Water Resources Data for South Dakota

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

WATER YEAR 1979

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

CALENDAR FOR WATER YEAR 1979

1978

OCTOBER

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

NOVEMBER

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

DECEMBER

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

1979

JANUARY

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

FEBRUARY

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

MARCH

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

APRIL

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

MAY

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

JUNE

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

JULY

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

AUGUST

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

SEPTEMBER

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

Water Resources Data for South Dakota

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

WATER YEAR 1979

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

UNITED STATES DEPARTMENT OF THE INTERIOR

CECIL D. ANDRUS, Secretary

GEOLOGICAL SURVEY

H. William Menard, Director

For information on the water program in South Dakota write to
District Chief, Water Resources Division
U.S. Geological Survey
Room 317, Federal Building
200 4th St. S.W.
Huron, South Dakota 57350

1980

PREFACE

This report was prepared by personnel of the South Dakota district of the Water Resources Division of the U.S. Geological Survey under the supervision of R. E. Fidler, District Chief, and Alfred Clebsch, Jr., Regional Hydrologist, Central Region. It was done in cooperation with the State of South Dakota and with other agencies.

This report is one of a series issued by State. General direction for the series is by Philip Cohen, Chief Hydrologist, U.S. Geological Survey, and S. M. Lang, Acting Assistant Chief Hydrologist for Scientific Publications and Data Management.

50272-101

REPORT DOCUMENTATION PAGE	1. REPORT NO. USGS/WRD/HD-80/030	2.	3. Recipient's Accession No.
4. Title and Subtitle: Water Resources Data for South Dakota Water Year 1979			5. Report Date: May 1980 6.
7. Author(s)			8. Performing Organization Rept. No. USGS-WDR-SD-79-1
9. Performing Organization Name and Address: U.S. Geological Survey, Water Resources Division Rm. 317, Federal Building 200 4th St. S.W. Huron, South Dakota 57350			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 Rm. 317, Federal Building 200 4th St. S.W. Huron, South Dakota 57350			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 South Dakota and with other agencies.

16. Abstract (Limit: 200 words)

Water resources data for the 1979 water year for South Dakota consists of records of stage, discharge, and water quality of streams; stage, contents, and water quality of lakes and reservoirs; and water levels in wells. This report contains discharge records for 109 gaging stations; stage and contents for 10 lakes and reservoirs; water quality for 22 gaging stations and 62 wells; and water levels for 16 observation wells. Also included are 97 crest-stage partial-record stations. Additional water data were collected at various sites, not part of the systematic data-collection program, and are published as miscellaneous measurements and analyses. 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 South Dakota.

17. Document Analysis a. Descriptors

*South 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	360
	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

CONTENTS

ILLUSTRATIONS

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

WATER RESOURCES DATA FOR SOUTH DAKOTA, 1979

INTRODUCTION

Water resources data for the 1979 water year for South 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 109 gaging stations; stage and contents for 10 lakes and reservoirs; water quality for 22 gaging stations, and 62 wells; and water levels for 16 observation wells. Also included are 97 crest-stage partial-record stations. 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 collected by the U.S. Geological Survey and cooperating State and Federal agencies in South 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 as an official Survey report 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 report is identified as "U.S. Geological Survey Water-Data Report SD-79-1." Water-Data reports are for sale by the National Technical Information Service, U.S. Department of Commerce, Springfield, Virginia 22161.

COOPERATION

The U.S. Geological Survey and organizations of the State of South Dakota have had cooperative agreements for the systematic collection of surface-water records since 1914, for ground-water levels since 1935, and for water-quality records since 1947. Organizations that assisted in collecting data through cooperative agreement with the Survey are:

Department of Water and Natural Resources, W. R. Neufeld, secretary.

Department of Transportation, E. L. Rowan, secretary.

East Dakota Conservancy Sub-district, J. L. Siegel, manager-engineer.

Black Hills Conservancy Sub-district, Ed Glassgow, manager-treasurer.

Assistance in the form of funds or services was given by the Corps of Engineers, U.S. Army; the Water and Power Resources Service, U.S. Department of Interior; the Fish and Wildlife Service, U.S. Department of Interior; the Environmental Protection Agency; and the Missouri River basin development program for gaging and water-quality stations.

Organizations that supplied data are acknowledged in station descriptions.

ACKNOWLEDGMENT

South Dakota district personnel who contributed significantly to the collection and preparation of the data in this report were: J. R. Little, chief, Hydrologic Data Collection and Analysis Section, N. F. Leibbrand, T. K. Lockner, M. D. Stevens, W. L. Bradford, H. L. Dixson, L. D. Becker, D. W. Heyd, E. M. Decker, and D. K. Matthews.

HYDROLOGIC CONDITIONS

Combined storage in the four Missouri River main-stem reservoirs (Lakes Oahe, Sharpe, Francis Case, and Lewis and Clark) was 26,100,000 acre-feet at the end of the water year, a decrease of 100,000 acre-feet from the corresponding date a year ago.

Combined storage in the other major reservoirs (Shadehill, Angostura, Deerfield, Pactola, and Belle Fourche) was 297,658 acre-feet, a decrease of 34,597 acre-feet from the same date a year ago.

Precipitation and runoff were near normal through the spring breakup. After the spring breakup the rainfall ranged from about 3 inches below normal in the western part of the State to about 5.5 inches above normal in the eastern regions. Streamflow was excessive in the southeast and near normal elsewhere.

A comparison of monthly and yearly mean discharge with the median discharge for the 30-year base period (1941-70) for two key gaging stations is shown in figure 2.

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 English units to International System of 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.

Adenosine triphosphate (ATP) is the primary energy donor in cellular life process. Its central role in living cells makes it an excellent indicator of the presence of living material in water. A measure of ATP therefore provides a sensitive and rapid estimate of biomass. ATP is reported in micrograms per liter of the original water sample.

Algae are mostly aquatic single-celled, colonial, or multi-celled 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.

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.

Bottom material: See Bed material.

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.

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 platinum-cobalt scale.

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

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

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 discharge 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 the material in a representative water sample which passes through a 0.45 µm membrane filter. This is a convenient operational definition used by Federal agencies that collect water data. Determination 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 a 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 noncontribution 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 (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.

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.

Parameter code numbers are unique five-digit code numbers assigned to each parameter placed into storage. These codes are assigned by the Environmental Protection Agency and are also used to identify data exchanged among agencies.

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.	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.

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.

Picocurie (PC, pCi) is one trillionth (1×10^{12}) of the amount of radioactivity represented by a curie (Ci). 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).

Milligrams of carbon per area or volume per unit time [mg C/(m^2·time) for periphyton and macrophytes and mg C/(m^3·time) for phytoplankton] are units for expressing primary productivity. They define the amount of carbon dioxide consumed as measured by radioactive carbon (carbon 14). The carbon 14 method is of greater sensitivity than the oxygen light and dark bottle method, and is preferred for use in unenriched waters. Unit time may be either the hour or day, depending on the incubation period.

Milligrams of oxygen per area or volume per unit time [mg O_2/(m^2·time) for periphyton and macrophytes and mg O_2/(m^3·time) for phytoplankton] are the units for expressing primary productivity. They define production and respiration rates as estimated from changes in the measured dissolved oxygen concentration. The oxygen light and dark bottle method is preferred if the rate of primary production is sufficient for accurate measurements to be made within 24 hours. Unit time may be either the hour or day, depending on the incubation period.

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 time 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.

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-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 substrates 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 multi-plate samplers (made of hardboard) for benthic organism collection, and plexiglass 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 (as used in tables of chemical analyses) refers to the amount (concentration) of the total concentration in a water-sediment mixture. The water-sediment mixture is associated with (or sorbed on) that material retained on a 0.45 micrometer filter.

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 um 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

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 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 load (tons) is the total quantity of any individual constituent, as measured by dry mass or volume, that is dissolved in a specific amount of water (discharge) during a given time. It is computed by multiplying the total discharge, times the mg/L of the constituent, times the factor 0.0027, times the number of days.

Total, recoverable refers to 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 percent 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.

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 the 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 indention in a list of stations in the front of the report. Each indention represents one rank. This downstream order and system of indention show which stations are on tributaries between any two stations and the rank of the tributary on which each station is situated.

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 06442500, which appears just to the left of the station name, includes the 2-digit part number "06" plus the 6-digit downstream order number "442500".

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 below.

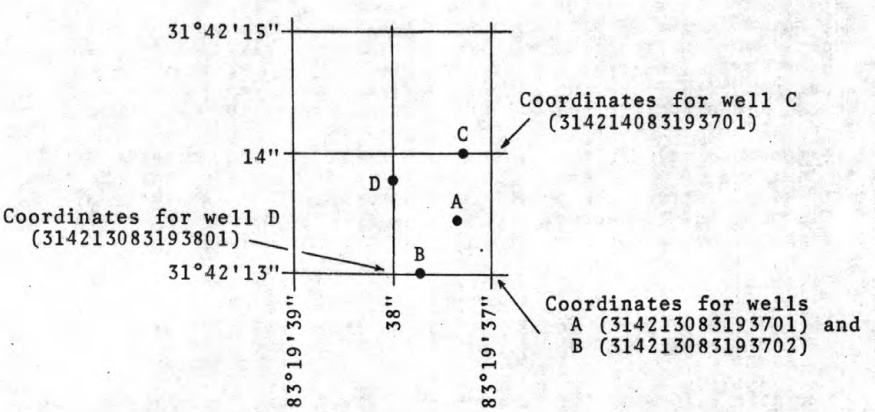

Figure 1. System for numbering wells and miscellaneous sites (latitude and longitude)

SPECIAL NETWORKS AND PROGRAMS

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

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.

Tritium network is a network of stations which has been established to provide baseline information on the occurrence of tritium in the Nation's surface waters. In addition to the surface-water stations in the network, tritium data are also obtained at a number of precipitation stations. The purpose of the precipitation stations is to provide an estimate sufficient for hydrologic studies of the tritium input to the 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 northern 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 or canals a table showing the daily discharge and monthly and yearly discharge is given. For gaging stations on lakes and reservoirs a monthly summary table of stage and contents or a table showing the daily contents is given. Tables of daily mean gage heights are included for some streamflow stations and for some reservoir stations. Records are published for the water year, which begins on October 1 and ends on September 30.

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 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 4.

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 stream-gaging stations having 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.

Skeleton 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 discharge measurements at low-flow partial-record stations, and the second is a table of annual maximum stage and discharge at crest-stage stations. 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 ft^3/s; to tenths between 1.0 and 10 ft^3/s; to whole numbers between 10 and 1,000 ft^3/s; and to 3 significant figures above 1,000 ft^3/s. 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, pH, dissolved oxygen, water temperature, sediment discharge, etc.); 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 rare 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, minimum, and mean 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.

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, either mean temperatures or 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.

EXPLANATION OF GROUND-WATER LEVEL RECORDS

Collection of the 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 figure 1.

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 either mean sea level (msl) or land-surface datum (lsd). Mean sea level is the datum plane on which the national network of precise levels is based; 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 above mean sea level 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 manuals 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).

Prices are subject to change. Customers should verify prices with the USGS Branch of Distribution, phone (202) 751-6777 before placing orders. Prices include cost of domestic surface transportation. For transmittal outside the U.S.A. (except to Canada and Mexico) a surcharge of of 25 percent of the net bill should be included to cover surface transportation.

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

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.

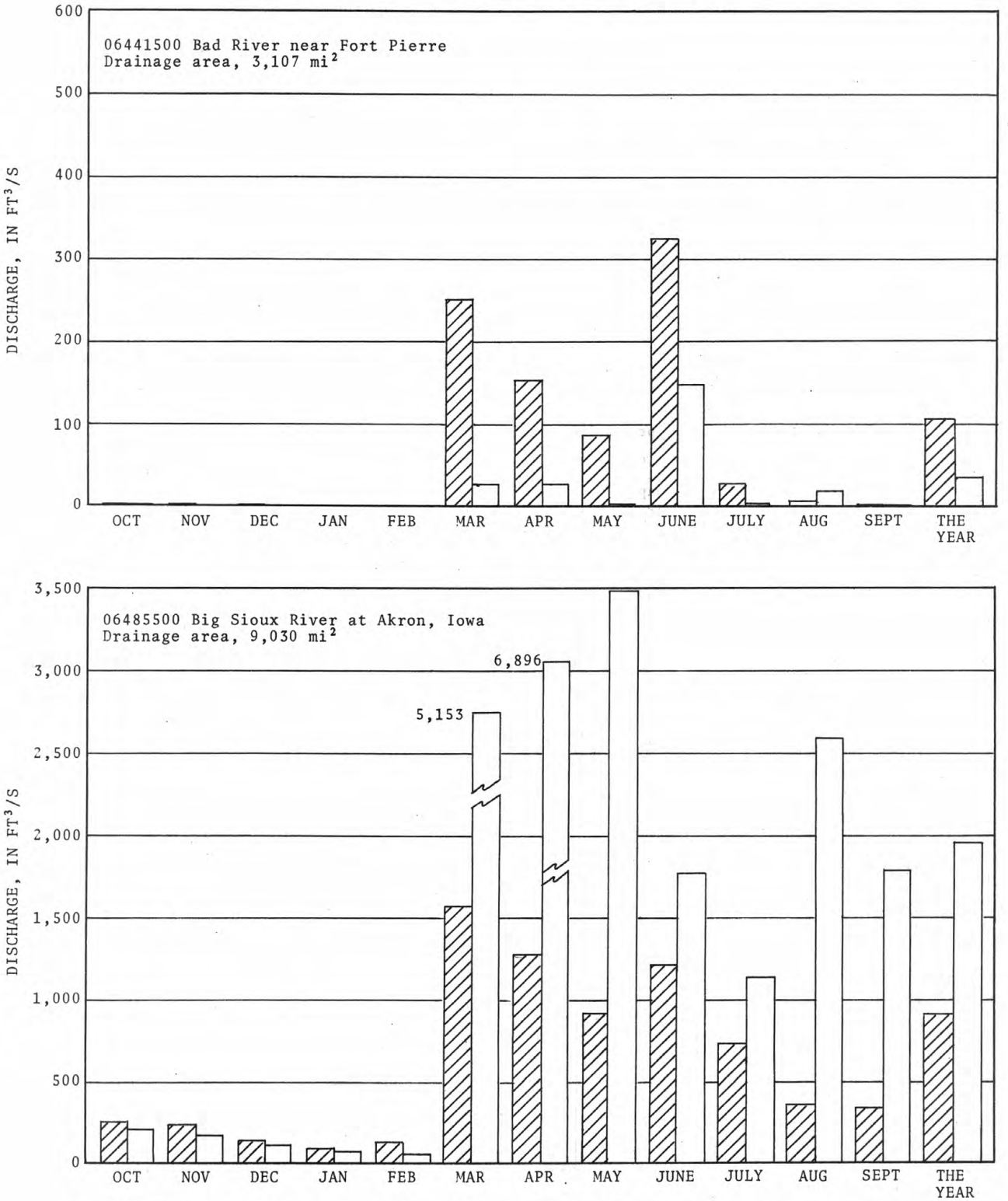

FIGURE 2.--Discharge during 1979 water year compared with median discharge for period 1941-70 for two representative gaging stations.

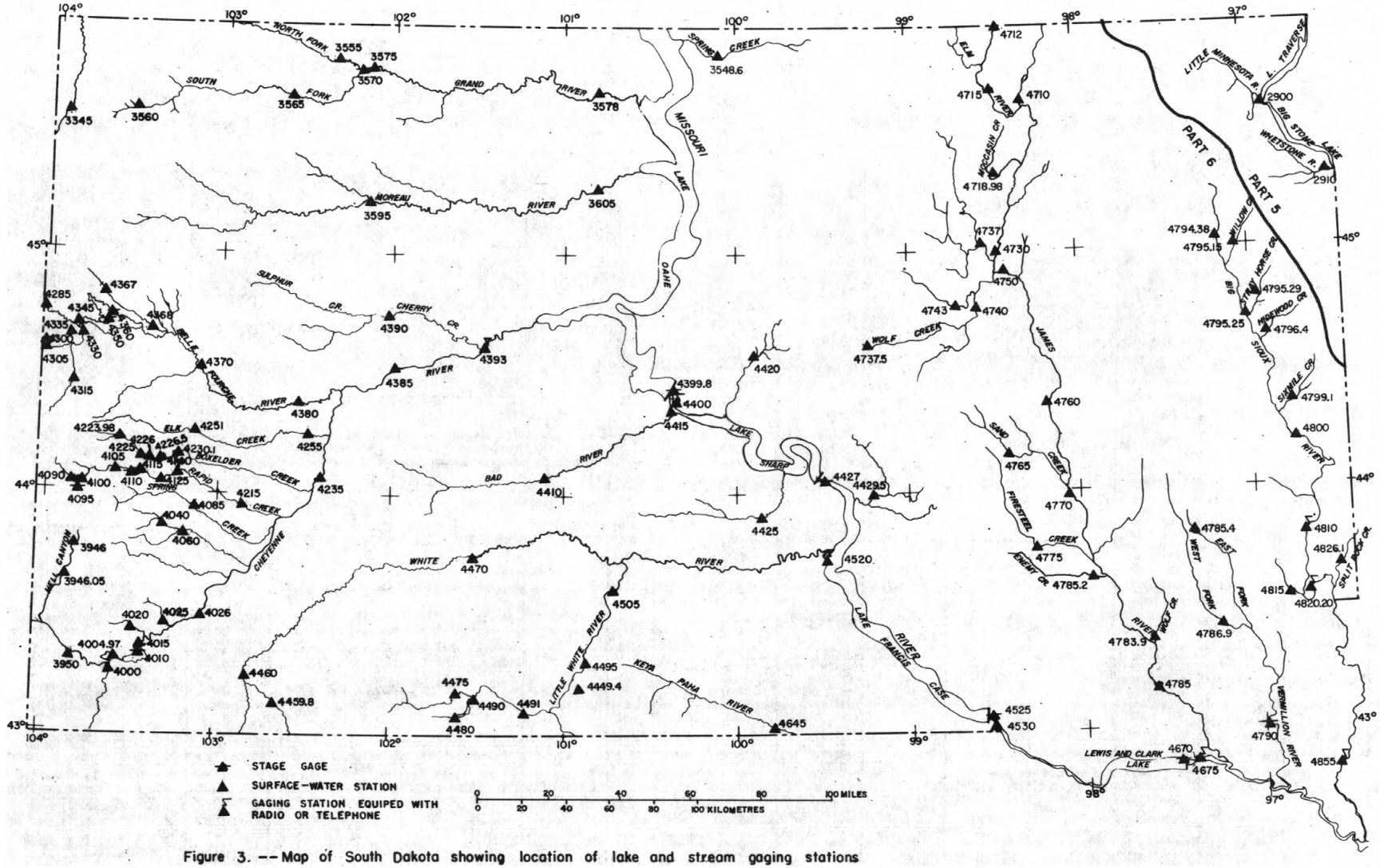

Figure 3. -- Map of South Dakota showing location of lake and stream gaging stations

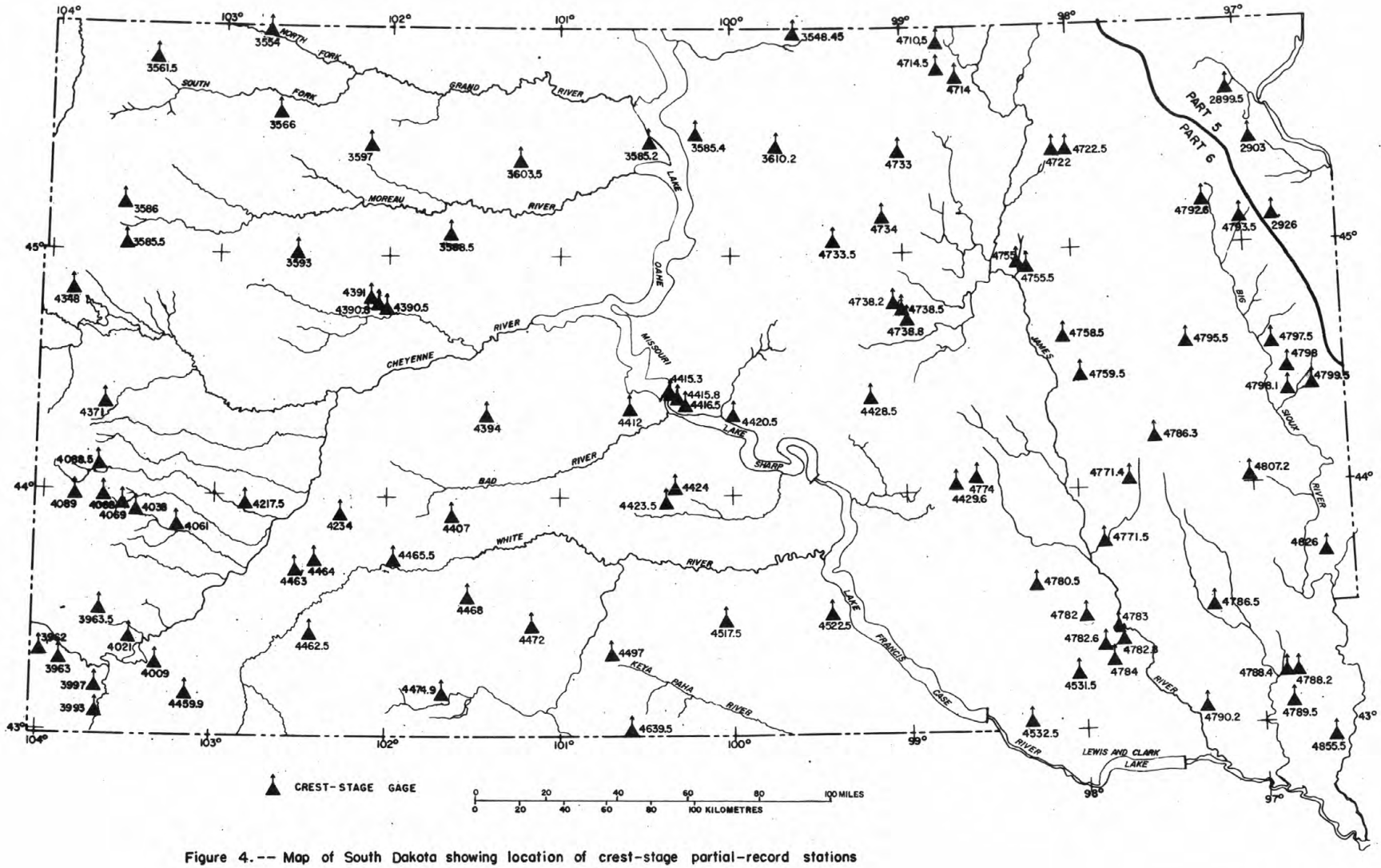

Figure 4.-- Map of South Dakota showing location of crest-stage partial-record stations

Figure 5.-- Map of South Dakota showing location of surface-water quality stations

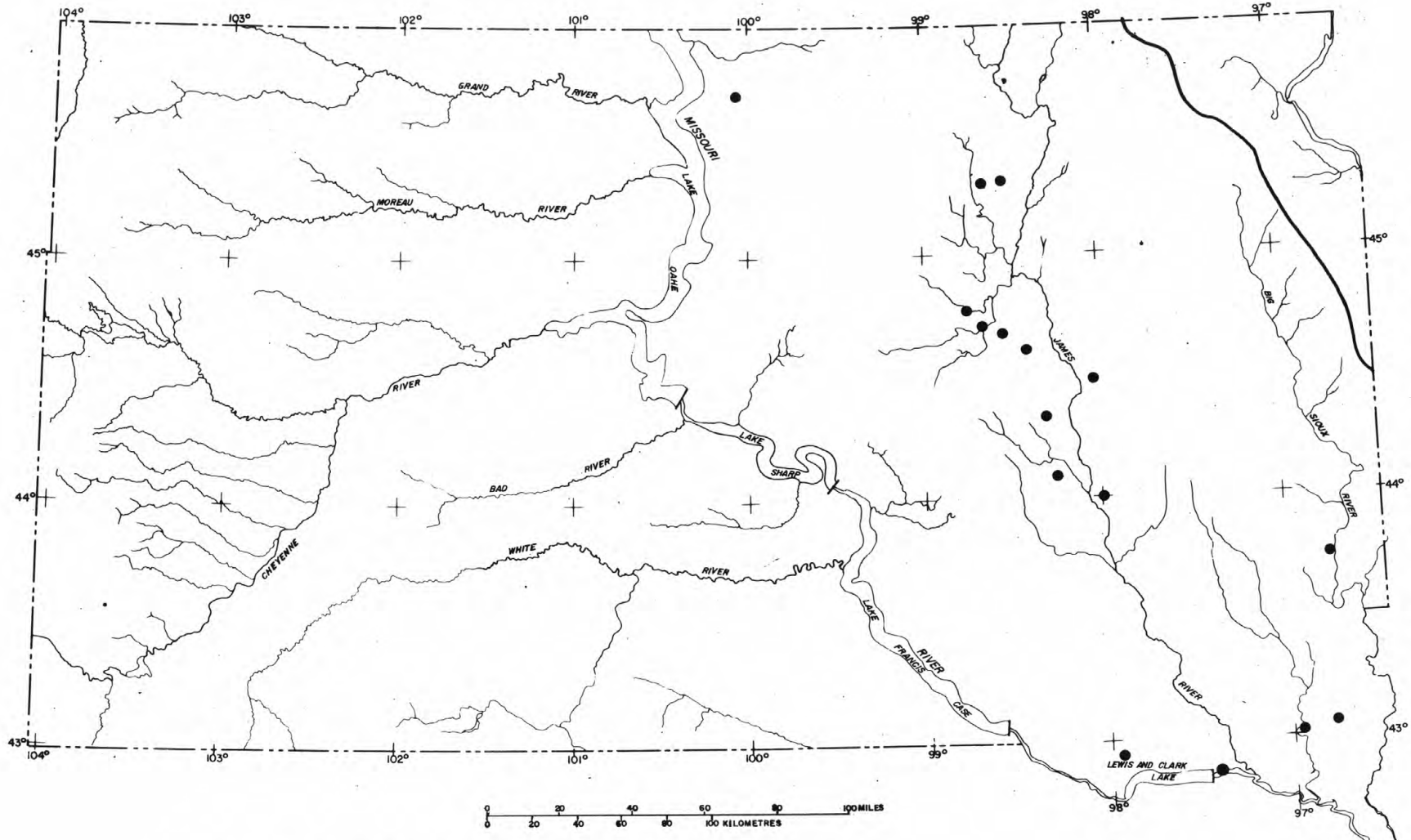

Figure 6. --Map of South Dakota showing location of ground-water observation wells

MINNESOTA RIVER BASIN

05290000 LITTLE MINNESOTA RIVER NEAR PEEVER, SD

LOCATION.--Lat 45°36'05", long 96°52'18", in SW¼ sec.13, T.125 N., R.50 W., Roberts County, Hydrologic Unit 07020001, on Sisseton Indian Reservation, on right bank 2 mi (3 km) northwest of town of Browns Valley, MN, 5.3 mi (8.5 km) northeast of Peever, 7.2 mi (11.6 km) downstream from Jorgenson River, and 8 mi (13 km) upstream from Big Stone Lake.

DRAINAGE AREA.--447 mi^2 (1,158 km^2).

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

REVISED RECORDS.--WSP 1308: 1943(M).

GAGE.--Water-stage recorder. Altitude of gage is 1,000 ft (305 m), from topographic map. Oct. 1, 1939, to Mar. 20, 1940, nonrecording gage at site 4.5 mi (7.2 km) downstream at different datum. Mar. 21 to Apr. 12, 1940, nonrecording gage at site 100 ft (30 m) downstream at present datum. April 13 to Aug. 27, 1940, nonrecording gage at present site and datum.

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

AVERAGE DISCHARGE.--40 years, 45.2 ft^3/s (1.280 m^3/s), 1.37 in/yr (35 mm/yr), 32,750 acre-ft/yr (40.4 hm^3/yr); median of yearly mean discharges, 34.0 ft^3/s (0.963 m^3/s), 1.03 in/yr (26 mm/yr), 24,630 acre-ft/yr (30.4 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,730 ft^3/s (134 m^3/s) Apr. 8, 1952, gage height, 12.16 ft (3.706 m); maximum gage height, 13.35 ft (4.069 m) Mar. 25, 1943, from floodmark (backwater from ice); no flow at times in 1940, 1942, 1950, 1954, 1957, 1959, 1963, 1968, 1976, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 450 ft^3/s (12.7 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. 13	1715	1,620	45.9	a*9.62	2.932	June 20	1900	1,640	46.4	7.86	2.396
Apr. 19	0700	*1,810	51.3	8.23	2.508						

a Backwater from ice.

Minimum discharge, 0.42 ft^3/s (0.012 m^3/s) Oct. 12, gage height, 2.15 ft (0.655 m); minimum daily discharge, 0.42 ft^3/s (0.012 m^3/s) Jan. 10 to Feb. 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	.93	.94	1.3	.58	.42	.60	220	238	43	161	35	4.1
2	.73	1.0	1.3	.56	.42	.60	120	216	37	137	31	3.7
3	.65	1.0	1.2	.54	.42	.60	92	197	34	119	27	2.9
4	.67	.90	1.2	.52	.42	.60	96	174	31	106	29	2.5
5	.63	.84	1.2	.49	.42	.60	165	158	28	93	26	2.4
6	.68	.83	1.2	.47	.42	.60	160	147	25	83	26	1.9
7	.72	.85	1.2	.45	.42	.61	250	141	22	75	23	1.7
8	.62	.87	1.2	.44	.42	.62	290	140	20	69	20	1.6
9	.64	1.1	1.2	.43	.42	.63	350	126	19	64	20	1.6
10	.66	1.7	1.1	.42	.42	.64	285	116	17	58	20	1.4
11	.55	1.8	1.1	.42	.42	.65	280	115	16	54	26	1.4
12	.48	1.9	1.1	.42	.42	.66	748	109	16	52	21	1.4
13	.75	2.3	1.1	.42	.42	.68	1410	98	15	50	16	1.2
14	.83	2.2	1.1	.42	.42	.70	1200	91	13	51	12	1.1
15	.85	2.2	1.1	.42	.42	.73	1040	84	12	50	11	1.1
16	1.2	2.1	1.1	.42	.42	.76	872	78	16	45	9.5	.98
17	1.3	1.9	1.0	.42	.42	.82	931	72	18	39	8.5	.90
18	1.3	1.8	1.0	.42	.42	.89	1290	67	24	34	8.3	.90
19	1.2	1.7	.98	.42	.42	1.1	1760	65	305	30	7.9	.90
20	1.2	1.6	.95	.42	.42	3.3	1630	63	1080	27	7.5	.90
21	1.1	1.5	.92	.42	.42	8.0	1230	58	1130	23	7.1	.90
22	1.1	1.5	.88	.42	.42	20	887	59	790	20	6.7	.90
23	1.1	1.5	.85	.42	.44	60	672	61	611	19	6.3	.90
24	1.0	1.5	.82	.42	.48	45	558	60	475	22	6.2	.90
25	1.1	1.4	.80	.42	.52	110	485	53	390	33	5.7	.83
26	1.2	1.4	.78	.42	.58	123	425	51	320	39	5.2	.83
27	1.2	1.4	.74	.42	.60	110	368	47	268	49	4.8	.76
28	1.2	1.3	.70	.42	.60	85	321	45	229	67	5.0	.76
29	1.1	1.3	.68	.42	---	75	287	41	206	53	4.7	.76
30	1.0	1.3	.64	.42	---	60	268	39	187	44	4.2	.76
31	1.1	---	.62	.42	---	110	---	40	---	39	4.2	---
TOTAL	28.79	43.63	31.06	13.72	12.46	822.39	18690	3049	6397	1805	444.8	42.88
MEAN	.93	1.45	1.00	.44	.45	26.5	623	98.4	213	58.2	14.3	1.43
MAX	1.3	2.3	1.3	.58	.60	123	1760	238	1130	161	35	4.1
MIN	.48	.83	.62	.42	.42	.60	92	39	12	19	4.2	.76
AC-FT	57	87	62	27	25	1630	37070	6050	12690	3580	882	85

CAL YR 1978 TOTAL 38419.86 MEAN 105 MAX 1920 MIN .48 AC-FT 76210
WTR YR 1979 TOTAL 31380.73 MEAN 86.0 MAX 1760 MIN .42 AC-FT 62240

05291000 WHETSTONE RIVER NEAR BIG STONE CITY, SD

LOCATION.--Lat 45°17'32", long 96°29'14", in SE¼NW¼ sec.18, T.121 N., R.46 W., Grant County, Hydrologic Unit 07020001, on right bank 20 ft (6 m) downstream from former highway bridge site, 1.5 mi (2.4 km) west of Big Stone City, and 4.5 mi (7.2 km) upstream from Big Stone Lake.

DRAINAGE AREA.--389 mi² (1,008 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1910 to November 1912 (winter records), and March 1931 to current year. Monthly discharge only for some periods, published in WSP 1308.

REVISED RECORDS.--WSP 895: Drainage area. WSP 1308: 1932(M), 1935(M).

GAGE.--Water-stage recorder. Datum of gage is 996.96 ft (303.873 m) adjustment of 1912. Mar. 8, 1910, to Nov. 30, 1912, nonrecording gage 2 mi (3 km) downstream at different datum. Mar. 18, 1931, to May 3, 1939, nonrecording gage, at site 20 ft (6 m) upstream at present datum. May 4, 1939, to Nov. 8, 1952, water-stage recorder at site 80 ft (24 m) downstream at present datum.

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

AVERAGE DISCHARGE.--48 years (water years 1932-79), 49.1 ft³/s (1,391 m³/s), 1.71 in/yr (43 mm/yr), 35,570 acre-ft/yr (43.9 hm³/yr); median of yearly mean discharges, 35.2 ft³/s (1.00 m³/s), 1.23 in/yr (31 mm/yr), 25,500 acre-ft/yr (31.4 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,870 ft³/s (195 m³/s) Apr. 8, 1969, gage height, 14.32 ft (4.365 m), from floodmark; no flow at times in most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known, about 26 ft (8 m) in June 1919, present site and datum, from information by local resident, discharge, 29,000 ft³/s (821 m³/s).

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

Date	Date	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. 22	1430	1,140	32.3	a9.17	2.795	Apr. 20	0030	1,900	53.8	8.77	2.673
Mar. 31	1400	1,550	43.9	a8.55	2.606	June 21	1330	1,110	31.4	7.50	2.286
Apr. 13	1515	*4,210	119	*12.11	3.691						

a Backwater from ice.
Minimum discharge, 4.2 ft³/s (0.12 m³/s) Sept. 27, gage height, 1.33 ft (0.405 m); minimum gage height, 1.32 ft (0.402 m) 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	8.3	7.6	9.4	8.3	7.7	5.1	1390	237	55	47	25	22
2	8.5	7.2	9.4	8.3	7.6	5.1	770	218	47	36	21	19
3	8.0	7.0	9.4	8.2	7.4	5.1	526	199	37	31	19	17
4	7.7	6.9	9.3	8.2	7.1	5.1	440	185	31	27	29	15
5	7.7	6.9	9.3	8.1	6.9	5.1	410	175	26	24	54	14
6	7.7	7.0	9.3	8.1	6.5	5.1	265	168	22	22	146	13
7	7.7	7.7	9.2	8.1	6.1	5.1	270	170	18	19	116	13
8	7.9	7.0	9.2	8.1	5.8	5.1	440	166	16	18	76	12
9	7.6	6.4	9.2	8.1	5.6	5.1	460	165	15	18	80	11
10	7.5	6.9	9.2	8.1	5.5	5.1	290	162	14	17	97	13
11	6.8	7.9	9.1	8.1	5.4	5.1	260	154	13	17	143	12
12	6.3	9.1	9.1	8.1	5.3	5.1	1200	146	12	17	145	11
13	6.2	13	9.1	8.1	5.2	5.1	3660	139	9.9	17	102	11
14	6.1	12	9.0	8.0	5.2	5.1	1830	131	8.2	17	67	10
15	6.1	11	9.0	8.0	5.2	5.1	730	122	7.1	17	48	9.8
16	6.3	10	9.0	8.0	5.2	8.0	682	113	7.9	16	39	8.7
17	6.0	9.9	9.0	8.0	5.1	12	771	105	9.6	15	34	7.4
18	6.9	9.8	8.9	8.0	5.1	25	878	98	11	14	30	6.7
19	7.1	9.8	8.9	8.0	5.1	160	1700	93	44	14	28	6.3
20	6.9	9.8	8.9	7.9	5.1	600	1550	88	422	13	26	5.8
21	7.2	9.8	8.7	7.9	5.1	795	1230	83	1070	12	27	5.7
22	6.6	9.7	8.7	7.9	5.1	1080	699	81	776	13	27	5.5
23	6.4	9.7	8.7	7.9	5.1	790	487	79	352	12	27	5.8
24	6.9	9.6	8.7	7.9	5.1	390	409	76	193	18	25	6.1
25	6.7	9.6	8.7	7.8	5.1	410	379	72	129	25	24	6.3
26	7.0	9.6	8.7	7.8	5.1	360	341	69	89	36	23	6.5
27	7.1	9.6	8.7	7.8	5.1	250	299	63	64	38	21	5.3
28	7.1	9.5	8.6	7.8	5.1	195	261	57	65	41	24	4.4
29	7.1	9.5	8.6	7.8	---	205	254	52	71	41	24	5.8
30	7.6	9.4	8.5	7.7	---	640	247	55	64	36	24	6.7
31	8.1	---	8.4	7.7	---	1320	---	56	---	30	23	---
TOTAL	221.1	268.9	277.9	247.8	158.9	7316.5	23128	3777	3698.7	718	1594	295.8
MEAN	7.13	8.96	8.96	7.99	5.68	236	771	122	123	23.2	51.4	9.86
MAX	8.5	13	9.4	8.3	7.7	1320	3660	237	1070	47	146	22
MIN	6.0	6.4	8.4	7.7	5.1	5.1	247	52	7.1	12	19	4.4
AC-FT	439	533	551	492	315	14510	45870	7490	7340	1420	3160	587

CAL YR 1978 TOTAL 47126.6 MEAN 129 MAX 3530 MIN 2.0 AC-FT 93480
WTR YR 1979 TOTAL 41702.6 MEAN 114 MAX 3660 MIN 4.4 AC-FT 82720

06334500 LITTLE MISSOURI RIVER AT CAMP CROOK, SD

LOCATION.--Lat 45°32'49", long 103°58'23", in SW¼ sec.2, T.18 N., R.1 E., Harding County, Hydrologic Unit 10110201, on left bank 15 ft (5 m) upstream from bridge on State Highway 20 at east edge of Camp Crook.

DRAINAGE AREA.--1,970 mi² (5,100 km²), approximately.

PERIOD OF RECORD.--September 1903 to November 1906, May 1956 to current year. Monthly discharge only for some periods, published in WSP 1309.

REVISED RECORDS.--WSP 1309: 1904. WSP 1729: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 3,108.98 ft (947.617 m) National Geodetic Vertical Datum of 1929. Sept. 2, 1903, to Nov. 30, 1906, nonrecording gage at site 0.5 mi (0.8 km) upstream at different datum. May 1956 to Oct. 8, 1957, nonrecording gage at site 15 ft (5 m) downstream, and Oct. 9, 1957, to Sept. 30, 1976, water-stage recorder at present site both at datum 2.00 ft (0.610 m) higher.

REMARKS.--Records good except those for winter periods, which are poor. Small diversions above station for irrigation. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--26 years, 145 ft³/s (4.106 m³/s), 105,100 acre-ft/yr (130 hm³/yr); median of yearly mean discharges, 110 ft³/s (3.12 m³/s), 79,700 acre-ft/yr (98 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,420 ft³/s (267 m³/s) Mar. 24, 1978, gage height, 16.90 ft (5.151 m), present datum; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of 1952 reached a stage of about 18 ft (5.5 m), present datum, from local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,590 ft³/s (73.3 m³/s) Mar. 27; maximum gage height, 10.43 ft (3.179 m) Mar. 21 (backwater from ice); no other peak above base of 1,000 ft³/s (28.3 m³/s); minimum daily discharge, 1.5 ft³/s (0.042 m³/s) Jan. 14, Mar. 3.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Mar. 27 to Apr. 25; stage-discharge relation affected by ice Nov. 11 to Mar. 26)

2.4	2.0	2.8	24	5.0	459
2.5	5.0	3.2	72	7.0	1,180
2.6	9.5	4.0	215	10.0	2,800
2.7	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	11	13	11	5.0	3.5	2.5	1040	125	55	41	205	9.1
2	11	13	10	4.0	3.0	2.0	869	108	48	56	98	9.1
3	11	13	9.0	4.0	3.0	1.5	708	95	42	43	75	15
4	11	12	10	3.0	3.0	2.0	629	85	45	39	58	16
5	11	11	9.0	3.0	3.0	2.0	539	78	37	47	45	15
6	13	11	9.0	3.0	3.5	2.0	476	71	28	35	33	12
7	10	12	8.0	2.5	3.5	2.0	491	65	30	28	24	9.5
8	11	12	7.0	2.5	4.0	2.0	419	59	30	22	20	7.8
9	11	14	7.0	2.5	4.5	2.0	566	58	21	19	18	6.8
10	11	13	8.0	2.5	5.0	6.0	632	57	20	17	17	6.5
11	11	12	10	2.5	4.5	10	575	55	20	14	15	6.8
12	10	10	11	2.5	4.5	20	729	52	19	12	13	6.8
13	11	10	10	2.0	4.0	40	651	57	14	14	29	7.2
14	15	11	10	1.5	4.0	50	584	65	11	21	44	6.8
15	21	12	10	2.0	3.5	70	572	55	13	24	49	6.0
16	17	12	10	2.0	2.5	100	590	49	12	21	37	4.9
17	13	13	10	2.0	2.5	150	648	45	12	131	32	4.3
18	11	12	10	2.5	3.0	200	593	44	12	123	22	4.3
19	10	11	10	3.0	3.0	250	714	43	11	65	19	4.3
20	10	9.0	10	4.0	3.0	400	602	38	13	52	20	3.8
21	9.5	9.0	10	5.0	3.0	700	478	36	18	41	20	3.8
22	9.5	9.5	10	4.5	3.0	900	410	36	13	29	32	3.8
23	9.5	10	10	4.5	2.5	1100	342	35	21	23	26	3.2
24	10	11	10	4.0	2.5	1300	315	34	22	22	21	2.4
25	10	11	10	4.0	2.5	1500	275	31	39	36	33	2.2
26	11	10	10	4.0	3.0	2000	242	31	40	49	33	2.3
27	11	10	9.0	4.0	3.0	2410	208	33	41	25	30	2.3
28	18	11	9.0	4.0	2.5	2320	177	32	36	23	27	3.0
29	16	12	8.0	3.5	---	2090	157	34	39	41	20	3.2
30	14	12	7.0	3.5	---	2200	139	37	39	144	16	2.9
31	13	---	6.0	3.5	---	1240	---	46	---	367	12	---
TOTAL	371.5	341.5	288.0	100.5	92.5	19074.0	15370	1689	801	1624	1143	191.1
MEAN	12.0	11.4	9.29	3.24	3.30	615	512	54.5	26.7	52.4	36.9	6.37
MAX	21	14	11	5.0	5.0	2410	1040	125	55	367	205	16
MIN	9.5	9.0	6.0	1.5	2.5	1.5	139	31	11	12	12	2.2
AC-FT	737	677	571	199	183	37830	30490	3350	1590	3220	2270	379

CAL YR 1978 TOTAL 163110.3 MEAN 447 MAX 8560 MIN 3.0 AC-FT 323500
WTR YR 1979 TOTAL 41086.1 MEAN 113 MAX 2410 MIN 1.5 AC-FT 81490

06354860 SPRING CREEK NEAR HERREID, SD

LOCATION.--Lat 45°58'52", long 100°06'28", in SW¼ sec.13, T.127 N., R.77 W., Campbell County, Hydrologic Unit 10130102, on left bank 0.5 mi (0.8 km) upstream from county highway bridge, 2.4 mi (3.9 km) southwest of Herreid and 13.2 mi (21.2 km) upstream from high-water line of Lake Oahe.

DRAINAGE AREA.--440 mi^2 (1,140 km^2), approximately, of which about 220 mi^2 (570 km^2) is probably noncontributing.

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

GAGE.--Water-stage recorder. Datum of gage is 1,653.80 ft (504.078 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records poor. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--17 years, 9.63 ft^3/s (0.273 m^3/s) 6,980 acre-ft/yr (8.61 hm^3/yr); median of yearly mean discharges, 5.1 ft^3/s (0.14 m^3/s), 3,700 acre-ft/yr (4.6 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,340 ft^3/s (37.9 m^3/s) Mar. 29, 1978, gage height, 11.49 ft (3.502 m); maximum gage height, 11.60 ft (3.536 m) Mar. 17, 1966; no flow for many days each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 58 ft^3/s (1.64 m^3/s) Mar. 27, gage height, 5.39 ft (1.643 m); no other peak above base of 40 ft^3/s (1.13 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	.00	.01	.00	.00	.00	4.1	2.0	.05	.00	.00	.00
2	.00	.00	.04	.00	.00	.00	3.5	2.5	.05	.00	.00	.00
3	.00	.00	.08	.00	.00	.00	2.7	3.0	.04	.00	.00	.00
4	.00	.00	.15	.00	.00	.00	3.0	4.5	.04	.00	.00	.00
5	.00	.00	.20	.00	.00	.00	4.0	6.0	.03	.00	.00	.00
6	.00	.00	.26	.00	.00	.00	3.2	5.8	.05	.00	.00	.00
7	.00	.00	.25	.00	.00	.00	3.7	5.6	.12	.00	.00	.00
8	.00	.00	.20	.00	.00	.00	22	5.4	.12	.00	.00	.00
9	.00	.00	.10	.00	.00	.00	20	5.0	.12	.00	.00	.00
10	.00	.00	.05	.00	.00	.00	18	5.9	.15	.00	.00	.00
11	.00	.00	.03	.00	.00	.00	20	6.5	.12	.00	.00	.00
12	.00	.00	.01	.00	.00	.00	25	7.0	.03	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	23	4.0	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	18	2.5	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	15	2.0	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.10	10	1.0	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.20	9.0	.70	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.50	8.0	.40	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	2.0	7.0	.30	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	3.5	6.5	.25	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	3.0	7.0	.20	.42	.00	.00	.00
22	.00	.00	.00	.00	.00	3.0	6.5	.18	.65	.00	.00	.00
23	.00	.00	.00	.00	.00	5.0	6.0	.15	.55	.00	.00	.00
24	.00	.00	.00	.00	.00	7.2	5.0	.13	.42	.00	.00	.00
25	.00	.00	.00	.00	.00	9.0	4.0	.11	.42	.00	.00	.00
26	.00	.00	.00	.00	.00	8.5	3.5	.09	.27	.00	.00	.00
27	.00	.00	.00	.00	.00	23	3.0	.08	.09	.00	.00	.00
28	.00	.00	.00	.00	.00	31	2.5	.10	.00	.00	.00	.00
29	.00	.00	.00	.00	---	13	2.8	.09	.00	.00	.00	.00
30	.00	.00	.00	.00	---	8.9	2.5	.07	.00	.00	.00	.00
31	.00	---	.00	.00	---	7.6	---	.06	---	.00	.00	---
TOTAL	.00	.00	1.38	.00	.00	125.50	268.5	71.61	3.74	.00	.00	.00
MEAN	.000	.000	.045	.000	.000	4.05	8.95	2.31	.12	.000	.000	.000
MAX	.00	.00	.26	.00	.00	31	25	7.0	.65	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	2.5	.06	.00	.00	.00	.00
AC-FT	.00	.00	2.7	.00	.00	249	533	142	7.4	.00	.00	.00

CAL YR 1978	TOTAL	13068.35	MEAN	35.8	MAX	1320	MIN	.00	AC-FT 25920
WTR YR 1979	TOTAL	470.73	MEAN	1.29	MAX	31	MIN	.00	AC-FT 934

06355500 NORTH FORK GRAND RIVER NEAR WHITE BUTTE, SD

LOCATION.--Lat 45°47'39", long 102°21'59", in NE¼SE¼ sec.10, T.21 N., R.14 E., Perkins County, Hydrologic Unit 10130301, on right bank 1,400 ft (430 m) upstream from highway bridge and 9.8 mi (15.8 km) south of White Butte.

DRAINAGE AREA.--1,190 mi^2 (3,080 km^2), approximately.

PERIOD OF RECORD.--October 1945 to current year. Monthly discharge only for some periods, published in WSP 1309.

REVISED RECORDS.--WSP 1279: 1947, 1950.

GAGE.--Water-stage recorder. Altitude of gage is 2,275 ft (693 m), by barometer. See WSP 1917 for history of changes prior to June 12, 1951. June 12, 1951, to Aug. 20, 1975, water-stage recorder, and Aug. 21 to Sept. 10, 1975, nonrecording gage at site 1,300 ft (400 m) downstream; Sept. 11, 1975, to Mar. 22, 1976, nonrecording gage at present site, and Mar. 23 to July 28, 1976, nonrecording gage at site 1,400 ft (430 m) downstream, all at present datum.

