
18...	77	32	1.9	25	260	200	26	.2	39	640	--
MAY , 1979											
17...	71	32	1.8	21	250	180	19	.2	29	598	566
05056250 - LAKE ALICE NR CHURCHS FERRY, ND (LAT 48 21 07 LONG 099 05 42)											
OCT , 1978											
18...	82	28	1.7	28	340	250	30	.2	9.7	764	--
MAY , 1979											
17...	18	25	.6	9.7	95	80	7.0	.3	18	258	255
05056260 - LAKE IRVINE NR CHURCHS FERRY, ND (LAT 48 16 57 LONG 099 10 25)											
OCT , 1978											
18...	80	29	1.8	29	300	230	34	.3	35	747	--
MAY , 1979											
17...	18	24	.6	9.0	94	79	8.1	.1	10	260	247
05056500 - DEVILS LAKE NR DEVILS LAKE, ND (LAT 48 04 00 LONG 098 56 07)											
OCT , 1978											
19...	690	61	10	89	430	1500	310	.2	21	3080	--
JAN , 1979											
18...	800	63	12	110	510	1800	330	.1	24	3510	3620
MAY											
18...	270	57	5.9	37	200	590	120	.2	10	1290	1260
JUL											
08...	410	80	7.2	58	330	850	170	.2	19	1960	1880
AUG											
07...	410	80	7.2	58	330	850	170	.2	19	1960	1880
05056505 - NARROWS OF DEVILS LAKE NR DEVILS LAKE, ND (LAT 48 01 36 LONG 098 53 44)											
OCT , 1978											
19...	670	62	10	91	450	1400	300	.1	21	3090	--
JAN , 1979											
18...	850	64	12	100	510	1800	330	.2	24	3560	3670
MAY											
18...	230	62	6.1	32	170	510	97	.2	8.4	1100	1060
AUG											
07...	410	58	7.5	58	330	880	170	.1	18	1970	1900
05056506 - MISSION BAY OF DEVILS LAKE NR DEVILS LAKE, ND (LAT 48 01 36 LONG 098 53 43)											
OCT , 1978											
19...	1100	66	15	140	450	2300	560	.1	11	4820	--
JAN , 1979											
18...	1400	66	17	200	600	3100	610	.1	19	5910	6030
MAY											
18...	380	60	7.5	49	230	820	160	.8	10	1710	1700
AUG											
08...	420	79	7.4	60	340	840	170	.1	19	2000	1890

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P) (00666)	ALUM- INUM, DIS- SOLVED (UG/L AS AL) (01106)	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	BORON, DIS- SOLVED (UG/L AS B) (01020)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	COBALT, DIS- SOLVED (UG/L AS CO) (01035)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)
PART 5. HUDSON BAY BASIN											
RED RIVER OF THE NORTH BASIN											
05056220 - SWEETWATER LAKE AT SWEETWATER, ND (LAT 48 12 37 LONG 098 52 15)											
OCT , 1978											
18...	.87	.00	.06	10	5	100	150	3	0	3	2
MAY , 1979											
17...	.81	.01	.16	0	5	100	100	0	0	1	0
05056250 - LAKE ALICE NR CHURCHS FERRY, ND (LAT 48 21 07 LONG 099 05 42)											
OCT , 1978											
18...	1.04	.54	.14	40	6	100	160	0	10	0	4
MAY , 1979											
17...	.35	1.7	.10	0	6	0	50	0	0	1	0
05056260 - LAKE IRVINE NR CHURCHS FERRY, ND (LAT 48 16 57 LONG 099 10 25)											
OCT , 1978											
18...	1.02	1.1	.56	50	14	100	180	0	10	0	11
MAY , 1979											
17...	.35	1.3	.06	0	4	0	40	1	0	0	2
05056500 - DEVILS LAKE NR DEVILS LAKE, ND (LAT 48 04 00 LONG 098 56 07)											
OCT , 1978											
19...	4.19	.10	.66	30	25	0	660	0	0	0	3
JAN , 1979											
18...	4.77	.28	.65	20	25	200	760	2	0	1	2
MAY											
18...	1.75	.45	.32	0	9	100	280	0	10	0	0
JUL											
08...	2.67	.03	.24	0	17	0	420	1	0	0	3
AUG											
07...	2.67	.03	.24	0	17	0	420	1	0	0	3
05056505 - NARROWS OF DEVILS LAKE NR DEVILS LAKE, ND (LAT 48 01 36 LONG 098 53 44)											
OCT , 1978											
19...	4.20	.05	.55	40	25	0	670	0	0	0	3
JAN , 1979											
18...	4.84	.15	.64	20	25	0	730	--	10	1	2
MAY											
18...	1.50	.42	.21	0	7	100	220	1	10	0	0
AUG											
07...	2.68	.04	.42	0	17	0	440	0	0	0	3
05056506 - MISSION BAY OF DEVILS LAKE NR DEVILS LAKE, ND (LAT 48 01 36 LONG 098 53 43)											
OCT , 1978											
19...	6.56	.16	.12	10	25	100	990	0	0	0	3
JAN , 1979											
18...	8.04	.32	.34	10	27	200	1200	1	10	1	2
MAY											
18...	2.33	.43	.24	0	10	0	340	0	0	1	0
AUG											
08...	2.72	.11	.43	0	17	0	440	1	0	0	9

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)	VANA-DIUM, DIS-SOLVED (UG/L AS V) (01085)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)
PART 5. HUDSON BAY BASIN											
RED RIVER OF THE NORTH BASIN											
05056220 - SWEETWATER LAKE AT SWEETWATER, ND (LAT 48 12 37 LONG 098 52 15)											
OCT , 1978											
18...	<10	0	60	5	.0	3	0	0	260	.0	3
MAY , 1979											
17...	10	0	50	520	.0	4	6	0	170	.0	10
05056250 - LAKE ALICE NR CHURCHS FERRY, ND (LAT 48 21 07 LONG 099 05 42)											
OCT , 1978											
18...	30	0	70	50	.0	3	3	0	380	.0	30
MAY , 1979											
17...	20	0	20	10	.1	5	9	0	220	4.0	10
05056260 - LAKE IRVINE NR CHURCHS FERRY, ND (LAT 48 16 57 LONG 099 10 25)											
OCT , 1978											
18...	30	0	70	10	.1	5	3	1	350	3.3	10
MAY , 1979											
17...	20	0	20	0	.2	4	9	0	20	1.0	10
05056500 - DEVILS LAKE NR DEVILS LAKE, ND (LAT 48 04 00 LONG 098 56 07)											
OCT , 1978											
19...	20	0	300	0	.0	4	1	0	410	.3	20
JAN , 1979											
18...	40	--	360	0	.0	4	3	0	430	.9	20
MAY											
18...	10	0	140	90	.1	3	4	0	260	.0	10
JUL											
08...	30	0	20	120	.3	3	3	0	350	1.0	20
AUG											
07...	30	0	20	120	.3	3	3	0	350	1.0	20
05056505 - NARROWS OF DEVILS LAKE NR DEVILS LAKE, ND (LAT 48 01 36 LONG 098 53 44)											
OCT , 1978											
19...	20	0	310	0	.0	4	1	0	410	.0	20
JAN , 1979											
18...	60	--	300	0	.3	5	2	0	410	.8	20
MAY											
18...	10	0	110	70	.0	4	9	0	230	.0	10
AUG											
07...	80	0	170	10	.1	1	3	0	380	1.0	20
05056506 - MISSION BAY OF DEVILS LAKE NR DEVILS LAKE, ND (LAT 48 01 36 LONG 098 53 43)											
OCT , 1978											
19...	20	0	440	0	.0	2	1	0	400	2.6	20
JAN , 1979											
18...	50	--	560	0	.0	4	2	0	460	5.5	20
MAY											
18...	20	0	170	100	.0	0	2	0	250	.0	10
AUG											
08...	40	0	160	0	.3	0	4	0	380	1.0	30

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM STAGE (FT ABOVE DATUM) (00065)	ELEV. OF LAND SURFACE DATUM (FT. NGVD) (72000)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	PH (UNITS) (00400)	TEMPERATURE (DEG C) (00010)	COLOR (PLATINUM-COBALT UNITS) (00080)	HARDNESS (MG/L AS CACO3) (00900)	HARDNESS, NONCARBONATE (MG/L CACO3) (00902)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)
PART 5. HUDSON BAY BASIN											
RED RIVER OF THE NORTH BASIN											
05056565 - EAST BAY OUTLET OF DEVILS LAKE NR CHARY, ND (LAT 48 00 13 LONG 098 41 50)											
OCT , 1978											
17...	1600	21.17	1400.00	16000	8.7	10.0	60	2000	1300	36	470
JAN , 1979											
17...	1615	21.07	1400.00	15000	8.6	.0	30	2100	1300	33	480
MAY											
16...	1530	23.14	1400.00	8490	7.9	19.0	40	1400	940	37	320
AUG											
08...	1030	26.37	1400.00	7100	8.7	22.0	30	1200	730	66	250
05056570 - EAST DEVILS LAKE NR HAMAR, ND (LAT 47 57 02 LONG 098 36 34)											
OCT , 1978											
19...	1300	3.91	1400.00	37000	9.0	9.0	40	5000	3900	13	1200
JAN , 1979											
19...	1145	3.93	1400.00	35000	9.0	-1.0	56	7000	5600	9.2	1700
MAY											
18...	1230	5.78	1400.00	17000	9.0	10.5	40	850	320	12	200
AUG											
08...	1145	24.59	1400.00	12000	8.8	23.0	50	1800	1300	46	410
05056630 - EASTERN STUMP LAKE NR LAKOTA, ND (LAT 47 52 04 LONG 098 21 33)											
OCT , 1978											
17...	1415	82.23	1300.00	102000	8.5	10.0	220	46000	44000	84	11000
JAN , 1979											
17...	1230	82.07	1300.00	135500	7.9	-0.0	340	110000	110000	140	27000
MAY											
16...	1215	84.16	1300.00	40000	7.2	14.5	40	12000	11000	42	2800
AUG											
08...	1515	84.16	1300.00	102000	8.9	24.0	50	9200	8700	59	2200
05056670 - WESTERN STUMP LAKE NR LAKOTA, ND (LAT 47 54 48 LONG 098 23 26)											
OCT , 1978											
17...	1230	96.55	1300.00	24500	8.5	6.0	640	3500	3100	46	830
MAY , 1979											
16...	1340	99.24	1300.00	6800	7.1	13.5	50	1100	930	55	230
AUG											
08...	1600	98.37	1300.00	9990	9.3	23.5	30	380	67	88	38
PART 6. MISSOURI RIVER BASIN											
JAMES RIVER BASIN											
06469000 - JAMESTOWN RESERVOIR NR JAMESTOWN, ND (LAT 46 56 03 LONG 098 42 38)											
OCT , 1978											
05...	1300	29.79	1400.00	685	--	13.0	55	220	--	48	24
JAN , 1979											
04...	1300	29.22	1400.00	705	8.7	2.0	8	220	0	45	27
MAY											
01...	2045	36.78	1400.00	440	8.1	4.5	15	160	11	33	19
JUL											
03...	1830	37.37	1400.00	405	8.2	23.5	30	130	0	27	15

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)
PART 5. HUDSON BAY BASIN											
RED RIVER OF THE NORTH BASIN											
05056565 - EAST BAY OUTLET OF DEVILS LAKE NR CHARY, ND (LAT 48 00 13 LONG 098 41 50)											
OCT , 1978											
17...	2500	70	24	260	680	5200	1200	.1	11	10300	--
JAN , 1979											
17...	2500	69	24	330	720	5300	1200	.1	7.6	10400	10300
MAY											
16...	1600	68	19	190	470	3500	630	.1	4.4	6980	6570
AUG											
08...	1200	66	15	140	460	2700	570	.1	13	5110	5240
05056570 - EAST DEVILS LAKE NR MAMAR, ND (LAT 47 57 02 LONG 098 36 34)											
OCT , 1978											
19...	7400	73	46	690	1060	16000	2500	.0	.5	30500	--
JAN , 1979											
19...	10000	73	52	790	1400	23000	3600	.1	11	39600	40000
MAY											
18...	3800	87	57	330	530	6200	1400	.1	6.5	15100	12300
AUG											
08...	2100	69	22	220	540	4600	860	.1	9.7	8670	8570
05056630 - EASTERN STUMP LAKE NR LAKOTA, ND (LAT 47 52 04 LONG 098 21 33)											
OCT , 1978											
17...	31000	58	63	2900	1100	85000	21000	.9	16	149000	--
JAN , 1979											
17...	14000	20	18	5400	2500	74000	47000	.0	17	198000	169000
MAY											
16...	7500	57	30	620	320	21000	4800	.0	7.9	40900	37000
AUG											
08...	22000	82	100	860	550	57000	7900	.0	8.4	96000	90400
05056670 - WESTERN STUMP LAKE NR LAKOTA, ND (LAT 47 54 48 LONG 098 23 26)											
OCT , 1978											
17...	6100	77	45	290	440	13000	2600	.0	16	23400	--
MAY , 1979											
16...	1300	71	17	65	160	2900	480	.1	8.5	5570	5140
AUG											
08...	1800	92	40	110	310	4200	780	.1	8.6	7530	7210
PART 6. MISSOURI RIVER BASIN											
JAMES RIVER BASIN											
06469000 - JAMESTOWN RESERVOIR NR JAMESTOWN, ND (LAT 46 56 03 LONG 098 42 38)											
OCT , 1978											
05...	51	32	1.5	13	210	100	11	.1	11	388	--
JAN , 1979											
04...	54	33	1.6	15	230	110	14	.2	1.1	429	405
MAY											
01...	38	33	1.3	8.8	150	72	9.5	.2	3.2	290	276
JUL											
03...	28	44	1.1	9.1	130	53	7.8	.1	4.5	236	223

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BORON, DIS-SOLVED (UG/L AS B) (01020)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)
PART 5. HUDSON BAY BASIN											
RED RIVER OF THE NORTH BASIN											
05056565 - EAST BAY OUTLET OF DEVILS LAKE NR CRARY, ND (LAT 48 00 13 LONG 098 41 50)											
OCT , 1978											
17...	14.0	.17	.04	0	19	200	1700	0	0	0	3
JAN , 1979											
17...	14.1	.15	.20	10	30	100	2000	2	10	2	1
MAY											
16...	9.49	.00	.03	0	13	0	1400	0	10	1	0
AUG											
08...	6.95	<5.0	.16	0	22	0	1000	0	0	0	2
05056570 - EAST DEVILS LAKE NR HAMAR, ND (LAT 47 57 02 LONG 098 36 34)											
OCT , 1978											
19...	41.5	.15	.13	50	59	100	4100	0	0	0	7
JAN , 1979											
19...	53.9	.01	.27	20	150	100	6100	0	30	2	1
MAY											
18...	20.5	.01	.05	0	47	0	2000	1	20	0	0
AUG											
08...	11.8	.02	.01	0	34	0	1600	0	10	0	3
05056630 - EASTERN STUMP LAKE NR LAKOTA, ND (LAT 47 52 04 LONG 098 21 33)											
OCT , 1978											
17...	203	.08	.74	60	400	200	22000	0	160	0	4
JAN , 1979											
17...	269	.02	3.0	0	620	200	46000	0	210	1	0
MAY											
16...	55.6	.00	.18	0	50	100	17000	1	40	0	0
AUG											
08...	131	--	.40	0	100	100	2200	0	70	0	2
05056670 - WESTERN STUMP LAKE NR LAKOTA, ND (LAT 47 54 48 LONG 098 23 26)											
OCT , 1978											
17...	31.8	.05	.06	70	13	100	2900	0	20	0	6
MAY , 1979											
16...	7.58	.00	.03	0	15	100	570	1	10	1	0
AUG											
08...	10.2	.00	.33	10	52	0	1100	0	20	1	3
PART 6. MISSOURI RIVER BASIN											
JAMES RIVER BASIN											
06469000 - JAMESTOWN RESERVOIR NR JAMESTOWN, ND (LAT 46 56 03 LONG 098 42 38)											
OCT , 1978											
05...	.53	.18	.07	0	4	0	130	1	0	0	4
JAN , 1979											
04...	.58	.03	.10	--	--	--	150	--	--	--	--
MAY											
01...	.39	.21	.07	10	2	100	100	0	0	4	0
JUL											
03...	.32	.07	.18	--	--	--	0	--	--	--	--

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)	VANA-DIUM, DIS-SOLVED (UG/L AS V) (01085)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)
PART 5. HUDSON BAY BASIN											
RED RIVER OF THE NORTH BASIN											
05056565 - EAST BAY OUTLET OF DEVILS LAKE NR CRARY, ND (LAT 48 00 13 LONG 098 41 50)											
OCT , 1978											
17...	50	0	950	60	.0	9	3	0	400	11	40
JAN , 1979											
17...	60	--	960	20	.0	6	2	0	600	9.4	40
MAY											
16...	10	0	650	20	.0	4	9	0	420	--	20
AUG											
08...	50	0	450	0	.1	0	3	0	490	--	30
05056570 - EAST DEVILS LAKE NR HAMAR, ND (LAT 47 57 02 LONG 098 36 34)											
OCT , 1978											
19...	50	0	2900	70	.0	5	0	0	120	.0	90
JAN , 1979											
19...	200	2	3600	130	.4	8	1	0	160	25	100
MAY											
18...	40	0	1400	80	.1	7	4	0	160	--	30
AUG											
08...	60	0	720	60	.3	0	4	0	380	--	40
05056630 - EASTERN STUMP LAKE NR LAKOTA, ND (LAT 47 52 04 LONG 098 21 33)											
OCT , 1978											
17...	290	0	19000	370	.0	16	2	1	910	42	250
JAN , 1979											
17...	1100	4	40000	640	4.0	0	4	0	1700	300	190
MAY											
16...	170	0	4000	150	.0	6	12	0	570	--	70
AUG											
08...	450	0	6300	140	.1	4	5	0	480	--	230
05056670 - WESTERN STUMP LAKE NR LAKOTA, ND (LAT 47 54 48 LONG 098 23 26)											
OCT , 1978											
17...	80	0	2200	40	.0	20	6	0	710	24	80
MAY , 1979											
16...	20	0	460	10	.1	7	7	1	520	3.6	10
AUG											
08...	30	0	550	10	.1	4	7	0	970	6.0	40
PART 6. MISSOURI RIVER BASIN											
JAMES RIVER BASIN											
06469000 - JAMESTOWN RESERVOIR NR JAMESTOWN, ND (LAT 46 56 03 LONG 098 42 38)											
OCT , 1978											
05...	20	0	40	0	.0	5	2	0	260	.0	20
JAN , 1979											
04...	--	--	--	--	--	--	--	--	--	--	--
MAY											
01...	30	0	20	260	.0	0	2	0	180	.0	10
JUL											
03...	--	--	--	--	--	--	--	--	--	--	--

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	SAMPLING DEPTH (FT) (00003)	RESERVOIR DEPTH (FEET) (72025)	STREAM STAGE (FT ABOVE DATUM) (00065)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	PH (UNITS) (00400)	TEMPERATURE, AIR (DEG C) (00020)	CLOUD COVER (PERCENT) (00032)	WIND DIRECTION (DEG. FROM TRUE NORTH) (00036)	WIND VELOCITY (MILES PER HOUR) (00035)	BAROMETRIC PRESSURE (MM OF HG) (00025)
PART 5. RED RIVER OF THE NORTH BASIN											
460236096555100 LAKE ELSIE (SHALLOW) NEAR HANKINSON, ND											
MAR											
07...	1340	3.3	7.0	43.69	1750	7.8	-18.5	100	320	15	--
07...	1345	6.6	--	--	1740	7.7	--	--	--	--	--
JUN											
05...	1240	3.3	7.0	44.69	1160	8.3	19.0	30	120	10	730
05...	1241	3.3	--	--	1160	8.3	--	--	--	--	--
05...	1250	6.6	--	--	1180	8.3	--	--	--	--	--
AUG											
21...	1220	3.3	7.3	44.25	1200	8.3	19.5	100	160	5.0	737
21...	1230	6.6	--	--	1190	8.3	--	--	--	--	--

DATE	TEMPERATURE (DEG C) (00010)	TRANSPARENCY (SECCHI DISK) (IN) (00077)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P) (00671)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4) (00660)	CHLOR-A PHYTOPLANKTON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTOPLANKTON CHROMO FLUOROM (UG/L) (70954)
MAR										
07...	1.0	60	6.8	--	.05	.02	.00	.00	14.0	.000
07...	2.0	--	6.5	--	--	--	--	--	--	--
JUN										
05...	18.0	26	7.9	86	.00	.04	.00	.00	--	--
05...	18.0	--	--	--	--	--	--	--	2.63	.000
05...	18.0	--	7.9	86	--	--	--	--	--	--
AUG										
21...	21.5	32	7.2	84	.01	.01	.07	.21	14.6	.000
21...	21.5	--	7.0	81	--	--	--	--	--	--

460251096555600 LAKE ELSIE (DEEP) NEAR HANKINSON, ND

DATE	TIME	SAMPLING DEPTH (FT) (00003)	RESERVOIR DEPTH (FEET) (72025)	STREAM STAGE (FT ABOVE DATUM) (00065)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	PH (UNITS) (00400)	TEMPERATURE, AIR (DEG C) (00020)	CLOUD COVER (PERCENT) (00032)	WIND DIRECTION (DEG. FROM TRUE NORTH) (00036)	WIND VELOCITY (MILES PER HOUR) (00035)	BAROMETRIC PRESSURE (MM OF HG) (00025)
MAR											
07...	1040	3.3	23	--	1790	7.7	-18.5	100	320	16	--
07...	1100	6.6	--	--	--	--	--	--	--	--	--
07...	1110	13	--	--	1750	7.6	--	--	--	--	--
07...	1140	19	--	--	--	--	--	--	--	--	--
07...	1155	23	--	--	1850	7.5	--	--	--	--	--
JUN											
05...	1130	3.3	22	44.69	1180	8.3	18.0	100	120	10	732
05...	1131	3.3	--	--	1180	8.3	--	--	--	--	--
05...	1135	6.6	--	--	--	--	--	--	--	--	--
05...	1140	13	--	--	1180	8.2	--	--	--	--	--
05...	1145	19	--	--	1210	8.3	--	--	--	--	--
AUG											
21...	1105	3.3	20	44.25	1200	8.3	20.5	100	160	5.0	737
21...	1115	6.6	--	--	1180	8.3	--	--	--	--	--
21...	1125	13	--	--	1180	8.0	--	--	--	--	--
21...	1130	16	--	--	1190	7.9	--	--	--	--	--
21...	1140	19	--	--	1190	7.9	--	--	--	--	--

ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD WATER-QUALITY LAKE STATIONS

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

PART 5. RED RIVER OF THE NORTH BASIN

460251096555600 LAKE ELSIE (DEEP) NEAR HANKINSON, ND--Continued

DATE	TEMPERATURE (DEG C) (00010)	TRANSPARENCY (SECCHI DISK) (IN) (00077)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P) (00671)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4) (00660)	CHLOR-A PHYTOPLANKTON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTOPLANKTON CHROMO FLUOROM (UG/L) (70954)
MAR										
07...	.5	72	6.8	--	.05	.02	.00	.00	9.16	.000
07...	3.0	--	6.2	--	--	--	--	--	--	--
07...	3.0	--	4.4	--	.05	.02	.00	.00	--	--
07...	4.0	--	2.6	--	--	--	--	--	--	--
07...	4.0	--	1.6	--	.05	.02	.00	.00	--	--
JUN										
05...	18.0	37	7.6	83	.00	.04	.00	.00	--	--
05...	18.0	--	--	--	--	--	--	--	2.31	.000
05...	18.0	--	7.6	83	--	--	--	--	--	--
05...	18.0	--	7.6	83	--	--	--	--	--	--
05...	18.0	--	7.6	83	--	--	--	--	--	--
AUG										
21...	21.5	3.2	7.4	86	.00	.01	.04	.12	15.5	.000
21...	21.5	--	7.4	86	--	--	--	--	--	--
21...	21.5	--	7.2	84	--	--	--	--	--	--
21...	20.5	--	2.0	23	.00	.01	.04	.12	--	--
21...	20.0	--	1.4	16	.01	.01	.04	.12	--	--

465114098093100 MOON LAKE (SHALLOW) NEAR SANBORN, ND

DATE	TIME	SAMPLING DEPTH (FT) (00003)	RESERVOIR DEPTH (FEET) (72025)	STREAM STAGE (FT ABOVE DATUM) (00065)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	PH (UNITS) (00400)	TEMPERATURE, AIR (DEG C) (00020)	CLOUD COVER (PERCENT) (00032)	WIND DIRECTION (DEG. FROM TRUE NORTH) (00036)	WIND VELOCITY (MILES PER HOUR) (00035)	BAROMETRIC PRESSURE (MM OF HG) (00025)
MAR											
10...	0920	--	7.0	--	--	--	-24.5	0	315	10	--
10...	0921	3.3	--	--	7500	9.1	--	--	--	--	--
10...	0930	6.6	--	--	7450	9.1	--	--	--	--	--
JUN											
08...	1230	--	8.1	40.22	--	--	17.5	20	285	5.0	732
08...	1231	3.3	--	--	6000	9.1	--	--	--	--	--
08...	1240	6.6	--	--	5950	9.1	--	--	--	--	--
AUG											
23...	1505	1.6	6.2	39.76	6750	9.1	17.0	95	350	10	726
23...	1510	3.3	--	--	6750	9.1	--	--	--	--	--

DATE	TEMPERATURE (DEG C) (00010)	TRANSPARENCY (SECCHI DISK) (IN) (00077)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P) (00671)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4) (00660)	CHLOR-A PHYTOPLANKTON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTOPLANKTON CHROMO FLUOROM (UG/L) (70954)
MAR										
10...	--	84	--	--	--	--	--	--	--	--
10...	.5	--	6.3	--	.11	.05	.01	.03	.000	.000
10...	.5	--	4.4	--	--	--	--	--	--	--
JUN										
08...	--	97	--	--	--	--	--	--	--	--
08...	16.5	--	8.2	87	.00	.04	.01	.03	.000	.000
08...	16.5	--	8.5	90	--	--	--	--	--	--
AUG										
23...	19.5	74	9.0	102	--	--	--	--	--	--
23...	19.5	--	8.2	93	.04	.00	.01	.03	3.21	.000

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	SAMPLING DEPTH (FT) (00003)	RESERVOIR DEPTH (FEET) (72025)	STREAM STAGE (FT ABOVE DATUM) (00065)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	PH (UNITS) (00400)	TEMPERATURE, AIR (DEG C) (00020)	CLOUD COVER (PERCENT) (00032)	WIND DIRECTION (DEG. FROM TRUE NORTH) (00036)	WIND VELOCITY (MILES PER HOUR) (00035)	BAROMETRIC PRESSURE (MM OF HG) (00025)
PART 5. RED RIVER OF THE NORTH BASIN											
465127098092600 MOON LAKE (DEEP) NEAR SANBORN, ND											
MAR											
10...	1200	--	42	39.44	--	--	-19.5	0	315	9.0	--
10...	1201	3.3	--	--	7600	9.1	--	--	--	--	--
10...	1215	6.6	--	--	--	--	--	--	--	--	--
10...	1225	13	--	--	--	--	--	--	--	--	--
10...	1235	19	--	--	--	--	--	--	--	--	--
10...	1245	26	--	--	7700	9.1	--	--	--	--	--
10...	1300	33	--	--	--	--	--	--	--	--	--
10...	1315	39	--	--	--	--	--	--	--	--	--
10...	1325	41	--	--	7700	9.1	--	--	--	--	--
JUN											
08...	1020	--	43	40.22	--	--	16.0	20	285	10	732
08...	1021	3.3	--	--	5900	9.1	--	--	--	--	--
08...	1025	6.6	--	--	--	--	--	--	--	--	--
08...	1030	13	--	--	--	--	--	--	--	--	--
08...	1040	19	--	--	7600	9.0	--	--	--	--	--
08...	1050	26	--	--	--	--	--	--	--	--	--
08...	1100	29	--	--	7800	9.0	--	--	--	--	--
08...	1110	33	--	--	--	--	--	--	--	--	--
08...	1115	39	--	--	--	--	--	--	--	--	--
08...	1120	42	--	--	7800	8.9	--	--	--	--	--
AUG											
23...	1345	--	41	39.76	--	--	17.5	98	350	10	726
23...	1346	3.3	--	--	6600	9.1	--	--	--	--	--
23...	1350	6.6	--	--	--	--	--	--	--	--	--
23...	1355	13	--	--	6800	9.1	--	--	--	--	--
23...	1405	19	--	--	--	--	--	--	--	--	--
23...	1420	24	--	--	8000	8.9	--	--	--	--	--
23...	1430	33	--	--	8400	8.9	--	--	--	--	--
23...	1435	39	--	--	--	--	--	--	--	--	--

DATE	TEMPERATURE (DEG C) (00010)	TRANSPARENCY (SECCHI DISK) (IN) (00077)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P) (00671)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4) (00660)	CHLOR-A PHYTOPLANKTON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTOPLANKTON CHROMO FLUOROM (UG/L) (70954)
MAR										
10...	--	108	--	--	--	--	--	--	--	--
10...	.5	--	4.2	--	.11	.05	.04	.12	.000	.000
10...	.5	--	4.2	--	--	--	--	--	--	--
10...	.5	--	4.2	--	--	--	--	--	--	--
10...	.5	--	4.2	--	--	--	--	--	--	--
10...	1.0	--	2.5	--	.09	.06	.01	.03	--	--
10...	1.0	--	.6	--	--	--	--	--	--	--
10...	1.0	--	.6	--	--	--	--	--	--	--
10...	1.0	--	.6	--	.07	.08	.03	.09	--	--
JUN										
08...	--	207	--	--	--	--	--	--	--	--
08...	16.0	--	8.2	86	4.5	.04	.00	.00	.350	.000
08...	16.0	--	8.2	86	--	--	--	--	--	--
08...	16.0	--	8.2	86	--	--	--	--	--	--
08...	6.5	--	7.6	64	--	--	--	--	--	--
08...	4.5	--	6.9	55	--	--	--	--	--	--
08...	4.0	--	4.2	33	.00	.04	.02	.06	--	--
08...	4.0	--	.0	0	--	--	--	--	--	--
08...	3.0	--	.0	0	--	--	--	--	--	--
08...	3.0	--	.0	0	.00	.19	.11	.34	--	--
AUG										
23...	--	108	--	--	--	--	--	--	--	--
23...	20.0	--	8.2	94	.02	.02	.07	.21	2.45	.000
23...	20.0	--	8.0	92	--	--	--	--	--	--
23...	20.0	--	7.9	90	--	--	--	--	--	--
23...	20.0	--	7.9	90	--	--	--	--	--	--
23...	12.0	--	.0	0	--	.03	--	--	--	--
23...	5.0	--	.0	0	.01	.22	.21	.64	--	--
23...	4.0	--	.0	0	--	--	--	--	--	--

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	SAMPLING DEPTH (FT) (00003)	RESERVOIR DEPTH (FEET) (72025)	STREAM STAGE (FT ABOVE DATUM) (00065)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	PH (UNITS) (00400)	TEMPERATURE, AIR (DEG C) (00020)	CLOUD COVER (PERCENT) (00032)	WIND DIRECTION (DEG. FROM TRUE NORTH) (00036)	WIND VELOCITY (MILES PER HOUR) (00035)	BAROMETRIC PRESSURE (MM OF HG) (00025)
PART 5. RED RIVER OF THE NORTH BASIN											
464058098023800 CLAUSEN SPRINGS LAKE (SHALLOW) NEAR KATHRYN, ND											
MAR											
09...	0915	--	7.2	--	--	--	-16.5	0	320	10	--
09...	0916	3.3	--	--	845	8.0	--	--	--	--	--
09...	0920	6.6	--	--	805	8.1	--	--	--	--	--
JUN											
07...	1230	--	--	40.74	--	--	11.5	100	285	10	725
07...	1231	3.3	--	--	574	8.5	--	--	--	--	--
07...	1240	6.6	--	--	580	8.5	--	--	--	--	--
AUG											
23...	1035	--	5.9	40.46	--	--	17.0	40	340	10	729
23...	1036	3.3	--	--	611	8.4	--	--	--	--	--
23...	1040	5.9	--	--	629	8.4	--	--	--	--	--

DATE	TEMPERATURE (DEG C) (00010)	TRANSPARENCY (SECCHI DISK) (IN) (00077)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P) (00671)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4) (00660)	CHLOR-A PHYTOPLANKTON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTOPLANKTON CHROMO FLUOROM (UG/L) (70954)
MAR										
09...	--	86	--	--	--	--	--	--	--	--
09...	.5	--	8.8	--	1.6	.10	.06	.18	2.33	.000
09...	.5	--	8.2	--	--	--	--	--	--	--
JUN										
07...	--	85	--	--	--	--	--	--	--	--
07...	17.0	--	8.2	89	.00	.05	.00	.00	1.14	.000
07...	17.0	--	8.2	89	--	--	--	--	--	--
AUG										
23...	--	71	--	--	--	--	--	--	--	--
23...	20.5	--	6.6	76	.02	.08	.11	.34	1.45	.000
23...	20.5	--	6.8	78	--	--	--	--	--	--

464059098020700 CLAUSEN SPRINGS LAKE (DEEP) NEAR KATHRYN, ND

DATE	TIME	SAMPLING DEPTH (FT) (00003)	RESERVOIR DEPTH (FEET) (72025)	STREAM STAGE (FT ABOVE DATUM) (00065)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	PH (UNITS) (00400)	TEMPERATURE, AIR (DEG C) (00020)	CLOUD COVER (PERCENT) (00032)	WIND DIRECTION (DEG. FROM TRUE NORTH) (00036)	WIND VELOCITY (MILES PER HOUR) (00035)	BAROMETRIC PRESSURE (MM OF HG) (00025)
MAR											
09...	1245	--	31	40.64	--	--	-15.5	95	315	20	--
09...	1246	3.3	--	--	830	7.9	--	--	--	--	--
09...	1305	6.6	--	--	--	--	--	--	--	--	--
09...	1315	13	--	--	--	--	--	--	--	--	--
09...	1325	19	--	--	--	--	--	--	--	--	--
09...	1335	26	--	--	820	7.9	--	--	--	--	--
09...	1345	31	--	--	810	7.8	--	--	--	--	--
JUN											
07...	1100	--	30	40.74	--	--	16.5	100	285	10	724
07...	1101	3.3	--	--	579	8.6	--	--	--	--	--
07...	1105	6.6	--	--	--	--	--	--	--	--	--
07...	1110	13	--	--	--	--	--	--	--	--	--
07...	1120	19	--	--	581	8.3	--	--	--	--	--
07...	1125	23	--	--	571	7.9	--	--	--	--	--
07...	1130	26	--	--	--	--	--	--	--	--	--
07...	1135	29	--	--	590	7.8	--	--	--	--	--
AUG											
23...	0920	--	28	40.46	--	--	14.5	30	340	10	732
23...	0921	3.3	--	--	608	8.5	--	--	--	--	--
23...	0925	6.6	--	--	--	--	--	--	--	--	--
23...	0930	13	--	--	621	8.5	--	--	--	--	--
23...	0940	19	--	--	629	8.1	--	--	--	--	--
23...	0950	26	--	--	632	8.0	--	--	--	--	--

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

PART 5. RED RIVER OF THE NORTH BASIN

464059098020700 CLAUSEN SPRINGS LAKE (DEEP) NEAR KATHRYN, ND--Continued

DATE	TEMPERATURE (DEG C) (00010)	TRANSPARENCY (SECCHI DISK) (IN) (00077)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P) (00671)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4) (00660)	CHLOR-A PHYTOPLANKTON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTOPLANKTON CHROMO FLUOROM (UG/L) (70954)
MAR										
09...	--	105	--	--	--	--	--	--	--	--
09...	1.0	--	8.2	--	.30	.05	.01	.03	.000	.000
09...	2.0	--	7.7	--	--	--	--	--	--	--
09...	3.0	--	6.5	--	--	--	--	--	--	--
09...	3.0	--	5.5	--	--	--	--	--	--	--
09...	3.0	--	3.7	--	.33	.08	.03	.09	--	--
09...	3.5	--	.0	--	.30	.08	.05	.15	--	--
JUN										
07...	--	131	--	--	--	--	--	--	--	--
07...	17.5	--	8.4	92	.00	.05	.00	.00	1.00	.000
07...	17.5	--	8.4	92	--	--	--	--	--	--
07...	17.5	--	8.4	92	--	--	--	--	--	--
07...	17.0	--	5.8	63	--	--	--	--	--	--
07...	12.5	--	1.8	18	.01	.07	.03	.09	--	--
07...	11.0	--	.6	6	--	--	--	--	--	--
07...	10.0	--	.1	1	.00	.36	.19	.58	--	--
AUG										
23...	--	79	--	--	--	--	--	--	--	--
23...	21.0	--	7.2	83	.01	.07	.11	.34	2.34	.000
23...	21.0	--	7.2	83	--	--	--	--	--	--
23...	20.5	--	7.2	83	--	--	--	--	--	--
23...	18.5	--	.6	7	.01	.25	.22	.67	--	--
23...	17.5	--	.0	0	.00	.46	.42	1.3	--	--

473343097382400 GOLDEN LAKE (SHALLOW) NEAR HATTON, ND

DATE	TIME	SAMPLING DEPTH (FT) (00003)	RESERVOIR DEPTH (FEET) (72025)	STREAM STAGE (FT ABOVE DATUM) (00065)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	PH (UNITS) (00400)	TEMPERATURE, AIR (DEG C) (00020)	CLOUD COVER (PERCENT) (00032)	WIND DIRECTION (DEG, FROM TRUE NORTH) (00036)	WIND VELOCITY (MILES PER HOUR) (00035)	BAROMETRIC PRESSURE (MM OF HG) (00025)
MAR											
06...	1730	--	8.0	42.26	--	--	-14.0	100	0	15	--
06...	1731	3.3	--	--	1800	8.1	--	--	--	--	--
06...	1735	6.6	--	--	1800	8.1	--	--	--	--	--
JUN											
04...	1845	--	7.4	43.53	--	--	20.0	2	0	10	732
04...	1846	3.3	--	--	1130	8.2	--	--	--	--	--
04...	1850	6.6	--	--	1140	8.2	--	--	--	--	--
AUG											
10...	1500	3.3	6.6	42.94	1140	8.8	23.0	70	115	10	735
10...	1510	6.6	--	--	1100	8.8	--	--	--	--	--

DATE	TEMPERATURE (DEG C) (00010)	TRANSPARENCY (SECCHI DISK) (IN) (00077)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P) (00671)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4) (00660)	CHLOR-A PHYTOPLANKTON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTOPLANKTON CHROMO FLUOROM (UG/L) (70954)
MAR										
06...	--	72	--	--	--	--	--	--	--	--
06...	.5	--	11.6	--	.02	.03	.00	.00	.560	.000
06...	1.0	--	--	--	--	--	--	--	--	--
JUN										
04...	--	76	--	--	--	--	--	--	--	--
04...	17.5	--	9.1	98	.01	.04	.00	.00	2.55	.000
04...	17.5	--	9.1	98	--	--	--	--	--	--
AUG										
10...	22.5	37	10.8	128	.01	.04	.07	.21	10.4	.000
10...	22.5	--	10.6	126	--	--	--	--	--	--

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	SAMPLING DEPTH (FT) (00003)	RESERVOIR DEPTH (FEET) (72025)	STREAM STAGE (FT ABOVE DATUM) (00065)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	PH (UNITS) (00400)	TEMPERATURE, AIR (DEG C) (00020)	CLOUD COVER (PERCENT) (00032)	WIND DIRECTION (DEG. FROM TRUE NORTH) (00036)	WIND VELOCITY (MILES PER HOUR) (00035)	BAROMETRIC PRESSURE (MM OF HG) (00025)
PART 5. RED RIVER OF THE NORTH BASIN											
473407097371600 GOLDEN LAKE (DEEP) NEAR HATTON, ND											
MAR											
06...	1330	--	17	42.26	--	--	-1.0	100	0	15	--
06...	1331	3.3	--	--	1780	8.2	--	--	--	--	--
06...	1340	6.6	--	--	1770	8.2	--	--	--	--	--
06...	1350	13	--	--	1770	8.1	--	--	--	--	--
06...	1400	16	--	--	1770	8.0	--	--	--	--	--
JUN											
04...	1745	3.3	18	43.53	1140	8.4	20.0	2	0	10	732
04...	1746	3.3	--	--	1140	8.4	--	--	--	--	--
04...	1750	6.6	--	--	--	--	--	--	--	--	--
04...	1755	13	--	--	1120	8.2	--	--	--	--	--
04...	1800	18	--	--	1140	8.3	--	--	--	--	--
AUG											
20...	1340	--	16	42.94	--	--	25.0	80	115	5.0	738
20...	1341	3.3	--	--	1150	8.8	--	--	--	--	--
20...	1350	6.6	--	--	--	--	--	--	--	--	--
20...	1405	13	--	--	1140	8.5	--	--	--	--	--
20...	1415	16	--	--	1060	8.4	--	--	--	--	--

DATE	TEMPERATURE (DEG C) (00010)	TRANSPARENCY (SECCHI DISK) (IN) (00077)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P) (00671)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4) (00660)	CHLOR-A PHYTOPLANKTON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTOPLANKTON CHROMO FLUOROM (UG/L) (70954)
MAR										
06...	--	8.6	--	--	--	--	--	--	--	--
06...	1.0	--	11.3	--	.03	.03	.00	.00	.000	.000
06...	3.0	--	11.3	--	--	--	--	--	--	--
06...	3.0	--	11.1	--	.04	.03	.00	.00	--	--
06...	4.0	--	10.2	--	.03	.03	.00	.00	--	--
JUN										
04...	16.5	79	8.6	91	--	--	--	--	3.28	.000
04...	16.5	--	--	--	--	--	--	--	--	--
04...	16.5	--	8.6	91	--	--	--	--	--	--
04...	16.0	--	8.6	90	--	--	--	--	--	--
04...	16.0	--	8.4	88	--	--	--	--	--	--
AUG										
20...	--	37	--	--	--	--	--	--	--	--
20...	21.0	--	10.3	118	.00	.04	.07	.21	15.9	.000
20...	20.5	--	9.9	112	--	--	--	--	--	--
20...	19.5	--	4.6	51	.00	.07	.10	.31	--	--
20...	19.0	--	2.0	22	.00	.10	.11	.34	--	--

485725099502900 LAKE UPSILON (SHALLOW) NEAR ST. JOHN, ND

DATE	TIME	SAMPLING DEPTH (FT) (00003)	RESERVOIR DEPTH (FEET) (72025)	STREAM STAGE (FT ABOVE DATUM) (00065)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	PH (UNITS) (00400)	TEMPERATURE, AIR (DEG C) (00020)	CLOUD COVER (PERCENT) (00032)	WIND DIRECTION (DEG. FROM TRUE NORTH) (00036)	WIND VELOCITY (MILES PER HOUR) (00035)
JUN										
20...	1858	--	13	13.83	--	--	15.5	100	315	10
20...	1900	.0	--	--	--	--	--	--	--	--
20...	1902	1.6	--	--	--	--	--	--	--	--
20...	1904	3.3	--	--	439	8.4	--	--	--	--
20...	1906	6.6	--	--	439	8.5	--	--	--	--
20...	1908	13	--	--	439	8.5	--	--	--	--
AUG										
15...	1743	--	14	13.17	--	--	15.0	30	180	5.0
15...	1745	.0	--	--	--	--	--	--	--	--
15...	1747	1.6	--	--	--	--	--	--	--	--
15...	1749	3.3	--	--	436	8.7	--	--	--	--
15...	1751	6.6	--	--	436	8.8	--	--	--	--
15...	1753	13	--	--	436	8.8	--	--	--	--

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TEMPERATURE (DEG C) (00010)	TRANSPARENCY (SECCHI DISK) (IN) (00077)	OXYGEN, DISSOLVED (MG/L) (00300)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P) (00671)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4) (00660)	CHLOR-A PHYTOPLANKTON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTOPLANKTON CHROMO FLUOROM (UG/L) (70954)
PART 5. RED RIVER OF THE NORTH BASIN									
485725099502900 LAKE UPSILON (SHALLOW) NEAR ST. JOHN, ND--Continued									
JUN									
20...	--	32	--	--	--	--	--	--	--
20...	17.7	--	6.5	--	--	--	--	--	--
20...	17.0	--	6.6	--	--	--	--	--	--
20...	--	--	6.6	.00	.00	.00	.00	24.8	.000
20...	--	--	6.6	--	--	--	--	--	--
20...	--	--	6.0	--	--	--	--	--	--
AUG									
15...	--	34	--	--	--	--	--	--	--
15...	18.1	--	8.9	--	--	--	--	--	--
15...	18.1	--	8.9	--	--	--	--	--	--
15...	18.1	--	8.6	.00	.01	.00	.00	10.1	.000
15...	18.0	--	7.8	--	--	--	--	--	--
15...	17.8	--	--	--	--	--	--	--	--

485941099502800 LAKE UPSILON (DEEP) NEAR ST. JOHN, ND

DATE	TIME	SAMPLING DEPTH (FT) (00003)	RESERVOIR DEPTH (FEET) (72025)	STREAM STAGE (FT ABOVE DATUM) (00065)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	PH (UNITS) (00400)	TEMPERATURE, AIR (DEG C) (00020)	CLOUD COVER (PERCENT) (00032)	WIND DIRECTION (DEG. FROM TRUE NORTH) (00036)	WIND VELOCITY (MILES PER HOUR) (00035)	BAROMETRIC PRESSURE (MM OF HG) (00025)
MAR											
14...	1235	.0	24	12.88	--	--	-12.0	0	0	12	693
14...	1236	1.6	--	--	--	--	--	--	--	--	--
14...	1237	3.3	--	--	568	7.8	--	--	--	--	--
14...	1238	6.6	--	--	--	--	--	--	--	--	--
14...	1239	13	--	--	568	7.8	--	--	--	--	--
14...	1240	19	--	--	570	7.8	--	--	--	--	--
JUN											
20...	1633	--	23	13.83	--	--	16.0	100	315	10	--
20...	1635	.0	--	--	--	--	--	--	--	--	--
20...	1637	1.6	--	--	--	--	--	--	--	--	--
20...	1639	3.3	--	--	439	8.4	--	--	--	--	--
20...	1641	6.6	--	--	--	--	--	--	--	--	--
20...	1643	13	--	--	439	8.5	--	--	--	--	--
20...	1645	19	--	--	439	8.4	--	--	--	--	--
AUG											
15...	1548	--	24	13.17	--	--	14.0	10	180	15	--
15...	1550	.0	--	--	--	--	--	--	--	--	--
15...	1552	1.6	--	--	--	--	--	--	--	--	--
15...	1554	3.3	--	--	436	8.8	--	--	--	--	--
15...	1556	6.6	--	--	--	--	--	--	--	--	--
15...	1558	13	--	--	436	8.8	--	--	--	--	--
15...	1600	19	--	--	436	8.8	--	--	--	--	--

DATE	TEMPERATURE (DEG C) (00010)	TRANSPARENCY (SECCHI DISK) (IN) (00077)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P) (00671)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4) (00660)	CHLOR-A PHYTOPLANKTON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTOPLANKTON CHROMO FLUOROM (UG/L) (70954)
MAR										
14...	.1	32	1.2	9	--	--	--	--	--	--
14...	.9	--	.6	4	--	--	--	--	--	--
14...	.9	--	.5	4	.02	.01	.00	.00	17.9	.000
14...	.9	--	.5	4	--	--	--	--	--	--
14...	1.0	--	.5	4	--	--	--	--	--	--
14...	1.5	--	.2	2	--	--	--	--	--	--
JUN										
20...	--	32	--	--	--	--	--	--	--	--
20...	18.0	--	6.4	--	--	--	--	--	--	--
20...	18.0	--	6.4	--	--	--	--	--	--	--
20...	18.0	--	6.4	--	--	--	--	--	24.1	.000
20...	18.0	--	6.4	--	--	--	--	--	--	--
20...	18.0	--	6.4	--	--	--	--	--	--	--
20...	13.3	--	.8	--	.00	.00	.00	.00	--	--
AUG										
15...	--	32	--	--	--	--	--	--	--	--
15...	18.1	--	8.7	--	--	--	--	--	--	--
15...	18.1	--	8.4	--	--	--	--	--	--	--
15...	18.1	--	8.0	--	.00	.01	.00	.00	14.4	.000
15...	18.1	--	8.0	--	--	--	--	--	--	--
15...	18.1	--	7.6	--	--	--	--	--	--	--
15...	18.0	--	7.6	--	--	--	--	--	--	--

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	SAMPLING DEPTH (FT) (00003)	RESERVOIR DEPTH (FEET) (72025)	STREAM STAGE (FT ABOVE DATUM) (00065)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	PH (UNITS) (00400)	TEMPERATURE, AIR (DEG C) (00020)	CLOUD COVER (PERCENT) (00032)	WIND DIRECTION (DEG. FROM TRUE NORTH) (00036)	WIND VELOCITY (MILES PER HOUR) (00035)
PART 5. RED RIVER OF THE NORTH BASIN										
485030102470000 TRUAX MINE LAKE (SHALLOW) NEAR COLUMBUS, ND										
JUN										
15...	1058	--	10	38.75	--	--	19.0	0	315	10
15...	1100	.0	--	--	--	--	--	--	--	--
15...	1102	1.6	--	--	--	--	--	--	--	--
15...	1104	3.3	--	--	2200	8.7	--	--	--	--
15...	1108	6.6	--	--	2200	8.7	--	--	--	--
SEP										
05...	1513	--	8.5	37.77	--	--	22.5	5	315	20
05...	1515	.0	--	--	--	--	--	--	--	--
05...	1517	1.6	--	--	--	--	--	--	--	--
05...	1519	3.3	--	--	1650	7.7	--	--	--	--
05...	1521	6.6	--	--	1650	7.7	--	--	--	--

DATE	TEMPERATURE (DEG C) (00010)	TRANSPARENCY (SECCHI DISK) (IN) (00077)	OXYGEN, DISSOLVED (MG/L) (00300)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P) (00671)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4) (00660)	CHLOR-A PHYTOPLANKTON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTOPLANKTON CHROMO FLUOROM (UG/L) (70954)
JUN									
15...	--	8.4	--	--	--	--	--	--	--
15...	16.3	--	8.0	--	--	--	--	--	--
15...	16.8	--	8.0	--	--	--	--	--	--
15...	16.8	--	8.0	.49	.11	.00	.00	--	--
15...	16.7	--	8.0	--	--	--	--	--	--
SEP									
05...	--	14	--	--	--	--	--	--	--
05...	18.1	--	7.6	--	--	--	--	--	--
05...	18.1	--	7.6	--	--	--	--	--	--
05...	18.1	--	7.6	.26	.01	.01	.03	3.79	.000
05...	18.1	--	7.6	--	--	--	--	--	--

485034102470700 TRUAX MINE LAKE (DEEP) NEAR COLUMBUS, ND

DATE	TIME	SAMPLING DEPTH (FT) (00003)	RESERVOIR DEPTH (FEET) (72025)	STREAM STAGE (FT ABOVE DATUM) (00065)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	PH (UNITS) (00400)	TEMPERATURE, AIR (DEG C) (00020)	CLOUD COVER (PERCENT) (00032)	WIND DIRECTION (DEG. FROM TRUE NORTH) (00036)	WIND VELOCITY (MILES PER HOUR) (00035)	BAROMETRIC PRESSURE (MM OF HG) (00025)
MAR											
07...	1039	--	10	38.76	--	--	-4.0	80	157	25	685
07...	1040	.0	--	--	--	--	--	--	--	--	--
07...	1041	1.6	--	--	--	--	--	--	--	--	--
07...	1042	3.3	--	--	3380	8.4	--	--	--	--	--
07...	1043	6.6	--	--	3380	8.5	--	--	--	--	--
JUN											
15...	0928	--	11	38.75	--	--	18.0	0	315	5.0	--
15...	0930	.0	--	--	--	--	--	--	--	--	--
15...	0932	1.6	--	--	--	--	--	--	--	--	--
15...	0934	3.3	--	--	2230	8.6	--	--	--	--	--
15...	0936	6.6	--	--	2230	8.6	--	--	--	--	--
15...	0938	9.9	--	--	--	--	--	--	--	--	--
SEP											
05...	1348	--	17	37.77	--	--	22.0	0	315	15	--
05...	1350	.0	--	--	--	--	--	--	--	--	--
05...	1352	1.6	--	--	--	--	--	--	--	--	--
05...	1354	3.3	--	--	2640	8.7	--	--	--	--	--
05...	1356	6.6	--	--	2640	8.7	--	--	--	--	--
05...	1358	13	--	--	--	--	--	--	--	--	--

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TEMPERATURE (DEG C) (00010)	TRANSPARENCY (SECCHI DISK) (IN) (00077)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P) (00671)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4) (00660)	CHLOR-A PHYTOPLANKTON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTOPLANKTON CHROMO FLUOROM (UG/L) (70954)
PART 5. RED RIVER OF THE NORTH BASIN										
485034102470700 TRUAX MINE LAKE (DEEP) NEAR COLUMBUS, ND--Continued										
MAR										
07...	--	14	--	--	--	--	--	--	--	--
07...	.0	--	11.6	88	--	--	--	--	--	--
07...	.0	--	11.6	88	--	--	--	--	--	--
07...	.0	--	11.6	88	.35	.02	.04	.12	2.46	.000
07...	2.1	--	11.6	93	--	--	--	--	--	--
JUN										
15...	--	9.0	--	--	--	--	--	--	--	--
15...	16.5	--	8.1	--	--	--	--	--	--	--
15...	16.5	--	8.1	--	--	--	--	--	--	--
15...	16.5	--	8.0	--	.50	.01	.01	.03	12.6	.000
15...	16.4	--	8.0	--	--	--	--	--	--	--
15...	12.9	--	--	--	--	--	--	--	--	--
SEP										
05...	--	14	--	--	--	--	--	--	--	--
05...	17.8	--	7.7	--	--	--	--	--	--	--
05...	17.8	--	7.6	--	--	--	--	--	--	--
05...	17.8	--	7.6	--	.25	.00	.01	.03	3.31	.000
05...	17.7	--	7.5	--	--	--	--	--	--	--
05...	15.2	--	--	--	--	--	--	--	--	--

484835102172500 BOWBELLS MINE LAKE (DEEP) NEAR BOWBELLS, ND

DATE	TIME	SAMPLING DEPTH (FT) (00003)	RESERVOIR DEPTH (FEET) (72025)	STREAM STAGE (FT ABOVE DATUM) (00065)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	PH (UNITS) (00400)	TEMPERATURE, AIR (DEG C) (00020)	CLOUD COVER (PERCENT) (00032)	WIND DIRECTION (DEG. FROM TRUE NORTH) (00036)	WIND VELOCITY (MILES PER HOUR) (00035)	BAROMETRIC PRESSURE (MM OF HG) (00025)
MAR											
08...	1000	.0	19	--	--	--	1.5	100	270	12	680
08...	1001	1.6	--	--	--	--	--	--	--	--	--
08...	1002	3.3	--	--	8500	7.6	--	--	--	--	--
08...	1003	6.6	--	--	--	--	--	--	--	--	--
08...	1004	13	--	--	8500	7.6	--	--	--	--	--
JUN											
14...	1138	--	22	46.11	--	--	22.5	90	315	10	--
14...	1140	.0	--	--	--	--	--	--	--	--	--
14...	1142	1.6	--	--	--	--	--	--	--	--	--
14...	1144	3.3	--	--	4860	8.2	--	--	--	--	--
14...	1146	6.6	--	--	--	--	--	--	--	--	--
14...	1148	13	--	--	7500	7.8	--	--	--	--	--
14...	1150	19	--	--	7700	7.9	--	--	--	--	--
SEP											
06...	0918	--	20	44.32	--	--	--	100	0	.0	--
06...	0920	.0	--	--	--	--	--	--	--	--	--
06...	0922	1.6	--	--	--	--	--	--	--	--	--
06...	0924	3.3	--	--	6500	8.5	--	--	--	--	--
06...	0926	6.6	--	--	--	--	--	--	--	--	--
06...	0928	13	--	--	7800	7.9	--	--	--	--	--
06...	0930	18	--	--	8400	7.6	--	--	--	--	--

DATE	TEMPERATURE (DEG C) (00010)	TRANSPARENCY (SECCHI DISK) (IN) (00077)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P) (00671)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4) (00660)	CHLOR-A PHYTOPLANKTON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTOPLANKTON CHROMO FLUOROM (UG/L) (70954)
MAR										
08...	-.5	180	.5	4	--	--	--	--	--	--
08...	-.5	--	.5	4	--	--	--	--	--	--
08...	-.5	--	.5	4	.06	.01	.00	.00	.000	.000
08...	-.5	--	.5	4	--	--	--	--	--	--
08...	-.5	--	.5	4	--	--	--	--	--	--
JUN										
14...	--	48	--	--	--	--	--	--	--	--
14...	18.3	--	9.2	--	--	--	--	--	--	--
14...	18.9	--	7.8	--	--	--	--	--	--	--
14...	18.9	--	7.8	--	.00	.01	.00	.00	.060	.000
14...	18.9	--	7.8	--	--	--	--	--	--	--
14...	4.7	--	3.2	--	.00	.01	.00	.00	--	--
14...	3.0	--	4.6	--	.00	.02	.00	.00	--	--
SEP										
06...	--	84	--	--	--	--	--	--	--	--
06...	17.3	--	8.0	--	--	--	--	--	--	--
06...	17.3	--	8.0	--	--	--	--	--	--	--
06...	17.4	--	7.8	--	.01	.00	.01	.03	2.32	.000
06...	17.4	--	7.7	--	--	--	--	--	--	--
06...	17.1	--	7.6	--	.00	.00	.00	.00	--	--
06...	9.5	--	.7	--	.02	.01	.00	.00	--	--

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	SAMPLING DEPTH (FT) (00003)	RESERVOIR DEPTH (FEET) (72025)	STREAM STAGE (FT ABOVE DATUM) (00065)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	PH (UNITS) (00400)	TEMPERATURE, AIR (DEG C) (00020)	CLOUD COVER (PERCENT) (00032)	WIND DIRECTION (DEG. FROM TRUE NORTH) (00036)	WIND VELOCITY (MILES PER HOUR) (00035)
PART 5. RED RIVER OF THE NORTH BASIN										
484845102200400 BOWBELLS MINE LAKE (SHALLOW) NEAR BOWBELLS, ND										
JUN										
14...	1408	--	15	46.11	--	--	16.0	100	315	20
14...	1410	.0	--	--	--	--	--	--	--	--
14...	1412	1.6	--	--	--	--	--	--	--	--
14...	1414	3.3	--	--	4950	8.2	--	--	--	--
14...	1416	6.6	--	--	4950	8.3	--	--	--	--
14...	1418	13	--	--	7700	8.0	--	--	--	--
SEP										
06...	1138	--	14	44.32	--	--	14.5	100	270	3.0
06...	1140	.0	--	--	--	--	--	--	--	--
06...	1142	1.6	--	--	--	--	--	--	--	--
06...	1144	3.3	--	--	6500	8.4	--	--	--	--
06...	1146	6.6	--	--	6700	8.4	--	--	--	--
06...	1148	13	--	--	6700	8.4	--	--	--	--

DATE	TEMPERATURE (DEG C) (00010)	TRANSPARENCY (SECCHI DISK) (IN) (00077)	OXYGEN, DISSOLVED (MG/L) (00300)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P) (00671)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4) (00660)	CHLOR-A PHYTOPLANKTON CHROMO FLUORUM (UG/L) (70953)	CHLOR-B PHYTOPLANKTON CHROMO FLUORUM (UG/L) (70954)
JUN									
14...	--	48	--	--	--	--	--	--	--
14...	18.0	--	7.8	--	--	--	--	--	--
14...	18.0	--	7.8	--	--	--	--	--	--
14...	18.0	--	7.8	.00	.10	.00	.00	.000	.000
14...	18.1	--	7.7	--	--	--	--	--	--
14...	7.9	--	7.2	.00	.02	.00	.00	--	--
SEP									
06...	--	92	--	--	--	--	--	--	--
06...	16.8	--	8.2	--	--	--	--	--	--
06...	16.8	--	8.2	--	--	--	--	--	--
06...	16.8	--	8.2	.01	.01	.00	.00	1.35	.000
06...	16.7	--	8.0	--	--	--	--	--	--
06...	16.6	--	8.0	--	--	--	--	--	--

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	SAMPLING DEPTH (FT) (00003)	RESERVOIR DEPTH (FEET) (72025)	ELEV. OF LAND SURFACE DATUM (FT. NGVD) (72000)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	PH (UNITS) (00400)	TEMPERATURE, AIR (DEG C) (00020)
			MISSOURI RIVER MAIN STEM				
			06332510 LAKE SAKAKAWEA NEAR NEW TOWN, ND				
OCT							
19...	0929	--	79	1800.00	--	--	11.0
19...	0931	.0	--	1800.00	624	8.6	--
19...	0933	1.6	--	1800.00	625	8.6	--
19...	0935	6.6	--	1800.00	625	8.6	--
19...	0937	16	--	1800.00	624	8.6	--
19...	0939	33	--	1800.00	624	8.6	--
19...	0941	66	--	1800.00	624	8.6	--
JAN							
11...	1134	--	73	1800.00	--	--	-19.0
11...	1135	.0	--	1800.00	837	8.4	--
11...	1136	1.6	--	1800.00	848	8.5	--
11...	1137	6.6	--	1800.00	852	8.5	--
11...	1138	16	--	1800.00	860	8.4	--
11...	1139	33	--	1800.00	868	8.4	--
11...	1140	66	--	1800.00	864	8.4	--
JUN							
13...	1158	--	80	1800.00	--	--	27.5
13...	1200	.0	--	1800.00	684	8.8	--
13...	1202	1.6	--	1800.00	782	8.8	--
13...	1204	6.6	--	1800.00	784	8.7	--
13...	1206	16	--	1800.00	797	8.6	--
13...	1208	33	--	1800.00	784	8.6	--
13...	1210	66	--	1800.00	698	8.2	--
JUL							
19...	1413	--	81	1800.00	--	--	28.0
19...	1415	.0	--	1800.00	566	8.6	--
19...	1417	1.6	--	1800.00	567	8.6	--
19...	1419	6.6	--	1800.00	593	8.6	--
19...	1421	16	--	1800.00	567	8.4	--
19...	1423	33	--	1800.00	585	8.4	--
19...	1425	66	--	1800.00	694	8.1	--
19...	1427	78	--	1800.00	694	8.1	--
AUG							
22...	0858	--	71	1800.00	--	--	18.0
22...	0900	.0	--	1800.00	--	--	--
22...	0902	6.6	--	1800.00	592	8.2	--
22...	0904	16	--	1800.00	592	8.3	--
22...	0906	33	--	1800.00	592	8.3	--
22...	0908	66	--	1800.00	620	8.0	--
22...	0910	68	--	1800.00	--	--	--

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	CLOUD COVER (PERCENT) (00032)	WIND DIRECTION (DEG. FROM TRUE NORTH) (00036)	WIND VELOCITY (MILES PER HOUR) (00035)	TEMPERATURE (DEG C) (00010)	TRANSPARENCY (SECCHI DISK) (IN) (00077)	OXYGEN, DISSOLVED (MG/L) (00300)
MISSOURI RIVER MAIN STEM						
06332510 LAKE SAKAKAWEA NEAR NEW TOWN, ND--Continued						
OCT						
19...	20	315	3.0	--	51	--
19...	--	--	--	11.0	--	10.0
19...	--	--	--	11.0	--	10.0
19...	--	--	--	11.0	--	10.0
19...	--	--	--	11.0	--	9.9
19...	--	--	--	11.0	--	9.9
19...	--	--	--	8.6	--	9.7
JAN						
11...	0	135	3.0	--	116	--
11...	--	--	--	.2	--	14.5
11...	--	--	--	.2	--	14.6
11...	--	--	--	.3	--	14.7
11...	--	--	--	.5	--	14.7
11...	--	--	--	.8	--	13.1
11...	--	--	--	1.2	--	12.7
JUN						
13...	80	180	25	--	62	--
13...	--	--	--	15.7	--	12.0
13...	--	--	--	15.7	--	12.0
13...	--	--	--	14.9	--	11.4
13...	--	--	--	13.2	--	10.3
13...	--	--	--	12.2	--	9.8
13...	--	--	--	6.7	--	9.4
JUL						
19...	80	45	2.0	--	62	--
19...	--	--	--	26.2	--	9.0
19...	--	--	--	24.5	--	10.0
19...	--	--	--	22.5	--	9.7
19...	--	--	--	21.1	--	7.5
19...	--	--	--	20.1	--	6.8
19...	--	--	--	10.2	--	6.4
19...	--	--	--	10.2	--	6.3
AUG						
22...	40	315	15	--	62	--
22...	--	--	--	19.5	--	--
22...	--	--	--	19.5	--	8.2
22...	--	--	--	19.5	--	8.1
22...	--	--	--	19.5	--	8.0
22...	--	--	--	17.5	--	5.8
22...	--	--	--	16.5	--	--

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	SAMPLING DEPTH (FT) (00003)	RESERVOIR DEPTH (FEET) (72025)	ELEV. OF LAND SURFACE DATUM (FT. NGVD) (72000)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	PH (UNITS) (00400)	TEMPERATURE, AIR (DEG C) (00020)
			MISSOURI RIVER MAIN STEM				
			06337995 LAKE SAKAKAWEA AT RIVERDALE, ND				
OCT							
10...	1131	--	160	1800.00	--	--	19.5
10...	1133	.0	--	1800.00	670	8.4	--
10...	1135	1.6	--	1800.00	670	8.4	--
10...	1137	6.6	--	1800.00	668	8.4	--
10...	1141	16	--	1800.00	670	8.4	--
10...	1143	33	--	1800.00	669	8.4	--
10...	1145	66	--	1800.00	668	8.5	--
10...	1147	99	--	1800.00	668	8.5	--
10...	1149	132	--	1800.00	665	8.5	--
JAN							
10...	1349	--	142	1800.00	--	--	-22.0
10...	1350	.0	--	1800.00	709	8.3	--
10...	1351	1.6	--	1800.00	733	8.5	--
10...	1352	6.6	--	1800.00	733	8.5	--
10...	1353	16	--	1800.00	735	8.6	--
10...	1354	33	--	1800.00	736	8.6	--
10...	1355	66	--	1800.00	742	8.6	--
10...	1356	99	--	1800.00	747	8.6	--
10...	1357	132	--	1800.00	755	8.6	--
JUN							
12...	1328	--	163	1800.00	--	--	29.0
12...	1330	.0	--	1800.00	600	8.3	--
12...	1332	1.6	--	1800.00	680	8.3	--
12...	1334	6.6	--	1800.00	706	8.3	--
12...	1336	16	--	1800.00	716	8.4	--
12...	1338	33	--	1800.00	708	8.3	--
12...	1340	66	--	1800.00	697	8.3	--
12...	1342	99	--	1800.00	688	8.3	--
12...	1344	132	--	1800.00	708	8.2	--
JUL							
20...	1238	--	173	1800.00	--	--	29.0
20...	1240	.0	--	1800.00	693	8.6	--
20...	1242	1.6	--	1800.00	694	8.6	--
20...	1244	6.6	--	1800.00	688	8.6	--
20...	1246	16	--	1800.00	687	8.6	--
20...	1248	33	--	1800.00	688	8.5	--
20...	1250	66	--	1800.00	672	8.4	--
20...	1252	98	--	1800.00	665	8.4	--
20...	1254	131	--	1800.00	669	8.4	--
20...	1256	152	--	1800.00	672	8.4	--
AUG							
21...	1258	--	171	1800.00	--	--	19.0
21...	1304	6.6	--	1800.00	703	8.4	--
21...	1306	16	--	1800.00	--	--	--
21...	1308	33	--	1800.00	703	8.4	--
21...	1310	66	--	1800.00	--	--	--
21...	1312	99	--	1800.00	--	--	--
21...	1314	132	--	1800.00	--	--	--
21...	1316	164	--	1800.00	710	8.1	--

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

MISSOURI RIVER MAIN STEM

06337995 LAKE SAKAKAWEA AT RIVERDALE, ND--Continued

DATE	CLOUD COVER (PERCENT) (00032)	WIND DIRECTION (DEG. FROM TRUE NORTH) (00036)	WIND VELOCITY (MILES PER HOUR) (00035)	TEMPERATURE (DEG C) (00010)	TRANSPARENCY (SECCHI DISK) (IN) (00077)	OXYGEN, DISSOLVED (MG/L) (00300)
OCT						
10...	5	135	5.0	--	103	--
10...	--	--	--	14.6	--	9.0
10...	--	--	--	14.6	--	9.0
10...	--	--	--	14.6	--	9.0
10...	--	--	--	14.6	--	9.0
10...	--	--	--	14.6	--	9.0
10...	--	--	--	14.5	--	9.0
10...	--	--	--	14.5	--	8.9
10...	--	--	--	14.5	--	8.9
JAN						
10...	0	135	3.0	--	182	--
10...	--	--	--	.0	--	13.0
10...	--	--	--	.0	--	13.1
10...	--	--	--	.0	--	13.2
10...	--	--	--	.0	--	13.1
10...	--	--	--	.0	--	13.1
10...	--	--	--	.0	--	13.1
10...	--	--	--	.1	--	13.0
10...	--	--	--	.4	--	12.8
JUN						
12...	0	45	3.0	--	118	--
12...	--	--	--	12.0	--	12.4
12...	--	--	--	12.0	--	12.1
12...	--	--	--	10.5	--	12.2
12...	--	--	--	10.0	--	12.0
12...	--	--	--	9.2	--	11.9
12...	--	--	--	7.5	--	11.8
12...	--	--	--	4.9	--	11.8
12...	--	--	--	3.5	--	11.7
JUL						
20...	0	225	5.0	--	143	--
20...	--	--	--	21.6	--	9.1
20...	--	--	--	21.8	--	9.0
20...	--	--	--	21.5	--	9.1
20...	--	--	--	20.3	--	8.8
20...	--	--	--	18.9	--	8.5
20...	--	--	--	11.8	--	8.9
20...	--	--	--	6.6	--	8.5
20...	--	--	--	5.9	--	8.4
20...	--	--	--	5.5	--	8.5
AUG						
21...	100	0	5.0	--	133	--
21...	--	--	--	19.0	--	8.3
21...	--	--	--	19.0	--	--
21...	--	--	--	18.0	--	7.9
21...	--	--	--	14.5	--	--
21...	--	--	--	8.0	--	--
21...	--	--	--	7.5	--	8.7
21...	--	--	--	7.0	--	8.5

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

TURTLE CREEK BASIN

474558100514600 STRAWBERRY LAKE (SHALLOW) NEAR RUSO, ND

DATE	TIME	SAMPLING DEPTH (FT) (00003)	RESERVOIR DEPTH (FEET) (72025)	STREAM STAGE (FT ABOVE DATUM) (00065)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	PH (UNITS) (00400)	TEMPERATURE, AIR (DEG C) (00020)	CLOUD COVER (PERCENT) (00032)	WIND DIRECTION (DEG. FROM TRUE NORTH) (00036)	WIND VELOCITY (MILES PER HOUR) (00035)	BAROMETRIC PRESSURE (MM OF HG) (00025)
MAR											
13...	1618	.0	7.5	22.44	--	--	-3.0	80	315	22	688
13...	1619	1.6	--	--	--	--	--	--	--	--	--
13...	1620	3.3	--	--	550	7.5	--	--	--	--	--
JUL											
03...	1313	--	9.6	22.66	--	--	24.0	40	45	5.0	--
03...	1315	.0	--	--	--	--	--	--	--	--	--
03...	1317	1.6	--	--	--	--	--	--	--	--	--
03...	1319	3.3	--	--	405	8.5	--	--	--	--	--
03...	1321	6.6	--	--	405	8.5	--	--	--	--	--
AUG											
16...	1308	--	14	22.52	--	--	26.0	30	225	10	--
16...	1310	.0	--	--	--	--	--	--	--	--	--
16...	1312	1.6	--	--	--	--	--	--	--	--	--
16...	1314	3.3	--	--	372	8.7	--	--	--	--	--
16...	1316	6.6	--	--	372	8.7	--	--	--	--	--
16...	1318	13	--	--	380	8.6	--	--	--	--	--

DATE	TEMPERATURE (DEG C) (00010)	TRANSPARENCY (SECCHI DISK) (IN) (00077)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P) (00671)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4) (00660)	CHLOR-A PHYTOPLANKTON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTOPLANKTON CHROMO FLUOROM (UG/L) (70954)
MAR										
13...	.5	90	.5	4	--	--	--	--	--	--
13...	1.6	--	.4	3	--	--	--	--	--	--
13...	2.0	--	.3	2	.13	.02	.01	.03	.670	.000
JUL										
03...	--	74	--	--	--	--	--	--	--	--
03...	22.3	--	9.2	--	--	--	--	--	--	--
03...	22.0	--	9.0	--	--	--	--	--	--	--
03...	21.6	--	8.4	--	.00	.02	.00	.00	11.9	.000
03...	21.5	--	8.2	--	--	--	--	--	--	--
AUG										
16...	--	--	--	--	--	--	--	--	--	--
16...	18.8	--	8.5	--	--	--	--	--	--	--
16...	18.8	--	8.5	--	--	--	--	--	--	--
16...	18.8	--	8.6	--	.00	.01	.00	.00	21.0	2.00
16...	18.8	--	8.6	--	--	--	--	--	--	--
16...	18.4	--	6.6	--	--	--	--	--	--	--

474600100515800 STRAWBERRY LAKE (DEEP) NEAR RUSO, ND

DATE	TIME	SAMPLING DEPTH (FT) (00003)	RESERVOIR DEPTH (FEET) (72025)	STREAM STAGE (FT ABOVE DATUM) (00065)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	PH (UNITS) (00400)	TEMPERATURE, AIR (DEG C) (00020)	CLOUD COVER (PERCENT) (00032)	WIND DIRECTION (DEG. FROM TRUE NORTH) (00036)	WIND VELOCITY (MILES PER HOUR) (00035)	BAROMETRIC PRESSURE (MM OF HG) (00025)
MAR											
13...	1325	.0	20	22.44	--	--	-2.0	80	270	12	688
13...	1326	1.6	--	--	--	--	--	--	--	--	--
13...	1327	3.3	--	--	552	7.7	--	--	--	--	--
13...	1328	6.6	--	--	552	7.7	--	--	--	--	--
13...	1329	13	--	--	578	7.7	--	--	--	--	--
JUL											
03...	1128	--	21	22.66	--	--	23.0	40	90	5.0	--
03...	1130	.0	--	--	--	--	--	--	--	--	--
03...	1132	1.6	--	--	--	--	--	--	--	--	--
03...	1134	3.3	--	--	406	8.5	--	--	--	--	--
03...	1136	6.6	--	--	--	--	--	--	--	--	--
03...	1138	13	--	--	406	8.5	--	--	--	--	--
03...	1140	19	--	--	422	8.3	--	--	--	--	--
AUG											
16...	1128	--	20	22.52	--	--	19.0	90	225	10	--
16...	1130	.0	--	--	--	--	--	--	--	--	--
16...	1132	1.6	--	--	--	--	--	--	--	--	--
16...	1134	3.3	--	--	372	8.7	--	--	--	--	--
16...	1136	6.6	--	--	--	--	--	--	--	--	--
16...	1138	13	--	--	372	8.7	--	--	--	--	--
16...	1140	19	--	--	372	8.7	--	--	--	--	--

ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD WATER-QUALITY LAKE STATIONS

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TEMPERATURE (DEG C) (00010)	TRANSPARENCY (SECCHI DISK) (IN) (00077)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P) (00671)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4) (00660)	CHLOR-A PHYTOPLANKTON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTOPLANKTON CHROMO FLUOROM (UG/L) (70954)
TURTLE CREEK BASIN										
474600100515800 STRAWBERRY LAKE (DEEP) NEAR RUSO, ND--Continued										
MAR										
13...	.0	150	.5	4	--	--	--	--	--	--
13...	1.0	--	.5	4	--	--	--	--	--	--
13...	2.1	--	.4	3	.16	.03	.01	.03	.410	.000
13...	2.6	--	.1	1	--	--	--	--	--	--
13...	2.7	--	.0	0	.05	.04	.02	.06	--	--
JUL										
03...	--	58	--	--	--	--	--	--	--	--
03...	21.7	--	8.8	--	--	--	--	--	--	--
03...	21.7	--	8.9	--	--	--	--	--	--	--
03...	21.7	--	8.9	--	.00	.02	.00	.00	9.45	.000
03...	21.7	--	8.9	--	--	--	--	--	--	--
03...	21.1	--	7.6	--	--	--	--	--	--	--
03...	17.9	--	.8	--	.00	.04	.01	.03	--	--
AUG										
16...	--	42	--	--	--	--	--	--	--	--
16...	18.5	--	7.8	--	--	--	--	--	--	--
16...	18.5	--	7.8	--	--	--	--	--	--	--
16...	18.5	--	7.8	--	.00	.01	.00	.00	20.8	.450
16...	18.5	--	7.7	--	--	--	--	--	--	--
16...	18.5	--	7.7	--	--	--	--	--	--	--
16...	18.4	--	7.5	--	--	--	--	--	--	--

HEART RIVER BASIN

06343500 E. A. PATTERSON LAKE NEAR DICKINSON, ND

DATE	TIME	SAMPLING DEPTH (FT) (00003)	RESERVOIR DEPTH (FEET) (72025)	STREAM STAGE (FT ABOVE DATUM) (00065)	ELEV. OF LAND SURFACE DATUM (FT. NGVD) (72000)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	PH (UNITS) (00400)	TEMPERATURE, AIR (DEG C) (00020)	CLOUD COVER (PERCENT) (00032)	WIND DIRECTION (DEG. FROM TRUE NORTH) (00036)	WIND VELOCITY (MILES PER HOUR) (00035)
OCT											
24...	1033	.0	--	15.33	2400.00	--	--	--	--	--	--
24...	1034	1.6	--	--	2400.00	--	--	--	--	--	--
24...	1035	3.3	23	--	2400.00	2590	7.9	10.0	30	338	10
24...	1036	9.8	--	--	2400.00	--	--	--	--	--	--
24...	1037	16	--	--	2400.00	--	--	--	--	--	--
24...	1038	23	--	--	2400.00	--	--	--	--	--	--
JAN											
22...	1224	--	23	15.35	2400.00	--	--	-7.0	100	294	15
22...	1228	1.6	--	--	2400.00	--	--	--	--	--	--
22...	1230	3.3	--	--	2400.00	2220	8.4	--	--	--	--
22...	1232	9.8	--	--	2400.00	--	--	--	--	--	--
22...	1234	16	--	--	2400.00	--	--	--	--	--	--
22...	1236	23	--	--	2400.00	--	--	--	--	--	--
MAY											
30...	0939	--	--	16.46	2400.00	--	--	16.0	50	315	25
30...	0941	.0	--	--	2400.00	--	--	--	--	--	--
30...	0943	1.6	--	--	2400.00	--	--	--	--	--	--
30...	0945	3.3	--	--	2400.00	1110	8.4	--	--	--	--
30...	0947	6.6	--	--	2400.00	--	--	--	--	--	--
30...	0949	13	--	--	2400.00	--	--	--	--	--	--
30...	0951	20	--	--	2400.00	--	--	--	--	--	--
30...	0953	26	--	--	2400.00	--	--	--	--	--	--
SEP											
25...	1000	--	25	14.56	2400.00	--	--	26.0	0	0	.0
25...	1005	3.3	--	--	2400.00	1490	9.1	--	--	--	--
25...	1007	6.6	--	--	2400.00	--	--	--	--	--	--
25...	1009	13	--	--	2400.00	--	--	--	--	--	--
25...	1011	20	--	--	2400.00	--	--	--	--	--	--
25...	1013	25	--	--	2400.00	--	--	--	--	--	--

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

HEART RIVER BASIN

06343500 E. A. PATTERSON LAKE NEAR DICKINSON, ND--Continued

DATE	TEMPERATURE (DEG C) (00010)	COLOR (PLATINUM-COBALT UNITS) (00080)	OXYGEN, DISSOLVED (MG/L) (00300)	HARDNESS (MG/L AS CACO3) (00900)	HARDNESS, NONCARBONATE (MG/L CACO3) (00902)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM ADSORPTION RATIO (00931)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)
OCT											
24...	6.0	--	9.0	--	--	--	--	--	--	--	--
24...	6.0	--	9.3	--	--	--	--	--	--	--	--
24...	6.0	21	9.9	390	--	85	44	270	59	5.9	10
24...	6.0	--	10.3	--	--	--	--	--	--	--	--
24...	6.0	--	9.1	--	--	--	--	--	--	--	--
24...	5.5	--	8.7	--	--	--	--	--	--	--	--
JAN											
22...	--	--	--	--	--	--	--	--	--	--	--
22...	.0	--	6.9	--	--	--	--	--	--	--	--
22...	.0	25	7.0	450	81	90	55	380	64	7.8	15
22...	.0	--	6.0	--	--	--	--	--	--	--	--
22...	.5	--	5.1	--	--	--	--	--	--	--	--
22...	.5	--	3.3	--	--	--	--	--	--	--	--
MAY											
30...	--	--	--	--	--	--	--	--	--	--	--
30...	13.0	--	7.4	--	--	--	--	--	--	--	--
30...	13.0	--	7.4	--	--	--	--	--	--	--	--
30...	13.0	30	7.3	250	79	55	27	160	57	4.4	--
30...	12.5	--	7.3	--	--	--	--	--	--	--	--
30...	12.5	--	7.4	--	--	--	--	--	--	--	--
30...	12.5	--	7.5	--	--	--	--	--	--	--	--
30...	12.5	--	7.5	--	--	--	--	--	--	--	--
SEP											
25...	--	--	--	--	--	--	--	--	--	--	--
25...	17.0	25	11.6	290	29	58	35	230	76	5.9	11
25...	17.0	--	9.7	--	--	--	--	--	--	--	--
25...	16.0	--	7.2	--	--	--	--	--	--	--	--
25...	15.5	--	6.2	--	--	--	--	--	--	--	--
25...	15.5	--	5.4	--	--	--	--	--	--	--	--

DATE	ALKALINITY (MG/L AS CACO3) (00410)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	BORON, DISSOLVED (UG/L AS B) (01020)
OCT											
24...	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--
24...	290	690	10	.3	7.4	1300	--	1.77	.14	.12	410
24...	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--
JAN											
22...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
22...	370	840	18	.4	8.9	1650	1630	2.24	.32	.10	230
22...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
MAY											
30...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	8.7	--	--	--	755	1.04	--	--	190
30...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
SEP											
25...	--	--	--	--	--	--	--	--	--	--	--
25...	260	520	9.2	.4	7.7	1060	1030	1.44	.02	.07	360
25...	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	SAMPLING DEPTH (FT) (00003)	RESERVOIR DEPTH (FEET) (72025)	STREAM STAGE (FT ABOVE DATUM) (00065)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	PH (UNITS) (00400)	TEMPERATURE, AIR (DEG C) (00020)	CLOUD COVER (PERCENT) (00032)	WIND DIRECTION (DEG. FROM TRUE NORTH) (00036)	WIND VELOCITY (MILES PER HOUR) (00035)	BAROMETRIC PRESSURE (MM OF HG) (00025)	TEMPERATURE (DEG C) (00010)
					HEART RIVER BASIN							
					463547101484000 LAKE TSCHIDA (DEEP) NEAR GLEN ULLIN, ND							
NOV												
01...	1329	--	43	62.53	--	--	15.5	0	315	10	--	--
01...	1331	.0	--	--	1237	8.7	--	--	--	--	--	8.4
01...	1333	1.6	--	--	1232	8.7	--	--	--	--	--	8.4
01...	1335	3.3	--	--	1230	8.7	--	--	--	--	--	8.4
01...	1337	6.6	--	--	1230	8.7	--	--	--	--	--	8.4
01...	1339	13	--	--	1232	8.7	--	--	--	--	--	8.4
01...	1341	19	--	--	1232	8.7	--	--	--	--	--	8.4
01...	1343	26	--	--	1234	8.7	--	--	--	--	--	8.4
01...	1345	33	--	--	1234	8.7	--	--	--	--	--	8.4
01...	1347	39	--	--	1233	8.7	--	--	--	--	--	8.4
FEB												
08...	1429	--	54	61.76	--	--	-12.0	0	270	10	719	--
08...	1430	.0	--	--	1443	8.6	--	--	--	--	--	.0
08...	1431	1.6	--	--	1478	8.6	--	--	--	--	--	1.0
08...	1432	3.3	--	--	1468	8.6	--	--	--	--	--	1.0
08...	1433	6.6	--	--	1467	8.7	--	--	--	--	--	1.0
08...	1434	13	--	--	1475	8.7	--	--	--	--	--	1.5
08...	1435	19	--	--	1488	8.6	--	--	--	--	--	1.5
08...	1436	26	--	--	1506	8.6	--	--	--	--	--	1.5
08...	1437	33	--	--	1533	8.5	--	--	--	--	--	2.0
08...	1438	39	--	--	1971	7.9	--	--	--	--	--	2.5
08...	1439	46	--	--	2001	7.9	--	--	--	--	--	2.5
08...	1441	--	--	--	--	--	--	--	--	--	--	--
MAY												
30...	1300	.0	58	65.07	808	8.1	17.0	100	315	20	--	13.0
30...	1302	1.6	--	--	890	8.2	--	--	--	--	--	13.0
30...	1303	3.3	--	--	890	8.2	--	--	--	--	--	13.0
30...	1304	6.6	--	--	894	8.2	--	--	--	--	--	13.0
30...	1306	13	--	--	896	8.2	--	--	--	--	--	13.0
30...	1308	19	--	--	896	8.2	--	--	--	--	--	13.0
30...	1310	26	--	--	900	8.3	--	--	--	--	--	13.0
30...	1312	33	--	--	902	8.3	--	--	--	--	--	13.0
30...	1314	39	--	--	900	8.3	--	--	--	--	--	12.9
30...	1316	46	--	--	900	8.3	--	--	--	--	--	12.7
30...	1320	52	--	--	950	7.9	--	--	--	--	--	9.3
30...	1322	--	--	--	--	--	--	--	--	--	--	--
AUG												
13...	1318	--	57	63.34	--	--	16.5	50	0	15	--	--
13...	1320	.0	--	--	--	--	--	--	--	--	--	21.5
13...	1322	1.6	--	--	--	--	--	--	--	--	--	21.5

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	COLOR (PLATINUM-COBALT UNITS) (00080)	TRANSPARENCY (SECCHI DISK) (IN) (00077)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM ADSORPTION RATIO (00931)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	ALKALINITY (MG/L AS CACO3) (00410)	SULFATE DISSOLVED (MG/L AS SO4) (00945)
HEART RIVER BASIN												
463547101484000 LAKE TSCHIDA (DEEP) NEAR GLEN ULLIN, ND--Continued												
NOV												
01...	--	45	--	--	--	--	--	--	--	--	--	--
01...	--	--	10.3	--	--	--	--	--	--	--	--	--
01...	--	--	10.3	--	--	--	--	--	--	--	--	--
01...	13	--	--	--	65	43	160	50	3.8	9.4	210	460
01...	--	--	10.4	--	--	--	--	--	--	--	--	--
01...	--	--	10.4	--	--	--	--	--	--	--	--	--
01...	--	--	10.4	--	--	--	--	--	--	--	--	--
01...	--	--	10.4	--	--	--	--	--	--	--	--	--
01...	--	--	10.4	--	--	--	--	--	--	--	--	--
01...	--	--	10.4	--	--	--	--	--	--	--	--	--
FEB												
08...	--	217	--	--	--	--	--	--	--	--	--	--
08...	--	--	13.0	94	--	--	--	--	--	--	--	--
08...	--	--	13.0	97	--	--	--	--	--	--	--	--
08...	--	--	12.9	96	--	--	--	--	--	--	--	--
08...	--	--	12.8	95	--	--	--	--	--	--	--	--
08...	--	--	12.7	96	--	--	--	--	--	--	--	--
08...	--	--	11.5	87	--	--	--	--	--	--	--	--
08...	--	--	12.4	94	--	--	--	--	--	--	--	--
08...	--	--	11.3	86	--	--	--	--	--	--	--	--
08...	--	--	4.7	36	--	--	--	--	--	--	--	--
08...	--	--	4.7	36	--	--	--	--	--	--	--	--
08...	14	--	--	--	96	52	180	46	3.7	9.8	290	550
MAY												
30...	--	21	9.5	--	--	--	--	--	--	--	--	--
30...	--	--	9.5	--	--	--	--	--	--	--	--	--
30...	--	--	9.5	--	--	--	--	--	--	--	--	--
30...	--	--	9.4	--	--	--	--	--	--	--	--	--
30...	--	--	9.3	--	--	--	--	--	--	--	--	--
30...	--	--	9.3	--	--	--	--	--	--	--	--	--
30...	--	--	9.2	--	--	--	--	--	--	--	--	--
30...	--	--	9.2	--	--	--	--	--	--	--	--	--
30...	--	--	9.2	--	--	--	--	--	--	--	--	--
30...	--	--	9.2	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--	--
30...	30	--	--	--	53	30	110	47	3.0	8.1	160	320
AUG												
13...	--	33	--	--	--	--	--	--	--	--	--	--
13...	--	--	7.2	--	--	--	--	--	--	--	--	--
13...	--	--	7.2	--	--	--	--	--	--	--	--	--

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

HEART RIVER BASIN

463547101484000 LAKE TSCHIDA (DEEP) NEAR GLEN ULLIN, ND--Continued

DATE	CHLORIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUORIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	NITROGEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOSPHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOSPHORUS, ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOSPHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)	BORON, DIS-SOLVED (UG/L AS B) (01020)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)
NOV												
01...	--	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--	--
01...	8.2	.2	.6	860	1.17	.10	.01	.01	.03	250	--	--
01...	--	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--	--
FEB												
08...	--	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	.13	.00	.04	.12	--	.670	.000
08...	--	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	.15	.01	.04	.12	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	.31	.01	.04	.12	--	--	--
08...	10	.3	3.0	1130	1.54	.22	.01	.04	.12	290	--	--
MAY												
30...	--	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	.55	.04	.01	.03	--	2.98	.000
30...	--	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	.55	.04	.01	.03	--	--	--
30...	5.8	.3	5.1	646	.88	.56	.04	.01	.03	180	--	--
AUG												
13...	--	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--	--

DATE	TIME	SAMPLING DEPTH (FT) (00003)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	PH (UNITS) (00400)	TEMPERATURE (DEG C) (00010)	COLOR (PLATINUM-COBALT UNITS) (00080)	OXYGEN, DIS-SOLVED (MG/L) (00300)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNESIUM, DIS-SOLVED (MG/L AS MG) (00925)
AUG									
13...	1324	3.3	1020	8.4	21.5	--	7.2	--	--
13...	1326	6.6	--	--	21.5	--	7.2	--	--
13...	1328	13	--	--	21.5	--	7.1	--	--
13...	1330	19	1020	8.4	21.5	--	7.0	--	--
13...	1332	26	--	--	21.5	--	7.0	--	--
13...	1334	32	--	--	21.4	--	7.1	--	--
13...	1336	39	--	--	21.4	--	7.1	--	--
13...	1338	46	1005	8.0	18.8	--	.5	--	--
13...	1340	--	--	--	--	15	--	58	39