REMARKS.--Records good except those for winter periods, which are poor. Flow regulated by Bowman-Haley Reservoir, capacity, 93,000 acre-ft (115 hm^3), 71 mi (114 km) upstream, beginning August 1966. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--34 years, 57.5 ft^3/s (1.628 m^3/s), 41,660 acre-ft/yr (51.4 hm^3/yr); median of yearly mean discharges, 35 ft^3/s (0.99 m^3/s), 25,400 acre-ft/yr (31 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 30,900 ft^3/s (875 m^3/s) Apr. 16, 1950, gage height, 20.0 ft (6.10 m), from floodmarks, from rating curve extended above 19,000 ft^3/s (538 m^3/s) on basis of slope-area measurement of peak flow; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 920 ft^3/s (26.1 m^3/s) Apr. 10, gage height, 5.68 ft (1.731 m); maximum gage height, 5.96 ft (1.817 m) Mar. 28 (backwater from ice); no flow Dec. 30 to Jan. 5, Jan. 13-16, Feb. 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	3.3	6.2	7.9	.00	.06	.07	470	161	30	10	18	22
2	3.3	6.8	5.8	.00	.05	.05	500	145	29	8.2	17	17
3	3.3	7.0	4.8	.00	.05	.06	490	130	29	5.8	12	13
4	3.1	7.3	6.2	.00	.07	.05	550	122	26	4.7	7.0	9.4
5	3.1	6.9	5.9	.00	.10	.06	590	113	24	3.1	3.9	7.0
6	2.9	6.8	4.2	.04	.08	.06	530	108	19	5.0	2.1	6.2
7	2.7	7.2	3.0	.06	.08	.06	538	106	18	4.3	1.6	5.8
8	2.7	7.4	4.2	.08	.10	.09	530	101	18	2.2	1.2	5.4
9	2.5	8.2	3.6	.10	.12	.10	582	106	18	3.5	.74	4.3
10	2.5	10	4.3	.10	.21	.08	784	113	16	5.8	.46	17
11	2.3	11	4.5	.08	.24	.11	821	100	14	2.7	.38	47
12	2.3	8.8	4.9	.05	.24	.56	718	91	12	2.5	.38	191
13	3.9	9.8	5.3	.00	.24	1.9	666	84	11	19	.29	95
14	5.6	9.0	5.6	.00	.21	1.9	611	79	11	57	.32	71
15	5.7	9.4	5.8	.00	.13	2.3	558	75	9.4	64	.35	50
16	5.5	9.3	5.8	.00	.00	3.8	574	72	7.0	42	.74	40
17	5.5	9.4	5.8	.05	.09	4.5	619	66	8.8	65	.69	32
18	5.1	9.2	5.5	.10	.11	4.8	653	64	10	55	.46	26
19	2.4	8.6	5.2	.10	.14	4.5	661	60	14	46	.74	21
20	.71	8.4	5.2	.15	.13	4.2	578	56	19	37	.74	19
21	.79	8.5	5.0	.16	.11	4.4	504	56	19	29	.84	18
22	.79	8.8	4.8	.18	.12	5.0	433	53	18	26	.84	16
23	.79	8.8	5.0	.18	.11	10	372	49	16	22	1.3	13
24	.79	9.0	5.2	.16	.06	40	327	47	14	21	3.1	12
25	3.7	9.2	5.0	.14	.06	200	289	43	14	35	2.2	11
26	6.0	9.3	4.2	.14	.08	450	260	41	15	41	1.8	11
27	6.4	9.4	4.2	.12	.08	600	237	38	16	27	11	9.4
28	6.4	9.2	3.3	.11	.06	700	217	34	18	22	217	8.8
29	6.6	9.2	.79	.14	---	650	195	33	14	21	46	8.2
30	6.7	8.4	.00	.08	---	550	175	31	11	20	41	7.6
31	6.4	---	.00	.04	---	450	---	30	---	19	31	---
TOTAL	113.77	256.5	140.99	2.36	3.13	3688.65	15032	2407	498.2	725.8	425.17	814.1
MEAN	3.67	8.55	4.55	.076	.11	119	501	77.6	16.6	23.4	13.7	27.1
MAX	6.7	11	7.9	.18	.24	700	821	161	30	65	217	191
MIN	.71	6.2	.00	.00	.00	.05	175	30	7.0	2.2	.29	4.3
AC-FT	226	509	280	4.7	6.2	7320	29820	4770	988	1440	843	1610

CAL YR 1978 TOTAL 58311.95 MEAN 160 MAX 6030 MIN .00 AC-FT 115700
WTR YR 1979 TOTAL 24107.67 MEAN 66.0 MAX 821 MIN .00 AC-FT 47820

06356000 SOUTH FORK GRAND RIVER AT BUFFALO, SD

LOCATION.--Lat 45°34'34", long 103°32'38", in SW¼ sec.29, T.19 N., R.5 E., Harding County, Hydrologic Unit 10130302, on right bank at downstream side of bridge on U.S. Highway 85, 0.3 mi (0.5 km) south of Buffalo.

DRAINAGE AREA.--148 mi^2 (383 km^2).

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

REVISED RECORDS.--WSP 1917: 1956-57. WRD SD-76-1: 1974(M), 1975.

GAGE.--Water-stage recorder. Datum of gage is 2,839.60 ft (865.510 m) National Geodetic Vertical Datum of 1929. Prior to May 5, 1970, nonrecording gage at same site and datum.

REMARKS.--Records good except those for winter periods, which are poor. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--24 years, 8.69 ft^3/s (0.246 m^3/s), 6,300 acre-ft/yr (7.77 hm^3/yr); median of yearly mean discharges, 7.0 ft^3/s (0.20 m^3/s), 5,100 acre-ft/yr (6.3 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,780 ft^3/s (78.7 m^3/s) June 14, 1963, gage height, 9.01 ft (2.746 m), from rating curve extended above 550 ft^3/s (15.6 m^3/s) on basis of slope-area measurement of peak flow; no flow at times in 1956-58, 1960, 1962, 1965, 1972.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in 1908 reached a stage of 15.4 ft (4.69 m), from information by South Dakota Department of Transportation.

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)
July 26	0930	*350	9.91	*5.46	1.664	July 29	2015	292	8.27	5.23	1.594

Minimum daily discharge, 1.1 ft^3/s (0.031 m^3/s) July 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	2.6	2.8	3.3	2.7	2.1	2.3	21	4.8	4.1	3.9	5.6	2.0
2	2.6	3.0	3.2	2.6	2.1	2.4	19	3.8	4.0	3.3	3.9	1.9
3	2.6	3.0	3.1	2.5	2.1	2.5	14	3.6	3.6	2.8	2.9	1.9
4	2.9	3.0	3.0	2.4	2.1	2.8	11	3.6	3.2	2.9	2.6	2.1
5	2.7	2.9	2.9	2.3	2.3	2.6	10	4.0	2.8	3.0	2.6	2.0
6	2.8	2.9	2.9	2.2	2.5	2.8	10	4.6	2.7	2.8	2.5	1.8
7	2.9	2.9	2.8	2.1	2.4	2.4	28	4.6	3.4	4.2	2.2	1.7
8	3.0	2.9	2.7	2.0	2.3	1.5	46	3.8	3.4	3.5	2.1	2.1
9	3.1	2.9	2.7	1.9	2.4	1.3	48	4.0	3.3	2.7	2.9	1.8
10	2.9	2.9	2.7	1.9	2.6	1.3	40	4.9	3.1	2.1	2.3	2.0
11	2.1	2.9	2.8	1.9	2.6	3.0	39	5.8	2.8	1.7	2.1	2.3
12	2.5	2.8	2.9	1.9	2.5	8.0	38	4.8	2.8	1.5	2.0	2.5
13	2.7	2.7	2.9	1.9	2.4	15	37	4.2	2.4	25	1.9	2.0
14	2.9	2.7	2.9	1.9	2.3	30	49	3.9	2.3	25	2.1	2.1
15	3.0	2.7	2.9	1.9	2.3	33	57	3.5	2.0	13	2.4	2.1
16	2.9	2.7	3.0	1.9	2.3	32	31	3.4	2.5	11	2.2	2.1
17	2.8	2.8	3.1	1.9	2.4	31	32	3.2	2.4	7.0	2.2	2.0
18	2.7	2.9	3.1	1.9	2.5	30	35	3.0	2.5	8.5	2.2	1.8
19	2.7	2.8	3.0	1.9	2.7	29	22	3.9	6.1	3.9	2.2	1.7
20	2.7	2.7	3.0	2.0	2.7	28	19	3.0	26	2.3	2.2	1.8
21	2.8	2.7	3.1	2.2	2.7	27	16	3.0	15	1.7	3.3	1.9
22	2.8	2.8	3.2	2.4	2.6	27	14	2.9	8.8	1.4	3.7	1.9
23	3.0	2.8	3.2	2.3	2.5	26	10	2.6	5.4	1.1	3.3	2.1
24	3.0	2.9	3.2	2.2	2.5	24	9.4	2.5	5.5	2.9	2.9	2.1
25	3.0	3.0	3.2	2.1	2.4	22	9.4	2.5	6.2	21	3.0	2.1
26	2.7	3.0	3.2	2.1	2.4	22	6.8	2.8	8.0	177	5.0	2.1
27	2.8	3.1	3.2	2.1	2.3	22	5.5	2.7	11	36	3.5	1.9
28	2.8	3.1	3.0	2.1	2.2	30	5.5	2.7	13	11	3.1	1.9
29	2.9	3.2	2.9	2.1	---	24	5.5	3.1	7.9	58	3.0	1.9
30	2.7	3.3	2.9	2.1	---	25	4.8	3.7	6.0	63	2.7	2.0
31	2.6	---	2.8	2.1	---	24	---	3.8	---	11	2.4	---
TOTAL	86.2	86.8	92.8	65.5	67.2	533.9	692.9	112.7	172.2	514.2	87.0	59.6
MEAN	2.78	2.89	2.99	2.11	2.40	17.2	23.1	3.64	5.74	16.6	2.81	1.99
MAX	3.1	3.3	3.3	2.7	2.7	33	57	5.8	26	177	5.6	2.5
MIN	2.1	2.7	2.7	1.9	2.1	1.3	4.8	2.5	2.0	1.1	1.9	1.7
AC-FT	171	172	184	130	133	1060	1370	224	342	1020	173	118

CAL YR 1978 TOTAL 7712.4 MEAN 21.1 MAX 750 MIN 1.4 AC-FT 15300
WTR YR 1979 TOTAL 2571.0 MEAN 7.04 MAX 177 MIN 1.1 AC-FT 5100

06356500 SOUTH FORK GRAND RIVER NEAR CASH, SD

LOCATION.--Lat 45°38'56", long 102°38'27", in SW¼SW¼ sec.34, T.20 N., R.12 E., Perkins County, Hydrologic Unit 10130302, on left bank at downstream side of highway bridge, 1.0 mi (1.6 km) upstream from Little Nasty Creek, 4.0 mi (6.4 km) north of Cash, 10 mi (16 km) south of Lodgepole, 12 mi (19 km) northwest of Bison, and 16 mi (26 km) downstream from Big Nasty Creek.

DRAINAGE AREA.--1,350 mi^2 (3,500 km^2), approximately.

PERIOD OF RECORD.--October 1945 to current year. Monthly discharge only for some periods, published in WSP 1309.

GAGE.--Water-stage recorder. Altitude of gage is 2,416 ft (736 m), by barometer. Prior to Oct. 25, 1946, nonrecording gage, and Oct. 25, 1946, to May 16, 1966, water-stage recorder, at site 500 ft (152 m) upstream. May 17, 1966, to May 2, 1968, nonrecording gage, at present site, all at same datum.

REMARKS.--Records good except those for winter periods, which are poor. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--34 years, 56.1 ft^3/s (1.589 m^3/s), 40,640 acre-ft/yr (50.1 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, 27,000 ft^3/s (765 m^3/s) Apr. 15, 1950, gage height, 15.40 ft (4.694 m), from rating curve extended above 14,000 ft^3/s (396 m^3/s) on basis of slope-area measurement of peak flow; no flow at times.

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)
Apr. 6	0600	ice jam		*9.15	2.789	Apr. 18	2330	550	15.6	3.43	1.045
Apr. 10	0615	*1,490	42.2	5.07	1.545						

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	10	14	10	.60	.00	.30	140	64	18	24	173	8.9
2	12	14	9.5	.40	.00	.40	130	52	18	28	86	6.3
3	11	14	9.5	.20	.00	.50	130	45	18	34	42	5.5
4	11	15	9.0	.10	.00	1.0	130	40	17	18	20	5.7
5	11	14	9.0	.00	.00	2.0	150	37	17	20	8.1	5.7
6	11	14	9.0	.00	.00	2.5	300	39	14	20	5.6	6.1
7	12	12	9.0	.00	.00	4.5	450	47	16	14	4.8	6.0
8	12	15	9.5	.00	.00	5.0	423	38	15	11	4.2	6.6
9	11	16	9.5	.00	.00	5.0	541	34	17	9.0	4.7	6.9
10	12	13	10	.00	.00	4.5	731	36	18	7.5	5.5	6.7
11	13	13	10	.00	.00	4.0	593	35	17	5.5	5.5	7.9
12	14	13	10	.00	.00	4.0	545	40	13	4.9	5.5	8.7
13	15	13	10	.00	.00	6.0	469	36	9.0	7.0	6.0	7.5
14	16	12	10	.00	.00	10	378	36	8.0	135	6.0	45
15	17	12	10	.00	.00	20	393	32	6.0	162	6.0	34
16	17	12	9.5	.00	.00	50	428	30	4.3	96	6.5	20
17	16	13	9.5	.00	.00	150	459	29	5.2	73	6.5	16
18	16	12	9.5	.00	.00	230	474	24	4.3	35	6.5	14
19	16	11	9.5	.00	.00	250	530	29	10	24	7.0	11
20	15	11	9.0	.00	.00	240	461	25	22	12	7.0	8.9
21	15	11	9.0	.00	.00	210	354	26	188	13	8.6	8.8
22	15	11	8.5	.00	.00	200	283	26	148	7.0	17	8.9
23	15	12	8.5	.00	.00	200	236	24	80	4.6	34	9.3
24	15	12	8.0	.00	.00	190	199	23	61	4.0	40	8.8
25	14	12	8.0	.00	.00	170	169	19	36	4.3	35	8.3
26	14	12	7.0	.00	.05	160	142	19	22	7.5	25	8.2
27	14	12	5.0	.00	.10	150	123	17	18	143	20	8.4
28	14	11	3.0	.00	.20	150	109	16	26	295	16	8.4
29	15	11	2.0	.00	---	160	93	17	61	161	13	8.5
30	15	10	1.5	.00	---	170	78	17	54	69	15	8.1
31	14	---	1.0	.00	---	150	---	17	---	44	16	---
TOTAL	428	377	252.5	1.30	.35	2899.70	9641	969	960.8	1492.3	656.0	323.1
MEAN	13.8	12.6	8.15	.042	.013	93.5	321	31.3	32.0	48.1	21.2	10.8
MAX	17	16	10	.60	.20	250	731	64	188	295	173	45
MIN	10	10	1.0	.00	.00	.30	78	16	4.3	4.0	4.2	5.5
AC-FT	849	748	501	2.6	.7	5750	19120	1920	1910	2960	1300	641

CAL YR 1978	TOTAL	43211.60	MEAN	118	MAX	3240	MIN	1.0	AC-FT	85710
WTR YR 1979	TOTAL	18001.05	MEAN	49.3	MAX	731	MIN	.00	AC-FT	35710

06357000 SHADEHILL RESERVOIR AT SHADEHILL, SD

LOCATION.--Lat 45°45'12", long 102°12'12", in E½ sec.25, T.21 N., R.15 E., Perkins County, Hydrologic Unit 10130302, at dam on Grand River, 1.3 mi (2.1 km) southwest of Shadehill.

DRAINAGE AREA.--3,120 m^2 (8,080 km^2), approximately.

PERIOD OF RECORD.--June 1950 to current year (monthend contents only).

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to Apr. 3, 1952, occasional elevations obtained by level circuits and Apr. 3, 1952, to Apr. 28, 1970, nonrecording gage at same site and datum.

REMARKS.--Reservoir formed by earthfill dam. Storage began July 1, 1950; dam completed August 1951. Conservation storage, 81,443 acre-ft (100 hm^3) between elevations 2,250.8 ft (686.04 m), invert of canal and river outlet, and elevation 2,272.0 ft (692.51 m), crest of morning-glory spillway. Dead storage, 58,231 acre-ft (71.8 hm^3) below elevation 2,250.8 ft (686.04 m). Flood control, 217,708 acre-ft (268 hm^3) between elevations 2,272.0 ft (692.51 m) and 2,302.0 ft (701.65 m), crest of emergency spillway. Surcharge, 111,203 acre-ft (137 hm^3) at elevation 2,312.0 ft (704.70 m), maximum pool elevation. Total reservoir capacity is 468,585 acre-ft (578 hm^3) at elevation 2,312.0 ft (704.70 m). The reservoir provides flood control and water for irrigation purposes. Figures given herein represent usable contents above elevation 2,250.8 ft (686.04 m). Prior to Oct. 1, 1968, reservoir contents published as total contents and included dead storage.

COOPERATION.--Records of elevations and contents furnished by Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.--Maximum usable contents observed, 259,900 acre-ft (320 hm^3) Apr. 10, 1952, elevation, 2,297.86 ft (700.388 m); minimum usable observed since first filling to spillway level, 25,950 acre-ft (32.0 hm^3) Mar. 17, 1962, elevation, 2,258.90 ft (688.51 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 86,863 acre-ft (107 hm^3) Apr. 22, elevation, 2,273.10 ft (692.841 m); minimum, 51,392 acre-ft (63.4 hm^3) Mar. 16, elevation, 2,265.40 ft (690.494 m).

MONTHEND ELEVATION, IN FEET NGVD, AND CONTENTS,
IN ACRE-FEET, AT 2400, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

Date	Elevation	Contents	Change in contents
Sept. 30	2269.06	67533	
Oct. 31	2268.10	63173	-4360
Nov. 30	2267.12	58814	-4359
Dec. 31	2266.74	57148	-1666
CAL YR 1978			-8013
Jan. 31	2266.15	54592	-2556
Feb. 28	2265.67	52539	-2053
Mar. 31	2267.70	61381	+8842
Apr. 30	2272.56	84189	+22808
May 31	2271.34	78246	-5943
June 30	2270.93	76282	-1964
July 31	2270.81	75710	-572
Aug. 31	2270.30	73296	-2414
Sept. 30	2268.36	64345	-8951
WTR YR 1979			-3188

06357500 GRAND RIVER AT SHADEHILL, SD

LOCATION.--Lat 45°45'25", long 102°11'41", in NW¼NW¼ sec.30, T.21 N., R.16 E., Perkins County, Hydrologic Unit 10130303, on left bank 0.2 mi (0.3 km) downstream from Shadehill Dam, 1.1 mi (1.8 km) southwest of Shadehill, and 12.0 mi (19.3 km) southwest of Lemmon.

DRAINAGE AREA.--3,120 mi^2 (8,080 km^2), approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--February 1943 to current year. Records for July 1904 to October 1906 collected at site 4 mi (6 km) upstream and published as "at Seim" in WSP 130, 172, and 208 have been found to be unreliable and should not be used.

REVISED RECORDS.--WSP 1279: 1943(M). See also Period of Record.

GAGE.--Water-stage recorder. Datum of gage is 2,192.48 ft (668.268 m) National Geodetic Vertical Datum of 1929. Prior to Aug. 31, 1947, nonrecording gage, and Aug. 31, 1947, to Oct. 24, 1958, water-stage recorder at site 0.8 mi (1.3 km) downstream at datum 6.02 ft (1.835 m) lower.

REMARKS.--Records good. Flow completely regulated by Shadehill Reservoir since July 1, 1950. (See station 06357000.)

AVERAGE DISCHARGE.--36 years, 119 ft^3/s (3.370 m^3/s), 86,220 acre-ft/yr (106 hm^3/yr); median of yearly mean discharges, 68 ft^3/s (1.93 m^3/s), 49,300 acre-ft/yr (61 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 58,000 ft^3/s (1,640 m^3/s) Apr. 16, 1950, gage height, 21.0 ft (6.40 m), from floodmarks upstream from bridge; 19.06 ft (5.809 m), from floodmark in gage well, unreliable, site and datum then in use; no flow for many days in some years.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 714 ft^3/s (20.2 m^3/s) Apr. 21, 22; maximum gage height, 5.06 ft (1.542 m) Apr. 21, 22; minimum daily discharge, 6.8 ft^3/s (0.19 m^3/s) Oct. 19.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Feb. 22 to Mar. 24, June 27 to Sept. 18,
Sept. 27-30; stage-discharge relation affected by ice Dec. 29, 30, Feb. 14-16)

2.5	5.5	3.2	63	4.5	414
2.6	9.2	3.5	115	5.0	654
2.8	20	4.0	232	5.5	931
3.0	39				

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	85	69	43	41	39	39	16	392	43	59	58	61
2	85	70	44	41	39	39	15	360	43	59	58	62
3	85	70	43	40	39	39	15	333	42	59	58	62
4	85	71	42	40	39	38	14	309	45	59	59	62
5	85	70	42	40	38	38	15	289	45	59	60	62
6	85	70	42	40	39	38	15	277	54	59	59	77
7	85	70	42	40	39	38	15	265	62	59	59	94
8	83	80	42	39	40	38	15	242	63	59	59	94
9	82	89	42	40	40	39	15	231	63	58	59	93
10	82	90	41	39	40	39	15	224	61	58	59	94
11	82	90	40	39	40	38	96	215	61	59	59	93
12	82	90	40	39	39	39	174	210	61	59	59	93
13	82	89	39	39	39	40	175	201	61	59	59	93
14	81	89	39	40	39	39	193	196	61	59	61	93
15	80	89	39	38	39	39	239	191	61	59	61	93
16	80	88	39	39	39	39	297	188	61	59	60	93
17	42	88	40	38	40	39	380	191	61	59	60	101
18	7.2	90	40	38	39	39	477	182	61	59	60	192
19	6.8	90	40	38	38	40	584	182	60	58	60	352
20	7.0	90	40	39	38	39	651	184	60	58	61	350
21	7.0	90	39	38	39	39	714	184	60	58	60	349
22	7.0	90	39	39	40	40	714	185	60	58	60	347
23	7.1	88	40	38	39	39	693	127	60	58	60	346
24	7.1	88	40	38	39	39	664	76	60	58	62	345
25	43	88	40	38	39	39	625	76	60	58	62	342
26	69	88	40	38	39	39	580	76	60	59	62	339
27	69	89	41	39	39	39	536	77	60	58	62	258
28	69	88	41	39	39	39	499	77	60	58	62	112
29	69	88	41	39	---	27	465	78	51	58	62	113
30	69	63	41	39	---	16	426	61	59	58	62	113
31	69	---	41	39	---	16	---	43	---	58	61	---
TOTAL	1877.2	2502	1262	1211	1095	1148	9332	5922	1719	1815	1863	4978
MEAN	60.6	83.4	40.7	39.1	39.1	37.0	311	191	57.3	58.5	60.1	166
MAX	85	90	44	41	40	40	714	392	63	59	62	352
MIN	6.8	63	39	38	38	16	14	43	42	58	58	61
AC-FT	3720	4960	2500	2400	2170	2280	18510	11750	3410	3600	3700	9870

CAL YR 1978 TOTAL 122923.2 MEAN 337 MAX 4190 MIN 6.8 AC-FT 243800
WTR YR 1979 TOTAL 34724.2 MEAN 95.1 MAX 714 MIN 6.8 AC-FT 68880

06357500 GRAND RIVER AT SHADEHILL, SD--Continued

WATER-QUALITY RECORDS

LOCATION.--Prior to October 1977, samples collected at site 0.2 mi (0.3 km) upstream.

PERIOD OF RECORD.--Water years 1952, 1954-68, 1977 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: March 1953 to September 1965.
WATER TEMPERATURES: August 1954 to September 1959, October 1966 to September 1968.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,780 micromhos Mar. 1, 2, 14, 16, 19, 1962; minimum daily, 427 micromhos Apr. 27, 1955.
WATER TEMPERATURES: Maximum, 26.0°C Aug. 3, 1955; minimum, 0.0°C on many days during winter periods.

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										
18...	0930	7.4	1550	9.0	9.0	220	0	41	29	260
JAN										
10...	0815	39	1800	8.3	1.0	230	0	42	30	310
APR										
03...	1105	15	1700	8.4	5.5	230	0	42	30	300
MAY										
09...	0845	242	1480	8.2	6.0	240	0	45	30	250
AUG										
28...	0730	62	1460	8.5	20.0	240	0	42	32	280

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)	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									
18...	71	7.6	8.4	250	10	220	510	6.3	.4
JAN									
10...	74	8.9	11	370	0	300	550	6.7	.3
APR									
03...	73	8.6	9.8	380	5	320	560	6.5	.4
MAY									
09...	69	7.1	8.8	310	0	250	490	5.9	.3
AUG									
28...	71	7.9	8.4	340	11	300	560	6.3	.4

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 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P) (00671)	BORON, DIS-SOLVED (UG/L AS B) (01020)
OCT									
18...	4.7	995	1.35	19.9	.28	.02	.02	.00	390
JAN									
10...	5.4	1140	1.55	120	.22	.03	.02	.00	410
APR									
03...	4.1	1150	1.56	46.6	.22	.02	.02	.03	430
MAY									
09...	8.5	993	1.35	649	.27	.03	.01	.00	390
AUG									
28...	5.2	1110	1.51	186	.26	.03	.01	.01	410

06357800 GRAND RIVER AT LITTLE EAGLE, SD

LOCATION.--Lat 45°39'28", long 100°49'04", in NE¼NE¼ sec.32, T.20 N., R.27 E., Corson County, Hydrologic Unit 10130303, on left bank at downstream side of bridge on State Highway 63, 1.3 mi (2.1 km) southwest of Little Eagle and 4.7 mi (7.6 km) downstream from Little Oak Creek.

DRAINAGE AREA.--5,370 mi^2 (13,910 km^2), approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1958 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,628.63 ft (496.406 m) National Geodetic Vertical Datum of 1929. Prior to May 12, 1959, nonrecording gage, and May 12, 1959, to Aug. 11, 1970, water-stage recorder at site 0.6 mi (1.0 km) downstream at datum 2.00 ft (0.610 m) lower.

REMARKS.--Records good except those for winter periods, which are poor. Flow regulated by Shadehill Reservoir 144 mi (232 km) upstream. (See station 06357000.)

AVERAGE DISCHARGE.--21 years, 245 ft^3/s (6.938 m^3/s), 177,500 acre-ft/yr (219 hm^3/yr); median of yearly mean discharges, 210 ft^3/s (5.95 m^3/s), 152,000 acre-ft/yr (190 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 19,000 ft^3/s (538 m^3/s) Mar. 23, 1978; maximum gage height, 21.76 ft (6.632 m) Mar. 18, 1966, from floodmarks, ice jam, site and datum then in use; no flow at times in 1958-62, 1969, 1975, 1977-79.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,200 ft^3/s (147 m^3/s) Apr. 3, gage height, 8.83 ft (2.691 m); maximum gage height, 9.93 ft (3.027 m) Mar. 26 (backwater from ice); no flow Feb. 2 to Mar. 3.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Apr. 3-17, May 7-12, July 3-20; stage-discharge relation affected by ice Nov. 13 to Apr. 2)

2.8	5.0	3.2	78	4.5	556
2.9	18	3.5	150	5.0	880
3.0	38	4.0	312	6.0	1,720

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	75	50	3.0	.20	.00	1000	567	132	70	119	122
2	87	79	45	3.1	.00	.00	800	514	133	74	102	127
3	93	82	45	3.2	.00	.00	680	472	122	64	82	122
4	93	84	45	3.4	.00	2.0	862	441	103	54	74	112
5	93	82	40	3.5	.00	5.0	602	411	93	58	62	117
6	93	84	37	3.5	.00	7.0	558	382	78	52	54	68
7	89	85	35	3.6	.00	10	730	354	69	48	48	60
8	89	85	35	3.7	.00	20	670	350	69	36	46	52
9	91	84	35	3.7	.00	30	660	325	62	40	52	48
10	93	104	35	3.6	.00	50	856	328	56	34	46	52
11	91	82	37	3.5	.00	100	992	317	52	52	44	94
12	89	82	38	3.3	.00	150	957	303	54	46	40	321
13	91	70	38	3.3	.00	200	1160	293	50	52	36	580
14	91	70	38	3.3	.00	400	1210	289	42	61	30	291
15	93	70	38	3.4	.00	350	1250	280	36	242	30	203
16	93	65	37	3.5	.00	350	1330	265	30	300	26	156
17	93	65	35	3.5	.00	300	1430	253	28	188	24	126
18	93	60	35	3.7	.00	350	1540	243	28	149	24	108
19	96	60	35	3.8	.00	500	1310	241	42	120	20	96
20	96	55	35	3.8	.00	700	1260	237	84	98	64	88
21	89	57	33	3.7	.00	1000	1220	232	1720	82	363	115
22	66	58	30	3.5	.00	1300	1200	230	1590	68	266	272
23	46	60	25	3.0	.00	1500	1140	230	538	58	96	282
24	34	60	20	2.5	.00	1200	1060	228	836	52	91	294
25	24	60	15	2.0	.00	1100	995	226	412	46	95	301
26	18	58	12	1.0	.00	1200	924	214	253	54	102	307
27	13	56	10	.80	.00	1000	849	158	107	62	98	308
28	12	54	8.0	.60	.00	900	765	134	105	167	107	308
29	10	54	5.0	.40	---	900	699	125	78	204	110	308
30	7.6	54	4.0	.40	---	1000	639	121	68	140	112	269
31	64	---	3.0	.20	---	1100	---	124	---	124	117	---
TOTAL	2217.6	2094	933.0	87.50	.20	15724.00	29348	8887	7070	2895	2580	5707
MEAN	71.5	69.8	30.1	2.82	.007	507	978	287	236	93.4	83.2	190
MAX	96	104	50	3.8	.20	1500	1540	567	1720	300	363	580
MIN	7.6	54	3.0	.20	.00	.00	558	121	28	34	20	48
AC-FT	4400	4150	1850	174	.4	31190	58210	17630	14020	5740	5120	11320

CAL YR 1978 TOTAL 271644.60 MEAN 744 MAX 16800 MIN .00 AC-FT 538800
WTR YR 1979 TOTAL 77543.30 MEAN 212 MAX 1720 MIN .00 AC-FT 153800

06357800 GRAND RIVER AT LITTLE EAGLE, SD--Continued
(National stream-quality accounting network station)
(National pesticide water-monitoring network station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1956, 1969, 1972 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1975 to September 1976, October 1977 to September 1978.
WATER TEMPERATURES: October 1975 to September 1978.
SUSPENDED SEDIMENT DISCHARGE: October 1971 to September 1976 (discontinued).

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 3,100 micromhos Dec. 4, 7-9, 1976; minimum daily, 290 micromhos Feb. 7, 1976.
WATER TEMPERATURES: Maximum daily, 33.0°C Aug. 26, 1976; minimum daily, 0.0°C on many days during winter periods.
SEDIMENT CONCENTRATIONS: Maximum daily mean, 19,000 mg/L May 2, 1972; minimum daily mean, 0 mg/L Jan. 10, 11, Feb. 5-10, 1975.
SEDIMENT LOADS: Maximum daily, 259,000 tons (235,000 tonnes) Mar. 12, 1972; minimum daily, 0 ton (0 tonne) Jan. 10, 11, Feb. 5-10, 1975.

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)
OCT										
17...	1020	92	1750	8.3	6.5	6.5	8.2	K14	K40	230
NOV										
07...	0900	82	1550	8.2	1.0	1.1	12.4	20	50	250
DEC										
06...	1300	37	1900	7.9	.0	4.5	12.4	--	50	330
JAN										
12...	0930	3.3	1200	8.4	.0	2.8	.0	K510	50	320
MAR										
08...	0800	20	2400	7.9	.0	1.5	12.4	K8	50	330
APR										
10...	1030	797	700	7.4	4.0	500	9.4	690	820	120
MAY										
09...	1315	334	1560	8.2	6.0	58	11.4	30	50	190
JUN										
06...	1030	69	2000	8.2	16.0	3.9	7.0	120	80	290
JUL										
11...	0900	53	1850	8.2	21.0	60	8.0	3000	2300	220
AUG										
09...	1000	48	1650	8.9	23.0	76	8.1	300	1340	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)
OCT										
17...	0	45	29	280	72	8.0	8.2	--	--	300
NOV										
07...	0	51	30	290	71	8.0	8.4	--	--	280
DEC										
06...	0	65	40	330	68	7.9	11	--	--	370
JAN										
12...	42	120	54	500	67	9.5	14	--	--	480
MAR										
08...	0	65	40	420	73	10	12	--	--	400
APR										
10...	0	24	14	110	66	4.4	4.4	--	--	140
MAY										
09...	0	24	31	260	74	8.3	9.0	--	--	270
JUN										
06...	0	60	35	340	71	8.6	11	--	--	320
JUL										
11...	0	45	25	320	75	9.5	12	--	--	290
AUG										
09...	0	55	25	330	74	9.3	12	--	--	300

K Non-ideal colony count.

06357800 GRAND RIVER AT LITTLE EAGLE, SD--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)
OCT									
17...	550	8.9	.5	3.0	1130	1110	1.54	281	.01
NOV									
07...	570	8.5	.3	3.3	1140	1130	1.55	252	.05
DEC									
06...	690	13	.3	5.6	1350	1380	1.84	135	.24
JAN									
12...	1000	30	.4	7.9	1770	2020	2.41	15.8	.24
MAR									
08...	790	16	.5	6.5	1630	1590	2.22	88.0	.48
APR									
10...	190	4.6	.2	5.5	436	437	.59	938	.20
MAY									
09...	500	7.8	.3	8.8	1040	1000	1.41	938	.11
JUN									
06...	640	12	.3	3.4	1290	1290	1.75	242	.13
JUL									
11...	610	15	.3	8.1	1230	1210	1.67	176	.03
AUG									
09...	570	12	.3	.6	1140	1190	1.55	148	.02

DATE	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN, NH4 + ORG. SUSP. TOTAL (MG/L AS N) (00624)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)
OCT									
17...	.89	.88	.01	.82	.07	.90	4.0	.01	.03
NOV									
07...	.40	.37	.03	.36	.04	.45	2.0	.00	.02
DEC									
06...	.86	.84	.02	.83	.03	1.1	4.9	.02	.03
JAN									
12...	.69	.57	.12	.66	.03	.93	4.1	.02	.02
MAR									
08...	.81	.78	.03	.67	.14	1.3	5.7	.01	.01
APR									
10...	.50	.42	.08	.47	.03	.70	3.1	.02	.51
MAY									
09...	.75	.64	.11	.75	.00	.86	3.8	.02	.08
JUN									
06...	.48	.43	.05	.39	.09	.61	2.7	.01	.06
JUL									
11...	.73	.60	.13	.73	.00	.76	3.4	.02	.09
AUG									
09...	1.0	.97	.03	.36	.64	1.0	4.5	.01	.10

DATE	TIME	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C) (00689)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	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)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
NOV									
07...	0900	--	--	6.8	440	--	--	--	--
DEC									
06...	1300	--	--	8.2	--	--	--	--	--
MAR									
08...	0800	--	--	9.8	66	--	--	--	--
MAY									
09...	1315	--	--	19	2200	--	--	246	222
JUN									
06...	1030	--	--	9.1	3000	2.99	2.91	131	25
AUG									
09...	1000	--	--	11	3300	.390	.240	286	37

06357800 GRAND RIVER AT LITTLE EAGLE, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM (70337)	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)	SED. SUSP. FALL DIAM. % FINER THAN .250 MM (70344)	SED. SUSP. FALL DIAM. % FINER THAN .500 MM (70345)
NOV 07...	--	--	--	--	--	--	--	--
DEC 06...	--	--	--	--	--	--	--	--
MAR 08...	--	--	--	--	--	--	--	--
MAY 09...	56	--	--	--	57	75	99	100
JUN 06...	92	--	--	--	--	--	--	--
AUG 09...	--	--	--	--	--	--	--	--

DATE	TIME	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	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)
OCT 17...	1020	1	1	1	0	1	0	0	0	<3	0
JAN 12...	0930	1	1	1	0	1	0	0	0	2	0
APR 10...	1030	6	1	2	0	2	30	30	0	14	14
JUL 11...	0900	2	1	<1	0	<1	10	0	10	3	0

DATE	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)	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)
OCT 17...	<3	6	2	4	660	10	10	0	10	50	40
JAN 12...	2	3	0	5	180	40	18	12	6	140	0
APR 10...	0	38	35	3	23000	80	19	1	18	590	570
JUL 11...	<3	9	7	2	2400	10	5	5	0	120	120

DATE	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)	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)
OCT 17...	10	.0	.0	.0	1	0	1	20	10	6
JAN 12...	140	.0	.0	.0	1	0	1	20	0	20
APR 10...	20	.2	.2	.0	1	1	0	120	110	10
JUL 11...	3	.5	.0	.5	0	0	0	40	40	<3

< Less than.

06357800 GRAND RIVER AT LITTLE EAGLE, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	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)
NOV										
07...	0900	ND	ND	ND	ND	ND	ND	ND	ND	ND
APR										
10...	1030	ND	--	ND	--	ND	--	ND	--	ND
MAY										
09...	1315	ND	--	ND	--	ND	--	ND	--	ND

DATE	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)
NOV										
07...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
APR										
10...	--	ND	--	ND	--	ND	--	ND	--	ND
MAY										
09...	--	ND	--	ND	--	ND	--	ND	--	ND

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)
NOV										
07...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
APR										
10...	--	ND	--	ND	--	ND	--	ND	--	ND
MAY										
09...	--	ND	--	ND	--	ND	--	ND	--	ND

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)
NOV									
07...	ND	ND	ND	ND	ND	ND	ND	ND	ND
APR									
10...	--	ND	--	ND	--	ND	--	ND	--
MAY									
09...	--	ND	--	ND	--	ND	--	ND	--

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS) (00061)	TEMPERATURE (DEG C) (00010)	OXYGEN, DISSOLVED (MG/L) (00300)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	PH (UNITS) (00400)
SEP						
05...	1500	117	26.5	9.0	--	--
05...	1700	117	26.5	10.5	--	--
05...	1900	117	26.5	9.5	--	--
05...	2100	110	26.5	8.8	--	--
05...	2300	100	26.0	8.2	--	--
06...	0100	85	26.0	8.0	--	--
06...	0300	70	26.0	7.5	--	--
06...	0500	68	25.5	7.4	--	--
06...	0700	68	25.5	7.4	--	--
06...	0900	68	24.0	7.6	--	--
06...	1100	68	24.0	8.6	--	--
06...	1300	66	23.5	9.2	--	--
06...	1500	64	23.0	9.2	--	--

ND Not detected.

06357800 GRAND RIVER AT LITTLE EAGLE, SD--Continued

PHYTOPLANKTON ANALYSES

DATE	AUG 10,78	SEP 14,78	NOV 7,78	MAR 8,79
TIME	1000	1145	0900	0800
TOTAL CELLS/ML	7600	2400	440	66
DIVERSITY: DIVISION	0.9	1.0	1.1	0.9
.CLASS	0.9	1.0	1.1	0.9
..ORDER	1.2	1.4	1.4	1.6
...FAMILY	1.9	1.7	1.8	1.6
....GENUS	3.0	1.8	2.3	0.0

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)								
.CHLOROPHYCEAE								
..CHLOROCOCCALES								
...COELASTRACEAE								
....COELASTRUM	--	-	69	3	--	-	--	-
...MICRACTINIACEAE								
....MICRACTINIUM	--	-	--	-	--	-	--	-
...OOCYSTACEAE								
....ANKISTRODESMUS	1300#	17	*	0	14	3	--	-
....DICTYOSPHAERIUM	2200#	29	16	1	--	-	--	-
....KIRCHNERIELLA	300	4	--	-	14	3	--	-
....OOCYSTIS	220	3	--	-	14	3	--	-
....SELENASTRUM	300	4	--	-	--	-	--	-
....TETRAEDRON	110	1	--	-	--	-	--	-
...SCENEDESMACEAE								
....ACTINASTRUM	--	-	--	-	--	-	--	-
....SCENEDESMUS	1700#	23	780#	32	160#	35	--	-
....TETRASTRUM	--	-	--	-	57	13	--	-
..TETRASPORALES								
...COCCOMYXACEAE								
....ELAKATOTHRIX	74	1	--	-	--	-	--	-
..VOLVOCALES								
...CHLAMYDOMONADACEAE	--	-	--	-	--	-	22#	33
....CHLAMYDOMONAS	74	1	16	1	--	-	--	-
CHRYSOPHYTA								
.BACILLARIOPHYCEAE								
..CENTRALES								
...COSCINODISCACEAE								
....CYCLOTELLA	74	1	--	-	--	-	22#	33
....STEPHANODISCUS	--	-	*	0	--	-	--	-
..PENNALES								
...FRAGILARIACEAE								
....FRAGILARIA	--	-	--	-	--	-	--	-
...NAVICULACEAE								
....NAVICULA	--	-	--	-	--	-	22#	33
...NITZSCHIACEAE								
....NITZSCHIA	370	5	*	0	--	-	--	-
...SURIRELLACEAE								
....SURIRELLA	--	-	--	-	--	-	--	-
.CHRYSOPHYCEAE								
..CHRYSOMONADALES								
...OCHROMONADACEAE								
....OCHROMONAS	--	-	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)								
.CRYPTOPHYCEAE								
..CRYPTOMONADALES								
...CRYPTOCHRYSIDACEAE								
....CHROOMONAS	--	-	--	-	--	-	--	-
...CRYPTOMONADACEAE								
....CRYPTOMONAS	--	-	--	-	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)								
.CYANOPHYCEAE								
..CHROOCOCCALES								
...CHROOCOCCACEAE								
....AGMENELLUM	--	-	1300#	53	--	-	--	-
....ANACYSTIS	220	3	37	2	29	6	--	-
..HORMOGONALES								
...NOSTOCACEAE								
....ANABAENA	--	-	110	5	--	-	--	-
...OSCILLATORIACEAE								
....LYNGBYA	590	8	--	-	--	-	--	-
....OSCILLATORIA	--	-	85	3	140#	32	--	-
EUGLENOPHYTA (EUGLENOIDS)								
.EUGLENOPHYCEAE								
..EUGLENALES								
...EUGLENACEAE								
....EUGLENA	*	0	*	0	--	-	--	-
....TRACHELOMONAS	*	0	--	-	14	3	--	-

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

06357800 GRAND RIVER AT LITTLE EAGLE, SD--Continued

PHYTOPLANKTON ANALYSES

DATE	MAY 9,79	JUN 6,79	AUG 9,79
TIME	1315	1030	1000
TOTAL CELLS/ML	2200	3000	3300
DIVERSITY: DIVISION	1.6	1.1	1.0
.CLASS	1.8	1.1	1.0
..ORDER	2.4	1.3	1.5
...FAMILY	2.9	1.6	2.1
....GENUS	3.1	2.1	2.7

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)						
.CHLOROPHYCEAE						
..CHLOROCOCCALES						
...COELASTRACEAE						
....COELASTRUM	--	-	--	-	--	-
...MICRACTINIACEAE						
....MICRACTINIUM	62	3	--	-	--	-
...OOCYSTACEAE						
....ANKISTRODESMUS	510#	23	1800#	59	460	14
....DICTYOSPHAERIUM	--	-	--	-	540#	16
....KIRCHNERIELLA	31	1	--	-	--	-
....OOCYSTIS	--	-	100	3	310	9
....SELENASTRUM	--	-	180	6	--	-
....TETRAEDRON	--	-	--	-	--	-
...SCENEDESMACEAE						
....ACTINASTRUM	62	3	--	-	--	-
....SCENEDESMUS	62	3	200	7	770#	23
....TETRASTRUM	--	-	--	-	--	-
..TETRASPORALES						
...COCCOMYXACEAE						
....ELAKATOTHRIX	--	-	--	-	--	-
..VOLVOCALES						
...CHLAMYDOMONADACEAE	--	-	--	-	--	-
....CHLAMYDOMONAS	250	11	--	-	390	12
CHRYSOPHYTA						
.BACILLARIOPHYCEAE						
..CENTRALES						
...COSCINODISCACEAE						
....CYCLOTELLA	160	7	150	5	--	-
....STEPHANODISCUS	--	-	--	-	--	-
..PENNALES						
...FRAGILARIACEAE						
....FRAGILARIA	16	1	--	-	--	-
...NAVICULACEAE						
....NAVICULA	--	-	--	-	--	-
...NITZSCHIACEAE						
....NITZSCHIA	620#	28	200	7	150	5
...SURIRELLACEAE						
....SURIRELLA	16	1	--	-	--	-
.CHRYSOPHYCEAE						
..CHRYSOMONADALES						
...OCHROMONADACEAE						
....OCHROMONAS	120	6	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)						
.CRYPTOPHYCEAE						
..CRYPTOMONADALES						
...CRYPTOCHRYSIDACEAE						
....CHROOMONAS	--	-	50	2	--	-
...CRYPTOMONADACEAE						
....CRYPTOMONAS	31	1	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)						
.CYANOPHYCEAE						
..CHROOCOCCALES						
...CHROOCOCCACEAE						
....AGMENELLUM	170	8	--	-	--	-
....ANACYSTIS	62	3	350	12	700#	21
..HORMOGONALES						
...NOSTOCACEAE						
....ANABAENA	--	-	--	-	--	-
...OSCILLATORIACEAE						
....LYNGBYA	--	-	--	-	--	-
....OSCILLATORIA	--	-	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)						
.EUGLENOPHYCEAE						
..EUGLENALES						
...EUGLENACEAE						
....EUGLENA	--	-	--	-	--	-
....TRACHELOMONAS	47	2	--	-	--	-

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

06357800 GRAND RIVER AT LITTLE EAGLE, SD--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	---	---	---	---		---	---	---	---	---	---	---
2	---	---	---	---		---	---	---	---	---	---	---
3	---	---	---	---		---	---	---	---	---	---	---
4	---	---	---	---		---	---	---	---	---	---	---
5	---	---	---	---		---	---	---	---	---	---	---
6	---	---	1900	---		---	---	---	2000	---	---	1220
7	---	1550	---	---		---	---	---	---	---	---	---
8	---	---	---	---		2400	---	---	---	---	---	---
9	---	---	---	---		---	---	1560	---	---	1650	---
10	---	---	---	---		---	700	---	---	---	---	---
11	---	---	---	---		---	---	---	---	1850	---	---
12	---	---	---	1200		---	---	---	---	---	---	---
13	---	---	---	---		---	---	---	---	---	---	---
14	---	---	---	---		---	---	---	---	---	---	---
15	---	---	---	---		---	---	---	---	---	---	---
16	---	---	---	---		---	---	---	---	---	---	---
17	1750	---	---	---		---	---	---	---	---	---	---
18	---	---	---	---		---	---	---	---	---	---	---
19	---	---	---	---		---	---	---	---	---	---	---
20	---	---	---	---		---	---	---	---	---	---	---
21	---	---	---	---		---	---	---	---	---	---	---
22	---	---	---	---		---	---	---	---	---	---	---
23	---	---	---	---		---	---	---	---	---	---	---
24	---	---	---	---		---	---	---	---	---	---	---
25	---	---	---	---		---	---	---	---	---	---	---
26	---	---	---	---		---	---	---	---	---	---	---
27	---	---	---	---		---	---	---	---	---	---	---
28	---	---	---	---		---	---	---	---	---	---	---
29	---	---	---	---		---	---	---	---	---	---	---
30	---	---	---	---		---	---	---	---	---	---	---
31	---	---	---	---		---	---	---	---	---	---	---
MEAN	1750	1550	1900	1200		2400	700	1560	2000	1850	1650	1220

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	15.0	---	---	---		---	---	---	---	---	---	---
2	14.0	---	---	---		---	---	---	---	---	---	---
3	14.0	---	---	---		---	---	---	---	---	---	---
4	13.0	---	---	---		---	---	---	---	---	---	---
5	13.0	---	---	---		---	---	---	---	---	---	---
6	11.0	---	.0	---		---	---	---	16.0	---	---	17.0
7	12.0	1.0	---	---		---	---	---	---	---	---	---
8	13.0	---	---	---		.0	---	---	---	---	---	---
9	13.0	---	---	---		---	---	6.0	---	---	23.0	---
10	18.0	---	---	---		---	4.0	---	---	---	---	---
11	---	---	---	---		---	---	---	---	21.0	---	---
12	---	---	---	.0		---	---	---	---	---	---	---
13	---	---	---	---		---	---	---	---	---	---	---
14	---	---	---	---		---	---	---	---	---	---	---
15	---	---	---	---		---	---	---	---	---	---	---
16	---	---	---	---		---	---	---	---	---	---	---
17	6.5	---	---	---		---	---	---	---	---	---	---
18	---	---	---	---		---	---	---	---	---	---	---
19	---	---	---	---		---	---	---	---	---	---	---
20	---	---	---	---		---	---	---	---	---	---	---
21	---	---	---	---		---	---	---	---	---	---	---
22	---	---	---	---		---	---	---	---	---	---	---
23	---	---	---	---		---	---	---	---	---	---	---
24	---	---	---	---		---	---	---	---	---	---	---
25	---	---	---	---		---	---	---	---	---	---	---
26	---	---	---	---		---	---	---	---	---	---	---
27	---	---	---	---		---	---	---	---	---	---	---
28	---	---	---	---		---	---	---	---	---	---	---
29	---	---	---	---		---	---	---	---	---	---	---
30	---	---	---	---		---	---	---	---	---	---	---
31	---	---	---	---		---	---	---	---	---	---	---
MEAN	13.0	1.0	.0	.0		.0	4.0	6.0	16.0	21.0	23.0	17.0

06359500 MOREAU RIVER NEAR FAITH, SD

LOCATION.--Lat 45°11'52", long 102°09'22", in NW¼NW¼ sec.10, T.14 N., R.16 E., Perkins County, Hydrologic Unit 10130306, on left bank 10 ft (3 m) downstream from bridge on State Highway 73, 3.1 mi (5.0 km) downstream from Rabbit Creek and 13.5 mi (21.7 km) northwest of Faith.

DRAINAGE AREA.--2,660 mi^2 (6,890 km^2), approximately.

PERIOD OF RECORD.--March 1943 to current year.

REVISED RECORDS.--WSP 1176: 1944. WSP 1279: 1946(M).