DATE	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM ADSORPTION RATIO (00931)	POTASSIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKALINITY (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLORIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUORIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)
AUG									
13...	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--
13...	130	47	3.2	7.9	190	410	6.6	.2	5.6

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

HEART RIVER BASIN

463547101484000 LAKE TSCHIDA (DEEP) NEAR GLEN ULLIN, ND--Continued

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)	BORON, DIS-SOLVED (UG/L AS B) (01020)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)
AUG									
13...	--	--	.38	.02	.01	.03	--	11.4	.000
13...	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--
13...	--	--	.52	.02	.01	.03	--	--	--
13...	695	.95	.47	.05	.04	.12	200	--	--

HEART RIVER BASIN

463710101555500 LAKE TSCHIDA (SHALLOW) NEAR GLEN ULLIN, ND

DATE	TIME	SAMP-LING DEPTH (FT) (00003)	RESER-VUIR DEPTH (FEET) (72025)	STREAM STAGE (FT ABOVE DATUM) (00065)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	CLOUD COVER (PER-CENT) (00032)	WIND DIREC-TION (DEG. FROM TRUE NORTH) (00036)	WIND VELOC-ITY (MILES PER HOUR) (00035)	BARO-METRIC PRES-SURE (MM OF HG) (00025)
FEB											
09...	1259	--	16	61.76	--	--	-8.0	90	90	15	711
09...	1300	.0	--	--	--	--	--	--	--	--	--
09...	1301	1.6	--	--	--	--	--	--	--	--	--
09...	1302	3.3	--	--	1400	8.7	--	--	--	--	--
09...	1303	6.6	--	--	1400	8.6	--	--	--	--	--
09...	1304	13	--	--	1400	8.6	--	--	--	--	--
MAY											
30...	1630	.0	21	65.07	890	8.3	17.5	75	315	20	--
30...	1632	1.6	--	--	928	8.3	--	--	--	--	--
30...	1634	3.3	--	--	926	8.3	--	--	--	--	--
30...	1636	6.6	--	--	926	8.3	--	--	--	--	--
30...	1638	13	--	--	925	8.3	--	--	--	--	--
30...	1640	19	--	--	917	8.3	--	--	--	--	--

DATE	TEMPER-ATURE (DEG C) (00010)	TRANS-PAR-ENCY (SECCHI DISK) (IN) (00077)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)
FEB										
09...	--	167	--	--	--	--	--	--	--	--
09...	.2	--	12.8	94	--	--	--	--	--	--
09...	1.2	--	12.8	96	--	--	--	--	--	--
09...	1.2	--	12.8	96	.14	.01	.01	.03	1.32	.000
09...	1.3	--	12.7	97	--	--	--	--	--	--
09...	1.7	--	12.4	96	--	--	--	--	--	--
MAY										
30...	13.4	13	9.3	--	--	--	--	--	--	--
30...	13.3	--	9.1	--	--	--	--	--	--	--
30...	13.3	--	9.1	--	.53	--	.01	.03	5.40	.000
30...	13.3	--	9.1	--	--	--	--	--	--	--
30...	13.2	--	9.2	--	--	--	--	--	--	--
30...	12.8	--	9.2	--	--	--	--	--	--	--

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	SAMPLING DEPTH (FT) (00003)	RESERVOIR DEPTH (FEET) (72025)	STREAM STAGE (FT ABOVE DATUM) (00065)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	PH (UNITS) (00400)	TEMPERATURE, AIR (DEG C) (00020)	CLOUD COVER (PERCENT) (00032)	WIND DIRECTION (DEG. FROM TRUE NORTH) (00036)	WIND VELOCITY (MILES PER HOUR) (00035)
HEART RIVER BASIN										
461952101504700 SHEEP CREEK RESERVOIR (SHALLOW) NEAR ELGIN, ND										
FEB										
28...	1714	--	7.3	20.31	--	--	-13.0	100	90	5.0
28...	1715	.0	--	--	--	--	--	--	--	--
28...	1716	1.6	--	--	--	--	--	--	--	--
28...	1717	3.3	--	--	--	--	--	--	--	--
MAY										
31...	1548	--	8.5	20.30	--	--	15.0	90	225	10
31...	1550	.0	--	--	2518	8.6	--	--	--	--
31...	1552	1.6	--	--	2334	8.6	--	--	--	--
31...	1554	3.3	--	--	2322	8.6	--	--	--	--
31...	1556	6.6	--	--	2320	8.6	--	--	--	--
AUG										
09...	1238	--	16	19.96	--	--	23.0	10	315	20
09...	1240	.0	--	--	--	--	--	--	--	--
09...	1242	1.6	--	--	--	--	--	--	--	--
09...	1244	3.3	--	--	1700	8.6	--	--	--	--
09...	1246	6.6	--	--	1700	8.6	--	--	--	--
09...	1248	13	--	--	1960	8.4	--	--	--	--

DATE	BAROMETRIC PRESSURE (MM OF HG) (00025)	TEMPERATURE (DEG C) (00010)	TRANSPARENCY (SECCHI DISK) (IN) (00077)	OXYGEN, DISSOLVED (MG/L) (00300)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P) (00671)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4) (00660)	CHLOROPHYLL PLANKTON CHROMO FLUOROM (UG/L) (70953)	CHLOROPHYLL PLANKTON CHROMO FLUOROM (UG/L) (70954)
FEB										
28...	701	--	49	--	--	--	--	--	--	--
28...	--	.0	--	8.3	--	--	--	--	--	--
28...	--	.4	--	4.5	--	--	--	--	--	--
28...	--	.5	--	4.9	--	--	--	--	--	--
MAY										
31...	--	--	93	--	--	--	--	--	--	--
31...	--	15.5	--	--	--	--	--	--	--	--
31...	--	15.6	--	8.6	--	--	--	--	--	--
31...	--	15.7	--	8.6	.03	.04	.01	.03	.580	.000
31...	--	15.7	--	8.6	--	--	--	--	--	--
AUG										
09...	--	--	51	--	--	--	--	--	--	--
09...	--	23.0	--	6.4	--	--	--	--	--	--
09...	--	23.0	--	6.5	--	--	--	--	--	--
09...	--	23.0	--	6.4	.02	.15	.07	.21	5.26	.000
09...	--	22.9	--	6.2	--	--	--	--	--	--
09...	--	22.3	--	2.9	.02	.27	.24	.74	--	--

462000101505500 SHEEP CREEK RESERVOIR (DEEP) NEAR ELGIN, ND

DATE	TIME	SAMPLING DEPTH (FT) (00003)	RESERVOIR DEPTH (FEET) (72025)	STREAM STAGE (FT ABOVE DATUM) (00065)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	PH (UNITS) (00400)	TEMPERATURE, AIR (DEG C) (00020)	CLOUD COVER (PERCENT) (00032)	WIND DIRECTION (DEG. FROM TRUE NORTH) (00036)	WIND VELOCITY (MILES PER HOUR) (00035)	BAROMETRIC PRESSURE (MM OF HG) (00025)
FEB											
28...	1349	--	26	20.31	--	--	-11.5	100	45	10	702
28...	1350	.0	--	--	--	--	--	--	--	--	--
28...	1351	1.6	--	--	--	--	--	--	--	--	--
28...	1352	3.3	--	--	2610	8.1	--	--	--	--	--
28...	1353	6.6	--	--	--	--	--	--	--	--	--
28...	1354	13	--	--	2580	8.1	--	--	--	--	--
28...	1355	19	--	--	2580	8.0	--	--	--	--	--
MAY											
31...	1155	.0	32	20.30	2190	8.6	16.5	80	225	7.5	--
31...	1157	1.6	--	--	2268	8.6	--	--	--	--	--
31...	1159	3.3	--	--	2268	8.6	--	--	--	--	--
31...	1201	6.6	--	--	2262	8.6	--	--	--	--	--
31...	1203	13	--	--	2256	8.6	--	--	--	--	--
31...	1205	19	--	--	2233	8.1	--	--	--	--	--
31...	1207	26	--	--	2988	8.0	--	--	--	--	--
AUG											
09...	1008	--	33	19.96	--	--	24.0	75	315	15	--
09...	1010	.0	--	--	--	--	--	--	--	--	--
09...	1012	1.6	--	--	--	--	--	--	--	--	--
09...	1014	3.3	--	--	1700	8.6	--	--	--	--	--
09...	1016	6.6	--	--	--	--	--	--	--	--	--
09...	1018	13	--	--	--	--	--	--	--	--	--
09...	1020	19	--	--	2240	8.3	--	--	--	--	--
09...	1022	26	--	--	2680	8.0	--	--	--	--	--

ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD WATER-QUALITY LAKE STATIONS

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TEMPERATURE (DEG C) (00010)	TRANSPARENCY (SECCHI DISK) (IN) (00077)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P) (00671)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4) (00660)	CHLOR-A PHYTOPLANKTON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTOPLANKTON CHROMO FLUOROM (UG/L) (70954)
				HEART RIVER BASIN						
				462000101505500 SHEEP CREEK RESERVOIR (DEEP) NEAR ELGIN, ND--Continued						
FEB										
28...	--	38	--	--	--	--	--	--	--	--
28...	.0	--	5.9	44	--	--	--	--	--	--
28...	.1	--	5.8	43	--	--	--	--	--	--
28...	.5	--	5.7	43	.27	.13	.05	.15	.000	.000
28...	.7	--	5.6	43	--	--	--	--	--	--
28...	1.0	--	5.4	41	--	--	--	--	--	--
28...	2.1	--	3.4	27	.29	.12	.05	.15	--	--
MAY										
31...	14.8	74	8.1	--	--	--	--	--	--	--
31...	14.8	--	8.0	--	--	--	--	--	--	--
31...	14.8	--	8.0	--	.02	.03	.00	.00	5.33	.000
31...	14.7	--	8.1	--	--	--	--	--	--	--
31...	14.6	--	--	--	--	--	--	--	--	--
31...	11.4	--	7.6	--	.01	.03	.00	.00	--	--
31...	6.7	--	.3	--	.01	.05	.01	.03	--	--
AUG										
09...	--	92	--	--	--	--	--	--	--	--
09...	23.1	--	8.3	--	--	--	--	--	--	--
09...	23.1	--	8.3	--	--	--	--	--	--	--
09...	23.1	--	8.2	--	.02	.14	.11	.34	13.8	.000
09...	23.1	--	8.1	--	--	--	--	--	--	--
09...	22.9	--	7.1	--	--	--	--	--	--	--
09...	17.5	--	.2	--	.01	.33	.29	.89	--	--
09...	11.0	--	.0	--	.01	.93	.85	2.6	--	--

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	SAMPLING DEPTH (FT) (00003)	RESERVOIR DEPTH (FEET) (72025)	STREAM STAGE (FT ABOVE DATUM) (00065)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	PH (UNITS) (00400)	TEMPERATURE, AIR (DEG C) (00020)	CLOUD COVER (PERCENT) (00032)	WIND DIRECTION (DEG. FROM TRUE NORTH) (00036)	WIND VELOCITY (MILES PER HOUR) (00035)	BAROMETRIC PRESSURE (MM OF HG) (00025)
				HEART RIVER BASIN							
				06348486 SWEETBRIAR LAKE (SHALLOW) NEAR JUDSON, ND							
OCT											
03...	1419	--	12	38.20	--	--	11.0	95	315	20	--
03...	1421	.0	--	--	867	8.7	--	--	--	--	--
03...	1423	1.6	--	--	865	8.7	--	--	--	--	--
03...	1425	3.3	--	--	838	8.7	--	--	--	--	--
03...	1427	6.6	--	--	847	8.7	--	--	--	--	--
03...	1429	9.9	--	--	852	8.7	--	--	--	--	--
FEB											
07...	1554	--	7.7	--	--	--	-18.0	100	90	12	713
07...	1555	.0	--	--	951	8.5	--	--	--	--	--
07...	1556	1.6	--	--	975	8.4	--	--	--	--	--
07...	1557	3.3	--	--	975	8.4	--	--	--	--	--
07...	1558	5.6	--	--	1110	7.8	--	--	--	--	--
MAR											
20...	1345	.0	11	--	--	--	1.0	100	337	18	690
20...	1346	1.6	--	--	--	--	--	--	--	--	--
20...	1347	3.3	--	--	960	8.0	--	--	--	--	--
20...	1348	6.6	--	--	1320	7.7	--	--	--	--	--
MAY											
16...	1420	.0	12	39.98	530	8.6	30.5	0	180	20	--
16...	1422	1.6	--	--	616	8.6	--	--	--	--	--
16...	1424	3.3	--	--	660	8.6	--	--	--	--	--
16...	1426	6.6	--	--	772	8.5	--	--	--	--	--
16...	1428	9.9	--	--	830	8.3	--	--	--	--	--
JUL											
05...	1418	--	10	39.62	--	--	30.0	25	135	20	--
05...	1420	.0	--	--	496	9.3	--	--	--	--	--
05...	1422	1.6	--	--	497	9.3	--	--	--	--	--
05...	1424	3.3	--	--	503	9.3	--	--	--	--	--
05...	1426	6.6	--	--	602	9.1	--	--	--	--	--
05...	1428	9.9	--	--	662	9.0	--	--	--	--	--
23...	1703	--	10	39.54	--	--	25.5	90	315	10	--
23...	1705	.0	--	--	525	9.4	--	--	--	--	--
23...	1707	1.6	--	--	585	9.2	--	--	--	--	--
23...	1709	3.3	--	--	634	9.0	--	--	--	--	--
23...	1711	6.6	--	--	678	9.0	--	--	--	--	--
23...	1713	9.9	--	--	1001	8.9	--	--	--	--	--
AUG											
06...	1353	--	11	39.68	--	--	32.0	0	270	10	--
06...	1355	.0	--	--	642	9.4	--	--	--	--	--
06...	1357	1.6	--	--	672	9.3	--	--	--	--	--
06...	1359	3.3	--	--	616	9.3	--	--	--	--	--
06...	1401	6.6	--	--	614	9.2	--	--	--	--	--
06...	1403	9.9	--	--	659	9.1	--	--	--	--	--
23...	1258	--	10	39.47	--	--	18.0	50	315	5.0	--
23...	1300	.0	--	--	648	9.0	--	--	--	--	--
23...	1302	1.6	--	--	625	9.0	--	--	--	--	--
23...	1304	3.3	--	--	625	9.0	--	--	--	--	--
23...	1306	6.6	--	--	618	8.9	--	--	--	--	--
23...	1308	9.9	--	--	740	8.7	--	--	--	--	--
SEP											
18...	1323	--	10	39.28	--	--	22.0	0	0	.0	716
18...	1325	.0	--	--	618	7.8	--	--	--	--	--
18...	1327	1.6	--	--	628	8.0	--	--	--	--	--
18...	1329	3.3	--	--	649	8.1	--	--	--	--	--
18...	1331	6.6	--	--	668	8.0	--	--	--	--	--
18...	1333	9.9	--	--	675	7.9	--	--	--	--	--

ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD WATER-QUALITY LAKE STATIONS

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TEMPERATURE (DEG C) (00010)	TRANSPARENCY (SECCHI DISK) (IN) (00077)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, NO2+NO3 TOT. IN BOT MAT (MG/KG AS N) (00633)	NITROGEN, NH4 + ORG. TOT IN BOT MAT (MG/KG AS N) (00626)	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P) (00671)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4) (00660)
				HEART RIVER BASIN						
			06348486 SWEETBRIAR LAKE (SHALLOW) NEAR JUDSON, ND--Continued							
OCT										
03...	--	27	--	--	--	--	--	--	--	--
03...	10.9	--	8.8	--	--	--	--	--	--	--
03...	10.9	--	8.7	--	--	--	--	--	--	--
03...	10.8	--	8.2	--	--	--	--	--	--	--
03...	10.7	--	8.4	--	--	--	--	--	--	--
03...	10.7	--	7.9	--	--	--	--	--	--	--
FEB										
07...	--	74	--	--	--	--	--	--	--	--
07...	.5	--	7.1	52	--	--	--	--	--	--
07...	1.2	--	7.0	53	--	--	--	--	--	--
07...	1.4	--	7.0	53	.08	--	--	.04	.01	.03
07...	1.1	--	6.4	48	--	--	--	--	--	--
MAR										
20...	1.1	13	5.2	40	--	--	--	--	--	--
20...	1.2	--	5.2	40	--	--	--	--	--	--
20...	.2	--	5.4	41	.26	--	--	.03	.02	.06
20...	.7	--	5.0	38	--	--	--	--	--	--
MAY										
16...	15.6	28	10.2	--	--	--	--	--	--	--
16...	15.2	--	10.1	--	--	--	--	--	--	--
16...	14.9	--	10.1	--	.04	--	--	.02	.00	.00
16...	14.3	--	9.2	--	--	--	--	--	--	--
16...	13.0	--	8.2	--	.00	--	--	.01	.00	.00
JUL										
05...	--	43	--	--	--	--	--	--	--	--
05...	23.3	--	9.4	--	--	--	--	--	--	--
05...	23.3	--	9.4	--	--	--	--	--	--	--
05...	23.2	--	9.3	--	.00	--	--	.03	.01	.03
05...	22.0	--	8.0	--	--	--	--	--	--	--
05...	21.9	--	7.8	--	--	--	--	--	--	--
23...	--	44	--	--	--	--	--	--	--	--
23...	26.8	--	16.4	--	--	--	--	--	--	--
23...	25.7	--	11.1	--	--	--	--	--	--	--
23...	23.0	--	4.0	--	.00	--	--	.08	.07	.21
23...	22.7	--	2.5	--	--	--	--	--	--	--
23...	22.3	--	1.4	--	--	--	--	--	--	--
AUG										
06...	--	49	--	--	--	--	--	--	--	--
06...	27.0	--	11.3	--	--	--	--	--	--	--
06...	26.2	--	10.7	--	--	--	--	--	--	--
06...	24.3	--	7.4	--	.00	--	--	.07	.07	.21
06...	23.6	--	5.5	--	--	--	--	--	--	--
06...	23.6	--	4.2	--	--	--	--	--	--	--
23...	--	27	--	--	--	--	--	--	--	--
23...	21.7	--	8.5	--	--	--	--	--	--	--
23...	21.7	--	8.1	--	--	--	--	--	--	--
23...	21.7	--	8.1	--	--	--	--	--	--	--
23...	21.1	--	3.4	--	--	--	--	--	--	--
23...	21.0	--	1.3	--	--	--	--	--	--	--
SEP										
18...	--	36	--	--	--	--	--	--	--	--
18...	18.8	--	5.4	62	--	--	--	--	--	--
18...	18.1	--	4.7	52	--	--	--	--	--	--
18...	16.8	--	4.3	47	.08	--	--	.08	.02	.06
18...	16.2	--	3.0	32	--	--	--	--	--	--
18...	15.9	--	2.4	26	--	--	--	--	--	--

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

HEART RIVER BASIN

06348486 SWEETBRIAR LAKE (SHALLOW) NEAR JUDSON, ND--Continued

DATE	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	PHYTO-PLANK-TON, TOTAL (CELLS PER ML) (60050)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)
OCT										
03...	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--
FEB										
07...	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	1.48	.000
07...	--	--	--	--	--	--	--	--	--	--
MAR										
20...	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	1700	6.11	.820
20...	--	--	--	--	--	--	--	--	--	--
MAY										
16...	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	23000	23.2	.000
16...	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--
JUL										
05...	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	55000	11.5	.000
05...	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	48000	23.3	.000
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
AUG										
06...	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	68000	33.2	.000
06...	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
SEP										
18...	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	6100	8.76	.000
18...	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--

PHYTOPLANKTON ANALYSES, OCTOBER 1978 TO SEPTEMBER 1979

HEART RIVER BASIN

06348486 SWEETBRIAR LAKE (SHALLOW) NEAR JUDSON, ND--Continued

DATE	SEP 18,79
TIME	1329
TOTAL CELLS/ML	6100
DIVERSITY: DIVISION	0.1
.CLASS	0.1
..ORDER	0.3
...FAMILY	0.3
....GENUS	0.3

ORGANISM	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)		
.CHLOROPHYCEAE		
..CHLOROCOCCALES		
...OOCYSTACEAE		
....OOCYSTIS	*	0
...SCENEDESMACEAE		
....SCENEDESMUS	*	0
..TETRASPORALES		
...PALMELLACEAE		
....GLOEOCYSTIS	43	1
..VOLVOCALES		
...CHLAMYDOMONADACEAE		
....CHLAMYDOMONAS	*	0
CYANOPHYTA (BLUE-GREEN ALGAE)		
.CYANOPHYCEAE		
..CHROOCOCCALES		
...CHROOCOCCACEAE		
....ANACYSTIS	100	2
..HORMOGONALES		
...NOSTOCACEAE		
....APHANIZOMENON	5900#	96

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	SAMPLING DEPTH (FT) (00003)	RESERVOIR DEPTH (FEET) (72025)	STREAM STAGE (FT ABOVE DATUM) (00065)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	PH (UNITS) (00400)	TEMPERATURE, AIR (DEG C) (00020)	CLOUD COVER (PERCENT) (00032)	WIND DIRECTION (DEG, FROM TRUE NORTH) (00036)	WIND VELOCITY (MILES PER HOUR) (00035)	BAROMETRIC PRESSURE (MM OF HG) (00025)
HEART RIVER BASIN											
06348488 SWEETBRIAR LAKE (DEEP) NEAR JUDSON, ND											
OCT											
03...	1143	--	30	38.20	--	--	10.0	100	315	15	--
03...	1145	.0	--	--	640	9.3	--	--	--	--	--
03...	1147	1.6	--	--	640	9.3	--	--	--	--	--
03...	1149	3.3	--	--	640	9.3	--	--	--	--	--
03...	1151	6.6	--	--	640	9.3	--	--	--	--	--
03...	1153	13	--	--	640	9.4	--	--	--	--	--
03...	1155	19	--	--	640	9.4	--	--	--	--	--
03...	1157	26	--	--	640	9.4	--	--	--	--	--
JAN											
03...	1317	--	29	--	--	--	-16.0	0	315	15	720
03...	1318	.0	--	--	780	8.3	--	--	--	--	--
03...	1319	1.6	--	--	690	8.3	--	--	--	--	--
03...	1320	3.3	--	--	800	8.3	--	--	--	--	--
03...	1321	6.6	--	--	800	8.2	--	--	--	--	--
03...	1322	13	--	--	810	8.0	--	--	--	--	--
03...	1323	19	--	--	900	7.9	--	--	--	--	--
03...	1324	26	--	--	1100	7.8	--	--	--	--	--
FEB											
07...	1144	--	28	--	--	--	-18.0	100	202	10	709
07...	1145	.0	--	--	890	8.3	--	--	--	--	--
07...	1146	1.6	--	--	910	8.3	--	--	--	--	--
07...	1147	3.3	--	--	920	8.3	--	--	--	--	--
07...	1148	6.6	--	--	915	8.3	--	--	--	--	--
07...	1149	13	--	--	925	8.2	--	--	--	--	--
07...	1150	19	--	--	1020	7.9	--	--	--	--	--
07...	1151	23	--	--	1200	7.8	--	--	--	--	--
07...	1153	--	--	--	--	--	--	--	--	--	--
MAR											
20...	1110	.0	31	--	--	--	1.0	100	270	20	691
20...	1111	1.6	--	--	--	--	--	--	--	--	--
20...	1112	3.3	--	--	940	8.1	--	--	--	--	--
20...	1113	6.6	--	--	--	--	--	--	--	--	--
20...	1114	13	--	--	1020	7.9	--	--	--	--	--
20...	1115	19	--	--	1380	7.8	--	--	--	--	--
20...	1116	26	--	--	--	--	--	--	--	--	--
MAY											
16...	1131	--	32	39.98	--	--	31.6	5	180	15	--
16...	1133	.0	--	--	312	8.5	--	--	--	--	--
16...	1135	1.6	--	--	372	8.5	--	--	--	--	--
16...	1137	3.3	--	--	378	8.5	--	--	--	--	--
16...	1139	6.0	--	--	382	8.5	--	--	--	--	--
16...	1141	13	--	--	384	8.5	--	--	--	--	--
16...	1143	20	--	--	382	8.4	--	--	--	--	--
16...	1145	26	--	--	383	8.3	--	--	--	--	--
JUL											
05...	1113	--	31	39.62	--	--	25.0	60	135	20	--
05...	1115	.0	--	--	460	8.5	--	--	--	--	--
05...	1117	1.6	--	--	482	8.5	--	--	--	--	--
05...	1119	3.3	--	--	486	8.5	--	--	--	--	--
05...	1121	6.6	--	--	486	8.6	--	--	--	--	--
05...	1123	13	--	--	486	8.4	--	--	--	--	--
05...	1125	19	--	--	485	8.4	--	--	--	--	--
05...	1127	26	--	--	490	8.0	--	--	--	--	--
23...	1408	--	27	39.54	--	--	27.0	60	315	15	--
23...	1410	.0	--	--	461	9.4	--	--	--	--	--
23...	1412	1.6	--	--	483	9.4	--	--	--	--	--
23...	1414	3.3	--	--	488	9.4	--	--	--	--	--
23...	1416	6.6	--	--	488	9.4	--	--	--	--	--
23...	1418	13	--	--	502	8.7	--	--	--	--	--
23...	1420	19	--	--	512	8.7	--	--	--	--	--
23...	1422	23	--	--	524	8.7	--	--	--	--	--
AUG											
06...	1108	--	28	39.68	--	--	28.0	0	270	10	--
06...	1110	.0	--	--	645	9.1	--	--	--	--	--
06...	1112	1.6	--	--	472	9.2	--	--	--	--	--
06...	1114	3.3	--	--	468	9.1	--	--	--	--	--
06...	1116	6.6	--	--	473	9.2	--	--	--	--	--
06...	1118	13	--	--	473	9.2	--	--	--	--	--
06...	1120	19	--	--	474	8.6	--	--	--	--	--
06...	1122	26	--	--	504	7.8	--	--	--	--	--
23...	1058	--	31	39.47	--	--	17.5	70	315	5.0	--
23...	1100	.0	--	--	539	9.2	--	--	--	--	--
23...	1102	1.6	--	--	516	9.2	--	--	--	--	--
23...	1104	3.3	--	--	512	9.2	--	--	--	--	--
23...	1106	6.6	--	--	511	9.2	--	--	--	--	--
23...	1108	13	--	--	508	9.2	--	--	--	--	--
23...	1110	19	--	--	509	9.2	--	--	--	--	--
23...	1112	26	--	--	517	8.8	--	--	--	--	--
SEP											
18...	1113	--	30	39.28	--	--	19.0	0	0	.0	718
18...	1115	.0	--	--	483	8.2	--	--	--	--	--
18...	1117	1.6	--	--	517	8.6	--	--	--	--	--
18...	1119	3.3	--	--	520	8.7	--	--	--	--	--
18...	1121	6.6	--	--	524	8.8	--	--	--	--	--
18...	1123	13	--	--	525	8.9	--	--	--	--	--
18...	1125	19	--	--	525	8.9	--	--	--	--	--
18...	1127	26	--	--	525	8.9	--	--	--	--	--

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

HEART RIVER BASIN

06348488 SWEETBRIAR LAKE (DEEP) NEAR JUDSON, ND--Continued

DATE	TEMPERATURE (DEG C) (00010)	TRANSPARENCY (SECCHI DISK) (IN) (00077)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, NO2+NO3 TOT. IN BOT MAT (MG/KG AS N) (00653)	NITROGEN, NH4 + ORG. TOT IN BOT MAT (MG/KG AS N) (00626)	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P) (00671)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4) (00660)
OCT										
03...	--	21	--	--	--	--	--	--	--	--
03...	12.2	--	9.8	--	--	--	--	--	--	--
03...	12.2	--	9.8	--	--	--	--	--	--	--
03...	12.2	--	9.8	--	--	--	--	--	--	--
03...	12.2	--	9.8	--	--	--	--	--	--	--
03...	12.2	--	9.8	--	--	--	--	--	--	--
03...	12.2	--	9.7	--	--	--	--	--	--	--
03...	12.2	--	9.7	--	--	--	--	--	--	--
JAN										
03...	--	220	--	--	--	--	--	--	--	--
03...	.7	--	9.0	66	--	--	--	--	--	--
03...	2.2	--	8.5	65	--	--	--	--	--	--
03...	2.5	--	8.1	63	--	--	--	--	--	--
03...	2.9	--	7.1	56	--	--	--	--	--	--
03...	3.4	--	3.7	29	--	--	--	--	--	--
03...	3.9	--	.7	6	--	--	--	--	--	--
03...	3.7	--	1.1	9	--	--	--	--	--	--
FEB										
07...	--	89	--	--	--	--	--	--	--	--
07...	.1	--	6.5	48	--	--	--	--	--	--
07...	2.0	--	6.3	49	--	--	--	--	--	--
07...	2.3	--	6.0	47	.06	--	--	.04	.00	.00
07...	2.7	--	5.9	47	--	--	--	--	--	--
07...	3.3	--	3.3	27	--	--	--	--	--	--
07...	4.0	--	.0	0	.07	--	--	.04	.01	.03
07...	4.0	--	.6	5	.03	--	--	--	.01	.03
07...	--	--	--	--	--	3.3	4500	--	--	--
MAR										
20...	.5	84	4.6	35	--	--	--	--	--	--
20...	2.0	--	5.9	47	--	--	--	--	--	--
20...	2.7	--	4.6	38	.28	--	--	.05	.01	.03
20...	2.8	--	4.6	38	--	--	--	--	--	--
20...	3.8	--	.3	2	--	--	--	--	--	--
20...	3.2	--	1.1	9	.09	--	--	.03	.02	.06
20...	3.3	--	.5	4	--	--	--	--	--	--
MAY										
16...	--	37	--	--	--	--	--	--	--	--
16...	9.9	--	12.0	--	--	--	--	--	--	--
16...	9.8	--	12.0	--	--	--	--	--	--	--
16...	9.8	--	12.0	--	.27	--	--	.03	.00	.00
16...	9.7	--	12.0	--	--	--	--	--	--	--
16...	9.3	--	11.5	--	.27	--	--	.03	.00	.00
16...	9.0	--	11.4	--	--	--	--	--	--	--
16...	8.5	--	10.4	--	.27	--	--	.04	.00	.00
JUL										
05...	--	50	--	--	--	--	--	--	--	--
05...	21.2	--	5.8	--	--	--	--	--	--	--
05...	21.1	--	5.6	--	--	--	--	--	--	--
05...	21.1	--	5.6	--	.00	--	--	.02	.00	.00
05...	21.0	--	5.6	--	--	--	--	--	--	--
05...	20.3	--	3.9	--	--	--	--	--	--	--
05...	19.7	--	3.2	--	.00	--	--	.03	.00	.00
05...	18.0	--	.1	--	.00	--	--	.05	.01	.03
23...	--	30	--	--	--	--	--	--	--	--
23...	25.6	--	12.9	--	--	--	--	--	--	--
23...	25.6	--	12.8	--	--	--	--	--	--	--
23...	25.6	--	13.0	--	.00	--	--	.02	.14	.43
23...	25.4	--	12.8	--	--	--	--	--	--	--
23...	21.6	--	3.9	--	--	--	--	--	--	--
23...	20.7	--	1.8	--	--	--	--	--	--	--
23...	20.4	--	1.7	--	.00	--	--	.02	.03	.09
AUG										
06...	--	50	--	--	--	--	--	--	--	--
06...	24.3	--	--	--	--	--	--	--	--	--
06...	24.3	--	--	--	--	--	--	--	--	--
06...	24.3	--	7.4	--	.00	--	--	.09	.12	.37
06...	23.6	--	--	--	--	--	--	--	--	--
06...	23.5	--	--	--	--	--	--	--	--	--
06...	22.9	--	4.5	--	--	--	--	--	--	--
06...	21.9	--	.0	--	.00	--	--	.50	.47	1.4
23...	--	19	--	--	--	--	--	--	--	--
23...	21.7	--	11.8	--	--	--	--	--	--	--
23...	21.7	--	11.7	--	--	--	--	--	--	--
23...	21.7	--	11.2	--	--	--	--	--	--	--
23...	21.6	--	10.5	--	--	--	--	--	--	--
23...	21.5	--	9.6	--	--	--	--	--	--	--
23...	21.4	--	8.7	--	--	--	--	--	--	--
23...	20.4	--	.3	--	--	--	--	--	--	--
SEP										
18...	--	74	--	--	--	--	--	--	--	--
18...	17.6	--	5.8	64	--	--	--	--	--	--
18...	17.3	--	5.8	64	--	--	--	--	--	--
18...	17.2	--	5.8	63	.02	--	--	.11	.17	.52
18...	17.1	--	5.9	64	--	--	--	--	--	--
18...	17.0	--	5.9	64	--	--	--	--	--	--
18...	17.0	--	5.9	64	--	--	--	--	--	--
18...	17.0	--	5.9	64	--	--	--	--	--	--

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

HEART RIVER BASIN

06348488 SWEETBRIAR LAKE (DEEP) NEAR JUDSON, ND--Continued

DATE	PHOS-PHORUS, TOTAL IN BOT. MAT. (MG/KG AS P) (00668)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BORON, DIS-SOLVED (UG/L AS B) (01020)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	CYANIDE TOTAL (MG/L AS CN) (00720)
FEB										
07...	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--
07...	800	10	3	100	260	0	0	0	3	.00

DATE	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	PHYTO-PLANK-TON, TOTAL (CELLS PER ML) (60050)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)
FEB										
07...	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	.000	.000
07...	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--
07...	40	1	740	.0	0	0	40	--	--	--
MAR										
20...	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	25	.520	.000
20...	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--
MAY										
16...	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	20000	27.6	.000
JUL										
05...	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	21000	7.29	.000
05...	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	280000	66.6	.000
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
AUG										
06...	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	160000	46.8	.000
06...	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--
SEP										
18...	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	43000	6.72	.000
18...	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--

PHYTOPLANKTON ANALYSES, OCTOBER 1978 TO SEPTEMBER 1979

HEART RIVER BASIN

06348488 SWEETBRIAR LAKE (DEEP) NEAR JUDSON, ND--Continued

DATE	SEP 18,79
TIME	1119
TOTAL CELLS/ML	43000
DIVERSITY: DIVISION	0.0
.CLASS	0.0
..ORDER	0.1
...FAMILY	0.1
....GENUS	0.1

ORGANISM	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)		
.CHLOROPHYCEAE		
..CHLOROCOCCALES		
...CHARACIACEAE		
....SCHROEDERIA	*	0
...OOCYSTACEAE		
....CLOSTERIOPSIS	*	0
CYANOPHYTA (BLUE-GREEN ALGAE)		
.CYANOPHYCEAE		
..CHROOCOCCALES		
...CHROOCOCCACEAE		
....ANACYSTIS	230	1
..HORMOGONALES		
...NOSTOCACEAE		
....APHANIZOMENON	42000#	98
...OSCILLATORIACEAE		
....OSCILLATORIA	330	1

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	SAMPLING DEPTH (FT) (00003)	RESERVOIR DEPTH (FEET) (72025)	STREAM STAGE (FT ABOVE DATUM) (00065)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	PH (UNITS) (00400)	TEMPERATURE, AIR (DEG C) (00020)	CLOUD COVER (PERCENT) (00032)	WIND DIRECTION (DEG. FROM TRUE NORTH) (00036)	WIND VELOCITY (MILES PER HOUR) (00035)	BAROMETRIC PRESSURE (MM OF HG) (00025)
HEART RIVER BASIN											
06348880 CROWN BUTTE LAKE (SHALLOW) NEAR MANDAN, ND											
OCT											
06...	1259	--	11	5.57	--	--	12.0	25	0	5.0	--
06...	1300	.0	--	--	712	8.8	--	--	--	--	--
06...	1301	1.6	--	--	721	8.8	--	--	--	--	--
06...	1302	3.3	--	--	718	8.8	--	--	--	--	--
06...	1303	6.0	--	--	715	8.8	--	--	--	--	--
06...	1304	10	--	--	715	8.8	--	--	--	--	--
FEB											
06...	1514	--	10	5.25	--	--	-20.0	0	315	10	716
06...	1515	.0	--	--	929	8.2	--	--	--	--	--
06...	1516	1.6	--	--	950	8.2	--	--	--	--	--
06...	1517	3.3	--	--	962	8.2	--	--	--	--	--
06...	1518	6.6	--	--	961	8.2	--	--	--	--	--
MAR											
16...	1250	.0	9.7	5.58	--	--	8.0	40	270	10	681
16...	1251	1.6	--	--	--	--	--	--	--	--	--
16...	1252	3.3	--	--	990	8.0	--	--	--	--	--
JUN											
04...	1343	--	13	6.51	--	--	23.0	70	135	5.0	--
04...	1345	.0	--	--	646	8.7	--	--	--	--	--
04...	1347	1.6	--	--	700	8.7	--	--	--	--	--
04...	1349	3.3	--	--	700	8.6	--	--	--	--	--
04...	1351	6.6	--	--	700	8.6	--	--	--	--	--
04...	1353	10	--	--	697	8.6	--	--	--	--	--
JUL											
24...	1358	--	9.3	4.22	--	--	27.5	50	135	2.0	--
24...	1400	.0	--	--	616	8.8	--	--	--	--	--
24...	1402	1.6	--	--	622	8.8	--	--	--	--	--
24...	1404	3.3	--	--	639	8.9	--	--	--	--	--
24...	1406	6.6	--	--	626	8.8	--	--	--	--	--
AUG											
14...	1328	--	8.5	3.12	--	--	19.0	70	0	.0	--
14...	1330	.0	--	--	678	8.9	--	--	--	--	--
14...	1332	1.6	--	--	658	8.9	--	--	--	--	--
14...	1334	3.3	--	--	640	8.9	--	--	--	--	--
14...	1336	6.6	--	--	637	8.9	--	--	--	--	--

DATE	TEMPERATURE (DEG C) (00010)	TRANSPARENCY (SECCHI DISK) (IN) (00077)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, NO2+NO3 TOT. IN BOT MAT (MG/KG AS N) (00633)	NITROGEN, NH4 + ORG. TOT IN BOT MAT (MG/KG AS N) (00626)	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P) (00671)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4) (00660)
OCT										
06...	--	31	--	--	--	--	--	--	--	--
06...	10.3	--	10.6	--	--	--	--	--	--	--
06...	10.1	--	10.6	--	--	--	--	--	--	--
06...	9.9	--	10.5	--	.01	--	--	.02	.00	.00
06...	8.4	--	10.2	--	.00	--	--	.02	.00	.00
06...	8.3	--	9.8	--	.00	--	--	.01	.00	.00
FEB										
06...	--	116	--	--	--	--	--	--	--	--
06...	.1	--	9.1	66	--	--	--	--	--	--
06...	1.1	--	9.3	69	--	--	--	--	--	--
06...	1.7	--	9.2	71	.06	--	--	.02	.00	.00
06...	1.9	--	9.5	73	--	--	--	--	--	--
MAR										
16...	1.1	116	--	--	--	--	--	--	--	--
16...	1.9	--	--	--	--	--	--	--	--	--
16...	2.0	--	6.5	52	.08	--	--	.02	.00	.00
JUN										
04...	--	118	--	--	--	--	--	--	--	--
04...	18.9	--	10.1	--	--	--	--	--	--	--
04...	17.4	--	10.4	--	--	--	--	--	--	--
04...	17.3	--	10.4	--	.09	--	--	.02	.02	.06
04...	16.7	--	10.9	--	--	--	--	--	--	--
04...	16.3	--	10.5	--	--	--	--	--	--	--
JUL										
24...	--	32	--	--	--	--	--	--	--	--
24...	27.7	--	10.7	--	--	--	--	--	--	--
24...	27.1	--	10.7	--	--	--	--	--	--	--
24...	26.5	--	10.7	--	.00	--	--	.03	.01	.03
24...	24.7	--	10.6	--	--	--	--	--	--	--
AUG										
14...	--	28	--	--	--	--	--	--	--	--
14...	21.1	--	10.8	--	--	--	--	--	--	--
14...	20.9	--	10.7	--	--	--	--	--	--	--
14...	20.6	--	10.7	--	.01	--	--	.08	.05	.15
14...	19.6	--	9.7	--	.02	--	--	.02	.01	.03

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

HEART RIVER BASIN

06348880 CROWN BUTTE LAKE (SHALLOW) NEAR MANDAN, ND--Continued

DATE	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	PHYTO-PLANK-TON, TOTAL (CELLS PER ML) (60050)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUORUM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUORUM (UG/L) (70954)
OCT										
06...	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	28000	.590	.000
06...	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--
FEB										
06...	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	5.23	.000
06...	--	--	--	--	--	--	--	--	--	--
MAR										
16...	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	120	1.64	.000
JUN										
04...	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	2600	3.58	.000
04...	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--
JUL										
24...	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	280000	52.1	.000
24...	--	--	--	--	--	--	--	--	--	--
AUG										
14...	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	440000	--	--
14...	--	--	--	--	--	--	--	--	--	--

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	SAMPLING DEPTH (FT) (00003)	RESERVOIR DEPTH (FEET) (72025)	STREAM STAGE (FT ABOVE DATUM) (00065)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	PH (UNITS) (00400)	TEMPERATURE, AIR (DEG C) (00020)	CLOUD COVER (PERCENT) (00032)	WIND DIRECTION (DEG. FROM TRUE NORTH) (00036)	WIND VELOCITY (MILES PER HOUR) (00035)	BAROMETRIC PRESSURE (MM OF HG) (00025)
					HEART RIVER BASIN						
					06348882 CROWN BUTTE LAKE (DEEP) NEAR MANDAN, ND						
OCT											
06...	1009	--	30	5.57	--	--	11.5	70	0	.0	--
06...	1010	.0	--	--	760	8.7	--	--	--	--	--
06...	1011	1.6	--	--	732	8.8	--	--	--	--	--
06...	1012	3.3	--	--	732	8.8	--	--	--	--	--
06...	1013	6.0	--	--	730	8.8	--	--	--	--	--
06...	1014	13	--	--	728	8.8	--	--	--	--	--
06...	1015	20	--	--	728	8.8	--	--	--	--	--
06...	1016	26	--	--	726	8.8	--	--	--	--	--
FEB											
06...	1219	--	25	5.25	--	--	-20.0	0	315	10	716
06...	1220	.0	--	--	958	8.1	--	--	--	--	--
06...	1221	1.6	--	--	965	8.1	--	--	--	--	--
06...	1222	3.3	--	--	975	8.1	--	--	--	--	--
06...	1223	6.6	--	--	977	8.1	--	--	--	--	--
06...	1224	13	--	--	978	8.0	--	--	--	--	--
06...	1225	19	--	--	1015	7.9	--	--	--	--	--
06...	1227	--	--	--	--	--	--	--	--	--	--
MAR											
16...	1020	.0	25	5.58	--	--	7.5	10	180	8.0	658
16...	1021	1.6	--	--	--	--	--	--	--	--	--
16...	1022	3.3	--	--	1000	8.1	--	--	--	--	--
16...	1023	6.6	--	--	1000	8.2	--	--	--	--	--
16...	1024	13	--	--	1000	8.2	--	--	--	--	--
16...	1025	19	--	--	1018	8.0	--	--	--	--	--
JUN											
04...	1038	--	25	6.51	--	--	19.5	85	135	3.0	--
04...	1040	.0	--	--	690	8.5	--	--	--	--	--
04...	1042	1.6	--	--	700	8.5	--	--	--	--	--
04...	1044	3.3	--	--	698	8.5	--	--	--	--	--
04...	1046	6.6	--	--	701	8.5	--	--	--	--	--
04...	1048	13	--	--	702	8.5	--	--	--	--	--
04...	1050	19	--	--	701	8.4	--	--	--	--	--
JUL											
24...	1123	--	22	4.22	--	--	28.0	40	225	2.0	--
24...	1125	.0	--	--	648	8.8	--	--	--	--	--
24...	1127	1.6	--	--	632	8.8	--	--	--	--	--
24...	1129	3.3	--	--	628	8.8	--	--	--	--	--
24...	1131	6.6	--	--	632	8.6	--	--	--	--	--
24...	1133	13	--	--	646	8.3	--	--	--	--	--
24...	1135	19	--	--	659	8.1	--	--	--	--	--
AUG											
14...	1058	--	21	3.12	--	--	16.0	70	90	3.0	--
14...	1100	.0	--	--	692	8.7	--	--	--	--	--
14...	1102	1.6	--	--	652	8.7	--	--	--	--	--
14...	1104	3.3	--	--	649	8.7	--	--	--	--	--
14...	1106	6.6	--	--	647	8.8	--	--	--	--	--
14...	1108	13	--	--	646	8.8	--	--	--	--	--
14...	1110	19	--	--	704	7.4	--	--	--	--	--

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

HEART RIVER BASIN

06348882 CROWN BUTTE LAKE (DEEP) NEAR MANDAN, ND--Continued

DATE	TEMPERATURE (DEG C) (00010)	TRANSPARENCY (SECCHI DISK) (IN) (00077)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, NO2+NO3 TOT. IN BOT MAT (MG/KG AS N) (00633)	NITROGEN, NH4 + ORG. TOT IN BOT MAT (MG/KG AS N) (00626)	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P) (00671)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4) (00660)
OCT										
06...	--	30	--	--	--	--	--	--	--	--
06...	9.9	--	9.7	--	--	--	--	--	--	--
06...	9.9	--	9.7	--	--	--	--	--	--	--
06...	9.8	--	9.6	--	.01	--	--	.02	.00	.00
06...	9.8	--	9.5	--	--	--	--	--	--	--
06...	9.8	--	9.4	--	.00	--	--	.02	.00	.00
06...	9.8	--	9.5	--	--	--	--	--	--	--
06...	9.7	--	9.3	--	.01	--	--	.01	.00	.00
FEB										
06...	--	161	--	--	--	--	--	--	--	--
06...	.5	--	7.4	54	--	--	--	--	--	--
06...	.5	--	7.5	55	--	--	--	--	--	--
06...	.9	--	7.4	55	.06	--	--	.02	.00	.00
06...	1.0	--	7.4	55	--	--	--	--	--	--
06...	1.3	--	7.3	55	.07	--	--	.02	.00	.00
06...	2.1	--	4.8	37	.05	--	--	.02	.00	.00
06...	--	--	--	--	--	1.6	2100	--	--	--
MAR										
16...	.9	167	--	--	--	--	--	--	--	--
16...	1.7	--	--	--	--	--	--	--	--	--
16...	1.9	--	5.3	43	.09	--	--	.02	.01	.03
16...	2.0	--	5.0	42	--	--	--	--	--	--
16...	2.4	--	4.6	39	--	--	--	--	--	--
16...	2.8	--	2.4	21	.06	--	--	.02	.01	.03
JUN										
04...	--	97	--	--	--	--	--	--	--	--
04...	17.3	--	10.6	--	--	--	--	--	--	--
04...	17.1	--	10.5	--	--	--	--	--	--	--
04...	16.9	--	10.3	--	.11	--	--	.02	.01	.03
04...	16.7	--	10.0	--	--	--	--	--	--	--
04...	16.3	--	9.5	--	--	--	--	--	--	--
04...	15.8	--	8.5	--	.11	--	--	.02	.00	.00
JUL										
24...	--	34	--	--	--	--	--	--	--	--
24...	25.8	--	10.0	--	--	--	--	--	--	--
24...	25.6	--	9.8	--	--	--	--	--	--	--
24...	25.3	--	9.2	--	.00	--	--	.03	.00	.00
24...	24.5	--	5.6	--	--	--	--	--	--	--
24...	21.7	--	3.0	--	.00	--	--	.04	.01	.03
24...	20.6	--	.0	--	.10	--	--	.26	.16	.49
AUG										
14...	--	25	--	--	--	--	--	--	--	--
14...	20.5	--	8.2	--	--	--	--	--	--	--
14...	20.5	--	8.1	--	--	--	--	--	--	--
14...	20.5	--	8.1	--	.02	--	--	.03	.02	.06
14...	20.5	--	7.8	--	--	--	--	--	--	--
14...	20.0	--	7.5	--	.01	--	--	.02	.01	.03
14...	16.6	--	.0	--	.01	--	--	1.3	1.2	3.7

DATE	PHOSPHORUS, TOTAL IN BOT. MAT. (MG/KG AS P) (00668)	ALUMINUM, DISSOLVED (UG/L AS AL) (01106)	ARSENIC DISSOLVED (UG/L AS AS) (01000)	BARIUM, DISSOLVED (UG/L AS BA) (01005)	BORON, DISSOLVED (UG/L AS B) (01020)	CADMIUM DISSOLVED (UG/L AS CD) (01025)	CHROMIUM, DISSOLVED (UG/L AS CR) (01030)	COBALT, DISSOLVED (UG/L AS CO) (01035)	COPPER, DISSOLVED (UG/L AS CU) (01040)	CYANIDE TOTAL (MG/L AS CN) (00720)
OCT										
06...	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--
FEB										
06...	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--
06...	780	30	2	100	190	0	0	0	2	.00

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

HEART RIVER BASIN

06348882 CROWN BUTTE LAKE (DEEP) NEAR MANDAN, ND--Continued

DATE	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	PHYTO-PLANK-TON, TOTAL (CELLS PER ML) (60050)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)
OCT										
06...	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	74000	--	.000
06...	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--
FEB										
06...	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	2.50	.000
06...	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--
06...	10	3	380	.1	0	0	40	--	--	--
MAR										
16...	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	81	.000	.000
16...	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--
JUN										
04...	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	4900	7.86	.000
04...	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--
JUL										
24...	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	400000	49.9	.000
24...	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--
AUG										
14...	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	210000	--	--
14...	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--

CANNONBALL RIVER BASIN

460927100584800 FROELICH RESERVOIR (SHALLOW) NEAR SELFRIDGE, ND

DATE	TIME	SAMP-LING DEPTH (FT) (00003)	RESER-VOIR DEPTH (FEET) (72025)	STREAM STAGE (FT ABOVE DATUM) (00065)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	CLOUD COVER (PER-CENT) (00032)	WIND DIREC-TION (DEG. FROM TRUE NORTH) (00036)	WIND VELOC-ITY (MILES PER HOUR) (00035)	BARO-METRIC PRES-SURE (MM OF HG) (00025)
MAR											
01...	1524	--	9.2	--	--	--	-7.0	100	45	2.0	707
01...	1525	.0	--	--	--	--	--	--	--	--	--
01...	1526	1.6	--	--	--	--	--	--	--	--	--
01...	1527	3.3	--	--	480	7.7	--	--	--	--	--
JUN											
08...	1118	--	10		--	--	16.0	40	315	5.0	--
08...	1120	.0	--	--	--	--	--	--	--	--	--
08...	1122	1.6	--	--	--	--	--	--	--	--	--
08...	1124	3.3	--	--	360	8.6	--	--	--	--	--
08...	1126	6.6	--	--	360	8.6	--	--	--	--	--
08...	1128	9.9	--	--	360	8.6	--	--	--	--	--
AUG											
10...	1158	--	10	15.88	--	--	20.5	50	315	10	--
10...	1200	.0	--	--	--	--	--	--	--	--	--
10...	1202	1.6	--	--	--	--	--	--	--	--	--
10...	1204	3.3	--	--	354	9.2	--	--	--	--	--
10...	1206	6.6	--	--	352	9.2	--	--	--	--	--
10...	1208	9.9	--	--	358	9.2	--	--	--	--	--

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

CANNONBALL RIVER BASIN

460927100584800 FROELICH RESERVOIR (SHALLOW) NEAR SELFRIDGE, ND--Continued

DATE	TEMPERATURE (DEG C) (00010)	TRANSPARENCY (SECCHI DISK) (IN) (00077)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P) (00671)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4) (00660)	CHLOR-A PHYTOPLANKTON CHROMO FLUORUM (UG/L) (70953)	CHLOR-B PHYTOPLANKTON CHROMO FLUORUM (UG/L) (70954)
MAR										
01...	--	61	--	--	--	--	--	--	--	--
01...	.3	--	7.0	52	--	--	--	--	--	--
01...	1.5	--	6.7	51	--	--	--	--	--	--
01...	2.1	--	6.4	50	.16	.13	.06	.18	2.31	.000
JUN										
08...	--	112	--	--	--	--	--	--	--	--
08...	16.2	--	8.7	--	--	--	--	--	--	--
08...	16.1	--	8.6	--	--	--	--	--	--	--
08...	16.1	--	8.6	--	.09	.08	.01	.03	4.42	.000
08...	15.9	--	8.5	--	--	--	--	--	--	--
08...	15.4	--	8.4	--	--	--	--	--	--	--
AUG										
10...	--	51	--	--	--	--	--	--	--	--
10...	22.1	--	8.1	--	--	--	--	--	--	--
10...	22.1	--	8.1	--	--	--	--	--	--	--
10...	22.1	--	8.2	--	.01	--	.06	.18	75.4	.000
10...	22.0	--	8.2	--	--	--	--	--	--	--
10...	21.3	--	4.8	--	--	--	--	--	--	--

460941101592600 FROELICH RESERVOIR (DEEP) NEAR SELFRIDGE, ND

DATE	TIME	SAMPLING DEPTH (FT) (00003)	RESERVOIR DEPTH (FEET) (72025)	STREAM STAGE (FT ABOVE DATUM) (00065)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	PH (UNITS) (00400)	TEMPERATURE, AIR (DEG C) (00020)	CLOUD COVER (PERCENT) (00032)	WIND DIRECTION (DEG. FROM TRUE NORTH) (00036)	WIND VELOCITY (MILES PER HOUR) (00035)	BAROMETRIC PRESSURE (MM OF HG) (00025)
MAR											
01...	1149	--	30	--	--	--	-8.0	100	45	2.0	708
01...	1150	.0	--	--	--	--	--	--	--	--	--
01...	1151	1.6	--	--	--	--	--	--	--	--	--
01...	1152	3.3	--	--	470	7.8	--	--	--	--	--
01...	1153	6.6	--	--	470	7.8	--	--	--	--	--
01...	1154	13	--	--	470	7.7	--	--	--	--	--
01...	1155	19	--	--	500	7.6	--	--	--	--	--
JUN											
08...	0928	--	29	--	--	--	14.0	30	315	10	--
08...	0930	.0	--	--	--	--	--	--	--	--	--
08...	0932	1.6	--	--	--	--	--	--	--	--	--
08...	0934	3.3	--	--	360	8.2	--	--	--	--	--
08...	0936	6.6	--	--	--	--	--	--	--	--	--
08...	0938	13	--	--	--	--	--	--	--	--	--
08...	0940	19	--	--	360	8.2	--	--	--	--	--
08...	0942	26	--	--	360	8.2	--	--	--	--	--
AUG											
10...	0958	--	31	15.88	--	--	21.0	60	315	5.0	--
10...	1000	.0	--	--	--	--	--	--	--	--	--
10...	1002	1.6	--	--	--	--	--	--	--	--	--
10...	1004	3.3	--	--	352	9.2	--	--	--	--	--
10...	1006	6.6	--	--	--	--	--	--	--	--	--
10...	1008	13	--	--	--	--	--	--	--	--	--
10...	1010	19	--	--	356	9.2	--	--	--	--	--
10...	1012	26	--	--	370	8.9	--	--	--	--	--

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TEMPERATURE (DEG C) (00010)	TRANSPARENCY (SECCHI DISK) (IN) (00077)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P) (00671)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4) (00660)	CHLOR-A PHYTOPLANKTON CHROMO FLUORUM (UG/L) (70953)	CHLOR-B PHYTOPLANKTON CHROMO FLUORUM (UG/L) (70954)
CANNONBALL RIVER BASIN										
460941101592600 FROELICH RESERVOIR (DEEP) NEAR SELFRIDGE, ND--Continued										
MAR										
01...	--	73	--	--	--	--	--	--	--	--
01...	.4	--	5.2	39	--	--	--	--	--	--
01...	1.7	--	5.1	40	--	--	--	--	--	--
01...	2.4	--	5.0	39	.15	.13	.06	.18	1.28	.000
01...	2.8	--	4.8	38	--	--	--	--	--	--
01...	3.8	--	2.8	23	--	--	--	--	--	--
01...	4.4	--	.0	0	.03	.22	.14	.43	--	--
JUN										
08...	--	101	--	--	--	--	--	--	--	--
08...	16.0	--	7.5	--	--	--	--	--	--	--
08...	16.1	--	7.5	--	--	--	--	--	--	--
08...	16.1	--	7.5	--	.11	.08	.01	.03	2.76	.000
08...	16.0	--	7.5	--	--	--	--	--	--	--
08...	16.0	--	7.5	--	--	--	--	--	--	--
08...	16.0	--	7.5	--	--	--	--	--	--	--
08...	15.5	--	7.3	--	--	--	--	--	--	--
AUG										
10...	--	51	--	--	--	--	--	--	--	--
10...	22.3	--	6.8	--	--	--	--	--	--	--
10...	22.3	--	6.8	--	--	--	--	--	--	--
10...	22.3	--	6.7	--	.02	.29	.10	.31	60.5	.000
10...	22.3	--	6.5	--	--	--	--	--	--	--
10...	22.2	--	6.5	--	--	--	--	--	--	--
10...	22.2	--	6.4	--	--	--	--	--	--	--
10...	21.2	--	2.2	--	.02	.33	.25	.77	--	--

GRAND RIVER BASIN

455941102380300 MIRROR LAKE (DEEP) AT HETTINGER, ND

DATE	TIME	SAMPLING DEPTH (FT) (00003)	RESERVOIR DEPTH (FEET) (72025)	STREAM STAGE (FT ABOVE DATUM) (00065)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	PH (UNITS) (00400)	TEMPERATURE, AIR (DEG C) (00020)	CLOUD COVER (PERCENT) (00032)	WIND DIRECTION (DEG. FROM TRUE NORTH) (00036)	WIND VELOCITY (MILES PER HOUR) (00035)	BAROMETRIC PRESSURE (MM OF HG) (00025)
FEB											
14...	1544	--	7.9	--	--	--	-15.0	100	0	10	691
14...	1545	.0	--	--	--	--	--	--	--	--	--
14...	1546	1.6	--	--	--	--	--	--	--	--	--
14...	1547	3.3	--	--	5800	8.1	--	--	--	--	--
14...	1548	6.6	--	--	5800	8.1	--	--	--	--	--
JUN											
06...	0848	--	10	20.87	--	--	15.0	95	270	10	--
06...	0850	.0	--	--	--	--	--	--	--	--	--
06...	0852	1.6	--	--	--	--	--	--	--	--	--
06...	0854	3.3	--	--	3210	8.2	--	--	--	--	--
06...	0856	6.6	--	--	3210	8.2	--	--	--	--	--
06...	0858	9.9	--	--	3200	8.3	--	--	--	--	--
AUG											
08...	1328	--	9.0	20.15	--	--	24.5	95	135	10	--
08...	1330	.0	--	--	--	--	--	--	--	--	--
08...	1332	1.6	--	--	--	--	--	--	--	--	--
08...	1334	3.3	--	--	3500	8.9	--	--	--	--	--
08...	1336	6.6	--	--	3500	8.9	--	--	--	--	--
08...	1338	7.7	--	--	--	--	--	--	--	--	--

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

GRAND RIVER BASIN

455941102380300 MIRROR LAKE (DEEP) AT HETTINGER, ND--Continued

DATE	TEMPERATURE (DEG C) (00010)	TRANSPARENCY (SECCHI DISK) (IN) (00077)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P) (00671)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4) (00660)	CHLOR-A PHYTOPLANKTON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTOPLANKTON CHROMO FLUOROM (UG/L) (70954)
FEB										
14...	--	32	--	--	--	--	--	--	--	--
14...	.0	--	--	--	--	--	--	--	--	--
14...	.0	--	--	--	--	--	--	--	--	--
14...	.0	--	1.6	12	.03	.06	.03	.09	87.8	.000
14...	.5	--	1.6	12	--	--	--	--	--	--
JUN										
06...	--	115	--	--	--	--	--	--	--	--
06...	17.7	--	7.1	--	--	--	--	--	--	--
06...	17.8	--	7.1	--	--	--	--	--	--	--
06...	17.8	--	7.1	--	--	.05	--	--	.700	.000
06...	17.8	--	7.0	--	--	--	--	--	--	--
06...	17.8	--	7.0	--	--	--	--	--	--	--
AUG										
08...	--	22	--	--	--	--	--	--	--	--
08...	22.4	--	8.7	--	--	--	--	--	--	--
08...	22.3	--	9.0	--	--	--	--	--	--	--
08...	21.8	--	6.8	--	.02	.29	.03	.09	89.1	5.86
08...	21.3	--	5.1	--	--	--	--	--	--	--
08...	21.3	--	5.1	--	--	--	--	--	--	--

455955102383400 MIRROR LAKE (SHALLOW) AT HETTINGER, ND

DATE	TIME	SAMPLING DEPTH (FT) (00003)	RESERVOIR DEPTH (FEET) (72025)	STREAM STAGE (FT ABOVE DATUM) (00065)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	PH (UNITS) (00400)	TEMPERATURE, AIR (DEG C) (00020)	CLOUD COVER (PERCENT) (00032)	WIND DIRECTION (DEG, FROM TRUE NORTH) (00036)	WIND VELOCITY (MILES PER HOUR) (00035)
JUN										
06...	1058	--	6.6	20.87	--	--	17.5	90	270	20
06...	1100	.0	--	--	--	--	--	--	--	--
06...	1102	1.6	--	--	--	--	--	--	--	--
06...	1104	3.3	--	--	3240	8.3	--	--	--	--
06...	1106	6.6	--	--	3240	8.3	--	--	--	--
AUG										
08...	1518	--	5.1	20.15	--	--	--	100	135	10
08...	1520	.0	--	--	--	--	--	--	--	--
08...	1522	1.6	--	--	--	--	--	--	--	--
08...	1524	3.3	--	--	3400	8.2	--	--	--	--

DATE	TEMPERATURE (DEG C) (00010)	TRANSPARENCY (SECCHI DISK) (IN) (00077)	OXYGEN, DISSOLVED (MG/L) (00300)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P) (00671)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4) (00660)	CHLOR-A PHYTOPLANKTON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTOPLANKTON CHROMO FLUOROM (UG/L) (70954)
JUN									
06...	--	79	--	--	--	--	--	--	--
06...	17.1	--	8.3	--	--	--	--	--	--
06...	17.2	--	8.3	--	--	--	--	--	--
06...	17.2	--	8.3	--	.06	--	--	.510	.000
06...	17.2	--	8.4	--	--	--	--	--	--
AUG									
08...	--	--	--	--	--	--	--	--	--
08...	21.7	--	--	--	--	--	--	--	--
08...	21.7	--	--	--	--	--	--	--	--
08...	20.8	--	.0	.01	.55	.36	1.1	207	115

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	SAMPLING DEPTH (FT) (00003)	RESERVOIR DEPTH (FEET) (72025)	STREAM STAGE (FT ABOVE DATUM) (00065)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	PH (UNITS) (00400)	TEMPERATURE, AIR (DEG C) (00020)	CLOUD COVER (PERCENT) (00032)	WIND DIRECTION (DEG. FROM TRUE NORTH) (00036)	WIND VELOCITY (MILES PER HOUR) (00035)	BAROMETRIC PRESSURE (MM OF HG) (00025)
JAMES RIVER BASIN											
461758098161500 LAKE LAMOURE (DEEP) NEAR LAMOURE, ND											
MAR											
08...	1314	--	32	3.70	--	--	3.0	50	190	10	--
08...	1315	3.3	--	--	770	7.6	--	--	--	--	--
08...	1330	6.6	--	--	--	--	--	--	--	--	--
08...	1340	13	--	--	--	--	--	--	--	--	--
08...	1350	19	--	--	790	7.7	--	--	--	--	--
08...	1400	26	--	--	--	--	--	--	--	--	--
08...	1410	31	--	--	925	7.9	--	--	--	--	--
JUN											
06...	1159	--	31	46.52	--	--	18.5	100	45	5.0	720
06...	1200	3.3	--	--	510	8.2	--	--	--	--	--
06...	1205	6.6	--	--	--	--	--	--	--	--	--
06...	1210	13	--	--	509	8.3	--	--	--	--	--
06...	1220	19	--	--	--	--	--	--	--	--	--
06...	1225	26	--	--	509	8.2	--	--	--	--	--
06...	1235	31	--	--	--	--	--	--	--	--	--
AUG											
22...	1019	--	29	46.01	--	--	20.5	99	350	5.0	726
22...	1020	3.3	--	--	550	8.9	--	--	--	--	--
22...	1030	6.6	--	--	--	--	--	--	--	--	--
22...	1040	13	--	--	551	8.9	--	--	--	--	--
22...	1050	19	--	--	--	--	--	--	--	--	--
22...	1055	23	--	--	550	8.8	--	--	--	--	--
22...	1100	26	--	--	--	--	--	--	--	--	--
22...	1110	29	--	--	559	8.8	--	--	--	--	--

DATE	TEMPERATURE (DEG C) (00010)	TRANSPARENCY (SECCHI DISK) (IN) (00077)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P) (00671)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4) (00660)	CHLOR-A PHYTOPLANKTON CHROMO FLUORUM (UG/L) (70953)	CHLOR-B PHYTOPLANKTON CHROMO FLUORUM (UG/L) (70954)
MAR										
08...	--	149	--	--	--	--	--	--	--	--
08...	1.5	--	7.0	--	.49	.20	.15	.46	2.29	.000
08...	3.0	--	6.9	--	--	--	--	--	--	--
08...	4.0	--	6.4	--	--	--	--	--	--	--
08...	4.5	--	3.6	--	.39	.24	.13	.40	--	--
08...	5.5	--	.3	--	--	--	--	--	--	--
08...	5.5	--	.3	--	.13	.25	.18	.55	--	--
JUN										
06...	17.5	86	--	--	--	--	--	--	--	--
06...	19.0	--	7.6	84	2.7	.20	.01	.03	--	--
06...	17.5	--	7.7	85	--	--	--	--	--	--
06...	17.5	--	7.7	85	--	--	--	--	--	--
06...	17.5	--	7.7	85	--	--	--	--	--	--
06...	17.5	--	7.7	85	--	--	--	--	--	--
06...	17.5	--	7.7	85	--	--	--	--	--	--
AUG										
22...	21.0	107	--	--	--	--	--	--	--	--
22...	21.0	--	6.4	75	.01	.48	.45	1.4	78.0	.000
22...	21.0	--	6.4	75	--	--	--	--	--	--
22...	21.0	--	6.4	75	--	--	--	--	--	--
22...	21.0	--	6.4	75	--	--	--	--	--	--
22...	21.0	--	5.2	61	.01	.50	.43	1.3	--	--
22...	20.5	--	4.5	52	--	--	--	--	--	--
22...	20.0	--	3.6	41	.01	.57	.51	1.6	--	--

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	SAMPLING DEPTH (FT) (00003)	RESERVOIR DEPTH (FEET) (72025)	STREAM STAGE (FT ABOVE DATUM) (00065)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	PH (UNITS) (00400)	TEMPERATURE, AIR (DEG C) (00020)	CLOUD COVER (PERCENT) (00032)	WIND DIRECTION (DEG. FROM TRUE NORTH) (00036)	WIND VELOCITY (MILES PER HOUR) (00035)	BAROMETRIC PRESSURE (MM OF HG) (00025)
JAMES RIVER BASIN											
461814098173800 LAKE LAMOURE (SHALLOW) NEAR LAMOURE, ND											
MAR											
08...	0929	--	7.6	3.70	--	--	-6.0	60	190	15	--
08...	0930	3.3	--	--	800	7.9	--	--	--	--	--
08...	0935	7.6	--	--	850	7.9	--	--	--	--	--
JUN											
06...	1339	--	7.2	46.52	--	--	20.0	100	55	5.0	719
06...	1340	3.3	--	--	710	8.6	--	--	--	--	--
06...	1350	6.6	--	--	710	8.5	--	--	--	--	--
AUG											
22...	1209	--	6.6	46.01	--	--	21.0	80	350	5.0	726
22...	1210	3.3	--	--	587	8.3	--	--	--	--	--
22...	1220	6.6	--	--	580	8.3	--	--	--	--	--

DATE	TEMPERATURE (DEG C) (00010)	TRANSPARENCY (SECCHI DISK) (IN) (00077)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P) (00671)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4) (00660)	CHLOR-A PHYTOPLANKTON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTOPLANKTON CHROMO FLUOROM (UG/L) (70954)
MAR										
08...	--	91	--	--	--	--	--	--	--	--
08...	1.0	--	8.0	--	.50	.27	.14	.43	3.67	.000
08...	2.5	--	5.8	--	--	--	--	--	--	--
JUN										
06...	--	86	--	--	--	--	--	--	--	--
06...	19.0	--	8.3	94	.13	.25	.09	.28	.000	.000
06...	19.0	--	8.3	94	--	--	--	--	--	--
AUG										
22...	--	41	--	--	--	--	--	--	--	--
22...	22.0	--	.0	0	.01	.02	.42	1.3	7.50	.000
22...	22.0	--	.0	0	--	--	--	--	--	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE (DEG C) (00010)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)
PART 5. HUDSON BAY BASIN										
RED RIVER OF THE NORTH BASIN										
05051500 - RED RIVER OF THE NORTH AT WAHPETON, ND (LAT 46 15 55 LONG 096 35 40)										
OCT , 1978										
18...	1515	131	500	8.0	7.5	250	18	45	33	11
APR , 1979										
16...	1515	6180	365	7.5	2.5	160	75	38	16	7.4
SEP										
20...	1540	534	400	8.5	17.0	190	0	39	23	7.5
05051600 - WILD RICE RIVER NR RUTLAND, ND (LAT 46 01 20 LONG 097 30 40)										
APR , 1979										
17...	1715	224	371	7.9	9.5	150	73	34	16	11
JUN										
22...	1615	5.8	920	8.2	19.0	390	180	78	47	59
05051700 - WILD RICE RIVER NR CAYUGA, ND (LAT 46 07 30 LONG 097 21 40)										
APR , 1979										
17...	1400	227	561	7.8	9.0	220	88	47	25	20
JUN										
22...	1035	6.3	910	8.3	19.0	420	220	89	48	43
05054000 - RED RIVER OF THE NORTH AT FARGO, ND (LAT 46 51 40 LONG 096 47 00)										
OCT , 1978										
18...	0840	90	525	8.5	8.0	260	28	44	36	15
SEP , 1979										
07...	1140	723	415	8.5	21.0	210	11	39	27	9.4
05056100 - MAUVAIS COULEE NR CANDO, ND (LAT 48 26 53 LONG 099 06 08)										
OCT , 1978										
11...	0950	.01	960	7.6	9.5	400	170	59	61	68
APR , 1979										
22...	1430	584	310	7.8	2.0	100	45	26	8.5	11
AUG										
22...	1240	.17	885	8.6	20.5	420	120	81	53	54
SEP										
19...	1655	.04	1000	8.5	19.0	450	120	97	50	61
05056200 - EDMORE COULEE NR EDMORE, ND (LAT 48 20 14 LONG 098 39 33)										
APR , 1979										
22...	1435	802	290	--	5.5	82	23	20	7.8	15
30...	1420	573	370	7.7	6.0	140	52	34	13	19
JUL										
19...	1015	4.7	960	7.5	22.0	360	30	84	36	77
05059500 - SHEYENNE RIVER AT WEST FARGO, ND (LAT 46 53 28 LONG 096 54 24)										
OCT , 1978										
26...	1740	84	830	8.2	7.5	290	38	71	27	68
MAY , 1979										
01...	1425	3050	385	7.4	6.0	150	21	26	21	25
SEP										
06...	1610	96	809	8.3	20.0	330	73	84	29	59
05059600 - MAPLE RIVER NR HUPE, ND (LAT 47 19 30 LONG 097 47 25)										
APR , 1979										
25...	1700	55	660	7.8	8.0	230	120	53	24	45
JUN										
21...	1110	.01	2200	7.8	15.5	1000	550	210	120	170

ANALYSES OF SAMPLES AT MISCELLANEOUS SURFACE-WATER QUALITY SITES

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	SODIUM PERCENT (00932)	SODIUM ADSORPTION RATIO (00931)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	BICARBONATE (MG/L AS HCO3) (00440)	CARBONATE (MG/L AS CO3) (00445)	ALKALINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DISSOLVED (MG/L AS CO2) (00405)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)
PART 5. HUDSON BAY BASIN										
RED RIVER OF THE NORTH BASIN										
05051500 - RED RIVER OF THE NORTH AT WAHPETON, ND (LAT 46 15 55 LONG 096 35 40)										
OCT , 1978										
18...	9	.3	3.6	281	0	230	4.5	30	5.7	.1
APR , 1979										
16...	9	.3	5.0	104	0	85	5.3	73	5.4	.1
SEP										
20...	8	.2	2.7	237	0	194	1.2	15	5.7	.2
05051600 - WILD RICE RIVER NR RUTLAND, ND (LAT 46 01 20 LONG 097 30 40)										
APR , 1979										
17...	13	.4	8.1	95	0	78	1.9	86	7.2	.1
JUN										
22...	24	1.3	13	255	0	209	2.6	270	25	.1
05051700 - WILD RICE RIVER NR CAYUGA, ND (LAT 46 07 30 LONG 097 21 40)										
APR , 1979										
17...	16	.6	10	161	0	132	4.1	130	11	.1
JUN										
22...	18	.9	13	247	0	203	2.0	300	13	.2
05054000 - RED RIVER OF THE NORTH AT FARGO, ND (LAT 46 51 40 LONG 096 47 00)										
OCT , 1978										
18...	11	.4	4.1	281	0	230	1.4	50	6.9	.2
SEP , 1979										
07...	9	.3	2.8	241	0	198	1.2	33	5.5	.2
05056100 - MAUVAIS COULEE NR CANDO, ND (LAT 48 26 53 LONG 099 06 08)										
OCT , 1978										
11...	26	1.5	9.5	285	0	234	11	280	26	.2
APR , 1979										
22...	18	.5	7.0	67	0	55	1.7	61	4.8	.1
AUG										
22...	22	1.1	6.4	369	0	303	1.5	220	13	.2
SEP										
19...	22	1.3	7.3	395	0	324	2.0	240	19	.2
05056200 - EDMORE COULEE NR EDMORE, ND (LAT 48 20 14 LONG 098 39 33)										
APR , 1979										
22...	27	.7	4.5	72	0	59	--	51	7.1	.1
30...	22	.7	5.9	105	0	86	3.4	59	16	.1
JUL										
19...	31	1.8	6.8	400	0	328	20	170	19	.2
05059500 - SHEYENNE RIVER AT WEST FARGO, ND (LAT 46 53 28 LONG 096 54 24)										
OCT , 1978										
26...	33	1.7	7.9	305	0	250	3.1	150	36	.2
MAY , 1979										
01...	25	.9	6.2	159	0	130	10	70	8.0	.1
SEP										
06...	28	1.4	6.7	312	0	256	2.5	150	33	.2
05059600 - MAPLE RIVER NR HOPE, ND (LAT 47 19 30 LONG 097 47 25)										
APR , 1979										
25...	29	1.3	6.2	136	0	112	3.4	200	13	.1
JUN										
21...	26	2.3	9.1	566	0	464	14	830	41	.2

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
PART 5. HUDSON BAY BASIN									
RED RIVER OF THE NORTH BASIN									
05051500 - RED RIVER OF THE NORTH AT WAHPETON, ND (LAT 46 15 55 LONG 096 35 40)									
OCT , 1978									
18...	2.0	283	269	.38	100	--	130	20	20
APR , 1979									
16...	12	221	208	.30	3690	--	180	40	70
SEP									
20...	15	239	225	.33	345	--	30	20	0
05051600 - WILD RICE RIVER NR RUTLAND, ND (LAT 46 01 20 LONG 097 30 40)									
APR , 1979									
17...	14	268	223	.36	162	--	30	200	10
JUN									
22...	4.1	666	622	.91	10.4	--	0	100	50
05051700 - WILD RICE RIVER NR CAYUGA, ND (LAT 46 07 30 LONG 097 21 40)									
APR , 1979									
17...	18	401	340	.55	246	--	0	0	50
JUN									
22...	4.7	661	633	.90	11.2	--	30	60	20
05054000 - RED RIVER OF THE NORTH AT FARGO, ND (LAT 46 51 40 LONG 096 47 00)									
OCT , 1978									
18...	1.9	324	297	.44	78.7	--	130	0	10
SEP , 1979									
07...	16	239	252	.33	467	--	160	20	0
05056100 - MAUVAIS COULEE NR CANDO, ND (LAT 48 26 53 LONG 099 06 08)									
OCT , 1978									
11...	2.2	672	647	.91	.02	--	0	240	200
APR , 1979									
22...	8.3	196	160	.27	309	--	60	200	50
AUG									
22...	15	652	625	.89	.30	--	0	120	80
SEP									
19...	14	698	683	.95	.08	--	100	80	40
05056200 - EDMORE COULEE NR EDMORE, ND (LAT 48 20 14 LONG 098 39 33)									
APR , 1979									
22...	11	182	152	.25	394	--	0	280	50
30...	16	222	215	.30	343	--	90	0	10
JUL									
19...	5.1	648	596	.88	8.22	--	30	320	100
05059500 - SHEYENNE RIVER AT WEST FARGO, ND (LAT 46 53 28 LONG 096 54 24)									
OCT , 1978									
26...	5.8	503	516	.68	114	--	160	60	80
MAY , 1979									
01...	9.7	222	245	.30	1830	--	60	20	110
SEP									
06...	19	565	535	.77	146	--	260	0	20
05059600 - MAPLE RIVER NR HOPE, ND (LAT 47 19 30 LONG 097 47 25)									
APR , 1979									
25...	17	466	425	.63	69.2	--	60	60	10
JUN									
21...	18	1820	1680	2.48	.05	--	0	160	6200

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE (DEG C) (00010)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)
PART 5. HUDSON BAY BASIN										
RED RIVER OF THE NORTH BASIN										
05060500 - RUSH RIVER AT AMENIA, ND (LAT 47 01 00 LONG 097 12 50)										
APR , 1979										
25...	1430	243	520	8.0	8.5	210	86	54	18	15
JUN										
22...	1520	25	1510	8.0	17.5	710	390	170	69	82
JUL										
18...	1445	.77	1490	7.8	25.0	660	340	150	69	86
05082500 - RED RIVER OF THE NORTH AT GRAND FORKS, ND (LAT 47 56 34 LONG 097 03 10)										
OCT , 1978										
24...	1450	772	535	8.6	8.0	240	47	52	27	17
APR , 1979										
27...	1050	79700	335	7.5	8.0	140	43	36	12	7.1
*27...	1051	79900	335	7.5	8.0	150	63	37	13	7.5
SEP										
24...	1610	1850	405	8.2	15.0	200	10	41	24	9.4
05083600 - MIDDLE BRANCH FOREST RIVER NR WHITMAN, ND (LAT 48 14 50 LONG 098 07 00)										
APR , 1979										
21...	1230	500	350	7.4	1.5	29	0	11	.4	21
JUL										
03...	1125	.18	1500	7.8	20.0	450	240	96	51	160
05084000 - FOREST RIVER NR FORDVILLE, ND (LAT 48 11 50 LONG 097 43 49)										
OCT , 1978										
03...	1500	7.7	615	7.3	10.5	300	67	73	29	22
APR , 1979										
21...	1825	2630	259	7.9	3.5	110	35	29	9.1	13
SEP										
13...	1855	4.2	730	7.8	13.5	330	71	94	23	17
05085000 - FOREST RIVER AT MINTO, ND (LAT 48 16 10 LONG 097 22 10)										
OCT , 1978										
04...	1045	4.1	775	7.8	10.5	320	84	76	32	45
APR , 1979										
21...	1150	6210	240	7.9	3.5	110	34	32	7.3	6.0
SEP										
12...	1025	35	665	8.4	15.5	270	51	71	23	33
05089000 - SOUTH BRANCH PARK RIVER BELOW HOMME DAM, ND (LAT 48 24 07 LONG 097 46 55)										
OCT , 1978										
10...	1140	1.4	675	7.3	10.5	270	82	67	25	40
APR , 1979										
26...	1645	408	318	8.3	4.5	120	39	32	9.7	20
SEP										
13...	1600	5.3	890	8.1	15.5	270	91	71	23	43
05089200 - NORTH BRANCH PARK RIVER AT GARDAR, ND (LAT 48 35 30 LONG 097 52 50)										
AUG , 1979										
10...	0950	.12	755	8.0	16.5	300	94	79	26	50
05090000 - PARK RIVER AT GRAFTON, ND (LAT 48 25 24 LONG 097 24 30)										
OCT , 1978										
04...	1350	.07	1050	7.7	10.5	310	100	70	33	110
APR , 1979										
25...	0920	3640	300	8.1	4.0	130	46	35	10	16
SEP										
11...	1740	3.6	1110	7.9	17.0	370	140	89	36	97

* - Quality assurance split sample.

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE (MG/L AS HCO3) (00440)	CAR-BONATE (MG/L AS CO3) (00445)	ALKA-LINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)
PART 5. HUDSON BAY BASIN										
RED RIVER OF THE NORTH BASIN										
05060500 - RUSH RIVER AT AMENIA, ND (LAT 47 01 00 LONG 097 12 50)										
APR , 1979										
25...	13	.5	6.8	150	0	123	2.4	110	9.0	.1
JUN										
22...	20	1.3	11	391	0	321	6.3	520	42	.2
JUL										
18...	22	1.5	11	390	0	320	9.9	480	39	.2
05082500 - RED RIVER OF THE NORTH AT GRAND FORKS, ND (LAT 47 56 34 LONG 097 03 10)										
OCT , 1978										
24...	13	.5	3.9	237	0	194	1.0	67	9.4	.2
APR , 1979										
27...	10	.3	5.2	118	0	97	6.0	51	5.1	.1
27...	10	.3	6.6	--	--	83	--	57	4.9	.2
SEP										
24...	9	.3	2.7	233	0	191	2.4	30	5.3	.1
05083600 - MIDDLE BRANCH FOREST RIVER NR WHITMAN, ND (LAT 48 14 50 LONG 098 07 00)										
APR , 1979										
21...	57	1.7	4.1	50	0	41	3.2	16	3.9	.1
JUL										
03...	43	3.3	9.3	252	0	207	6.4	500	75	.2
05084000 - FOREST RIVER NR FORDVILLE, ND (LAT 48 11 50 LONG 097 43 49)										
OCT , 1978										
03...	13	.6	4.8	286	0	235	23	100	6.2	.1
APR , 1979										
21...	20	.5	4.1	91	0	75	1.8	48	4.9	.1
SEP										
13...	10	.4	4.0	315	0	258	8.0	110	7.1	.3
05085000 - FOREST RIVER AT MINTO, ND (LAT 48 16 10 LONG 097 22 10)										
OCT , 1978										
04...	23	1.1	5.3	289	0	237	7.3	120	49	.2
APR , 1979										
21...	10	.2	4.6	93	0	76	1.9	41	4.6	.1
SEP										
12...	20	.9	6.0	269	0	221	1.7	100	14	.2
05089000 - SOUTH BRANCH PARK RIVER BELOW HOMME DAM, ND (LAT 48 24 07 LONG 097 46 55)										
OCT , 1978										
10...	24	1.1	6.1	229	0	188	18	150	11	.2
APR , 1979										
26...	26	.8	4.4	98	0	80	.8	74	5.9	.1
SEP										
13...	25	1.1	6.1	221	0	181	2.8	170	15	.3
05089200 - NORTH BRANCH PARK RIVER AT GARDAR, ND (LAT 48 35 30 LONG 097 52 50)										
AUG , 1979										
10...	26	1.2	10	--	--	210	--	170	26	.3
05090000 - PARK RIVER AT GRAFTON, ND (LAT 48 25 24 LONG 097 24 30)										
OCT , 1978										
04...	43	2.7	8.1	257	0	211	8.2	190	110	.3
APR , 1979										
25...	21	.6	5.0	101	0	83	1.3	64	7.5	.1
SEP										
11...	36	2.2	7.4	285	0	234	5.7	240	87	.3

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
PART 5. HUDSON BAY BASIN									
RED RIVER OF THE NORTH BASIN									
05060500 - RUSH RIVER AT AMENIA, ND (LAT 47 01 00 LONG 097 12 50)									
APR , 1979									
25...	13	321	300	.44	211	--	60	60	90
JUN									
22...	6.6	1150	1090	1.56	77.6	--	10	140	60
JUL									
18...	17	1120	1050	1.52	2.33	--	300	430	440
05082500 - RED RIVER OF THE NORTH AT GRAND FORKS, ND (LAT 47 56 34 LONG 097 03 10)									
OCT , 1978									
24...	2.0	342	295	.47	713	--	130	60	20
APR , 1979									
27...	13	231	188	.31	49700	--	300	260	10
27...	12	212	188	.29	45700	--	60	20	0
SEP									
24...	8.7	220	236	.30	1100	--	1	0	0
05083600 - MIDDLE BRANCH FOREST RIVER NR WHITMAN, ND (LAT 48 14 50 LONG 098 07 00)									
APR , 1979									
21...	11	131	92	.18	177	--	90	100	40
JUL									
03...	13	1060	1030	1.44	.52	--	170	280	240
05084000 - FOREST RIVER NR FORDVILLE, ND (LAT 48 11 50 LONG 097 43 49)									
OCT , 1978									
03...	7.2	430	384	.58	8.94	--	380	0	140
APR , 1979									
21...	10	187	164	.25	1330	--	210	260	270
SEP									
13...	26	440	437	.60	4.99	--	260	40	200
05085000 - FOREST RIVER AT MINTO, ND (LAT 48 16 10 LONG 097 22 10)									
OCT , 1978									
04...	7.2	500	478	.68	5.53	--	60	20	380
APR , 1979									
21...	10	171	152	.23	2870	--	210	220	90
SEP									
12...	26	408	406	.55	38.6	--	160	20	40
05089000 - SOUTH BRANCH PARK RIVER BELOW HUMME DAM, ND (LAT 48 24 07 LONG 097 46 55)									
OCT , 1978									
10...	10	452	422	.61	1.71	--	30	20	220
APR , 1979									
26...	16	231	211	.31	254	--	240	100	40
SEP									
13...	13	475	451	.65	6.80	--	230	80	480
05089200 - NORTH BRANCH PARK RIVER AT GARDAR, ND (LAT 48 35 30 LONG 097 52 50)									
AUG , 1979									
10...	26	--	514	.70	.17	.01	110	<10	--
05090000 - PARK RIVER AT GRAFTON, ND (LAT 48 25 24 LONG 097 24 30)									
OCT , 1978									
04...	14	668	663	.91	.13	--	410	60	520
APR , 1979									
25...	15	232	203	.32	2280	--	150	140	100
SEP									
11...	19	744	717	1.01	7.23	--	30	450	80

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE (DEG C) (00010)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)
PART 5. HUDSON BAY BASIN										
RED RIVER OF THE NORTH BASIN										
05092000 - RED RIVER OF THE NORTH AT DRAYTON, ND (LAT 48 34 20 LONG 097 08 50)										
OCT , 1978										
02...	1530	1000	760	8.3	15.0	280	68	62	30	48
APR , 1979										
28...	1145	92900	360	7.5	9.0	120	29	29	12	13
SEP										
11...	1300	2160	560	8.5	19.0	250	56	95	3.2	28
05092200 - PEMBINA COUNTY DRAIN 20 NR GLASSTON, ND (LAT 48 41 49 LONG 097 23 03)										
APR , 1979										
20...	1745	923	268	8.1	9.0	130	62	33	12	3.3
AUG										
31...	1240	7.6	990	8.0	21.0	490	440	92	63	24
05098700 - HIDDEN ISLAND COULEE NR HANSBORO, ND (LAT 48 57 10 LONG 099 25 35)										
APR , 1979										
26...	1650	168	340	8.3	5.0	130	61	29	14	9.5
05098800 - CYPRESS CREEK NR SARLES, ND (LAT 48 56 35 LONG 098 57 05)										
APR , 1979										
26...	1235	190	485	8.2	5.0	180	96	43	18	24
05100000 - PEMBINA RIVER AT NECHE, ND (LAT 48 59 20 LONG 097 33 05)										
OCT , 1978										
05...	1045	27	875	8.4	10.0	400	120	96	39	53
APR , 1979										
25...	1340	5800	355	7.9	4.0	140	53	30	16	19
SEP										
12...	1740	63	950	7.9	16.0	370	110	97	31	45
05116500 - DES LACS RIVER AT FOXHOLM, ND (LAT 48 22 14 LONG 101 34 11)										
APR , 1979										
23...	1215	534	380	7.9	5.0	150	55	35	15	17
05117500 - SOURIS RIVER ABOVE MINOT, ND (LAT 48 14 45 LONG 101 22 15)										
MAY , 1979										
01...	1030	4550	610	8.1	4.5	180	35	38	21	59
05122000 - SOURIS RIVER NR BANTRY, ND (LAT 48 30 20 LONG 100 26 04)										
MAY , 1979										
02...	1830	4120	498	8.0	8.0	160	47	35	17	40
05123400 - WILLOW CREEK NR WILLOW CITY, ND (LAT 48 35 20 LONG 100 26 30)										
APR , 1979										
25...	1300	2070	360	7.7	4.0	100	26	21	12	33
JUL										
11...	1330	.17	1320	8.2	26.0	--	--	--	--	--
05123510 - DEEP RIVER NR UPHAM, ND (LAT 48 35 03 LONG 100 51 44)										
APR , 1979										
26...	1345	1960	280	7.8	4.0	110	40	23	13	8.9
*26...	1346	1960	280	7.8	4.0	100	42	22	12	9.2
SEP										
07...	1030	.09	960	8.5	15.5	420	110	66	62	47

* - Quality assurance split sample.