GAGE.--Water-stage recorder. Datum of gage is 2,238.68 ft (682.350 m) National Geodetic Vertical Datum of 1929. Prior to Oct. 5, 1949, nonrecording gage 0.3 mi (0.5 km) upstream and Oct. 5, 1949, to July 16, 1959, nonrecording gage and crest-stage gage at present site; both at datum 1.0 ft (0.30 m) higher. July 17, 1959, to Sept. 1, 1971, recording gage at site 500 ft (152 m) downstream at present datum.

REMARKS.--Records good except those for winter periods, which are poor. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--36 years, 138 ft^3/s (3.908 m^3/s), 99,980 acre-ft/yr (123 hm^3/yr); median of yearly mean discharges, 97 ft^3/s (2.75 m^3/s), 70,300 acre-ft/yr (87 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 26,000 ft^3/s (736 m^3/s) Apr. 9, 1944, gage height, 20.9 ft (6.37 m), from floodmarks, 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 of peak flow; no flow at times in 1944, 1946, 1948-51, 1955-66, 1968-71, 1974-75, 1978-79.

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)
Apr. 20	2345	1,590	45.0	6.96	2.121	July 15	0330	*2,750	77.9	*8.60	2.62

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	5.4	9.3	9.0	.00	.00	.00	509	64	16	79	111	15
2	6.6	9.7	8.0	.00	.00	.00	441	57	15	60	242	14
3	6.5	10	8.0	.00	.00	.00	403	51	15	41	215	13
4	6.1	10	7.5	.00	.00	.00	330	45	13	29	120	12
5	6.2	10	7.0	.00	.00	.00	249	41	12	26	77	11
6	6.3	12	7.0	.00	.00	.00	202	41	12	34	59	8.7
7	6.4	11	7.5	.00	.00	.00	209	40	14	24	46	8.3
8	6.2	10	7.5	.00	.00	.00	239	32	14	20	41	7.5
9	6.4	11	7.5	.00	.00	.00	295	34	14	20	33	6.4
10	6.3	11	8.0	.00	.00	.00	369	35	13	16	26	5.9
11	6.5	12	8.0	.00	.00	.00	492	35	11	12	25	29
12	7.2	14	8.0	.00	.00	.00	461	34	11	33	21	30
13	7.7	16	8.1	.00	.00	5.0	416	32	9.5	491	19	14
14	7.7	17	8.0	.00	.00	10	346	32	8.6	1540	17	11
15	7.9	15	8.0	.00	.00	20	325	30	7.9	2330	15	7.6
16	10	14	8.0	.00	.00	35	324	27	8.0	1280	13	5.9
17	8.8	12	7.5	.00	.00	50	359	25	8.3	826	13	5.0
18	8.3	11	7.5	.00	.00	100	358	25	8.4	609	12	4.3
19	8.1	10	7.5	.00	.00	200	310	29	33	523	13	4.1
20	7.7	10	7.5	.00	.00	330	955	27	601	419	12	3.7
21	8.5	10	7.0	.00	.00	550	1090	24	331	252	15	3.9
22	9.0	11	7.0	.00	.00	706	482	23	289	149	35	3.7
23	8.6	11	7.0	.00	.00	618	310	22	171	194	18	3.5
24	8.5	11	6.5	.00	.00	602	219	20	148	283	13	3.6
25	8.4	11	6.5	.00	.00	704	165	19	132	135	32	3.4
26	8.8	12	5.0	.00	.00	705	132	19	180	104	57	3.3
27	9.2	12	3.0	.00	.00	789	115	18	144	195	26	3.1
28	8.8	12	2.0	.00	.00	853	98	16	160	139	21	3.1
29	9.4	11	1.0	.00	---	651	86	15	174	116	.16	3.0
30	9.4	10	.50	.00	---	600	74	17	110	79	15	2.7
31	9.3	---	.00	.00	---	683	---	17	---	126	19	---
TOTAL	240.2	346.0	200.60	.00	.00	8211.00	10363	946	2683.7	10184	1397	249.7
MEAN	7.75	11.5	6.47	.000	.000	265	345	30.5	89.5	329	45.1	8.32
MAX	10	17	9.0	.00	.00	853	1090	64	601	2330	242	30
MIN	5.4	9.3	.00	.00	.00	.00	74	15	7.9	12	12	2.7
AC-FT	476	686	398	.00	.00	16290	20560	1880	5320	20200	2770	495

CAL YR 1978 TOTAL 137219.05 MEAN 376 MAX 15200 MIN .00 AC-FT 272200
WTR YR 1979 TOTAL 34821.20 MEAN 95.4 MAX 2330 MIN .00 AC-FT 69070

06360500 MOREAU RIVER NEAR WHITEHORSE, SD

LOCATION.--Lat 45°15'21", long 100°50'33", in SW¼SE¼ sec.17, T.15 N., R.27 E., Dewey County, Hydrologic Unit 10130306, on left bank 30 ft (9 m) downstream from bridge, 2.4 mi (3.9 km) southeast of Whitehorse, 8.8 mi (14.2 km) downstream from Little Moreau River, and 16.3 mi (26.2 km) southeast of town of Timber Lake.

DRAINAGE AREA.--4,880 mi² (12,640 km²), approximately.

WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WRD SD-78-1: 1977.

GAGE.--Water-stage recorder. Datum of gage is 1,661.48 ft (506.419 m) National Geodetic Vertical Datum of 1929. Prior to Nov. 24, 1954, nonrecording gage at same site and datum.

REMARKS.--Records good except those for winter periods, which are poor. U.S. Weather Bureau gage-height telemeter at station.

AVERAGE DISCHARGE.--25 years, 205 ft³/s (5.806 m³/s), 148,500 acre-ft/yr (183 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, 25,600 ft³/s (725 m³/s) Mar. 24, 1978, gage height, 25.31 ft (7.714 m); maximum gage height, 26.20 ft (7.986 m) Mar. 14, 1972 (backwater from ice); no flow at times each year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in June 1953 reached a stage of about 26.2 ft (7.99 m). Flood in March 1947 was probably higher.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,800 ft³/s (51.0 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. 19	1030	ice jam		*11.40	3.475	June 23	0245	2,020	57.2	7.16	2.182
Mar. 25	0045	2,300	65.1	7.85	2.393	July 17	0515	*2,350	66.6	7.81	2.380

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	.38	.85	1.9	.00	.00	.00	857	164	20	239	419	96
2	.23	.78	2.0	.00	.00	.00	831	142	20	200	354	111
3	.10	.77	2.2	.00	.00	.00	694	124	19	175	288	80
4	.05	.75	2.3	.00	.00	.00	662	110	16	132	285	50
5	.04	.77	2.1	.00	.00	.00	654	92	15	121	260	35
6	.04	.70	1.9	.00	.00	.00	513	81	14	110	280	26
7	.00	.70	3.0	.00	.00	.00	449	75	14	88	198	17
8	.13	.70	2.5	.00	.00	.00	422	68	14	80	136	11
9	.33	.73	2.0	.00	.00	.00	414	64	14	64	102	7.0
10	.39	1.3	1.2	.00	.00	.00	519	61	14	48	87	5.2
11	.63	.16	.92	.00	.00	.00	531	62	13	33	98	3.6
12	.90	.40	.74	.00	.00	.00	616	64	11	48	86	3.1
13	.90	1.1	.70	.00	.00	.00	845	61	7.3	36	73	169
14	1.1	.58	.70	.00	.00	5.0	912	55	3.8	152	51	214
15	1.2	.51	.70	.00	.00	10	764	49	3.8	571	40	165
16	1.3	.55	.70	.00	.00	20	705	55	3.6	1500	26	115
17	1.3	.75	.70	.00	.00	35	606	111	3.6	2240	15	93
18	1.3	.89	.70	.00	.00	50	593	70	3.3	1360	12	67
19	1.3	.77	.60	.00	.00	80	577	52	3.8	952	9.5	35
20	1.3	.55	.60	.00	.00	150	643	46	8.1	730	15	15
21	1.2	.60	.60	.00	.00	300	581	40	16	650	122	10
22	1.2	.77	.50	.00	.00	500	856	36	122	546	180	8.0
23	1.2	.86	.50	.00	.00	750	1090	33	1190	436	28	6.0
24	1.2	1.1	.50	.00	.00	1000	653	29	534	300	20	5.5
25	1.3	1.3	.50	.00	.00	1050	468	27	380	213	11	5.0
26	1.2	1.3	.50	.00	.00	861	370	27	282	507	8.7	4.5
27	1.0	1.5	.40	.00	.00	780	298	25	394	577	8.4	4.5
28	.93	1.6	.30	.00	.00	995	248	23	370	416	131	4.0
29	1.0	1.6	.20	.00	---	1030	213	21	258	549	263	4.0
30	.93	1.5	.10	.00	---	1030	183	21	260	504	136	4.0
31	.85	---	.00	.00	---	977	---	19	---	419	179	---
TOTAL	24.93	26.44	32.26	.00	.00	9623.00	17767	1907	4027.3	13996	3921.6	1373.4
MEAN	.80	.88	1.04	.000	.000	310	592	61.5	134	451	127	45.8
MAX	1.3	1.6	3.0	.00	.00	1050	1090	164	1190	2240	419	214
MIN	.00	.16	.00	.00	.00	.00	183	19	3.3	33	8.4	3.1
AC-FT	49	52	64	.00	.00	19090	35240	3780	7990	27760	7780	2720

CAL YR 1978 TOTAL 258902.85 MEAN 709 MAX 24900 MIN .00 AC-FT 513500
WTR YR 1979 TOTAL 52698.93 MEAN 144 MAX 2240 MIN .00 AC-FT 104500

06360500 MOREAU RIVER NEAR WHITEHORSE, SD--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1969, 1972-76, 1978 to current year.

PERIOD OF DAILY RECORD.--
SUSPENDED SEDIMENT DISCHARGE: October 1970 to September 1976 (discontinued).

REMARKS.--No flow Oct. 7, Dec. 31 to March 13. Sediment-discharge records prior to Oct. 1, 1971, on file in the District office, Corps of Engineers, Omaha, NE.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SEDIMENT CONCENTRATIONS: Maximum daily mean, 20,300 mg/L May 9, 1972; minimum daily mean, 0 mg/L on many days most years.
SEDIMENT LOADS: Maximum daily, 420,000 tons (381,000 tonnes) May 10, 1975; minimum daily, 0 ton (0 tonne) on many days each 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)	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)
OCT										
13...	1030	.82	2300	8.0	7.0	12	--	410	510	420
NOV										
09...	0940	.67	2550	7.7	6.0	5.1	7.4	200	290	590
DEC										
07...	1030	3.3	3000	7.9	.0	13	11.8	--	20	610
APR										
06...	1100	530	1080	7.4	2.0	450	9.2	K40	740	190
MAY										
10...	0915	62	1650	8.1	4.0	50	12.3	K8	30	350
JUN										
07...	1030	15	2500	7.9	14.0	15	8.0	140	280	370
JUL										
11...	1200	30	2400	8.5	26.5	22	8.4	80	350	290
AUG										
08...	1040	122	900	8.8	23.0	180	7.8	200	240	120
SEP										
06...	1235	26	1120	8.8	23.0	22	--	60	6	170

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)
OCT										
13...	200	110	35	350	64	7.4	12	--	--	220
NOV										
09...	350	160	47	390	58	7.0	12	--	--	240
DEC										
07...	210	150	57	650	70	11	7.4	--	--	400
APR										
06...	110	47	18	130	59	4.1	6.6	--	--	84
MAY										
10...	130	84	35	250	60	5.8	9.3	--	--	220
JUN										
07...	150	84	40	420	80	9.4	12	--	--	220
JUL										
11...	21	67	30	440	76	11	13	--	--	270
AUG										
08...	0	33	10	150	71	5.9	8.7	--	--	170
SEP										
06...	18	44	14	160	74	5.4	7.8	--	--	150

K Non-ideal colony count.

06360500 MOREAU RIVER NEAR WHITEHORSE, SD--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)
OCT									
13...	880	18	.5	.4	1580	1540	2.15	3.50	.01
NOV									
09...	1100	23	.3	4.6	1910	1880	2.60	3.46	.01
DEC									
07...	1600	35	.4	2.9	2810	2740	3.82	25.0	.46
APR									
06...	390	5.5	.2	5.6	620	653	.84	887	.38
MAY									
10...	610	12	.3	8.8	1150	1140	1.56	193	.01
JUN									
07...	910	17	.3	.7	1730	1620	2.35	71.9	.03
JUL									
11...	880	16	.4	7.1	1640	1620	2.23	133	.01
AUG									
08...	270	8.7	.3	.2	528	583	.72	174	.01
SEP									
06...	430	5.4	.3	5.7	739	758	1.01	51.9	.01

DATE	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN, NH4 + ORG. SUSP. TOTAL (MG/L AS N) (00624)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)
OCT									
13...	1.2	1.0	.16	--	.00	1.2	5.4	.02	.07
NOV									
09...	.68	.61	.07	.52	.16	.69	3.1	.01	.06
DEC									
07...	.65	.56	.09	.47	.18	1.1	4.9	.03	.05
APR									
06...	1.4	1.3	.10	.44	.96	1.8	7.9	.03	.50
MAY									
10...	.66	.57	.09	.42	.24	.67	3.0	.01	.08
JUN									
07...	.60	.55	.05	.39	.21	.63	2.8	.02	.07
JUL									
11...	.94	.77	.17	--	.00	.95	4.2	.02	.09
AUG									
08...	1.1	1.1	.03	.17	.93	1.1	4.9	.02	.22
SEP									
06...	.75	.74	.01	.32	.43	.76	3.4	.01	.02

DATE	TIME	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C) (00689)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	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)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
NOV									
09...	0940	--	--	7.4	130000	--	--	280	.51
DEC									
07...	1030	--	--	9.6	--	--	--	--	--
MAY									
10...	0915	--	--	9.3	14000	--	--	133	22
JUN									
07...	1030	--	--	--	56000	--	--	118	4.9
AUG									
08...	1040	--	--	13	10000	--	--	749	247
SEP									
06...	1235	--	--	11	--	--	--	--	--

06360500 MOREAU RIVER NEAR WHITEHORSE, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM (70337)	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)	SED. SUSP. FALL DIAM. % FINER THAN .250 MM (70344)	SED. SUSP. FALL DIAM. % FINER THAN .500 MM (70345)
NOV 09...	82	--	--	--	85	95	97	97
DEC 07...	--	--	--	--	--	--	--	--
MAY 10...	89	--	--	--	--	--	--	--
JUN 07...	75	--	--	--	--	--	--	--
AUG 08...	99	92	92	99	--	--	--	--
SEP 06...	--	--	--	--	--	--	--	--

DATE	TIME	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	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)
OCT 13...	1030	1	1	0	0	0	0	0	0	0	0
APR 06...	1100	5	1	1	0	1	30	30	0	10	10
JUL 11...	1200	2	2	0	0	0	10	10	0	1	1

DATE	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)	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)
OCT 13...	0	8	0	8	550	80	5	2	3	160	70
APR 06...	0	34	31	3	23000	30	18	18	0	360	350
JUL 11...	0	8	4	4	960	30	4	4	0	70	70

DATE	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)	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)
OCT 13...	90	.0	.0	.0	3	0	3	30	10	20
APR 06...	10	.0	.0	.0	3	2	1	90	80	10
JUL 11...	0	.5	.5	.0	0	0	0	20	10	10

06360500 MOREAU RIVER NEAR WHITEHORSE, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)
SEP						
06...	1400	26	22.5	9.5	--	--
06...	1600	26	22.5	9.5	--	--
06...	1800	26	22.5	9.3	--	--
06...	2400	23	22.0	7.4	--	--
07...	0200	22	22.0	7.1	--	--
07...	0400	21	22.0	6.8	--	--
07...	0600	20	22.0	6.3	--	--
07...	0800	19	21.5	6.2	--	--
07...	1000	18	21.5	6.9	--	--
07...	1200	16	21.5	7.7	--	--
07...	1400	16	21.5	8.3	--	--
07...	1600	15	21.5	9.4	--	--

PHYTOPLANKTON ANALYSES

DATE	AUG 8,78	SEP 13,78	NOV 9,78	MAY 10,79	AUG 8,79
TIME	0930	1155	0940	0915	1040
TOTAL CELLS/ML	36000	22000	130000	14000	10000
DIVERSITY: DIVISION	0.6	1.3	0.5	1.0	1.2
.CLASS	0.6	1.3	0.5	1.0	1.2
..ORDER	0.8	1.5	0.7	1.6	1.5
...FAMILY	1.6	1.9	0.9	2.3	1.8
....GENUS	2.1	2.5	0.9	3.1	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										
...CHARACIACEAE										
....SCHROEDERIA	--	-	*	0	--	-	--	-	--	-
...COELASTRACEAE										
....COELASTRUM	860	2	--	-	--	-	--	-	--	-
...OOCYSTACEAE										
....ANKISTRODESMUS	860	2	200	1	920	1	3300#	24	--	-
....CHODATELLA	--	-	--	-	1100	1	--	-	--	-
....DICTYOSPHAERIUM	--	-	5000#	23	--	-	2700#	19	--	-
....KIRCHNERIELLA	--	-	240	1	--	-	--	-	--	-
....NEPHROCYTIUM	--	-	--	-	--	-	230	2	--	-
....OOCYSTIS	3600	10	130	1	--	-	230	2	520	5
....SELENASTRUM	220	1	--	-	*	0	230	2	--	-
....TREUBARIA	--	-	240	1	--	-	--	-	--	-
....WESTELLA	--	-	--	-	--	-	--	-	520	5
...SCENEDESMACEAE										
....ACTINASTRUM	22000#	63	--	-	14000	11	1500	11	--	-
....CRUCIGENIA	430	1	--	-	--	-	--	-	--	-
....SCENEDESMUS	2600	7	1200	5	--	-	230	2	2600#	26
....TETRASTRUM	--	-	--	-	--	-	--	-	520	5
..TETRASPORALES										
...PALMELLACEAE										
....SPHAEROCYSTIS	--	-	270	1	--	-	--	-	--	-
...TETRASPORACEAE										
....TETRASPORA	--	-	400	2	--	-	--	-	--	-
..VOLVOCALES										
...CHLAMYDOMONADACEAE										
....CARTERIA	220	1	--	-	*	0	--	-	--	-
....CHLAMYDOMONAS	540	2	*	0	--	-	810	6	260	3
..ZYGNEMATALES										
...DESMIDIACEAE										
....COSMARIUM	*	0	--	-	--	-	--	-	--	-
CHRYSOPHYTA										
.BACILLARIOPHYCEAE										
..CENTRALES										
...COSCINODISCACEAE										
....CYCLOTELLA	--	-	*	0	--	-	--	-	--	-
....MELOSIRA	--	-	1700	8	--	-	--	-	--	-
..PENNALES										

06360500 MOREAU RIVER NEAR WHITEHORSE, SD--Continued

PHYTOPLANKTON ANALYSES

DATE TIME	AUG 8,78 0930		SEP 13,78 1155		NOV 9,78 0940		MAY 10,79 0915		AUG 8,79 1040	
TOTAL CELLS/ML	36000		22000		130000		14000		10000	
DIVERSITY: DIVISION	0.6		1.3		0.5		1.0		1.2	
.CLASS	0.6		1.3		0.5		1.0		1.2	
..ORDER	0.8		1.5		0.7		1.6		1.5	
...FAMILY	1.6		1.9		0.9		2.3		1.8	
....GENUS	2.1		2.5		0.9		3.1		2.1	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
...NAVICULACEAE										
....NAVICULA	--	-	*	0	--	-	--	-	--	-
...NITZSCHIACEAE										
....NITZSCHIA	220	1	--	-	--	-	120	1	130	1
CRYPTOPHYTA (CRYPTOMONADS)										
.CRYPTOPHYCEAE										
..CRYPTOMONADALES										
...CRYPTOCHRYSIDACEAE										
....CHROOMONAS	--	-	*	0	--	-	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)										
.CYANOPHYCEAE										
..CHROOCOCCALES										
...CHROOCOCCACEAE										
....ANACYSTIS	1700	5	--	-	2100	2	1200	8	260	3
..HORMOGONALES										
...NOSTOCACEAE										
....ANABAENA	430	1	2100	10	2000	2	1700	12	--	-
....ANABAENOPSIS	--	-	9700#	44	--	-	--	-	--	-
...OSCILLATORIACEAE										
....LYNGBYA	--	-	--	-	110000#	84	--	-	--	-
....OSCILLATORIA	1500	4	670	3	--	-	1500	11	5200#	51
EUGLENOPHYTA (EUGLENOIDS)										
.EUGLENOPHYCEAE										
..EUGLENALES										
...EUGLENACEAE										
....TRACHELOMONAS	--	-	--	-	--	-	*	0	130	1
PYRRHOPHYTA (FIRE ALGAE)										
.DINOPHYCEAE										
..PERIDINIALES										
...GLENODINIACEAE										
....GLENODINIUM	*	0	--	-	--	-	*	0	--	-
...PERIDINIACEAE										
....PERIDINIUM	--	-	*	0	--	-	--	-	--	-

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

06360500 MOREAU RIVER NEAR WHITEHORSE, SD--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	---	---	---				---	---	---	---	---	---
2	---	---	---				---	---	---	---	---	---
3	---	---	---				---	---	---	---	---	---
4	---	---	---				---	---	---	---	---	---
5	---	---	---				---	---	---	---	---	---
6	---	---	---				1080	---	---	---	---	1120
7	---	---	3000				---	---	2500	---	---	---
8	---	---	---				---	---	---	---	900	---
9	---	2550	---				---	---	---	---	---	---
10	---	---	---				---	1650	---	---	---	---
11	---	---	---				---	---	---	2400	---	---
12	---	---	---				---	---	---	---	---	---
13	2300	---	---				---	---	---	---	---	---
14	---	---	---				---	---	---	---	---	---
15	---	---	---				---	---	---	---	---	---
16	---	---	---				---	---	---	---	---	---
17	---	---	---				---	---	---	---	---	---
18	---	---	---				---	---	---	---	---	---
19	---	---	---				---	---	---	---	---	---
20	---	---	---				---	---	---	---	---	---
21	---	---	---				---	---	---	---	---	---
22	---	---	---				---	---	---	---	---	---
23	---	---	---				---	---	---	---	---	---
24	---	---	---				---	---	---	---	---	---
25	---	---	---				---	---	---	---	---	---
26	---	---	---				---	---	---	---	---	---
27	---	---	---				---	---	---	---	---	---
28	---	---	---				---	---	---	---	---	---
29	---	---	---				---	---	---	---	---	---
30	---	---	---				---	---	---	---	---	---
31	---	---	---				---	---	---	---	---	---
MEAN	2300	2550	3000				1080	1650	2500	2400	900	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	---	---	---			---	---	---	---	---	---	---
2	---	---	---			---	---	---	---	---	---	---
3	---	---	---			---	---	---	---	---	---	---
4	---	---	---			---	---	---	---	---	---	---
5	---	---	---			---	---	---	---	---	---	---
6	---	---	---			---	2.0	---	---	---	---	23.0
7	---	---	.0			---	---	---	14.0	---	---	---
8	---	---	---			.0	---	---	---	---	23.0	---
9	---	6.0	---			---	---	---	---	---	---	---
10	---	---	---			---	---	4.0	---	---	---	---
11	---	---	---			---	---	---	---	26.5	---	---
12	---	---	---			---	---	---	---	---	---	---
13	7.0	---	---			---	---	---	---	---	---	---
14	---	---	---			---	---	---	---	---	---	---
15	---	---	---			---	---	---	---	---	---	---
16	---	---	---			---	---	---	---	---	---	---
17	---	---	---			---	---	---	---	---	---	---
18	---	---	---			---	---	---	---	---	---	---
19	---	---	---			---	---	---	---	---	---	---
20	---	---	---			---	---	---	---	---	---	---
21	---	---	---			---	---	---	---	---	---	---
22	---	---	---			---	---	---	---	---	---	---
23	---	---	---			---	---	---	---	---	---	---
24	---	---	---			---	---	---	---	---	---	---
25	---	---	---			---	---	---	---	---	---	---
26	---	---	---			---	---	---	---	---	---	---
27	---	---	---			---	---	---	---	---	---	---
28	---	---	---			---	---	---	---	---	---	---
29	---	---	---			---	---	---	---	---	---	---
30	---	---	---			---	---	---	---	---	---	---
31	---	---	---			---	---	---	---	---	---	---
MEAN	7.0	6.0	.0			.0	2.0	4.0	14.0	26.5	23.0	23.0

06392900 BEAVER CREEK AT MALLO CAMP, NEAR FOUR CORNERS, WY

LOCATION.--Lat 44°05'04", long 104°03'41", in NE¼NE¼ sec.4, T.47 N., R.60 W., Weston County, Hydrologic Unit 10120107, between Forest Service Road 811 and right bank at Mallo Campgrounds, 300 ft (91 m) upstream from mouth, 800 ft (244 m) upstream from dam on Stockade Beaver Creek, and 3.8 mi (6.1 km) east of Four Corners.

DRAINAGE AREA.--10.3 mi^2 (26.7 km^2).

PERIOD OF RECORD.--October 1974 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 6,030 ft (1,840 m), from topographic map.

REMARKS.--Records good except those for winter periods, which are poor. Several observations of water temperature and specific conductance were made during the year.

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, 21 ft^3/s (0.59 m^3/s) Apr. 26, gage height, 5.40 ft (1.646 m); minimum daily, 0.23 ft^3/s (0.007 m^3/s) Oct. 14, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5.2 ft^3/s (0.147 m^3/s) Aug. 7, gage height, 4.56 ft (1.390 m), no peak above base of 10 ft^3/s (0.28 m^3/s); minimum discharge observed, 0.99 ft^3/s (0.028 m^3/s) Nov. 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	2.3	2.5	1.8	1.4	2.2	2.7	2.9	2.8	2.7	3.3	2.7	2.5
2	2.2	2.5	1.8	1.5	2.2	2.7	2.9	2.7	2.7	3.2	2.8	2.5
3	2.2	2.5	1.7	1.8	2.3	2.7	3.0	2.7	2.8	3.3	2.8	2.6
4	2.2	2.5	1.8	2.0	2.4	2.6	3.2	2.6	2.8	3.4	2.8	2.6
5	2.2	2.5	1.8	1.9	2.4	2.6	3.2	2.6	2.9	3.3	2.7	2.6
6	2.2	2.5	1.7	2.2	2.5	2.6	3.3	2.6	3.0	3.3	2.7	2.5
7	2.2	2.5	1.6	2.3	2.5	2.6	3.3	2.6	3.0	3.3	3.0	2.5
8	2.2	2.5	1.6	2.3	2.5	2.6	3.3	2.6	3.0	3.3	3.2	2.5
9	2.2	2.5	1.6	2.3	2.5	2.5	3.3	2.6	3.1	3.3	2.9	2.5
10	2.3	2.3	1.7	2.3	2.5	2.5	3.6	2.6	3.0	3.3	2.8	2.5
11	2.3	2.1	1.8	2.4	2.5	2.6	3.6	2.6	3.3	3.3	2.8	2.5
12	2.3	2.0	1.8	2.3	2.5	2.6	3.6	2.6	3.3	3.4	2.8	2.5
13	2.3	1.8	1.9	2.2	2.6	2.6	3.7	2.5	3.3	3.3	2.8	2.5
14	2.3	1.7	1.9	2.1	2.5	2.6	3.4	2.5	3.3	3.2	2.6	2.5
15	2.3	1.6	2.0	2.3	2.4	2.6	3.6	2.5	3.4	3.1	2.6	2.4
16	2.3	1.7	2.0	2.3	2.5	2.8	3.7	2.4	4.2	3.4	2.6	2.4
17	2.3	1.8	2.0	2.3	2.5	2.8	4.1	2.5	3.8	3.1	2.6	2.4
18	2.4	1.8	2.0	2.3	2.5	2.7	4.2	2.6	3.6	3.0	2.6	2.4
19	2.3	1.8	2.0	2.3	2.6	2.7	4.0	2.5	3.5	3.1	2.7	2.3
20	2.3	1.7	1.9	2.3	2.6	2.8	3.7	2.6	3.5	3.0	2.7	2.3
21	2.3	1.7	1.9	2.2	2.6	2.7	3.7	2.6	3.3	3.0	2.7	2.4
22	2.3	1.8	1.9	2.3	2.6	2.7	3.6	2.6	3.3	2.9	2.7	2.4
23	2.3	1.9	1.9	2.2	2.6	2.7	3.6	2.6	3.3	2.9	2.6	2.4
24	2.4	2.0	1.9	2.3	2.6	2.7	3.4	2.5	3.3	2.8	2.6	2.4
25	2.4	2.0	1.9	2.3	2.6	2.7	3.3	2.6	3.2	2.8	2.8	2.4
26	2.4	2.0	1.9	2.3	2.6	2.8	3.1	2.5	3.3	2.7	2.8	2.4
27	2.4	2.0	1.9	2.2	2.7	2.8	3.1	2.5	3.3	2.7	2.7	2.4
28	2.5	1.9	1.8	2.2	2.8	2.9	3.1	2.6	3.3	2.7	2.7	2.4
29	2.5	1.9	1.7	2.1	---	2.9	2.9	2.6	3.3	2.9	2.7	2.4
30	2.5	1.9	1.6	2.2	---	2.9	2.9	2.6	3.3	2.8	2.6	2.5
31	2.5	---	1.5	2.2	---	2.9	---	2.7	---	2.7	2.6	---
TOTAL	71.8	61.9	56.3	67.3	70.3	83.6	102.3	80.1	97.1	95.8	84.7	73.6
MEAN	2.32	2.06	1.82	2.17	2.51	2.70	3.41	2.58	3.24	3.09	2.73	2.45
MAX	2.5	2.5	2.0	2.4	2.8	2.9	4.2	2.8	4.2	3.4	3.2	2.6
MIN	2.2	1.6	1.5	1.4	2.2	2.5	2.9	2.4	2.7	2.7	2.6	2.3
AC-FT	142	123	112	133	139	166	203	159	193	190	168	146

CAL YR 1978 TOTAL 815.74 MEAN 2.23 MAX 6.0 MIN .86 AC-FT 1620
WTR YR 1979 TOTAL 944.80 MEAN 2.59 MAX 4.2 MIN 1.4 AC-FT 1870

06392950 STOCKADE BEAVER CREEK NEAR NEWCASTLE, WY

LOCATION.--Lat 43°51'30", long 104°06'23", in SW¼SE¼ sec.19, T.45 N., R.60 W., Weston County, Hydrologic Unit 10120107, on left bank at downstream side of bridge on county highway 0.6 mi (1.0 km) upstream from South Draw, 2.5 mi (4.0 km) upstream of LAK Reservoir Dam, and 4.7 mi (7.6 km) east of Newcastle.

DRAINAGE AREA.--107 mi^2 (277 km^2).

PERIOD OF RECORD.--October 1974 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 4,455 ft (1,358 m), from topographic map.

REMARKS.--Records good. A few small diversions above station for irrigation. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--5 years, 12.8 ft^3/s (0.362 m^3/s), 9,270 acre-ft/yr (11.4 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 107 ft^3/s (3.03 m^3/s) June 16, 1977, gage height, 7.54 ft (2.298 m); maximum gage height, 7.91 ft (2.411 m) Jan. 12, 1975 (backwater from ice); minimum daily discharge, 6.2 ft^3/s (0.18 m^3/s) May 27, 28, 31, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 22 ft^3/s (0.62 m^3/s) Aug. 7, gage height, 6.75 ft (2.057 m); no peak above base of 50 ft^3/s (1.42 m^3/s); minimum daily discharge, 9 6 ft^3/s (0.27 m^3/s) May 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	14	13	14	13	12	15	14	10	11	12	11	14
2	13	13	14	13	12	15	13	9.8	11	12	12	14
3	13	13	13	13	12	15	13	9.8	11	12	12	14
4	13	13	13	14	13	15	13	9.8	12	13	12	14
5	13	13	13	14	14	16	13	9.8	11	13	12	14
6	12	13	13	14	14	17	13	9.8	11	13	12	14
7	12	13	13	14	13	17	13	9.6	12	13	14	14
8	12	14	13	14	13	17	13	9.6	12	12	16	14
9	13	14	13	14	13	17	13	10	12	12	15	13
10	13	14	14	14	13	17	13	10	11	12	14	14
11	13	14	14	14	13	17	13	11	11	12	14	14
12	13	14	14	14	13	17	13	11	11	12	14	14
13	12	13	14	13	13	17	13	10	11	12	15	14
14	12	13	14	12	12	17	13	11	11	12	14	14
15	13	15	14	11	12	17	12	11	11	12	14	14
16	13	14	14	12	13	17	12	11	12	13	14	14
17	13	14	14	12	14	17	12	11	13	13	14	13
18	13	14	14	12	14	16	12	11	12	13	15	13
19	13	14	14	13	14	16	11	12	12	12	16	13
20	13	13	14	14	14	16	11	11	12	11	15	13
21	12	12	14	15	15	15	11	11	12	11	14	13
22	13	13	13	14	15	15	11	11	12	11	14	13
23	13	13	13	14	15	15	11	11	12	11	14	13
24	13	13	13	14	15	15	11	11	12	11	14	13
25	13	12	13	13	15	15	11	12	11	11	14	13
26	13	13	13	13	15	14	10	11	12	11	14	13
27	13	13	13	13	15	14	10	11	13	13	14	13
28	13	13	13	13	15	14	10	11	14	12	14	13
29	13	14	13	12	---	14	10	11	13	11	14	13
30	13	13	13	12	---	14	10	11	12	11	14	12
31	13	---	13	12	---	14	---	11	---	11	14	---
TOTAL	398	400	417	409	381	487	358	330.2	353	370	429	404
MEAN	12.8	13.3	13.5	13.2	13.6	15.7	11.9	10.7	11.8	11.9	13.8	13.5
MAX	14	15	14	15	15	17	14	12	14	13	16	14
MIN	12	12	13	11	12	14	10	9.6	11	11	11	12
AC-FT	789	793	827	811	756	966	710	655	700	734	851	801

CAL YR 1978 TOTAL 4614.4 MEAN 12.6 MAX 16 MIN 9.4 AC-FT 9150
WTR YR 1979 TOTAL 4736.2 MEAN 13.0 MAX 17 MIN 9.6 AC-FT 9390

06394600 HELL CANYON NEAR JEWEL CAVE, NEAR CUSTER, SD

LOCATION.--Lat 43°42'56", long 103°50'05", in NW¼SW¼ sec.12, T.4 S., R.2 E., Custer County, Hydrologic Unit 10120107, on left bank 0.8 mi (1.3 km) downstream from Lithograph Canyon, 1.9 mi (3.1 km) downstream from south boundary of Jewell Cave National Monument, and 12 mi (19 km) southwest of Custer.

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

GAGE.--Water-stage recorder. Altitude of gage is 5,050 ft (1,540 m), from topographic map.

REMARKS.--Records good. Considerable loss in sink holes below gage.

EXTREMES FOR CURRENT PERIOD.--No flow April 1978 to current year.

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

No flow during year

06394605 HELL CANYON NEAR CUSTER, SD

LOCATION.--Lat 43°37'00", long 103°53'27", in SW¼NW¼ sec.16, T.5 S., R.2 E., Custer County, Hydrologic Unit 10120107, in channel 8.5 mi (13.7 km) south of Jewel Cave National Monument and 19 mi (31 km) southwest of Custer.

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

GAGE.--Water-stage recorder. Altitude of gage is 4,220 ft (1,290 m), from topographic map.

REMARKS.--Records good. Considerable loss in sink holes in reach above gage.

EXTREMES FOR CURRENT PERIOD.--Maximum discharge, 25 ft^3/s (0.71 m^3/s) July 21, 1978, gage height, 40.86 ft (12.454 m), from floodmark, on basis of slope-area measurement of peak flow, no flow most days.

Water year 1979: No flow during period.

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

No flow during year

06395000 CHEYENNE RIVER AT EDGEMONT, SD

LOCATION.--Lat 43°18'20", long 103°49'14", in SW¼SE¼SE¼ sec.36, T.8 S., R.2 E., Fall River County, Hydrologic Unit 10120106, on right bank at downstream side of bridge on U.S. Highway 18, at Edgemont, 300 ft (91 m) downstream from Burlington Northern Railroad bridge and 600 ft (183 m) upstream from Cottonwood Creek.

DRAINAGE AREA.--7,143 mi² (18,500 km²).

PERIOD OF RECORD.--June 1903 to November 1906 (no winter records), April 1928 to February 1933, October 1946 to current year.

REVISED RECORDS.--WSP 1086: Drainage area. WSP 1116: 1947. WDR SD-78-1 1977.

GAGE.--Water-stage recorder. Datum of gage is 3,414.56 ft (1,040.758 m) National Geodetic Vertical Datum of 1929. Prior to Dec. 1, 1906, nonrecording gage 20 ft (6 m) upstream at datum 0.7 ft (0.21 m) lower. Apr. 11, 1928, to Feb. 28, 1933, Oct. 4, 1946, to Oct. 23, 1947, and Jan. 11, 1961, to Apr. 24, 1963, nonrecording gage, and Oct. 24, 1947, to Jan. 10, 1961, and Apr. 25, 1963, to Sept. 30, 1972, water-stage recorder all at present site at datum 2.00 ft (0.610 m) higher.

REMARKS.--Records good except those for winter periods, which are poor. Many small reservoirs above station used for stock and irrigation water, total capacity, about 45,000 acre-ft (55.5 hm³). Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--37 years, 103 ft³/s (2.917 m³/s), 74,620 acre-ft/yr (92.0 hm³/yr); median of yearly mean discharges, 80 ft³/s (2.27 m³/s), 58,000 acre-ft/yr (72 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge (corrected), 28,000 ft³/s (793 m³/s) May 20, 1978, gage height, 13.65 ft (4.161 m), present datum; no flow at times most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 12, 1920, reached a stage of 13.0 ft (3.96 m) and May 1, 1922, 14.0 ft (4.27 m), present datum, from floodmarks at railroad bridge.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,500 ft³/s (42.5 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)
July 6	1800	1,920	54.4	4.32	1.317	Aug. 11	0200	*3,960	112	*5.95	1.814

Minimum daily discharge, 3.0 ft³/s (0.085 m³/s) Dec. 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	15	23	14	3.5	3.5	6.0	306	40	18	196	165	70
2	16	24	13	3.5	3.5	6.0	293	40	16	129	324	61
3	15	25	12	3.5	3.5	7.0	259	43	13	89	156	52
4	16	27	12	4.0	3.8	8.0	227	42	13	79	112	42
5	15	27	12	4.0	4.0	10	190	39	13	76	89	34
6	14	27	11	4.0	4.0	15	156	35	13	901	55	27
7	14	29	10	4.0	4.0	30	120	33	13	928	43	25
8	14	29	10	4.0	4.5	50	105	38	14	454	113	22
9	14	32	11	4.0	5.0	100	103	44	14	280	200	22
10	14	28	12	4.0	5.5	200	103	45	14	168	1860	21
11	13	24	12	4.5	6.0	300	137	42	14	123	2240	18
12	13	20	12	4.5	6.0	400	153	40	14	85	626	16
13	12	18	13	4.0	6.0	400	150	34	10	61	365	14
14	14	17	13	4.5	6.0	350	140	31	10	46	234	13
15	14	17	13	4.5	5.5	300	118	29	10	32	156	12
16	14	18	14	4.5	5.0	300	96	28	11	23	120	12
17	13	20	14	5.0	5.0	300	120	28	59	17	107	10
18	14	18	15	5.0	5.0	330	118	29	46	18	92	10
19	14	16	15	5.0	5.5	350	98	31	416	11	107	8.6
20	14	14	15	5.5	6.0	450	87	31	425	9.8	329	8.1
21	12	16	15	5.0	6.0	620	68	32	190	9.8	361	8.1
22	18	18	15	5.0	5.5	476	50	32	87	10	399	8.6
23	22	20	15	5.0	5.0	370	49	29	45	11	227	8.1
24	23	22	15	5.0	5.0	361	48	26	33	12	153	7.6
25	21	20	14	4.5	5.5	320	44	27	44	9.8	123	7.0
26	23	19	12	4.0	6.0	298	42	24	35	9.8	107	7.0
27	23	18	10	4.0	6.0	302	40	22	33	16	115	5.8
28	22	18	8.0	3.8	6.0	324	38	22	29	34	87	6.2
29	22	17	5.0	3.5	---	298	39	24	375	134	156	7.0
30	22	16	3.5	3.5	---	284	43	22	311	320	123	7.6
31	22	---	3.0	3.5	---	342	---	22	---	223	85	---
TOTAL	512	637	368.5	132.3	142.3	7907.0	3540	1004	2338	4515.2	9429	570.7
MEAN	16.5	21.2	11.9	4.27	5.08	255	118	32.4	77.9	146	304	19.0
MAX	23	32	15	5.5	6.0	620	306	45	425	928	2240	70
MIN	12	14	3.0	3.5	3.5	6.0	38	22	10	9.8	43	5.8
AC-FT	1020	1260	731	262	282	15680	7020	1990	4640	8960	18700	1130

CAL YR 1978 TOTAL 113405.4 MEAN 311 MAX 24000 MIN 3.0 AC-FT 224900
WTR YR 1979 TOTAL 31096.0 MEAN 85.2 MAX 2240 MIN 3.0 AC-FT 61680

06400000 HAT CREEK NEAR EDGEMONT, SD

LOCATION.--Lat 43°14'24", long 103°35'16", in SW¼SE¼NE¼ sec.25, T.9 S., R.4 E., Fall River County, Hydrologic Unit 10120108, on right bank at upstream side of bridge on State Highway 71, 2.0 mi (3.2 km) upstream from mouth, 2.0 mi (3.2 km) west of Heppner, and 12.5 mi (20.1 km) southeast of Edgemont.

DRAINAGE AREA.--1,044 mi^2 (2,704 km^2).

PERIOD OF RECORD.--April 1905 to September 1906, October 1950 to current year. Monthly discharge only for some periods, published in WSP 1309.

GAGE.--Water-stage recorder. Datum of gage is 3,295.71 ft (1,004.532 m) National Geodetic Vertical Datum of 1929. Nonrecording gage Apr. 8, 1905, to May 2, 1906, at site 0.6 mi (1.0 km) downstream and May 3 to July 7, 1906, at site 0.4 mi (0.6 km) upstream at different datum. Nov. 6, 1950, to May 1, 1951, and July 18 to Sept. 7, 1975, nonrecording gage and May 2, 1951, to July 17, 1975, recording gage, at site 0.4 mi (0.6 km) downstream at present datum.

REMARKS.--Records poor. A few small diversions above station for irrigation. Lander ditch diverts water from Hat Creek 0.4 mi (0.6 km) upstream from gaging station for irrigating hay meadows downstream from station. Several observations of water temperature and specific conductance were made during the year. Results of discharge measurements, in cubic feet per second, of Lander ditch during water year 1977-78 are given herewith:

Oct. 16	0	Feb. 19	0	June 18	0
Nov. 14	0	Mar. 20	10.7	July 23	0
Dec. 18	0	May 21	1.19	Sept.10	0

AVERAGE DISCHARGE.--30 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, 13,300 ft^3/s (377 m^3/s) June 16, 1967, gage height, 13.35 ft (4.069 m), from rating curve extended above 2,600 ft^3/s (73.6 m^3/s) on basis of slope-area measurement at 11.98 ft (3.652 m); no flow for many days each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 784 ft^3/s (22.2 m^3/s) Aug. 21, gage height, 10.52 ft (3.206 m); no peak above base of 1,000 ft^3/s (28.3 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	.00	.00	.00	.00	.00	4.8	.28	4.0	4.6	11	.00
2	.00	.00	.00	.00	.00	.00	4.6	.15	2.0	1.1	4.0	.00
3	.00	.00	.00	.00	.00	.00	4.6	.19	.80	.29	.83	.00
4	.00	.00	.00	.00	.00	.00	5.0	.25	.60	.13	.00	.00
5	.00	.00	.00	.00	.00	.00	4.8	.32	.40	.07	.00	.00
6	.00	.00	.00	.00	.00	.69	4.6	.31	.80	5.3	.00	.00
7	.00	.00	.00	.00	.00	6.2	4.4	.47	1.0	3.0	.00	.00
8	.00	.00	.00	.00	.00	17	4.2	.44	.60	.27	.00	.00
9	.00	.00	.00	.00	.00	44	4.0	.51	.40	.68	1.1	.00
10	.00	.00	.00	.00	.00	57	4.4	.53	.20	.03	.00	.00
11	.00	.00	.00	.00	.00	43	5.0	.61	.10	.00	.00	.00
12	.00	.00	.00	.00	.00	52	5.5	.66	.10	.00	.00	.00
13	.00	.00	.00	.00	.00	20	5.0	.75	.05	.00	.00	.00
14	.00	.00	.00	.00	.00	5.9	4.5	1.5	.05	.00	.00	.00
15	.00	.00	.00	.00	.00	4.5	4.0	2.0	.10	.00	.00	.00
16	.00	.00	.00	.00	.00	3.0	3.5	1.7	.60	.00	.00	.00
17	.00	.00	.00	.00	.00	4.2	3.0	1.3	.40	.00	.00	.00
18	.00	.00	.00	.00	.00	5.0	2.5	1.1	.20	.00	.26	.00
19	.00	.00	.00	.00	.00	3.4	2.0	.80	.11	.00	7.0	.00
20	.00	.00	.00	.00	.00	1.3	1.5	.55	.09	.00	113	.00
21	.00	.00	.00	.00	.00	2.6	1.0	.33	.04	.00	394	.00
22	.00	.00	.00	.00	.00	2.9	.80	.41	.01	.00	14	.00
23	.00	.00	.00	.00	.00	2.4	.60	.39	.03	.00	2.3	.00
24	.00	.00	.00	.00	.00	1.8	.40	.35	.01	.00	2.3	.00
25	.00	.00	.00	.00	.00	2.6	.21	.31	.00	.00	1.7	.00
26	.00	.00	.00	.00	.00	2.1	.19	.30	.00	2.8	1.4	.00
27	.00	.00	.00	.00	.00	1.8	.16	.28	.00	.22	1.4	.00
28	.00	.00	.00	.00	.00	2.4	.15	.28	.00	.00	.51	.00
29	.00	.00	.00	.00	---	3.6	.11	3.0	.00	.00	.04	.00
30	.00	.00	.00	.00	---	4.7	.21	5.0	12	.00	.11	.00
31	.00	---	.00	.00	---	5.0	---	8.0	---	.00	.44	---
TOTAL	.00	.00	.00	.00	.00	299.09	85.73	33.07	24.69	18.49	555.39	.00
MEAN	.000	.000	.000	.000	.000	9.65	2.86	1.07	.82	.60	17.9	.000
MAX	.00	.00	.00	.00	.00	57	5.5	8.0	12	5.3	394	.00
MIN	.00	.00	.00	.00	.00	.00	.11	.15	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	593	170	66	49	37	1100	.00

CAL YR 1978	TOTAL	6037.92	MEAN 16.5	MAX 800	MIN .00	AC-FT	11980
WTR YR 1979	TOTAL	1016.46	MEAN 2.78	MAX 394	MIN .00	AC-FT	2020

06400497 CASCADE SPRINGS NEAR HOT SPRINGS, SD

LOCATION.--Lat 43°20'10", long 103°33'07", in SE¼SW¼ sec.20, T.8 S., R.5 E., Fall River County, Hydrologic Unit 10120106, on right bank near upstream end of culvert on State Highway 71, 3.3 mi (5.3 km) upstream from mouth, and 8.5 mi (13.7 km) southwest of Hot Springs.

PERIOD OF RECORD.--July 1976 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 3,440 ft (1,049 m), from topographic map.

REMARKS.--Records good. Several observations of water temperature and specific conductance were made during the year.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 49 ft^3/s (1.39 m^3/s) July 4, 1977, gage height, 6.25 ft (1.905 m); minimum daily, 17 ft^3/s (0.48 m^3/s) for many days in 1979.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 24 ft^3/s (0.68 m^3/s) July 1-10; minimum daily, 17 ft^3/s (0.48 m^3/s) 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	18	19	19	19	19	18	17	19	20	24	22	20
2	18	19	19	19	19	18	17	19	20	24	22	20
3	18	19	19	19	19	18	17	19	21	24	22	20
4	18	19	19	19	19	18	17	19	21	24	22	20
5	18	19	19	19	19	18	17	20	21	24	22	20
6	18	19	19	19	19	18	17	19	21	24	22	20
7	18	19	19	19	19	18	18	20	21	24	22	20
8	18	19	19	19	19	18	17	19	20	24	22	20
9	18	19	19	19	19	17	18	19	20	24	22	20
10	18	19	19	19	19	18	17	20	20	24	22	20
11	18	19	19	19	20	18	17	20	20	23	22	20
12	18	19	19	19	20	18	17	20	21	23	21	20
13	18	19	19	19	20	18	17	20	21	23	21	20
14	19	19	19	19	19	18	17	20	20	23	21	20
15	19	19	19	19	19	18	17	20	20	23	21	20
16	19	19	19	19	19	18	17	21	20	23	21	20
17	18	19	19	19	19	17	18	20	21	23	21	20
18	18	19	19	18	19	17	18	20	21	23	21	20
19	18	19	19	18	19	17	18	21	21	23	21	20
20	18	19	19	18	19	17	17	21	21	23	21	20
21	18	19	19	18	19	17	17	21	21	23	21	20
22	18	19	19	18	19	17	17	21	21	23	21	20
23	18	19	19	19	18	18	17	20	21	23	21	20
24	18	19	19	19	18	18	17	20	21	22	21	20
25	18	19	19	19	18	18	17	20	21	22	21	20
26	18	19	19	19	18	18	21	20	21	22	21	20
27	18	19	19	19	18	18	20	20	21	22	21	20
28	18	19	19	19	18	18	19	20	21	22	21	20
29	18	19	19	19	---	18	19	20	21	22	21	20
30	18	19	19	19	---	18	19	20	22	22	20	20
31	18	---	19	19	---	17	---	20	---	22	20	---
TOTAL	561	570	589	584	529	550	528	618	622	715	660	600
MEAN	18.1	19.0	19.0	18.8	18.9	17.7	17.6	19.9	20.7	23.1	21.3	20.0
MAX	19	19	19	19	20	18	21	21	22	24	22	20
MIN	18	19	19	18	18	17	17	19	20	22	20	20
AC-FT	1110	1130	1170	1160	1050	1090	1050	1230	1230	1420	1310	1190

CAL YR 1978 TOTAL 7427 MEAN 20.3 MAX 25 MIN 18 AC-FT 14730
WTR YR 1979 TOTAL 7126 MEAN 19.5 MAX 24 MIN 17 AC-FT 14130

06401000 ANGOSTURA RESERVOIR NEAR HOT SPRINGS, SD

LOCATION.--Lat 43°20'35", long 103°26'16", in SW¼NW¼ sec.20, T.8 S., R.6 E., Fall River County, Hydrologic Unit 10120106, at dam on Cheyenne River, 6.5 mi (10.5 km) southeast of Hot Springs.