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	SODIUM PERCENT (00932)	SODIUM ADSORPTION RATIO (00931)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	BICARBONATE (MG/L AS HCO3) (00440)	CARBONATE (MG/L AS CO3) (00445)	ALKALINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DISSOLVED (MG/L AS CO2) (00405)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)
PART 5. HUDSON BAY BASIN										
RED RIVER OF THE NORTH BASIN										
05092000 - RED RIVER OF THE NORTH AT DRAYTON, ND (LAT 48 34 20 LONG 097 08 50)										
OCT , 1978										
02...	27	1.3	4.9	257	0	211	2.1	92	55	.1
APR , 1979										
28...	18	.5	4.8	113	0	93	5.7	51	6.2	.1
SEP										
11...	19	.8	3.6	237	0	194	1.2	69	34	.2
05092200 - PEMBINA COUNTY DRAIN 20 NR GLASSTON, ND (LAT 48 41 49 LONG 097 23 03)										
APR , 1979										
20...	5	.1	2.7	85	0	70	1.1	64	3.2	.2
AUG										
31...	10	.5	5.0	55	0	45	.9	450	32	.3
05098700 - HIDDEN ISLAND COULEE NR MANSBURG, ND (LAT 48 57 10 LONG 099 25 35)										
APR , 1979										
26...	13	.4	4.4	84	0	69	.7	70	2.8	.1
05098800 - CYPRESS CREEK NR SARLES, ND (LAT 48 56 35 LONG 098 57 05)										
APR , 1979										
26...	22	.8	4.2	104	0	85	1.0	130	5.2	.1
05100000 - PEMBINA RIVER AT NECHE, ND (LAT 48 59 20 LONG 097 33 05)										
OCT , 1978										
05...	22	1.2	8.0	339	0	278	2.2	200	18	.2
APR , 1979										
25...	22	.7	3.6	107	0	88	2.2	76	5.4	.1
SEP										
12...	21	1.0	7.4	319	0	262	6.4	190	18	.3
05116500 - DES LACS RIVER AT FOXHOLM, ND (LAT 48 22 14 LONG 101 34 11)										
APR , 1979										
23...	19	.6	9.7	115	0	94	2.3	88	5.3	.1
05117500 - SOURIS RIVER ABOVE MINOT, ND (LAT 48 14 45 LONG 101 22 15)										
MAY , 1979										
01...	40	1.9	8.9	179	0	147	2.3	150	10	.1
05122000 - SOURIS RIVER NR BANTRY, ND (LAT 48 30 20 LONG 100 26 04)										
MAY , 1979										
02...	34	1.4	10	--	--	110	--	120	8.6	.1
05123400 - WILLOW CREEK NR WILLOW CITY, ND (LAT 48 35 20 LONG 100 26 30)										
APR , 1979										
25...	39	1.4	7.7	92	0	75	2.9	88	12	.1
JUL										
11...	--	--	--	--	--	--	--	--	--	--
05123510 - DEEP RIVER NR UPHAM, ND (LAT 48 35 03 LONG 100 51 44)										
APR , 1979										
26...	14	.4	9.4	87	0	71	2.2	44	12	.0
26...	14	.4	11	--	--	62	--	45	9.8	.1
SEP										
07...	19	1.0	12	81	0	312	1.9	160	43	.1

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
05092000 - RED RIVER OF THE NORTH AT DRAYTON, ND (LAT 48 34 20 LONG 097 08 50)									
OCT , 1978									
02...	9.6	472	429	.64	1270	--	310	100	20
APR , 1979									
28...	12	210	164	.29	52700	--	150	40	20
SEP									
11...	11	354	361	.48	2070	--	100	140	0
05092200 - PEMBINA COUNTY DRAIN 20 NR GLASSTON, ND (LAT 48 41 49 LONG 097 23 03)									
APR , 1979									
20...	7.0	174	168	.24	434	--	150	340	20
AUG									
31...	4.9	751	699	1.02	15.4	--	70	160	80
05098700 - HIDDEN ISLAND COULEE NR HANSBORO, ND (LAT 48 57 10 LONG 099 25 35)									
APR , 1979									
26...	12	238	184	.32	108	--	270	100	20
05098800 - CYPRESS CREEK NR SARLES, ND (LAT 48 56 35 LONG 098 57 05)									
APR , 1979									
26...	17	328	293	.45	168	--	270	0	10
05100000 - PEMBINA RIVER AT NECHE, ND (LAT 48 59 20 LONG 097 33 05)									
OCT , 1978									
05...	9.2	639	591	.87	46.6	--	250	100	70
APR , 1979									
25...	14	254	217	.35	3980	--	240	100	170
SEP									
12...	25	583	571	.79	99.2	--	230	200	100
05116500 - DES LACS RIVER AT FOXHOLM, ND (LAT 48 22 14 LONG 101 34 11)									
APR , 1979									
23...	8.0	268	235	.36	386	--	150	200	110
05117500 - SOURIS RIVER ABOVE MINOT, ND (LAT 48 14 45 LONG 101 22 15)									
MAY , 1979									
01...	5.8	404	381	.55	4960	--	240	80	100
05122000 - SOURIS RIVER NR BANTRY, ND (LAT 48 30 20 LONG 100 26 04)									
MAY , 1979									
02...	8.8	325	306	.44	3620	--	100	150	10
05123400 - WILLOW CREEK NR WILLOW CITY, ND (LAT 48 35 20 LONG 100 26 30)									
APR , 1979									
25...	11	258	230	.35	1440	--	300	0	10
JUL									
11...	--	--	--	--	--	--	--	--	--
05123510 - DEEP RIVER NR UPHAM, ND (LAT 48 35 03 LONG 100 51 44)									
APR , 1979									
26...	9.9	209	163	.28	1110	--	300	100	30
26...	11	198	168	.27	1050	2.3	40	120	20
SEP									
07...	4.8	641	583	.87	.16	--	130	120	20

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE (DEG C) (00010)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)
PART 5. HUDSON BAY BASIN										
RED RIVER OF THE NORTH BASIN										
05123700 - CUT BANK CREEK AT N LAKE OUTLET NR GRANVILLE, ND (LAT 48 23 10 LONG 100 46 00)										
APR , 1979										
27...	1325	296	360	7.8	6.0	130	48	21	19	24
SEP										
06...	1515	5.0	960	8.0	19.0	350	60	60	49	83
05123900 - BOUNDARY CREEK NR LANDA, ND (LAT 48 48 46 LONG 100 51 46)										
APR , 1979										
22...	1330	350	375	7.8	7.0	120	21	32	9.7	27
PART 6. MISSOURI RIVER BASIN										
YELLOWSTONE RIVER BASIN										
06329597 - CHARBONNEAU CREEK NR CHARBONNEAU, ND (LAT 47 51 10 LONG 103 47 40)										
OCT , 1978										
02...	1635	.30	2480	8.8	12.0	190	0	33	26	560
APR , 1979										
10...	0920	1460	200	7.9	.5	70	0	12	9.7	18
SEP										
04...	1525	.15	2170	8.0	21.0	190	0	38	23	460
LITTLE MUDDY RIVER BASIN										
06331000 - LITTLE MUDDY RIVER BL COW CREEK NR WILLISTON, ND (LAT 48 17 04 LONG 103 34 21)										
OCT , 1978										
03...	1620	12	1900	8.6	12.5	410	0	74	55	330
APR , 1979										
20...	1030	5900	235	8.6	4.0	86	0	13	13	14
AUG										
03...	0910	9.9	1890	8.4	21.5	420	0	65	63	360
WHITE EARTH RIVER BASIN										
06332000 - WHITE EARTH RIVER AT WHITE EARTH, ND (LAT 48 22 35 LONG 102 46 00)										
OCT , 1978										
04...	1550	6.5	1680	8.8	10.0	340	0	46	55	280
APR , 1979										
19...	1630	3540	360	8.4	1.5	110	2	16	17	31
AUG										
02...	0940	2.0	2000	8.3	20.5	260	0	38	40	420
LITTLE MISSOURI RIVER BASIN										
06335000 - LITTLE BEAVER CREEK NR MARMARTH, ND (LAT 46 16 29 LONG 103 58 33)										
APR , 1979										
04...	1600	226	840	8.2	.0	200	63	36	27	100
10...	1440	836	565	8.0	3.0	130	18	27	15	66
AUG										
02...	1045	5.2	1490	8.6	22.5	230	0	46	28	270
*02...	1050	5.2	1490	8.6	22.5	230	0	47	27	270
06335500 - LITTLE MISSOURI RIVER AT MARMARTH, ND (LAT 46 17 44 LONG 103 55 06)										
APR , 1979										
10...	1835	3890	542	8.2	5.0	110	12	27	10	72
SEP										
14...	1220	68	1270	8.1	13.0	110	0	23	13	250

* - Quality assurance split sample.

DATE	SODIUM PERCENT (00932)	SODIUM ADSORPTION RATIO (00931)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	BICARBONATE (MG/L AS HCO3) (00440)	CARBONATE (MG/L AS CO3) (00445)	ALKALINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DISSOLVED (MG/L AS CO2) (00405)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)
PART 5. HUDSON BAY BASIN										
RED RIVER OF THE NORTH BASIN										
05123700 - CUT BANK CREEK AT N LAKE OUTLET NR GRANVILLE, ND (LAT 48 23 10 LONG 100 46 00)										
APR , 1979										
27...	27	.9	7.9	101	0	83	2.6	96	11	.1
SEP										
06...	33	1.9	14	355	0	291	5.7	220	28	.1
05123900 - BOUNDARY CREEK NR LANDA, ND (LAT 48 48 46 LONG 100 51 46)										
APR , 1979										
22...	31	1.1	8.2	120	0	98	3.0	86	4.9	.1
PART 6. MISSOURI RIVER BASIN										
YELLOWSTONE RIVER BASIN										
06329597 - CHARBONNEAU CREEK NR CHARBONNEAU, ND (LAT 47 51 10 LONG 103 47 40)										
OCT , 1978										
02...	86	18	9.1	784	7	655	2.0	760	6.1	.6
APR , 1979										
10...	33	.9	6.4	89	0	73	1.8	42	3.9	.1
SEP										
04...	83	15	7.4	720	6	601	12	590	6.9	.5
LITTLE MUDDY RIVER BASIN										
06331000 - LITTLE MUDDY RIVER BL COW CREEK NR WILLISTON, ND (LAT 48 17 04 LONG 103 34 21)										
OCT , 1978										
03...	63	7.1	10	646	0	530	2.6	580	8.9	.2
APR , 1979										
20...	24	.7	6.8	115	0	94	.5	23	2.1	.1
AUG										
03...	64	7.6	8.8	706	0	579	4.5	590	11	.3
WHITE EARTH RIVER BASIN										
06332000 - WHITE EARTH RIVER AT WHITE EARTH, ND (LAT 48 22 35 LONG 102 46 00)										
OCT , 1978										
04...	63	6.6	8.9	618	10	524	1.6	370	56	.2
APR , 1979										
19...	36	1.3	6.8	132	0	108	.8	70	9.6	.0
AUG										
02...	77	11	7.0	825	0	677	6.6	440	33	.9
LITTLE MISSOURI RIVER BASIN										
06335000 - LITTLE BEAVER CREEK NR MARMARTH, ND (LAT 46 16 29 LONG 103 58 33)										
APR , 1979										
04...	51	3.1	4.9	168	0	138	1.7	270	5.8	.1
10...	52	2.5	3.3	136	0	112	2.2	160	3.2	.1
AUG										
02...	71	7.7	6.2	370	9	318	1.6	470	8.2	.4
02...	71	7.8	6.8	372	7	317	1.6	470	8.1	.4
06335500 - LITTLE MISSOURI RIVER AT MARMARTH, ND (LAT 46 17 44 LONG 103 55 06)										
APR , 1979										
10...	58	3.0	3.3	118	0	97	1.2	160	4.4	.1
SEP										
14...	82	10	5.5	249	0	204	3.2	410	29	.4

ANALYSES OF SAMPLES AT MISCELLANEOUS SURFACE-WATER QUALITY SITES

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
PART 5. HUDSON BAY BASIN									
RED RIVER OF THE NORTH BASIN									
05123700 - CUT BANK CREEK AT N LAKE OUTLET NR GRANVILLE, ND (LAT 48 23 10 LONG 100 46 00)									
APR , 1979									
27...	7.0	263	236	.36	210	--	30	610	30
SEP									
06...	22	644	651	.88	8.69	--	230	80	0
05123900 - BOUNDARY CREEK NR LANDA, ND (LAT 48 48 46 LONG 100 51 46)									
APR , 1979									
22...	14	261	241	.35	247	--	150	80	10
PART 6. MISSOURI RIVER BASIN									
YELLOWSTONE RIVER BASIN									
06329597 - CHARBONNEAU CREEK NR CHARBONNEAU, ND (LAT 47 51 10 LONG 103 47 40)									
OCT , 1978									
02...	4.4	1820	1790	2.48	1.47	--	440	890	40
APR , 1979									
10...	6.0	147	142	.20	579	--	120	60	80
SEP									
04...	11	1520	1500	2.07	.62	--	230	220	60
LITTLE MUDDY RIVER BASIN									
06331000 - LITTLE MUDDY RIVER BL COW CREEK NR WILLISTON, ND (LAT 48 17 04 LONG 103 34 21)									
OCT , 1978									
03...	7.2	1360	1380	1.85	44.1	--	500	320	40
APR , 1979									
20...	7.5	132	136	.18	2100	--	0	100	170
AUG									
03...	14	1450	1460	1.97	39.0	--	600	530	10
WHITE EARTH RIVER BASIN									
06332000 - WHITE EARTH RIVER AT WHITE EARTH, ND (LAT 48 22 35 LONG 102 46 00)									
OCT , 1978									
04...	6.3	1170	1140	1.59	20.5	--	530	1700	20
APR , 1979									
19...	6.9	197	223	.27	1880	--	120	20	40
AUG									
02...	15	1430	1400	1.94	7.72	--	430	450	120
LITTLE MISSOURI RIVER BASIN									
06335000 - LITTLE BEAVER CREEK NR MARMARTH, ND (LAT 46 16 29 LONG 103 58 33)									
APR , 1979									
04...	9.1	563	536	.77	344	--	120	20	70
10...	5.1	345	347	.47	779	--	150	0	70
AUG									
02...	8.5	1020	1030	1.39	14.3	--	330	100	80
02...	9.0	1100	1030	1.50	15.4	--	400	240	80
06335500 - LITTLE MISSOURI RIVER AT MARMARTH, ND (LAT 46 17 44 LONG 103 55 06)									
APR , 1979									
10...	4.1	353	340	.48	3710	--	120	340	30
SEP									
14...	10	871	864	1.18	160	--	360	260	20

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE (DEG C) (00010)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)
PART 6. MISSOURI RIVER BASIN										
KNIFE RIVER BASIN										
06339500 - KNIFE RIVER NR GOLDEN VALLEY, ND (LAT 47 09 40 LONG 102 03 39)										
APR , 1979										
13...	1415	1460	475	7.5	2.0	91	0	20	10	62
AUG										
20...	1710	6.2	1850	8.1	21.5	310	0	54	43	330
06340200 - WEST BRANCH OTTER CREEK NR BEULAH, ND (LAT 47 08 05 LONG 101 39 35)										
APR , 1979										
25...	1335	4.7	1120	7.8	6.0	280	70	53	36	150
AUG										
29...	0945	.08	1500	8.1	19.0	270	0	41	41	260
SQUARE BUTTE CREEK BASIN										
06342260 - SQUARE BUTTE CREEK BELOW CENTER, ND (LAT 47 03 25 LONG 101 11 35)										
APR , 1979										
19...	1045	323	700	8.3	9.0	180	70	31	25	77
AUG										
29...	0850	1.4	1210	8.2	18.0	360	0	85	36	170
BURNT CREEK BASIN										
06342450 - BURNT CREEK NR BISMARCK, ND (LAT 46 54 54 LONG 100 48 48)										
APR , 1979										
19...	1515	1420	135	8.6	3.0	49	0	8.1	7.1	6.1
HEART RIVER BASIN										
06345500 - HEART RIVER NR RICHARDTON, ND (LAT 46 44 46 LONG 102 18 27)										
APR , 1979										
11...	1525	3070	555	8.0	2.0	120	32	25	14	64
06346000 - HEART RIVER NR LARK, ND (LAT 46 36 37 LONG 101 22 54)										
APR , 1979										
16...	1345	2450	725	8.1	4.0	220	79	40	29	84
AUG										
27...	1415	26	1220	8.1	23.0	300	30	53	41	160
06348500 - SWEETBRIAR CREEK NR JUDSON, ND (LAT 46 51 06 LONG 101 15 10)										
APR , 1979										
16...	0915	240	460	8.0	2.0	100	0	21	12	65
AUG										
29...	1100	1.1	850	8.4	21.0	180	0	40	19	150
CANNONBALL RIVER BASIN										
06351000 - CANNONBALL RIVER BELOW BENTLEY, ND (LAT 46 21 30 LONG 102 02 30)										
APR , 1979										
13...	1200	1950	560	7.9	.5	160	70	33	19	55
JUL										
31...	1045	38	1510	8.0	21.0	440	190	80	58	210

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE (MG/L AS HCO3) (00440)	CAR-BONATE (MG/L AS CO3) (00445)	ALKA-LINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)
PART 6. MISSOURI RIVER BASIN										
KNIFE RIVER BASIN										
06339500 - KNIFE RIVER NR GOLDEN VALLEY, ND (LAT 47 09 40 LONG 102 03 39)										
APR , 1979										
13...	58	2.8	6.6	130	0	107	6.6	120	2.7	.1
AUG										
20...	69	8.1	8.3	546	0	448	6.9	570	3.9	.5
06340200 - WEST BRANCH OTTER CREEK NR BEULAH, ND (LAT 47 08 05 LONG 101 39 35)										
APR , 1979										
25...	53	3.9	6.2	257	0	211	6.5	390	4.2	.1
AUG										
29...	67	6.9	7.7	415	0	340	5.3	490	2.4	.3
SQUARE BUTTE CREEK BASIN										
06342260 - SQUARE BUTTE CREEK BELOW CENTER, ND (LAT 47 03 25 LONG 101 11 35)										
APR , 1979										
19...	47	2.5	8.2	134	0	110	1.1	240	4.1	.2
AUG										
29...	50	3.9	5.0	453	0	372	4.6	350	6.5	.3
BURNT CREEK BASIN										
06342450 - BURNT CREEK NR BISMARCK, ND (LAT 46 54 54 LONG 100 48 48)										
APR , 1979										
19...	19	.4	4.3	72	0	59	.3	7.0	1.4	.1
HEART RIVER BASIN										
06345500 - HEART RIVER NR RICHARDTON, ND (LAT 46 44 46 LONG 102 18 27)										
APR , 1979										
11...	52	2.5	5.4	107	0	88	1.7	160	4.7	.1
06348000 - HEART RIVER NR LARK, ND (LAT 46 36 37 LONG 101 22 54)										
APR , 1979										
16...	44	2.5	7.2	171	0	140	2.2	240	5.2	.1
AUG										
27...	53	4.0	6.4	330	0	271	4.2	370	4.0	.3
06348500 - SWEETBRIAR CREEK NR JUDSON, ND (LAT 46 51 06 LONG 101 15 10)										
APR , 1979										
16...	56	2.8	7.1	176	0	144	2.8	100	3.1	.1
AUG										
29...	64	4.9	5.1	370	0	303	2.4	180	6.0	.4
CANNONBALL RIVER BASIN										
06351000 - CANNONBALL RIVER BELOW BENTLEY, ND (LAT 46 21 30 LONG 102 02 30)										
APR , 1979										
13...	42	1.9	5.7	111	0	91	2.2	170	3.1	.1
JUL										
31...	50	4.4	8.7	305	0	250	4.9	610	7.2	.3

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
PART 6. MISSOURI RIVER BASIN									
KNIFE RIVER BASIN									
06339500 - KNIFE RIVER NR GOLDEN VALLEY, ND (LAT 47 09 40 LONG 102 03 39)									
APR , 1979									
13...	3.6	282	290	.38	1110	--	80	360	80
AUG									
20...	9.4	1290	1290	1.75	21.6	--	70	180	20
06340200 - WEST BRANCH OTTER CREEK NR BEULAH, ND (LAT 47 08 05 LONG 101 39 35)									
APR , 1979									
25...	9.1	801	776	1.09	10.2	--	330	220	110
AUG									
29...	3.2	1090	1050	1.48	.24	--	70	220	90
SQUARE BUTTE CREEK BASIN									
06342260 - SQUARE BUTTE CREEK BELOW CENTER, ND (LAT 47 03 25 LONG 101 11 35)									
APR , 1979									
19...	15	485	467	.66	423	--	90	0	30
AUG									
29...	19	893	896	1.21	3.50	--	420	180	120
BURNT CREEK BASIN									
06342450 - BURNT CREEK NR BISMARCK, ND (LAT 46 54 54 LONG 100 48 48)									
APR , 1979									
19...	4.4	84	74	.11	322	--	180	240	30
HEART RIVER BASIN									
06345500 - HEART RIVER NR RICHARDTON, ND (LAT 46 44 46 LONG 102 18 27)									
APR , 1979									
11...	4.9	352	331	.48	2920	--	150	120	100
06348000 - HEART RIVER NR LARK, ND (LAT 46 36 37 LONG 101 22 54)									
APR , 1979									
16...	6.4	499	497	.68	3300	--	120	320	30
AUG									
27...	5.9	826	803	1.12	58.0	--	0	6	0
06348500 - SWEETBRIAR CREEK NR JUDSON, ND (LAT 46 51 06 LONG 101 15 10)									
APR , 1979									
16...	6.0	344	302	.47	223	--	180	1100	210
AUG									
29...	4.5	582	588	.79	1.78	--	320	140	40
CANNONBALL RIVER BASIN									
06351000 - CANNONBALL RIVER BELOW BENTLEY, ND (LAT 46 21 30 LONG 102 02 30)									
APR , 1979									
13...	4.6	362	346	.49	1910	--	180	140	130
JUL									
31...	6.1	1180	1130	1.60	121	--	300	80	20

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE (DEG C) (00010)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)
PART 6. MISSOURI RIVER BASIN										
CANNONBALL RIVER BASIN										
06351680 - WHITE BUTTE FORK CEDAR CREEK NR SCRANTON, ND (LAT 46 19 20 LONG 102 59 45)										
APR , 1979										
20...	1545	32	920	7.8	11.0	240	110	47	30	96
AUG										
03...	1255	.01	4250	8.0	25.5	1500	1300	220	250	640
06352000 - CEDAR CREEK NR HAYNES, ND (LAT 46 09 15 LONG 102 28 25)										
APR , 1979										
13...	1630	849	710	8.0	1.0	200	100	37	26	73
MAY										
09...	1100	58	2000	8.3	7.0	630	310	110	86	260
*09...	1105	58	2000	8.3	7.0	620	320	110	85	270
JUL										
31...	1450	3.4	1990	8.1	23.0	530	160	84	78	310
06353000 - CEDAR CREEK NR RALEIGH, ND (LAT 46 05 00 LONG 101 20 00)										
OCT , 1978										
24...	1300	9.1	2600	7.9	8.0	600	260	82	96	390
APR , 1979										
10...	1340	1020	930	8.2	.5	290	160	46	42	110
AUG										
27...	1300	25	1160	7.8	21.0	260	57	52	32	170
BEAVER CREEK BASIN										
06354500 - BEAVER CREEK AT LINTON, ND (LAT 46 15 27 LONG 100 13 58)										
APR , 1979										
18...	1230	1710	200	8.0	5.0	60	0	13	6.7	15
SEP										
28...	1300	.37	1050	8.3	16.0	360	0	79	40	100
JAMES RIVER BASIN										
06467600 - JAMES RIVER NR MANFRED, ND (LAT 47 38 40 LONG 099 49 40)										
APR , 1979										
20...	1715	607	190	8.0	2.0	62	10	14	6.6	10
AUG										
07...	1330	.25	940	8.1	23.0	280	0	53	36	130
06468170 - JAMES RIVER NR GRACE CITY, ND (LAT 47 33 29 LONG 098 51 45)										
APR , 1979										
22...	1530	449	280	8.0	1.0	74	0	15	8.9	31
25...	1215	2028	225	8.0	2.0	82	12	17	9.6	13
SEP										
04...	1830	2.6	800	8.5	23.0	270	0	50	35	82

* - Quality assurance split sample.

DATE	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE (MG/L AS HCO3) (00440)	CAR-BONATE (MG/L AS CO3) (00445)	ALKA-LINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)
PART 6. MISSOURI RIVER BASIN										
CANNONBALL RIVER BASIN										
06351680 - WHITE BUTTE FORK CEDAR CREEK NR SCRANTON, ND (LAT 46 19 20 LONG 102 59 45)										
APR , 1979										
20...	46	2.7	4.7	163	0	134	4.1	510	4.6	.1
AUG										
03...	48	7.2	12	182	0	149	2.9	2700	21	.2
06352000 - CEDAR CREEK NR HAYNES, ND (LAT 46 09 15 LONG 102 28 25)										
APR , 1979										
13...	43	2.2	5.8	120	0	98	1.9	260	3.8	.1
MAY										
09...	47	4.5	7.7	388	0	318	3.1	840	10	.2
09...	48	4.7	9.2	--	--	300	--	850	9.8	.4
JUL										
31...	56	5.9	7.8	455	0	373	5.8	790	11	.4
06353000 - CEDAR CREEK NR RALEIGH, ND (LAT 46 05 00 LONG 101 20 00)										
OCT , 1978										
24...	58	6.9	9.8	420	0	344	8.5	1100	13	.4
APR , 1979										
10...	44	2.8	8.6	159	0	130	1.6	390	6.6	.2
AUG										
27...	58	4.6	6.7	250	0	205	6.3	410	7.0	.3
BEAVER CREEK BASIN										
06354500 - BEAVER CREEK AT LINTON, ND (LAT 46 15 27 LONG 100 13 58)										
APR , 1979										
18...	32	.8	6.4	87	0	71	1.4	26	2.0	.1
SEP										
28...	37	2.3	11	457	8	388	3.8	190	13	.3
JAMES RIVER BASIN										
06467600 - JAMES RIVER NR MANFRED, ND (LAT 47 38 40 LONG 099 49 40)										
APR , 1979										
20...	24	.6	5.4	63	0	52	1.0	28	4.0	.1
AUG										
07...	49	3.4	9.4	516	0	423	6.6	130	13	.3
06468170 - JAMES RIVER NR GRACE CITY, ND (LAT 47 33 29 LONG 098 51 45)										
APR , 1979										
22...	45	1.6	5.4	100	0	82	1.6	43	11	.1
25...	24	.6	5.7	85	0	70	1.4	35	4.1	.1
SEP										
04...	39	2.2	10	397	0	326	2.0	110	20	.2

ANALYSES OF SAMPLES AT MISCELLANEOUS SURFACE-WATER QUALITY SITES

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS- SOLVED (TONS PER DAY) (70302)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	BORON, DIS- SOLVED (UG/L AS B) (01020)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)
PART 6. MISSOURI RIVER BASIN									
CANNONBALL RIVER BASIN									
06351680 - WHITE BUTTE FORK CEDAR CREEK NR SCRANTON, ND (LAT 46 19 20 LONG 102 59 45)									
APR , 1979									
20...	9.9	639	583	.87	55.2	--	300	160	140
AUG									
03...	.0	4160	3910	5.66	.11	--	1200	240	80
06352000 - CEDAR CREEK NR HAYNES, ND (LAT 46 09 15 LONG 102 28 25)									
APR , 1979									
13...	7.3	448	473	.61	1030	--	120	220	80
MAY									
09...	5.7	1560	1510	2.12	244	--	420	0	70
09...	6.2	1590	1520	2.16	249	--	500	20	60
JUL									
31...	4.3	1540	1510	2.09	14.1	--	970	220	60
06353000 - CEDAR CREEK NR RALEIGH, ND (LAT 46 05 00 LONG 101 20 00)									
OCT , 1978									
24...	2.7	1800	1900	2.45	44.2	--	440	0	60
APR , 1979									
18...	8.8	746	691	1.01	2050	--	90	60	90
AUG									
27...	9.0	800	811	1.09	55.1	--	320	100	0
BEAVER CREEK BASIN									
06354500 - BEAVER CREEK AT LINTON, ND (LAT 46 15 27 LONG 100 13 58)									
APR , 1979									
18...	6.5	162	119	.22	748	--	180	220	140
SEP									
28...	19	686	686	.93	.69	--	290	220	320
JAMES RIVER BASIN									
06467600 - JAMES RIVER NR MANFRED, ND (LAT 47 38 40 LONG 099 49 40)									
APR , 1979									
20...	4.0	119	104	.16	195	--	210	160	40
AUG									
07...	23	683	649	.93	.46	--	70	160	100
06468170 - JAMES RIVER NR GRACE CITY, ND (LAT 47 33 29 LONG 098 51 45)									
APR , 1979									
22...	5.8	179	170	.24	217	--	210	60	90
25...	5.7	127	132	.17	695	--	210	20	70
SEP									
04...	5.3	528	508	.72	3.71	--	290	40	40

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE (DEG C) (00010)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)
PART 6. MISSOURI RIVER BASIN										
JAMES RIVER BASIN										
06469400 - PIPESTEM CREEK NR PINGREE, ND (LAT 47 10 03 LONG 098 58 07)										
APR , 1979										
20...	1015	2360	160	8.0	.5	54	8	13	5.2	7.5
SEP										
05...	1025	.99	800	8.4	20.0	300	0	62	35	73
06470000 - JAMES RIVER AT JAMESTOWN, ND (LAT 46 53 22 LONG 098 40 58)										
APR , 1979										
23...	1430	171	320	7.9	6.0	130	25	32	12	15
SEP										
05...	1750	261	430	8.1	21.0	170	15	41	16	25
PARK RIVER BASIN										
483209097383300 - NORTH BRANCH PARK RIVER AB HOOPLE, ND (LAT 48 32 09 LONG 097 38 33)										
AUG , 1979										
09...	1435	.03	945	7.7	20.5	450	160	110	43	46
483216097380300 - NORTH BRANCH PARK RIVER AT HOOPLE, ND (LAT 48 32 16 LONG 097 38 03)										
AUG , 1979										
09...	1500	.03	2050	7.9	23.0	510	310	94	67	240
483639097423600 - CART CREEK AB CRYSTAL, ND (LAT 48 36 39 LONG 097 42 36)										
AUG , 1979										
09...	1620	.01	945	7.9	19.0	430	91	110	38	52

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	SODIUM PERCENT (00932)	SODIUM ADSORPTION RATIO (00931)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	BICARBONATE (MG/L AS HCO3) (00440)	CARBONATE (MG/L AS CO3) (00445)	ALKALINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DISSOLVED (MG/L AS CO2) (00405)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)
PART 6. MISSOURI RIVER BASIN										
JAMES RIVER BASIN										
06469400 - PIPESTEM CREEK NR PINGREE, ND (LAT 47 10 05 LONG 098 58 07)										
APR , 1979										
20...	20	.4	9.4	56	0	46	.9	24	2.3	.1
SEP										
05...	34	1.8	11	412	0	338	2.6	130	11	.2
06470000 - JAMES RIVER AT JAMESTOWN, ND (LAT 46 53 22 LONG 098 40 58)										
APR , 1979										
23...	19	.6	7.0	127	0	104	2.6	56	7.1	.1
SEP										
05...	23	.8	8.7	187	0	153	2.4	71	6.6	.1
PARK RIVER BASIN										
483209097383300 - NORTH BRANCH PARK RIVER AB HOOPLE, ND (LAT 48 32 09 LONG 097 38 33)										
AUG , 1979										
09...	26	.9	11	--	--	290	--	220	27	.3
483216097380300 - NORTH BRANCH PARK RIVER AT HOOPLE, ND (LAT 48 32 16 LONG 097 38 03)										
AUG , 1979										
09...	50	4.6	13	--	--	200	--	230	400	.3
483639097423600 - CANT CREEK AB CRYSTAL, ND (LAT 48 36 39 LONG 097 42 36)										
AUG , 1979										
09...	28	1.1	8.4	--	--	340	--	200	16	.4

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
PART 6. MISSOURI RIVER BASIN									
JAMES RIVER BASIN									
06469400 - PIPESTEM CREEK NR PINGREE, ND (LAT 47 10 03 LONG 098 58 07)									
APR , 1979									
20...	4.3	108	94	.15	688	--	510	120	60
SEP									
05...	6.1	523	532	.71	1.40	--	260	160	100
06470000 - JAMES RIVER AT JAMESTOWN, ND (LAT 46 53 22 LONG 098 40 58)									
APR , 1979									
25...	6.9	228	199	.31	105	--	330	0	390
SEP									
05...	4.3	274	265	.37	193	--	230	120	20
PARK RIVER BASIN									
483209097383300 - NORTH BRANCH PARK RIVER AB HOOPLE, ND (LAT 48 32 09 LONG 097 38 33)									
AUG , 1979									
09...	27	635	659	.86	.05	.00	100	<10	150
483216097380300 - NORTH BRANCH PARK RIVER AT HOOPLE, ND (LAT 48 32 16 LONG 097 38 03)									
AUG , 1979									
09...	11	1310	1180	1.78	.11	.00	380	20	80
483639097423600 - CART CREEK AB CRYSTAL, ND (LAT 48 36 39 LONG 097 42 36)									
AUG , 1979									
09...	28	638	658	.87	.02	.04	160	10	720

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	TEMPER-ATURE (DEG C) (00010)	DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	TEMPER-ATURE (DEG C) (00010)
PART 5. HUDSON BAY BASIN									
RED RIVER OF THE NORTH BASIN									
05051500 - RED RIVER OF THE NORTH AT HAMPETON, ND (LAT 46 15 55 LONG 096 35 40)									
OCT , 1978					APR , 1979				
18...	1515	131	500	7.5	19...	1325	6640	420	9.0
NOV					22...	1605	4390	535	11.0
16...	1040	98	580	.0	26...	1645	2040	610	8.0
DEC					MAY				
20...	1155	101	625	.0	10...	1130	2060	730	7.5
JAN , 1979					JUN				
24...	1330	105	660	.0	29...	1400	1740	600	22.5
FEB					JUL				
13...	1200	112	625	.0	16...	1740	1120	500	23.5
MAR					AUG				
22...	1115	356	335	1.0	23...	0935	779	460	20.5
APR					SEP				
14...	1835	7000	365	.5	20...	1540	534	400	17.0
16...	1515	6180	365	2.5					
05051600 - WILD RICE RIVER NR RUTLAND, ND (LAT 46 01 20 LONG 097 30 40)									
APR , 1979					JUN , 1979				
10...	1735	8.0	400	.0	22...	1615	5.8	920	19.0
17...	1715	224	371	9.5	JUL				
27...	0950	110	670	5.0	17...	1330	1.0	1080	25.0
MAY					AUG				
09...	1045	30	780	7.5	22...	1735	1.2	1200	24.0
05051700 - WILD RICE RIVER NR CAYUGA, ND (LAT 46 07 30 LONG 097 21 40)									
APR , 1979					JUN , 1979				
11...	1605	140	355	.0	22...	1035	6.3	910	19.0
17...	1400	227	561	9.0	JUL				
27...	1230	419	640	5.5	17...	1105	11	890	20.5
MAY					AUG				
09...	1245	131	680	7.5	23...	1320	.63	940	21.0
05054000 - RED RIVER OF THE NORTH AT FARGO, ND (LAT 46 51 40 LONG 096 47 00)									
OCT , 1978					APR , 1979				
18...	0840	90	525	8.0	19...	1135	17300	290	5.5
NOV					23...	1515	13200	405	10.0
17...	1400	75	590	1.0	27...	1340	6900	490	11.0
DEC					MAY				
21...	1220	100	740	.0	04...	1525	3120	580	8.5
JAN , 1979					08...	1845	3160	560	10.0
26...	1345	90	760	.0	JUL				
FEB					03...	1045	1920	621	24.0
20...	1440	90	720	.0	AUG				
MAR					01...	1635	1690	520	24.0
08...	1710	238	800	.0	SEP				
APR					07...	1140	723	615	21.0
10...	1550	1610	560	.0					
17...	1200	13700	250	2.0					
05056100 - MAUVAIS COULEE NR CANDO, ND (LAT 48 26 53 LONG 099 06 08)									
OCT , 1978					MAY , 1979				
11...	0950	.01	960	9.5	16...	1730	116	525	17.5
NOV					JUN				
15...	1025	.05	1800	1.0	07...	0935	30	740	16.0
DEC					JUL				
14...	1305	.02	2250	.5	18...	1325	17	710	23.0
APR , 1979					AUG				
22...	1430	584	310	2.0	22...	1240	.17	885	20.5
30...	1800	1190	375	6.0	SEP				
MAY					19...	1655	.04	1000	19.0
03...	1800	675	400	6.5					
05056200 - EDMORE COULEE NR EDMORE, ND (LAT 48 20 14 LONG 098 39 33)									
APR , 1979					JUN , 1979				
22...	1435	802	290	5.5	06...	1730	17	730	19.0
25...	1330	1110	300	4.5	07...	1730	5.1	740	19.5
30...	1420	573	370	6.0	JUL				
MAY					19...	1015	4.7	960	22.0
03...	1445	373	425	7.0					
17...	1745	75	390	16.0					

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	TEMPER-ATURE (DEG C) (00010)	DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	TEMPER-ATURE (DEG C) (00010)

PART 5. HUDSON BAY BASIN

RED RIVER OF THE NORTH BASIN

05059500 - SHEYENNE RIVER AT WEST FARGO, ND (LAT 46 53 28 LONG 096 54 24)

OCT , 1978					APR , 1979				
26...	1740	84	850	7.5	24...	0945	3430	395	7.5
NOV					MAY				
30...	1625	57	940	.0	01...	1425	3050	385	6.0
DEC					05...	1450	3100	340	7.0
19...	1620	45	1000	.0	08...	1530	3140	355	8.0
JAN , 1979					JUN				
25...	1020	44	1260	.0	27...	1320	328	740	21.5
MAR					AUG				
01...	1650	52	910	.0	02...	1315	332	575	23.0
12...	1610	64	1000	.0	SEP				
APR					06...	1610	96	809	20.0
17...	1400	1350	340	1.5					

05059600 - MAPLE RIVER NR MOPE, ND (LAT 47 19 30 LONG 097 47 25)

APR , 1979					JUN , 1979				
20...	1615	247	370	9.0	21...	1110	.01	2200	15.5
25...	1700	55	660	8.0					
MAY									
01...	1305	8.4	880	5.0					

05060500 - ROSH RIVER AT AMENIA, ND (LAT 47 01 00 LONG 097 12 50)

APR , 1979					JUN , 1979				
16...	1830	365	550	.5	18...	1240	.33	1375	20.0
19...	1720	3240	255	7.5	22...	1520	25	1510	17.5
25...	1430	243	520	8.5	JUL				
MAY					18...	1445	.77	1490	25.0
08...	1145	28	1275	10.0					

05082500 - RED RIVER OF THE NORTH AT GRAND FORKS, ND (LAT 47 56 34 LONG 097 03 10)

OCT , 1978					APR , 1979				
24...	1450	772	535	8.0	30...	1200	58800	358	9.5
NOV					MAY				
24...	1315	638	610	.5	04...	1530	37800	450	7.5
DEC					11...	1535	17400	410	6.0
20...	1215	743	670	.0	24...	1315	8890	565	14.0
JAN , 1979					JUN				
22...	1645	658	550	.0	26...	1225	6070	600	20.0
FEB					JUL				
22...	1200	713	550	.0	03...	1355	9350	455	22.0
MAR					05...	1125	11300	435	22.0
23...	1235	1120	520	.0	09...	1240	7720	510	23.5
APR					24...	1535	2980	510	26.5
12...	1100	3070	560	.5	AUG				
18...	1220	30100	245	1.5	24...	1300	2920	460	20.0
20...	1030	54800	250	3.0	27...	1240	2660	470	20.5
22...	1030	76700	295	7.0	SEP				
23...	0830	80900	280	7.0	24...	1610	1850	405	15.0
27...	1050	79700	335	8.0					
27...	1051	79900	335	8.0					

05083600 - MIDDLE BRANCH FOREST RIVER NR WHITMAN, ND (LAT 48 14 50 LONG 098 07 00)

APR , 1979					MAY , 1979				
21...	1230	500	350	1.5	11...	1645	6.1	870	5.0
25...	1740	90	540	4.5	JUL				
30...	1445	43	654	9.0	03...	1125	.18	1500	20.0

05084000 - FOREST RIVER NR FORDVILLE, ND (LAT 48 11 50 LONG 097 43 49)

OCT , 1978					APR , 1979				
03...	1500	7.7	615	10.5	30...	1225	676	421	5.0
31...	1145	6.4	540	5.0	MAY				
DEC					11...	1330	451	485	4.5
12...	1230	5.3	755	2.0	JUN				
JAN , 1979					15...	1305	22	680	21.5
16...	1550	5.7	900	.0	JUL				
FEB					12...	1220	25	675	23.0
12...	1405	7.4	650	.0	AUG				
MAR					14...	1230	8.8	630	16.0
23...	1240	10	680	1.0	SEP				
APR					13...	1855	4.2	730	13.5
17...	1215	16	575	3.0					
21...	1825	2630	259	3.5					

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

PART 5. HUDSON BAY BASIN

RED RIVER OF THE NORTH BASIN

05085000 - FOREST RIVER AT MINTO, ND (LAT 48 16 10 LONG 097 22 10)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	TEMPER-ATURE (DEG C) (00010)
OCT , 1978				
04...	1045	4.1	775	10.5
30...	1525	5.5	800	5.5
DEC				
15...	1535	2.0	1110	.5
JAN , 1979				
08...	1415	2.1	1290	.0
FEB				
26...	1350	1.0	980	.5
APR				
17...	1600	14	630	.5
21...	1150	6210	240	3.5
25...	1930	1780	381	5.5
MAY , 1979				
10...	1640	521	515	4.0
JUN				
13...	1120	51	800	19.0
JUL				
10...	1020	57	730	24.5
AUG				
16...	1130	11	780	16.0
SEP				
12...	1025	35	665	15.5

05089000 - SOUTH BRANCH PARK RIVER BELOW HUMME DAM, ND (LAT 48 24 07 LONG 097 46 55)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	TEMPER-ATURE (DEG C) (00010)
OCT , 1978				
10...	1140	1.4	675	10.5
30...	1155	.93	710	5.0
DEC				
12...	1510	2.6	855	.5
JAN , 1979				
16...	1215	4.0	1050	.0
FEB				
13...	1310	2.8	900	.0
MAR				
16...	1315	5.2	880	1.0
APR				
26...	1645	408	318	4.5
MAY , 1979				
03...	1720	190	438	5.5
10...	0945	113	470	5.0
JUN				
15...	1605	7.1	630	20.0
JUL				
12...	0845	14	645	20.0
AUG				
14...	1600	6.8	655	20.0
SEP				
13...	1600	5.3	890	15.5

05090000 - PARK RIVER AT GRAFTON, ND (LAT 48 25 24 LONG 097 24 30)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	TEMPER-ATURE (DEG C) (00010)
OCT , 1978				
04...	1350	.07	1050	10.5
30...	1400	.05	1100	6.0
DEC				
15...	1325	.99	1020	.0
JAN , 1979				
08...	1625	.56	1375	.5
APR				
09...	1600	E7.0	700	.5
18...	1840	E186	420	.0
22...	1600	8460	300	7.0
25...	0920	3640	300	4.0
MAY , 1979				
01...	1200	738	510	6.5
10...	1315	326	660	4.5
JUN				
12...	1610	33	1225	19.5
JUL				
10...	1240	71	810	24.5
AUG				
13...	1515	5.0	1190	19.5
SEP				
11...	1740	3.6	1110	17.0

05092000 - RED RIVER OF THE NORTH AT DRAYTON, ND (LAT 48 34 20 LONG 097 08 50)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	TEMPER-ATURE (DEG C) (00010)
OCT , 1978				
02...	1530	1000	760	15.0
NOV				
02...	1510	926	700	6.0
DEC				
14...	1635	814	820	.0
JAN , 1979				
18...	1230	715	820	.0
FEB				
22...	1205	730	750	.0
MAR				
16...	1135	892	625	.0
APR				
13...	1220	2220	350	.0
20...	1500	33700	290	3.5
24...	1315	76900	330	6.0
28...	1145	92900	360	9.0
MAY , 1979				
02...	1310	74900	395	4.5
14...	1210	31100	510	9.0
21...	1400	18700	540	12.5
JUN				
12...	1220	6540	700	19.0
JUL				
06...	1420	12200	565	23.0
09...	1505	11300	595	24.0
11...	1115	8330	645	24.5
AUG				
13...	1230	3040	495	20.0
SEP				
11...	1300	2160	560	19.0

05092200 - PEMBINA COUNTY DRAIN 20 NR GLASSTON, ND (LAT 48 41 49 LONG 097 23 03)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	TEMPER-ATURE (DEG C) (00010)
APR , 1979				
20...	1745	923	268	9.0
25...	1655	151	280	7.5
26...	1115	88	279	6.5
MAY				
01...	1425	15	358	5.5
09...	1130	3.5	450	4.0
AUG				
31...	1240	7.6	990	21.0

E - Estimated.

PART 5. HUDSON BAY BASIN

RED RIVER OF THE NORTH BASIN

05098700 - HIDDEN ISLAND COULEE NR HANSBORO, ND (LAT 48 57 10 LONG 099 25 55)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	TEMPER-ATURE (DEG C) (00010)
APR , 1979				
25...	1710	228	305	1.0
26...	1650	168	340	5.0
MAY				
02...	1350	38	410	4.0
04...	1145	27	500	5.5
MAY , 1979				
12...	1400	12	560	4.5
17...	1145	17	480	15.5
JUN				
07...	1220	.14	975	15.0

05098800 - CYPRESS CREEK NR SARLES, ND (LAT 48 56 35 LONG 098 57 05)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	TEMPER-ATURE (DEG C) (00010)
APR , 1979				
23...	1645	391	280	4.5
26...	1235	190	485	5.0
MAY				
02...	1600	25	560	6.0
04...	1415	22	600	6.0
MAY , 1979				
12...	1540	7.6	590	8.0
17...	1410	21	460	16.5
JUN				
07...	1440	.49	850	16.0

05100000 - PEMBINA RIVER AT NECHE, ND (LAT 48 59 20 LONG 097 33 05)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	TEMPER-ATURE (DEG C) (00010)
OCT , 1978				
05...	1045	27	675	10.0
NOV				
01...	1330	19	950	5.0
DEC				
14...	1100	4.4	1200	.5
JAN , 1979				
10...	1135	4.8	1120	.0
FEB				
20...	1405	3.4	950	1.0
MAR				
07...	1230	3.8	1025	.0
APR				
09...	1330	4.4	1000	.5
22...	1220	8440	320	2.5
APR , 1979				
25...	1340	5800	355	4.0
MAY				
01...	1920	3780	459	6.0
08...	1410	5380	425	6.0
JUN				
13...	1550	816	720	20.0
JUL				
11...	1015	318	770	25.0
AUG				
15...	1510	74	870	17.0
SEP				
12...	1740	63	950	16.0

05116500 - DES LACS RIVER AT FOXHOLM, ND (LAT 48 22 14 LONG 101 34 11)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	TEMPER-ATURE (DEG C) (00010)
OCT , 1978				
03...	1535	1.4	1870	11.5
NOV				
01...	1610	2.3	2000	4.5
30...	1705	1.8	2200	.0
JAN , 1979				
04...	1725	.70	3000	.0
31...	1640	E.08	2650	.0
FEB				
28...	1110	E.10	2410	.0
MAR				
28...	1350	E1.5	770	.0
APR				
10...	1710	3.0	1200	.0
17...	1110	143	295	.5
APR , 1979				
20...	1100	2350	210	2.5
23...	1215	534	380	5.0
MAY				
04...	1130	408	560	6.0
JUN				
08...	1615	184	890	17.0
JUL				
12...	1845	28	1130	26.0
AUG				
03...	1045	17	1150	21.5
SEP				
06...	1040	29	1100	17.0

05117500 - SOURIS RIVER ABOVE MINOT, ND (LAT 48 14 45 LONG 101 22 15)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	TEMPER-ATURE (DEG C) (00010)
OCT , 1978				
03...	1925	50	860	12.0
NOV				
01...	1800	52	940	5.0
30...	1455	43	1040	.0
JAN , 1979				
05...	1055	83	1090	.0
FEB				
01...	1020	75	1110	.0
28...	1730	219	1110	.0
APR				
10...	1500	322	1190	.0
25...	1720	3830	795	2.5
27...	1000	4640	830	4.5
MAY , 1979				
01...	1030	4550	610	4.5
25...	1405	4450	395	13.0
JUN				
08...	1410	1010	560	16.5
JUL				
12...	2220	286	590	26.0
AUG				
03...	1230	79	640	22.5
SEP				
06...	1250	23	1200	18.0

E - Estimated.

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	TEMPER-ATURE (DEG C) (00010)	DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	TEMPER-ATURE (DEG C) (00010)

PART 5. HUDSON BAY BASIN

RED RIVER OF THE NORTH BASIN

05122000 - SOURIS RIVER NR BANTRY, ND (LAT 48 30 20 LONG 100 26 04)

OCT , 1978					MAY , 1979				
05...	1910	46	850	9.5	02...	1830	4120	498	8.0
31...	1015	61	930	3.5	JUN				
NOV					07...	1710	2420	535	16.5
29...	1630	49	1310	.0	JUL				
JAN , 1979					10...	2130	453	635	26.0
10...	1430	56	1210	.0	31...	2230	326	830	23.5
30...	1230	76	1150	.0	SEP				
MAR					06...	1800	54	950	20.0
01...	1445	181	1200	.0					
APR									
12...	1615	204	1180	.0					

05123400 - WILLOW CREEK NR WILLOW CITY, ND (LAT 48 35 20 LONG 100 26 30)

APR , 1979					JUL , 1979				
25...	1300	2070	360	4.0	11...	1330	.17	1320	26.0
JUN					AUG				
07...	2015	18	1250	17.0	01...	0925	E.06	1250	20.5

05123510 - DEEP RIVER NR UPHAM, ND (LAT 48 35 03 LONG 100 51 44)

APR , 1979					JUL , 1979				
21...	1420	183	245	2.0	13...	1120	4.6	1030	24.5
26...	1345	1960	280	4.0	AUG				
26...	1346	1960	280	4.0	02...	1910	4.5	915	24.5
MAY					SEP				
03...	1400	462	413	7.5	07...	1030	.09	960	15.5
JUN									
08...	1920	16	880	19.0					

05123700 - CUT BANK CREEK AT N LAKE OUTLET NR GRANVILLE, ND (LAT 48 23 10 LONG 100 46 00)

APR , 1979					JUL , 1979				
25...	1450	221	322	4.0	16...	1645	32	970	23.5
27...	1325	296	360	6.0	AUG				
MAY					02...	1455	20	920	24.0
01...	1420	245	460	8.0	SEP				
JUN					06...	1515	5.0	960	19.0
09...	1040	27	870	16.5					

05123900 - BOUNDARY CREEK NR LANDA, ND (LAT 48 48 46 LONG 100 51 46)

APR , 1979					JUN , 1979				
22...	1325	353	375	7.0	05...	1920	1.9	1560	20.0
22...	1330	350	375	7.0					
MAY									
03...	1055	68	432	6.5					

PART 6. MISSOURI RIVER BASIN

YELLOWSTONE RIVER BASIN

06329597 - CHARBONNEAU CREEK NR CHARBONNEAU, ND (LAT 47 51 10 LONG 103 47 40)

OCT , 1978					APR , 1979				
02...	1635	.30	2480	12.0	16...	1725	291	540	6.5
NOV					20...	1440	63	520	10.0
03...	1140	.58	2700	6.0	25...	1130	15	960	5.5
DEC					30...	1550	7.7	1300	11.0
01...	1130	.82	--	.0	JUN				
JAN , 1979					04...	1555	1.6	2600	24.0
02...	1620	.65	3200	.0	JUL				
FEB					02...	1520	.36	2800	28.0
05...	1605	.37	3200	.5	AUG				
MAR					01...	0825	3.9	760	20.0
05...	1700	.62	2850	.5	SEP				
21...	1320	5.0	1300	.5	04...	1525	.15	2170	21.0
28...	1410	88	430	.5					
APR									
02...	1635	42	710	.5					
10...	0920	1460	200	.5					

E - Estimated.

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	TEMPER-ATURE (DEG C) (00010)	DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	TEMPER-ATURE (DEG C) (00010)
PART 6. MISSOURI RIVER BASIN									
LITTLE MUDDY RIVER BASIN									
06331000 - LITTLE MUDDY RIVER BL COW CREEK NR WILLISTON, ND (LAT 48 17 04 LONG 103 34 21)									
OCT , 1978					APR , 1979				
03...	1620	12	1900	12.5	20...	1030	5900	235	4.0
31...	0825	13	1920	4.0	25...	0835	536	700	3.0
DEC					MAY				
01...	0855	13	2200	.0	04...	0855	147	1100	6.0
JAN , 1979					JUN				
04...	1700	7.3	2220	.0	07...	1445	24	1900	15.0
FEB					JUL				
06...	1555	7.7	2050	.5	04...	0820	14	1940	24.0
MAR					AUG				
08...	0925	7.7	1950	.5	03...	0910	9.9	1890	21.5
APR					SEP				
03...	1600	35	1490	.5	06...	1240	7.1	1890	18.0
13...	0930	176	610	1.5					
WHITE EARTH RIVER BASIN									
06332000 - WHITE EARTH RIVER AT WHITE EARTH, ND (LAT 48 22 35 LONG 102 46 00)									
OCT , 1978					APR , 1979				
04...	1550	6.5	1680	10.0	21...	1530	2003	370	4.5
31...	1050	11	2000	5.0	24...	1405	857	540	4.0
NOV					26...	1500	704	690	5.0
30...	0945	7.4	2000	.0	MAY				
JAN , 1979					03...	1530	348	740	5.5
04...	1420	3.1	2050	.0	JUN				
FEB					07...	1010	47	1320	15.0
07...	1505	2.2	1990	.0	JUL				
MAR					05...	1550	5.7	1690	23.0
06...	1540	4.1	1850	.5	AUG				
APR					02...	0940	2.0	2000	20.5
03...	1330	6.8	1900	.0	SEP				
17...	1330	102	900	.5	06...	1030	1.2	2230	18.0
19...	1630	3540	360	1.5					
LITTLE MISSOURI RIVER BASIN									
06335000 - LITTLE BEAVER CREEK NR MARMARTH, ND (LAT 46 16 29 LONG 103 58 33)									
OCT , 1978					APR , 1979				
05...	0955	4.5	1720	7.0	19...	1115	426	745	11.0
NOV					MAY				
02...	1030	5.1	1810	4.0	04...	1025	41	1390	8.0
DEC					JUN				
14...	1110	4.8	2110	.0	06...	1030	17	1750	18.0
JAN , 1979					JUL				
11...	1140	1.5	2420	.0	12...	0845	2.5	1630	21.0
FEB					AUG				
08...	1145	1.6	2040	.0	02...	1045	5.2	1490	22.5
MAR					02...	1050	5.2	1490	22.5
08...	1120	3.5	1560	.0	SEP				
21...	1140	285	600	.0	14...	1025	9.6	1130	11.0
28...	1050	546	650	.5					
APR									
04...	1600	226	840	.0					
10...	1440	836	565	3.0					
06335500 - LITTLE MISSOURI RIVER AT MARMARTH, ND (LAT 46 17 44 LONG 103 55 06)									
OCT , 1978					APR , 1979				
05...	1505	34	1850	11.0	10...	1835	3890	542	5.0
NOV					19...	1425	2420	710	10.0
02...	1415	37	2000	9.0	MAY				
DEC					04...	1340	272	1290	9.0
14...	1500	20	2810	.0	JUN				
JAN , 1979					06...	1235	85	1850	20.0
11...	1435	.76	3050	.0	JUL				
FEB					12...	1115	43	1920	24.0
08...	1525	1.3	2750	.0	AUG				
MAR					02...	1450	154	1690	26.0
08...	1350	2.2	1550	.0	SEP				
21...	1600	1220	660	.0	14...	1220	68	1270	13.0
28...	1450	2120	585	.5					

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	TEMPER-ATURE (DEG C) (00010)	DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	TEMPER-ATURE (DEG C) (00010)

PART 6. MISSOURI RIVER BASIN

KNIFE RIVER BASIN

06339500 - KNIFE RIVER NR GOLDEN VALLEY, ND (LAT 47 09 40 LONG 102 03 39)

OCT , 1978					APR , 1979				
16...	1400	13	1520	5.0	13...	1415	1460	475	2.0
NOV					17...	1440	730	750	7.5
21...	1300	16	2390	1.0	25...	1650	221	930	6.5
DEC					MAY				
19...	1215	15	3120	.0	25...	1320	32	1940	18.0
JAN , 1979					JUN				
23...	1245	5.7	3130	.0	21...	1535	15	1980	23.0
FEB					JUL				
19...	1315	5.8	2830	.5	26...	1025	15	1610	23.0
MAR					AUG				
16...	1535	12	2520	1.0	20...	1710	6.2	1850	21.5
19...	1655	1380	430	1.0	SEP				
22...	1255	700	430	1.0	20...	1210	6.1	1900	16.0
27...	1150	1390	495	1.5					

06340200 - WEST BRANCH UTTER CREEK NR BEULAH, ND (LAT 47 08 05 LONG 101 39 35)

MAR , 1979					APR , 1979				
27...	1130	3.9	800	.0	25...	1335	4.7	1120	6.0
30...	1205	1.9	1140	.0	MAY				
APR					23...	1545	.18	1920	19.0
13...	1120	19	420	.0	AUG				
16...	1545	30	430	1.5	29...	0945	.08	1500	19.0
19...	1200	39	495	10.0					

SQUARE BUTTE CREEK BASIN

06342260 - SQUARE BUTTE CREEK BELOW CENTER, ND (LAT 47 03 25 LONG 101 11 35)

OCT , 1978					APR , 1979				
25...	1135	1.5	1130	7.0	19...	1045	323	700	9.0
NOV					MAY				
22...	0855	1.2	1200	2.0	22...	1025	6.6	875	14.0
DEC					JUN				
20...	0955	1.6	930	1.0	25...	1005	1.0	1100	20.0
JAN , 1979					JUL				
26...	0920	1.7	1050	1.0	24...	1300	1.3	1280	24.0
FEB					AUG				
26...	0900	.90	1150	.0	29...	0850	1.4	1210	18.0
MAR					SEP				
21...	1330	1.5	1500	--	26...	1040	.90	1180	15.5
APR									
16...	1440	1.8	1000	8.0					

BURNT CREEK BASIN

06342450 - BURNT CREEK NR BISMARCK, ND (LAT 46 54 54 LONG 100 48 48)

OCT , 1978					APR , 1979				
26...	1520	E.03	1135	5.5	16...	0900	26	370	.0
DEC					18...	1635	E5000	110	3.0
20...	1240	.65	1350	.5	19...	1515	1420	135	3.0
JAN , 1979					20...	1535	237	250	4.5
25...	1250	.44	1540	.5	25...	1410	33	700	5.5
FEB					MAY				
21...	1340	.33	1620	.5	02...	1600	14	1050	10.0
MAR					21...	0915	5.0	1300	12.0
17...	1430	1.2	1650	.0	JUN				
APR					28...	1440	.76	1650	20.0
10...	1520	5.4	950	.0					

E - Estimated.

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	TEMPER-ATURE (DEG C) (00010)	DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	TEMPER-ATURE (DEG C) (00010)

PART 6. MISSOURI RIVER BASIN

HEART RIVER BASIN

06345500 - HEART RIVER NR RICHARDTON, ND (LAT 46 44 46 LONG 102 18 27)

OCT , 1978					APR , 1979				
04...	1015	18	1480	10.0	02...	1200	790	640	5.0
NOV					07...	1015	530	760	2.5
01...	1600	19	1800	5.0	11...	1525	3070	555	2.0
DEC					18...	1330	2070	675	13.0
01...	1145	28	2070	.0	MAY				
JAN , 1979					02...	1400	124	1340	10.0
08...	1235	8.3	2300	.0	JUN				
FEB					08...	1340	27	1820	16.0
02...	1155	9.8	2760	.0	JUL				
MAR					12...	1635	24	1530	25.0
08...	1310	7.7	2230	.5	AUG				
25...	1315	2510	810	.5	06...	1450	22	1620	26.0
25...	1715	2510	810	.5	SEP				
26...	1235	2190	750	2.5	04...	1100	9.7	1630	22.0
27...	1425	1880	685	1.5					

06348000 - HEART RIVER NR LARK, ND (LAT 46 36 37 LONG 101 22 54)

OCT , 1978					APR , 1979				
26...	1125	18	1350	6.0	27...	1135	865	640	5.0
NOV					MAY				
21...	1245	49	1400	.0	21...	1410	144	1050	17.0
DEC					JUN				
19...	1125	45	1450	.0	26...	1150	328	1000	21.5
JAN , 1979					JUL				
25...	1010	48	1350	.0	27...	1050	103	1020	21.5
FEB					AUG				
22...	1105	32	1275	.0	27...	1415	26	1220	23.0
MAR					SEP				
20...	1145	640	620	.0	24...	1140	56	1250	17.0
27...	1040	1390	785	.0					
APR									
04...	1400	1380	850	2.0					
16...	1345	2450	725	4.0					

06348500 - SWEETBRIAR CREEK NR JUDSON, ND (LAT 46 51 06 LONG 101 15 10)

OCT , 1978					APR , 1979				
26...	1400	.92	900	6.0	20...	1130	240	230	5.0
NOV					27...	1435	18	435	6.0
21...	1400	.69	1120	.0	MAY				
DEC					23...	0915	3.4	490	11.0
19...	1350	.41	1400	.0	JUN				
JAN , 1979					26...	1415	.85	950	23.0
25...	1330	.41	1000	.0	JUL				
FEB					27...	1320	1.3	920	24.0
22...	1310	.40	880	.0	AUG				
MAR					29...	1100	1.1	850	21.0
22...	1300	1.4	1050	.0	SEP				
APR					24...	1415	.94	960	17.5
13...	1610	119	660	3.0					
16...	0915	240	460	2.0					

CANNONBALL RIVER BASIN

06351000 - CANNONBALL RIVER BELOW BENTLEY, ND (LAT 46 21 30 LONG 102 02 30)

OCT , 1978					APR , 1979				
31...	1000	17	1990	2.5	18...	1120	1670	1010	10.0
DEC					MAY				
12...	1145	22	2400	.0	08...	1615	120	1830	10.0
JAN , 1979					JUN				
09...	1150	10	2750	.0	07...	1345	35	1950	17.0
FEB					JUL				
06...	1225	10	2590	.0	10...	1400	18	1950	25.0
MAR					31...	1045	38	1510	21.0
06...	1705	15	2150	.0	SEP				
APR					12...	1030	11	1610	15.0
06...	1610	664	940	.0					
13...	1200	1950	560	.5					

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	TEMPER-ATURE (DEG C) (00010)	DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	TEMPER-ATURE (DEG C) (00010)

PART 6. MISSOURI RIVER BASIN

CANNONBALL RIVER BASIN

06351680 - WHITE BUTTE FORK CEDAR CREEK NR SCRANTON, ND (LAT 46 19 20 LONG 102 59 45)

NOV , 1978					APR , 1979				
05...	1645	.02	6500	7.0	04...	1155	7.7	1130	.5
DEC					12...	1210	52	895	.5
13...	1605	.17	4990	.0	20...	1545	52	920	11.0
JAN , 1979					MAY				
12...	1415	.13	3990	.0	09...	1515	4.9	2900	7.0
FEB					JUN				
14...	1145	.21	3550	.0	04...	1515	.64	4190	18.0
MAR					JUL				
13...	1225	.17	3580	.0	12...	1345	.01	5100	24.0
23...	1555	.59	2800	.5	AUG				
29...	1805	37	1060	.0	03...	1255	.01	4250	25.5

06352000 - CEDAR CREEK NR HAYNES, ND (LAT 46 09 15 LONG 102 28 25)

OCT , 1978					APR , 1979				
05...	1745	2.9	2410	11.5	18...	1525	896	1090	10.0
31...	1545	3.9	2200	4.5	MAY				
DEC					09...	1100	58	2000	7.0
12...	1635	6.6	3250	.0	09...	1105	58	2000	7.0
JAN , 1979					JUN				
09...	1700	1.9	3310	.0	07...	0945	12	2190	15.0
FEB					JUL				
07...	1155	4.5	3510	.0	10...	1530	5.6	2420	26.0
MAR					31...	1450	3.4	1990	23.0
07...	1355	4.7	3100	.0	SEP				
20...	1735	11	1920	.0	12...	1515	3.6	1950	15.0
27...	1525	120	1210	.5					
APR									
06...	1240	398	1070	.0					
13...	1630	849	710	1.0					

06353000 - CEDAR CREEK NR RALEIGH, ND (LAT 46 05 00 LONG 101 20 00)

OCT , 1978					APR , 1979				
24...	1300	9.1	2600	8.0	13...	1300	1950	700	1.0
NOV					16...	1815	1600	680	6.0
20...	1420	11	2350	.0	26...	1345	399	1400	9.0
DEC					MAY				
18...	1300	9.9	3000	.0	16...	1400	114	2100	18.0
JAN , 1979					JUN				
24...	1430	2.9	3500	.0	27...	1125	151	2200	24.0
FEB					JUL				
21...	1430	2.3	3750	--	13...	1415	3680	240	19.0
MAR					25...	1130	49	700	25.0
20...	1415	60	1300	--	AUG				
27...	1340	E74	1180	.5	27...	1300	25	1160	21.0
APR					SEP				
04...	1055	510	1050	.5	25...	1255	7.5	2000	17.0
10...	1340	1020	930	.5					

BEAVER CREEK BASIN

06354500 - BEAVER CREEK AT LINTON, ND (LAT 46 15 27 LONG 100 13 58)

OCT , 1978					APR , 1979				
23...	1210	4.4	905	7.5	16...	1235	550	265	2.5
NOV					18...	1230	1710	200	5.0
20...	1220	5.9	1060	.5	23...	1155	594	440	10.0
DEC					MAY				
22...	1320	4.3	1300	.5	22...	1100	48	910	13.0
JAN , 1979					JUN				
22...	1210	2.7	990	.0	21...	1220	18	700	19.0
FEB					JUL				
20...	1235	1.6	1200	.0	26...	1250	13	850	23.0
MAR					AUG				
25...	1745	71	640	.5	10...	1215	6.7	458	21.5
30...	1315	57	495	.5	16...	1120	4.4	900	19.0
APR					SEP				
10...	1225	225	370	1.5	28...	1300	.37	1050	16.0
13...	1330	725	240	.0					

E - Estimated.

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	TEMPER-ATURE (DEG C) (00010)
PART 6. MISSOURI RIVER BASIN				
JAMES RIVER BASIN				
06467600 - JAMES RIVER NR MANFRED, ND (LAT 47 38 40 LONG 099 49 40)				
APR , 1979				
20...	1715	607	190	2.0
22...	1140	290	235	6.0
25...	1500	107	320	6.5
MAY				
02...	1145	26	460	7.5
JUN				
04...	1210	2.8	1200	18.5
JUL , 1979				
02...	1200	3.8	920	23.5
AUG				
07...	1330	.25	940	23.0
SEP				
04...	1040	.11	1020	20.0
06468170 - JAMES RIVER NR GRACE CITY, ND (LAT 47 33 29 LONG 098 51 45)				
OCT , 1978				
05...	1730	.08	1790	9.0
NOV				
01...	0840	.05	1840	2.0
30...	1445	E.01	2440	.0
APR , 1979				
20...	1440	198	130	.5
22...	1530	449	280	1.0
25...	1215	2028	225	2.0
MAY				
01...	1305	816	270	7.0
JUN , 1979				
05...	1030	33	660	17.5
JUL				
03...	1200	100	600	22.0
AUG				
08...	1010	21	670	21.0
SEP				
04...	1830	2.6	800	23.0
06469400 - PIPESTEM CREEK NR PINGREE, ND (LAT 47 10 03 LONG 098 58 07)				
OCT , 1978				
05...	1530	E.01	1150	8.0
APR , 1979				
18...	1705	272	160	.5
20...	1015	2360	160	.5
23...	1150	1710	255	7.0
25...	0835	1060	235	4.0
MAY				
01...	1730	286	360	9.5
JUN , 1979				
05...	1515	11	800	20.0
JUL				
03...	1550	89	700	25.0
AUG				
08...	1540	10	750	23.5
SEP				
05...	1025	.99	800	20.0
06470000 - JAMES RIVER AT JAMESTOWN, ND (LAT 46 53 22 LONG 098 40 58)				
OCT , 1978				
05...	1210	4.2	880	10.0
31...	1730	3.7	1140	5.0
DEC				
01...	1300	3.4	1300	.0
JAN , 1979				
05...	1125	3.3	1220	.0
31...	1630	3.7	1210	.0
FEB				
28...	0950	3.8	1120	.0
MAR				
28...	1415	7.5	875	.0
APR				
17...	1720	399	185	1.0
APR , 1979				
18...	1000	553	275	5.0
23...	1430	171	320	6.0
MAY				
02...	1015	503	570	4.5
JUN				
05...	1850	477	420	16.5
JUL				
09...	1430	315	430	22.0
AUG				
08...	1630	251	420	24.0
SEP				
05...	1750	261	430	21.0

E - Estimated.

BENSON COUNTY

480228098482501. Local number, 153-063-30CBC.
LOCATION.--Lat 48°02'28", long 098°48'25", Hydrologic Unit 09020201.
Owner: North Dakota State Water Commission.
AQUIFER.--Spiritwood.
WELL CHARACTERISTICS.--Drilled observation well, diameter 1.25 in (0.03 m), depth 200 ft (61 m), cased to 137 ft (41.8 m), plastic pipe, No. 18 slot screen set 137 to 143 ft (41.8 to 43.6 m) below land-surface datum.
DATUM.--Altitude of land-surface datum is 1,445 ft (440 m). Measuring point: Top of casing 2.00 ft (0.61 m) above land-surface datum.
PERIOD OF RECORD.--June 1970 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 16.58 ft (5.05 m) below land-surface datum, Sept. 19, 1979; lowest measured, 25.05 ft (7.64 m) below land-surface datum, Mar. 4, 1971.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 22	19.55	MAR 14	19.72	JUNE 8	17.05	SEPT 19	16.58

BENSON COUNTY

480958099154801. Local number, 154-067-15BBB.
LOCATION.--Lat 48°09'58", long 099°15'48", Hydrologic Unit 09020201.
Owner: North Dakota State Water Commission.
AQUIFER.--Spiritwood.
WELL CHARACTERISTICS.--Drilled observation well, diameter 1.25 in (0.03 m), depth 180 ft (54.9 m), cased to 147 ft (44.8 m), plastic pipe, No. 18 slot screen set 147 to 153 ft (44.8 to 46.6 m) below land-surface datum.
DATUM.--Altitude of land-surface datum is 1,475 ft (450 m). Measuring point: Top of casing 2.00 ft (0.61 m) above land-surface datum.
PERIOD OF RECORD.--June 1970 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 32.16 ft (9.80 m) below land-surface datum, Sept. 20, 1979; lowest measured, 33.80 ft (10.30 m) below land-surface datum, Mar. 15, 1978.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 22	33.44	MAR 12	33.40	JUNE 5	32.27	SEPT 20	32.16

BENSON COUNTY

481041099442701. Local number, 154-071-11AAD1.
LOCATION.--Lat 48°10'41", long 099°44'27", Hydrologic Unit 09020202.
Owner: North Dakota State Water Commission.
AQUIFER.--Fox Hills Sandstone.
WELL CHARACTERISTICS.--Drilled observation well, diameter 1.25 in (0.03 m), depth 100 ft (30.5 m), cased to 42 ft (12.8 m), plastic pipe, No. 12 slot screen set 42 to 45 ft (12.8 to 13.7 m) below land-surface datum.
DATUM.--Altitude of land-surface datum is 1,590 ft (485 m). Measuring point: Top of casing 2.0 ft (0.61 m) above land-surface datum.
PERIOD OF RECORD.--August 1968 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 6.47 ft (1.97 m) below land-surface datum, June 6, 1979; lowest measured, 9.05 ft (2.76 m) below land-surface datum, Mar. 13, 1978.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 22	8.19	MAR 13	8.58	JUNE 6	6.47	SEPT 20	7.43

BOWMAN COUNTY

461534103491701. Local number, 132-105-16BDB.
LOCATION.--Lat 46°15'34", long 103°49'17", Hydrologic Unit 10110203.
Owner: North Dakota State Water Commission.
AQUIFER.--Hell Creek-Fox Hills Sandstone.
WELL CHARACTERISTICS.--Drilled observation well, diameter 2 in (0.05 m), depth 475 ft (145 m), cased to 441 ft (134 m), steel pipe, No. 12 slot screen set 441 to 459 ft (134 to 140 m) below land-surface datum.
DATUM.--Altitude of land-surface datum is 3,010 ft (917 m). Measuring point: Top of casing 3.40 ft (1.04 m) above land-surface datum.
PERIOD OF RECORD.--September 1971 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 270.15 ft (82.34 m) below land-surface datum, Feb. 25, 1973; lowest measured, 271.73 ft (82.82 m) below land-surface datum, Jan. 11, 1972.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 30	270.87	MAR 8	270.78	JUNE 6	271.19	SEPT 14	271.11

BURLEIGH COUNTY

464943100305801. Local number, 139-078-27CBB.
LOCATION.--Lat 46°49'43", long 100°30'58", Hydrologic Unit 10130103.
Owner: North Dakota State Water Commission.
AQUIFER.--McKenzie.
WELL CHARACTERISTICS.--Drilled observation well, diameter 1.25 in (0.03 m), depth 255 ft (77.7 m), cased to 200 ft (61 m), plastic pipe, slotted 200 to 220 ft (61 to 67 m) below land-surface datum, gravel packed.
DATUM.--Altitude of land-surface datum is 1,713 (522 m). Measuring point: Top of casing 1.90 ft (0.58 m) above land-surface datum.
PERIOD OF RECORD.--August 1962 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 22.30 ft (6.80 m) below land-surface datum, June 17, 1970; lowest measured, 32.44 ft (9.89 m) below land-surface datum, Aug. 26, 1977.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 25	26.79	APR 30	24.18	JUNE 21	25.56	AUG 23	29.51
DEC 1	26.13	MAY 23	23.90	JULY 31	26.92	SEPT 19	28.04
DEC 21	25.87						

CASS COUNTY

464359096541301. Local number, 138-049-29CCC.
LOCATION.--Lat 46°43'59", long 096°54'13", Hydrologic Unit 09020105.
Owner: North Dakota State Water Commission.
AQUIFER.--West Fargo.
WELL CHARACTERISTICS.--Drilled observation well, diameter 1.25 in (0.03 m), depth 317 ft (96.6 m), cased to 278 ft (84.7 m), plastic pipe, screens set at 278 to 280 ft (84.7 to 85.3 m) below land-surface datum.
DATUM.--Altitude of land-surface datum is 912 ft (278 m). Measuring point: Top of casing 1.80 ft (0.55 m) above land-surface datum.
PERIOD OF RECORD.--August 1964 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 32.17 ft (9.81 m) below land-surface datum, Aug. 1, 1964; lowest measured, 44.77 ft (13.65 m) below land-surface datum, Sept. 20, 1978.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 20	43.96	MAR 30	43.24	JUNE 18	43.73	SEPT 17	44.07

DIVIDE COUNTY

485649103155701. Local number, 163-97-15BCC.
LOCATION.--Lat 48°56'49", long 103°15'57", Hydrologic Unit 09010001.
Owner: North Dakota State Water Commission.
AQUIFER.--Yellowstone.
WELL CHARACTERISTICS.--Drilled observation well, diameter 2 in (0.05 m), depth 575 ft (175 m), cased to 546 ft (166 m), steel pipe, No. 12 slot screen set 546 to 558 ft (166 to 170 m) below land-surface datum.
DATUM.--Altitude of land-surface datum is 1,915 ft (584 m). Measuring point: top of casing 1.50 ft (0.46 m) above land-surface datum.
PERIOD OF RECORD.--August 1972 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 10.31 ft (3.14 m) below land-surface datum, June 5, 1979; lowest measured, 14.48 ft (4.41 m) below land-surface datum, Aug. 9, 1972.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 29	10.63	MAR 7	10.53	JUNE 5	10.31	SEPT 5	10.89

DUNN COUNTY

471323102290101. Local number, 143-093-09BCB.
LOCATION.--Lat 47°13'23", long 102°29'01", Hydrologic Unit 10130201.
Owner: North Dakota State Water Commission.
AQUIFER.--Sentinel Butte.
WELL CHARACTERISTICS.--Drilled observation well, diameter 2 in (0.05 m), depth 965 ft (294 m), cased to 378 ft (115 m), steel pipe, No. 12 slot screen set 378 to 396 ft (115 to 121 m) below land-surface datum.
DATUM.--Altitude of land-surface datum is 2,133 ft (650 m). Measuring point: Top of casing 2.10 ft (0.64 m) above land-surface datum.
PERIOD OF RECORD.--February 1974 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 92.59 ft (28.22 m) below land-surface datum, Nov. 30, 1978; lowest measured, 93.49 ft (28.50 m) below land-surface datum, Dec. 1, 1977.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 30	92.59	MAR 22	92.94	JUNE 25	92.93	SEPT 19	92.82

EDDY COUNTY

473720098592401. Local number, 148-065-19DAA.
LOCATION.--Lat 47°37'20", long 098°59'24", Hydrologic Unit 10160001.
Owner: North Dakota State Water Commission.
AQUIFER.--New Rockford.
WELL CHARACTERISTICS.--Drilled observation well, diameter 1.25 in (0.03 m), depth 242 ft (74 m), cased to 220 ft (67 m), plastic pipe, slotted from 210 to 220 ft (64 to 67 m) below land-surface datum.
DATUM.--Altitude of land-surface datum is 1,526 ft (465 m). Measuring point: Top of casing 1.90 ft (0.58 m) above land-surface datum.
PERIOD OF RECORD.--September 1964 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 43.51 ft (13.26 m) below land-surface datum, June 28, 1966; lowest measured, 50.49 ft (15.39 m) below land-surface datum, Sept. 6, 1978.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 6	49.70	FEB 1	47.76	JUNE 5	45.64	AUG 8	45.82
NOV 1	49.55	FEB 27	47.29	JULY 3	45.43	SEPT 4	46.85
NOV 30	48.71						

EMMONS COUNTY

463632100171901. Local number, 136-076-07CBC.
LOCATION.--Lat 46°36'32", long 100°17'19", Hydrologic Unit 10130103.
Owner: North Dakota State Water Commission.
AQUIFER.--Long Lake.
WELL CHARACTERISTICS.--Drilled observation well, diameter 1.25 in (0.03 m), depth 150 ft (45.7 m), cased to 117 ft (35.7 m), plastic pipe, No. 12 slot screen set at 117 to 123 ft (35.7 to 37.5 m) below land-surface datum.
DATUM.--Altitude of land-surface datum is 1,735 ft (529 m). Measuring point: Top of casing 2.00 ft (0.61 m) above land-surface datum.
PERIOD OF RECORD.--November 1972 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 1.21 ft (0.37 m) below land-surface datum, May 31, 1979; lowest measured, 8.32 ft (2.54 m) below land-surface datum, Sept. 1, 1977.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 27	4.50	MAR 29	4.55	MAY 31	1.21	AUG 22	3.62

GRAND FORKS COUNTY

474957097343501. Local number, 150-054-04CCD.
LOCATION.--Lat 47°49'57", long 097°34'35", Hydrologic Unit 09020307.
Owner: North Dakota State Water Commission.
AQUIFER.--Elk Valley.
WELL CHARACTERISTICS.--Drilled observation well, diameter 1.25 in (0.03 m), depth 126 ft (38.4 m), cased to 40 ft (12.2 m), plastic pipe, No. 12 slot screen set 40 to 43 ft (12.2 to 13.1 m) below land-surface datum.
DATUM.--Altitude of land-surface datum is 1,127 ft (344 m). Measuring point: Top of casing 1.80 ft (0.55 m) above land-surface datum.
PERIOD OF RECORD.--September 1965 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 2.48 ft (0.76 m) below land-surface datum, May 6, 1966; lowest measured, 7.96 ft (2.43 m) below land-surface datum, Mar. 7, 1977.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 20	5.90	JUNE 15	2.49	AUG 15	3.64	SEPT 13	4.30
MAR 5	6.99						

GRANT COUNTY

460159101500401. Local number, 130-089-32DDA.
LOCATION.--Lat 46°01'59", long 101°50'04", Hydrologic Unit 10130205.
Owner: North Dakota State Water Commission.
AQUIFER.--Fox Hills Sandstone.
WELL CHARACTERISTICS.--Drilled observation well, diameter 2 in (0.05 m), depth 860 ft (262 m), cased to 525 ft (160 m), steel pipe, No. 12 slot screen set 525 to 543 ft (160 to 166 m) below land-surface datum.
DATUM.--Altitude of land-surface datum is 2,165 ft (660 m). Measuring point: Top of casing 4.00 ft (1.22 m) above land-surface datum.
PERIOD OF RECORD.--November 1972 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 55.49 ft (16.91 m) below land-surface datum, Apr. 10, 1973; lowest measured, 57.00 ft (17.37 m) below land-surface datum, Nov. 7, 1972.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 28	56.40	MAR 6	56.57	JUNE 7	56.66	SEPT 12	56.69

GRIGGS COUNTY

471612098113101. Local number, 144-059-20CCC.
LOCATION.--Lat 47°16'12", long 098°11'31", Hydrologic Unit 09020203.
Owner: North Dakota State Water Commission.
AQUIFER.--Spiritwood.
WELL CHARACTERISTICS.--Drilled observation well, diameter 1.25 in (0.03 m), depth 240 ft (73 m), cased to 158 ft (48 m), plastic pipe, No. 25 slot screen set 158 to 161 ft (48 to 49 m) below land-surface datum.
DATUM.--Altitude of land-surface datum is 1,430 ft (436 m). Measuring point: Top of casing 2.0 ft (0.61 m) above land-surface datum.
PERIOD OF RECORD.--September 1971 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 45.84 ft (13.97 m) below land-surface datum, Apr. 5, 1977; lowest measured, 86.99 ft (26.51 m) below land-surface datum, Aug. 10, 1976.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 5	62.25	MAY 2	46.79	JULY 3	54.75	AUG 27	70.40
DEC 13	51.27	JUNE 5	46.67	JULY 31	75.88	SEPT 24	61.38
APR 4	47.10						

GRIGGS COUNTY

473425098232901. Local number, 147-061-01CCC.
LOCATION.--Lat 47°34'25", long 098°23'29", Hydrologic Unit 09020203.
Owner: North Dakota State Water Commission.
AQUIFER.--Spiritwood.
WELL CHARACTERISTICS.--Drilled observation well, diameter 1.25 in (0.03 m), depth 340 ft (104 m), cased to 237 ft (72 m), plastic pipe, No. 25 slot screen set 237 to 240 ft (72 to 73 m) below land-surface datum.
DATUM.--Altitude of land-surface datum is 1,525 ft (465 m). Measuring point: Top of casing 2.00 ft (0.61 m) above land-surface datum.
PERIOD OF RECORD.--September 1971 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 26.82 ft (8.18 m) below land-surface datum, May 19, 1976; lowest measured, 96.10 ft (29.3 m) below land-surface datum, Aug. 12, 1975.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 4	39.93	MAY 3	29.58	JULY 4	33.13	AUG 29	58.62
DEC 14	31.13	JUNE 6	28.20	AUG 1	58.26	SEPT 25	56.20

GRIGGS COUNTY

473600098065901. Local number, 148-059-36AAB.
LOCATION.--Lat 47°36'00", long 098°06'59", Hydrologic Unit 09020203.
Owner: North Dakota State Water Commission.
AQUIFER.--McVille.
WELL CHARACTERISTICS.--Drilled observation well, diameter 1.25 in (0.03 m), depth 180 ft (54.9 m), cased to 137 ft (41.8 m), plastic pipe, No. 12 slot screen set 137 to 143 ft (41.8 to 43.6 m) below land-surface datum.
DATUM.--Altitude of land-surface datum is 1,320 ft (402 m). Measuring point: Top of casing 2.00 ft (0.61 m) above land-surface datum.
PERIOD OF RECORD.--October 1971 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 6.40 ft (1.95 m) below land-surface datum, May 3, 1979; lowest measured, 12.09 ft (3.69 m) below land-surface datum, Aug. 9, 1978.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 4	11.47	MAY 3	6.40	JULY 4	8.65	OCT 30	10.00
DEC 14	11.43	JUNE 6	9.08	AUG 1	9.67		

HETTINGER COUNTY

463153102521001. Local number, 135-097-04DCA.
LOCATION.--Lat 46°31'53", long 102°52'10", Hydrologic Unit 10130204.
Owner: North Dakota State Water Commission.
AQUIFER.--Fox Hills Sandstone.
WELL CHARACTERISTICS.--Drilled observation well, diameter 4 in (0.10 m), depth 1,790 ft (546 m), cased to 1,320 ft (402 m), steel pipe, open hole.
DATUM.--Altitude of land-surface datum is 2,567 ft (782 m). Measuring point: Top of casing 0.70 ft (0.21 m) above land-surface datum.
PERIOD OF RECORD.--September 1968 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 141.87 ft (43.24 m) below land-surface datum, Dec. 31, 1968; lowest measured, 144.20 ft (43.95 m) below land-surface datum, Nov. 26, 1969.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 29	142.68	MAR 5	142.70	JUNE 4	142.39	SEPT 11	143.00

KIDDER COUNTY

470638099324301. Local number, 142-070-16DDD.
LOCATION.--Lat 47°06'38", long 099°32'43", Hydrologic Unit 10130103.
Owner: North Dakota State Water Commission.
AQUIFER.--Long Lake.
WELL CHARACTERISTICS.--Drilled observation well, diameter 1.25 in (0.03 m), depth 84 ft (25.6 m), cased to 70 ft (21.3 m), plastic pipe, No. 18 slot screen set 70 to 73 ft (21.3 to 22.3 m) below land-surface datum.
DATUM.--Altitude of land-surface datum is 1,810 ft (552 m). Measuring point: Top of casing 1.90 ft (0.58 m) above land-surface datum.
PERIOD OF RECORD.--November 1965 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 19.94 ft (6.08 m) below land-surface datum, Dec. 4, 1976; lowest measured, 25.44 ft (7.75 m) below land-surface datum, Aug. 27, 1973.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 24	22.12	FEB 21	22.11	JUNE 15	22.14	AUG 6	21.97
NOV 21	22.09	MAR 30	22.05	JUNE 29	21.70	AUG 22	21.80
DEC 20	22.00	MAY 24	21.30	JULY 16	21.60	SEPT 5	24.25

MC LEAN COUNTY

473752101055301. Local number, 148-082-23BBB.
LOCATION.--Lat 47°37'52", long 101°05'53", Hydrologic Unit 10130101.
Owner: North Dakota State Water Commission.
AQUIFER.--Lake Nettie.
WELL CHARACTERISTICS.--Drilled observation well, diameter 1.25 in (0.03 m), depth 300 ft (91 m), cased to 198 ft (60 m), plastic pipe, No. 24 slot screen set 198 to 204 ft (60 to 62 m) below land-surface datum.
DATUM.--Altitude of land-surface datum is 1,880 ft (573 m). Measuring point: Top of casing 2.30 ft (0.70 m) above land-surface datum.
PERIOD OF RECORD.--December 1969 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 37.60 ft (11.46 m) below land-surface datum, June 4, 1979; lowest measured, 42.30 ft (12.89 m) below land-surface datum, Dec. 2, 1970.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 25	38.37	JAN 24	38.12	MAY 7	37.79	JULY 1	37.66
NOV 6	38.24	FEB 20	38.14	MAY 22	37.89	JULY 31	37.83
NOV 29	38.34	MAR 7	38.27	JUNE 4	37.60	AUG 22	37.84
DEC 27	38.27	APR 24	38.09	JUNE 27	37.61	SEPT 25	38.09
JAN 8	38.23						

OLIVER COUNTY

470642101162701. Local number, 142-084-24BBA.
LOCATION.--Lat 47°06'42", long 101°16'27", Hydrologic Unit 10130101.
Owner: North Dakota State Water Commission.
AQUIFER.--Fox Hills Sandstone.
WELL CHARACTERISTICS.--Drilled observation well, diameter 4 in (0.10 m), depth 1,295 ft (395 m), cased to 966 ft (294 m), steel pipe, open ended.
DATUM.--Altitude of land-surface datum is 2,006 ft (611 m). Measuring point: Top of casing 2.00 ft (0.61 m) above land-surface datum.
PERIOD OF RECORD.--January 1968 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 197.04 ft (60.06 m) below land-surface datum, Dec. 8, 1972; lowest measured, 208.70 ft (63.61 m) below land-surface datum, Nov. 24, 1971.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 1	198.54	SEPT 10	198.86				

PEMBINA COUNTY

485239097501702. Local number, 162-056-01CCC2.
LOCATION.--Lat 48°52'39", long 097°50'17", Hydrologic Unit 09020313.
Owner: North Dakota State Water Commission.
AQUIFER.--Icelandic.
WELL CHARACTERISTICS.--Drilled observation well, diameter 1.25 in (0.03 m), depth 40 ft (12 m), cased to 37 ft (11.3 m), plastic pipe, No. 12 slot screen set 37 to 40 ft (11.3 to 12.2 m) below land-surface datum.
DATUM.--Altitude of land-surface datum is 988 ft (301 m). Measuring point: Top of casing 1.8 ft (0.55 m) above land-surface datum.
PERIOD OF RECORD.--October 1969 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 4.65 ft (1.42 m) below land-surface datum, May 8, 1970; lowest measured, 8.06 ft (2.46 m) below land-surface datum, Dec. 4, 1972.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 21	7.98	MAR 7	7.95	JUNE 13	5.44	SEPT 12	5.34

PIERCE COUNTY

475323100092101. Local number, 151-074-20AAA.
LOCATION.--Lat 47°53'23", long 100°09'21", Hydrologic Unit 09020202.
Owner: North Dakota State Water Commission.
AQUIFER.--New Rockford.
WELL CHARACTERISTICS.--Drilled observation well, diameter 1.25 in (0.03 m), depth 320 ft (98 m), cased to 256 ft (78 m), plastic pipe, No. 18 slot screen set 256 to 259 ft (78 to 79 m) below land-surface datum.
DATUM.--Altitude of land-surface datum is 1,605 ft (489 m). Measuring point: Top of casing 2.00 ft (0.61 m) above land-surface datum.
PERIOD OF RECORD.--November 1968 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 26.74 ft (8.15 m) below land-surface datum, Feb. 26, 1979; lowest measured, 31.73 ft (9.67 m) below land-surface datum, Dec. 10, 1968.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 28	29.28	FEB 26	26.74	JUNE 4	29.34	SEPT 4	29.28

RICHLAND COUNTY

462633097163402. Local number, 134-052-06CCD2.
LOCATION.--Lat 46°26'33", long 097°16'34", Hydrologic Unit 09020204.
Owner: North Dakota State Water Commission.
AQUIFER.--Sheyenne Delta.
WELL CHARACTERISTICS.--Drilled observation well, diameter 4 in (0.10 m), depth 40 ft (12 m), cased to 30 ft (9.1 m), plastic pipe, slotted 30 to 40 ft (9.1 to 12.2 m) below land-surface datum.
DATUM.--Altitude of land-surface datum is 1,067 ft (325 m). Measuring point: Top of casing 0.65 ft (0.20 m) above land-surface datum.
REMARKS.--Well pumped, repainted and identification installed on Sept. 17, 1969.
PERIOD OF RECORD.--September 1963 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 0.78 ft (0.24 m) below land-surface datum, May 13, 1972; lowest recorded, 8.73 ft (2.66 m) below land-surface datum, Feb. 8, 1977. May have been lower during period of missing record, Jan. 17 - Feb. 7, 1977.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MINIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	6.96	7.24	7.28	7.56	7.91	8.05	6.96	2.45	3.72	5.02	4.66	6.00
10	7.03	7.26	7.39	7.69	8.00	8.01	6.24	2.52	4.06	5.30	5.31	6.12
15	7.09	7.22	7.38	7.77	8.05	7.96	5.91	2.67	4.74	5.56	5.76	6.28
20	7.14	7.22	7.42	7.85	8.06	7.65	2.60	2.65	2.98	5.85	5.99	6.56
25	7.19	7.24	7.45	7.87	8.06	7.25	2.57	3.12	3.64	5.46	5.64	6.68
EOM	7.25	7.27	7.55	7.90	8.06	7.10	2.64	3.24	4.31	4.52	5.47	6.79
MIN	6.96	7.17	7.24	7.55	7.90	7.10	2.50	2.22	2.98	4.46	4.63	5.60