DRAINAGE AREA.--9,100 mi^2 (23,570 km^2), approximately.

PERIOD OF RECORD.--October 1949 to current year (monthend contents only).

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to Aug. 26, 1965, nonrecording gage at same site and datum.

REMARKS.--Reservoir formed by concrete gravity dam with earth embankment with gated concrete gravity spillway section. Storage began Oct. 3, 1949; dam completed December 1949. Conservation capacity, 127,558 acre-ft (157 hm^3) between elevations 3,139.75 ft (956.996 m), invert of lowest outlet, and 3,187.2 ft (971.46 m), top of spillway gates. Dead storage below elevation 3,139.75 ft (956.996 m), 11,203 acre-ft (13.8 hm^3). Surcharge capacity, 196,221 acre-ft (242 hm^3), maximum pool elevation. Figures given herein represent contents above elevation 3,139.75 ft (956.996 m). Water is stored for irrigation.

COOPERATION.--Records of elevations, contents, and diversion to Angostura project furnished by Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 145,200 acre-ft (179 hm^3) June 18, 1962, elevation, 3,189.00 ft (972.007 m); minimum observed since normal operating level reached, 45,350 acre-ft (55.9 hm^3) Sept. 28, 1960, elevation, 3,162.90 ft (964.052 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 127,366 acre-ft (157 hm^3) Apr. 17, elevation, 3,187.16 ft (971.446 m); minimum, 115,331 acre-ft (142 hm^3) Oct. 20, elevation, 3,184.54 ft (970.648 m).

MONTHEND ELEVATION, IN FEET NGVD, AND CONTENTS
IN ACRE-FEET, AT 2400, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

Date	Elevation	Contents	Change in contents	†Diversions
Sept. 30	3184.86	116742		
Oct. 31	3184.64	115772	-970	1793
Nov. 30	3184.89	116874	+1102	
Dec. 30	3185.34	118911	+2037	
CAL YR 1978			+52295	47573
Jan. 31	3185.74	120737	+1826	
Feb. 28	3186.05	122157	+1420	
Mar. 31	3187.07	126935	+4778	
Apr. 30	3186.97	126460	-475	95
May 31	3186.45	124028	-2432	5054
June 30	3186.06	122204	-1824	4640
July 31	3184.80	116477	-5727	13674
Aug. 31	3186.34	123514	+7037	10882
Sept. 30	3184.82	116566	-6948	6672
WTR YR 1979			-176	42810

† Diversions from Angostura irrigation project.

06401500 CHEYENNE RIVER BELOW ANGOSTURA DAM, SD

LOCATION.--Lat 43°20'42", long 103°26'12", in NE¼NW¼NW¼ sec.20, T.8 S., R.6 E., Fall River County, Hydrologic Unit 10120109, on right bank 800 ft (244 m) downstream from Angostura Dam, 4.8 mi (7.7 km) upstream from Fall River and 6.5 mi (10.5 km) southeast of Hot Springs.

DRAINAGE AREA.--9,100 mi^2 (23,600 km^2), approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1945 to current year, seasonal records only beginning October 1978. Monthly discharge only for some periods, published in WSP 1309.

REVISED RECORDS.--WSP 1309: 1946(M). WDR SD-78-1: 1962(M), 1967(M), 1971(M).

GAGE.--Water-stage recorder. Datum of gage is 3,058.02 ft (932.084 m) National Geodetic Vertical Datum of 1929 (Bureau of Reclamation bench mark). Prior to Oct. 17, 1946, nonrecording gage and Oct. 17, 1946, to July 7, 1953, water-stage recorder at site 4.8 mi (7.7 km) downstream at different datum.

REMARKS.--Records good. Flow regulated by Angostura Reservoir 800 ft (244 m) upstream since October 1949 (see station 06401000).

AVERAGE DISCHARGE.--33 years (water years 1945-78), 78.5 ft^3/s (2.223 m^3/s), 56,870 acre-ft/yr (70.1 hm^3/yr); median of yearly mean discharges, 52 ft^3/s (1.47 m^3/s), 37,700 acre-ft/yr (46 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 30,300 ft^3/s (858 m^3/s) May 20, 1978, gage height, 15.97 ft (4.868 m), from rating curve extended above 12,000 ft^3/s (340 m^3/s); no flow Oct. 9, 1949, to Feb. 5, 1950, Apr. 28, Aug. 26, 30, 1951.

EXTREMES FOR CURRENT PERIOD.--Maximum discharge, 565 ft^3/s (16.0 m^3/s) Mar. 22, gage height, 4.59 ft (1.399 m); minimum daily, 1.0 ft^3/s (0.028 m^3/s) Oct. 4, 8, 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	1.3			---	2.0	2.3	180	2.6	2.3	1.5	2.0	
2	1.4			---	2.0	2.3	288	2.0	2.0	1.4	2.3	
3	1.4			---	2.0	2.3	355	2.9	1.7	2.6	2.3	
4	1.0			---	1.7	2.3	349	2.6	1.7	2.4	2.4	
5	1.1			---	1.5	2.0	278	2.3	1.7	1.5	2.4	
6	1.1			---	1.7	2.3	172	1.5	2.0	1.6	2.3	
7	1.1			---	1.7	2.6	134	2.6	2.3	1.7	2.3	
8	1.0			---	1.7	2.6	137	1.7	2.3	2.0	2.6	
9	1.1			---	1.7	2.3	129	2.0	2.3	1.8	---	
10	1.0			---	1.7	2.3	82	2.0	2.0	1.9	---	
11	1.1			---	1.7	2.3	66	2.0	2.0	1.7	---	
12	1.1			---	1.7	2.3	96	2.0	2.0	1.6	---	
13	1.2			---	1.7	2.9	112	2.0	2.0	1.7	---	
14	1.2			---	1.7	3.6	111	2.0	2.3	1.7	---	
15	1.1			---	2.0	105	95	2.0	2.3	1.6	---	
16	1.2			---	2.0	263	106	2.0	3.9	1.8	---	
17	1.1			---	1.7	327	131	2.0	2.0	1.7	---	
18	---			1.7	1.7	360	165	2.0	2.0	1.7	---	
19	---			1.7	1.7	394	134	2.0	2.0	1.7	---	
20	---			1.7	1.7	434	130	2.0	1.7	1.7	---	
21	---			1.7	1.7	453	118	2.0	1.9	1.9	---	
22	---			1.7	1.7	481	112	2.0	1.9	1.9	---	
23	---			1.7	2.0	498	98	2.0	2.1	2.0	---	
24	---			1.7	1.7	358	68	2.0	2.1	2.0	---	
25	---			1.7	1.7	291	84	2.0	2.1	1.9	---	
26	---			2.0	1.7	297	109	2.0	2.2	2.0	---	
27	---			2.0	2.0	285	120	2.0	2.3	2.0	---	
28	---			2.0	2.0	245	112	2.0	2.1	2.2	---	
29	---			2.0	---	180	109	2.3	2.2	1.9	---	
30	---			2.0	---	176	38	2.0	2.5	1.9	---	
31	---			2.0	---	176	---	2.3	---	2.1	---	
TOTAL	---			---	49.8	5377.4	4218	64.8	63.9	57.1	---	
MEAN	---			---	1.78	173	141	2.09	2.13	1.84	---	
MAX	---			---	2.0	498	355	2.9	3.9	2.6	---	
MIN	---			---	1.5	2.0	38	1.5	1.7	1.4	---	
AC-FT	---			---	99	10670	8370	129	127	113	---	

06401500 CHEYENNE RIVER BELOW ANGOSTURA DAM, SD--Continued

WATER-QUALITY RECORDS

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

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1968 to September 1970, October 1971 to current year.
WATER TEMPERATURES: October 1968 to September 1970, October 1971 to September 1973, October 1975 to September 1976, October 1977 to September 1978.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 2,750 micromhos Jan. 13, 1975; minimum daily, 575 micromhos July 5, 1977.
WATER TEMPERATURES: Maximum daily, 31.0°C July 6, 10, 18, 23, 1976; minimum daily, 0.0°C on many days during winter periods.

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)
FEB										
21...	1650	1.6	2230	8.2	4.0	770	620	200	65	180
MAR										
21...	0900	452	2000	7.6	3.5	670	530	180	53	190
APR										
26...	1215	130	1920	7.7	9.0	660	530	180	51	190
MAY										
23...	0730	2.1	1930	8.4	12.0	790	620	200	70	180
JUN										
19...	1530	21	2180	8.0	14.0	720	580	200	53	200
AUG										
08...	1615	2.2	1925	8.3	29.5	760	640	200	63	190

06401500 CHEYENNE RIVER BELOW ANGOSTURA DAM, SD--Continued

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)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)
FEB									
21...	33	2.8	9.8	180	0	150	830	94	.5
MAR									
21...	38	3.2	9.3	170	0	140	780	81	.6
APR									
26...	38	3.2	8.2	160	0	130	760	91	.6
MAY									
23...	43	2.8	10	170	14	160	860	100	6.0
JUN									
19...	46	3.3	9.5	170	0	140	840	96	.6
AUG									
08...	45	3.0	10	150	0	120	890	96	.6

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					2350	2200	1880	2640	2220	2250		
2					2340	2100	1850	2460	2130	2300		
3					2350	2250	1850	2380	2150	2250		
4					2400	2100	1830	2390	2120	2300		
5					2350	2200	1850	2360	2170	2350		
6					2300	2300	1850	2350	2180	2300		
7					2300	2080	1850	2340	2180	2300		
8					2280	2200	1800	2380	2100	2250		
9					2300	2200	1800	2360	2100	2250		
10					2300	2050	1830	2410	2080	2300		
11					2200	2080	1930	2350	2100	2320		
12					2150	2080	1850	2360	2110	2300		
13					2140	1850	1850	2410	2100	2340		
14					2220	1850	1930	2390	2100	2350		
15					2350	1850	1850	2360	2080	2340		
16					2400	1830	1850	2300	2100	2340		
17					2330	1850	1850	2270	2080	2350		
18					2300	1850	1850	2300	2070	2350		
19					2350	1850	1850	2320	2100	2350		
20					2350	1850	1850	2330	2110	2300		
21					2240	1850	1850	2390	2090	2300		
22					2070	1850	1850	2380	2100	2350		
23					2200	1850	1850	2400	2100	2350		
24					2250	1850	1850	2360	2090	2300		
25					2100	1850	1850	2360	2080	2300		
26					2300	1850	1850	2370	2070	2300		
27					2070	1850	2000	2350	2080	2350		
28					2010	1850	2000	2350	2060	2300		
29					---	1850	2000	2420	2090	2300		
30					---	1850	2000	2360	2070	2300		
31					---	1880	---	2340	---	2300		
MEAN					2260	1970	1870	2370	2110	2310		

06401500 CHEYENNE RIVER BELOW ANGOSTURA DAM, SD--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 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P) (00671)	BORON, DIS-SOLVED (UG/L AS B) (01020)
FEB									
21...	8.0	1480	2.01	6.39	.25	.01	.00	.01	160
MAR									
21...	6.7	1390	1.89	1700	.23	.01	.01	.01	170
APR									
26...	6.1	1370	1.86	481	.18	.01	.01	.01	160
MAY									
23...	6.8	1530	2.08	8.26	--	.01	.01	.00	120
JUN									
19...	6.1	1490	2.03	84.5	.13	.01	.01	.00	140
AUG									
08...	7.1	1530	2.08	9.21	.06	.02	.02	.03	160

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					1.0	5.0	4.0	18.0	18.0	18.0		
2					1.0	2.0	4.0	9.0	20.0	19.0		
3					1.0	3.0	5.0	12.0	18.0	22.0		
4					1.0	7.0	5.0	12.0	18.0	20.0		
5					2.0	5.0	5.0	15.0	16.0	21.0		
6					3.0	7.0	5.0	18.0	10.0	20.0		
7					3.0	10.0	6.0	18.0	14.0	18.0		
8					1.0	7.0	6.0	15.0	16.0	18.0		
9					3.0	5.0	7.0	9.0	17.0	19.0		
10					2.0	5.0	7.0	8.0	17.0	19.0		
11					3.0	8.0	6.0	11.0	20.0	20.0		
12					5.0	5.0	5.0	11.0	21.0	20.0		
13					3.0	7.0	6.0	12.0	21.0	22.0		
14					5.0	6.0	7.0	13.0	22.0	22.0		
15					1.0	5.0	7.0	13.0	22.0	19.0		
16					2.0	7.0	7.0	15.0	18.0	18.0		
17					2.0	7.0	6.0	15.0	18.0	20.0		
18					3.0	5.0	5.0	10.0	19.0	23.0		
19					4.0	5.0	8.0	12.0	19.0	23.0		
20					6.0	4.0	9.0	13.0	20.0	21.0		
21					2.0	4.0	9.0	13.0	20.0	20.0		
22					3.0	4.0	10.0	15.0	21.0	24.0		
23					2.0	4.0	10.0	18.0	22.0	26.0		
24					5.0	4.0	8.0	18.0	20.0	25.0		
25					3.0	4.0	7.0	20.0	20.0	24.0		
26					5.0	4.0	10.0	20.0	19.0	24.0		
27					4.0	4.0	12.0	15.0	18.0	26.0		
28					4.0	4.0	15.0	17.0	20.0	27.0		
29					---	4.0	17.0	18.0	22.0	28.0		
30					---	4.0	18.0	18.0	22.0	28.0		
31					---	4.0	---	18.0	---	28.0		
MEAN					3.0	5.0	8.0	14.5	19.0	22.0		

06402000 FALL RIVER AT HOT SPRINGS, SD

LOCATION.--Lat 43°25'50", long 103°28'33", in NW¼NW¼ sec.24, T.7 S., R.5 E., Fall River County, Hydrologic Unit 10120109, on left bank at intersection of River Street and University Avenue in Hot Springs and 6.0 mi (9.7 km) upstream from mouth.

DRAINAGE AREA.--137 mi^2 (355 km^2).

PERIOD OF RECORD.--October 1937 to current year. Monthly discharge only for October 1937, published in WSP 1309.

REVISED RECORDS.--WSP 1279: 1938, 1941(M), 1947(M). WSP 1729: 1959(M).

GAGE.--Water-stage recorder. Datum of gage is 3,413.20 ft (1,040.343 m) National Geodetic Vertical Datum of 1929. Prior to June 2, 1939, nonrecording gage at site 300 ft (91 m) upstream at datum 3.00 ft (0.914 m) higher.

REMARKS.--Records good. Flow regulated by Coldbrook Reservoir, capacity, 7,200 acre-ft (8.88 hm^3), beginning September 1952, and Cottonwood Springs Lake, capacity, 8,385 acre-ft (10.3 hm^3) since June 1969. Some diversion above station for municipal supply of Hot Springs. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--42 years, 25.3 ft^3/s (0.716 m^3/s), 18,330 acre-ft/yr (22.6 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,100 ft^3/s (371 m^3/s) Sept. 4, 1938, gage height, 18.4 ft (5.61 m), site and datum then in use, from rating curve extended above 51 ft^3/s (1.44 m^3/s) on basis of weir formula and slope-area measurement of peak flow; minimum, 4.0 ft^3/s (0.11 m^3/s) Sept. 23, 1940.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 234 ft^3/s (6.63 m^3/s) Aug. 22, gage height, 2.82 ft (0.860 m); minimum daily, 19 ft^3/s (0.54 m^3/s) June 11, 12, 14, Sept. 9, 10, 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	22	23	22	23	23	21	22	23	23	24	22	24
2	22	23	23	23	23	21	22	23	22	22	22	22
3	22	22	22	23	23	21	22	23	22	24	22	22
4	22	22	23	22	23	20	22	23	22	24	23	22
5	22	23	23	21	23	21	23	23	22	24	23	21
6	22	22	22	22	21	20	21	23	21	23	23	22
7	21	22	22	22	21	21	21	23	21	24	24	20
8	21	21	22	22	23	21	22	23	22	24	29	20
9	22	21	22	22	23	21	22	23	21	24	22	19
10	22	22	22	22	23	21	23	22	20	23	22	19
11	22	22	22	22	23	22	22	22	19	22	22	20
12	22	22	23	22	23	22	23	22	19	21	21	22
13	23	22	22	21	25	22	22	22	20	21	22	20
14	23	22	22	21	24	22	22	22	19	21	22	21
15	25	22	22	21	23	23	22	22	20	22	22	20
16	24	22	22	22	24	22	22	22	26	24	23	19
17	24	22	23	22	24	24	22	22	24	22	22	21
18	24	21	23	22	24	21	21	24	23	22	23	20
19	24	21	22	22	24	21	23	23	25	22	27	20
20	23	21	22	22	24	21	23	24	24	22	23	21
21	24	21	23	22	23	21	23	24	24	21	24	20
22	24	21	23	22	24	21	22	23	23	21	34	20
23	23	21	22	22	24	20	22	24	25	21	22	21
24	24	21	23	22	22	20	23	24	23	21	22	20
25	24	21	23	22	21	21	23	24	24	22	23	20
26	24	22	23	22	23	21	23	24	23	24	23	20
27	24	21	23	23	21	21	23	24	23	23	22	20
28	24	22	22	23	22	22	23	23	23	23	23	21
29	24	22	22	23	---	22	23	23	23	23	23	22
30	23	22	22	23	---	22	23	24	24	23	23	22
31	23	---	23	23	---	21	---	24	---	24	23	---
TOTAL	713	652	695	686	644	660	670	715	670	701	721	621
MEAN	23.0	21.7	22.4	22.1	23.0	21.3	22.3	23.1	22.3	22.6	23.3	20.7
MAX	25	23	23	23	25	24	23	24	26	24	34	24
MIN	21	21	22	21	21	20	21	22	19	21	21	19
AC-FT	1410	1290	1380	1360	1280	1310	1330	1420	1330	1390	1430	1230

CAL YR 1978 TOTAL 8332 MEAN 22.8 MAX 75 MIN 17 AC-FT 16530
WTR YR 1979 TOTAL 8148 MEAN 22.3 MAX 34 MIN 19 AC-FT 16160

06402500 BEAVER CREEK NEAR BUFFALO GAP, SD

LOCATION.--Lat 43°27'56", long 103°18'22", in SE¼SE¼ sec.5, T.7 S., R.7 E., Fall River County, Hydrologic Unit 10120109, on left bank 1.5 mi (2.4 km) south of Buffalo Gap and 4.5 mi (7.2 km) upstream from mouth.

DRAINAGE AREA.--130 mi^2 (340 km^2), approximately.

PERIOD OF RECORD.--October 1937 to current year. Monthly discharge only for October, November, 1937, published in WSP 1309.

REVISED RECORDS.--WSP 956: 1941. WSP 1309: 1939-40(M), 1947(M).

GAGE.--Water-stage recorder. Altitude of gage is 3,150 ft (960 m), from topographic map. Prior to June 20, 1939, nonrecording gage at site 0.8 mi (1.3 km) downstream at different datum.

REMARKS.--Records good except those for winter periods, which are poor. Nearly all flow is diverted above station during irrigation season. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--42 years, 7.05 ft^3/s (0.200 m^3/s), 5,110 acre-ft/yr (6.30 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,700 ft^3/s (331 m^3/s) Sept. 4, 1938, gage height, 16.46 ft (5.017 m), site and datum then in use, from rating curve extended above 11 ft^3/s (0.31 m^3/s) on basis of slope-area measurement of peak flow; no flow at times in some years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in 1927 reached a stage of 18.0 ft (5.49 m), former site and datum, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 24 ft^3/s (0.680 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)
July 23	1500	*192	5.44	*6.40	1.951	Aug. 17	1600	30	0.85	4.79	1.500

Minimum discharge, 0.0 ft^3/s part of each day July 14-16, 22, 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	.54	12	11	9.5	10	12	11	2.0	.98	1.2	5.6	9.5
2	.66	11	12	9.0	11	12	11	1.9	.98	.27	7.5	9.4
3	.70	11	14	8.5	10	12	11	2.1	.95	.21	13	9.4
4	.74	11	14	10	11	12	11	2.2	.91	4.5	13	9.6
5	.74	11	14	11	10	12	11	2.0	.95	3.6	8.7	9.8
6	.82	11	14	12	11	10	11	1.5	1.2	.70	8.3	9.8
7	.94	11	14	12	11	12	11	1.3	1.3	.46	9.2	10
8	.98	11	13	12	11	12	11	1.3	1.4	.30	14	10
9	.94	7.9	12	13	12	12	10	1.9	1.6	.24	12	11
10	.94	7.3	12	13	12	12	7.9	1.9	1.4	.18	11	11
11	.94	6.9	13	13	12	12	8.4	2.0	.96	.12	14	10
12	6.1	6.9	13	13	12	12	8.8	1.8	.63	.09	14	9.6
13	10	6.9	12	13	12	12	8.7	1.6	.55	.09	14	9.5
14	10	7.0	12	13	12	12	7.7	1.5	.47	.09	14	8.7
15	10	7.0	12	13	12	12	7.7	1.4	.46	.06	14	8.1
16	10	7.0	12	12	12	12	7.3	1.3	.66	.18	14	7.8
17	10	7.2	12	12	12	12	6.3	1.3	.79	.27	17	7.3
18	11	7.8	12	13	12	12	6.1	1.4	.74	.24	14	6.9
19	11	8.6	12	13	12	12	5.7	1.3	.93	.15	15	6.7
20	11	9.0	12	13	12	12	5.4	1.3	.79	.09	16	6.3
21	10	9.1	13	13	12	11	5.7	1.3	.64	.21	13	6.3
22	12	9.0	12	13	12	11	5.9	1.2	.58	.05	13	6.2
23	12	8.7	12	13	12	10	6.0	1.2	.62	21	13	5.8
24	12	8.9	12	13	12	11	5.6	1.2	.58	3.2	12	5.5
25	12	9.3	13	13	12	11	2.3	1.2	.54	1.2	12	5.0
26	12	9.9	13	13	12	11	1.4	1.2	.46	1.0	12	4.2
27	12	10	13	13	12	11	1.4	1.1	.62	.85	11	4.1
28	12	10	13	13	12	11	1.5	1.0	.62	.72	11	4.0
29	12	11	13	12	---	11	1.5	1.3	.66	.62	11	3.9
30	12	11	11	12	---	11	1.8	1.7	1.2	.59	11	3.7
31	12	---	10	11	---	11	---	1.0	---	.86	10	---
TOTAL	228.04	275.4	387	377.0	325	358	211.1	46.4	25.17	43.34	377.3	229.1
MEAN	7.36	9.18	12.5	12.2	11.6	11.5	7.04	1.50	.84	1.40	12.2	7.64
MAX	12	12	14	13	12	12	11	2.2	1.6	21	17	11
MIN	.54	6.9	10	8.5	10	10	1.4	1.0	.46	.05	5.6	3.7
AC-FT	452	546	768	748	645	710	419	92	50	86	748	454

CAL YR 1978 TOTAL 2716.03 MEAN 7.44 MAX 61 MIN .30 AC-FT 5390
WTR YR 1979 TOTAL 2882.85 MEAN 7.90 MAX 21 MIN .05 AC-FT 5720

06402600 CHEYENNE RIVER NEAR BUFFALO GAP, SD

LOCATION.--Lat 43°30'05", long 103°04'23", in SW¼NE¼ sec.29, T.6 S., R.9 E., Custer County, Hydrologic Unit 10120109, on right bank at right end of highway bridge, 5.8 mi (9.3 km) upstream from Cottonwood Creek and 12 mi (19 km) east of Buffalo Gap.

DRAINAGE AREA.--9,810 mi² (25,410 km²), approximately.

WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WRD SD-76-1: 1970-75.

GAGE.--Water-stage recorder. Datum of gage is 2,811.45 ft (856.930 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for winter periods, which are poor. Flow regulated by Angostura Reservoir 34 mi (55 km) upstream (see station 06401000).

AVERAGE DISCHARGE.--11 years, 110 ft³/s (3.115 m³/s), 79,700 acre-ft/yr (98.3 hm³/yr); median of yearly mean discharges, 76 ft³/s (2.15 m³/s), 55,100 acre-ft/yr (68 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 25,000 ft³/s (708 m³/s) May 21, 1978, gage height, 13.15 ft (4.008 m); minimum daily, 13 ft³/s (0.37 m³/s) July 25, 1976.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 600 ft³/s (17.0 m³/s) Mar. 17, gage height, unknown, (backwater from ice); minimum daily, 33 ft³/s (0.93 m³/s) June 14, 15.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Mar. 21 to May 15, June 18 to July 7; stage-discharge relation affected by ice Nov. 10 to Mar. 20)

3.0	32	4.2	280
3.3	65	4.9	610
3.7	137		

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	52	70	70	45	55	70	218	133	43	45	76	65
2	51	70	70	50	55	70	218	101	38	46	61	64
3	55	70	70	50	55	65	348	87	36	45	68	62
4	58	71	70	50	60	65	364	66	36	98	65	58
5	60	74	70	50	60	70	356	64	36	112	61	55
6	62	71	70	50	60	75	270	65	35	83	56	53
7	64	72	70	50	60	80	194	64	40	72	55	51
8	66	72	70	50	65	90	180	64	38	61	70	51
9	68	72	80	50	65	90	178	88	43	62	72	48
10	70	72	80	50	65	90	168	90	48	53	55	52
11	70	75	80	55	65	100	142	82	49	55	61	57
12	66	75	80	55	65	120	118	71	44	53	66	65
13	70	80	80	50	70	150	139	65	34	53	61	61
14	70	80	80	50	70	200	155	64	33	53	58	65
15	71	80	80	50	65	300	151	64	33	53	60	62
16	71	80	80	55	60	400	137	57	42	61	62	61
17	71	80	80	55	60	600	144	50	227	71	71	62
18	71	80	80	60	60	500	165	49	148	55	74	64
19	71	80	80	60	60	500	191	53	105	50	83	65
20	70	80	80	65	65	500	165	53	92	48	131	65
21	70	80	80	70	70	480	168	44	77	60	94	66
22	78	80	80	70	70	490	155	38	64	46	82	66
23	77	85	80	70	65	530	151	37	60	55	95	66
24	74	85	80	70	65	520	135	34	57	71	85	65
25	74	85	80	70	65	324	112	36	53	51	77	60
26	74	85	75	65	70	320	120	36	55	61	74	60
27	74	85	70	65	70	320	155	36	52	65	72	61
28	74	85	65	60	70	312	153	36	49	87	71	61
29	76	80	60	60	---	259	148	37	46	85	68	64
30	72	75	50	55	---	227	146	42	48	76	66	64
31	74	---	45	55	---	224	---	43	---	72	68	---
TOTAL	2124	2329	2285	1760	1785	8141	5444	1849	1761	1958	2218	1819
MEAN	68.5	77.6	73.7	56.8	63.8	263	181	59.6	58.7	63.2	71.5	60.6
MAX	78	85	80	70	70	600	364	133	227	112	131	66
MIN	51	70	45	45	55	65	112	34	33	45	55	48
AC-FT	4210	4620	4530	3490	3540	16150	10800	3670	3490	3880	4400	3610

CAL YR 1978 TOTAL 90077 MEAN 247 MAX 20600 MIN 28 AC-FT 178700
WTR YR 1979 TOTAL 33473 MEAN 91.7 MAX 600 MIN 33 AC-FT 66390

06402600 CHEYENNE RIVER NEAR BUFFALO GAP, SD--Continued

WATER-QUALITY RECORDS

LOCATION.--Samples collected 6.0 mi (9.6 km) downstream from discharge station.

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

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1968 to current year.
WATER TEMPERATURES: October 1968 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 3,140 micromhos Jan. 13, 1971; minimum daily, 1,120 micromhos Mar. 11, 12, 1978.
WATER TEMPERATURES: Maximum daily, 32.0°C on several days during July to August 1969; minimum daily, 0.0°C on many days during winter periods.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 3,000 micromhos Nov. 20; minimum daily, 1,840 micromhos Mar. 17.
WATER TEMPERATURES: Maximum daily, 29.5°C July 29; minimum daily, 0.0°C on Many days during winter period.

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										
18...	1150	73	2780	8.1	10.5	950	780	250	80	220
NOV										
15...	1630	96	3280	8.3	.5	--	--	300	--	220
DEC										
19...	1515	82	2630	7.7	.0	1000	860	280	83	200
JAN										
19...	1130	61	2280	7.4	.0	1000	810	290	75	170
FEB										
22...	1140	71	3100	7.8	.0	970	780	270	73	170
MAR										
21...	1200	474	1820	8.0	4.5	730	570	200	55	190
APR										
30...	1300	149	2100	8.0	14.5	780	630	210	62	200
MAY										
23...	1240	38	2350	8.1	18.5	900	750	230	80	230
JUN										
20...	1145	92	2050	7.9	17.0	680	530	180	55	180
JUL										
26...	1345	49	2150	8.0	27.0	870	720	220	77	200
AUG										
09...	1030	80	2320	8.2	25.0	900	740	240	73	210
SEP										
12...	1230	129	2650	8.0	16.0	920	660	250	72	230

06402600 CHEYENNE RIVER NEAR BUFFALO GAP, SD--Continued

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)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)
OCT									
18...	33	3.1	18	210	0	170	1100	130	.8
NOV									
15...	--	--	--	260	0	210	1200	140	.5
DEC									
19...	29	2.7	17	220	0	180	1100	120	.5
JAN									
19...	26	2.3	17	270	0	220	1000	110	.5
FEB									
22...	27	2.4	13	240	0	200	930	110	.5
MAR									
21...	36	3.1	10	190	0	160	780	84	.6
APR									
30...	35	3.1	11	180	0	150	860	110	.6
MAY									
23...	36	3.3	1.6	190	0	160	1000	130	.6
JUN									
20...	37	3.2	14	180	0	150	780	86	.4
JUL									
26...	43	3.0	15	180	0	150	920	110	.5
AUG									
09...	33	3.0	16	190	0	160	1000	120	.8
SEP									
12...	44	3.3	16	--	--	260	990	120	.5

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	2490	2550	2100	2350	2030	2340	1950	2100	2350	2450	2100	2600
2	2570	2580	2150	2300	2050	2440	1930	2130	2300	2000	2150	2650
3	2460	2580	2300	2300	2030	2330	1980	2130	2400	2000	2240	2680
4	2440	2620	2150	2200	2050	2400	1880	2220	2400	1990	2250	2700
5	2500	2670	2050	2050	2050	2370	1930	2210	2450	2200	2350	2700
6	2470	2600	2050	2070	1990	2290	1880	2160	2450	2150	2360	2750
7	2450	2580	2050	2050	1970	2220	1950	2160	2300	2250	2450	2700
8	2440	2580	2150	2100	1930	2150	2000	2200	2260	2300	2350	2650
9	2450	2630	2220	2120	1950	2210	2000	2180	2250	2420	2350	2750
10	2450	2630	2350	2130	1960	2310	2000	2170	2300	2450	2450	2750
11	2540	2700	2050	2150	1990	2200	1950	2170	2300	2400	2400	2700
12	2490	2700	2000	2100	2050	2250	2100	2190	2350	2450	2450	2700
13	2490	2640	2000	2050	1970	2160	2080	2180	2350	2450	2500	2700
14	2470	2800	2050	2100	2400	2130	1950	2200	2360	2450	2450	2700
15	2470	2800	2050	2050	1950	2090	2030	2210	2350	2500	2550	2700
16	2420	2780	2050	2550	2090	2080	2030	2200	1950	2350	2450	2680
17	2420	2780	2100	2570	2050	1840	2050	2200	1950	2350	2450	2650
18	2450	2670	2100	2570	2130	1950	1950	2210	2050	2400	2450	2700
19	2500	2870	2050	2520	2030	2050	2000	2210	2050	2500	2150	2700
20	2520	3000	2000	2330	2000	2000	2000	2220	2050	2500	2400	2700
21	2520	2700	2000	2150	1980	2040	2000	2200	2050	2500	2450	2800
22	2540	2700	2050	2220	2100	2030	2000	2210	2000	2500	2400	2750
23	2550	2580	2100	2200	2100	2040	2000	2220	2200	2350	2420	2700
24	2620	2550	2050	2200	2000	2040	2050	2260	2250	2500	2420	2750
25	2600	2620	2100	2150	2000	2090	2050	2250	2300	1920	2400	2650
26	2540	2600	2070	2100	2050	2100	2150	2250	2350	2000	2350	2700
27	2570	2560	2200	2200	1980	2100	2080	2280	2300	2350	2440	2700
28	2550	2550	2150	2100	1980	2130	2050	2250	2300	2350	2450	2800
29	2600	2540	2200	2150	---	2080	2030	2260	2300	2350	2500	2850
30	2620	2550	2150	2170	---	2170	2030	2260	2350	2200	2450	2800
31	2620	---	2300	2150	---	2200	---	2250	---	2200	2450	---
MEAN	2510	2660	2110	2210	2030	2160	2000	2200	2250	2320	2390	2710

06402600 CHEYENNE RIVER NEAR BUFFALO GAP, SD--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 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P) (00671)	BORON, DIS-SOLVED (UG/L AS B) (01020)
OCT									
18...	11	1920	2.61	378	.93	.02	.00	.01	330
NOV									
15...	15	--	--	--	1.7	.03	.00	.01	330
DEC									
19...	13	1930	2.62	427	1.8	.01	.01	.00	300
JAN									
19...	15	1820	2.48	300	1.8	.05	.03	.03	250
FEB									
22...	12	1700	2.31	326	1.6	.04	.03	.02	260
MAR									
21...	7.7	1420	1.93	1820	.41	.01	.01	.01	180
APR									
30...	5.9	1550	2.11	624	.24	.02	.01	.01	230
MAY									
23...	7.1	1770	2.41	182	.19	.03	.01	.00	270
JUN									
20...	10	1410	1.92	350	.48	.66	.13	.08	250
JUL									
26...	7.9	1640	2.23	218	.18	.04	.02	.00	330
AUG									
09...	9.1	1760	2.39	380	.20	.04	.03	.03	370
SEP									
12...	9.6	1850	2.52	644	.43	.01	.00	.01	310

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	8.5	8.0	1.5	.0	.0	.0	.0	8.0	23.0	22.0	28.0	19.5
2	10.0	6.0	1.5	.0	.0	.0	.0	5.0	25.0	22.0	21.0	20.5
3	19.0	8.0	1.5	.0	.0	.0	.0	5.0	17.5	21.0	21.0	19.5
4	9.0	8.0	1.5	.0	.0	.0	.0	6.0	17.0	18.0	21.0	21.0
5	7.0	7.0	1.5	.0	.0	.0	.0	13.0	17.0	17.0	24.0	19.0
6	10.0	2.5	1.5	.0	.0	.0	.0	12.0	16.0	17.0	21.0	18.0
7	7.5	4.0	1.5	.0	.0	.0	.0	11.0	15.5	18.0	21.0	18.5
8	9.0	6.0	.0	.0	.0	.0	.0	8.5	16.5	18.0	20.0	20.5
9	10.0	8.0	.0	.0	.0	.0	.0	6.0	15.0	19.0	20.0	21.5
10	8.5	2.0	.0	.0	.0	.0	.0	7.0	13.0	21.0	19.0	18.0
11	10.5	2.0	.0	.0	.0	.0	.0	4.0	16.0	21.0	19.0	19.0
12	11.0	1.0	.0	.0	.0	.0	.0	10.0	18.0	21.5	18.5	15.0
13	7.0	2.0	.0	.0	.0	.0	9.0	11.0	17.5	22.0	18.0	14.0
14	6.5	2.5	.0	.0	.0	.0	9.0	6.0	17.0	19.5	17.0	11.0
15	7.0	2.0	.0	.0	.0	.0	10.0	13.0	18.0	19.0	16.0	12.0
16	7.0	3.5	.0	.0	.0	.0	10.0	18.0	17.0	20.0	18.5	13.0
17	9.0	2.0	.0	.0	.0	.0	11.0	5.5	17.5	21.5	22.5	14.5
18	10.0	1.0	.0	.0	.0	.0	16.0	10.0	20.5	22.0	20.0	15.0
19	8.0	1.0	.0	.0	.0	.0	16.0	10.0	18.0	21.0	19.0	15.0
20	8.5	1.0	.0	.0	.0	.0	13.0	15.0	18.0	21.5	19.5	15.5
21	8.5	1.0	.0	.0	.0	.0	13.0	11.0	18.0	21.0	20.0	13.0
22	8.5	1.0	.0	.0	.0	.0	13.0	11.0	22.0	22.5	19.5	13.5
23	8.0	1.0	.0	.0	.0	.0	13.0	12.0	20.5	22.0	19.0	13.0
24	7.5	1.0	.0	.0	.0	.0	7.0	14.0	19.5	21.0	19.0	12.5
25	7.0	1.0	.0	.0	.0	.0	12.5	15.0	19.0	20.0	19.0	12.0
26	5.0	1.5	.0	.0	.0	.0	4.5	17.0	21.0	22.0	19.0	12.0
27	5.0	1.5	.0	.0	.0	.0	11.5	16.0	21.0	24.0	19.0	12.0
28	6.0	1.5	.0	.0	.0	.0	8.0	16.0	21.5	23.0	19.0	11.0
29	6.0	1.5	.0	.0	---	.0	7.0	10.0	22.0	29.5	17.0	11.0
30	7.0	1.5	.0	.0	---	.0	6.0	13.5	22.0	22.0	20.0	10.5
31	7.5	---	.0	.0	---	.0	---	11.0	---	22.0	17.0	---
MEAN	8.5	3.0	.5	.0	.0	.0	6.5	10.5	18.5	21.0	19.5	15.5

06404000 BATTLE CREEK NEAR KEYSTONE, SD

LOCATION.--Lat 43°52'21", long 103°20'10", in SW¼SW¼ sec.18, T.2 S., R.7 E., Pennington County, Hydrologic Unit 10120109, at right downstream end county highway bridge, 0.6 mi (1.0 km) downstream from Iron Creek and 4.5 mi (7.2 km) southeast of Keystone.

DRAINAGE AREA.--66 mi^2 (171 km^2).

PERIOD OF RECORD.--July 1945 to July 1947, October 1961 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 3,800 ft (1,160 m), from topographic map. Prior to Nov. 13, 1961, nonrecording gage at site 250 ft (76 m) downstream at different datum and Nov. 13 to Dec. 5, 1961, at same site at present datum. Dec. 6, 1961, to June 9, 1972, water-stage recorder at site 210 ft (64 m) downstream at present datum (destroyed by flood); June 10 to Nov. 20, 1972, nonrecording gage 180 ft (55 m) downstream at present datum; Nov. 21, 1972, to Nov. 27, 1973, water-stage recorder at present site and datum; Nov. 28, 1973, to Nov. 7, 1974, nonrecording gage 180 ft (55 m) downstream at present datum.

REMARKS.--Records good except those for winter periods, which are poor. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--19 years (water years 1946, 1962-79), 10.1 ft^3/s (0.286 m^3/s), 7,320 acre-ft/yr (9.03 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, 26,200 ft^3/s (742 m^3/s) June 9, 1972, gage height, 14.5 ft (4.42 m), from floodmarks, site then in use, from rating curve extended above 550 ft^3/s (15.6 m^3/s) on basis of slope-area measurement of peak flow; no flow for many days in 1961, 1962, 1970, 1974, 1976.

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)
July 4	0415	*409	11.6	*5.07	1.545	July 28	0130	119	3.37	4.25	1.295

Minimum daily discharge, 0.20 ft^3/s (0.006 m^3/s) Jan. 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	.76	1.3	1.2	.20	.35	1.4	4.2	2.4	2.3	4.0	54	5.9
2	.63	1.4	1.1	.22	.35	1.4	3.7	2.2	1.7	3.3	40	5.4
3	.63	1.5	1.0	.30	.38	1.3	4.0	2.3	1.6	3.1	31	5.1
4	.63	1.5	1.0	.40	.40	1.2	4.2	2.1	1.4	179	24	4.9
5	.63	1.4	1.1	.50	.42	1.2	4.1	2.4	1.1	62	21	4.5
6	.63	1.4	1.1	.50	.50	1.3	4.3	2.3	1.2	36	18	4.3
7	.63	1.4	1.0	.55	.55	1.4	5.5	2.2	2.1	24	16	4.1
8	.63	1.3	1.1	.60	.60	1.5	6.9	1.8	1.7	18	17	3.8
9	.50	1.3	1.1	.60	.65	1.7	6.4	1.9	1.9	14	14	3.5
10	.50	1.4	1.2	.60	.75	1.8	6.7	1.6	1.8	11	12	3.5
11	.50	1.3	1.2	.60	.90	1.8	8.8	2.5	1.4	9.4	10	3.4
12	.50	1.2	1.3	.50	1.0	1.9	7.2	2.8	1.1	8.7	9.1	3.4
13	.50	1.1	1.4	.40	1.2	2.0	5.9	3.1	.70	18	9.6	3.5
14	.76	1.1	1.4	.35	1.1	2.1	6.2	3.4	.60	12	11	3.6
15	.89	1.1	1.4	.35	1.0	2.1	6.8	2.7	.50	8.6	9.8	3.6
16	.76	1.2	1.3	.40	.85	2.1	7.1	3.0	2.8	32	8.5	3.3
17	.89	1.3	1.3	.45	.80	2.2	7.2	2.9	8.1	41	12	3.0
18	1.3	1.2	1.2	.52	.76	2.5	7.7	4.3	7.7	27	10	2.7
19	1.3	1.1	1.1	.60	.80	2.8	7.5	5.1	6.6	20	13	2.5
20	1.2	1.0	1.0	.65	.84	2.9	6.3	5.1	7.0	18	26	2.2
21	1.2	1.1	.96	.80	.86	3.1	5.4	4.2	5.8	16	18	2.1
22	1.4	1.1	.84	.80	.90	3.3	5.0	3.1	5.0	14	14	2.0
23	1.4	1.2	.90	.80	.95	3.1	4.3	3.2	5.3	13	13	1.9
24	1.4	1.3	1.0	.80	1.0	3.1	2.3	2.4	7.8	20	11	1.9
25	1.3	1.1	.90	.75	1.1	3.1	2.6	1.9	24	18	10	1.9
26	1.3	1.0	.80	.70	1.1	3.0	2.3	1.7	11	27	10	1.6
27	1.3	.96	.70	.65	1.1	3.5	2.4	2.0	9.3	39	9.5	1.4
28	1.3	.96	.60	.60	1.2	4.5	2.3	3.0	8.1	82	9.0	1.2
29	1.4	1.0	.50	.50	---	4.6	2.1	3.0	6.7	92	8.5	1.1
30	1.4	1.2	.55	.45	---	4.8	2.2	2.8	5.2	69	7.2	1.1
31	1.3	---	.40	.35	---	4.7	---	2.7	---	84	6.6	---
TOTAL	29.47	36.42	31.65	16.49	22.41	77.4	151.6	86.1	141.50	1023.1	482.8	92.4
MEAN	.95	1.21	1.02	.53	.80	2.50	5.05	2.78	4.72	33.0	15.6	3.08
MAX	1.4	1.5	1.4	.80	1.2	4.8	8.8	5.1	24	179	54	5.9
MIN	.50	.96	.40	.20	.35	1.2	2.1	1.6	.50	3.1	6.6	1.1
AC-FT	58	72	63	33	44	154	301	171	281	2030	958	183

CAL YR 1978 TOTAL 4271.70 MEAN 11.7 MAX 144 MIN .40 AC-FT 8470
WTR YR 1979 TOTAL 2191.34 MEAN 6.00 MAX 179 MIN .20 AC-FT 4350

06404998 GRACE COOLIDGE CREEK NEAR GAME LODGE, NEAR CUSTER, SD

LOCATION.--Lat 43°45'40", long 103°21'49", in SW¼NE¼ sec.26, T.3 S., R.6 E., Custer County, Hydrologic Unit 10120109, on right bank 0.3 mi (0.5 km) downstream from bridge on U.S. Highway 16A, 0.9 mi (1.5 km) east of Game Lodge, 1.5 mi (2.4 km) southwest of junction of State Highway 36 and U.S. Highway 16A, and 11.5 mi (18.5 km) east of Custer.

DRAINAGE AREA.--25.2 mi^2 (65.3 km^2).

PERIOD OF RECORD.--October 1976 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 4,100 ft (1,250 m), from topographic map.

REMARKS.--Records good except those for winter periods, which are poor. Considerable losses in sinkholes downstream from gage. Several observations of water temperature and specific conductance were made dr uring the year.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 102 ft^3/s (2.89 m^3/s) May 18, 1978, gage height, 8.48 ft (2.585 m); maximum gage height, 12.76 ft (3.889 m) Feb. 9, 1979 (backwater from ice); no flow June 5-9, July 6, 8, 11, 19, 1977, for part of June 14, 1979.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 10, 1972, reached a stage of 10.35 ft (3.155 m), from floodmarks, discharge, 709 ft^3/s (20.1 m^3/s) from slope-area measurement of peak flow.

Flood of June 15, 1976, reached a stage of 10.90 ft (3.322 m), from floodmarks, discharge, 980 ft^3/s (27.8 m^3/s) on basis of slope-area measurement of 10.35 ft.

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)
Feb. 9	0400	unknown		a*12.76	3.889	July 23	2230	31	0.88	7.83	2.387
July 4	0700	*226	6.40	8.89	2.710	July 31	0300	59	1.67	8.08	2.463
July 16	1900	40	1.13	7.93	2.417						

a Backwater from ice.
Minimum discharge, no flow for part of June 14.

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	1.6	.80	.55	.90	1.5	1.6	1.1	.98	2.1	39	4.7
2	.74	1.7	.75	.60	.90	1.4	1.6	1.1	.82	1.8	29	4.7
3	.66	1.7	.75	.65	.90	1.4	1.6	1.1	.82	2.7	23	4.6
4	.66	1.7	.75	.70	.90	1.3	1.8	1.1	.66	104	20	4.2
5	.58	1.8	.75	.70	.95	1.4	2.0	1.1	.58	58	18	4.0
6	.58	1.8	.70	.70	1.0	1.5	1.8	1.1	.58	29	15	3.8
7	.66	1.8	.65	.70	1.1	1.7	2.3	1.1	.82	20	15	3.8
8	.66	1.8	.65	.75	1.2	2.0	2.3	.98	1.1	19	16	3.8
9	.66	1.8	.70	.75	1.3	1.8	2.2	.90	.98	14	12	3.5
10	.74	1.7	.75	.75	1.4	1.8	2.3	1.1	.66	11	9.6	3.8
11	.82	1.3	.80	.80	1.4	1.8	3.0	1.2	.50	8.2	9.2	4.0
12	.90	1.1	.85	.80	1.4	2.0	2.8	1.4	.30	7.2	8.2	3.8
13	.82	1.0	.85	.80	1.4	2.0	2.7	1.2	.15	17	8.9	6.5
14	.66	1.0	.85	.90	1.4	1.8	2.7	1.1	.06	10	9.2	7.5
15	.74	1.0	.85	1.0	1.3	1.8	2.5	1.1	.10	7.5	8.2	7.2
16	.74	1.0	.85	1.1	1.1	2.0	2.4	.98	.82	25	7.8	7.5
17	.98	1.0	.85	1.1	1.1	2.0	2.4	.98	1.8	29	7.8	7.0
18	1.3	1.0	.90	1.1	1.2	1.6	2.3	1.2	1.4	18	7.5	7.0
19	1.3	1.0	.95	1.2	1.3	1.4	2.3	1.5	1.3	15	11	6.8
20	1.3	.90	.95	1.3	1.4	1.4	2.1	1.2	1.3	12	17	6.5
21	1.3	.90	.95	1.4	1.5	1.4	2.1	1.1	1.3	11	11	6.8
22	1.8	.80	.95	1.4	1.5	1.3	2.2	1.1	.98	11	8.6	6.5
23	2.1	.80	.95	1.4	1.5	1.3	1.7	.98	.90	14	7.8	6.5
24	1.8	.75	.95	1.3	1.5	1.3	1.6	.90	.90	23	7.2	6.2
25	1.8	.70	.95	1.2	1.5	1.4	1.6	.90	7.1	21	7.0	6.2
26	1.8	.75	.90	1.1	1.6	1.4	1.5	.90	5.5	19	6.8	6.2
27	1.8	.80	.85	1.0	1.6	1.5	1.4	.82	4.6	28	7.0	6.2
28	1.8	.80	.80	.95	1.6	1.7	1.3	.74	4.0	35	6.8	6.2
29	1.8	.80	.70	.95	---	1.6	1.1	.82	3.0	36	5.8	6.0
30	1.7	.80	.60	.95	---	1.6	1.1	1.1	2.4	32	5.5	6.0
31	1.5	---	.50	.95	---	1.6	---	1.1	---	52	5.5	---
TOTAL	35.60	35.60	25.05	29.55	35.85	49.7	60.3	33.00	46.41	692.5	370.4	167.5
MEAN	1.15	1.19	.81	.95	1.28	1.60	2.01	1.06	1.55	22.3	11.9	5.58
MAX	2.1	1.8	.95	1.4	1.6	2.0	3.0	1.5	7.1	104	39	7.5
MIN	.58	.70	.50	.55	.90	1.3	1.1	.74	.06	1.8	5.5	3.5
AC-FT	71	71	50	59	71	99	120	65	92	1370	735	332

CAL YR 1978 TOTAL 2016.66 MEAN 5.53 MAX 76 MIN .45 AC-FT 4000
WTR YR 1979 TOTAL 1581.46 MEAN 4.33 MAX 104 MIN .06 AC-FT 3140

06405400 GRACE COOLIDGE CREEK NEAR FAIRBURN, SD

LOCATION.--Lat 43°46'13", long 103°20'28", in SE¼SE¼ sec.24, T.3 S., R.6 E., Custer County, Hydrologic Unit 10120109, in Custer State Park, 80 ft (24 m) upstream from bridge on U.S. Highway 16A, 0.2 mi (0.3 km) west of east park boundary, 2.0 (3.2 km) east of Game Lodge and 8.8 mi (14.2 km) northwest of Fairburn.