WTR YR 1979 MEAN 6.11 HIGH 2.22 MAY 6 LOW 8.10 FEB 24

STARK COUNTY

465755102410701. Local number, 140-095-08AAA.
LOCATION.--Lat 46°57'55", long 102°41'07", Hydrologic Unit 10130204.
Owner: North Dakota State Water Commission.
AQUIFER.--Sentinel Butte.
WELL CHARACTERISTICS.--Drilled observation well, diameter 4 in (0.10 m), depth 160 ft (49 m), cased to 80 ft (24.4 m), plastic pipe, open ended.
DATUM.--Altitude of land-surface datum is 2,419 ft (737 m). Measuring point: Top of casing 1.70 ft (0.52 m) above land-surface datum.
PERIOD OF RECORD.--December 1968 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 15.61 ft (4.76 m) below land-surface datum, June 19, 1970; lowest measured, 27.23 ft (8.30 m) below land-surface datum, Dec. 10, 1968.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 17	17.76	JAN 24	18.05	APR 23	15.99	JULY 24	17.19
NOV 22	17.89	FEB 20	18.30	MAY 24	16.74	SEPT 19	17.83
DEC 20	19.98	MAR 22	17.99	JUNE 23	16.71		

STEELE COUNTY

471601097371001. Local number, 144-055-26BBB.
LOCATION.--Lat 47°16'01", long 097°37'10", Hydrologic Unit 09020109.
Owner: North Dakota State Water Commission.
AQUIFER.--Galesburg.
WELL CHARACTERISTICS.--Drilled observation well, diameter 1.25 in (0.03 m), depth 300 ft (91 m), cased to 53 ft (16.2 m), plastic pipe, slotted 53 to 68 ft (16.2 to 20.7 m) below land-surface datum.
DATUM.--Altitude of land-surface datum is 1,160 ft (354 m). Measuring point: Top of casing 2.00 ft (0.61 m) above land-surface datum.
PERIOD OF RECORD.--June 1970 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 17.43 ft (5.31 m) below land-surface datum, June 27, 1970; lowest measured, 21.87 ft (6.67 m) below land-surface datum, Aug. 30, 1977.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 22	21.01	JUNE 21	19.29	AUG 13	21.62	SEPT 25	20.69
MAR 7	21.30						

STUTSMAN COUNTY

463846098274101. Local number, 137-062-26DDD.
LOCATION.--Lat 46°38'46", long 098°27'41", Hydrologic Unit 10160003.
Owner: North Dakota State Water Commission.
AQUIFER.--Spiritwood.
WELL CHARACTERISTICS.--Drilled observation well, diameter 1.25 in (0.03 m), depth 240 ft (73 m), cased to 157 ft (48 m), plastic pipe, No. 12 slot screen set 157-163 ft (48 to 50 m) below land-surface datum.
DATUM.--Altitude of land-surface datum is 1,455 ft (443 m). Measuring point: Top of casing 1.80 ft (0.55 m) above land-surface datum.
PERIOD OF RECORD.--September 1970 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 15.20 ft (4.63 m) below land-surface datum, Sept. 6, 1979; lowest measured, 20.67 ft (6.30 m) below land-surface datum, May 28, 1973.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 30	16.60	FEB 28	17.86	JUNE 6	15.60	SEPT 6	15.20

TRAILL COUNTY

473228097051501. Local number, 147-051-22BBB.
LOCATION.--Lat 47°32'28", long 097°05'15", Hydrologic Unit 09020301.
Owner: North Dakota State Water Commission.
AQUIFER.--Hillsboro.
WELL CHARACTERISTICS.--Drilled observation well, diameter 1.25 in (0.03 m), depth 103 ft (31.4 m), cased to 97 ft (29.6 m), plastic pipe, No. 18 slot screen set 97 to 100 ft (29.6 m to 30.5 m) below land-surface datum.
DATUM.--Altitude of land-surface datum is 925 ft (282 m). Measuring point: Top of casing 2.40 ft (0.73 m) above land-surface datum.
PERIOD OF RECORD.--August 1965 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, +1.90 ft (+0.58 m) above land-surface datum, July 4, 1979; lowest measured, 7.27 ft (2.22 m) below land-surface datum, Aug. 17, 1965.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 22	1.86	MAR 7	2.48	JULY 4	+1.90	SEPT 10	0.40

WALSH COUNTY

481657097473601. Local number, 156-056-36CCC1.
LOCATION.--Lat 48°16'57", long 097°47'36", Hydrologic Unit 09020308.
Owner: North Dakota State Water Commission.
AQUIFER.--Fordville.
WELL CHARACTERISTICS.--Drilled observation well, diameter 1.25 in (0.03 m), depth 280 ft (85.3 m), cased to 27 ft (8.23 m), plastic pipe, No. 18 slot screen set 27 to 30 ft (8.23 to 9.14 m) below land-surface datum.
DATUM.--Altitude of land-surface datum is 1,145 ft (349 m). Measuring point: Top of casing 1.85 ft (0.56 m) above land-surface datum.
PERIOD OF RECORD.--May 1968 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 5.15 ft (1.57 m) below land-surface datum, Mar. 5, 1971; lowest measured, 6.95 ft (2.12 m) below land-surface datum, June 13, 1973.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 20	6.00	MAR 5	5.23	JUNE 15	5.23	SEPT 13	5.47

WALSH COUNTY

482408097443201. Local number, 157-055-21DBC.
LOCATION.--Lat 48°24'08", long 097°44'32", Hydrologic Unit 09020301.
Owner: North Dakota State Water Commission.
AQUIFER.--Dakota Formation.
WELL CHARACTERISTICS.--Drilled observation well, diameter 4 in (0.10 m), depth 496 ft (151 m), cased to 491 ft (150 m), steel pipe, screen set 491 to 496 ft (150 to 151 m) below land-surface datum.
DATUM.--Altitude of land-surface datum is 975 ft (297 m). Measuring point: Top of casing at land-surface datum.
PERIOD OF RECORD.--May 1968 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 90.67 ft (27.64 m) below land-surface datum, Mar. 7, 1978; lowest measured, 92.75 ft (28.27 m) below land-surface datum, Sept. 17, 1974.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 20	91.67	MAR 6	91.06	JUNE 15	91.04	SEPT 13	91.05

WALSH COUNTY

482449098095801. Local number, 157-058-18DDD.
LOCATION.--Lat 48°24'49", long 098°09'58", Hydrologic Unit 09020308.
Owner: North Dakota State Water Commission.
AQUIFER.--Pierre Shale.
WELL CHARACTERISTICS.--Drilled observation well, diameter 4 in (0.10 m), depth 140 ft (42.7 m), cased to 80 ft (24.4 m), plastic pipe, slotted screen set 80 to 100 ft (24.4 to 30.5 m) below land-surface datum.
DATUM.--Altitude of land-surface datum is 1,580 ft (482 m). Measuring point: Top of casing 1.00 ft (0.30 m) above land-surface datum.
PERIOD OF RECORD.--June 1968 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, +0.89 ft (+0.27 m) above land-surface datum, Dec. 5, 1972; lowest measured, 9.15 ft (2.79 m) below land-surface datum, Mar. 14, 1977.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 20	6.36	MAR 6	8.20	JUNE 14	4.78	SEPT 13	6.42

WARD COUNTY

480912101090301. Local number, 154-082-24ABA.
LOCATION.--Lat 48°09'12", long 101°09'03", Hydrologic Unit 09010001.
Owner: North Dakota State Water Commission.
AQUIFER.--Lower Souris.
WELL CHARACTERISTICS.--Drilled observation well, diameter 1.25 in (0.03 m), depth 115 ft (35.1 m), cased to 10 ft (3.0 m), plastic pipe, slotted screen set 10 to 40 ft (3.0 to 12.2 m) below land-surface datum.
DATUM.--Altitude of land-surface datum is 1,850 ft (564 m). Measuring point: Top of casing 1.70 ft (0.52 m) above land-surface datum.
REMARKS.--Measurement frequency has been changed from annual to quarterly as of Jan. 31, 1977.
PERIOD OF RECORD.--January 1964 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 6.33 ft (1.93 m) below land-surface datum, July 30, 1969; lowest measured, 13.69 ft (4.17 m) below land-surface datum, Mar. 4, 1964.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 30	13.27	MAR 2	13.61	JUNE 5	7.73	SEPT 5	9.66

WELLS COUNTY

474419099371201. Local number, 149-070-09DAA1.
LOCATION.--Lat 47°44'19", long 099°37'12", Hydrologic Unit 10160001.
Owner: North Dakota State Water Commission.
AQUIFER.--New Rockford.
WELL CHARACTERISTICS.--Drilled observation well, diameter 1.25 in (0.03 m), depth 283 ft (86 m), cased to 177 ft (54 m), plastic pipe, slotted 177 to 197 ft (54 to 60 m) below land-surface datum.
DATUM.--Altitude of land-surface datum is 1,610 ft (491 m). Measuring point: Top of casing 1.80 ft (0.55 m) above land-surface datum.
PERIOD OF RECORD.--May 1966 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 64.78 ft (19.74 m) below land-surface datum, Sept. 4, 1979; lowest measured, 66.65 ft (20.32 m) below land-surface datum, Mar. 15, 1967.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 29	65.28	FEB 26	65.01	JUNE 4	65.23	SEPT 4	64.78

WILLIAMS COUNTY

483048103373101. Local number, 158-100-17ADA.
LOCATION.--Lat 48°30'48", long 103°37'31", Hydrologic Unit 10110102.
Owner: North Dakota State Water Commission.
AQUIFER.--Little Muddy.
WELL CHARACTERISTICS.--Drilled observation well, diameter 1.25 in (0.03 m), depth 52 ft (15.8 m), cased to 35 ft (10.7 m), plastic pipe, slotted 35 to 43 ft (10.7 to 13.1 m) below land-surface datum.
DATUM.--Altitude of land-surface datum is 1,987 ft (606 m). Measuring point: Top of casing 2.00 ft (0.61 m) above land-surface datum.
PERIOD OF RECORD.--August 1966 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 18.02 ft (5.49 m) below land-surface datum, June 5, 1979; lowest measured, 20.32 ft (6.19 m) below land-surface datum, July 18, 1968.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 29	18.99	MAR 7	18.79	JUNE 5	18.02	SEPT 5	19.01

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

STATION NUMBER	LOCAL IDENTIFIER	GEOLOGIC UNIT	DEPTH OF WELL, TOTAL (FEET) (72008)	DATE OF SAMPLE	TIME	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	PH (UNITS) (00400)	TEMPERATURE (DEG C) (00010)	COLOR (PLATINUM-COBALT UNITS) (00080)
			BENSON						
475529098351401	151-062-15CCC	112WRCK	25	78-11-15	1100	390	8.1	7.4	2
		112WRCK	25	79-02-06	1345	440	7.7	7.0	4
		112WRCK	25	79-05-17	1150	390	8.0	4.5	0
		112WRCK	25	79-08-15	1215	420	7.8	7.0	5
475131098444101	151-063-32ABD	112WRCK	23	79-05-17	1320	1400	7.4	6.5	--
		112WRCK	23	79-08-15	1515	1190	7.2	9.5	40
			BOTTINEAU						
483701101060401	159-081-11BBB	112TILL	20	78-11-16	1215	580	8.1	8.6	0
		112TILL	20	79-02-07	1600	410	9.5	5.5	4
		112TILL	20	79-05-09	1630	560	8.3	4.0	5
		112TILL	20	79-08-16	0830	580	7.6	8.0	5
			BURMAN						
460705103041101	130-099-04BAA	--	--	78-11-06	1330	5900	7.3	9.0	--
460856103024401	131-099-22DCC	125TRVL	76	78-11-07	1205	4400	7.5	11.0	--
460604103010101	131-099-26DDD	125TRVL	76	78-11-06	1600	1430	8.8	8.5	--
			DICKEY						
460630098014703	130-059-02AAA3	112OKES	18	78-11-14	0815	633	7.4	9.0	0
		112OKES	18	79-02-05	1700	580	7.2	7.5	5
		112OKES	18	79-06-16	1750	640	7.4	6.5	--
		112OKES	18	79-08-14	2030	600	7.3	8.5	0
460401098012503	130-059-13CCC3	112OKES	18	78-11-13	1506	620	7.5	8.7	2
		112OKES	18	79-02-06	0830	700	7.4	8.5	9
		112OKES	18	79-05-16	1820	640	7.5	7.5	5
		112OKES	18	79-08-15	0730	640	7.3	8.0	5
460448098041502	130-059-16AAA2	112OKES	18	78-11-13	1700	570	7.7	8.6	1
		112OKES	18	79-02-06	0930	540	7.4	7.5	5
		112OKES	18	79-05-16	1920	650	7.6	6.5	5
		112OKES	18	79-08-15	0830	560	7.4	7.5	10
460403098041503	130-059-16DDD3	112OKES	18	78-11-13	1550	608	7.5	8.8	8
		112OKES	18	79-02-06	0900	570	7.2	7.5	8
		112OKES	18	79-05-16	1850	560	7.5	6.0	--
		112OKES	18	79-08-15	0815	560	7.3	8.0	15
460818098040202	131-059-27BBB2	112OKES	23	78-11-14	1050	1500	7.7	7.8	1
		112OKES	23	79-02-05	1430	1400	7.5	7.0	4
		112OKES	23	79-05-16	1515	1650	7.6	7.0	3
		112OKES	23	79-08-14	1730	1060	7.5	7.5	5
460732098032402	131-059-27DCC2	112OKES	18	78-11-14	0950	395	7.5	8.1	1
		112OKES	18	79-02-05	1540	450	7.2	6.5	5
		112OKES	18	79-05-16	1620	390	7.4	4.0	10
		112OKES	18	79-08-14	1900	360	7.2	7.5	15
460739098041102	131-059-28DDA2	112OKES	18	78-11-14	1025	645	7.8	9.7	2
		112OKES	18	79-02-05	1515	580	7.5	6.5	--
		112OKES	18	79-05-16	1550	650	7.7	5.5	0
		112OKES	18	79-08-14	1830	600	7.7	8.5	5
460706098041102	131-059-33ADD2	112OKES	23	78-11-14	0850	700	7.5	8.4	1
		112OKES	23	79-02-05	1630	650	7.3	8.0	5
		112OKES	23	79-05-16	1720	680	7.5	7.5	3
		112OKES	23	79-08-14	2015	690	7.3	8.5	3
460719098040202	131-059-34BBC2	112OKES	19	78-11-14	0920	630	7.9	9.4	6
		112OKES	19	79-02-05	1610	590	7.7	7.5	6
		112OKES	19	79-05-16	1650	670	7.8	7.0	5
		112OKES	19	79-08-14	1945	560	7.5	7.0	--
			EDDY						
474347098524201	149-064-17ABB	112NRKF	26	78-11-15	1300	500	7.7	7.3	1
		112NRKF	26	79-02-06	1500	500	7.3	7.0	2
		112NRKF	26	79-05-17	1430	600	7.7	6.5	--
		112NRKF	26	79-08-15	1415	570	7.5	6.5	5
474346098561401	149-065-14AAB	112NRKF	23	78-11-15	1400	740	7.8	7.4	--
		112NRKF	23	79-05-17	1500	700	7.6	6.0	0
		112NRKF	23	79-08-15	1445	875	7.4	7.0	5
475004098375601	150-062-06DDA1	112WRCK	--	78-11-15	1013	380	7.7	9.0	1

Geologic unit (aquifer):

112WRCK - Warwick aquifer, Pleistocene age.
112TILL - Till deposits, Pleistocene age.
112OKES - Oakes aquifer, Pleistocene age.
125TRVL - Tongue River-Ludlow Members of Fort Union Formation, Paleocene age.
112NRKF - New Rockford aquifer, Pleistocene age.

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

STATION NUMBER	DATE OF SAMPLE	HARDNESS (MG/L AS CACO3) (00900)	HARDNESS, NONCARBONATE (MG/L CACO3) (00902)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM ADSORPTION RATIO (00931)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	ALKALINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DISSOLVED (MG/L AS CO2) (00405)
					BENSON						
475329098351401	78-11-15	200	--	52	17	3.2	3	.1	2.2	150	--
	79-02-06	230	65	61	20	3.7	3	.1	2.3	170	--
	79-05-17	200	62	53	17	3.9	4	.1	2.2	140	--
	79-08-15	210	41	55	18	4.5	4	.1	2.0	170	--
475131098444101	79-05-17	--	--	--	--	--	--	--	--	--	--
	79-08-15	580	0	67	100	45	34	.8	20	730	--
					BUTTINEAU						
483701101060401	78-11-16	300	--	67	31	13	9	.3	1.8	250	--
	79-02-07	200	25	16	40	23	19	.7	2.5	180	--
	79-05-09	290	68	56	36	14	9	.4	2.5	220	--
	79-08-16	290	31	67	30	17	11	.4	1.7	260	--
					BOWMAN						
460705103041101	78-11-06	680	--	110	98	970	75	16	15	380	--
460856103024401	78-11-07	1500	1000	260	200	550	44	6.0	15	480	--
460804103010101	78-11-06	20	0	4.7	1.9	340	97	33	2.8	420	--
					DICKEY						
460630098014703	78-11-14	300	--	74	27	15	10	.4	11	280	--
	79-02-05	320	14	87	26	14	8	.3	11	310	--
	79-06-16	--	--	--	--	--	--	--	--	--	--
	79-08-14	290	18	74	25	16	10	.4	10	270	--
460401098012503	78-11-13	330	--	87	27	11	7	.3	3.5	280	--
	79-02-06	300	43	80	25	11	7	.3	3.3	260	--
	79-05-16	330	29	89	26	14	8	.3	3.6	300	--
	79-08-15	310	14	83	26	16	10	.4	3.5	300	29
460448098041502	78-11-13	280	--	74	22	19	13	.5	4.0	280	--
	79-02-06	260	0	70	21	19	13	.5	3.7	270	--
	79-05-16	330	10	91	25	24	13	.6	4.3	320	--
	79-08-15	310	0	84	25	27	16	.7	4.4	340	--
460403098041503	78-11-13	310	--	73	31	11	7	.3	7.0	290	--
	79-02-06	300	26	69	30	9.8	7	.2	6.5	270	--
	79-05-16	280	29	67	27	10	7	.3	6.4	250	--
	79-08-15	270	14	65	27	13	9	.3	6.5	260	25
460818098040202	78-11-14	790	--	200	71	23	6	.4	5.9	400	--
	79-02-05	750	450	190	67	24	6	.4	5.7	300	--
	79-05-16	610	240	160	--	22	7	.4	--	--	--
	79-08-14	550	160	140	48	23	8	.4	5.2	390	--
460732098032402	78-11-14	190	--	51	14	1.7	2	.1	7.8	160	--
	79-02-05	220	55	62	17	1.8	2	.1	7.9	170	--
	79-05-16	190	26	53	13	1.8	2	.1	7.4	160	--
	79-08-14	160	5	44	11	1.9	2	.1	8.2	150	--
460739098041102	78-11-14	310	--	69	34	18	11	.4	3.8	280	--
	79-02-05	290	77	64	31	15	10	.4	3.1	210	--
	79-05-16	320	71	74	--	15	9	.4	--	--	--
	79-08-14	280	30	61	31	16	11	.4	3.0	250	--
460706098041102	78-11-14	350	--	92	28	21	12	.5	4.9	320	--
	79-02-05	320	49	85	26	22	13	.5	4.8	270	--
	79-05-16	350	29	97	26	23	12	.5	5.1	320	--
	79-08-14	320	0	85	26	25	14	.6	5.0	330	--
460719098040202	78-11-14	290	11	54	38	23	14	.6	5.5	280	--
	79-02-05	280	0	52	36	22	14	.6	5.4	280	--
	79-05-16	310	44	63	--	22	13	.5	--	--	--
	79-08-14	--	--	--	--	--	--	--	--	--	--
					EDDY						
474347098524201	78-11-15	250	--	66	20	6.3	5	.2	2.3	190	--
	79-02-06	240	65	65	20	6.0	5	.2	2.2	180	--
	79-05-17	--	--	--	--	--	--	--	--	--	--
	79-08-15	270	68	71	22	8.8	7	.2	2.5	200	--
474346098561401	78-11-15	300	--	78	25	40	22	1.0	3.8	250	--
	79-05-17	300	64	82	24	39	22	1.0	3.7	240	--
	79-08-15	380	140	100	31	48	21	1.1	3.7	240	--
475004098375601	78-11-15	210	--	59	14	2.8	3	.1	.8	200	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

STATION NUMBER	DATE OF SAMPLE	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	BROMIDE DIS-SOLVED (MG/L AS BR) (71870)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)
					BENSON						
475529098351401	78-11-15	52	2.0	.2	--	23	250	--	.34	.02	--
	79-02-06	65	2.4	.2	--	24	304	281	.41	.00	--
	79-05-17	55	3.0	.2	--	21	253	241	.34	.40	--
	79-08-15	54	3.0	.2	--	2.7	272	245	.37	.66	--
475131098444101	79-05-17	--	--	--	--	--	--	--	--	--	--
	79-08-15	13	9.1	.4	--	8.1	731	708	.99	.05	--
					BUTTINEAU						
483701101060401	78-11-16	70	1.0	.3	--	16	348	--	.47	.09	--
	79-02-07	74	1.6	.1	--	5.6	277	272	.38	.08	--
	79-05-09	82	1.3	.2	--	9.6	333	336	.45	.16	--
	79-08-16	80	1.3	.3	--	5.7	359	361	.49	.12	--
					BUNMAN						
460705103041101	78-11-06	2400	7.5	.1	.2	14	3700	--	5.03	.02	1.4
460856103024401	78-11-07	2200	65	.4	.3	7.3	3770	--	5.13	.04	.35
460804103010101	78-11-06	300	6.0	2.0	.1	6.8	986	920	1.34	.03	.74
					DICKEY						
460630098014703	78-11-14	61	3.3	.2	--	29	390	--	.53	.02	--
	79-02-05	66	3.2	.1	--	30	395	427	.54	.01	--
	79-06-16	--	--	--	--	--	--	--	--	--	--
	79-08-14	64	3.1	.2	--	27	386	385	.53	.03	--
460401098012503	78-11-13	58	2.5	.4	--	28	383	--	.52	.01	--
	79-02-06	48	2.2	.4	--	31	391	361	.53	.01	--
	79-05-16	46	2.0	.5	--	28	383	393	.52	.00	--
	79-08-15	56	1.9	.4	--	31	412	402	.56	.02	--
460448098041502	78-11-13	29	6.6	.2	--	29	342	--	.47	.01	--
	79-02-06	23	6.8	.1	--	29	352	336	.48	.00	--
	79-05-16	36	8.4	.2	--	25	412	408	.56	.00	--
	79-08-15	36	10	.2	--	28	419	421	.57	.02	--
460403098041503	78-11-13	44	6.5	.1	--	26	367	--	.50	.01	--
	79-02-06	50	5.3	.1	--	26	375	361	.51	.01	--
	79-05-16	45	5.9	.2	--	23	350	338	.48	.00	--
	79-08-15	45	9.2	.1	--	26	360	352	.49	.02	--
460818098040202	78-11-14	260	120	.3	--	27	1050	--	1.43	3.9	--
	79-02-05	250	110	.3	--	29	1020	898	1.39	9.1	--
	79-05-16	150	67	--	--	--	--	748	1.10	--	--
	79-08-14	120	52	.4	--	8.0	755	637	1.03	1.0	--
460732098032402	78-11-14	34	3.2	.1	--	23	233	--	.32	.13	--
	79-02-05	49	3.0	.1	--	23	298	275	.41	.01	--
	79-05-16	22	5.2	.1	--	21	228	226	.31	.21	--
	79-08-14	22	5.6	.1	--	5.1	227	199	.31	.06	--
460739098041102	78-11-14	36	5.9	.3	--	29	391	--	.53	7.2	--
	79-02-05	39	4.8	.3	--	28	379	346	.52	7.6	--
	79-05-16	--	--	--	--	--	--	431	.56	--	--
	79-08-14	42	3.3	.4	--	.4	377	347	.51	8.8	--
460706098041102	78-11-14	57	4.8	.3	--	29	425	--	.58	.11	--
	79-02-05	56	5.0	.3	--	30	428	393	.58	.05	--
	79-05-16	56	4.4	.4	--	28	426	433	.58	.18	--
	79-08-14	54	4.7	.3	--	28	422	427	.57	.05	--
460719098040202	78-11-14	31	2.6	.3	--	25	380	--	.52	.77	--
	79-02-05	43	4.0	.2	--	25	374	369	.51	2.9	--
	79-05-16	--	--	--	--	--	--	405	.56	--	--
	79-08-14	--	--	--	--	--	--	--	--	--	--
					EDDY						
474347098524201	78-11-15	51	3.6	.1	--	22	315	--	.43	6.6	--
	79-02-06	58	4.2	.1	--	24	334	295	.45	1.6	--
	79-05-17	--	--	--	--	--	--	--	--	--	--
	79-08-15	42	4.2	.2	--	3.1	357	336	.49	14	--
474346098561401	78-11-15	110	23	.2	--	29	466	--	.63	.11	--
	79-05-17	110	20	.2	--	27	457	453	.62	.25	--
	79-08-15	220	23	.2	--	9.2	621	581	.84	.04	--
475004098375601	78-11-15	6.9	.5	.2	--	25	225	--	.31	.03	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

STATION NUMBER	DATE OF SAMPLE	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BORON, DIS-SOLVED (UG/L AS B) (01020)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)
					BENSON						
475329098351401	78-11-15	.02	--	--	--	40	--	--	--	10	--
	79-02-06	.00	--	--	--	40	--	--	--	10	--
	79-05-17	.01	--	--	--	30	--	--	--	0	--
	79-08-15	.00	--	--	--	10	--	--	--	10	--
475151098444101	79-05-17	--	--	--	--	--	--	--	--	--	--
	79-08-15	.01	--	--	--	140	--	--	--	6000	--
					BOTTINEAU						
483701101060401	78-11-16	.04	--	--	--	70	--	--	--	310	--
	79-02-07	.00	--	--	--	60	--	--	--	10	--
	79-05-09	.00	--	--	--	860	--	--	--	10	--
	79-08-16	.02	--	--	--	20	--	--	--	150	--
					BOWMAN						
460705103041101	78-11-06	.05	0	1	0	5800	0	0	0	1900	0
460856103024401	78-11-07	.03	0	3	0	560	0	0	0	60	0
460804103010101	78-11-06	.14	40	2	100	980	2	10	0	80	7
					DICKEY						
460650098014703	78-11-14	.03	--	--	--	50	--	--	--	2300	--
	79-02-05	.00	--	--	--	20	--	--	--	1900	--
	79-06-16	--	--	--	--	--	--	--	--	--	--
	79-08-14	.02	--	--	--	40	--	--	--	2400	--
460401098012503	78-11-13	.13	--	--	--	40	--	--	--	3500	--
	79-02-06	.01	--	--	--	40	--	--	--	2400	--
	79-05-16	.01	--	--	--	40	--	--	--	2500	--
	79-08-15	.01	--	--	--	30	--	--	--	3000	--
460448098041502	78-11-13	.05	--	--	--	50	--	--	--	170	--
	79-02-06	.02	--	--	--	50	--	--	--	140	--
	79-05-16	.03	--	--	--	60	--	--	--	270	--
	79-08-15	.03	--	--	--	50	--	--	--	260	--
460403098041503	78-11-13	.22	--	--	--	60	--	--	--	2500	--
	79-02-06	.03	--	--	--	40	--	--	--	1200	--
	79-05-16	.04	--	--	--	40	--	--	--	1800	--
	79-08-15	.17	--	--	--	40	--	--	--	2600	--
460818098040202	78-11-14	.12	--	--	--	120	--	--	--	10	--
	79-02-05	.11	--	--	--	110	--	--	--	<0	--
	79-05-16	--	--	--	--	100	--	--	--	--	--
	79-08-14	.14	--	--	--	30	--	--	--	30	--
460732098032402	78-11-14	.08	--	--	--	40	--	--	--	5200	--
	79-02-05	.05	--	--	--	30	--	--	--	5400	--
	79-05-16	.02	--	--	--	30	--	--	--	2300	--
	79-08-14	.02	--	--	--	30	--	--	--	6300	--
460739098041102	78-11-14	.04	--	--	--	100	--	--	--	20	--
	79-02-05	.03	--	--	--	80	--	--	--	10	--
	79-05-16	--	--	--	--	70	--	--	--	--	--
	79-08-14	.03	--	--	--	30	--	--	--	0	--
460706098041102	78-11-14	.04	--	--	--	110	--	--	--	440	--
	79-02-05	.02	--	--	--	100	--	--	--	150	--
	79-05-16	.01	--	--	--	110	--	--	--	20	--
	79-08-14	.03	--	--	--	90	--	--	--	150	--
460719098040202	78-11-14	.04	--	--	--	130	--	--	--	30	--
	79-02-05	.03	--	--	--	120	--	--	--	30	--
	79-05-16	--	--	--	--	100	--	--	--	--	--
	79-08-14	--	--	--	--	--	--	--	--	--	--
					EDDY						
474347098524201	78-11-15	.02	--	--	--	40	--	--	--	10	--
	79-02-06	.04	--	--	--	40	--	--	--	10	--
	79-05-17	--	--	--	--	--	--	--	--	--	--
	79-08-15	.01	--	--	--	20	--	--	--	0	--
474346098561401	78-11-15	.07	--	--	--	90	--	--	--	980	--
	79-05-17	.02	--	--	--	100	--	--	--	490	--
	79-08-15	.01	--	--	--	50	--	--	--	610	--
475004098375601	78-11-15	.01	--	--	--	30	--	--	--	20	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

STATION NUMBER	DATE OF SAMPLE	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	GROSS ALPHA, DIS-SOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DIS-SOLVED (PCI/L AS CS-137) (03515)
					BENSON						
475329098351401	78-11-15	--	120	--	--	--	--	--	--	--	--
	79-02-06	--	110	--	--	--	--	--	--	--	--
	79-05-17	--	80	--	--	--	--	--	--	--	--
	79-08-15	--	140	--	--	--	--	--	--	--	--
475131098444101	79-05-17	--	--	--	--	--	--	--	--	--	--
	79-08-15	--	380	--	--	--	--	--	--	--	--
					BOTTINEAU						
483701101060401	78-11-16	--	800	--	--	--	--	--	--	--	--
	79-02-07	--	20	--	--	--	--	--	--	--	--
	79-05-09	--	340	--	--	--	--	--	--	--	--
	79-08-16	--	870	--	--	--	--	--	--	--	--
					BOWMAN						
460705103041101	78-11-06	290	700	.0	0	0	4000	30	<30	<.4	20
460856103024401	78-11-07	110	600	.0	6	0	4700	50	83	<.4	18
460804103010101	78-11-06	20	20	.0	0	0	170	10	10	1.1	<3.6
					DICKEY						
460630098014703	78-11-14	--	760	--	--	--	--	--	--	--	--
	79-02-05	--	760	--	--	--	--	--	--	--	--
	79-06-16	--	--	--	--	--	--	--	--	--	--
	79-08-14	--	750	--	--	--	--	--	--	--	--
460401098012503	78-11-13	--	980	--	--	--	--	--	--	--	--
	79-02-06	--	830	--	--	--	--	--	--	--	--
	79-05-16	--	1000	--	--	--	--	--	--	--	--
	79-08-15	--	1100	--	--	--	--	--	--	--	--
460448098041502	78-11-13	--	980	--	--	--	--	--	--	--	--
	79-02-06	--	830	--	--	--	--	--	--	--	--
	79-05-16	--	1100	--	--	--	--	--	--	--	--
	79-08-15	--	1200	--	--	--	--	--	--	--	--
460403098041503	78-11-13	--	1600	--	--	--	--	--	--	--	--
	79-02-06	--	1000	--	--	--	--	--	--	--	--
	79-05-16	--	1600	--	--	--	--	--	--	--	--
	79-08-15	--	1500	--	--	--	--	--	--	--	--
460818098040202	78-11-14	--	760	--	--	--	--	--	--	--	--
	79-02-05	--	550	--	--	--	--	--	--	--	--
	79-05-16	--	--	--	--	--	--	--	--	--	--
	79-08-14	--	1200	--	--	--	--	--	--	--	--
460732098032402	78-11-14	--	3100	--	--	--	--	--	--	--	--
	79-02-05	--	3200	--	--	--	--	--	--	--	--
	79-05-16	--	3100	--	--	--	--	--	--	--	--
	79-08-14	--	4000	--	--	--	--	--	--	--	--
460739098041102	78-11-14	--	1000	--	--	--	--	--	--	--	--
	79-02-05	--	530	--	--	--	--	--	--	--	--
	79-05-16	--	--	--	--	--	--	--	--	--	--
	79-08-14	--	970	--	--	--	--	--	--	--	--
460706098041102	78-11-14	--	640	--	--	--	--	--	--	--	--
	79-02-05	--	600	--	--	--	--	--	--	--	--
	79-05-16	--	150	--	--	--	--	--	--	--	--
	79-08-14	--	60	--	--	--	--	--	--	--	--
460719098040202	78-11-14	--	440	--	--	--	--	--	--	--	--
	79-02-05	--	270	--	--	--	--	--	--	--	--
	79-05-16	--	--	--	--	--	--	--	--	--	--
	79-08-14	--	--	--	--	--	--	--	--	--	--
					EDDY						
474347098524201	78-11-15	--	140	--	--	--	--	--	--	--	--
	79-02-06	--	110	--	--	--	--	--	--	--	--
	79-05-17	--	--	--	--	--	--	--	--	--	--
	79-08-15	--	210	--	--	--	--	--	--	--	--
474346098561401	78-11-15	--	720	--	--	--	--	--	--	--	--
	79-05-17	--	730	--	--	--	--	--	--	--	--
	79-08-15	--	1100	--	--	--	--	--	--	--	--
475004098375601	78-11-15	--	30	--	--	--	--	--	--	--	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

STATION NUMBER	DATE OF SAMPLE	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)	GROSS BETA, DIS- SOLVED (PCI/L AS SR/YT-90) (80050)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90) (80060)	RADIUM 226, DIS- SOLVED, RADON METHOD (PCI/L) (09511)	URANIUM DIS- SOLVED, EXTRAC- TION (UG/L) (80020)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)
			BENSON				
475329098351401	78-11-15	--	--	--	--	--	--
	79-02-06	--	--	--	--	--	--
	79-05-17	--	--	--	--	--	--
	79-08-15	--	--	--	--	--	--
475131098444101	79-05-17	--	--	--	--	--	--
	79-08-15	--	--	--	--	--	--
			BUTTINEAU				
483701101060401	78-11-16	--	--	--	--	--	--
	79-02-07	--	--	--	--	--	--
	79-05-09	--	--	--	--	--	--
	79-08-16	--	--	--	--	--	--
			BOWMAN				
460705103041101	78-11-06	<.4	19	<.4	.38	.06	8.1
460856103024401	78-11-07	1.7	16	1.8	.54	24	7.9
460804103010101	78-11-06	.7	<3.3	.8	.13	.60	6.4
			DICKEY				
460630098014703	78-11-14	--	--	--	--	--	--
	79-02-05	--	--	--	--	--	--
	79-06-16	--	--	--	--	--	--
	79-08-14	--	--	--	--	--	--
460401098012503	78-11-13	--	--	--	--	--	--
	79-02-06	--	--	--	--	--	--
	79-05-16	--	--	--	--	--	--
	79-08-15	--	--	--	--	--	--
460448098041502	78-11-13	--	--	--	--	--	--
	79-02-06	--	--	--	--	--	--
	79-05-16	--	--	--	--	--	--
	79-08-15	--	--	--	--	--	--
460403098041503	78-11-13	--	--	--	--	--	--
	79-02-06	--	--	--	--	--	--
	79-05-16	--	--	--	--	--	--
	79-08-15	--	--	--	--	--	--
460818098040202	78-11-14	--	--	--	--	--	--
	79-02-05	--	--	--	--	--	--
	79-05-16	--	--	--	--	--	--
	79-08-14	--	--	--	--	--	--
460732098032402	78-11-14	--	--	--	--	--	--
	79-02-05	--	--	--	--	--	--
	79-05-16	--	--	--	--	--	--
	79-08-14	--	--	--	--	--	--
460739098041102	78-11-14	--	--	--	--	--	--
	79-02-05	--	--	--	--	--	--
	79-05-16	--	--	--	--	--	--
	79-08-14	--	--	--	--	--	--
460706098041102	78-11-14	--	--	--	--	--	--
	79-02-05	--	--	--	--	--	--
	79-05-16	--	--	--	--	--	--
	79-08-14	--	--	--	--	--	--
460719098040202	78-11-14	--	--	--	--	--	--
	79-02-05	--	--	--	--	--	--
	79-05-16	--	--	--	--	--	--
	79-08-14	--	--	--	--	--	--
			EDDY				
474347098524201	78-11-15	--	--	--	--	--	--
	79-02-06	--	--	--	--	--	--
	79-05-17	--	--	--	--	--	--
	79-08-15	--	--	--	--	--	--
474346098561401	78-11-15	--	--	--	--	--	--
	79-05-17	--	--	--	--	--	--
	79-08-15	--	--	--	--	--	--
475004098375601	78-11-15	--	--	--	--	--	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

STATION NUMBER	LOCAL IDENTIFIER	GEOLOGIC UNIT	DEPTH OF WELL, TOTAL (FEET) (72008)	DATE OF SAMPLE	TIME	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	PH (UNITS) (00400)	TEMPERATURE (DEG C) (00010)	COLOR (PLATINUM-COBALT UNITS) (00080)
				EDDY					
475004098375601	150-062-06ODA1	112WRCK	--	79-02-06	1310	350	7.4	6.5	3
		112WRCK	--	79-05-17	1110	380	7.7	6.0	0
		112WRCK	--	79-08-15	1145	375	7.5	8.5	--
474747098354301	150-062-21ACD	112WRCK	--	78-11-16	1615	450	6.3	--	4
		112WRCK	--	79-04-24	1515	410	7.8	1.5	20
		112WRCK	--	79-08-23	1535	425	8.1	8.0	10
474851098425501	150-063-15B8C	112WRCK	--	78-11-16	1500	465	8.5	4.0	4
		112WRCK	--	79-02-14	1200	415	7.0	4.0	4
		112WRCK	--	79-04-24	1345	435	8.0	1.5	15
		112WRCK	--	79-08-23	1305	438	8.1	12.5	5
474628099010301	150-065-29CCC	112NRKF	23	78-11-15	1440	663	7.6	7.5	1
		112NRKF	23	79-02-06	1545	580	7.2	5.5	7
		112NRKF	23	79-05-17	1545	650	7.6	5.0	3
		112NRKF	23	79-08-15	1530	675	7.5	7.0	5
				MCHENRY					
482028100475601	156-079-14BBB	112TILL	12	78-11-17	1115	760	7.7	9.2	4
		112TILL	12	79-02-07	1130	750	7.7	4.5	4
		112TILL	12	79-05-09	1150	310	8.2	3.5	5
		112TILL	12	79-08-16	1500	690	7.6	10.5	5
482028100503201	156-079-16BBB	112TILL	19	78-11-17	1045	724	7.9	8.7	20
		112TILL	19	79-02-07	1045	670	7.9	4.5	5
		112TILL	19	79-05-09	1100	750	7.5	2.0	5
		112TILL	19	79-08-16	1530	800	7.6	9.0	10
482405100474601	157-078-19CCC	112TILL	20	78-11-17	1150	1070	7.9	9.4	2
		112TILL	20	79-05-09	1230	1000	7.8	4.0	10
		112TILL	20	79-08-16	1430	1000	7.6	9.5	5
482357100502302	157-079-26BBB2	112TILL	12	78-11-17	1015	840	7.6	9.4	2
		112TILL	12	79-02-07	1210	750	7.9	3.5	2
		112TILL	12	79-05-09	1315	680	7.5	3.5	10
		112TILL	12	79-08-16	1400	570	7.9	12.0	5
483240100503201	158-079-03AAA	112TILL	12	78-11-17	0930	9600	7.6	8.6	6
		112TILL	12	79-02-07	1330	8000	7.7	3.0	13
		112TILL	12	79-05-09	1500	E14000	7.6	2.5	70
		112TILL	12	79-08-16	1315	12620	7.4	8.0	30
483003100503201	158-079-22AAA	112TILL	134	78-11-16	1435	562	8.4	9.0	2
		112TILL	134	79-02-07	1245	450	8.8	6.0	3
		112TILL	134	79-05-09	1350	500	8.2	5.0	10
		112TILL	134	79-08-16	1130	500	8.1	7.5	0
483003100480401	158-079-24AAB	112TILL	16	78-11-16	1518	652	8.1	9.0	2
		112TILL	16	79-02-07	1310	480	8.4	6.5	5
		112TILL	16	79-05-09	1420	540	7.8	5.0	5
		112TILL	16	79-08-16	1215	520	7.7	7.0	5
482825100565502	158-080-25CCC2	112TILL	12	78-11-16	1025	1860	7.7	8.4	2
		112TILL	12	79-02-08	1045	1700	7.8	4.0	5
		112TILL	12	79-05-09	1830	2000	7.7	3.0	15
		112TILL	12	79-08-16	1045	2100	7.7	9.0	10
482825101100202	158-080-29DDD2	112TILL	12	78-11-16	0945	692	7.5	8.6	4
		112TILL	12	79-02-08	1015	650	7.5	5.5	9
		112TILL	12	79-05-09	1800	790	7.4	3.0	15
		112TILL	12	79-08-16	1045	725	7.4	9.0	10
483418100475501	159-079-25AAD	112TILL	12	78-11-16	1320	2000	7.8	9.6	1
		112TILL	12	79-02-07	1400	4000	7.3	5.0	5
		112TILL	12	79-05-09	1530	7000	6.0	4.0	50
		112TILL	12	79-08-16	1245	2750	7.6	11.0	--
483247100593201	159-080-34CCC	112TILL	12	78-11-16	1108	2440	7.5	8.2	2
		112TILL	12	79-05-09	1715	4000	7.7	3.0	30
		112TILL	12	79-08-16	0930	2400	7.3	8.5	0

Geologic unit (aquifer):

112WRCK - Warwick aquifer, Pleistocene age.
112NRKF - New Rockford aquifer, Pleistocene age.
112TILL - Till deposits, Pleistocene age.

E - Estimated.

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

STATION NUMBER	DATE OF SAMPLE	HARDNESS (MG/L AS CACO3) (00900)	HARDNESS, NONCARBONATE (MG/L CACO3) (00902)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM ADSORPTION RATIO (00931)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	ALKALINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DISSOLVED (MG/L AS CO2) (00405)
					EDDY						
475004098375601	79-02-06	190	0	56	13	2.6	3	.1	.7	200	--
	79-05-17	200	13	60	13	3.2	3	.1	1.4	190	--
	79-08-15	190	1	55	13	3.0	3	.1	.8	190	--
474747098354301	78-11-16	220	4	60	18	3.1	3	.1	.8	220	--
	79-04-24	180	13	47	16	3.2	4	.1	2.5	170	--
	79-08-23	220	5	62	17	2.6	2	.1	.7	220	--
474851098425501	78-11-16	190	--	53	15	8.6	9	.3	1.9	180	--
	79-02-14	210	27	58	15	8.3	8	.3	1.7	180	--
	79-04-24	180	19	47	15	9.9	11	.3	2.5	160	--
	79-08-23	210	7	58	15	10	9	.3	2.0	200	--
474628099010301	78-11-15	310	--	71	31	23	14	.6	5.3	270	--
	79-02-06	290	30	70	28	21	13	.5	4.7	260	--
	79-05-17	310	52	77	29	23	14	.6	5.3	260	--
	79-08-15	320	25	75	31	32	18	.8	5.3	290	--
					MCHENRY						
482028100475601	78-11-17	340	--	75	36	44	22	1.0	4.1	350	--
	79-02-07	340	56	75	36	42	21	1.0	3.5	280	--
	79-05-09	160	8	17	28	4.6	6	.2	6.8	150	--
	79-08-16	330	0	53	48	31	32	.7	7.3	360	--
482028100503201	78-11-17	350	12	80	37	29	15	.7	4.8	340	--
	79-02-07	330	53	74	36	25	14	.6	4.1	280	--
	79-05-09	380	30	88	39	27	13	.6	5.1	350	--
	79-08-16	380	67	80	43	35	17	.8	4.9	310	--
482405100474601	78-11-17	530	--	120	55	30	11	.6	4.5	410	--
	79-05-09	550	150	120	60	30	11	.6	4.9	400	--
	79-08-16	520	72	120	54	33	12	.6	4.0	450	--
482357100502302	78-11-17	440	--	110	40	13	6	.3	3.7	270	--
	79-02-07	370	180	94	34	9.8	5	.2	2.5	190	--
	79-05-09	370	130	98	31	12	7	.3	3.0	240	--
	79-08-16	300	90	54	40	13	9	.3	2.0	210	--
483240100503201	78-11-17	5700	--	150	1300	650	20	3.7	13	560	--
	79-02-07	6200	6000	510	1200	590	17	3.3	12	260	--
	79-05-09	9800	9100	120	2300	1200	21	5.3	11	700	--
	79-08-16	3500	2800	230	700	1000	39	7.4	11	670	--
483003100503201	78-11-16	290	--	60	34	12	8	.3	3.2	280	--
	79-02-07	240	24	50	29	11	9	.3	2.8	220	--
	79-05-09	260	25	50	34	12	9	.3	3.4	240	--
	79-08-16	240	0	46	31	15	22	.4	3.1	250	--
483003100480401	78-11-16	300	--	88	20	6.5	4	.2	2.1	280	--
	79-02-07	270	17	74	20	6.6	5	.2	1.9	250	--
	79-05-09	310	37	90	20	7.1	5	.2	2.3	270	--
	79-08-16	260	0	73	19	8.0	6	.2	1.9	270	--
482825100565502	78-11-16	750	--	120	110	170	33	2.7	3.8	430	--
	79-02-08	750	350	120	110	140	29	2.2	3.6	400	--
	79-05-09	830	470	100	140	140	27	2.1	3.5	360	--
	79-08-16	1100	720	130	190	160	24	2.1	3.4	390	--
482825101100202	78-11-16	320	--	69	36	24	14	.6	11	250	--
	79-02-08	310	56	68	33	21	13	.5	11	250	--
	79-05-09	360	95	85	37	24	12	.5	12	270	--
	79-08-16	340	65	77	37	36	18	.8	11	280	--
483418100475501	78-11-16	1000	--	120	170	150	24	2.1	6.4	610	--
	79-02-07	2200	1700	310	340	240	19	2.2	11	480	--
	79-05-09	1600	1200	57	350	500	40	5.5	23	430	--
	79-08-16	--	--	--	--	--	--	--	--	--	--
483247100593201	78-11-16	1500	--	330	170	33	4	.4	9.8	310	--
	79-05-09	1900	1700	130	390	96	10	1.0	4.6	270	--
	79-08-16	1100	770	370	36	42	8	.6	8.5	300	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

STATION NUMBER	DATE OF SAMPLE	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	BROMIDE DIS-SOLVED (MG/L AS BR) (71870)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)
					EDDY						
475004098375601	79-02-06	6.6	.8	.1	--	25	229	225	.31	.01	--
	79-05-17	8.6	2.0	.2	--	22	220	224	.30	.01	--
	79-08-15	12	.8	.2	--	6.4	223	206	.30	.05	--
474747098354301	78-11-16	21	1.4	.1	--	26	278	--	.38	.56	--
	79-04-24	25	1.8	.2	--	22	249	222	.34	.42	--
	79-08-23	17	.8	.2	--	32	260	268	.38	.83	--
474851098425501	78-11-16	38	2.2	.1	--	27	267	--	.36	.02	--
	79-02-14	25	2.4	.1	--	25	258	246	.32	.55	--
	79-04-24	45	2.8	.2	--	23	271	243	.37	.21	--
	79-08-23	36	2.5	.2	--	29	286	273	.39	.04	--
474628099010301	78-11-15	92	4.8	.2	--	25	410	--	.56	.02	--
	79-02-06	81	4.7	.1	--	26	407	393	.55	.00	--
	79-05-17	84	4.1	.2	--	23	413	403	.56	.00	--
	79-08-15	100	5.6	.2	--	6.1	439	431	.60	.02	--
					MCHENRY						
482028100475601	78-11-17	76	1.9	.1	--	23	470	--	.64	.05	--
	79-02-07	87	1.5	.1	--	21	484	455	.66	.04	--
	79-05-09	15	.8	.1	--	4.7	182	188	.22	.12	--
	79-08-16	55	1.0	.1	--	4.5	388	417	.53	.05	--
482028100503201	78-11-17	60	4.9	.2	--	21	445	--	.61	.59	--
	79-02-07	62	4.7	.2	--	21	437	397	.59	.01	--
	79-05-09	78	5.3	.2	--	18	472	473	.64	.05	--
	79-08-16	120	6.0	.2	--	.6	520	477	.71	.04	--
482405100474601	78-11-17	170	11	.2	--	18	689	--	.94	.32	--
	79-05-09	140	9.1	.2	--	12	680	669	.92	.11	--
	79-08-16	160	11	.2	--	7.1	690	663	.94	.11	--
482357100502302	78-11-17	150	2.8	.2	--	20	569	--	.77	10	--
	79-02-07	140	2.7	.2	--	17	520	481	.71	15	--
	79-05-09	130	2.1	.3	--	17	445	458	.60	4.5	--
	79-08-16	91	1.7	.4	--	7.9	366	364	.50	6.3	--
483240100503201	78-11-17	6500	41	.2	--	25	10700	--	14.6	25	--
	79-02-07	7000	47	.2	--	24	10200	9630	13.9	21	--
	79-05-09	11000	94	.2	--	13	18800	15200	25.6	17	--
	79-08-16	--	100	.2	--	23	18500	13500	25.2	--	--
483003100503201	78-11-16	56	2.2	.1	--	17	328	--	.45	.15	--
	79-02-07	43	2.0	.1	--	6.0	290	277	.39	.20	--
	79-05-09	35	2.8	.2	--	9.6	292	292	.40	.06	--
	79-08-16	35	7.9	.2	--	1.3	275	291	.37	.11	--
483003100480401	78-11-16	23	1.5	.2	--	21	353	--	.45	.06	--
	79-02-07	27	1.3	.2	--	18	324	300	.44	.01	--
	79-05-09	26	1.2	.2	--	19	324	329	.44	.01	--
	79-08-16	32	1.4	.2	--	.5	324	299	.44	.06	--
482825100565502	78-11-16	540	9.7	.3	--	23	1370	--	1.86	29	--
	79-02-08	550	9.3	.3	--	21	1290	1290	1.75	27	--
	79-05-09	620	10	.5	--	12	1430	1330	1.94	20	--
	79-08-16	940	14	.4	--	16	1860	1770	2.53	18	--
482825101100202	78-11-16	130	3.8	.2	--	23	444	--	.60	.37	--
	79-02-08	120	3.1	.2	--	22	449	429	.61	.00	--
	79-05-09	150	4.0	.1	--	19	491	496	.67	.04	--
	79-08-16	140	4.3	.2	--	4.2	489	480	.67	.09	--
483418100475501	78-11-16	620	16	.9	--	22	1470	--	2.00	.12	--
	79-02-07	2100	39	.4	--	26	3740	3360	5.09	.76	--
	79-05-09	2100	50	.4	--	6.0	3630	3350	4.94	.04	--
	79-08-16	--	--	--	--	--	--	--	--	--	--
483247100593201	78-11-16	1300	5.1	.2	--	27	2210	--	3.01	.24	--
	79-05-09	1600	8.8	.2	--	8.4	3030	2600	4.12	.05	--
	79-08-16	--	6.4	.2	--	25	2780	3570	3.78	--	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

STATION NUMBER	DATE OF SAMPLE	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BORON, DIS-SOLVED (UG/L AS B) (01020)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)
					EDDY						
475004098375601	79-02-06	.00	--	--	--	30	--	--	--	10	--
	79-05-17	.01	--	--	--	20	--	--	--	0	--
	79-08-15	.00	--	--	--	9	--	--	--	10	--
474747098354301	78-11-16	.01	--	--	--	50	--	--	--	40	--
	79-04-24	.05	--	--	--	40	--	--	--	80	--
	79-08-23	.02	--	--	--	20	--	--	--	40	--
474851098425501	78-11-16	.03	--	--	--	80	--	--	--	20	--
	79-02-14	.07	--	--	--	60	--	--	--	10	--
	79-04-24	.06	--	--	--	50	--	--	--	60	--
	79-08-23	.04	--	--	--	30	--	--	--	20	--
474628099010301	78-11-15	.06	--	--	--	80	--	--	--	940	--
	79-02-06	.00	--	--	--	60	--	--	--	1100	--
	79-05-17	.01	--	--	--	120	--	--	--	900	--
	79-08-15	.02	--	--	--	50	--	--	--	950	--
					MCHENRY						
482028100475601	78-11-17	.01	--	--	--	50	--	--	--	10	--
	79-02-07	.00	--	--	--	70	--	--	--	10	--
	79-05-09	.01	--	--	--	510	--	--	--	10	--
	79-08-16	.00	--	--	--	110	--	--	--	10	--
482028100503201	78-11-17	.01	--	--	--	90	--	--	--	300	--
	79-02-07	.00	--	--	--	60	--	--	--	600	--
	79-05-09	.00	--	--	--	80	--	--	--	880	--
	79-08-16	.00	--	--	--	80	--	--	--	470	--
482405100474601	78-11-17	.01	--	--	--	80	--	--	--	70	--
	79-05-09	.00	--	--	--	230	--	--	--	490	--
	79-08-16	.00	--	--	--	60	--	--	--	1800	--
482357100502302	78-11-17	.01	--	--	--	70	--	--	--	10	--
	79-02-07	.00	--	--	--	40	--	--	--	10	--
	79-05-09	.00	--	--	--	80	--	--	--	10	--
	79-08-16	.00	--	--	--	60	--	--	--	10	--
483240100503201	78-11-17	.02	--	--	--	180	--	--	--	20	--
	79-02-07	.05	--	--	--	150	--	--	--	60	--
	79-05-09	.04	--	--	--	640	--	--	--	70	--
	79-08-16	.02	--	--	--	170	--	--	--	90	--
483003100503201	78-11-16	.01	--	--	--	40	--	--	--	30	--
	79-02-07	.00	--	--	--	30	--	--	--	30	--
	79-05-09	.00	--	--	--	120	--	--	--	10	--
	79-08-16	.00	--	--	--	40	--	--	--	10	--
483003100480401	78-11-16	.01	--	--	--	50	--	--	--	200	--
	79-02-07	.00	--	--	--	30	--	--	--	0	--
	79-05-09	.00	--	--	--	250	--	--	--	40	--
	79-08-16	.00	--	--	--	30	--	--	--	420	--
482825100565502	78-11-16	.01	--	--	--	110	--	--	--	10	--
	79-02-08	.00	--	--	--	80	--	--	--	10	--
	79-05-09	.01	--	--	--	110	--	--	--	10	--
	79-08-16	.02	--	--	--	100	--	--	--	20	--
482825101100202	78-11-16	.06	--	--	--	80	--	--	--	590	--
	79-02-08	.02	--	--	--	40	--	--	--	490	--
	79-05-09	.02	--	--	--	530	--	--	--	1000	--
	79-08-16	.03	--	--	--	40	--	--	--	880	--
483418100475501	78-11-16	.01	--	--	--	180	--	--	--	70	--
	79-02-07	--	--	--	--	130	--	--	--	570	--
	79-05-09	.03	--	--	--	850	--	--	--	10	--
	79-08-16	--	--	--	--	--	--	--	--	--	--
483247100593201	78-11-16	.01	--	--	--	120	--	--	--	10	--
	79-05-09	.03	--	--	--	180	--	--	--	10	--
	79-08-16	.02	--	--	--	100	--	--	--	20	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

STATION NUMBER	DATE OF SAMPLE	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	GROSS ALPHA, DIS-SOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DIS-SOLVED (PCI/L AS CS-137) (03515)
					EDDY						
475004098375601	79-02-06	--	20	--	--	--	--	--	--	--	--
	79-05-17	--	20	--	--	--	--	--	--	--	--
	79-08-15	--	30	--	--	--	--	--	--	--	--
474747098354301	78-11-16	--	40	--	--	--	--	--	--	--	--
	79-04-24	--	180	--	--	--	--	--	--	--	--
	79-08-23	--	40	--	--	--	--	--	--	--	--
474851098425501	78-11-16	--	80	--	--	--	--	--	--	--	--
	79-02-14	--	90	--	--	--	--	--	--	--	--
	79-04-24	--	170	--	--	--	--	--	--	--	--
	79-08-23	--	100	--	--	--	--	--	--	--	--
474628099010301	78-11-15	--	200	--	--	--	--	--	--	--	--
	79-02-06	--	210	--	--	--	--	--	--	--	--
	79-05-17	--	210	--	--	--	--	--	--	--	--
	79-08-15	--	230	--	--	--	--	--	--	--	--
					MCHENRY						
482028100475601	78-11-17	--	20	--	--	--	--	--	--	--	--
	79-02-07	--	5	--	--	--	--	--	--	--	--
	79-05-09	--	0	--	--	--	--	--	--	--	--
	79-08-16	--	5	--	--	--	--	--	--	--	--
482028100503201	78-11-17	--	490	--	--	--	--	--	--	--	--
	79-02-07	--	490	--	--	--	--	--	--	--	--
	79-05-09	--	580	--	--	--	--	--	--	--	--
	79-08-16	--	440	--	--	--	--	--	--	--	--
482405100474601	78-11-17	--	1000	--	--	--	--	--	--	--	--
	79-05-09	--	780	--	--	--	--	--	--	--	--
	79-08-16	--	1000	--	--	--	--	--	--	--	--
482357100502302	78-11-17	--	10	--	--	--	--	--	--	--	--
	79-02-07	--	2	--	--	--	--	--	--	--	--
	79-05-09	--	0	--	--	--	--	--	--	--	--
	79-08-16	--	10	--	--	--	--	--	--	--	--
483240100503201	78-11-17	--	20	--	--	--	--	--	--	--	--
	79-02-07	--	40	--	--	--	--	--	--	--	--
	79-05-09	--	40	--	--	--	--	--	--	--	--
	79-08-16	--	50	--	--	--	--	--	--	--	--
483003100503201	78-11-16	--	250	--	--	--	--	--	--	--	--
	79-02-07	--	70	--	--	--	--	--	--	--	--
	79-05-09	--	160	--	--	--	--	--	--	--	--
	79-08-16	--	190	--	--	--	--	--	--	--	--
483003100480401	78-11-16	--	580	--	--	--	--	--	--	--	--
	79-02-07	--	290	--	--	--	--	--	--	--	--
	79-05-09	--	340	--	--	--	--	--	--	--	--
	79-08-16	--	370	--	--	--	--	--	--	--	--
482825100565502	78-11-16	--	10	--	--	--	--	--	--	--	--
	79-02-08	--	7	--	--	--	--	--	--	--	--
	79-05-09	--	0	--	--	--	--	--	--	--	--
	79-08-16	--	10	--	--	--	--	--	--	--	--
482825101100202	78-11-16	--	380	--	--	--	--	--	--	--	--
	79-02-08	--	260	--	--	--	--	--	--	--	--
	79-05-09	--	480	--	--	--	--	--	--	--	--
	79-08-16	--	430	--	--	--	--	--	--	--	--
483418100475501	78-11-16	--	20	--	--	--	--	--	--	--	--
	79-02-07	--	160	--	--	--	--	--	--	--	--
	79-05-09	--	10	--	--	--	--	--	--	--	--
	79-08-16	--	--	--	--	--	--	--	--	--	--
483247100593201	78-11-16	--	0	--	--	--	--	--	--	--	--
	79-05-09	--	10	--	--	--	--	--	--	--	--
	79-08-16	--	10	--	--	--	--	--	--	--	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

STATION NUMBER	DATE OF SAMPLE	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)	GROSS BETA, DIS-SOLVED (PCI/L AS SR/YT-90) (80050)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90) (80060)	RADIUM 226, DIS-SOLVED, RADON METHOD (PCI/L) (09511)	URANIUM DIS-SOLVED, EXTRAC-TION (UG/L) (80020)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)
			EDDY				
475004098375601	79-02-06	--	--	--	--	--	--
	79-05-17	--	--	--	--	--	--
	79-08-15	--	--	--	--	--	--
474747098354301	78-11-16	--	--	--	--	--	--
	79-04-24	--	--	--	--	--	--
	79-08-23	--	--	--	--	--	--
474851098425501	78-11-16	--	--	--	--	--	--
	79-02-14	--	--	--	--	--	--
	79-04-24	--	--	--	--	--	--
	79-08-23	--	--	--	--	--	--
474628099010301	78-11-15	--	--	--	--	--	--
	79-02-06	--	--	--	--	--	--
	79-05-17	--	--	--	--	--	--
	79-08-15	--	--	--	--	--	--
			MCHENRY				
482028100475601	78-11-17	--	--	--	--	--	--
	79-02-07	--	--	--	--	--	--
	79-05-09	--	--	--	--	--	--
	79-08-16	--	--	--	--	--	--
482028100503201	78-11-17	--	--	--	--	--	--
	79-02-07	--	--	--	--	--	--
	79-05-09	--	--	--	--	--	--
	79-08-16	--	--	--	--	--	--
482405100474601	78-11-17	--	--	--	--	--	--
	79-05-09	--	--	--	--	--	--
	79-08-16	--	--	--	--	--	--
482357100502302	78-11-17	--	--	--	--	--	--
	79-02-07	--	--	--	--	--	--
	79-05-09	--	--	--	--	--	--
	79-08-16	--	--	--	--	--	--
483240100503201	78-11-17	--	--	--	--	--	--
	79-02-07	--	--	--	--	--	--
	79-05-09	--	--	--	--	--	--
	79-08-16	--	--	--	--	--	--
483003100503201	78-11-16	--	--	--	--	--	--
	79-02-07	--	--	--	--	--	--
	79-05-09	--	--	--	--	--	--
	79-08-16	--	--	--	--	--	--
483003100480401	78-11-16	--	--	--	--	--	--
	79-02-07	--	--	--	--	--	--
	79-05-09	--	--	--	--	--	--
	79-08-16	--	--	--	--	--	--
482825100565502	78-11-16	--	--	--	--	--	--
	79-02-08	--	--	--	--	--	--
	79-05-09	--	--	--	--	--	--
	79-08-16	--	--	--	--	--	--
482825101100202	78-11-16	--	--	--	--	--	--
	79-02-08	--	--	--	--	--	--
	79-05-09	--	--	--	--	--	--
	79-08-16	--	--	--	--	--	--
483418100475501	78-11-16	--	--	--	--	--	--
	79-02-07	--	--	--	--	--	--
	79-05-09	--	--	--	--	--	--
	79-08-16	--	--	--	--	--	--
483247100593201	78-11-16	--	--	--	--	--	--
	79-05-09	--	--	--	--	--	--
	79-08-16	--	--	--	--	--	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

STATION NUMBER	LOCAL IDENTIFIER	COUNTY	GEOLOGIC UNIT	DEPTH OF WELL, TOTAL (FEET) (72008)	DATE OF SAMPLE	TIME	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	PH (UNITS) (00400)	TEMPERATURE (DEG C) (00010)
			ADAMS						
461130102122601	131-092-05000	001	--	--	79-08-15	1800	2450	8.3	9.5
		001	--	--	79-08-15	1900	2600	8.4	12.0
			BURKE						
483948102175901	160-090-210001	013	--	--	79-08-30	1500	2100	8.5	8.0
		013	--	--	79-08-30	1345	2050	8.5	10.5
483948102175902	160-090-210002	013	--	--	79-08-30	1320	1550	7.9	7.5
		013	--	--	79-08-30	1430	1560	7.1	9.5
484033102162101	160-090-23BBA	013	--	--	79-08-30	1100	2700	8.3	8.0
		013	--	--	79-08-30	1130	2620	8.0	9.5
484923102471401	162-093-300001	013	--	--	79-08-29	1545	3100	8.5	8.0
		013	--	--	79-08-29	1630	3050	8.5	9.0
485245102511002	162-094-10AAA2	013	--	--	79-08-30	1700	2770	8.3	10.5
		013	--	--	79-08-30	1730	2780	8.0	12.5
485008102510001	162-094-26BBB	013	--	--	79-08-29	1200	4400	8.2	8.0
		013	--	--	79-08-29	1315	4600	8.0	8.0
			HETTINGER						
461348102121901	132-092-28BCB	041	--	--	79-07-23	1930	5000	8.1	9.0
		041	--	--	79-07-23	2000	5300	8.0	10.5
461452102194601	132-095-21BBB	041	--	--	79-08-15	2030	2530	8.3	8.5
		041	--	--	79-08-15	2100	2420	8.3	11.0
461755102163001	133-092-29CCC	041	--	--	79-07-16	1730	1750	8.7	10.0
		041	--	--	79-07-16	1840	1780	9.2	10.0
462652102462501	134-096-08BAB	041	--	--	79-09-13	1845	1550	8.6	9.0
		041	--	--	79-09-13	1930	1550	8.7	10.0
463145102444101	135-096-04ABA	041	--	--	79-09-13	1130	1330	8.7	10.0
463050102492201	135-097-14AAA	041	--	--	79-09-12	1915	1400	8.2	9.0
		041	--	--	79-09-12	2000	1380	8.0	10.5
462729102520101	135-097-35DDC	041	--	--	79-09-13	1545	3600	8.3	9.0
		041	--	--	79-09-13	1615	3750	8.3	10.5
			OLIVER						
471223101460201	143-087-18BCC	065	--	--	79-07-10	1530	3000	6.0	17.0
471150101460202	143-087-19BBB2	065	--	--	79-07-10	1300	1950	6.4	15.0
			SARGENT						
461003097203001	131-053-09CCC	081	112MLCL	61	79-08-08	1637	1635	--	9.7
461003097191501	131-053-10CCC	081	112MLCL	56	79-08-08	1815	1690	--	10.5
461003097180101	131-053-11CCC	081	112MLCL	54	79-08-09	1310	1290	--	10.5
460950097214501	131-053-17CBB	081	112MLCL	91	79-08-08	1530	1200	--	10.5
461057097514801	131-057-06DDD	081	112EGLV	108	79-08-07	1700	2030	--	9.0
461239097203901	132-053-29DDD	081	112MLCL	34	79-08-09	1605	850	--	9.5
461331097541401	132-058-26AAA1	081	112EGLV	101	79-08-07	1830	670	--	10.0

Geologic unit (aquifer):

112MLCL - Milnor Channel aquifer, Pleistocene age.
112EGLV - Englevale aquifer, Pleistocene age.

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

STATION NUMBER	DATE OF SAMPLE	HARDNESS (MG/L AS CACO3) (00900)	HARDNESS, NONCARBONATE (MG/L CACO3) (00902)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM ADSORPTION RATIO (00931)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	BICARBONATE (MG/L AS HCO3) (00440)	CARBONATE (MG/L AS CO3) (00445)
					ADAMS						
461130102122601	79-08-15	--	--	--	--	--	--	--	--	--	--
	79-08-15	55	0	13	5.4	600	95	35	6.1	--	--
					BURKE						
483948102175901	79-08-30	29	0	7.6	2.4	520	98	42	5.1	--	--
	79-08-30	23	0	6.2	1.8	540	98	49	3.1	--	--
483948102175902	79-08-30	410	0	100	39	230	54	4.9	8.1	--	--
	79-08-30	420	0	100	40	240	55	5.1	8.2	--	--
484033102162101	79-08-30	57	0	16	4.0	650	96	38	4.0	--	--
	79-08-30	86	0	27	4.3	650	94	31	3.4	--	--
484923102471401	79-08-29	24	0	4.7	3.0	760	99	69	2.7	--	--
	79-08-29	83	0	30	2.0	770	96	37	2.8	--	--
485245102511002	79-08-30	160	0	50	8.0	750	93	26	5.8	--	--
	79-08-30	49	0	11	5.0	600	96	38	5.2	--	--
485008102510001	79-08-29	52	0	--	7.6	1200	52	--	5.1	--	--
	79-08-29	81	0	20	7.4	1200	97	58	5.2	--	--
					HETTINGER						
461348102121901	79-07-23	270	0	70	22	1300	91	35	13	--	--
	79-07-23	280	0	73	23	1300	91	34	13	--	--
461452102194601	79-08-15	200	0	69	30	600	87	19	5.7	--	--
	79-08-15	190	0	69	29	600	87	19	5.6	--	--
461755102163001	79-07-16	22	0	4.9	2.3	440	97	41	3.2	--	--
	79-07-16	22	0	5.1	2.3	450	97	42	3.9	--	--
462632102462301	79-09-13	15	0	3.4	1.6	360	99	40	1.9	--	--
	79-09-13	14	0	3.3	1.4	370	99	43	2.1	--	--
463143102444101	79-09-13	13	0	3.0	1.2	270	97	33	2.9	--	--
463050102492201	79-09-12	22	0	5.2	2.2	280	96	26	2.7	--	--
	79-09-12	23	0	5.5	2.1	300	97	28	2.7	--	--
462729102520101	79-09-13	160	0	38	16	900	95	31	6.4	--	--
	79-09-13	150	0	33	15	950	96	34	6.4	--	--
					OLIVER						
471223101460201	79-07-10	1900	1800	480	170	43	7	.4	7.8	--	--
471150101460202	79-07-10	1300	980	390	68	40	6	.5	6.2	--	--
					SARGENT						
461003097203001	79-08-08	420	0	120	29	200	50	4.3	14	530	0
461003097191501	79-08-08	440	0	120	34	200	49	4.2	13	537	0
461003097180101	79-08-09	370	0	110	23	170	49	3.8	12	501	0
460930097214501	79-08-08	390	0	110	28	190	51	4.2	12	484	0
461057097514801	79-08-07	460	80	120	39	300	58	6.1	13	463	0
461239097203901	79-08-09	420	71	100	41	41	17	.9	5.1	424	0
461331097541401	79-08-07	280	0	73	24	35	21	.9	6.7	357	0

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

STATION NUMBER	DATE OF SAMPLE	ALKALINITY (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLORIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUORIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)
				ADAMS					
461130102122601	79-08-15	--	--	--	--	--	--	--	--
	79-08-15	380	940	8.2	.8	6.5	--	1810	2.46
				BURKE					
483948102175901	79-08-30	850	290	12	.8	7.5	--	1350	1.84
	79-08-30	840	290	12	.8	7.5	--	1370	1.86
483948102175902	79-08-30	510	410	4.6	.1	22	--	1120	1.52
	79-08-30	540	420	5.4	.1	23	--	1160	1.58
484033102162101	79-08-30	840	640	8.9	1.1	22	--	1850	2.52
	79-08-30	830	650	8.5	1.0	22	--	1870	2.54
484923102471401	79-08-29	1230	520	30	2.6	7.7	--	2090	2.84
	79-08-29	1210	520	25	2.7	7.4	--	2090	2.84
485245102511002	79-08-30	1520	32	52	1.0	9.1	--	1820	2.48
	79-08-30	1370	18	45	1.0	6.3	--	1520	2.07
485008102510001	79-08-29	1150	1500	17	1.3	8.9	--	3430	4.66
	79-08-29	1140	1500	17	1.3	9.1	--	3450	4.69
				HETTINGER					
461346102121901	79-07-23	410	2500	4.7	.5	7.4	--	4170	5.67
	79-07-23	410	2500	4.6	.5	7.3	--	4170	5.67
461452102194601	79-08-15	580	920	3.1	.3	7.5	--	1950	2.65
	79-08-15	580	890	3.2	.5	7.5	--	1920	2.61
461755102163001	79-07-16	480	510	5.0	1.6	8.0	--	1260	1.71
	79-07-16	480	510	5.7	1.6	7.9	--	1280	1.74
462632102462301	79-09-13	530	380	4.7	1.2	7.3	--	1080	1.47
	79-09-13	530	380	4.7	1.2	7.3	--	1090	1.48
463143102444101	79-09-13	530	140	5.3	5.5	6.1	--	751	1.02
463050102492201	79-09-12	400	370	5.9	.8	9.0	--	917	1.25
	79-09-12	370	360	5.7	.8	9.6	--	910	1.24
462729102520101	79-09-13	560	1800	5.4	1.0	9.2	--	3110	4.23
	79-09-13	560	1800	5.4	1.0	9.3	--	3160	4.30
				OLIVER					
471223101460201	79-07-10	97	2000	4.4	.4	48	--	2820	3.84
471150101460202	79-07-10	280	1100	11	.3	17	--	1800	2.45
				SARGENT					
461003097203001	79-08-08	435	380	41	.2	37	1120	1090	--
461003097191501	79-08-08	440	400	39	.2	37	1140	1110	--
461003097180101	79-08-09	411	300	25	.2	34	944	924	--
460930097214501	79-08-08	397	350	41	.2	31	1000	1000	--
461057097514801	79-08-07	380	410	230	.3	29	1460	1370	--
461239097203901	79-08-09	348	130	14	.2	35	622	577	--
461331097541401	79-08-07	293	35	19	.2	30	424	401	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

STATION NUMBER	DATE OF SAMPLE	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N) (00623)	BORON, DISSOLVED (UG/L AS B) (01020)	MANGANESE, DISSOLVED (UG/L AS MN) (01056)
ADAMS				
461130102122601	79-08-15	--	--	--
	79-08-15	.69	600	40
BURKE				
483948102175901	79-08-30	.64	80	10
	79-08-30	.67	90	10
483948102175902	79-08-30	.79	220	230
	79-08-30	.97	220	240
484033102162101	79-08-30	1.1	90	20
	79-08-30	.69	90	10
484923102471401	79-08-29	.57	150	--
	79-08-29	.17	130	--
485245102511002	79-08-30	.92	80	40
	79-08-30	.70	60	30
485008102510001	79-08-29	.99	80	30
	79-08-29	1.0	80	30
BETTINGER				
461348102121901	79-07-23	1.1	600	170
	79-07-23	1.1	510	180
461452102194601	79-08-15	.53	940	20
	79-08-15	.59	930	20
461755102163001	79-07-16	.47	650	10
	79-07-16	.61	640	10
462632102462301	79-09-13	.84	730	8
	79-09-13	.82	720	8
463143102444101	79-09-13	.91	550	20
463050102492201	79-09-12	.69	900	10
	79-09-12	.66	860	10
462729102520101	79-09-13	1.3	570	70
	79-09-13	1.3	570	70
OLIVER				
471223101460201	79-07-10	.00	100	6200
471150101460202	79-07-10	.57	90	330
SARGENT				
461003097203001	79-08-06	--	400	680
461003097191501	79-08-08	--	430	740
461003097180101	79-08-09	--	330	700
460930097214501	79-08-08	--	300	760
461057097514801	79-08-07	--	370	810
461239097203901	79-08-09	--	0	720
461331097541401	79-08-07	--	100	620

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

STATION NUMBER	LOCAL IDENTIFIER	COUNTY	GEOLOGIC UNIT	DEPTH OF WELL, TOTAL (FEET) (72008)	DATE OF SAMPLE	TIME	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	PH (UNITS) (00400)	TEMPERATURE (DEG C) (00010)
			SLOPE						
462010103233501	135-101-17ABB	087	125TRVL	65	79-07-19	1030	2100	8.1	8.5
		087	125TRVL	65	79-07-19	1045	2200	7.4	11.0
461832103245101	135-101-19DCC	087	125TRVL	101	79-07-17	1545	4200	8.8	13.0
		087	125TRVL	101	79-07-19	1700	4400	7.8	14.0
462441103230601	134-101-17DDD	087	125TRVL	160	79-07-18	1700	900	8.5	11.0
		087	125TRVL	160	79-07-18	1810	900	8.3	12.5
462527103245001	134-101-18ABB	087	125TRVL	75	79-07-18	1210	2000	8.4	12.0
		087	125TRVL	75	79-07-18	1330	1980	7.1	17.5
463746102562001	136-098-01BAA	087	--	--	79-08-08	1900	1480	8.2	10.8
		087	--	--	79-08-08	1945	1360	8.2	11.0
463745103003801	136-098-05AAA	087	--	--	79-07-25	1145	3700	8.4	9.5
		087	--	--	79-08-08	1650	2800	8.3	11.5
463559102581001	136-098-15AAA	087	--	--	79-08-09	1000	1430	8.7	9.0
		087	--	--	79-08-09	1145	1430	8.6	11.5
463532102591501	136-098-15CBB	087	--	--	79-07-25	1630	1700	8.1	9.0
463538103053501	136-099-15ADD	087	--	--	79-07-25	1815	3600	8.3	9.0
		087	--	--	79-07-25	1845	3700	8.0	11.5
463417103080401	136-099-20DDD	087	--	--	79-07-25	1930	1500	8.8	11.0
		087	--	--	79-07-25	2000	1530	8.8	14.5
463257103102301	136-099-31BCC	087	--	--	79-07-19	1430	3500	8.8	10.5
		087	--	--	79-07-19	1530	3700	8.7	14.0
463231103041101	136-099-36CDC	087	--	--	79-08-09	1400	1640	9.0	9.5
		087	--	--	79-08-09	1445	1610	8.9	12.5
			STARK						
465145102583601	139-097-07CCC	089	--	--	79-08-09	1650	2400	8.1	8.5
		089	--	--	79-08-09	1730	2440	8.0	12.0
465819103010701	140-098-02CBB	089	--	--	79-09-12	1100	1500	8.8	9.0
		089	--	--	79-09-12	1200	1550	8.9	9.0
465705103011601	140-098-10DDD	089	--	--	79-08-16	1100	1540	8.9	9.0
		089	--	--	79-08-16	1530	1600	9.3	13.0
465658103034801	140-098-17AAA	089	--	--	79-09-12	1330	1680	9.1	9.0
		089	--	--	79-09-12	1400	1680	9.2	10.5
465511103011601	140-098-27AAA1	089	--	--	79-08-16	1830	2000	8.4	9.5
		089	--	--	79-08-16	1930	2000	8.1	13.5
			WILLIAMS						
481148103013401	154-096-04AAB	105	--	--	79-08-28	1300	1960	7.7	8.0
		105	--	--	79-08-28	1330	2040	7.7	14.5
481457103025301	155-096-17ADC	105	--	--	79-08-28	1030	1880	7.8	8.0
		105	--	--	79-08-28	1130	1900	7.7	10.0
481412103023301	155-096-21BCB1	105	--	--	79-08-28	1700	1800	8.0	8.5
		105	--	--	79-08-28	1730	1800	7.7	10.5
481412103023302	155-096-21BCB2	105	--	--	79-08-28	1800	1650	7.7	10.5
481300103022301	155-096-28CBD	105	--	--	79-08-28	1500	1900	8.0	9.0
		105	--	--	79-08-28	1530	1990	7.2	12.5

Geologic unit (aquifer):

125TRVL - Tongue River-Ludlow Members of Fort Union Formation, Paleocene age.

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

STATION NUMBER	DATE OF SAMPLE	HARDNESS (MG/L AS CACO3) (00900)	HARDNESS, NONCARBONATE (MG/L CACO3) (00902)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM ADSORPTION RATIO (00931)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	BICARBONATE (MG/L AS HCO3) (00440)	CARBONATE (MG/L AS CO3) (00445)
					SLOPE						
462010103233501	79-07-19	490	31	110	52	420	65	8.3	6.1	--	--
	79-07-19	--	--	--	--	--	--	--	--	--	--
461832103245101	79-07-17	310	0	63	36	930	92	23	13	--	--
	79-07-19	300	0	69	30	1100	88	28	14	--	--
462441103230601	79-07-18	--	--	--	--	--	--	--	--	--	--
	79-07-18	210	0	51	20	130	57	3.9	5.9	--	--
462527103245001	79-07-18	630	82	120	80	300	67	5.2	22	--	--
	79-07-18	610	0	120	75	300	51	5.3	21	--	--
463746102562001	79-08-08	120	0	24	14	330	85	13	6.6	--	--
	79-08-08	120	0	25	14	320	84	13	7.0	--	--
463745103003801	79-07-25	88	0	21	8.5	820	95	38	5.8	--	--
	79-08-08	83	0	18	9.0	850	95	41	4.8	--	--
463559102581001	79-08-09	20	0	4.6	2.0	360	97	35	3.1	--	--
	79-08-09	20	0	4.7	2.0	370	97	36	3.2	--	--
463532102591501	79-07-25	11	0	4.3	--	410	18	--	2.9	--	--
463538103053501	79-07-25	89	0	22	8.0	820	95	38	8.2	--	--
	79-07-25	100	0	40	--	860	38	--	7.6	--	--
463417103080401	79-07-25	43	0	17	--	330	14	--	2.1	--	--
	79-07-25	--	--	--	--	--	--	--	--	--	--
463257103102301	79-07-19	42	0	10	4.0	840	98	57	3.6	--	--
	79-07-19	48	0	13	3.8	910	97	57	3.1	--	--
463231103041101	79-08-09	10	0	2.3	1.1	410	99	56	1.9	--	--
	79-08-09	9	0	2.1	.9	400	99	58	1.9	--	--
					STARK						
465145102583601	79-08-09	50	0	13	4.3	620	96	38	4.0	--	--
	79-08-09	48	0	12	4.3	620	96	39	3.9	--	--
465819103010701	79-09-12	4	0	.2	.7	420	99	99	1.6	--	--
	79-09-12	3	0	.7	.3	420	99	106	1.7	--	--
465705103011601	79-08-16	33	0	7.1	3.6	370	96	28	12	--	--
	79-08-16	31	0	6.9	3.4	370	96	29	11	--	--
465658103034801	79-09-12	2	0	.9	<.6	400	100	116	1.5	--	--
	79-09-12	4	0	.9	.3	400	100	93	1.2	--	--
465511103011601	79-08-16	46	0	10	4.9	550	96	34	3.0	--	--
	79-08-16	45	0	10	4.7	500	97	33	2.8	--	--
					WILLIAMS						
481148103013401	79-08-28	490	0	82	69	390	63	7.7	8.3	--	--
	79-08-28	500	0	83	70	390	63	7.6	8.6	--	--
481457103025301	79-08-28	520	0	84	74	350	59	6.7	8.4	--	--
	79-08-28	540	0	84	79	340	58	6.4	8.6	--	--
481412103023301	79-08-28	340	0	61	45	320	81	7.6	8.6	--	--
	79-08-28	360	0	64	48	320	80	7.4	8.7	--	--
481412103023302	79-08-28	470	0	85	63	250	71	5.0	8.1	--	--
481300103022301	79-08-28	240	0	45	31	450	80	13	6.2	--	--
	79-08-28	220	0	42	27	470	82	14	6.1	--	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

STATION NUMBER	DATE OF SAMPLE	ALKALINITY (MG/L AS CACO3) (00410)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)
				SLOPE					
462010103233501	79-07-19	460	870	6.4	.2	9.4	--	1750	2.38
	79-07-19	--	--	--	--	--	--	--	--
461832103245101	79-07-17	780	1700	5.9	.1	17	--	3240	4.41
	79-07-19	870	1800	6.1	.2	17	--	3560	4.84
462441103230601	79-07-18	--	--	--	--	--	--	--	--
	79-07-18	310	200	1.6	.4	12	--	608	.83
462527103245001	79-07-18	550	600	7.4	.1	8.8	--	1470	2.00
	79-07-18	670	590	7.3	.1	8.8	--	1530	2.08
463746102562001	79-08-08	480	360	2.6	.2	8.8	--	1040	1.41
	79-08-08	480	360	2.4	.2	8.7	--	1030	1.40
463745105003801	79-07-25	860	1000	4.1	1.8	9.9	--	2390	3.25
	79-08-08	860	1100	4.5	1.8	10	--	2520	3.43
463559102581001	79-08-09	630	180	5.3	3.7	8.0	--	946	1.29
	79-08-09	670	180	5.7	4.0	8.4	--	977	1.33
463532102591501	79-07-25	570	340	4.3	1.2	9.8	--	1120	1.52
463538103053501	79-07-25	820	1000	5.5	.4	7.8	--	2370	3.22
	79-07-25	820	1000	5.9	.4	7.7	--	2420	3.29
463417103080401	79-07-25	770	110	19	2.7	7.9	--	954	1.30
	79-07-25	--	--	--	--	--	--	--	--
463257103102301	79-07-19	630	1300	7.4	1.4	8.0	--	2550	3.47
	79-07-19	620	1300	5.8	1.5	8.0	--	2620	3.56
463231103041101	79-08-09	500	440	2.8	.8	10	--	1170	1.59
	79-08-09	500	420	2.7	.7	10	--	1140	1.55
				STARK					
465145102583601	79-08-09	600	810	4.9	.9	18	--	1840	2.50
	79-08-09	600	800	4.6	.9	18	--	1830	2.49
465819103010701	79-09-12	750	200	--	.9	1.9	--	1080	1.47
	79-09-12	750	200	--	.9	2.1	--	1080	1.47
465705103011601	79-08-16	570	340	3.9	1.1	6.2	--	1090	1.48
	79-08-16	570	340	3.2	1.1	6.3	--	1090	1.48
465658103034801	79-09-12	530	460	2.0	.6	9.7	--	1190	1.62
	79-09-12	530	460	1.8	.6	10	--	1190	1.62
465511103011601	79-08-16	1150	39	53	.0	.0	--	1340	1.82
	79-08-16	1140	47	58	.0	.1	--	1310	1.78
				WILLIAMS					
481148103013401	79-08-28	570	690	7.3	.3	23	--	1620	2.20
	79-08-28	570	700	7.4	.3	23	--	1630	2.22
481457103025301	79-08-28	550	670	6.5	.2	30	--	1560	2.12
	79-08-28	550	660	6.6	.2	30	--	1540	2.09
481412105023301	79-08-28	480	600	5.0	.3	19	--	1350	1.84
	79-08-28	480	610	5.1	.3	20	--	1370	1.86
481412103023302	79-08-28	510	550	7.0	.2	17	--	1290	1.75
481300103022301	79-08-28	730	460	5.7	.6	11	--	1450	1.97
	79-08-28	770	430	5.4	.7	10	--	1460	1.99

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

STATION NUMBER	DATE OF SAMPLE	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N) (00623)	BORON, DISSOLVED (UG/L AS B) (01020)	MANGANESE, DISSOLVED (UG/L AS MN) (01056)
SLOPE				
462010103233501	79-07-19	.51	550	240
	79-07-19	--	--	--
461832103245101	79-07-17	1.0	1300	80
	79-07-19	.88	1200	130
462441103230601	79-07-18	--	--	--
	79-07-18	.30	100	40
462527103245001	79-07-18	1.2	690	280
	79-07-18	.65	810	410
463746102562001	79-08-08	.44	380	70
	79-08-08	.32	430	70
463745103003801	79-07-25	.54	670	30
	79-08-08	.60	670	30
463559102581001	79-08-09	.49	440	10
	79-08-09	.50	450	10
463532102591501	79-07-25	.36	520	0
463538103053501	79-07-25	.56	1500	50
	79-07-25	.63	1600	90
463417103080401	79-07-25	1.3	1900	40
	79-07-25	--	--	--
463257103102301	79-07-19	1.1	600	40
	79-07-19	.90	590	40
463231103041101	79-08-09	.45	1000	4
	79-08-09	.32	1000	3
STARK				
465145102583601	79-08-09	.57	480	0
	79-08-09	.60	500	0
465819103010701	79-09-12	1.7	1700	20
	79-09-12	1.5	1700	--
465705103011601	79-08-16	.89	900	30
	79-08-16	.84	920	20
465658103034801	79-09-12	.64	830	6
	79-09-12	.73	830	6
465511103011601	79-08-16	5.8	2900	20
	79-08-16	2.0	3300	20
WILLIAMS				
481148103013401	79-08-28	.44	270	230
	79-08-28	.25	270	220
481457103025301	79-08-28	2.4	300	110
	79-08-28	2.3	290	100
481412103023301	79-08-28	.97	270	130
	79-08-28	.85	270	130
481412103023302	79-08-28	.46	220	110
481300103022301	79-08-28	.81	320	60
	79-08-28	.78	340	60

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  green, definition of---------- 11
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FACTORS FOR CONVERTING INCH-POUND UNITS TO INTERNATIONAL SYSTEM UNITS (SI)

The following factors may be used to convert the inch-pound units published herein to the International System of Units (SI). This report contains both the inch-pound and SI unit equivalents in the station manuscript descriptions.

Multiply inch-pound units	By	To obtain SI units
	Length	
inches (in)	2.54×10^{1}	millimeters (mm)
	2.54×10^{-2}	meters (m)
feet (ft)	3.048×10^{-1}	meters (m)
miles (mi)	1.609×10^{0}	kilometers (km)
	Area	
acres	4.047×10^{3}	square meters (m^2)
	4.047×10^{-1}	square hectometers (hm^2)
	4.047×10^{-3}	square kilometers (km^2)
square miles (mi^2)	2.590×10^{0}	square kilometers (km^2)
	Volume	
gallons (gal)	3.785×10^{0}	liters (L)
	3.785×10^{0}	cubic decimeters (dm^3)
	3.785×10^{-3}	cubic meters (m^3)
million gallons	3.785×10^{3}	cubic meters (m^3)
	3.785×10^{-3}	cubic hectometers (hm^3)
cubic feet (ft^3)	2.832×10^{1}	cubic decimeters (dm^3)
	2.832×10^{-2}	cubic meters (m^3)
cfs-days	2.447×10^{3}	cubic meters (m^3)
	2.447×10^{-3}	cubic hectometers (hm^3)
acre-feet (acre-ft)	1.233×10^{3}	cubic meters (m^3)
	1.233×10^{-3}	cubic hectometers (hm^3)
	1.233×10^{-6}	cubic kilometers (km^3)
	Flow	
cubic feet per second (ft^3/s)	2.832×10^{1}	liters per second (L/s)
	2.832×10^{1}	cubic decimeters per second (dm^3/s)
	2.832×10^{-2}	cubic meters per second (m^3/s)
gallons per minute (gal/min)	6.309×10^{-2}	liters per second (L/s)
	6.309×10^{-2}	cubic decimeters per second (dm^3/s)
	6.309×10^{-5}	cubic meters per second (m^3/s)
million gallons per day	4.381×10^{1}	cubic decimeters per second (dm^3/s)
	4.381×10^{-2}	cubic meters per second (m^3/s)
	Mass	
tons (short)	9.072×10^{-1}	megagrams (Mg) or metric tons

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