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

GAGE.--Water-stage recorder. Altitude of gage is 3,820 ft (1,160 m), from topographic map.

REMARKS.--Records good.

EXTREMES FOR CURRENT PERIOD.--May to September 1978: Maximum discharge during period, 124 ft^3/s (3.51 m^3/s) May 18, gage height, 51.57 ft (15.719 m); no flow for many days.

Water year 1979: Maximum discharge, 197 ft^3/s (5.58 m^3/s) July 4, gage height, 51.83 ft (15.798 m); no flow for many days.

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

49.4	0	49.8	0.83	50.2	4.9	50.8	28
49.5	.10	49.9	1.4	50.4	9.6	51.0	45
49.6	.23	50.0	2.2	50.6	17	51.2	67
49.7	.46						

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								---	5.5	.00	.00	.00
2								---	4.2	.00	.00	.00
3								---	3.0	.00	.00	.00
4								---	2.2	.00	.00	.00
5								---	1.5	.00	.00	.00
6								---	.89	.00	.00	.00
7								---	.10	.00	.00	.00
8								---	.00	.00	.00	.00
9								---	.00	.00	.00	.00
10								---	.00	.00	.00	.00
11								---	.00	.00	.00	.00
12								---	.00	.00	.00	.00
13								15	.00	.00	.00	.00
14								10	.00	.00	.00	.00
15								6.4	.00	.00	.00	.00
16								3.5	.00	.00	.00	.00
17								2.6	.00	.00	.00	.00
18								69	.00	.00	.00	.00
19								65	.00	.00	.00	.00
20								36	.00	.00	.00	.00
21								24	.00	.00	.00	.00
22								15	.00	.00	.00	.00
23								11	.00	.00	.00	.00
24								14	.00	.00	.00	.00
25								7.6	.00	.00	.00	.00
26								4.8	.00	.00	.00	.00
27								3.5	.00	.00	.00	.00
28								5.4	.00	.00	.00	.00
29								3.3	.00	.00	.00	.00
30								8.2	.00	.00	.00	.00
31								8.3	---	.00	.00	---
TOTAL	---	---	---	---	---	---	---	---	17.39	.00	.00	.00
MEAN	---	---	---	---	---	---	---	---	.58	.000	.000	.000
MAX	---	---	---	---	---	---	---	---	5.5	.00	.00	.00
MIN	---	---	---	---	---	---	---	---	.00	.00	.00	.00
AC-FT	---	---	---	---	---	---	---	---	34	.00	.00	.00

06405400 GRACE COOLIDGE CREEK NEAR FAIRBURN, SD--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	.00	.00	.00	.00	8.4	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	2.8	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.20	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	61	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	17	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	2.8	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.10	.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	1.4	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.32	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	15	.00	---
TOTAL	.00	.00	.00	.00	.00	.00	.00	.00	.00	97.62	11.40	.00
MEAN	.000	.000	.000	.000	.000	.000	.000	.000	.000	3.15	.37	.000
MAX	.00	.00	.00	.00	.00	.00	.00	.00	.00	61	8.4	.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	194	23	.00

CAL YR 1978 TOTAL 109.02 MEAN .30 MAX 61 MIN .00 AC-FT 216

23							.00	8.3	.00	.00	.00	.00
24							.00	10	.00	.00	.00	.00
25							.00	5.2	.00	.00	.00	.00
26							.00	2.9	.00	.00	.00	.00
27							.00	1.5	.00	.00	.00	.00
28							.00	3.5	.00	.00	.00	.00
29							.00	1.4	.00	.00	.00	.00
30							.00	5.5	.00	.00	.00	.00
31							---	5.5	---	.00	.00	---
TOTAL	---	---	---	---	---	---	.00	395.76	6.74	.00	.00	.00
MEAN	---	---	---	---	---	---	.000	12.8	.22	.000	.000	.000
MAX	---	---	---	---	---	---	.00	44	3.4	.00	.00	.00
MIN	---	---	---	---	---	---	.00	.00	.00	.00	.00	.00
AC-FT	---	---	---	---	---	---	.00	785	13	.00	.00	.00

06405500 GRACE COOLIDGE CREEK NEAR HERMOSA, SD

LOCATION (REVISED).--Lat 43°46'29", long 103°19'42", in SW¼NE¼ sec.19, T.3 S., R.7 E., Custer County, Hydrologic Unit 10120109, near center span on downstream side of bridge on State Highway 36, 0.5 mi (0.8 km) east of east boundary of Custer State Park, 2.8 mi (4.5 km) east of Game Lodge, and 8.2 mi (13.2 km) southwest of Hermosa.

DRAINAGE AREA.--27.5 mi^2 (71.2 km^2).

PERIOD OF RECORD.--July 1945 to July 1947, April 1978 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 3,740 ft (1,140 m), from topographic map. Prior to April 1978, nonrecording gage at same site, at different datum.

REMARKS.--Records good. Considerable loss in sinkholes in 3 mi (4.8 km) reach above gage.

EXTREMES FOR CURRENT PERIOD.--April to September 1978: Maximum discharge during period, 73 ft^3/s (2.07 m^3/s) May 18, gage height, 41.13 ft (12.536 m); no flow for many days.

Water year 1979: Maximum discharge, 112 ft^3/s (3.17 m^3/s) July 4, gage height, 41.39 ft (12.616 m); no flow for many days.

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

39.6	0	39.9	1.2	40.3	11
39.7	.19	40.0	2.6	40.6	28
39.8	.54	40.1	4.4	41.0	61

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	.00	3.4	.00	.00	.00
2							.00	.00	2.1	.00	.00	.00
3							.00	.00	.97	.00	.00	.00
4							.00	.00	.22	.00	.00	.00
5							.00	5.7	.04	.00	.00	.00
6							.00	19	.01	.00	.00	.00
7							.00	22	.00	.00	.00	.00
8							.00	17	.00	.00	.00	.00
9							.00	26	.00	.00	.00	.00
10							.00	42	.00	.00	.00	.00
11							.00	32	.00	.00	.00	.00
12							.00	20	.00	.00	.00	.00
13							.00	13	.00	.00	.00	.00
14							.00	8.0	.00	.00	.00	.00
15							.00	4.1	.00	.00	.00	.00
16							.00	1.1	.00	.00	.00	.00
17							.00	.06	.00	.00	.00	.00
18							.00	44	.00	.00	.00	.00
19							.00	43	.00	.00	.00	.00
20							.00	26	.00	.00	.00	.00
21							.00	18	.00	.00	.00	.00
22							.00	11	.00	.00	.00	.00
23							.00	8.3	.00	.00	.00	.00
24							.00	10	.00	.00	.00	.00
25							.00	5.2	.00	.00	.00	.00
26							.00	2.9	.00	.00	.00	.00
27							.00	1.5	.00	.00	.00	.00
28							.00	3.5	.00	.00	.00	.00
29							.00	1.4	.00	.00	.00	.00
30							.00	5.5	.00	.00	.00	.00
31							---	5.5	---	.00	.00	---
TOTAL	---	---	---	---	---	---	.00	395.76	6.74	.00	.00	.00
MEAN	---	---	---	---	---	---	.000	12.8	.22	.000	.000	.000
MAX	---	---	---	---	---	---	.00	44	3.4	.00	.00	.00
MIN	---	---	---	---	---	---	.00	.00	.00	.00	.00	.00
AC-FT	---	---	---	---	---	---	.00	785	13	.00	.00	.00

06405500 GRACE COOLIDGE CREEK NEAR HERMOSA, SD--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	.00	.00	.00	.00	5.6	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.90	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	36	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	8.2	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.43	.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	.01	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	7.8	.00	---
TOTAL	.00	.00	.00	.00	.00	.00	.00	.00	.00	52.44	6.50	.00
MEAN	.000	.000	.000	.000	.000	.000	.000	.000	.000	1.69	.21	.000
MAX	.00	.00	.00	.00	.00	.00	.00	.00	.00	36	5.6	.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	104	13	.00

WTR YR 1979 TOTAL 58.94 MEAN .16 MAX 36 MIN .00 AC-FT 117

06406000 BATTLE CREEK AT HERMOSA, SD

LOCATION.--Lat 43°49'41", long 103°11'44", in NE¼SW¼SW¼ sec.32, T.2 S., R.8 E., Custer County, Hydrologic Unit 10120109, on right bank 50 ft (15 m) downstream from Chicago and North Western Transportation Company bridge, 0.8 mi (1.3 km) south of Hermosa and 2.9 mi (4.7 km) downstream from Grace Coolidge Creek.

DRAINAGE AREA.--178 mi^2 (461 km^2).

PERIOD OF RECORD.--August to December 1903 (gage heights only), July 1949 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 3,290 ft (1,000 m), from topographic map. Nonrecording gage, August to December 1903, at site 50 ft (15 m) upstream, July 7, 1949, to Nov. 2, 1950, at site 0.5 mi (0.8 km) upstream, Nov. 3, 1950, to Dec. 6, 1961, at site 170 ft (52 m) downstream, all at different datum. Dec. 7, 1961, to June 10, 1972, water-stage recorder (destroyed by flood), and June 11, 1972, to Aug. 28, 1972, nonrecording gage at site 80 ft (24 m) downstream at present datum.

REMARKS.--Records good except those for winter periods, which are poor. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--30 years, 9.46 ft^3/s (0.268 m^3/s), 6,850 acre-ft/yr (8.45 hm^3/yr); median of yearly mean discharges, 6.2 ft^3/s (0.18 m^3/s), 4,500 acre-ft/yr (5.6 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 21,400 ft^3/s (606 m^3/s) June 10, 1972, gage height, 17.72 ft (5.401 m), from floodmarks, from rating curve extended above 2,800 ft^3/s (79.3 m^3/s) on basis of contracted-opening and flow-over-railroad embankment measurement of peak flow; no flow at times in 1954-57, 1959.

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)
July 4	1030	256	7.25	5.20	1.570	July 29	0815	*367	10.4	*5.92	1.789

Minimum daily discharge, 0.08 ft^3/s (0.002 m^3/s) July 2, 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	3.3	6.3	6.5	4.2	3.6	4.1	5.0	4.7	1.8	2.0	48	9.1
2	3.3	6.3	6.1	4.6	3.7	4.0	5.1	4.7	2.1	.08	36	8.6
3	3.3	6.3	5.6	4.8	3.8	3.9	5.2	4.6	3.8	.08	29	8.5
4	3.5	6.4	6.5	4.9	3.9	3.9	5.2	4.5	3.7	90	25	8.9
5	3.7	6.1	7.1	5.0	4.0	4.0	5.2	5.0	1.5	48	21	8.6
6	4.1	6.3	5.9	5.0	4.1	4.2	5.3	4.8	1.1	25	19	8.7
7	4.4	6.5	6.2	5.0	4.1	4.4	5.2	4.6	2.5	16	16	8.4
8	4.4	6.4	6.0	5.0	4.1	4.4	5.0	4.4	1.9	10	18	9.0
9	4.4	6.6	6.0	5.0	4.1	4.4	5.1	4.2	1.7	7.7	16	8.8
10	4.4	7.3	6.2	5.0	4.1	4.5	5.5	4.8	1.6	5.9	14	7.9
11	4.8	7.5	6.1	5.0	4.1	4.7	6.4	5.4	1.2	4.8	14	9.4
12	4.7	7.6	6.4	5.1	4.0	4.8	6.3	5.8	.87	3.5	13	11
13	5.1	7.9	6.2	5.2	3.9	4.9	5.9	6.2	.30	4.6	13	12
14	5.6	7.0	6.3	5.2	3.8	5.1	5.8	6.8	.15	4.1	13	11
15	5.7	6.8	6.5	5.2	3.5	5.2	5.6	6.2	.13	3.7	13	11
16	6.0	6.8	6.2	5.2	3.4	5.4	5.5	6.5	.55	7.4	13	10
17	5.9	7.0	6.1	5.2	3.5	5.4	5.5	8.0	1.4	19	13	10
18	5.4	7.1	6.3	5.2	3.6	5.4	5.3	9.0	1.6	15	13	9.8
19	5.3	5.9	5.9	5.1	3.7	5.3	5.5	7.5	2.1	11	14	10
20	4.8	5.8	5.7	5.0	3.9	5.3	5.4	6.4	2.4	9.0	14	10
21	4.8	6.0	5.6	4.9	4.0	5.2	5.5	5.4	3.5	8.7	15	10
22	5.1	6.4	5.4	4.4	4.2	5.1	5.5	4.8	3.2	7.0	14	10
23	5.1	6.5	5.9	3.9	4.2	5.1	5.4	4.5	3.0	6.7	14	10
24	5.3	6.6	5.9	3.6	4.2	5.0	5.0	4.1	4.2	6.8	13	9.6
25	5.1	6.4	5.9	3.8	4.2	4.9	5.0	3.9	3.3	8.4	13	9.7
26	5.9	6.5	5.2	3.8	4.3	4.9	4.8	4.2	2.8	9.9	12	9.2
27	6.3	6.4	5.6	3.8	4.3	4.8	4.7	4.0	3.2	15	12	9.3
28	6.5	6.3	5.5	3.7	4.3	4.8	4.6	1.8	3.0	39	12	9.2
29	6.8	6.3	4.8	3.6	---	4.8	4.4	1.4	2.6	101	12	9.7
30	6.5	6.5	4.8	3.5	---	4.9	4.5	1.7	2.5	55	11	9.7
31	6.3	---	4.4	3.5	---	4.8	---	2.0	---	62	9.7	---
TOTAL	155.8	197.8	182.8	142.4	110.6	147.6	158.4	151.9	63.70	606.36	512.7	287.1
MEAN	5.03	6.59	5.90	4.59	3.95	4.76	5.28	4.90	2.12	19.6	16.5	9.57
MAX	6.8	7.9	7.1	5.2	4.3	5.4	6.4	9.0	4.2	101	48	12
MIN	3.3	5.8	4.4	3.5	3.4	3.9	4.4	1.4	.13	.08	9.7	7.9
AC-FT	309	392	363	282	219	293	314	301	126	1200	1020	569

CAL YR 1978 TOTAL 5394.50 MEAN 14.8 MAX 177 MIN 2.0 AC-FT 10700
WTR YR 1979 TOTAL 2717.16 MEAN 7.44 MAX 101 MIN .08 AC-FT 5390

06408500 SPRING CREEK NEAR HERMOSA, SD

LOCATION.--Lat 43°56'31", long 103°09'32", in SE¼SE¼SE¼ sec.21, T.1 S., R.8 E., Pennington County, Hydrologic Unit 10120109, at left upstream end of county highway bridge, 0.3 mi (0.5 km) upstream from Chicago and North Western Transportation Company bridge and 7.5 mi (12.1 km) north of Hermosa.

DRAINAGE AREA.--199 mi^2 (515 km^2).

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

REVISED RECORDS.--WSP 1729: 1950.

GAGE.--Water-stage recorder. Datum of gage is 3,265.30 ft (995.263 m) National Geodetic Vertical Datum of 1929. Prior to Mar. 30, 1973, nonrecording gage and crest-stage gage 210 ft (64.0 m) upstream, and Mar. 30 to Sept. 30, 1973, water-stage recorder at present site, both at datum 2.00 ft (0.610 m) higher.

REMARKS.--Records good except those for period of no gage-height record, June 21 to July 26, and those for winter periods, which are poor. Considerable loss in sinkholes in reach 10 to 15 mi (16 to 24 km) above station. Flow slightly regulated by Lake Sheridan, capacity, 12,657 acre-ft (15.6 hm^3), 24 mi (39 km) above station. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--30 years, 5.62 ft^3/s (0.159 m^3/s), 4,070 acre-ft/yr (5.02 hm^3/yr); median of yearly mean discharges, 1.6 ft^3/s (0.05 m^3/s), 1,200 acre-ft/yr (1.5 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,400 ft^3/s (379 m^3/s) June 10, 1972, gage height, 13.12 ft (3.999 m), site and datum then in use, from floodmarks, from rating curve extended above 350 ft^3/s (9.91 m^3/s) on basis of contracted-opening measurement of peak flow; no flow for many days most years.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 5.0 ft^3/s (0.14 m^3/s) Nov. 16; maximum gage height, 3.18 ft (0.969 m) Dec. 30 (backwater from ice); 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	1.5	1.3	.90	.00	.00	.00	1.1	1.3	.48	.54	.00	1.3
2	1.5	1.3	.80	.00	.00	.00	1.1	1.3	.43	.54	.00	.95
3	1.5	1.3	.75	.00	.00	.00	1.1	1.2	.43	.54	.00	.79
4	1.5	1.1	.90	.00	.00	.02	1.1	1.3	.39	.70	.14	.99
5	1.5	.73	1.0	.00	.00	.05	.86	1.4	.41	.70	.08	1.3
6	1.5	.85	.90	.00	.00	.10	.90	1.4	.28	.70	.00	1.2
7	1.7	.70	.80	.00	.00	.25	.98	1.4	.59	.70	.04	1.6
8	1.7	.81	.80	.00	.00	.40	.95	1.3	.32	.70	.34	1.3
9	1.4	.75	.90	.00	.00	.80	.93	1.7	.37	.54	.00	.78
10	1.5	.70	1.0	.00	.00	1.0	1.1	1.5	.42	.54	.00	.52
11	1.4	.54	1.5	.00	.00	1.5	1.2	1.4	.45	.54	.00	.89
12	1.7	.54	2.0	.00	.00	2.0	1.2	1.3	.46	.54	.00	.65
13	1.5	.54	1.5	.00	.00	2.5	1.1	1.4	.38	.54	.04	.32
14	1.5	.54	2.2	.00	.00	3.0	1.1	1.4	.22	.54	.46	.23
15	1.7	4.3	1.7	.00	.00	3.5	1.1	1.2	.24	.70	.35	.36
16	1.6	5.0	1.3	.00	.00	4.0	1.1	1.3	.72	.88	.23	.18
17	1.8	1.0	1.4	.00	.00	4.5	1.1	1.3	.83	1.0	.29	.03
18	1.8	.72	1.3	.00	.00	3.5	1.0	1.7	.43	1.2	.18	.00
19	1.8	.47	1.3	.00	.00	2.5	1.0	1.6	.64	1.0	1.2	.00
20	1.8	.75	1.2	.00	.00	2.4	.99	1.4	.75	.88	1.7	.00
21	1.9	.97	1.3	.00	.00	2.4	1.0	1.4	.70	.70	1.4	.00
22	1.7	1.3	1.1	.00	.00	2.3	1.2	1.3	.70	.70	1.6	.00
23	1.7	1.3	1.1	.00	.00	2.2	1.3	1.3	.88	.70	2.2	.00
24	1.9	1.2	1.0	.00	.00	2.0	1.3	1.3	.70	.54	2.7	.00
25	1.7	.94	.90	.00	.00	1.5	1.3	1.2	.70	.54	3.0	.00
26	1.5	1.2	.70	.00	.00	1.6	1.3	1.1	.70	.54	2.8	.00
27	1.7	1.1	.50	.00	.00	1.7	1.4	.86	.54	.53	3.0	.03
28	1.5	1.1	.35	.00	.00	1.3	1.4	.89	.54	.31	2.5	.01
29	1.5	.96	.25	.00	---	1.4	1.4	.55	.54	2.5	2.4	.00
30	1.3	.88	.10	.00	---	1.3	1.4	.54	.54	1.2	2.2	.00
31	1.3	---	.00	.00	---	1.3	---	.48	---	.11	2.0	---
TOTAL	49.6	34.89	31.45	.00	.00	51.02	34.01	38.72	15.78	22.39	30.85	13.43
MEAN	1.60	1.16	1.01	.000	.000	1.65	1.13	1.25	.53	.72	1.00	.45
MAX	1.9	5.0	2.2	.00	.00	4.5	1.4	1.7	.88	2.5	3.0	1.6
MIN	1.3	.47	.00	.00	.00	.00	.86	.48	.22	.11	.00	.00
AC-FT	98	69	62	.00	.00	101	67	77	31	44	61	27

CAL YR 1978 TOTAL 3421.98 MEAN 9.38 MAX 165 MIN .00 AC-FT 6790
WTR YR 1979 TOTAL 322.14 MEAN .88 MAX 5.0 MIN .00 AC-FT 639

06409000 CASTLE CREEK ABOVE DEERFIELD RESERVOIR, NEAR HILL CITY, SD
(Hydrologic benchmark and radiochemical station)

LOCATION.--Lat 44°00'49", long 103°49'48", in SW¼ sec.25, T.1 N., R.2 E., Pennington County, Hydrologic Unit 10120110, on right bank 50 ft (15 m) downstream from highway bridge, 250 ft (76 m) downstream from South Fork Castle Creek, 600 ft (183 m) upstream from high-water line of Deerfield Reservoir, 2.5 mi (4.0 km) southwest of Deerfield Dam, and 14 mi (23 km) northwest of Hill City.

DRAINAGE AREA.--83 mi^2 (215 km^2), approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1948 to current year. Prior to October 1953, published as "above Deerfield Reservoir, near Deerfield".

REVISED RECORDS.--WSP 1917: 1952(M).

GAGE.--Water-stage recorder and grouted-rock control. Altitude of gage is 5,910 ft (1,800 m), from reservoir elevation. Prior to Aug. 31, 1948, nonrecording gage at site 50 ft (15 m) upstream at datum 2.05 ft (0.625 m) higher.

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

AVERAGE DISCHARGE.--31 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, 1,120 ft^3/s (31.7 m^3/s) May 22, 1952, gage height, 5.81 ft (1.771 m), from rating curve extended above slope-area measurement at gage height, 5.67 ft (1.728 m); minimum, 1.2 ft^3/s (0.034 m^3/s) Apr. 25, 1969; minimum gage height, 1.35 ft (0.411 m) Nov. 12, 1949, Feb. 19, 1954, Mar. 7, 1957, Mar. 29, 1961.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 30 ft^3/s (0.85 m^3/s) Apr. 17, gage height, 2.25 ft (0.686 m); maximum gage height, 2.60 ft (0.792 m) Feb. 18 (backwater from ice), no peak above base of 100 ft^3/s (2.83 m^3/s); minimum daily discharge, 8.0 ft^3/s (0.23 m^3/s) Jan. 14.

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	13	10	9.0	10	14	13	16	12	12	13	12
2	13	13	10	10	10	13	13	15	12	12	13	12
3	13	13	10	10	10	13	13	15	12	12	13	12
4	13	13	10	10	10	14	13	16	12	15	13	11
5	13	13	10	9.5	11	14	12	15	12	15	13	11
6	13	13	11	9.5	12	14	14	15	13	15	13	11
7	13	13	11	10	12	15	17	15	15	13	13	11
8	13	13	10	10	12	14	15	15	13	13	13	11
9	13	13	10	10	12	14	17	15	14	12	12	11
10	13	12	9.0	10	13	14	18	16	13	12	12	11
11	13	11	9.5	11	12	15	17	16	12	12	12	11
12	14	11	10	10	12	15	9.6	17	12	13	12	11
13	13	11	10	9.0	12	14	11	16	12	14	12	11
14	13	11	10	8.0	12	14	15	16	12	13	12	11
15	14	11	10	8.5	12	14	18	15	12	12	12	11
16	13	11	9.5	9.5	12	15	20	15	15	18	12	11
17	13	11	10	10	13	15	24	15	16	14	13	11
18	15	11	10	10	12	15	24	19	13	13	12	11
19	14	12	10	11	13	15	24	16	13	14	13	11
20	13	12	10	11	12	14	21	15	14	13	14	11
21	13	11	9.5	12	13	14	20	14	13	13	13	11
22	14	10	9.5	11	13	14	19	14	13	14	12	11
23	14	10	9.5	11	13	13	18	13	12	14	12	11
24	14	11	9.5	11	13	14	18	13	13	14	12	11
25	14	11	9.0	11	13	13	17	13	14	14	12	11
26	13	10	9.0	10	13	13	17	13	13	15	13	11
27	13	10	9.0	10	13	15	16	13	14	14	12	11
28	13	11	9.0	10	14	16	16	13	13	14	12	11
29	13	11	9.0	10	---	15	16	13	13	16	12	11
30	13	11	8.5	10	---	14	16	13	13	14	12	11
31	13	---	8.5	10	---	13	---	13	---	13	12	---
TOTAL	412	347	300.0	312.0	339	439	501.6	458	390	422	386	333
MEAN	13.3	11.6	9.68	10.1	12.1	14.2	16.7	14.8	13.0	13.6	12.5	11.1
MAX	15	13	11	12	14	16	24	19	16	18	14	12
MIN	13	10	8.5	8.0	10	13	9.6	13	12	12	12	11
AC-FT	817	688	595	619	672	871	995	908	774	837	766	661

CAL YR 1978 TOTAL 5303.2 MEAN 14.5 MAX 52 MIN 6.9 AC-FT 10520
WTR YR 1979 TOTAL 4639.6 MEAN 12.7 MAX 24 MIN 8.0 AC-FT 9200

06409000 CASTLE CREEK ABOVE DEERFIELD RESERVOIR, NEAR HILL CITY, SD--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1964 to current year.

PERIOD OF DAILY RECORD.--
WATER TEMPERATURES.--May 1964 to current year.

INSTRUMENTATION.--Recorder with thermograph attachment.

REMARKS.--Periodic samples obtained for analysis of suspended-sediment concentration most years. Monthly samples obtained for water-quality analysis.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: Maximum, 22.0°C July 17, 1969; minimum, 0.0°C on many days during winter periods.

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)	OXYGEN, DISSOLVED (MG/L) (00300)	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)
OCT											
05...	1300	13	510	8.2	6.0	11.3	270	K5	30	280	37
NOV											
13...	1300	11	470	8.1	.0	--	60	40	K4	280	9
DEC											
07...	1145	11	715	8.0	.0	11.1	40	K6	70	270	2
JAN											
04...	1130	10	550	7.3	.0	9.7	100	K7	60	260	3
FEB											
06...	1045	12	538	8.3	.5	11.4	30	K10	20	260	0
MAR											
19...	1100	15	540	8.4	1.0	11.3	120	K6	14	270	12
APR											
16...	1415	20	425	7.7	9.0	9.2	220	K3	30	230	0
MAY											
15...	1215	16	510	8.1	10.0	9.5	8	ND	K2	270	30
JUN											
13...	1200	12	480	8.8	15.5	9.1	40	K7	60	260	38
JUL											
18...	1145	13	465	8.3	14.0	9.2	K13	K30	110	240	0
AUG											
20...	1150	14	459	8.6	12.5	9.5	50	40	50	240	19
SEP											
04...	1145	11	477	8.9	15.0	9.6	K9	K18	75	250	22

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)	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										
05...	60	31	1.2	1	.0	1.2	240	9.7	1.1	.1
NOV										
13...	59	32	1.7	1	.0	1.6	270	7.6	1.4	.1
DEC										
07...	58	31	1.6	1	.0	1.5	270	7.7	1.2	.1
JAN										
04...	56	30	1.4	1	.0	1.4	260	8.6	1.2	.1
FEB										
06...	54	30	1.3	1	.0	.8	260	8.9	1.4	.1
MAR										
19...	58	31	1.4	1	.0	1.4	260	8.1	1.1	.1
APR										
16...	48	27	1.7	2	.0	1.4	240	8.4	1.1	.2
MAY										
15...	57	31	1.6	1	.0	1.2	240	6.1	6.8	.1
JUN										
13...	54	30	1.3	2	.0	1.1	220	15	.9	.1
JUL										
18...	50	28	1.3	1	.0	1.2	240	12	.9	.1
AUG										
20...	51	27	2.1	2	.1	1.2	220	11	9.2	.2
SEP										
04...	53	29	1.4	2	.0	1.1	230	12	9.0	.2

K Non-ideal colony count.
ND Not detected.

06409000 CASTLE CREEK ABOVE DEERFIELD RESERVOIR, NEAR HILL CITY, SD--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)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	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										
05...	9.0	242	258	.33	8.49	.15	.01	59	2.1	--
NOV										
13...	9.8	266	276	.36	7.90	.19	.01	212	6.3	--
DEC										
07...	10	271	273	.37	8.05	.23	.04	65	1.9	--
JAN										
04...	9.5	273	265	.37	7.37	.22	.05	87	2.3	--
FEB										
06...	8.6	257	261	.35	8.33	.25	.04	46	1.5	--
MAR										
19...	9.1	252	267	.34	10.2	.20	.01	57	2.3	--
APR										
16...	8.8	233	241	.32	12.6	.11	.02	131	7.1	70
MAY										
15...	6.7	256	255	.35	11.1	.10	.02	105	4.5	12
JUN										
13...	6.9	221	242	.30	7.16	.08	.02	81	2.6	62
JUL										
18...	8.2	237	246	.32	8.32	.07	.01	30	1.1	65
AUG										
20...	.1	148	234	.20	5.59	.02	.04	52	2.0	60
SEP										
04...	8.6	199	244	.27	6.07	.05	.01	31	.92	82

DATE	TIME	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)
NOV							
13...	1300	1	200	0	0	4	220
MAY							
15...	1215	1	0	1	10	2	560

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)	CYANIDE TOTAL (MG/L AS CN) (00720)
NOV							
13...	4	20	.0	1	0	10	.00
MAY							
15...	7	20	.0	1	0	20	.00

DATE	TIME	URANIUM DIS-SOLVED, EXTRAC-TION (UG/L) (80020)	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)
NOV									
13...	1300	1.4	<2.6	<.4	1.8	<.4	1.7	<.4	.10

DATE	TIME	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)	DDE, TOTAL (UG/L) (39365)
NOV										
13...	1300	.0	0	.00	.0	.0	0	.00	.0	.00

< Less than.

06409000 CASTLE CREEK ABOVE DEERFIELD RESERVOIR, NEAR HILL CITY, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	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)	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)	HEPTACHLOR, TOTAL (UG/L) (39410)
NOV 13...	.0	.00	.4	.00	.00	.0	.00	.0	.00	.00

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)	METHYL PARATHION, TOTAL (UG/L) (39600)	METHYL TRITHION, TOTAL (UG/L) (39790)	PARATHION, TOTAL (UG/L) (39540)	TOXAPHENE, TOTAL (UG/L) (39400)
NOV 13...	.0	.00	.0	.00	.0	.00	.00	.00	.00	0

DATE	TOXAPHENE, TOTAL IN BOTTOM MATERIAL (UG/KG) (39403)	TOTAL TRITHION (UG/L) (39786)	PERTHANE TOTAL (UG/L) (39034)	NAPHTHALENES, POLYCHLOR. TOTAL (UG/L) (39250)	ENDOSULFAN, TOTAL (UG/L) (39388)	ENDOSULFAN, TOTAL IN BOTTOM MATERIAL (UG/KG) (39389)	MIREX, TOTAL (UG/L) (39755)	MIREX, TOTAL IN BOTTOM MATERIAL (UG/KG) (39758)	PCN, TOTAL IN BOTTOM MATERIAL (UG/KG) (39251)
NOV 13...	0	.00	.00	.00	.00	.0	.00	.0	.0

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	8.5	6.0										
2	8.0	6.0										
3	7.0	6.0										
4	6.5	6.0										
5	6.0	6.0										
6	6.0	6.0										
7	6.5	6.0										
8	7.0	6.0										
9	7.0	5.5										
10	7.0	5.5										
11	8.0	5.5										
12	6.5	6.0										
13	6.0	6.0										
14	6.0	6.0										
15	6.5	6.0										
16	6.5	5.5										
17	6.5	5.5										
18	6.5	5.5										
19	6.5	5.5										
20	6.5	5.5										
21	6.0	5.5										
22	5.5	5.5										
23	5.5	5.5										
24	6.5	5.5										
25	---	---										
26	---	---										
27	---	---										
28	---	---										
29	---	---										
30	---	---										
31	---	---										
MONTH	8.5	5.5										

06409000 CASTLE CREEK ABOVE DEERFIELD RESERVOIR, NEAR HILL CITY, SD--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
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	---	---	8.0	5.5	13.0	5.0	20.0	11.0	15.5	8.5	13.5	8.0
2	---	---	6.0	5.5	14.5	5.0	18.0	11.0	14.5	8.5	13.0	6.5
3	---	---	10.5	5.5	13.5	5.5	18.0	10.0	17.0	10.0	13.5	7.0
4	---	---	11.5	5.5	15.5	6.5	15.0	11.5	17.0	9.0	13.5	7.0
5	---	---	10.5	5.5	16.5	8.5	14.5	10.5	18.5	11.0	13.0	8.0
6	---	---	11.5	5.5	11.5	6.0	18.0	9.5	16.5	11.5	13.0	6.5
7	---	---	11.0	5.5	11.0	5.5	18.5	11.0	17.0	11.5	14.0	8.5
8	---	---	6.0	5.5	8.5	5.5	18.0	10.0	16.5	12.0	14.0	8.5
9	---	---	5.5	5.5	10.5	5.5	19.0	12.0	15.0	11.5	14.0	8.5
10	---	---	6.5	5.5	15.5	5.5	19.5	10.5	13.5	9.0	14.0	10.0
11	---	---	6.5	5.0	16.5	6.5	19.0	12.0	15.0	8.0	10.0	6.5
12	---	---	9.0	5.0	18.5	8.5	18.5	11.5	13.5	9.5	8.5	6.5
13	---	---	10.0	5.0	19.0	10.5	18.0	13.5	11.0	9.0	6.5	4.5
14	---	---	11.5	5.0	19.0	10.0	18.5	10.5	9.0	8.0	8.0	4.5
15	---	---	15.0	5.0	16.5	9.0	15.0	9.5	15.0	8.0	9.5	4.5
16	8.0	5.5	15.5	6.5	13.0	9.5	12.0	6.5	12.0	9.5	10.0	4.5
17	10.5	5.5	10.5	7.0	10.0	9.0	14.0	8.5	13.0	9.5	10.5	5.0
18	11.0	5.5	9.0	5.5	14.5	8.0	14.5	11.0	10.5	9.0	10.0	5.5
19	10.0	6.0	13.5	5.5	11.5	8.5	16.0	8.0	9.5	9.0	11.0	6.0
20	10.0	5.5	11.5	5.5	14.5	8.0	16.0	9.0	10.5	9.0	9.0	6.0
21	10.0	5.5	15.0	5.5	16.5	8.0	16.0	10.0	11.0	8.0	10.0	4.5
22	11.0	5.5	14.0	5.5	17.0	9.5	17.0	10.0	11.0	7.0	10.0	5.0
23	11.0	5.5	13.5	5.5	15.0	10.5	14.0	11.0	13.0	6.5	10.0	5.5
24	9.5	5.5	15.5	5.5	17.0	9.5	15.0	11.0	12.0	8.0	10.0	5.0
25	8.5	5.5	11.5	8.0	16.5	8.0	15.5	10.0	10.0	7.0	10.5	5.5
26	7.0	5.0	13.0	6.0	17.0	10.0	14.5	9.5	11.5	6.5	11.0	6.5
27	9.0	5.0	16.5	6.0	16.0	9.5	15.0	10.0	13.0	8.0	9.0	5.5
28	8.0	5.0	13.5	8.5	18.5	9.0	16.5	9.5	11.5	8.5	9.0	4.5
29	8.5	5.0	10.5	6.5	19.0	10.0	15.5	10.5	13.5	6.5	9.0	4.5
30	10.0	5.0	9.0	5.5	20.5	12.0	15.0	9.0	14.0	8.5	9.5	5.0
31	---	---	9.5	5.0	---	---	13.5	9.0	14.0	9.5	---	---
MONTH	11.0	5.0	16.5	5.0	20.5	5.0	20.0	6.5	18.5	6.5	14.0	4.5

06409500 DEERFIELD RESERVOIR NEAR HILL CITY, SD

LOCATION.--Lat 44°01'41", long 103°47'09", in NE¼SW¼ sec.20, T.1 N., R.3 E., at dam on Castle Creek, Hydrologic Unit 10120110, 0.4 mi (0.6 km) upstream from Dutchman Creek and 12.5 mi (20.1 km) northwest of Hill City.

DRAINAGE AREA.--95 mi^2 (246 km^2), approximately.

PERIOD OF RECORD.--May 1947 to current year (monthend contents only). Some elevations obtained during period of initial filling, December 1945 to May 1947, are available in Bureau of Reclamation files. Prior to October 1953, published as "near Deerfield."

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Bureau of Reclamation). Prior to July 20, 1964, nonrecording gage at same site and datum.

REMARKS.--Reservoir is formed by earthfill dam. Storage began Dec. 3, 1945; dam completed in 1947. Usable capacity, 15,153 acre-ft (18.7 hm^3) between elevations 5,839 ft (1,779.7 m), lowest outlet, and 5,908 ft (1,800.8 m), crest of spillway. Dead storage below elevation 5,839 ft (1,779.7 m), 565 acre-ft (0.697 hm^3). Figures given herein represent usable contents. Water is used to supplement Rapid City water supply and for irrigation in Rapid Creek basin downstream from Rapid City.

COOPERATION.--Records of elevation and contents furnished by Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 15,340 acre-ft (18.9 hm^3) May 22, 1952, elevation, 5,908.50 ft (1,800.911 m), from capacity table extended above elevation 5,908.00 ft (1,800.758 m), crest of spillway; minimum observed, 5 acre-ft (6,160 m^3) Oct. 2, 1959, elevation, 5,839.10 ft (1,779.758 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 15,169 acre-ft (18.7 hm^3) Feb. 9, elevation, 5,908.04 ft (1,800.771 m); minimum, 13,103 acre-ft (16.2 hm^3) Oct. 24, elevation, 5,902.85 ft (1,799.189 m).

MONTHEND ELEVATION, IN FEET NGVD, AND CONTENTS, IN ACRE-FEET, AT 2400, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

Date	Elevation	Contents	Change in contents
Sept. 30	5904.42	13710	
Oct. 31	5903.20	13237	-473
Nov. 30	5904.47	13729	+492
Dec. 31	5906.30	14457	+728
CAL YR 1978			-247
Jan. 31	5907.60	14987	+530
Feb. 28	5907.78	15062	+75
Mar. 31	5907.67	15016	-46
Apr. 30	5907.94	15128	+112
May 31	5907.75	15049	-79
June 30	5907.67	15016	-33
July 31	5907.43	14917	-99
Aug. 31	5906.95	14721	-196
Sept. 30	5904.05	13566	-1155
WTR YR 1979			-144

06410000 CASTLE CREEK BELOW DEERFIELD DAM, SD

LOCATION.--Lat 44°01'45", long 103°46'53", in NW¼SE¼ sec.20, T.1 N., R.3 E., Pennington County, Hydrologic Unit 10120110, on left bank 200 ft (61 m) upstream from Dutchman Creek, 1,100 ft (335 m) downstream from Deerfield Dam, and 12.5 mi (20.1 km) northwest of Hill City.

DRAINAGE AREA.--96 mi^2 (249 km^2), approximately.

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

GAGE.--Water-stage recorder. Datum of gage is 5,784.52 ft (1,763.122 m) National Geodetic Vertical Datum of 1929 (Bureau of Reclamation bench mark). Prior to Oct. 15, 1947, at site 400 ft (122 m) downstream at datum 0.23 ft (0.070 m) higher. Oct. 15, 1947, to Sept. 1, 1948, at site 550 ft (168 m) downstream at datum 1.77 ft (0.540 m) lower, and Sept. 2, 1948, to Nov. 2, 1971, at site 300 ft (91 m) upstream at datum 4.0 ft (1.22 m) higher.

REMARKS.--Records good. Flow completely regulated by Deerfield Reservoir 1,100 ft (335 m) upstream. (See station 06409500.) Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--33 years, 10.6 ft^3/s (0.300 m^3/s), 7,680 acre-ft/yr (9.47 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 200 ft^3/s (5.66 m^3/s) May 22, 1952; maximum gage height, 3.87 ft (1.180 m) May 23, 1952 (backwater from spillway overflow), site and datum then in use; no flow at times in 1948, 1950-60.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 66 ft^3/s (1.87 m^3/s) Feb. 9, gage height, 4.36 ft (1.329 m); minimum daily, 1.7 ft^3/s (0.048 m^3/s) Oct. 28, Nov. 11, 12, 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	28	1.9	2.2	2.2	1.9	15	13	16	16	16	16	21
2	28	1.8	2.2	2.2	1.8	15	15	18	15	16	16	21
3	28	1.8	2.2	2.2	1.8	15	17	20	15	16	16	21
4	28	1.9	2.2	2.2	1.9	15	16	22	15	16	15	21
5	28	1.9	2.3	2.2	1.9	15	16	22	16	16	15	22
6	24	1.9	2.3	2.2	1.8	15	17	22	17	16	16	22
7	22	1.9	2.2	2.2	1.7	15	18	22	17	16	16	25
8	22	1.9	2.2	2.2	2.0	16	19	22	17	16	16	27
9	22	2.0	2.2	2.2	36	17	19	22	16	16	16	27
10	22	1.8	2.3	2.2	37	18	19	22	16	16	16	27
11	22	1.7	2.3	2.2	20	18	19	18	16	16	16	27
12	22	1.7	2.3	2.2	15	18	19	16	16	16	14	27
13	22	2.0	2.3	2.2	14	18	21	16	16	16	12	28
14	22	2.2	2.4	2.2	13	18	22	16	16	16	12	28
15	23	2.2	2.3	2.2	14	18	22	16	16	16	13	28
16	23	2.2	2.2	2.2	13	15	22	16	16	16	14	28
17	22	2.2	2.2	2.2	12	13	25	16	16	16	14	28
18	23	2.2	2.2	2.1	13	14	30	16	16	17	14	28
19	23	2.2	2.2	2.1	16	17	29	16	16	17	14	28
20	24	2.2	2.2	2.1	15	17	26	16	16	17	14	28
21	25	2.2	2.2	2.1	15	17	24	16	16	17	14	28
22	25	2.1	2.2	2.1	14	17	24	16	15	17	14	28
23	25	2.1	2.2	2.1	15	15	18	16	15	17	14	28
24	10	2.1	2.1	2.1	16	14	14	16	15	17	15	29
25	1.8	2.1	2.2	2.1	15	14	14	16	16	17	15	29
26	1.8	2.1	2.2	2.1	15	14	14	16	16	17	14	29
27	1.8	2.2	2.1	2.1	15	14	15	16	16	17	14	29
28	1.7	2.2	2.2	2.1	15	14	15	16	16	16	14	29
29	1.8	2.2	2.1	2.0	---	14	15	16	16	16	14	29
30	1.8	2.2	2.2	1.9	---	13	15	16	16	16	18	29
31	1.8	---	2.1	1.9	---	13	---	16	---	16	21	---
TOTAL	575.5	61.1	68.7	66.3	352.8	481	572	546	477	506	462	799
MEAN	18.6	2.04	2.22	2.14	12.6	15.5	19.1	17.6	15.9	16.3	14.9	26.6
MAX	28	2.2	2.4	2.2	37	18	30	22	17	17	21	29
MIN	1.7	1.7	2.1	1.9	1.7	13	13	16	15	16	12	21
AC-FT	1140	121	136	132	700	954	1130	1080	946	1000	916	1580

CAL YR 1978 TOTAL 6311.1 MEAN 17.3 MAX 83 MIN 1.7 AC-FT 12520
WTR YR 1979 TOTAL 4967.4 MEAN 13.6 MAX 37 MIN 1.7 AC-FT 9850

06410500 RAPID CREEK ABOVE PACTOLA RESERVOIR, AT SILVER CITY, SD

LOCATION.--Lat 44°05'05", long 103°34'48", in SW¼SE¼ sec.36, T.2 N., R.4 E., Pennington County, Hydrologic Unit 10120110, on right bank 0.8 mi (1.3 km) west of Silver City and 3.0 mi (4.8 km) downstream from Slate Creek.

DRAINAGE AREA.--292 mi^2 (756 km^2).

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

GAGE.--Water-stage recorder. Datum of gage is 4,620.00 ft (1,408.176 m) National Geodetic Vertical Datum of 1929 (Bureau of Reclamation bench mark).

REMARKS.--Records good except those for winter periods, which are poor. Flow regulated by Deerfield Reservoir on Castle Creek since December 1945 (see station 06409500). Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--26 years, 41.1 ft^3/s (1.164 m^3/s), 29,780 acre-ft/yr (36.7 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,060 ft^3/s (58.3 m^3/s) May 15, 1965, gage height, 10.44 ft (3.182 m); from rating curve extended above 1,000 ft^3/s (28.3 m^3/s) on basis of slope-area measurement of peak flow; minimum daily, 4.0 ft^3/s (0.11 m^3/s) Jan. 20, 1962.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 173 ft^3/s (4.90 m^3/s) July 23; gage height, 5.38 ft (1.640 m); maximum gage height, 5.90 ft (1.798 m) Dec. 30 (backwater from ice); minimum daily discharge, 12 ft^3/s (0.34 m^3/s) Jan. 14.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used May 23 to July 1; stage-discharge relation affected by ice Nov. 11 to Apr. 9)

4.3	14	4.7	48
4.5	28	5.0	88

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	48	21	21	16	15	38	50	43	47	36	58	45
2	47	21	20	15	16	38	50	46	45	35	55	45
3	47	22	20	15	17	40	50	46	42	36	51	46
4	47	21	20	15	18	42	49	48	41	63	49	45
5	47	22	20	15	18	42	49	49	41	64	48	45
6	48	21	20	15	18	42	49	48	43	56	45	45
7	42	22	20	15	19	42	50	48	53	56	46	45
8	41	23	20	15	20	42	50	48	51	48	50	49
9	41	24	20	15	26	42	51	51	53	45	47	49
10	40	23	21	15	40	42	52	51	49	44	45	49
11	41	23	22	15	50	42	52	51	46	41	43	51
12	42	23	22	15	50	42	44	50	43	40	41	53
13	41	23	21	14	50	42	42	46	41	41	45	53
14	41	23	22	12	50	44	50	44	39	39	45	50
15	40	23	22	13	40	45	55	42	40	38	41	49
16	39	23	21	14	36	46	61	41	50	54	42	48
17	40	25	20	15	38	46	64	42	73	53	77	47
18	44	25	20	15	42	47	73	49	59	44	50	46
19	42	23	20	15	40	47	78	53	55	42	48	46
20	41	22	20	15	39	47	72	47	55	40	51	47
21	41	22	20	16	39	47	63	47	50	40	47	47
22	44	22	20	17	39	48	61	44	46	40	45	45
23	43	23	20	17	39	48	60	42	46	75	44	45
24	41	25	20	16	40	48	51	42	44	88	43	45
25	28	24	20	15	42	48	48	42	45	83	43	45
26	25	23	19	15	44	48	46	42	42	77	46	46
27	22	22	18	15	39	48	45	42	48	72	42	45
28	23	22	18	15	38	49	44	45	47	65	40	46
29	22	22	17	15	---	49	43	47	41	72	39	45
30	22	22	17	15	---	49	43	47	38	68	39	44
31	22	---	16	15	---	50	---	46	---	61	46	---
TOTAL	1192	680	617	465	962	1390	1595	1429	1413	1656	1451	1406
MEAN	38.5	22.7	19.9	15.0	34.4	44.8	53.2	46.1	47.1	53.4	46.8	46.9
MAX	48	25	22	17	50	50	78	53	73	88	77	53
MIN	22	21	16	12	15	38	42	41	38	35	39	44
AC-FT	2360	1350	1220	922	1910	2760	3160	2830	2800	3280	2880	2790

CAL YR 1978 TOTAL 21977 MEAN 60.2 MAX 396 MIN 16 AC-FT 43590
WTR YR 1979 TOTAL 14256 MEAN 39.1 MAX 88 MIN 12 AC-FT 28280

06411000 PACTOLA RESERVOIR NEAR SILVER CITY, SD

LOCATION.--Lat 44°04'20", long 103°29'17", in NE¼SW¼ sec.2, T.1 N., R.5 E., Pennington County, Hydrologic Unit 10120110, in outlet works of dam on Rapid Creek, 3.8 mi (6.1 km) east of Silver City.

DRAINAGE AREA.--319 mi^2 (826 km^2).

PERIOD OF RECORD.--August 1956 to current year (monthend contents only).

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (Bureau of Reclamation datum). Prior to Feb. 18, 1970, nonrecording gage at same site and datum.

REMARKS.--Reservoir formed by an earthfill dam completed August 1956. Storage began August 22, 1956. Conservation capacity, 54,960 acre-ft (67.8 hm^3) between elevations 4,456.1 ft (1,358.22 m) and 4,580.2 ft (1,396.04 m). Combined dead and inactive storage below elevation 4,456.1 ft (1,358.22 m) is 1,003 acre-ft (1.24 hm^3). Flood storage capacity, 43,050 acre-ft (53.1 hm^3) between elevations 4,580.2 ft (1,396.04 m) and 4,621.5 ft (1,408.63 m), crest of spillway. Surcharge capacity, 15,780 acre-ft (19.5 hm^3) between elevations 4,621.5 ft (1,408.63 m) and 4,633.7 ft (1,412.35 m), maximum pool elevation. Figures given herein represent contents above elevation 4,456.1 ft (1,358.22 m). Reservoir provides flood control and water for municipal and irrigation uses.

COOPERATION.--Records of elevations and contents furnished by Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 60,970 acre-ft (75.2 hm^3) May 19, 1964, elevation, 4,585.87 ft (1,397.773 m); minimum observed since initial filling, 42,122 acre-ft (51.9 hm^3) Sept. 30, 1974, elevation, 4,563.72 ft (1,391.022 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 54,481 acre-ft (67.2 hm^3) May 8, elevation, 4,579.64 ft (1,395.874 m); minimum, 52,019 acre-ft (64.1 hm^3) July 2, elevation, 4,576.71 ft (1,394.981 m).

MONTHEND ELEVATION, IN FEET NGVD, AND CONTENTS, IN ACRE-FEET, AT 2400, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

Date	Elevation	Contents	Change in contents
Sept. 30	4579.26	54157	
Oct. 31	4579.19	54097	-60
Nov. 30	4578.92	53867	-230
Dec. 31	4578.64	53631	-236
CAL YR 1978			+5604
Jan. 31	4578.27	53319	-312
Feb. 28	4577.90	53007	-312
Mar. 31	4578.58	53580	+573
Apr. 30	4579.50	54362	+782
May 31	4578.61	53605	-757
June 30	4576.81	52101	-1504
July 31	4578.02	53108	+1007
Aug. 31	4578.54	53546	+438
Sept. 30	4578.70	53681	+135
WTR YR 1979			+476

06411500 RAPID CREEK BELOW PACTOLA DAM, SD

LOCATION.--Lat 44°04'36", long 103°28'54", in SW¼NE¼ sec.2, T.1 N., R.5 E., Pennington County, Hydrologic Unit 10120110, on right bank 2,000 ft (610 m) downstream from Pactola Dam, 3.9 mi (6.3 km) upstream from Deer Creek and 13 mi (21 km) west of Rapid City.

DRAINAGE AREA.--320 mi^2 (829 km^2), approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1928 to September 1932 (combined records of Creek and Dakota Power and Light Co. flume), July 1946 to current year. Prior to October 1953, published as "near Pactola." Monthly discharge only for some periods, published in WSP 1309.

REVISED RECORDS.--WSP 1309: 1931(M).

GAGE.--Water-stage recorder; concrete control since Oct. 16, 1962. Datum of gage is 4,406.00 ft (1,342.949 m) National Geodetic Vertical Datum of 1929, Bureau of Reclamation bench mark. Apr. 19, 1929, to June 30, 1932, nonrecording gage at site 3,500 ft (1,070 m) upstream at different datum. July 24, 1946, to Aug. 24, 1947, nonrecording gage and Aug. 25, 1947, to Nov. 18, 1953, water-stage recorder, at site 2 mi (3 km) upstream at different datum.

REMARKS.--Records good. Flow regulated by dam on Castle Creek since December 3, 1945 (see station 06409500), and completely regulated by Pactola Reservoir 2,000 ft (610 m) upstream since Aug. 22, 1956 (see station 06411000).

AVERAGE DISCHARGE.--37 years, 44.5 ft^3/s (1.260 m^3/s), 32,240 acre-ft/yr (39.8 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,170 ft^3/s (61.5 m^3/s) May 22, 1952, gage height, 6.74 ft (2.054 m), site and datum then in use; no flow Oct. 11-17, 1962.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 101 ft^3/s (2.86 m^3/s) June 16; minimum daily, 22 ft^3/s (0.62 m^3/s) Nov. 16-20, Dec. 9, 10.

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

7.3	22	7.7	62
7.5	38	8.0	120

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	37	23	24	31	40	37	34	56	58	56	40
2	38	37	23	24	34	40	37	34	56	58	56	40
3	38	30	23	24	35	40	37	34	56	66	54	40
4	38	24	23	24	35	39	37	41	56	70	53	36
5	39	24	23	24	36	38	37	47	64	52	53	34
6	39	24	23	23	36	38	37	47	74	36	53	34
7	39	24	23	23	36	38	37	47	77	36	54	34
8	39	24	23	23	36	37	37	47	86	36	42	34
9	39	24	22	23	36	37	37	64	94	36	35	34
10	39	24	22	23	37	37	37	76	96	50	35	34
11	39	24	23	23	39	38	37	56	96	62	34	34
12	39	24	23	23	39	38	37	42	96	62	34	34
13	39	23	23	24	40	39	37	42	96	47	34	34
14	39	23	23	24	39	39	37	42	96	38	34	34
15	39	23	23	24	39	39	37	42	96	38	34	34
16	39	22	23	24	39	39	37	49	101	38	34	34
17	39	22	23	24	39	39	41	54	101	36	35	34
18	39	22	24	26	40	39	47	62	74	37	36	34
19	39	22	25	28	40	39	52	68	50	37	36	34
20	39	22	25	28	39	39	59	68	48	49	37	34
21	39	23	25	28	40	39	65	68	48	56	37	34
22	39	23	25	29	41	39	66	68	46	56	37	34
23	39	23	25	29	41	38	62	68	42	56	37	34
24	39	23	25	29	41	38	58	68	44	57	39	47
25	34	23	26	32	41	38	58	68	42	57	41	54
26	36	23	26	34	41	38	58	66	42	57	41	54
27	37	23	25	30	41	38	48	66	45	58	40	54
28	37	23	25	30	40	38	33	66	45	56	40	54
29	37	23	26	31	---	38	33	66	52	56	40	54
30	37	23	25	32	---	37	33	59	58	56	40	56
31	37	---	23	32	---	37	---	56	---	56	40	---
TOTAL	1187	729	739	819	1071	1190	1305	1715	2033	1563	1271	1175
MEAN	38.3	24.3	23.8	26.4	38.3	38.4	43.5	55.3	67.8	50.4	41.0	39.2
MAX	39	37	26	34	41	40	66	76	101	70	56	56
MIN	34	22	22	23	31	37	33	34	42	36	34	34
AC-FT	2350	1450	1470	1620	2120	2360	2590	3400	4030	3100	2520	2330

CAL YR 1978 TOTAL 20649 MEAN 56.6 MAX 386 MIN 12 AC-FT 40960
WTR YR 1979 TOTAL 14797 MEAN 40.5 MAX 101 MIN 22 AC-FT 29350

06411500 RAPID CREEK BELOW PACTOLA DAM, SD--Continued

WATER-QUALITY RECORDS

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

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1968 to current year.
WATER TEMPERATURES: October 1968 to September 1972, October 1973 to September 1975, October 1977 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 455 micromhos Feb. 3, 1979; minimum daily, 240 micromhos Mar. 28-30, 1971.
WATER TEMPERATURES: Maximum daily, 10.5°C July 27, Sept. 5-7, 14, 1978; minimum daily, 0.0°C on several days during December 1968.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 455 micromhos Feb. 3; minimum daily, 278 micromhos Dec. 15.
WATER TEMPERATURES: Maximum daily, 9.5°C Oct. 3, 23-24, 31, Nov. 2, 3; minimum daily, 1.0°C Dec. 31, Jan. 31.

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										
11...	1000	39	418	7.8	8.5	170	34	38	19	2.9
NOV										
08...	1200	24	360	8.5	10.0	170	42	38	19	3.3
DEC										
07...	1300	22	330	8.1	3.5	170	31	37	19	3.0
JAN										
04...	1230	24	375	7.9	3.0	170	23	37	19	3.1
FEB										
06...	1400	36	400	7.3	2.0	180	30	38	20	3.0
MAR										
12...	1140	38	414	8.5	4.5	180	34	42	19	3.5
APR										
16...	1500	37	405	8.0	6.0	180	24	39	20	3.1
MAY										
14...	1330	42	380	8.2	7.0	190	47	40	21	3.4
JUN										
14...	1500	97	338	8.2	6.0	180	35	40	20	3.0
JUL										
10...	1430	64	461	7.2	8.0	170	25	36	20	3.4
AUG										
14...	1215	34	370	8.1	7.0	180	33	41	19	3.7
SEP										
10...	1015	34	378	8.7	8.0	180	32	40	20	4.6

06411500 RAPID CREEK BELOW PACTOLA DAM, SD--Continued

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)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)
OCT									
11...	3	.1	2.6	170	0	140	40	1.2	.2
NOV									
08...	4	.1	2.5	160	0	130	37	1.3	.2
DEC									
07...	4	.1	2.8	170	0	140	36	1.4	.2
JAN									
04...	4	.1	2.8	180	0	150	41	1.2	.2
FEB									
06...	4	.1	2.6	180	0	150	38	1.2	.2
MAR									
12...	4	.1	2.3	180	1	150	39	1.7	.3
APR									
16...	4	.1	2.5	190	0	160	40	1.2	.3
MAY									
14...	4	.1	2.7	170	0	140	43	1.4	.2
JUN									
14...	3	.1	2.7	180	0	150	40	1.2	.2
JUL									
10...	4	.1	2.9	180	0	150	43	1.5	.3
AUG									
14...	7	.1	2.8	180	0	150	47	1.4	.2
SEP									
10...	5	.1	2.2	--	--	150	44	1.1	.3

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	340	350	320	290	310	342	350	355	340	380	375	390
2	340	340	282	285	308	340	350	385	335	380	378	390
3	335	345	288	290	455	342	350	385	340	380	375	395
4	340	350	288	285	310	340	355	383	335	385	375	395
5	340	---	280	290	308	342	355	381	335	385	375	390
6	340	350	281	290	306	340	360	380	340	390	375	400
7	---	345	289	285	308	340	355	379	330	390	380	390
8	---	350	280	290	310	340	355	380	330	395	375	390
9	---	350	281	290	310	340	355	381	330	390	395	---
10	---	---	280	290	308	340	355	382	---	390	380	400
11	---	345	282	290	310	360	355	381	---	390	380	400
12	---	---	280	295	308	345	355	---	---	385	378	450
13	340	---	281	---	310	---	355	---	---	380	375	400
14	340	---	282	---	310	330	335	378	---	390	380	400
15	340	---	278	300	310	332	355	375	335	385	375	---
16	---	---	285	300	---	340	355	373	335	370	375	---
17	---	---	285	300	310	335	350	378	330	385	375	400
18	---	---	280	300	310	335	355	372	330	390	380	400
19	335	345	281	300	310	335	355	371	350	390	380	400
20	340	350	281	300	310	338	350	372	335	385	375	400
21	340	350	282	300	310	338	350	372	330	385	375	400
22	335	340	285	300	310	335	350	373	330	380	378	400
23	335	350	289	300	310	338	350	375	335	390	380	400
24	335	350	285	380	310	338	---	371	335	385	380	400
25	340	---	---	300	310	340	---	370	340	380	380	400
26	340	350	285	300	312	340	345	371	---	385	372	400
27	340	360	285	300	310	342	340	370	340	390	375	400
28	335	350	288	300	310	335	340	371	335	390	375	400
29	335	350	283	300	---	338	---	371	340	385	380	400
30	335	350	290	300	---	340	---	370	340	380	380	400
31	335	---	290	300	---	340	---	369	---	390	375	---
MEAN	338	349	285	298	315	339	351	375	336	386	378	400

06411500 RAPID CREEK BELOW PACTOLA DAM, SD--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 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P) (00671)	BORON, DIS-SOLVED (UG/L AS B) (01020)
OCT 11...	9.6	198	.27	20.8	.11	.01	.01	.02	30
NOV 08...	10	191	.26	12.4	.11	.00	.00	.02	40
DEC 07...	9.0	192	.26	11.4	.00	.02	.01	.01	30
JAN 04...	9.0	214	.29	13.9	.11	.00	.00	3.7	30
FEB 06...	8.9	201	.27	19.5	.07	.01	.01	.01	40
MAR 12...	9.6	207	.28	21.2	.05	.00	.00	.00	40
APR 16...	9.4	210	.29	21.0	.11	.02	.01	.05	40
MAY 14...	8.0	204	.28	23.1	.00	.18	.01	.00	40
JUN 14...	7.9	204	.28	53.4	.01	.01	.00	.00	10
JUL 10...	9.2	205	.28	35.4	.01	.02	.01	.00	40
AUG 14...	9.4	214	.29	19.6	.11	.08	.04	.04	20
SEP 10...	9.3	212	.29	19.5	.03	.01	.00	.01	20

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	7.5	8.5	4.5	1.5	1.5	2.0	2.5	5.0	4.5	5.5	5.5	5.5
2	8.0	9.5	4.0	2.0	1.5	2.0	2.5	3.5	5.0	5.5	5.5	6.5
3	9.5	9.5	3.5	2.0	2.0	2.5	2.5	3.5	4.5	5.0	5.5	6.5
4	7.5	9.0	4.0	2.0	2.0	2.5	2.5	4.0	4.5	5.5	7.5	6.0
5	7.5	---	3.5	1.5	2.0	2.0	2.5	4.0	4.5	5.5	6.0	6.0
6	7.5	9.0	3.5	2.0	2.0	2.5	2.5	4.0	4.5	5.5	5.5	5.5
7	---	8.5	3.5	1.5	2.0	2.5	4.0	4.0	4.5	6.5	5.5	6.0
8	---	8.5	2.5	1.5	2.0	2.5	3.5	4.0	4.5	6.0	5.5	8.5
9	---	8.5	3.0	1.5	2.0	2.0	3.0	3.5	4.5	5.5	5.5	---
10	---	---	3.0	1.5	2.5	2.5	3.5	3.5	---	5.5	5.5	6.0
11	---	7.5	2.5	2.0	2.5	3.0	3.0	4.0	---	5.5	6.5	6.0
12	---	---	3.0	1.5	2.0	2.0	3.0	---	---	5.5	6.5	5.5
13	9.0	---	2.5	---	2.5	---	3.0	---	---	5.5	5.5	5.5
14	8.5	---	2.5	---	2.5	3.0	4.0	5.5	---	6.0	5.5	5.5
15	9.0	---	3.0	2.0	2.0	2.0	3.5	4.0	5.5	6.0	5.5	---
16	---	---	2.0	2.0	---	2.5	3.5	4.5	5.0	5.5	6.0	---
17	---	---	2.0	2.0	2.5	3.0	3.5	4.5	5.0	5.5	6.0	6.0
18	---	---	2.5	2.0	2.5	3.0	3.5	4.5	5.0	5.5	6.5	6.0
19	9.0	5.5	3.0	2.0	2.0	2.5	3.5	4.5	5.0	6.5	6.0	6.0
20	9.0	5.0	3.0	2.0	2.5	2.0	3.5	4.5	5.0	6.5	5.5	5.5
21	8.0	4.5	2.5	2.0	2.0	2.5	4.0	4.5	5.0	6.0	5.5	6.0
22	8.0	5.5	2.5	2.0	2.0	2.5	4.0	4.5	5.0	6.5	5.5	6.5
23	9.5	6.0	2.5	1.5	2.0	2.5	3.5	4.5	5.5	5.5	5.5	6.0
24	9.5	5.0	3.0	1.5	2.0	2.5	---	4.5	5.5	5.5	5.5	5.5
25	9.0	---	---	2.0	2.5	3.0	---	4.5	5.0	5.5	6.0	6.0
26	8.0	5.5	2.5	2.0	2.0	2.5	4.0	5.0	---	5.5	6.5	6.0
27	9.0	5.0	2.0	1.5	2.0	2.5	4.0	5.0	5.5	5.5	5.5	6.0
28	8.5	5.0	2.5	1.5	2.0	3.0	3.5	5.5	5.0	5.5	5.5	6.0
29	8.5	4.5	2.0	1.5	---	2.5	---	4.5	5.0	6.0	5.5	7.0
30	8.5	4.5	1.5	1.5	---	2.5	---	4.5	5.5	5.5	6.5	6.0
31	9.5	---	1.0	1.0	---	3.0	---	4.5	---	5.5	6.0	---
MEAN	8.5	6.5	3.0	1.5	2.0	2.5	3.5	4.5	5.0	5.5	6.0	6.0

06412500 RAPID CREEK ABOVE CANYON LAKE, NEAR RAPID CITY, SD

LOCATION.--Lat 44°03'04", long 103°18'47", in NE¼NE¼ sec.18, T.1 N., R.7 E., Pennington County, Hydrologic Unit 10120110, on right bank at bridge on State Highway 40, 1.0 mi (1.6 km) southwest of city limits of Rapid City and 2.8 mi (4.5 km) downstream from Victoria Creek.

DRAINAGE AREA.--371 mi^2 (961 km^2).

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

GAGE.--Water-stage recorder. Concrete control Oct. 17, 1962, to Nov. 2, 1967 (destroyed). Datum of gage is 3,405.39 ft (1,037.963 m) National Geodetic Vertical Datum of 1929, levels by Corps of Engineers. Prior to Oct. 6, 1947, nonrecording gage, Oct. 6, 1947, to Nov. 2, 1967, and Oct. 1, 1968, to Sept. 30, 1976, water-stage recorder all at datum 2.0 ft (0.61 m) higher. Nov. 3, 1967, to Sept. 30, 1968, nonrecording gage at site 0.2 mi (0.3 km) downstream at datum 1.12 ft (0.341 m) lower.

REMARKS.--Records good except those for winter periods, which are poor. Flow regulated by dam on Castle Creek since December 1945 (see station 06409500) and by Pactola Reservoir 21 mi (34 km) upstream since August 1956 (see station 06411000). Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--33 years, 39.7 ft^3/s (1.124 m^3/s), 28,760 acre-ft/yr (35.5 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, 31,200 ft^3/s (884 m^3/s) June 9, 1972, gage height, 17.77 ft (5.416 m), present datum, from floodmarks, from rating curve extended above 1,300 ft^3/s (36.8 m^3/s) on basis of slope-area measurement of peak flow; no flow at times in 1950-51, 1957-60, 1962-63.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 150 ft^3/s (4.25 m^3/s) June 17, gage height, 3.85 ft (1.173 m); minimum daily, 7.3 ft^3/s (0.21 m^3/s) Nov. 20.

Rating table (gage height, in feet, and discharge, in cubic feet per second
(Stage-discharge relation affected by ice Dec. 5 to Mar. 4, Mar. 10, 11)

2.9	5.6	3.5	63
3.1	18	4.0	148

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	34	28	18	10	19	29	30	29	67	63	59	38
2	34	28	11	11	20	30	30	28	64	63	58	38
3	34	28	17	12	23	31	30	28	67	64	56	38
4	34	21	18	11	26	33	30	28	67	92	55	37
5	34	18	16	11	30	35	29	36	69	83	55	31
6	35	18	13	11	29	34	29	37	86	48	55	30
7	35	18	11	12	27	36	29	38	94	40	58	29
8	35	18	10	12	25	35	29	39	95	38	59	30
9	34	18	10	12	27	34	29	48	106	38	50	30
10	32	19	15	12	30	36	30	66	111	37	36	30
11	32	18	18	12	29	37	31	63	111	60	35	31
12	32	18	20	11	29	38	32	39	115	66	35	31
13	32	19	17	11	30	35	32	38	117	63	34	31
14	32	15	18	10	35	35	32	37	120	42	34	31
15	32	18	18	11	25	35	31	34	120	39	34	31
16	34	18	18	14	20	36	32	36	124	45	34	30
17	35	20	18	16	25	34	32	42	132	39	34	29
18	35	20	18	18	30	32	36	48	117	38	34	29
19	34	16	18	20	32	32	39	60	74	38	37	29
20	35	7.3	18	22	30	32	46	63	66	40	37	29
21	34	8.4	18	25	29	32	58	63	62	63	35	29
22	32	16	18	24	28	32	59	64	62	62	35	29
23	32	20	18	22	27	32	60	66	55	60	35	29
24	32	20	18	20	27	32	56	66	56	63	35	30
25	34	19	18	20	30	32	55	67	58	60	36	45
26	27	19	17	20	35	30	56	69	54	60	39	48
27	28	19	14	19	32	30	55	71	54	59	39	49
28	28	18	13	19	29	30	37	73	54	63	39	48
29	27	18	11	18	---	30	29	76	54	64	38	48
30	28	17	10	18	---	30	29	71	63	59	37	48
31	28	---	10	18	---	30	---	67	---	59	37	---
TOTAL	1004	557.7	485	482	778	1019	1132	1590	2494	1708	1294	1035
MEAN	32.4	18.6	15.6	15.5	27.8	32.9	37.7	51.3	83.1	55.1	41.7	34.5
MAX	35	28	20	25	35	38	60	76	132	92	59	49
MIN	27	7.3	10	10	19	29	29	28	54	37	34	29
AC-FT	1990	1110	962	956	1540	2020	2250	3150	4950	3390	2570	2050

CAL YR 1978 TOTAL 21484.1 MEAN 58.9 MAX 433 MIN 3.5 AC-FT 42610
WTR YR 1979 TOTAL 13578.7 MEAN 37.2 MAX 132 MIN 7.3 AC-FT 26930

06414000 RAPID CREEK AT RAPID CITY, SD

LOCATION.--Lat 44°05'09", long 103°14'31", in NE¼SE¼SW¼ (corrected) sec.35, T.2 N., R.7 E., Pennington County, Hydrologic Unit 10120110, on left bank 300 ft (91 m) upstream from Oskosh Street in Rapid City and 3.6 mi (5.8 m) downstream from Canyon Lake Dam.

DRAINAGE AREA.--410 mi^2 (1,060 km^2), approximately.

PERIOD OF RECORD.--June 1903 to November 1906, July 1942 to current year. Monthly discharge only for some periods, published in WSP 1309.

GAGE.--Water-stage recorder. Datum of gage is 3,230.00 ft (984.504 m) National Geodetic Vertical Datum of 1929. Prior to Nov. 30, 1906, nonrecording gage at site 1 mi (1.6 km) downstream at different datum, and June 10, 1972, to Nov. 1, 1972, nonrecording gage at site 800 ft (244 m) downstream at datum 0.80 ft (0.244 m) higher. July 1942 to June 9, 1972, water-stage recorder at site 300 ft (91 m) downstream at datum 0.80 ft (0.244 m) higher (destroyed by flood).

REMARKS.--Records good except those for winter periods, which are fair. Several small diversions above station to municipal park pools and for irrigation of about 320 acres (130 hm^3). Flow regulated by Pactola Reservoir 25.4 mi (40.9 km) upstream since Aug. 22, 1956 (see station 06411000). Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--40 years, 62.1 ft^3/s (1.759 m^3/s), 44,990 acre-ft/yr (55.5 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 50,000 ft^3/s (1,420 m^3/s) June 9, 1972, gage height, 19.66 ft (5.992 m), from floodmarks, on basis of slope-area measurement of peak flow; minimum, 1.6 ft^3/s (0.045 m^3/s) Apr. 20, 1962.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 12, 13, 1920, reached a stage of 14.4 ft (4.39 m) present datum, from floodmarks.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 451 ft^3/s (12.8 m^3/s) Aug. 7, gage height, 5.28 ft (1.609 m); minimum daily discharge, 26 ft^3/s (0.74 m^3/s) July 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	48	54	38	28	38	48	45	35	73	66	75	45
2	50	53	33	30	40	45	45	34	64	57	68	44
3	48	53	36	32	42	45	49	32	57	46	60	42
4	48	45	38	31	43	45	48	33	52	119	60	38
5	48	40	42	30	46	45	48	41	52	103	68	32
6	48	37	38	32	50	55	46	44	78	68	57	31
7	49	38	33	32	53	55	48	44	102	53	86	32
8	46	38	36	34	57	55	48	57	98	46	211	31
9	46	40	38	36	54	52	48	79	109	41	62	28
10	43	43	37	37	53	48	48	96	107	26	55	37
11	44	42	41	38	52	52	61	93	94	46	50	48
12	48	41	38	33	50	54	54	64	94	71	49	48
13	48	40	37	30	50	52	52	62	86	78	52	48
14	50	34	35	28	48	49	53	58	84	54	54	48
15	50	36	36	29	48	49	52	54	98	49	54	41
16	49	37	36	31	47	49	53	41	137	73	50	32
17	48	42	38	32	46	52	48	52	144	55	52	32
18	52	42	40	33	51	52	55	73	123	48	50	32
19	52	34	42	33	54	49	60	86	89	33	73	32
20	50	30	37	35	52	48	66	86	70	34	58	31
21	50	30	37	37	49	49	81	83	88	62	54	33
22	52	36	37	38	49	52	86	75	111	62	55	36
23	53	40	40	36	45	49	84	75	68	58	55	33
24	54	42	38	37	46	46	78	75	67	82	53	31
25	54	40	40	40	50	44	76	76	58	83	55	48
26	50	41	34	40	53	44	70	76	57	81	57	53
27	52	42	31	39	52	43	75	73	67	83	55	54
28	52	38	33	38	50	41	53	81	60	89	54	54
29	54	38	31	39	---	44	43	91	57	96	48	54
30	53	36	30	40	---	46	34	91	62	81	40	55
31	54	---	29	40	---	46	---	78	---	76	43	---
TOTAL	1543	1202	1129	1068	1368	1503	1707	2038	2506	2019	1913	1203
MEAN	49.8	40.1	36.4	34.5	48.9	48.5	56.9	65.7	83.5	65.1	61.7	40.1
MAX	54	54	42	40	57	55	86	96	144	119	211	55
MIN	43	30	29	28	38	41	34	32	52	26	40	28
AC-FT	3060	2380	2240	2120	2710	2980	3390	4040	4970	4000	3790	2390

CAL YR 1978 TOTAL 26044.7 MEAN 71.4 MAX 408 MIN 8.6 AC-FT 51660
WTR YR 1979 TOTAL 19199.0 MEAN 52.6 MAX 211 MIN 26 AC-FT 38080

06421500 RAPID CREEK NEAR FARMINGDALE, SD

LOCATION.--Lat 43°56'31", long 102°51'12", in SW¼SW¼SW¼ sec.19, T.1 S., R.11 E., Pennington County, Hydrologic Unit 10120110, on right bank at downstream side of bridge, 2 mi (3.2 km) southeast of Farmingdale and 4.8 mi (7.7 km) downstream from Antelope Creek.

DRAINAGE AREA.--602 mi^2 (1,559 km^2).

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Altitude of gage is 2,700 ft (823 m), from topographic map. Prior to Sept. 19, 1947, nonrecording gage at same site and datum.

REMARKS.--Records good except those for winter periods, which are poor. Flow regulated by Pactola Reservoir 67 mi (108 km) upstream since August 22, 1956 (see station 06411000). Diversions for irrigation of about 10,000 acres (4,050 hm^2) above station.

AVERAGE DISCHARGE.--33 years, 55.4 ft^3/s (1.569 m^3/s), 40,140 acre-ft/yr (49.5 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,320 ft^3/s (207 m^3/s) June 10, 1972, gage height, 11.85 ft (3.612 m), from floodmarks, from rating curve extended above 400 ft^3/s (11.3 m^3/s) on basis of contracted-opening and flow-over-road measurement of peak flow; no flow at times in 1949, 1952-56, 1958-63, 1969-71.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 444 ft^3/s (12.6 m^3/s) July 4, gage height, 7.53 ft (2.295 m); maximum gage height, 9.28 ft (2.829 m) Mar. 8 (backwater from ice); minimum daily discharge, 6.1 ft^3/s (0.17 m^3/s) May 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	30	55	54	28	36	50	100	32	15	48	55	19
2	30	59	52	25	38	50	94	27	13	44	58	19
3	32	59	54	28	40	50	99	25	12	49	53	17
4	37	60	56	27	42	55	90	23	10	241	46	13
5	39	47	54	26	44	70	73	20	7.0	127	45	15
6	40	40	50	28	46	80	71	22	8.0	89	45	18
7	42	40	49	28	44	90	69	20	11	70	55	14
8	37	43	48	28	44	80	66	10	34	54	100	13
9	35	50	48	30	44	70	61	11	19	49	79	12
10	33	50	50	30	46	67	61	31	31	44	52	12
11	34	49	50	32	48	70	62	37	30	33	45	11
12	36	50	52	29	46	80	78	38	19	28	41	14
13	43	50	50	27	46	70	66	24	11	50	38	17
14	43	48	48	22	48	70	60	21	13	64	43	19
15	47	49	50	24	46	75	58	14	15	46	40	20
16	50	50	48	26	42	75	56	9.7	24	43	41	19
17	54	50	44	27	30	75	57	6.5	154	85	40	17
18	48	48	44	28	35	80	54	6.1	118	55	40	17
19	53	46	42	31	40	85	54	10	102	46	39	15
20	49	44	42	34	40	88	58	18	82	43	82	13
21	50	46	40	37	38	90	55	15	58	39	47	9.3
22	55	48	38	35	38	90	62	16	124	46	41	8.9
23	62	50	38	33	40	90	65	10	183	51	40	12
24	59	52	38	35	45	94	72	9.7	72	52	39	8.2
25	59	54	38	38	50	98	65	11	56	63	32	7.2
26	60	52	36	38	55	105	56	6.5	50	70	33	8.1
27	58	50	34	38	52	118	54	8.0	41	59	33	8.1
28	56	50	34	38	52	120	53	9.5	50	64	34	13
29	58	52	34	38	---	118	50	12	46	82	33	16
30	56	54	32	38	---	114	38	14	46	95	28	15
31	52	---	30	38	---	108	---	17	---	65	24	---
TOTAL	1437	1495	1377	964	1215	2575	1957	534.0	1454.0	1994	1421	419.8
MEAN	46.4	49.8	44.4	31.1	43.4	83.1	65.2	17.2	48.5	64.3	45.8	14.0
MAX	62	60	56	38	55	120	100	38	183	241	100	20
MIN	30	40	30	22	30	50	38	6.1	7.0	28	24	7.2
AC-FT	2850	2970	2730	1910	2410	5110	3880	1060	2880	3960	2820	833

CAL YR 1978 TOTAL 28988.0 MEAN 79.4 MAX 430 MIN 10 AC-FT 57500
WTR YR 1979 TOTAL 16842.8 MEAN 46.1 MAX 241 MIN 6.1 AC-FT 33410

06421500 RAPID CREEK NEAR FARMINGDALE, SD--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1953, 1956-58, 1969 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1955 to September 1958, October 1968 to current year.
WATER TEMPERATURES: October 1955 to September 1958, October 1968 to September 1969, October 1971 to September 1975, October 1978 to September 1979.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,650 micromhos Oct. 16, 1956; minimum daily, 360 micromhos June 6, 1978.
WATER TEMPERATURES: Maximum daily, 34.0°C June 12, 1956; minimum daily, 0.0°C on many days during winter periods.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,260 micromhos Sept. 13, 30; minimum daily, 550 micromhos Feb. 9, 21.
WATER TEMPERATURES: Maximum daily, 28.0°C Aug. 5; minimum daily, 0.0°C Dec. 9, 31.

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										
11...	1400	34	1050	8.7	14.0	390	180	93	38	49
NOV										
07...	1400	42	840	8.5	8.0	350	180	86	33	33
DEC										
05...	1330	54	1100	7.9	.0	380	380	92	36	40
JAN										
02...	1230	25	1300	7.6	.0	450	210	110	42	57
FEB										
05...	1545	44	860	7.3	.0	320	140	77	32	29
MAR										
23...	1430	91	850	7.6	.0	350	170	88	31	44
APR										
17...	1315	59	790	7.8	14.5	350	150	79	36	40
MAY										
18...	0915	6.0	1050	8.7	14.0	430	210	100	43	67
JUN										
13...	1350	9.5	1040	8.1	26.5	420	210	100	42	59
JUL										
10...	1055	42	908	8.1	25.0	350	150	79	38	48
AUG										
15...	0900	38	1020	8.3	16.5	450	250	110	43	60
SEP										
10...	1410	8.6	--	8.6	8.6	440	220	100	47	64

06421500 RAPID CREEK NEAR FARMINGDALE, SD--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 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P) (00671)	BORON, DIS-SOLVED (UG/L AS B) (01020)
OCT									
11...	.4	597	.81	54.8	1.3	.86	.81	.74	180
NOV									
07...	3.0	505	.69	57.3	1.0	.84	.77	--	140
DEC									
05...	7.2	586	.80	85.4	1.9	.99	.94	.95	130
JAN									
02...	11	677	.40	20.0	1.7	1.3	1.2	.10	150
FEB									
05...	10	462	.63	54.9	.86	.86	.84	.70	120
MAR									
23...	7.5	521	.71	128	.47	.75	.72	.67	110
APR									
17...	4.0	495	.67	78.9	.77	.81	.63	.53	150
MAY									
18...	.9	684	.93	11.1	.00	.27	.25	.17	140
JUN									
13...	7.1	647	.88	16.6	.81	.34	.30	.15	200
JUL									
10...	9.5	561	.76	63.6	.00	.56	.38	.46	260
AUG									
15...	11	731	.99	75.0	2.2	.57	.50	.46	230
SEP									
10...	3.3	729	.99	16.9	.24	.38	.30	.27	240

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	15.0	10.0	1.0		2.0	2.0	1.0	---	13.0	23.5	22.5	24.5
2	12.5	5.0	1.0		2.5	2.0	1.5	---	17.5	23.0	22.5	19.0
3	10.0	2.0	.5		1.5	2.0	1.5	---	15.5	23.0	25.0	24.5
4	11.0	6.0	2.0		2.0	3.0	2.0	---	18.5	23.0	25.0	21.0
5	9.5	5.5	1.5		2.0	2.0	1.0	---	20.0	23.0	28.0	24.5
6	7.5	2.0	.5		2.5	2.0	2.0	---	19.0	22.5	26.0	19.0
7	9.5	2.5	1.0		2.5	2.0	2.0	---	16.5	24.5	27.0	19.5
8	10.0	4.5	1.0		2.0	2.5	2.0	---	14.5	25.0	23.5	19.5
9	10.0	2.5	.0		3.0	3.0	---	8.0	14.0	23.0	24.0	20.5
10	9.5	2.0	1.0		2.5	1.5	---	6.5	18.5	26.5	23.5	21.5
11	12.5	.5	1.0		2.0	3.5	---	6.0	26.0	27.0	21.0	16.5
12	11.5	.5	2.0		1.5	2.0	---	8.5	28.0	27.0	21.0	17.0
13	10.0	.5	2.0		3.0	2.0	---	11.5	22.5	27.5	21.0	16.5
14	6.0	.0	2.5		2.0	3.0	---	13.5	25.0	24.5	20.0	16.5
15	10.0	---	2.5		1.0	3.0	---	---	24.5	23.0	18.5	17.0
16	7.5	2.5	2.5		2.0	3.0	---	---	20.5	21.0	21.0	21.5
17	9.0	1.5	3.0		2.0	3.0	---	---	15.5	23.0	23.0	15.0
18	9.5	2.0	1.5		1.5	2.5	---	---	16.0	22.0	22.0	14.0
19	8.0	1.0	2.5		2.0	2.0	---	14.0	16.0	24.5	18.0	14.5
20	20.0	.5	.5		2.0	2.0	---	16.0	15.0	23.0	19.0	15.5
21	10.0	1.0	2.0		1.5	3.0	---	15.0	18.5	25.0	21.5	13.0
22	10.0	1.5	1.0		2.5	2.0	---	17.0	20.5	25.5	20.5	14.0
23	6.0	3.0	1.0		2.5	2.5	---	14.5	20.5	26.5	19.0	14.0
24	7.5	1.5	2.5		2.0	2.5	---	15.0	22.0	25.0	19.5	14.0
25	8.0	1.5	1.0		1.0	1.0	---	18.0	19.5	23.5	20.5	14.5
26	6.0	1.5	.5		2.0	1.0	---	16.5	24.0	23.0	19.5	17.0
27	5.5	1.5	1.5		2.0	1.5	---	18.5	21.0	23.0	18.5	15.5
28	6.5	2.0	1.5		1.5	1.0	---	18.0	24.0	24.5	20.0	14.0
29	9.5	2.0	1.5		---	1.5	---	17.5	25.0	23.5	18.5	14.5
30	7.0	1.5	1.0		---	2.0	---	13.5	24.5	23.5	26.0	15.0
31	5.5	---	.0		---	1.0	---	13.0	---	24.5	21.0	---
MEAN	9.5	2.5	1.5		2.0	2.0	1.5	13.5	20.0	24.0	22.0	17.5

06421500 RAPID CREEK NEAR FARMINGDALE, SD--Continued

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)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)
OCT									
11...	21	1.1	6.6	250	--	210	230	48	.6
NOV									
07...	17	.8	5.0	200	3	170	210	28	.4
DEC									
05...	18	.9	5.9	240	0	0	240	38	.5
JAN									
02...	21	1.2	7.6	290	0	240	240	58	.5
FEB									
05...	16	.7	4.8	230	0	190	160	29	.4
MAR									
23...	21	1.0	4.6	220	0	180	190	43	.4
APR									
17...	20	.9	5.1	240	0	200	180	27	.5
MAY									
18...	25	1.4	6.9	240	9	210	300	38	.6
JUN									
13...	22	1.2	8.1	260	0	210	270	32	.5
JUL									
10...	22	1.1	6.2	250	0	210	220	36	.5
AUG									
15...	32	1.2	6.9	250	0	210	320	46	.5
SEP									
10...	35	1.3	6.2	--	--	220	330	44	.6

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	790	750	990	660	790	715	865	1070	1020	760	1080
2	1040	800	920	970	650	1200	745	820	1120	1020	900	1000
3	960	830	880	930	680	770	750	893	1160	990	860	1020
4	890	840	850	890	650	880	745	945	1150	960	900	1100
5	860	840	810	890	660	760	765	1030	1140	970	870	1100
6	900	780	770	860	600	720	810	1060	1160	810	820	1160
7	860	820	790	900	570	710	810	1050	1200	830	860	1090
8	860	870	840	890	560	690	810	1010	1400	890	820	1090
9	900	830	870	900	550	750	830	1100	1200	940	710	1160
10	870	870	950	830	560	775	800	1100	970	990	650	1150
11	855	870	960	820	580	830	765	1040	980	960	830	1140
12	840	890	790	780	570	770	770	860	960	1080	910	1220
13	905	850	730	800	650	680	760	870	950	1060	990	1260
14	905	860	750	790	590	730	790	885	1100	1090	1100	1240
15	890	860	830	730	630	760	820	860	1100	900	1060	1140
16	890	880	820	790	630	795	830	885	1010	910	980	1160
17	875	890	790	730	635	725	810	990	760	880	960	1110
18	800	1050	880	750	670	720	790	1080	740	1020	1040	1160
19	815	1040	820	760	700	780	850	1100	670	840	1040	1110
20	810	980	750	760	590	720	830	1150	850	880	1020	1120
21	905	890	760	770	550	780	830	1120	910	970	920	1090
22	855	940	800	750	580	790	830	1150	910	1020	990	1100
23	850	950	780	750	810	770	755	1080	990	1060	840	1150
24	810	940	790	740	610	800	680	---	740	1150	930	1140
25	775	790	780	780	785	810	665	1120	890	970	960	1150
26	820	790	780	760	650	800	660	1180	990	950	1000	1130
27	805	830	820	760	590	820	720	1160	1060	840	990	1120
28	805	780	800	800	570	730	720	1320	1020	890	985	1380
29	830	790	890	770	---	790	740	1330	1040	720	950	1270
30	820	840	920	760	---	810	770	1300	960	720	880	1260
31	780	---	940	710	---	780	---	1280	---	720	930	---
MEAN	864	866	826	810	626	782	772	1050	1010	937	918	1150

06422398 BOXELDER CREEK AT NEMO, SD

LOCATION.--Lat 44°11'48", long 103°30'14", in NE¼NW¼ sec.27, T.3 N., R.5 E., Lawrence County, Hydrologic Unit 10120111, at center span on downstream side of county highway bridge at Nemo and 2.5 mi (4.0 km) downstream from South Boxelder Creek.

PERIOD OF RECORD.--May 1978 to current year (no winter record).

GAGE.--Water-stage recorder. Altitude of gage is 4,610 ft (1,410 m), from topographic map.

REMARKS.--Records good except those for periods of no gage-height record, which are poor.

EXTREMES FOR CURRENT PERIOD.--May to September 1978: Maximum discharge during period, 519 ft^3/s (14.7 m^3/s) May 11, gage height, 61.80 ft (18.837 m); minimum daily discharge, 5.2 ft^3/s (0.15 m^3/s) Aug. 21.

Water year 1979: Maximum discharge, 118 ft^3/s (3.34 m^3/s) July 4, gage height, 60.99 ft (18.590 m); minimum daily discharge, 1.6 ft^3/s (0.04 m^3/s) June 14.

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								---	41	25	11	19
2								---	38	21	9.7	18
3								---	35	15	9.3	17
4								---	34	13	8.7	17
5								---	33	12	8.1	16
6								---	32	12	7.8	15
7								---	29	14	7.2	15
8								---	28	19	6.8	14
9								---	26	16	6.4	14
10								---	25	14	6.6	14
11								---	25	12	6.9	15
12								179	24	11	6.5	16
13								---	23	10	5.8	15
14								---	21	10	6.8	14
15								---	20	9.7	10	13
16								95	21	9.6	7.7	13
17								90	28	12	6.5	12
18								141	24	10	6.5	14
19								106	20	9.3	6.4	14
20								92	18	10	5.5	13
21								87	17	24	5.2	13
22								81	17	30	6.7	12
23								73	16	16	11	11
24								66	15	12	15	11
25								59	15	11	18	10
26								54	14	9.9	19	9.8
27								50	13	9.5	41	9.3
28								50	13	9.1	41	10
29								46	13	9.6	27	9.5
30								56	14	11	24	8.8
31								44	---	10	20	---
TOTAL	---	---	---	---	---	---	---	---	692	416.7	378.1	402.4
MEAN	---	---	---	---	---	---	---	---	23.1	13.4	12.2	13.4
MAX	---	---	---	---	---	---	---	---	41	30	41	19
MIN	---	---	---	---	---	---	---	---	13	9.1	5.2	8.8
AC-FT	---	---	---	---	---	---	---	---	1370	827	750	798

06422398 BOXELDER CREEK AT NEMO, SD--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	8.8			---			8.1	13	4.4	3.5	4.4	3.1
2	8.7			---			8.0	9.6	3.8	3.4	4.4	3.1
3	8.5			---			9.9	8.8	3.1	4.1	4.1	3.0
4	8.1			---			16	8.4	2.8	31	4.1	3.0
5	8.2			5.4			7.6	8.0	2.3	11	3.8	2.9
6	8.1			---			8.0	7.4	2.1	8.3	3.8	2.9
7	7.8			---			11	6.5	3.9	7.5	4.4	2.9
8	7.8			---			11	6.5	3.8	6.6	5.2	2.9
9	7.8			---			9.9	8.4	3.7	6.2	5.0	2.9
10	7.5			---			10	7.4	3.5	5.8	4.7	3.0
11	7.2			---			10	6.9	2.8	5.7	4.4	2.9
12	7.5			---			8.2	9.6	2.5	5.6	4.1	2.9
13	7.7			---			6.1	7.8	2.0	5.2	4.2	2.9
14	7.4			---			10	6.7	1.6	5.2	4.4	2.9
15	7.2			---			17	5.6	1.8	4.8	4.4	2.9
16	7.1			---			18	5.3	4.3	6.8	4.3	2.8
17	7.2			---			17	5.0	13	8.0	4.5	2.8
18	7.8			---			17	5.7	7.4	6.0	4.8	2.8
19	8.1			---			17	6.9	5.9	5.2	5.2	2.8
20	7.9			---			15	5.7	7.3	5.0	5.4	2.8
21	7.6			---			13	5.1	5.9	5.4	4.6	2.8
22	7.8			---			13	4.1	5.0	4.9	4.4	2.8
23	7.8			---			11	3.7	4.6	4.6	4.1	2.8
24	7.7			---			10	3.6	6.5	4.5	4.0	2.8
25	7.5			---			10	3.6	7.1	4.6	3.8	2.8
26	7.6			---			9.5	3.7	5.5	4.6	3.7	2.9
27	7.5			---			9.3	3.4	5.0	4.6	3.7	2.9
28	7.4			---			12	3.7	5.5	4.8	3.6	2.9
29	7.2			---			10	3.9	5.3	5.0	3.6	2.9
30	7.1			---			9.0	4.1	4.0	5.0	3.6	2.9
31	6.9			---			---	4.2	---	4.6	3.2	---
TOTAL	238.5	---	---	---	---	---	341.6	192.3	136.4	197.5	131.9	86.7
MEAN	7.69	---	---	---	---	---	11.4	6.20	4.55	6.37	4.25	2.89
MAX	8.8	---	---	---	---	---	18	13	13	31	5.4	3.1
MIN	6.9	---	---	---	---	---	6.1	3.4	1.6	3.4	3.2	2.8
AC-FT	473	---	---	---	---	---	678	381	271	392	262	172

06422500 BOXELDER CREEK NEAR NEMO, SD

LOCATION.--Lat 44°08'38", long 103°27'16", in SE¼SE¼ sec.12, T.2 N., R.5 E., Lawrence County, Hydrologic Unit 10120111, on right bank at ranch 0.2 mi (0.3 km) upstream from county line, 0.9 mi (1.4 km) downstream from Jim Creek and 4.5 mi (7.2 km) southeast of Nemo.

DRAINAGE AREA.--96 mi^2 (249 km^2), approximately.

PERIOD OF RECORD.--July 1945 to July 1947, May 1966 to current year.

GAGE.--Water-stage recorder. Datum of gage is 4,320.27 ft (1,316.818 m) National Geodetic Vertical Datum of 1929. July 1945 to July 1947 nonrecording gage at site 100 ft (30 m) upstream at different datum. May 17, 1966, to June 9, 1972, water-stage recorder (destroyed by flood) and June 10, 1972, to Aug. 8, 1972, nonrecording gage, both at site 100 ft (30 m) upstream at datum 2.00 ft (0.610 m) higher.

REMARKS.--Records good except those for winter periods, which are poor. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--14 years (water years 1946, 1967-79), 20.9 ft^3/s (0.592 m^3/s), 15,140 acre-ft/yr (18.7 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, 30,100 ft^3/s (852 m^3/s) June 9, 1972, gage height, 20.4 ft (6.22 m), site and datum then in use, 22.0 ft (6.71 m), present site and datum, from floodmarks, from rating curve extended above 600 ft^3/s (17.0 m^3/s) on basis of slope-area measurement of peak flow; minimum daily, 0.70 ft^3/s (0.020 m^3/s) Dec. 30, 1968.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of 1911 reached a stage of about 16 ft (4.9 m), present datum.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 97 ft^3/s (2.75 m^3/s) July 4, gage height, 2.78 ft (0.847 m); no peak above base of 100 ft^3/s (2.83 m^3/s); maximum gage height, 3.23 ft (0.985 m) Jan. 9 (backwater from ice); minimum daily discharge, 3.0 ft^3/s (0.085 m^3/s) Jan. 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	7.9	8.2	7.2	3.0	4.5	8.0	11	13	7.4	7.4	7.2	5.2
2	7.9	8.1	7.0	3.5	4.5	8.0	10	12	6.7	7.2	7.2	5.0
3	7.8	7.9	6.5	3.5	4.8	8.0	11	10	6.2	8.0	6.9	4.8
4	7.9	7.9	7.0	3.5	5.0	8.5	11	10	5.8	39	6.8	4.6
5	7.9	7.9	6.5	3.5	5.3	9.0	11	9.9	5.4	19	6.6	4.6
6	7.9	7.4	6.0	3.7	5.4	9.0	10	9.7	5.4	14	6.3	4.4
7	7.9	7.6	6.0	3.7	5.4	9.0	14	8.9	6.1	12	6.3	4.4
8	7.7	8.2	6.0	3.8	5.0	9.0	15	8.9	6.3	11	8.5	4.2
9	7.6	8.0	6.0	3.8	5.4	9.5	14	11	6.0	10	8.5	4.2
10	7.6	7.7	6.5	3.8	6.0	10	15	10	6.0	9.5	7.9	4.2
11	7.6	7.2	7.0	3.8	5.6	10	15	9.2	5.4	9.2	7.2	4.3
12	7.6	7.5	7.5	3.5	5.8	11	12	11	5.0	9.1	6.9	4.4
13	7.6	8.0	7.0	3.5	6.0	12	8.4	10	4.6	8.6	6.8	4.4
14	7.6	8.6	7.5	3.5	6.5	15	9.6	9.2	4.2	8.5	7.2	4.5
15	7.8	8.6	7.0	3.5	6.0	19	17	8.5	4.2	8.0	7.4	4.6
16	8.0	8.5	6.5	4.0	5.0	20	21	8.0	6.2	11	7.2	4.3
17	8.2	9.0	7.0	4.5	5.5	22	20	7.6	15	13	7.1	4.0
18	8.2	9.0	7.0	4.7	6.0	21	19	8.0	10	9.8	7.8	3.8
19	8.4	8.5	7.0	5.0	6.5	16	18	8.5	8.3	8.8	8.4	3.8
20	8.6	7.5	7.0	5.0	7.0	14	17	8.4	8.9	8.3	9.1	3.8
21	8.7	7.5	7.5	5.3	7.0	14	14	7.6	8.3	9.0	7.8	3.8
22	8.9	7.6	7.0	5.3	7.0	13	15	7.3	7.6	8.3	7.4	3.8
23	8.9	8.0	6.5	5.0	6.5	11	13	6.8	7.4	7.6	7.0	3.6
24	8.9	8.2	7.0	5.0	7.0	11	12	6.8	10	7.3	6.8	3.5
25	8.9	7.5	6.5	5.0	7.5	12	11	6.6	11	7.5	6.6	3.5
26	8.8	7.0	6.0	4.7	7.5	11	11	6.7	8.9	7.6	6.2	3.5
27	8.7	7.0	5.5	4.7	7.5	12	11	6.6	8.9	7.6	6.2	3.4
28	8.7	7.5	5.0	4.7	7.5	13	12	6.6	8.3	7.7	6.0	3.4
29	8.7	7.5	4.5	4.5	---	13	12	6.6	8.6	8.2	6.0	3.4
30	8.5	7.5	4.0	4.5	---	13	10	6.9	7.4	8.2	5.8	3.4
31	8.4	---	3.5	4.5	---	12	---	7.3	---	7.6	5.4	---
TOTAL	253.8	236.6	198.2	130.0	168.7	383.0	400.0	267.6	219.5	318.0	218.5	122.8
MEAN	8.19	7.89	6.39	4.19	6.03	12.4	13.3	8.63	7.32	10.3	7.05	4.09
MAX	8.9	9.0	7.5	5.3	7.5	22	21	13	15	39	9.1	5.2
MIN	7.6	7.0	3.5	3.0	4.5	8.0	8.4	6.6	4.2	7.2	5.4	3.4
AC-FT	503	469	393	258	335	760	793	531	435	631	433	244

CAL YR 1978	TOTAL	8131.0	MEAN 22.3	MAX 261	MIN 2.4	AC-FT	16130	
WTR YR 1979	TOTAL	2916.7	MEAN 7.99	MAX 39	MIN 3.0	AC-FT	5790	

06422600 BOXELDER CREEK AT CAMP COLUMBUS, NEAR NEMO, SD

LOCATION.--Lat 44°07'30", long 103°25'30", in SE¼NW¼ sec.17, T.2 N., R.6 E., Pennington County, Hydrologic Unit 10120110, at center span on downstream side of county highway bridge, 0.2 mi (0.3 km) southeast of Camp Columbus, 3.4 mi (5.5 km) downstream from Jim Creek and 6.0 mi (9.7 km) southeast of Nemo.

PERIOD OF RECORD.--June 1978 to current year (no winter record).

GAGE.--Water-stage recorder. Altitude of gage is 4,220 ft (1,290 m), from topographic map.

REMARKS.--Records good.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge, 257 ft^3/s (7.28 m^3/s) May 18, 1978, gage height, 51.78 ft (15.783 m) from high water mark.

EXTREMES FOR CURRENT PERIOD.--June to September 1978: Maximum discharge during period, 92 ft^3/s (2.61 m^3/s) Aug. 27, gage height 50.99 ft (15.542 m); minimum daily discharge, 8.8 ft^3/s (0.25 m^3/s) Sept. 28.

Water year 1979: Maximum discharge, 91 ft^3/s (2.58 m^3/s) July 4, gage height, 51.01 ft (15.548 m); minimum daily during period of recorder operation 3.2 ft^3/s (0.091 m^3/s) Sept. 28-30.

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								---	---	28	16	14
2								---	---	37	16	13
3								---	---	24	16	12
4								---	---	21	13	11
5								---	---	19	14	11
6								---	---	19	13	11
7								---	---	22	13	10
8								---	---	27	12	9.9
9								---	---	26	12	9.6
10								---	---	23	13	9.4
11								---	---	21	13	10
12								---	---	19	12	11
13								---	---	18	11	11
14								---	---	17	13	10
15								---	---	16	16	10
16								128	---	16	15	9.6
17								---	---	16	13	9.4
18								---	---	17	12	11
19								---	---	16	12	11
20								---	27	17	11	11
21								---	26	29	11	11
22								---	25	46	10	10
23								---	24	25	10	9.9
24								---	24	21	10	9.7
25								---	23	18	9.9	9.4
26								---	23	17	10	9.1
27								---	22	16	19	8.9
28								---	21	15	39	8.8
29								---	21	15	19	9.1
30								---	22	16	17	9.0
31								---	---	16	16	---
TOTAL								---	---	653	436.9	309.8
MEAN								---	---	21.1	14.1	10.3
MAX								---	---	46	39	14
MIN								---	---	15	9.9	8.8
AC-FT								---	---	1300	867	614

06422600 BOXELDER CREEK AT CAMP COLUMBUS, NEAR NEMO, SD--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	8.9			---			10	11	8.0	6.8	7.5	5.7
2	8.8			---			9.2	12	6.8	6.6	7.4	5.4
3	8.8			---			9.2	10	6.3	7.7	6.9	5.2
4	8.8			---			9.4	9.8	5.9	42	6.5	5.1
5	8.7			3.4			11	9.4	5.8	22	6.3	4.8
6	8.8			---			9.4	9.4	5.6	16	5.9	4.7
7	8.8			---			12	8.6	6.9	14	5.9	4.6
8	8.8			---			14	8.3	7.2	12	8.8	4.5
9	8.8			---			14	9.3	7.2	11	9.9	4.3
10	8.8			---			13	10	7.0	10	8.8	5.0
11	8.8			---			13	8.9	6.5	9.5	7.3	5.0
12	8.9			---			12	9.2	5.9	9.0	6.6	5.1
13	9.1			---			8.0	10	5.4	9.0	7.3	5.3
14	9.1			---			7.9	8.9	5.1	8.7	7.9	5.5
15	9.1			---			15	8.0	5.0	8.2	8.1	5.0
16	9.1			---			19	7.3	7.7	12	7.4	4.7
17	9.1			---			17	7.0	19	14	7.7	4.4
18	9.4			---			17	7.5	14	11	9.3	4.1
19	9.4			---			16	8.3	11	9.4	10	4.1
20	9.7			---			15	7.9	10	8.8	11	3.9
21	9.7			---			13	7.0	10	9.7	9.5	3.7
22	9.8			---			14	6.7	8.9	9.0	8.3	3.6
23	9.7			---			12	6.2	8.1	7.9	7.6	3.6
24	9.6			---			11	6.1	11	7.4	7.2	3.6
25	9.1			---			11	6.0	14	8.0	6.9	3.5
26	9.1			---			10	6.1	10	8.2	6.7	3.5
27	9.1			---			10	6.1	9.5	8.2	6.6	3.3
28	9.1			---			11	6.3	8.6	8.1	6.8	3.2
29	9.1			---			11	6.3	8.7	9.2	6.8	3.2
30	9.1			---			10	6.8	7.6	9.0	6.3	3.2
31	9.1			---			---	7.3	---	8.1	6.0	---
TOTAL	282.2	---	---	---	---	---	364.1	251.7	252.7	340.5	235.2	130.8
MEAN	9.10	---	---	---	---	---	12.1	8.12	8.42	11.0	7.59	4.36
MAX	9.8	---	---	---	---	---	19	12	19	42	11	5.7
MIN	8.7	---	---	---	---	---	7.9	6.0	5.0	6.6	5.9	3.2
AC-FT	560	---	---	---	---	---	722	499	501	675	467	259

06422650 BOXELDER CREEK AT DOTY SCHOOL, NEAR BLACKHAWK, SD

LOCATION.--Lat 44°07'03", long 103°21'54", in NE¼SW¼ sec.23, T.2 N., R.6 E., Pennington County, Hydrologic Unit 10120111, on left bank 100 ft (30 m) upstream from county highway bridge, 0.3 mi (0.5 km) northwest of Doty School and 2.0 mi (3.2 km) southwest of Blackhawk.

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

GAGE.--Water-stage recorder. Altitude of gage is 3,860 ft (1,180 m), from topographic map.

REMARKS.--Records good. Considerable loss in sinkholes above gage.

EXTREMES FOR CURRENT PERIOD.--May to September 1978: Maximum discharge during period, 251 ft^3/s (7.11 m^3/s) May 18, gage height, 42.34 ft (12.095 m); no flow for many days.

Water year 1979: No flow during year.

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

40.4	0	40.8	13	41.4	67
40.5	1.3	41.0	26	41.7	112
40.6	4.2	41.2	44	42.1	192

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								---	42	5.5	.00	.00
2								---	38	19	.00	.00
3								---	34	11	.00	.00
4								---	33	6.8	.00	.00
5								---	30	4.4	.00	.00
6								---	30	2.6	.00	.00
7								---	26	3.1	.00	.00
8								---	24	7.7	.00	.00
9								---	22	11	.00	.00
10								---	20	7.7	.00	.00
11								---	19	6.0	.00	.00
12								223	18	2.3	.00	.00
13								---	16	.00	.00	.00
14								---	14	.00	.00	.00
15								---	13	.00	.00	.00
16								109	12	.00	.00	.00
17								101	16	.00	.00	.00
18								171	19	.00	.00	.00
19								140	14	.00	.00	.00
20								111	11	.00	.00	.00
21								102	10	.30	.00	.00
22								96	9.4	17	.00	.00
23								85	8.2	9.5	.00	.00
24								76	7.7	3.2	.00	.00
25								67	7.7	.07	.00	.00
26								59	7.2	.00	.00	.00
27								52	6.0	.00	.00	.00
28								51	4.9	.00	.00	.00
29								49	4.5	.00	.00	.00
30								57	4.7	.00	.00	.00
31								48	---	.00	.00	---
TOTAL								---	521.3	117.17	.00	.00
MEAN								---	17.4	3.78	.000	.000
MAX								---	42	19	.00	.00
MIN								---	4.5	.00	.00	.00
AC-FT								---	1030	232	.00	.00

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

No flow during year

06423010 BOXELDER CREEK NEAR RAPID CITY, SD

LOCATION.--Lat 44°07'54", long 103"17'54", in NW¼SE¼ sec.17, T.2 N., R.7 E., Pennington County, Hydrologic Unit 10120111, near center span on downstream side of bridge on State Highway 79, and 4.0 mi (6.4 km) northwest of Rapid City.

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

GAGE.--Water-stage recorder. Altitude of gage is 3,450 ft (1,050 m), from topographic map.

REMARKS.--Records fair. Considerable loss in sinkholes in reach above gage.

EXTREMES FOR CURRENT PERIOD.--May to September 1978: Maximum discharge during period, 253 ft^3/s (7.16 m^3/s) May 18, gage height, 31.14 ft (9.491 m), from floodmark; no flow for many days.

Water year 1979: No flow during year.

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

29.3	0	29.9	7.8
29.4	.30	30.1	18
29.5	.77	30.3	35
29.6	1.5	30.5	62
29.7	2.8	30.8	128

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								---	23	3.3	1.0	.21
2								---	20	4.0	1.0	.21
3								---	16	2.5	.96	.21
4								---	14	2.3	.92	.20
5								---	11	2.0	.88	.18
6								---	11	1.8	.84	.14
7								---	8.5	2.0	.81	.08
8								---	5.7	2.5	.73	.04
9								---	4.2	2.8	.71	.01
10								---	3.1	2.3	.69	.00
11								---	2.5	2.0	.66	.00
12								---	2.2	1.7	.63	.00
13								---	2.2	1.4	.59	.00
14								---	2.3	1.1	.58	.00
15								106	2.3	.82	.59	.00
16								92	2.4	.65	.58	.00
17								82	2.8	.60	.55	.00
18								105	2.5	.55	.49	.00
19								102	2.6	.58	.47	.00
20								82	2.4	.80	.45	.00
21								75	2.6	3.5	.42	.00
22								70	2.6	3.0	.38	.00
23								63	2.4	2.6	.34	.00
24								57	2.3	2.3	.31	.00
25								48	2.2	2.0	.39	.00
26								40	2.2	1.8	.30	.00
27								34	2.1	1.6	.32	.00
28								34	2.0	1.4	.27	.00
29								31	2.0	1.3	.26	.00
30								38	2.2	1.2	.25	.00
31								32	---	1.1	.24	---
TOTAL								---	163.3	57.50	17.61	1.28
MEAN								---	5.44	1.85	.57	.043
MAX								---	23	4.0	1.0	.21
MIN								---	2.0	.55	.24	.00
AC-FT								---	324	114	35	2.5

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

No flow during year

06423500 CHEYENNE RIVER NEAR WASTA, SD

LOCATION.--Lat 44°04'52", long 102°24'03", in NE¼NE¼NW¼ sec.2, T.1 N., R.14 E., Pennington County, Hydrologic Unit 10120111, on left bank at downstream side of highway bridge, 200 ft (61 m) downstream from Chicago and North Western Transportation Co. bridge, 3.0 mi (4.8 m) east of Wasta, and 8.6 mi (13.8 m) downstream from Boxelder Creek.

DRAINAGE AREA.--12,800 mi^2 (33,200 km^2), approximately.

PERIOD OF RECORD.--July 1914 to June 1915, August 1928 to June 1932, March 1934 to current year. Monthly discharge only for some periods, published in WSP 1309. Records for Feb. 19-28, 1930, published in WSP 701, have been found to be unreliable and should not be used.

REVISED RECORDS.--WSP 786: Drainage area. WSP 1279: 1930(M), 1931, 1937. See also Period of Record.

GAGE.--Water-stage recorder. Datum of gage is 2,260.78 ft (689.086 m) National Geodetic Vertical Datum of 1929. Prior to Aug. 1, 1940, nonrecording gage at site 50 ft (15 m) upstream; Aug. 1, 1940, to Dec. 3, 1940, nonrecording gage and Dec. 4, 1940, to Sept. 30, 1968, water-stage recorder at present site all at datum 2.00 ft (0.610 m) higher. Oct. 1, 1968, to Sept. 30, 1972, at datum 1.00 ft (0.305 m) higher.

REMARKS.--Records good except those for winter periods, which are poor. Flow regulated by Angostura Reservoir 108 mi (174 km) upstream (see station 06401000) since October 1949 and by upstream reservoirs on Rapid Creek since August 1956. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--48 years (water years 1929-31, 1935-79), 356 ft^3/s (10.1 m^3/s), 257,900 acre-ft/yr (318 hm^3/yr); median of yearly mean discharges, 300 ft^3/s (8.50 m^3/s), 217,000 acre-ft/yr (268 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge observed, 46,300 ft^3/s (1,310 m^3/s) May 6, 1932, gage height, 13.28 ft (4.048 m), present datum, from rating curve extended above 11,000 ft^3/s (312 m^3/s) on basis of an incomplete discharge measurement at gage height 10.65 ft (3.246 m), present datum; maximum gage height observed, 14.5 ft (4.42 m), present datum, June 13, 1915; minimum discharge, 0.6 ft^3/s (0.017 m^3/s) July 27, 1961.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 1920 reached a stage of 18 ft (5.5 m), present datum, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 14,200 ft^3/s (402 m^3/s) June 17, gage height, 9.94 ft (3.030 m); minimum daily, 23 ft^3/s (0.65 m^3/s) Jan. 14.

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	81	126	96	45	26	90	421	211	65	220	200	104
2	80	124	94	40	26	85	401	207	64	200	182	95
3	84	115	100	36	27	85	378	190	64	270	168	88
4	86	117	100	32	30	90	437	172	57	5000	157	81
5	94	122	100	28	34	100	486	153	52	1680	141	77
6	96	121	98	26	40	105	460	137	47	507	123	73
7	101	115	95	29	44	105	429	126	45	328	125	69
8	110	116	94	30	40	110	364	127	41	234	4210	65
9	112	124	94	28	38	120	306	132	59	188	804	64
10	110	139	95	26	38	150	294	223	73	158	274	67
11	109	121	98	25	38	250	307	465	73	138	189	65
12	114	91	100	24	38	350	564	292	79	131	143	67
13	109	96	105	24	38	500	374	199	77	504	136	71
14	110	114	105	23	40	450	290	160	57	153	131	81
15	118	122	110	25	42	400	273	131	46	152	125	85
16	124	118	110	28	42	600	250	113	54	131	128	95
17	130	115	105	32	42	800	242	98	5150	611	131	90
18	135	115	105	35	42	1200	231	90	1770	249	136	87
19	134	115	100	35	40	1700	244	89	772	160	546	84
20	131	100	100	35	35	1500	258	94	1560	115	1100	82
21	127	95	97	34	36	1500	267	102	342	103	346	83
22	126	100	94	33	42	1300	249	92	299	86	227	76
23	128	100	92	32	50	1200	245	85	1160	90	360	69
24	137	105	90	31	60	1200	251	79	295	100	205	72
25	129	110	85	30	70	1100	247	67	299	108	154	75
26	128	110	80	29	80	900	235	69	180	135	136	75
27	132	110	75	29	90	750	205	71	450	190	131	75
28	133	105	66	28	90	600	218	62	300	226	131	70
29	128	105	60	27	---	554	235	62	260	380	161	72
30	127	100	54	26	---	493	223	65	240	373	131	82
31	128	---	50	26	---	440	---	65	---	247	114	---
TOTAL	3591	3366	2847	931	1258	18827	9384	4228	14030	13167	11245	2339
MEAN	116	112	91.8	30.0	44.9	607	313	136	468	425	363	78.0
MAX	137	139	110	45	90	1700	564	465	5150	5000	4210	104
MIN	80	91	50	23	26	85	205	62	41	86	114	64
AC-FT	7120	6680	5650	1850	2500	37340	18610	8390	27830	26120	22300	4640

CAL YR 1978 TOTAL 172770 MEAN 473 MAX 19100 MIN 50 AC-FT 342700
WTR YR 1979 TOTAL 85213 MEAN 233 MAX 5150 MIN 23 AC-FT 169000

06425100 ELK CREEK NEAR RAPID CITY, SD

LOCATION.--Lat 44°14'25", long 103°09'03", in NE¼NE¼ sec.9, T.3 N., R.8 E., Meade County, Hydrologic Unit 10120110, on section line near right upstream corner of county road bridge, 1.7 mi (2.7 km) downstream from Morris Creek tributary and 10 mi (16.1 km) north of Exit 61 and I-90 northeast of Rapid City.

DRAINAGE AREA.--190 mi^2 (492 km^2).

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

GAGE.--Water-stage recorder. Altitude of gage is 2,950 ft (900 m), from topographic map.

REMARKS.--Records fair. Some flow is pumped from stream for irrigation. Several observation of water temperature and specific conductance were made during the year.

EXTREMES FOR CURRENT PERIOD.--Maximum discharge, 310 ft^3/s (8.78 m^3/s) Aug. 8, 1979, gage height, 7.28 ft (2.219 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		4.8	1.9	1.1	1.0	1.8	15	4.5	3.5	3.0	.83	.46
2		4.7	1.6	1.0	1.0	1.9	18	4.5	3.3	3.2	1.1	.42
3		4.7	1.4	1.1	1.0	1.9	12	4.3	3.2	2.8	.83	.39
4		4.7	1.1	1.0	1.0	2.0	13	4.0	2.6	3.6	.67	.30
5		4.5	1.1	1.0	1.1	2.1	20	4.3	2.3	3.3	.30	.27
6		4.7	1.0	.90	1.2	2.4	15	4.7	2.0	2.0	.32	.24
7		4.7	.90	.90	1.3	2.8	8.9	4.7	2.2	2.3	.13	.20
8		4.7	.90	.90	1.4	3.1	12	4.5	1.9	1.9	72	.20
9		4.6	1.0	.90	1.5	3.5	15	4.9	2.2	1.6	62	.16
10		4.6	1.1	.90	1.5	4.0	30	5.8	2.2	1.1	28	.16
11		4.6	1.1	.90	1.5	4.8	31	6.5	2.0	.63	11	.22
12		4.6	1.1	.90	1.4	6.0	7.7	6.7	1.8	.50	5.3	.30
13		4.6	1.1	.90	1.2	7.0	8.6	6.5	1.6	.35	2.9	.22
14		4.5	1.1	.80	1.1	8.4	18	6.0	1.3	.35	2.0	.11
15		4.5	1.1	.70	1.0	17	11	5.3	1.2	.30	1.6	.13
16		4.5	1.2	.80	1.0	32	12	5.3	.95	.67	1.4	.11
17		4.7	1.2	.80	1.1	19	14	5.1	2.2	1.9	1.6	.13
18		4.7	1.2	.90	1.1	17	14	4.7	2.6	1.9	1.4	.02
19		4.9	1.2	.90	1.3	28	12	5.1	5.8	2.0	1.3	.00
20		5.1	1.2	1.0	1.4	38	10	5.1	6.2	1.1	1.0	.00
21		5.1	1.2	1.1	1.5	18	6.2	5.3	2.4	1.2	.89	.00
22		4.9	1.2	1.2	1.5	17	5.9	5.1	3.5	.83	1.5	.00
23		4.7	1.2	1.2	1.6	17	5.5	4.7	2.6	.50	.83	.00
24		4.7	1.1	1.1	1.6	14	5.3	4.3	2.6	.50	.95	.00
25		4.7	1.1	1.1	1.6	19	5.1	4.3	2.6	.50	1.5	.00
26		4.0	1.0	1.1	1.6	17	4.9	4.0	2.4	.54	12	.00
27		3.2	1.0	1.0	1.6	20	4.9	6.2	3.3	1.0	3.2	.00
28		2.7	1.0	1.0	1.7	28	4.9	4.5	4.0	1.2	1.8	.00
29		2.3	1.0	1.0	---	20	4.7	3.8	4.0	1.4	1.5	.00
30		2.0	1.1	1.0	---	21	4.5	3.5	3.5	1.2	.95	.00
31		---	1.1	1.0	---	22	---	3.3	---	.89	.58	---
TOTAL		131.7	35.50	30.10	36.8	415.7	349.1	151.5	81.95	44.26	221.38	4.04
MEAN		4.39	1.15	.97	1.31	13.4	11.6	4.89	2.73	1.43	7.14	.13
MAX		5.1	1.9	1.2	1.7	38	31	6.7	6.2	3.6	72	.46
MIN		2.0	.90	.70	1.0	1.8	4.5	3.3	.95	.30	.13	.00
AC-FT		261	70	60	73	825	692	301	163	88	439	8.0

06425500 ELK CREEK NEAR ELM SPRINGS, SD

LOCATION.--Lat 44°14'54", long 102°30'10", in SW¼NW¼ sec.1, T.3 N., R.13 E., Meade County, Hydrologic Unit 10120111, on left bank near downstream end of county highway bridge, 1.4 mi (2.3 km) downstream from Hay Draw, 5.0 mi (8.0 km) southeast of Elm Springs, and 7.0 mi (11.3 km) upstream from mouth.

DRAINAGE AREA.--540 mi^2 (1,400 km^2), approximately.

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

GAGE.--Water-stage recorder. Datum of gage is 2,304.49 ft (702.409 m) National Geodetic Vertical Datum of 1929. Prior to Nov. 2, 1976, nonrecording gage, and prior to Feb. 1, 1967, at site 350 ft (107 m) downstream at present datum.

REMARKS.--Records fair. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--30 years, 23.5 ft^3/s (0.666 m^3/s), 17,030 acre-ft/yr (21.0 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, 8,540 ft^3/s (242 m^3/s) Mar. 29, 1952, gage height, 10.61 ft (3.234 m), from floodmarks, site and datum then in use, from rating curve extended above 5,100 ft^3/s (144 m^3/s); maximum gage height, 11.0 ft (3.35 m) May 29, 1962, from floodmarks, site and datum then in use; no flow for long periods in each year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known, about 17 ft (5.2 m), at former site, in May 1920, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 92 ft^3/s (2.61 m^3/s) Mar. 17, gage height, 5.40 ft (1.646 m); no peak above base of 400 ft^3/s (11.3 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	.00	.00	.00	.00	.00	20	3.9	11	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	17	3.4	7.5	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	15	3.2	6.4	.00	.00	.00
4	.00	.00	.05	.00	.00	.02	17	2.8	5.0	.77	.00	.00
5	.00	.00	.10	.00	.00	.05	15	2.5	3.9	.96	.00	.00
6	.00	.00	.00	.00	.00	.10	16	2.6	2.8	.85	.00	.00
7	.00	.00	.00	.00	.00	.20	16	2.6	2.6	.04	.46	.00
8	.00	.00	.00	.00	.00	.40	20	2.6	2.1	.12	4.1	.00
9	.00	.00	.00	.00	.00	.30	17	3.4	1.9	1.4	1.7	.00
10	.00	.00	.05	.00	.00	.30	15	4.1	1.3	.76	.85	.00
11	.00	.05	.10	.00	.00	.40	17	4.5	.20	.00	.52	.00
12	.00	.05	.10	.00	.00	1.0	16	4.3	.04	.85	.00	.00
13	.00	.08	.20	.00	.00	1.5	15	3.9	.00	.34	.10	.00
14	.00	.08	.20	.00	.00	2.2	15	3.0	.00	.52	.42	.00
15	.00	.10	.10	.00	.00	8.0	13	2.8	.00	.20	.42	.00
16	.00	.15	.05	.00	.00	16	12	2.6	.03	1.1	.31	.00
17	.00	.10	.02	.00	.00	46	14	2.1	2.2	.10	.20	.00
18	.00	.04	.02	.00	.00	44	13	.74	1.4	.00	.10	.00
19	.00	.00	.01	.00	.00	22	15	.00	2.3	.00	.20	.00
20	.00	.00	.00	.00	.00	35	13	.00	2.3	.00	.10	.00
21	.00	.00	.00	.00	.00	52	12	.00	1.3	.00	.10	.00
22	.00	.00	.00	.00	.00	38	11	.00	2.6	.00	.00	.00
23	.00	.00	.00	.00	.00	26	11	.00	8.4	1.9	.00	.00
24	.00	.00	.00	.00	.00	25	9.2	.00	6.1	1.4	.00	.00
25	.00	.00	.00	.00	.00	31	8.6	.00	2.5	.52	.00	.00
26	.00	.00	.00	.00	.00	20	7.2	.00	1.3	.63	.00	.00
27	.00	.00	.00	.00	.00	23	6.1	.00	.85	.10	.08	.00
28	.00	.00	.00	.00	.00	28	4.5	.00	.74	.00	.89	.00
29	.00	.00	.00	.00	---	24	3.7	.00	.00	2.8	.20	.00
30	.00	.00	.00	.00	---	20	3.6	10	.00	.96	.00	.00
31	.00	---	.00	.00	---	20	---	16	---	.00	.00	---
TOTAL	.00	.65	1.00	.00	.00	484.47	387.9	81.04	76.76	16.32	10.75	.00
MEAN	.000	.022	.032	.000	.000	15.6	12.9	2.61	2.56	.53	.35	.000
MAX	.00	.15	.20	.00	.00	52	20	16	11	2.8	4.1	.00
MIN	.00	.00	.00	.00	.00	.00	3.6	.00	.00	.00	.00	.00
AC-FT	.00	1.3	2.0	.00	.00	961	769	161	152	32	21	.00

CAL YR 1978 TOTAL 14000.96 MEAN 38.4 MAX 1930 MIN .00 AC-FT 27770
WTR YR 1979 TOTAL 1058.89 MEAN 2.90 MAX 52 MIN .00 AC-FT 2100

06427000 KEYHOLE RESERVOIR NEAR MOORCROFT, WY

LOCATION.--Lat 44°22'55", long 104°46'45", in NW¼NW¼ sec.27, T.51 N., R.66 W., Crook County, Hydrologic Unit 10120201, at reservoir dam on Belle Fourche River 12 mi (19 km) northeast of Moorcroft.

DRAINAGE AREA.--2,000 mi^2 (5,180 km^2), approximately.

PERIOD OF RECORD.--March 1952 to current year (monthend contents only).

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (Bureau of Reclamation datum). Prior to May 15, 1958, and Oct. 1, 1968, to Mar. 13, 1970, nonrecording gages, and May 15, 1958, to Sept. 30, 1968, water-stage recorder, all at present site and datum.

REMARKS.--Reservoir is formed by a zoned earth-fill dam completed by the Bureau of Reclamation Oct. 25, 1952. Storage began Feb. 12, 1952. Dead storage, below elevation 4,036.0 ft (1,230.17 m), 1,170 acre-ft (1.44 hm^3). Inactive storage, between elevations 4,036.0 ft (1,230.17 m) and 4,051.0 ft (1,234.74 m), 8,310 acre-ft (10.2 hm^3). Total capacity below elevation 4,099.3 ft (1,249.47 m), crest of spillway, 199,900 acre-ft (246 hm^3). Figures given herein represent total contents. The reservoir provides flood control and water for irrigation in Wyoming and near Belle Fourche, SD.

COOPERATION.--Records furnished by the Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 200,744 acre-ft (248 hm^3) May 21, 1978, elevation, 4,100.38 ft (1,249.796 m); minimum daily contents (since appreciable storage was attained), 6,030 acre-ft (7.43 hm^3) Mar. 8, 9, 1955, elevation, 4,046.35 ft (1,233.327 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 162,156 acre-ft (200 hm^3) Apr. 22, elevation, 4,096.11 ft (1,248.494 m); minimum, 138,404 acre-ft (171 hm^3) Sept. 30, elevation, 4093.07 ft (1,247.568 m).

MONTHEND ELEVATION, IN FEET NGVD, AND CONTENTS,
IN ACRE-FEET, AT 2400, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

Date	Elevation	Contents	Change in contents
Sept. 30	4094.51	149290	
Oct. 31	4094.31	147730	-1560
Nov. 30	4094.14	146404	-1326
Dec. 31	4094.24	147184	+780
CAL YR 1978			+44439
Jan. 31	4094.30	147652	+468
Feb. 28	4094.36	148120	+468
Mar. 31	4095.68	158631	+10511
Apr. 30	4096.08	161902	+3271
May 31	4095.55	157576	-4326
June 30	4094.94	152644	-4932
July 31	4094.39	148354	-4290
Aug. 31	4093.72	143214	-5140
Sept. 30	4093.07	138404	-4810
WTR YR 1979			-10886

06428500 BELLE FOURCHE RIVER AT WYOMING-SOUTH DAKOTA STATE LINE

LOCATION.--Lat 44°44'59", long 104°02'49", in NE¼NW¼NW¼ sec.18, T.9 N., R.1 E., Butte County, Hydrologic Unit 10120202, on left bank 0.3 mi (0.5 km) downstream from State line, 3.7 mi (6.0 km) downstream from Oak Creek and 11 mi (18 km) northwest of Belle Fourche, SD.

DRAINAGE AREA.--3,280 mi^2 (8,500 km^2), approximately.

PERIOD OF RECORD.--December 1946 to current year. Records for water year 1947 incomplete, yearly estimate published in WSP 1729.

GAGE.--Water-stage recorder. Datum of gage is 3,095.7 ft (943.57 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for winter periods, which are poor. Diversions above station for irrigation of about 5,400 acres (2,200 hm^2). Flow regulated by Keyhole Reservoir, usable capacity, 191,600 acre-ft (236 hm^3), 143 mi (230 km) upstream since Oct. 25, 1952. Water-quality records for the station are published in the annual report "Water Resources Data for Wyoming."

AVERAGE DISCHARGE.--33 years, 91.6 ft^3/s (2.594 m^3/s), 66,360 acre-ft/yr (81.8 hm^3/yr); median of yearly mean discharges, 91 ft^3/s (2.58 m^3/s), 65,900 acre-ft/yr (81 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,400 ft^3/s (125 m^3/s) June 18, 1962, gage height, 15.59 ft (4.752 m); no flow at times most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 376 ft^3/s (10.6 m^3/s) June 20; maximum gage height, 8.16 ft (2.624 m) Mar. 17 (backwater from ice); minimum daily, 4.0 ft^3/s (0.11 m^3/s) Jan. 15, 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	30	31	22	6.0	7.5	10	237	72	42	62	83	28
2	29	31	20	5.0	7.5	10	194	69	94	59	77	26
3	28	31	20	5.0	7.0	10	160	66	122	56	73	24
4	28	31	22	5.0	7.0	10	147	62	123	53	72	22
5	29	30	22	5.0	7.0	11	138	59	126	53	72	21
6	29	29	20	4.5	7.5	13	118	58	128	51	71	19
7	30	32	20	4.5	8.0	15	123	56	133	54	69	18
8	29	30	20	4.5	8.0	30	144	55	137	51	90	16
9	27	31	22	5.5	8.5	60	122	56	137	53	86	16
10	26	31	24	6.0	9.0	200	121	58	135	45	77	17
11	26	27	24	6.5	9.0	350	132	60	132	42	105	16
12	26	25	25	6.5	9.0	250	155	61	126	43	96	18
13	27	25	25	5.5	10	300	156	61	122	43	72	20
14	27	25	25	5.0	11	230	200	59	119	44	64	18
15	27	25	25	4.0	9.0	200	195	58	116	47	57	19
16	27	25	22	4.0	8.0	190	192	55	122	86	51	20
17	27	25	20	4.5	8.5	250	224	51	126	84	53	20
18	28	22	22	4.5	9.0	350	192	51	130	79	54	19
19	31	20	22	6.5	9.0	220	168	51	138	73	52	19
20	35	20	22	8.5	9.0	130	150	50	333	70	77	17
21	36	22	25	10	9.0	160	149	46	283	68	65	15
22	35	25	25	10	9.0	170	138	44	196	72	54	15
23	33	25	25	9.0	8.5	135	122	42	161	69	50	14
24	31	25	25	9.0	8.5	175	111	40	131	73	43	14
25	29	25	25	9.0	9.0	200	101	37	111	84	41	12
26	29	25	22	8.5	10	180	93	36	99	99	39	11
27	30	25	20	8.5	10	200	87	37	90	90	39	9.9
28	29	25	15	8.5	10	200	82	36	94	83	135	12
29	30	25	10	8.5	---	200	80	38	83	99	58	11
30	29	25	9.0	8.0	---	240	75	41	68	81	35	11
31	30	---	7.0	8.0	---	240	---	44	---	79	25	---
TOTAL	907	793	652.0	203.5	242.5	4939	4306	1609	3957	2045	2035	517.9
MEAN	29.3	26.4	21.0	6.56	8.66	159	144	51.9	132	66.0	65.6	17.3
MAX	36	32	25	10	11	350	237	72	333	99	135	28
MIN	26	20	7.0	4.0	7.0	10	75	36	42	42	25	9.9
AC-FT	1800	1570	1290	404	481	9800	8540	3190	7850	4060	4040	1030

CAL YR 1978	TOTAL	82763.0	MEAN	227	MAX	1980	MIN	7.0	AC-FT	164200
WTR YR 1979	TOTAL	22206.9	MEAN	60.8	MAX	350	MIN	4.0	AC-FT	44050

06429500 COLD SPRINGS CREEK AT BUCKHORN, WY

LOCATION.--Lat 44°09'14", long 104°04'39", in NW¼ sec.9, T.48 N., R.60 W., Weston County, Hydrologic Unit 10120303, on right shoulder of Cold Springs Creek road, 155 ft (47 m) upstream from centerline of U.S. Highway 85, and 0.5 mi (0.8 km) northeast of Buckhorn.

DRAINAGE AREA.--19.0 mi^2 (49.2 km^2).

PERIOD OF RECORD.--October 1974 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 6,090 ft (1,855 m), from topographic map.

REMARKS.--Records good except those for winter periods, which are poor. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--5 years, 4.78 ft^3/s (0.135 m^3/s), 3,460 acre-ft/yr (4.27 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12 ft^3/s (0.34 m^3/s) July 1, 1979, gage height, 4.91 ft (1.497 m); maximum gage height, 8.61 ft (2.624 m) Jan. 12, 1978, backwater from ice; minimum daily discharge, 2.0 ft^3/s (0.057 m^3/s) Mar. 28, 1975.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 10 ft^3/s (0.28 m^3/s) July 16, gage height, 4.80 ft (1.463 m); maximum gage height, 8.61 ft (2.624 m) Jan. 12 (backwater from ice); minimum daily discharge, 2.2 ft^3/s (0.062 m^3/s) Jan. 14.

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	5.0	5.6	3.2	3.8	4.3	4.7	4.4	5.0	4.8	5.4	5.6
2	4.6	5.2	5.6	3.0	3.6	4.3	4.8	4.6	5.0	5.0	5.4	5.8
3	4.8	5.2	5.4	2.8	4.0	4.1	4.9	4.6	5.0	5.0	5.4	5.8
4	5.0	5.2	5.2	2.8	4.1	3.6	5.0	4.4	5.0	5.4	5.4	5.8
5	4.8	5.2	4.5	2.6	4.1	4.6	5.4	4.3	5.0	4.8	5.4	6.0
6	4.6	5.2	3.6	2.6	4.3	4.1	5.4	4.3	5.2	4.6	5.6	6.0
7	4.6	5.2	4.4	2.6	4.4	4.1	5.4	4.3	5.2	4.8	6.0	5.8
8	4.4	5.2	4.4	2.4	4.3	4.0	5.4	4.3	5.0	5.0	5.8	5.6
9	4.3	5.2	4.4	2.4	4.3	3.9	5.4	4.3	5.0	5.0	5.8	5.4
10	4.3	5.0	4.5	2.4	4.3	3.8	5.4	4.3	5.0	5.0	5.6	5.2
11	4.4	4.0	4.5	2.6	4.1	4.0	5.2	4.5	5.0	5.0	5.8	5.2
12	4.6	3.5	4.5	2.4	4.1	4.0	3.9	4.3	5.0	5.0	5.8	5.2
13	4.6	3.0	5.0	2.4	4.1	3.9	4.4	4.1	5.0	5.0	6.0	5.2
14	4.6	2.8	5.0	2.2	4.1	3.9	5.0	4.1	5.0	5.0	5.8	5.2
15	4.6	2.8	5.0	2.4	3.8	4.1	5.6	4.1	5.2	5.2	5.8	4.8
16	4.6	2.9	4.5	2.8	3.8	4.0	5.4	4.0	5.8	6.3	5.6	4.8
17	4.8	3.0	5.0	2.6	4.3	4.1	5.8	4.0	5.6	5.2	5.6	4.8
18	4.8	3.2	5.4	2.8	4.3	4.0	5.6	4.1	5.0	5.2	5.6	5.0
19	4.8	3.5	5.6	3.0	4.3	4.0	5.0	4.0	5.0	5.2	5.6	4.8
20	4.8	4.5	5.8	3.0	4.2	3.6	5.0	4.0	5.2	5.2	5.6	4.8
21	4.8	5.5	5.6	3.2	4.0	3.9	5.0	4.0	5.2	5.2	5.4	4.8
22	4.8	6.0	5.6	3.2	4.3	4.0	5.0	4.0	5.2	5.2	5.4	5.0
23	4.8	6.0	5.6	3.0	4.3	4.0	5.0	4.1	5.0	5.2	5.6	5.0
24	5.0	5.8	5.4	3.0	4.2	4.2	5.0	4.3	5.0	5.2	5.6	4.8
25	5.0	5.8	4.6	3.0	4.2	4.2	4.8	4.8	4.8	5.4	5.6	4.8
26	5.0	5.8	5.0	3.5	4.3	4.2	4.8	4.8	5.2	5.4	5.6	4.8
27	5.0	5.8	4.5	3.5	4.3	4.2	4.8	4.8	5.2	5.4	5.6	4.8
28	5.0	5.8	4.3	3.5	4.3	4.2	4.8	4.8	5.0	5.2	5.6	4.6
29	5.0	5.8	4.0	3.8	---	4.3	4.8	4.8	5.0	5.6	5.6	4.6
30	5.0	5.8	3.8	4.0	---	4.5	4.6	4.8	5.0	5.4	5.6	4.6
31	5.0	---	3.5	4.0	---	4.6	---	5.0	---	5.4	5.6	---
TOTAL	147.0	142.9	149.8	90.7	116.2	126.7	151.3	135.2	152.8	160.3	174.2	154.6
MEAN	4.74	4.76	4.83	2.93	4.15	4.09	5.04	4.36	5.09	5.17	5.62	5.15
MAX	5.0	6.0	5.8	4.0	4.4	4.6	5.8	5.0	5.8	6.3	6.0	6.0
MIN	4.3	2.8	3.5	2.2	3.6	3.6	3.9	4.0	4.8	4.6	5.4	4.6
AC-FT	292	283	297	180	230	251	300	268	303	318	346	307

CAL YR 1978 TOTAL 1785.0 MEAN 4.89 MAX 6.5 MIN 2.8 AC-FT 3540
WTR YR 1979 TOTAL 1701.7 MEAN 4.66 MAX 6.3 MIN 2.2 AC-FT 3380

06429895 SAND CREEK NEAR SUNDANCE, WY

LOCATION.--Lat 44°28'40", long 104°07'20", in SW¼SE¼ sec.24, T.52 N., R.61 W., Crook County, Hydrologic Unit 10120203, in channel 300 ft (91 m) upstream from Black Hills National Forest boundary, 1.1 mi (1.8 km) southwest from Ranch A, and 16 mi (26 km) northeast of Sundance.

DRAINAGE AREA.--256 sq mi (663 km^2), approximately.

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

GAGE.--Water-stage recorder. Altitude of gage is 3,830 ft (1,170 m), from topographic map.

REMARKS.--Records good.

EXTREMES FOR CURRENT PERIOD.--April to September 1978: Maximum discharge during period, not determined; no flow for many days.

Water year 1979: No flow during year.

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

No flow during year

06429905 SAND CREEK NEAR RANCH A, NEAR BEULAH, WY

LOCATION.--Lat 44°31'13", long 104°05'00", in SE¼SW¼ sec.5, T.52 N., R.60 W., Crook County, Hydrologic Unit 10120203, on left bank 1.0 mi (1.6 km) upstream from Bear Gulch, and 1.6 mi (2.6 km) south of Beulah.

DRAINAGE AREA.--267 mi^2 (692 km^2).

PERIOD OF RECORD.--October 1976 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 3,600 ft (1,100 m), from topographic map.

REMARKS.--Records good. Several observations of water temperature and specific conductance were made during the year.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 96 ft^3/s (2.72 m^3/s) Apr. 29, 1978, gage height, 5.73 ft (1.747 m); minimum daily, 16 ft^3/s (0.45 m^3/s) Apr. 15-21, 1979.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge, 700 ft^3/s (19.8 m^3/s) June 15, 1976, gage height, 7.77 ft (2.368 m), from slope-area measurement of peak flow at site 3 mi (4.8 km) upstream.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 34 ft^3/s (0.96 m^3/s) Oct. 15, 16, gage height, 5.23 ft (1.594 m); minimum daily, 16 ft^3/s (0.45 m^3/s) Apr. 15-21.

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	28	28	27	27	25	24	22	24	25	26	24	21
2	28	27	27	27	25	24	22	24	25	26	24	21
3	28	28	26	26	25	23	22	24	25	26	23	21
4	28	27	26	27	25	24	22	24	25	26	23	21
5	28	27	26	26	26	24	22	24	24	27	23	21
6	28	27	26	26	26	24	23	24	24	27	23	21
7	28	27	26	26	26	25	23	24	24	27	23	21
8	29	27	26	26	25	25	22	24	24	26	23	21
9	28	27	26	27	25	24	23	24	24	26	23	21
10	29	27	26	26	26	24	22	24	24	26	23	21
11	29	27	26	27	26	24	20	24	24	26	23	21
12	28	27	26	27	25	25	20	24	24	25	23	22
13	28	27	26	27	25	25	19	24	25	26	22	21
14	28	27	26	27	26	23	17	23	24	25	22	21
15	29	27	26	26	25	24	16	23	24	25	22	21
16	29	27	26	25	24	24	16	24	27	25	23	21
17	29	26	26	25	24	24	16	24	28	25	23	21
18	29	26	26	25	24	24	16	24	26	25	23	21
19	29	26	26	25	24	23	16	24	26	25	23	21
20	29	26	26	25	24	23	16	24	26	25	23	21
21	29	26	26	26	24	23	16	24	26	24	23	21
22	29	26	26	27	24	23	18	24	24	24	22	21
23	29	26	26	26	24	23	22	24	24	24	22	21
24	29	26	26	25	24	23	22	24	25	24	22	22
25	29	26	27	25	24	23	22	24	26	25	23	22
26	28	27	26	25	24	23	22	25	26	24	22	22
27	28	27	27	25	24	23	22	25	26	24	23	22
28	28	27	27	25	24	23	23	25	26	24	22	22
29	28	27	27	25	---	23	23	25	26	25	21	22
30	28	27	27	25	---	23	23	26	26	24	21	21
31	28	---	27	25	---	23	---	26	---	24	21	---
TOTAL	882	803	814	802	693	733	608	750	753	781	701	637
MEAN	28.5	26.8	26.3	25.9	24.8	23.6	20.3	24.2	25.1	25.2	22.6	21.2
MAX	29	28	27	27	26	25	23	26	28	27	24	22
MIN	28	26	26	25	24	23	16	23	24	24	21	21
AC-FT	1750	1590	1610	1590	1370	1450	1210	1490	1490	1550	1390	1260

CAL YR 1978 TOTAL 10750 MEAN 29.5 MAX 73 MIN 22 AC-FT 21320
WTR YR 1979 TOTAL 8957 MEAN 24.5 MAX 29 MIN 16 AC-FT 17770

06430000 MURRAY DITCH AT WYOMING-SOUTH DAKOTA STATE LINE

LOCATION.--Lat 44°34'35", long 104°02'58", in SW¼SW¼ sec.7, T.7 N., R.1 E., Butte County, Hydrologic Unit 10120203 on right bank 15 ft (5 m) downstream from State line and 12 mi (19 km) southwest of Belle Fourche, SD.

PERIOD OF RECORD.--June 1954 to current year (irrigation seasons only prior to October 1959).

GAGE.--Water-stage recorder. Altitude of gage is 3,440 ft (1,050 m), from topographic map.

REMARKS.--Records fair. Ditch diverts water from left bank of Redwater Creek, 2.0 mi (3.2 km) upstream, for irrigation of about 700 acres (283 hm^2). Flow maintained during irrigation season only. Several observations of water temperature and specific conductance were made during the year.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 37 ft^3/s (1.05 m^3/s) July 17, 1973; no flow for long periods in each year.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 27 ft^3/s (0.76 m^3/s) July 13, gage height, 2.45 ft (0.747 m); no flow for long periods.

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	8.3	.00	.00	.00	.00	.00	.00	.00	.00	.00	22	.21
2	7.0	.00	.00	.00	.00	.00	.00	.00	3.0	.00	4.6	.21
3	9.5	.00	.00	.00	.00	.00	.00	.00	8.7	1.9	7.9	.18
4	11	.00	.00	.00	.00	.05	.00	.00	8.7	12	8.5	.15
5	9.7	.00	.00	.00	.00	.15	.00	.00	15	15	6.7	.15
6	9.2	.00	.00	.00	.00	.05	.00	.00	20	8.0	7.6	1.9
7	9.1	.00	.00	.00	.00	.00	.00	.00	21	10	13	3.0
8	11	.00	.00	.00	.00	.00	.00	.00	22	15	16	6.2
9	17	.00	.00	.00	.00	.00	.00	.00	22	18	17	6.3
10	12	.00	.00	.00	.00	.00	.00	.00	17	20	17	6.4
11	12	.00	.00	.00	.00	.00	.00	.00	24	20	17	6.9
12	13	.00	.00	.00	.00	.00	.00	.00	16	18	18	7.8
13	13	.00	.00	.00	.00	.00	.00	.00	14	27	14	6.9
14	12	.00	.00	.00	.00	.00	.00	.00	17	16	9.7	4.2
15	12	.00	.00	.00	.00	.00	.00	.00	19	12	9.5	1.4
16	12	.00	.00	.00	.00	.00	.00	.00	24	13	9.4	1.1
17	11	.00	.00	.00	.00	.00	.00	.00	24	12	8.9	1.0
18	11	.00	.00	.00	.00	.00	.00	.00	22	11	8.9	.37
19	11	.00	.00	.00	.00	.00	.00	.00	21	11	10	.01
20	12	.00	.00	.00	.00	.00	.00	.00	23	12	11	.36
21	13	.00	.00	.00	.00	.00	.00	.00	22	11	11	4.3
22	11	.00	.00	.00	.00	.00	.00	.00	15	11	11	7.3
23	.21	.00	.00	.00	.00	.00	.00	.00	.30	9.4	3.6	7.2
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	7.5	3.2	6.8
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	14	2.3	6.6
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	16	.86	6.3
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	16	.75	6.3
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	13	.50	7.2
29	.00	.00	.00	.00	---	.00	.00	.00	.00	16	.40	7.4
30	.00	.00	.00	.00	---	.00	.00	.00	.00	19	.30	7.9
31	.00	---	.00	.00	---	.00	---	.00	---	22	.24	---
TOTAL	247.01	.00	.00	.00	.00	.25	.00	.00	378.70	406.80	270.85	122.04
MEAN	7.97	.000	.000	.000	.000	.008	.000	.000	12.6	13.1	8.74	4.07
MAX	17	.00	.00	.00	.00	.15	.00	.00	24	27	22	7.9
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.24	.01
AC-FT	490	.00	.00	.00	.00	.5	.00	.00	751	807	537	242

CAL YR 1978 TOTAL 1269.63 MEAN 3.48 MAX 19 MIN .00 AC-FT 2520
WTR YR 1979 TOTAL 1425.65 MEAN 3.91 MAX 27 MIN .00 AC-FT 2830

06430500 REDWATER CREEK AT WYOMING-SOUTH DAKOTA STATE LINE

LOCATION.--Lat 44°34'26", long 104°02'54", in NW¼NW¼ sec.18, T.7 N., R.1 E., Butte County, Hydrologic Unit 10120203, on left bank 800 ft (244 m) downstream from State line, 5.7 mi (9.2 km) upstream from Crow Creek, and 12 mi (19 km) southwest of Belle Fourche, SD.

DRAINAGE AREA.--471 mi^2 (1,220 km^2).

PERIOD OF RECORD.--April 1929 to September 1931 and February 1936 to July 1937 (published as "near Beulah, WY"), June 1954 to current year.

REVISED RECORDS.--WSP 1309: 1931(M), 1936-37(M).

GAGE.--Water-stage recorder. Altitude of gage is 3,410 ft (1,040 m), from topographic map. Apr. 25, 1929, to Sept. 30, 1931, and Feb. 28, 1936, to July 31, 1937, nonrecording gage at site 2 mi (3 km) upstream at different datum.

REMARKS.--Records good. Large diversions for irrigation above station. Total flow passing State line may be obtained by adding flow of Murray ditch (see station 06430000). Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--27 years, 36.9 ft^3/s (1.045 m^3/s), 26,730 acre-ft/yr (33.0 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,440 ft^3/s (69.1 m^3/s) Aug. 22, 1973, gage height, 12.19 ft (3.716 m), from rating curve extended above 1,000 ft^3/s (27 m^3/s) on basis of slope-area measurement at gage height 11.95 ft (3.462 m); no flow Aug. 13-15, 1929.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 93 ft^3/s (2.63 m^3/s) Mar. 7, gage height, 3.04 ft (0.927 m); maximum gage height, 3.85 ft (1.173 m) Jan. 6 (backwater from ice); no peak above base of 150 ft^3/s (4.25 m^3/s); minimum daily discharge, 5.4 ft^3/s (0.15 m^3/s) June 11.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 29 to Nov. 8, June 12 to July 22; stage-discharge relation affected by ice Dec. 7-9, Dec. 29 to Jan. 11, Jan. 29 to Feb. 3, Feb. 16, 17)

1.9	5.0	2.1	13	2.5	39
2.0	8.8	2.2	19	2.7	55

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	29	35	40	36	41	39	38	39	38	49	25	37
2	30	39	40	36	41	39	38	39	29	48	36	37
3	31	39	41	38	41	38	40	40	21	46	29	37
4	32	39	42	40	41	38	45	40	21	31	26	37
5	32	40	41	40	41	40	44	40	16	30	31	36
6	29	40	41	42	41	42	43	41	11	31	28	33
7	26	40	40	42	41	54	43	40	11	28	22	32
8	27	40	40	42	41	47	41	39	11	23	19	27
9	24	41	40	42	41	44	38	41	11	17	21	26
10	20	43	40	41	41	41	39	41	10	8.7	19	27
11	20	40	39	39	41	45	40	41	5.4	7.9	19	27
12	24	41	40	37	40	44	39	40	6.0	7.7	19	29
13	23	41	39	37	41	44	39	40	5.6	13	20	28
14	23	41	40	38	42	43	39	39	5.9	12	21	31
15	23	41	39	38	41	43	39	40	6.5	18	21	36
16	24	41	38	38	41	44	40	41	8.5	18	25	36
17	24	42	39	37	40	43	40	41	9.0	16	26	35
18	24	39	38	35	39	40	41	41	8.0	16	26	36
19	24	39	39	35	39	39	46	41	7.4	17	27	36
20	24	40	38	35	39	39	47	41	7.3	16	25	36
21	24	39	38	35	39	39	47	41	13	17	24	31
22	27	40	37	36	40	40	47	41	29	19	25	24
23	43	39	37	35	38	39	47	41	46	18	34	24
24	43	39	38	36	38	39	43	39	47	11	34	24
25	43	39	36	36	38	38	38	36	51	21	38	25
26	41	40	35	35	39	38	38	36	54	21	41	25
27	40	40	36	36	39	38	38	37	53	28	42	24
28	40	38	36	38	39	38	39	37	52	27	39	22
29	39	38	36	40	---	38	39	38	50	26	38	23
30	39	40	36	42	---	38	39	39	50	26	37	23
31	39	---	36	42	---	39	---	38	---	24	36	---
TOTAL	931	1193	1195	1179	1123	1270	1234	1228	693.6	691.3	873	904
MEAN	30.0	39.8	38.5	38.0	40.1	41.0	41.1	39.6	23.1	22.3	28.2	30.1
MAX	43	43	42	42	42	54	47	41	54	49	42	37
MIN	20	35	35	35	38	38	38	36	5.4	7.7	19	22
AC-FT	1850	2370	2370	2340	2230	2520	2450	2440	1380	1370	1730	1790

CAL YR 1978 TOTAL 16342.0 MEAN 44.8 MAX 264 MIN 20 AC-FT 32410
WTR YR 1979 TOTAL 12514.9 MEAN 34.3 MAX 54 MIN 5.4 AC-FT 24820

06431500 SPEARFISH CREEK AT SPEARFISH, SD

LOCATION.--Lat 44°28'57", long 103°51'40", in SE¼NW¼ sec.15, T.6 N., R.2 E., Lawrence County, Hydrologic Unit 10120203, on right bank in city park in Spearfish, 500 ft (152 m) downstream from fish hatchery and nearest tributary, and 9.8 mi (15.8 km) upstream from mouth.

DRAINAGE AREA.--168 mi^2 (435 km^2).

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

REVISED RECORDS.--WSP 1116: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 3,640 ft (1,110 m), from topographic map. Prior to Dec. 5, 1946, nonrecording gage at same site and datum.

REMARKS.--Records good except those for winter periods, which are poor. Regulation by fish hatchery and by hydroelectric plant 0.5 mi (0.8 km) upstream causes diurnal fluctuation, but since storage capacity is small, daily flows are not appreciably affected. Prior to water year 1962 average monthly diversion by Homestake Mining Co. about 7 ft^3/s (0.20 m^3/s). Figures of daily discharge do not include diversion by Homestake Mining Co. Several observations of water temperature and specific conductance were made during the year.

COOPERATION.--Figures of monthly diversion are furnished by Homestake Mining Co.

AVERAGE DISCHARGE.--33 years, 51.8 ft^3/s (1.467 m^3/s), 37,530 acre-ft/yr (46.3 hm^3/yr), unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,240 ft^3/s (120 m^3/s) May 15, 1965, gage height, 10.53 ft (3.210 m), from rating curve extended above 520 ft^3/s (14.7 m^3/s) on basis of slope-area measurement of peak flow; maximum gage height, 10.54 ft (3.213 m) June 15, 1976; no flow for part of Oct. 18, 1970.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 5, 1904, reached a stage of 7.00 ft (2.134 m), site and datum of former gage near Spearfish, 1 mi (2 km) upstream, drainage area, 157 mi^2 (407 km^2); discharge about 5,000 ft^3/s (142 m^3/s).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 182 ft^3/s (5.15 m^3/s) Aug. 7, gage height, 5.73 ft (1.747 m); minimum daily, 41 ft^3/s (1.16 m^3/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	55	57	53	48	44	75	48	57	67	59	47	50
2	53	56	52	48	42	61	47	56	65	58	47	50
3	51	55	48	50	44	54	46	58	66	58	46	50
4	51	57	54	48	50	52	46	57	64	57	46	49
5	52	60	53	48	60	51	46	57	65	56	45	48
6	53	59	46	49	65	49	45	58	64	55	45	46
7	54	59	46	50	63	49	47	57	70	54	61	47
8	54	58	50	50	64	50	47	57	64	53	65	46
9	54	59	50	50	63	49	48	59	66	56	63	48
10	54	59	50	50	63	48	53	58	64	54	58	41
11	55	58	55	50	67	50	54	59	62	52	55	51
12	56	58	57	48	66	51	51	61	61	52	52	54
13	55	57	52	48	65	56	51	60	62	51	54	54
14	55	56	52	46	66	53	51	60	61	51	49	52
15	56	55	52	46	62	52	54	60	60	52	50	51
16	56	56	51	48	60	55	56	59	69	60	50	48
17	57	55	52	52	65	55	62	61	79	55	58	47
18	58	57	51	52	70	55	67	63	71	54	52	48
19	57	55	53	54	71	53	70	62	68	53	54	49
20	57	54	53	54	71	52	65	62	70	52	54	45
21	56	58	52	56	69	52	62	62	68	52	52	46
22	57	58	53	56	72	50	61	59	65	52	51	45
23	57	52	53	56	71	52	62	61	64	52	50	46
24	56	50	54	59	72	51	65	62	65	51	50	46
25	58	54	55	58	73	52	64	61	63	58	51	46
26	58	54	52	57	74	50	62	63	62	54	54	47
27	59	54	48	53	74	49	60	61	61	53	52	47
28	59	55	51	50	74	51	60	64	62	51	55	48
29	58	55	50	46	---	50	59	66	59	53	54	46
30	58	54	50	44	---	49	58	67	58	51	52	45
31	58	---	49	44	---	49	---	67	---	48	50	---
TOTAL	1727	1684	1597	1568	1800	1625	1667	1874	1945	1667	1622	1436
MEAN	55.7	56.1	51.5	50.6	64.3	52.4	55.6	60.5	64.8	53.8	52.3	47.9
MAX	59	60	57	59	74	75	70	67	79	60	65	54
MIN	51	50	46	44	42	48	45	56	58	48	45	41
AC-FT	3430	3340	3170	3110	3570	3220	3310	3720	3860	3310	3220	2850
MEAN‡	63.9	64.0	59.0	60.1	73.4	60.9	64.1	69.1	74.1	64.5	63.1	58.5
(†)	503	472	461	585	508	523	505	528	555	658	664	631
AC-FT‡	3930	3810	3630	3700	4080	3740	3820	4250	4420	3970	3880	3480

CAL YR 1978 TOTAL 23724 MEAN 65.0 MAX 219 MIN 44 AC-FT 47060
WTR YR 1979 TOTAL 20212 MEAN 55.4 MAX 79 MIN 41 AC-FT 40090

† Diversion, in acre-ft, by Homestake Mining Company
‡ Adjusted for diversion

06433000 REDWATER RIVER ABOVE BELLE FOURCHE, SD

LOCATION.--Lat 44°40'02", long 103°50'20", in NW¼SE¼ sec.11, T.8 N., R.2 E., Butte County, Hydrologic Unit 10120203, on right bank at upstream side of bridge on U.S. Highway 212 in Belle Fourche, 0.5 mi (0.8 km) upstream from Hay Creek and 0.9 mi (1.4 km) upstream from mouth.

DRAINAGE AREA.--920 mi^2 (2,383 km^2).

PERIOD OF RECORD.--November 1945 to current year. Records for water year 1946 incomplete, yearly discharge published in WSP 1309. Prior to October 1960, published as Redwater Creek above Belle Fourche.

REVISED RECORDS.--WSP 1389: 1954 (maximum gage height only).

GAGE.--Water-stage recorder. Altitude of gage is 3,000 ft (910 m), from topographic map. Prior to Dec. 13, 1946, nonrecording gage at same site and datum.

REMARKS.--Records good except those for winter periods, which are poor. Diversions for irrigation of about 13,000 acres (5,260 hm^2) above station. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--34 years, 136 ft^3/s (3.852 m^3/s), 98,530 acre-ft/yr (121 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,400 ft^3/s (464 m^3/s) June 16, 1962, gage height, 11.69 ft (3.563 m), from rating curve extended above 6,000 ft^3/s (170 m^3/s) on basis of slope-area measurement of peak flow; no flow for part of Aug. 5, 1960, Aug. 8-10, 1968, and Aug. 13, 1969.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 356 ft^3/s (10.1 m^3/s) Mar. 8, gage height, 3.74 ft (1.140 m); maximum gage height, unknown (backwater from ice), no peak above base of 500 ft^3/s (14.2 m^3/s); minimum daily discharge, 6.9 ft^3/s (0.20 m^3/s) July 12.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 1 to Nov. 19, Nov. 25 to Dec. 1, Dec. 12, 15, 16, 19-25; stage-discharge relation affected by ice Nov. 20-24, Dec. 2-11, 13, 14, 17, 18, 22, Dec. 26 to Mar. 6)

Oct. 1 to Feb. 15		Feb. 16 to Sept. 30			
2.9	111	1.8	4.5	2.5	55
3.3	220	1.9	7.5	2.9	120
		2.0	12	3.5	285
		2.2	25		

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	166	170	156	125	120	160	188	170	39	110	67	88
2	163	173	160	125	125	170	185	170	32	93	65	81
3	151	165	160	125	125	180	180	168	25	76	73	94
4	112	165	160	125	125	190	180	168	19	76	77	91
5	116	167	160	125	130	200	188	165	16	74	81	81
6	123	167	160	125	130	193	182	168	8.7	68	75	79
7	122	167	160	125	130	208	182	170	9.9	60	61	73
8	124	167	160	125	130	283	185	165	12	54	133	67
9	125	167	170	125	140	224	180	168	13	45	132	62
10	128	170	180	125	150	200	172	165	13	28	118	56
11	130	173	200	125	140	214	178	160	13	12	111	60
12	128	173	201	125	140	238	180	160	11	6.9	114	67
13	132	181	190	125	145	243	175	163	8.3	52	121	68
14	137	188	170	125	150	227	180	163	8.3	66	127	68
15	138	200	169	125	140	247	178	147	16	32	126	75
16	141	208	170	125	130	231	180	144	31	51	124	83
17	148	200	170	130	135	244	180	151	104	56	129	94
18	161	164	160	135	145	247	182	149	90	44	121	94
19	163	169	143	140	150	229	190	140	98	33	136	85
20	162	170	137	145	140	213	193	135	100	25	139	83
21	163	170	144	150	140	208	182	118	98	28	130	75
22	177	180	140	150	140	209	180	108	92	29	126	69
23	180	190	136	145	130	208	185	92	118	34	130	71
24	186	170	137	140	140	207	182	70	131	29	122	83
25	193	162	141	135	150	202	180	44	133	23	113	80
26	190	164	140	130	150	199	175	44	133	40	118	78
27	186	164	140	125	150	193	178	37	133	42	119	79
28	183	161	130	120	150	190	172	33	129	44	117	76
29	193	158	130	120	---	190	170	33	122	56	111	75
30	184	157	125	120	---	188	170	47	118	56	104	77
31	174	---	125	120	---	188	---	41	---	60	97	---
TOTAL	4779	5180	4824	4005	3870	6523	5412	3856	1874.2	1502.9	3417	2312
MEAN	154	173	156	129	138	210	180	124	62.5	48.5	110	77.1
MAX	193	208	201	150	150	283	193	170	133	110	139	94
MIN	112	157	125	120	120	160	170	33	8.3	6.9	61	56
AC-FT	9480	10270	9570	7940	7680	12940	10730	7650	3720	2980	6780	4590

CAL YR 1978 TOTAL 62996.0 MEAN 173 MAX 828 MIN 11 AC-FT 125000
WTR YR 1979 TOTAL 47555.1 MEAN 130 MAX 283 MIN 6.9 AC-FT 94330

06433500 HAY CREEK AT BELLE FOURCHE, SD

LOCATION.--Lat 44°40'01", long 103°50'46", in NW¼SW¼ sec.11, T.8 N., R.2 E., Butte County, Hydrologic Unit 10120203, on right bank at intersection of Tenth Avenue and Jackson Street in Belle Fourche, 0.5 mi (0.8 km) upstream from mouth.

DRAINAGE AREA.--121 mi^2 (313 km^2).

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

GAGE.--Water-stage recorder. Datum of gage is 3,005.18 ft (915.979 m) National Geodetic Vertical Datum of 1929 (City of Belle Fourche bench mark). Prior to Dec. 8, 1953, nonrecording gage at site 300 ft (91 m) downstream at same datum.

REMARKS.--Records fair. Minor diversion to the stream at times from city reservoir overflow, which enters stream above gage. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--26 years, 1.48 ft^3/s (0.042 m^3/s), 1,070 acre-ft/yr (1.32 hm^3/yr); median of yearly mean discharges, 1.0 ft^3/s (0.03 m^3/s), 720 acre-ft/yr (0.89 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 930 ft^3/s (26.3 m^3/s) June 19, 1972, gage height, 9.15 ft (2.789 m); no flow for many days each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 34 ft^3/s (0.96 m^3/s) June 16; maximum gage height, 5.80 ft (1.768 m) Mar. 10 (backwater from ice); no 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	.00	.00	.00	.00	.00	1.2	1.3	.55	.00	.00	.00
2	.00	.27	.00	.00	.00	.00	.92	1.5	.40	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	1.0	.85	.26	.00	.00	.00
4	.00	.00	.00	.00	.00	.50	1.0	.60	.20	.00	.00	.00
5	.00	.00	.00	.00	.00	1.0	1.2	.65	.13	.00	.00	.00
6	.00	.08	.00	.00	.00	4.0	.92	.65	.12	.00	.00	.00
7	.00	.18	.00	.00	.00	6.5	1.1	.86	.96	.00	.50	.00
8	.00	.00	.01	.00	.00	8.0	1.2	.65	.67	.00	6.0	.00
9	.00	.05	.02	.00	.00	8.0	1.2	1.5	.46	.00	3.0	.00
10	.00	.02	.03	.00	.00	6.0	1.3	1.1	.33	.00	.07	.00
11	.00	.02	.05	.00	.00	6.0	2.2	1.1	.21	.00	.00	.00
12	.00	.02	.05	.00	.00	8.0	1.8	1.0	.12	.00	.00	.00
13	.00	.02	.05	.00	.00	10	1.7	.86	.06	.00	.16	.00
14	.00	.02	.05	.00	.00	15	5.0	.69	.01	.00	.36	.00
15	.00	.02	.05	.00	.00	20	4.1	.46	.00	.00	.01	.00
16	.00	.02	.05	.00	.00	25	3.2	.50	6.2	.00	.03	.00
17	.00	.05	.04	.00	.00	24	3.2	.48	18	.00	.00	.00
18	.00	.02	.03	.00	.00	20	3.1	.89	10	.00	.00	.00
19	.00	.00	.02	.00	.00	8.8	2.6	1.4	4.0	.00	.07	.00
20	.00	.00	.03	.00	.00	8.6	2.3	.49	3.0	.00	.00	.00
21	.00	.00	.04	.00	.00	6.2	2.1	.35	2.0	.00	.00	.00
22	.00	.00	.03	.00	.00	5.1	1.8	.29	1.0	.00	.00	.00
23	.00	.00	.02	.00	.00	2.6	1.7	.25	.50	.00	.00	.00
24	.00	.00	.02	.00	.00	2.2	1.6	.26	.40	.00	.05	.00
25	.00	.00	.01	.00	.00	2.3	1.5	.26	.30	.00	.00	.00
26	.00	.00	.01	.00	.00	1.0	1.3	.27	.20	.00	.00	.00
27	.00	.00	.00	.00	.00	1.1	1.5	.23	.10	.00	.08	.00
28	.00	.00	.00	.00	.00	1.9	1.1	.69	.05	.00	.11	.00
29	.00	.00	.00	.00	---	1.2	1.2	.77	.00	.00	.00	.00
30	.00	.00	.00	.00	---	1.6	1.1	1.2	.00	.00	.00	.00
31	.00	---	.00	.00	---	1.8	---	.60	---	.00	.00	---
TOTAL	.00	.79	.61	.00	.00	206.40	55.14	22.70	50.23	.00	10.44	.00
MEAN	.000	.026	.020	.000	.000	6.66	1.84	.73	1.67	.000	.34	.000
MAX	.00	.27	.05	.00	.00	25	5.0	1.5	18	.00	6.0	.00
MIN	.00	.00	.00	.00	.00	.00	.92	.23	.00	.00	.00	.00
AC-FT	.00	1.6	1.2	.00	.00	409	109	45	100	.00	21	.00

CAL YR 1978 TOTAL 1601.56 MEAN 4.39 MAX 123 MIN .00 AC-FT 3180
WTR YR 1979 TOTAL 346.31 MEAN .95 MAX 25 MIN .00 AC-FT 687

06434500 INLET CANAL NEAR BELLE FOURCHE, SD

LOCATION.--Lat 44°42'14", long 103°49'23", in NE¼NW¼ sec.36, T.9 N., R.2 E., Butte County, Hydrologic Unit 10120202, on right bank 0.5 mi (0.8 km) downstream from Crow Creek, 0.9 mi (1.4 km) downstream from diversion dam on Belle Fourche River, and 2.5 mi (4.0 km) northeast of Belle Fourche.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1945 to current year. Monthly diversions from Inlet Canal between station and reservoir for some periods, published in WSP 1309.

GAGE.--Water-stage recorder. Datum of gage is 2,985.22 ft (909.895 m) National Geodetic Vertical Datum of 1929. Prior to Dec. 10, 1946, nonrecording gage, and Dec. 10, 1946, to Nov. 26, 1949, water-stage recorder at site 0.8 mi (1.3 km) upstream at same datum.

REMARKS.--Records good except those for winter periods, which are poor. Records show actual diversions to Belle Fourche Reservoir (see station 06435000), from Belle Fourche River and Crow Creek, except for 1,911 acre-ft (2.36 hm^3) which was diverted for irrigation from the canal between the station and reservoir.

COOPERATION.--Records of diversion from the canal furnished by Bureau of Reclamation.

AVERAGE DISCHARGE.--34 years, 164 ft^3/s (4.644 m^3/s), 118,800 acre-ft/yr (146 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 1,340 ft^3/s (37.9 m^3/s) May 30, 1962, Mar. 21, 1978; no flow for many days in 1946-49, 1963, 1966, 1971-76, 1978-79.

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	180	191	190	145	135	170	434	35	81	168	130	98
2	162	190	200	145	140	180	376	35	74	151	133	116
3	151	191	200	145	140	190	356	33	117	125	129	132
4	144	191	200	145	140	200	336	33	123	141	135	123
5	144	192	200	145	150	210	333	32	118	123	141	110
6	155	193	200	145	150	210	314	32	118	124	124	111
7	154	190	200	145	150	230	312	12	123	103	108	110
8	159	195	185	145	150	250	331	.00	129	100	237	104
9	157	197	190	145	160	300	344	.00	134	87	227	96
10	150	208	200	145	170	400	328	.00	130	73	183	92
11	154	190	230	145	150	617	333	.00	125	60	167	107
12	143	179	230	145	150	479	359	.00	118	48	197	123
13	152	191	220	145	155	566	350	.00	113	86	186	129
14	154	207	200	145	160	485	379	.00	113	106	172	126
15	157	206	200	145	150	442	395	.00	117	76	160	125
16	159	219	200	150	140	462	390	.00	130	119	150	131
17	161	223	200	150	145	550	417	.00	249	147	153	135
18	171	179	210	150	155	633	425	93	203	118	157	129
19	171	174	180	150	160	466	408	151	208	96	153	126
20	176	175	170	150	150	364	394	137	253	92	157	125
21	175	180	170	150	150	392	376	121	377	92	171	115
22	178	200	200	145	150	387	365	113	283	94	145	112
23	181	250	170	140	140	346	354	98	286	98	147	109
24	187	250	170	140	150	381	344	87	284	93	149	126
25	187	200	180	135	160	426	327	62	255	95	133	127
26	187	195	180	135	160	366	317	61	245	123	155	119
27	184	195	180	135	160	344	309	59	238	133	163	119
28	179	190	160	135	160	385	301	50	222	112	180	133
29	194	188	160	135	---	401	295	46	218	135	226	141
30	187	188	150	135	---	429	140	72	194	146	139	139
31	188	---	150	135	---	429	---	80	---	120	117	---
TOTAL	5181	5917	5875	4445	4230	11690	10442	1442.00	5378	3384	4924	3588
MEAN	167	197	190	143	151	377	348	46.5	179	109	159	120
MAX	194	250	230	150	170	633	434	151	377	168	237	141
MIN	143	174	150	135	135	170	140	.00	74	48	108	92
AC-FT	10280	11740	11650	8820	8390	23190	20710	2860	10670	6710	9770	7120

CAL YR 1978 TOTAL 85565.00 MEAN 234 MAX 1340 MIN .00 AC-FT 169700
WTR YR 1979 TOTAL 66496.00 MEAN 182 MAX 633 MIN .00 AC-FT 131900

06434500 INLET CANAL NEAR BELLE FOURCHE, SD--Continued

WATER-QUALITY RECORDS

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

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1968 to September 1978.
WATER TEMPERATURES: October 1968 to September 1978.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 3,100 micromhos Feb. 13, 1969; minimum daily, 335 micromhos Feb. 12, 1971.
WATER TEMPERATURES: Maximum daily, 29.0°C July 1, 1971; minimum daily, 0.0°C on many days during winter periods.

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										
06...	0900	156	1490	8.8	12.0	740	560	210	52	30
NOV										
03...	1230	188	1460	8.2	8.0	680	500	190	50	28
DEC										
05...	0830	175	1360	8.4	3.0	720	510	210	48	23
JAN										
11...	1010	147	2000	8.4	.0	760	560	220	50	16
FEB										
01...	1145	133	1360	7.3	.0	800	570	240	49	19
MAR										
08...	1000	185	1290	8.0	1.5	620	440	180	41	15
APR										
18...	1445	421	1360	7.7	18.0	730	560	200	55	65
JUN										
06...	1440	118	1510	7.9	19.5	630	470	170	50	100
JUL										
12...	0800	50	1280	8.0	22.0	730	570	190	62	120
AUG										
09...	1315	220	1100	8.1	20.5	540	380	150	40	49
SEP										
05...	1515	108	1360	8.3	23.0	710	550	200	51	37

06434500 INLET CANAL NEAR BELLE FOURCHE, SD--Continued

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)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)
OCT									
06...	8	.5	3.5	220	0	180	610	4.0	.4
NOV									
03...	8	.5	3.6	220	0	180	560	5.0	.3
DEC									
05...	9	.4	3.0	--	--	210	540	4.1	.3
JAN									
11...	4	.3	3.1	240	0	200	570	4.4	.3
FEB									
01...	5	.3	2.9	280	0	230	570	5.8	.3
MAR									
08...	5	.3	5.3	220	0	180	430	5.5	.3
APR									
18...	16	1.1	5.8	200	0	160	620	5.3	.5
JUN									
06...	25	1.7	8.8	190	0	160	650	12	.6
JUL									
12...	26	1.9	10	190	0	160	810	15	.6
AUG									
09...	16	.9	6.6	200	0	160	470	9.4	.4
SEP									
05...	14	.6	4.1	200	0	160	610	6.3	.4

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	---	1230	---	1080	950	1240	---	990	1870	---	1340	1390
2	1300	1260	---	1240	960	1890	1200	945	---	1380	---	1390
3	1260	1320	---	1240	---	---	1280	925	1950	---	1360	---
4	1300	---	---	1040	---	---	1280	---	1850	---	1320	1390
5	1310	1210	---	1080	960	1080	1270	590	1490	1410	1320	1430
6	1290	1090	1100	1100	960	1290	1340	---	1520	---	1380	1400
7	1230	1190	1160	1120	720	2040	1380	---	1380	---	1400	1430
8	1230	1240	1100	1040	1040	---	1360	---	1360	---	1260	---
9	1260	1240	---	1090	950	1190	1400	---	1380	1550	1200	---
10	1310	1150	---	1090	---	---	1370	---	1370	---	1190	1440
11	1220	---	1020	1160	---	---	1400	---	1320	1720	1270	1480
12	1270	---	1030	1100	960	1100	1360	---	---	---	---	---
13	1230	---	990	1060	960	1010	1400	---	---	1350	1270	1440
14	---	1250	1030	1060	1040	1180	---	---	1350	---	1260	1460
15	---	1230	1000	1040	---	1140	---	---	1370	---	---	---
16	---	1250	1040	1020	1070	1150	1400	---	---	1620	1310	---
17	1230	1270	1140	1010	---	1250	1400	---	1280	---	1320	1410
18	1250	---	1030	1030	---	1220	1380	---	1310	1500	---	1410
19	1240	---	1100	990	1060	1200	1340	---	---	---	---	1400
20	1320	1320	1030	1000	1070	1260	1260	---	1300	1500	1340	1400
21	---	1280	1030	1060	1070	1240	---	---	1200	---	1360	---
22	---	1380	1020	1040	950	1290	---	---	1180	---	1360	1420
23	1320	1260	1020	1040	---	1370	1240	---	1330	1440	1370	---
24	1340	1320	---	1090	---	---	1230	---	---	---	1370	1420
25	1330	---	---	1020	---	---	1260	---	1250	1440	---	1390
26	1240	---	1070	1020	1080	1330	1260	---	---	---	---	1420
27	1260	1280	1080	1040	1060	1240	1280	---	1290	---	1380	1420
28	---	1280	1280	1120	910	1300	---	---	1280	1320	1350	1420
29	---	1300	1050	1060	---	1280	---	---	1260	---	---	1380
30	1300	1300	1300	---	---	1300	1320	---	---	---	1240	1380
31	1280	---	---	---	---	---	---	---	---	1300	1320	---
MEAN	1270	1260	1080	1070	987	1290	1320	863	1400	1460	1320	1410

06434500 INLET CANAL NEAR BELLE FOURCHE, SD--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 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P) (00671)	BORON, DIS-SOLVED (UG/L AS B) (01020)
OCT 06...	9.3	1030	1.40	434	.18	.03	.01	.01	110
NOV 03...	9.1	956	1.30	485	.31	.01	.01	.00	120
DEC 05...	9.1	965	1.31	456	.36	.04	.04	.03	80
JAN 11...	11	995	1.35	395	.44	.04	.04	.00	90
FEB 01...	11	1040	1.41	373	.40	.10	.08	.00	90
MAR 08...	8.7	797	1.08	398	.47	.09	.09	.06	90
APR 18...	7.0	1060	1.44	1210	.10	.18	.03	.01	160
JUN 06...	5.7	1090	1.48	347	.01	.16	.02	.00	240
JUL 12...	8.2	1310	1.78	177	.01	.06	.02	.00	220
AUG 09...	9.8	835	1.14	496	.21	.36	.03	.00	100
SEP 05...	9.5	1020	1.39	297	.02	.03	.02	.01	120

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	---	9.0	1.0	.0	.0	.0	---	11.0	23.0	23.0	22.0	22.0
2	14.0	10.0	---	.0	.0	.0	3.0	13.0	---	---	---	22.0
3	11.0	7.0	---	.0	---	---	5.0	12.0	---	---	23.0	---
4	11.0	.0	.0	.0	---	---	3.0	---	22.0	---	22.0	21.0
5	11.0	.0	1.0	.0	.0	.0	2.0	9.0	20.0	23.0	23.0	20.0
6	7.0	6.0	.0	.0	.0	.0	4.0	---	18.0	---	23.0	17.0
7	9.0	9.0	2.0	.0	.0	.0	6.0	---	15.0	---	24.0	21.0
8	10.0	8.0	.0	.0	.0	---	8.0	---	14.0	---	22.0	---
9	12.0	9.0	---	.0	.0	.0	10.0	---	16.0	23.0	21.0	---
10	14.0	1.0	---	.0	---	---	9.0	---	18.0	---	21.0	21.0
11	13.0	---	1.0	.0	---	---	6.0	---	19.0	23.0	21.0	13.0
12	11.0	---	1.0	.0	.0	4.0	7.0	---	---	---	---	---
13	8.0	---	.0	.0	.0	5.0	6.0	---	---	21.0	20.0	15.0
14	---	1.0	1.0	.0	.0	3.0	---	---	27.0	---	15.0	10.0
15	---	.0	.0	.0	---	5.0	---	---	21.0	19.0	---	---
16	---	.0	.0	.0	.0	5.0	8.0	---	---	---	22.0	---
17	10.0	.0	.0	.0	---	7.0	15.0	---	19.0	---	20.0	16.0
18	9.0	---	.0	.0	---	3.0	18.0	---	17.0	22.0	---	15.0
19	9.0	---	.0	.0	.0	1.0	12.0	---	---	---	---	16.0
20	12.0	.0	.0	.0	.0	1.0	10.0	---	16.0	23.0	22.0	15.0
21	---	1.0	.0	.0	.0	3.0	---	---	22.0	---	21.0	---
22	---	.0	.0	.0	.0	2.5	---	---	20.0	---	17.0	17.0
23	9.0	.0	.0	.0	---	4.0	11.0	---	20.0	24.0	18.0	---
24	12.0	.0	---	.0	---	---	9.0	---	---	---	18.0	16.0
25	8.0	---	---	.0	---	---	11.0	---	21.0	23.0	---	18.0
26	8.0	---	.0	.0	.0	3.0	10.0	---	---	---	---	17.0
27	6.0	1.0	.0	.0	.0	2.0	11.0	---	22.0	---	18.0	15.0
28	---	1.0	.0	.0	.0	3.0	---	---	23.0	23.0	17.0	14.0
29	---	1.0	.0	.0	---	4.0	---	---	24.0	---	---	15.0
30	7.0	2.0	.0	.0	---	4.0	8.0	---	---	---	20.0	15.0
31	6.0	---	---	.0	---	---	---	---	---	24.0	23.0	---
MEAN	10.0	3.0	.5	.0	.0	2.5	8.5	11.5	20.0	22.5	20.5	17.0

06435000 BELLE FOURCHE RESERVOIR NEAR BELLE FOURCHE, SD

LOCATION.--Lat 44°44'12", long 103°40'27", in SW¼SE¼ sec.18, T.9 N., R.4 E., Butte County, Hydrologic Unit 10120202, at dam on Owl Creek, 9.8 mi (15.8 km) northeast of Belle Fourche.

PERIOD OF RECORD.--January 1912 to current year (monthend contents only).

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929, adjustment of 1912. Prior to June 6, 1967, nonrecording gage at present site and datum.

REMARKS.--Offstream reservoir formed by earthfill dam. Storage began in May 1910; dam completed in April 1911. Conservation capacity, 185,170 acre-ft (228 hm^3) 1949 survey, between elevations 2,927.0 ft (892.15 m), lowest outlet, and 2,975.0 ft (906.78 m), crest of spillway weir. Dead storage below elevation 2,927.0 ft (892.15 m) 6,800 acre-ft (8.38 hm^3). Figures given herein represent contents above elevation 2,927.0 ft (892.15 m). Water diverted from Belle Fourche River through Inlet Canal (see station 06434500) is stored in Belle Fourche Reservoir for irrigation.

COOPERATION.--Elevations and contents furnished by Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 197,400 acre-ft (243 hm^3) Apr. 30, 1919, May 20, 1920, elevation, 2,974.9 ft (906.75 m); minimum observed, -3,000 acre-ft (-3.70 hm^3) Sept. 30, 1936, water was lowered below dead storage level of 2,927.0 ft (892.15 m) by opening holes in crib walls.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 184,363 acre-ft (227 hm^3) Apr. 30, elevation, 2,974.9 ft (906.75 m); minimum, 49,500 acre-ft (61.0 hm^3) Sept. 30, elevation, 2,952.4 ft (899.89 m).

MONTHEND ELEVATION, IN FEET NGVD, AND CONTENTS
IN ACRE-FEET, AT 2400, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

Date	Elevation	Contents	Change in contents
Sept. 30	2959.3	80114	
Oct. 31	2960.9	89637	+9523
Nov. 30	2963.1	102260	+12623
Dec. 31	2965.0	113311	+11051
CAL YR 1978			+39791
Jan. 31	2966.5	123000	+9689
Feb. 28	2968.1	133680	+10680
Mar. 31	2972.2	163320	+29640
Apr. 30	2974.9	184363	+21043
May 31	2973.2	170940	-13423
June 30	2970.1	147722	-23218
July 31	2965.2	114589	-33133
Aug. 31	2959.3	80114	-34475
Sept. 30	2952.4	49500	-30614
WTR YR 1979			-30614

06436000 BELLE FOURCHE RIVER NEAR FRUITDALE, SD

LOCATION.--Lat 44°41'27", long 103°44'14", in NW¼NE¼ sec.3, T.8 N., R.3 E., Butte County, Hydrologic Unit 10120202, on right bank 5 ft (2 m) downstream from bridge on U.S. Highway 212, 2.5 mi (4.0 km) northwest of Fruitdale and 8.8 mi (14.2 km) downstream from point of diversion to Belle Fourche Reservoir.

DRAINAGE AREA.--4,540 mi² (11,760 km²), approximately.

PERIOD OF RECORD.--October 1945 to current year. Monthly discharge only for October 1945, published in WSP 1309.

GAGE.--Water-stage recorder. Altitude of gage is 2,925 ft (892 m), from topographic map. Prior to Apr. 9, 1947, nonrecording gage and Apr. 10, 1947, to Oct. 14, 1948, water-stage recorder, at site 100 ft (30 m) upstream at same datum. Oct. 15, 1948, to Dec. 30, 1958, water-stage recorder and Dec. 31, 1958, to Sept. 23, 1959, nonrecording gage at present site and datum.

REMARKS.--Records good except those for winter periods, which are poor. Flow regulated by Keyhole Reservoir since Feb. 12, 1952, usable capacity, 191,600 acre-ft (236 hm³), 180 mi (290 km) upstream. At a point 8.8 mi (14.2 km) above station, water is diverted to Belle Fourche Reservoir (see station 06435000) through Inlet Canal (see station 06434500), with other smaller diversions from the main stem and tributaries for irrigation. Total diversions for irrigation of about 60,000 acres (243 km²) above station. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--34 years, 90.8 ft³/s (2.571 m³/s), 65,780 acre-ft/yr (81.1 hm³/yr); median of yearly mean discharges, 59 ft³/s (1.67 m³/s), 42,800 acre-ft/yr (53 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,200 ft³/s (346 m³/s) June 15, 1976, gage height, 13.18 ft (4.017 m); no flow at times in 1945, 1948, 1959-62, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 248 ft³/s (7.02 m³/s) May 10, gage height, 3.66 ft (1.116 m); minimum daily, 2.6 ft³/s (0.074 m³/s) Jan. 14.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used May 1-13; stage-discharge relation affected by ice Nov. 9 to Mar. 11)

1.88	2.5	2.0	5.2	2.5	32	3.5	184
1.9	2.9	2.2	12	2.8	62	4.0	312

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	3.8	3.5	3.2	4.1	4.2	4.6	227	15	7.6	12	9.7
2	10	3.8	3.2	3.1	4.2	4.1	4.5	215	14	7.2	13	8.3
3	10	3.6	3.1	3.1	4.2	4.1	4.4	208	14	7.2	12	7.6
4	10	3.6	3.2	3.0	4.3	3.9	4.4	205	14	9.9	11	9.7
5	9.6	3.1	3.3	3.0	4.3	4.1	4.4	199	12	11	11	8.8
6	10	3.4	3.2	2.9	4.4	4.0	4.4	198	12	9.0	11	7.7
7	10	3.4	3.1	2.9	4.4	4.0	4.4	212	13	8.0	9.7	10
8	10	3.4	3.3	2.9	4.6	4.3	4.4	219	16	8.0	13	10
9	9.6	3.4	3.6	2.9	4.6	4.5	4.4	231	16	7.8	13	13
10	9.6	3.4	3.7	2.9	4.7	4.5	4.3	243	14	7.2	10	15
11	9.1	3.4	3.8	2.9	4.7	4.5	5.0	230	15	5.7	10	16
12	8.7	3.4	3.9	2.8	4.8	4.5	5.0	220	14	5.1	11	13
13	7.7	3.4	4.0	2.7	4.8	4.5	4.5	225	15	9.9	12	12
14	7.1	3.4	4.0	2.6	4.8	4.5	4.5	220	9.5	13	12	8.7
15	6.1	3.3	4.0	2.7	4.7	4.5	4.5	205	10	10	12	8.6
16	6.1	3.2	3.9	2.8	4.5	4.5	4.5	200	17	13	11	9.3
17	6.4	3.2	3.8	2.8	4.5	4.6	4.5	200	25	13	9.6	8.4
18	7.1	3.1	3.8	2.9	4.6	4.7	4.5	105	21	14	9.0	7.0
19	6.8	3.1	3.8	2.9	4.5	4.8	4.5	40	20	14	8.6	7.1
20	6.8	3.0	3.8	3.1	4.5	4.9	4.5	50	16	9.5	9.8	6.5
21	6.4	3.0	3.9	3.3	4.5	5.0	4.5	45	12	9.1	8.8	5.9
22	6.1	3.1	4.0	3.5	4.5	6.5	4.5	40	10	8.9	7.7	6.5
23	6.1	3.1	4.0	3.6	4.5	6.0	4.5	35	9.2	9.6	8.4	6.4
24	5.5	3.2	4.0	3.8	4.3	5.8	4.0	25	8.6	9.8	9.6	6.3
25	5.2	3.2	4.0	4.1	4.3	5.6	4.0	20	7.8	7.4	10	6.5
26	4.7	3.3	4.0	4.0	4.5	5.4	4.0	20	8.1	7.8	10	6.1
27	4.3	3.3	3.9	4.0	4.4	5.2	4.0	15	8.7	9.2	14	5.7
28	4.3	3.4	3.8	4.0	4.3	5.0	4.0	20	8.8	11	12	6.5
29	4.0	3.4	3.7	4.0	---	4.9	4.0	25	8.0	14	12	6.4
30	3.8	3.5	3.5	4.0	---	4.8	100	15	7.7	14	12	5.9
31	3.8	---	3.3	4.0	---	4.7	---	15	---	14	11	---
TOTAL	225.9	99.9	114.1	100.4	125.5	146.6	227.7	4127	391.4	304.9	336.2	258.6
MEAN	7.29	3.33	3.68	3.24	4.48	4.73	7.59	133	13.0	9.84	10.8	8.62
MAX	11	3.8	4.0	4.1	4.8	6.5	100	243	25	14	14	16
MIN	3.8	3.0	3.1	2.6	4.1	3.9	4.0	15	7.7	5.1	7.7	5.7
AC-FT	448	198	226	199	249	291	452	8190	776	605	667	513

CAL YR 1978	TOTAL	77038.3	MEAN	211	MAX	3400	MIN 3.0	AC-FT	152800
WTR YR 1979	TOTAL	6458.2	MEAN	17.7	MAX	243	MIN 2.6	AC-FT	12810

06436700 INDIAN CREEK NEAR ARPAN, SD

LOCATION.--Lat 44°48'51", long 103°41'22", in SE¼NE¼ sec.24, T.10 N., R.3 E., Butte County, Hydrologic Unit 10120202, on left bank 3,200 ft (975 m) upstream from North Canal flume, 3.5 mi (5.6 km) northwest of Arpan and 6.9 mi (11.1 km) downstream from Bitter Creek.

DRAINAGE AREA.--315 mi^2 (815 km^2), approximately.

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

GAGE.--Water-stage recorder. Altitude of gage is 2,900 ft (880 m), from topographic map.

REMARKS.--Records fair. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--18 years, 21.9 ft^3/s (0.620 m^3/s), 15,870 acre-ft/yr (19.6 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, 16,700 ft^3/s (473 m^3/s) June 15, 1976, gage height, 18.00 ft (5.486 m), from floodmarks, from rating curve extended above 3,000 ft^3/s (85.0 m^3/s) on basis of slope-area measurement of peak flow; no flow for many days in most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 437 ft^3/s (12.4 m^3/s) Mar. 18, gage height, 8.91 ft (2.716 m); maximum gage height, 12.24 ft (3.731 m) Mar. 13 (backwater from ice); no other peak above base of 350 ft^3/s (9.91 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	.00	.00	.00	.00	.00	97	.50	.00	.00	22	.19
2	.00	.00	.00	.00	.00	.00	75	.30	.05	.00	8.0	.00
3	.00	.00	.00	.00	.00	.00	48	.25	.10	.00	3.0	.00
4	.00	.00	.00	.00	.00	.00	34	.20	.10	.00	.71	.14
5	.00	.00	.00	.00	.00	.03	30	.20	.10	.00	.00	.15
6	.00	.00	.00	.00	.00	.05	29	.15	.10	.00	.00	.06
7	.00	.00	.00	.00	.00	.10	27	.15	.05	.00	.00	.00
8	.00	.00	.00	.00	.00	.10	39	.10	.00	.00	10	.00
9	.00	.00	.00	.00	.00	.10	96	.10	.00	.00	14	.00
10	.00	.00	.00	.00	.00	.50	85	.10	.00	.00	4.0	.00
11	.00	.00	.00	.00	.00	1.0	65	.05	.00	.00	2.0	.00
12	.00	.00	.00	.00	.00	2.0	64	.00	.00	.00	.04	.00
13	.00	.00	.00	.00	.00	5.0	57	.00	.00	23	.60	.00
14	.00	.00	.00	.00	.00	20	41	.00	.00	73	.75	.00
15	.00	.00	.00	.00	.00	60	41	.00	.00	5.9	.75	.00
16	.00	.00	.00	.00	.00	120	45	.00	.00	5.9	.45	.00
17	.00	.00	.00	.00	.00	300	41	.00	.00	14	.30	.00
18	.00	.00	.00	.00	.00	407	37	.00	.10	2.1	.08	.00
19	.00	.00	.00	.00	.00	311	34	.00	1.0	.00	.00	.00
20	.00	.00	.00	.00	.00	223	30	.00	.50	.00	.00	.00
21	.00	.00	.00	.00	.00	179	24	.00	.10	.00	.00	.00
22	.00	.00	.00	.00	.00	164	17	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	93	13	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	85	10	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	134	9.0	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.01	159	7.5	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.02	113	6.0	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	96	4.5	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	---	106	3.0	.00	.00	.00	.75	.00
30	.00	.00	.00	.00	---	97	1.5	.00	.00	5.3	.75	.00
31	.00	---	.00	.00	---	109	---	.00	---	42	.75	---
TOTAL	.00	.00	.00	.00	.03	2784.88	1110.5	2.10	2.20	171.20	68.93	.54
MEAN	.000	.000	.000	.000	.001	89.8	37.0	.068	.073	5.52	2.22	.018
MAX	.00	.00	.00	.00	.02	407	97	.50	1.0	73	22	.19
MIN	.00	.00	.00	.00	.00	.00	1.5	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.06	5520	2200	4.2	4.4	340	137	1.1

CAL YR 1978	TOTAL	27246.79	MEAN 74.6	MAX 2450	MIN .00	AC-FT	54040	
WTR YR 1979	TOTAL	4140.38	MEAN 11.3	MAX 407	MIN .00	AC-FT	8210	

06436800 HORSE CREEK NEAR VALE, SD

LOCATION.--Lat 44°39'30", long 103°20'17", in SE¼NW¼ sec.13, T.8 N., R.6 E., Butte County, Hydrologic Unit 10120202, on right bank 600 ft (183 m) downstream from Dry Creek, 2.9 mi (4.7 km) upstream from mouth and 4.0 mi (6.4 km) northeast of Vale.

DRAINAGE AREA.--530 mi^2 (1,370 km^2), approximately.

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Datum of gage is 2,688.96 ft (819.595 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for winter periods, which are poor. Natural flow of stream affected by diversions for irrigation above station and by return flow from Belle Fourche Irrigation Project.

AVERAGE DISCHARGE.--17 years, 62.6 ft^3/s (1.773 m^3/s), 45,350 acre-ft/yr (55.9 hm^3/yr); median of yearly mean discharges, 53 ft^3/s (1.50 m^3/s), 38,400 acre-ft/yr (47 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,600 ft^3/s (329 m^3/s) June 16, 1976, gage height, 14.61 ft (4.453 m), from floodmarks, from rating curve extended above 2,000 ft^3/s (56.6 m^3/s) on basis of slope-area measurement of peak flow; no flow Jan. 3-18, 1979.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,750 ft^3/s (49.6 m^3/s) July 16, gage height, 9.54 ft (2.908 m), no other peak above base of 400 ft^3/s (11.3 m^3/s); no flow Jan. 3-18.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 1 to Nov. 8, Apr. 11 to May 19, June 26 to July 20, Sept. 23-30; stage-discharge relation affected by ice Nov. 9 to Apr. 2)

2.8	0	3.1	2.6	4.0	57
2.9	.30	3.2	4.9	5.0	185
3.0	1.0	3.5	16	6.0	381

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	5.5	3.9	.40	1.2	1.8	150	6.9	116	77	176	116
2	94	5.5	3.9	.20	1.0	2.0	140	6.0	112	69	179	110
3	83	5.5	3.9	.00	1.2	2.1	127	5.5	134	74	151	112
4	42	5.5	3.8	.00	1.2	2.2	64	4.4	133	84	139	120
5	15	5.2	3.7	.00	1.4	2.3	70	4.4	124	100	132	93
6	9.9	4.7	3.5	.00	1.4	2.2	57	4.7	126	92	124	96
7	7.7	4.7	3.3	.00	1.4	2.1	62	4.0	179	84	120	108
8	5.7	4.7	3.1	.00	1.6	2.0	67	3.3	177	87	129	118
9	6.9	4.4	3.2	.00	1.8	2.0	83	4.0	169	80	148	124
10	8.4	4.4	3.6	.00	2.0	2.0	138	4.2	162	77	154	127
11	7.4	4.4	4.1	.00	1.8	2.0	147	4.2	162	60	130	137
12	6.6	4.4	3.9	.00	1.6	2.2	125	3.8	146	54	120	146
13	4.7	4.3	3.8	.00	1.4	2.3	110	3.1	110	67	113	150
14	3.8	4.0	3.5	.00	1.2	2.4	117	2.9	97	109	111	150
15	3.8	3.7	3.4	.00	1.0	2.5	107	2.6	105	204	109	147
16	3.8	3.5	3.2	.00	1.2	2.6	90	2.3	115	265	109	150
17	4.0	3.3	3.1	.00	1.4	2.7	87	1.8	238	291	101	147
18	4.2	3.1	3.0	.00	1.6	2.8	72	1.8	154	211	104	142
19	4.7	3.0	3.1	.30	1.8	2.9	78	1.5	130	140	109	141
20	4.7	3.0	3.5	1.0	1.6	3.0	68	44	210	132	113	133
21	4.7	3.0	3.9	3.0	1.4	3.5	51	56	151	118	103	128
22	4.9	3.0	3.8	2.7	1.4	4.0	38	56	156	119	98	117
23	4.9	3.0	3.6	2.5	1.4	5.0	30	42	284	120	96	103
24	4.9	3.1	3.5	2.4	1.6	6.0	21	26	152	103	97	102
25	5.2	3.3	3.4	2.3	1.8	11	17	34	112	97	105	101
26	5.2	3.5	3.0	2.2	1.8	20	14	35	113	106	112	102
27	5.5	3.7	2.7	2.1	1.8	50	13	43	96	112	115	102
28	5.5	3.8	2.2	2.0	1.6	100	11	74	113	128	119	107
29	5.5	3.8	1.7	2.0	---	180	9.6	79	111	168	117	116
30	4.9	3.9	1.2	1.9	---	170	7.7	94	92	157	120	127
31	5.2	---	.80	1.7	---	160	---	156	---	159	110	---
TOTAL	463.7	120.9	100.30	26.70	41.6	755.6	2171.3	810.4	4279	3744	3763	3672
MEAN	15.0	4.03	3.24	.86	1.49	24.4	72.4	26.1	143	121	121	122
MAX	94	5.5	4.1	3.0	2.0	180	150	156	284	291	179	150
MIN	3.8	3.0	.80	.00	1.0	1.8	7.7	1.5	92	54	96	93
AC-FT	920	240	199	53	83	1500	4310	1610	8490	7430	7460	7280

CAL YR 1978 TOTAL 47485.30 MEAN 130 MAX 3120 MIN .80 AC-FT 94190
WTR YR 1979 TOTAL 19948.50 MEAN 54.7 MAX 291 MIN .00 AC-FT 39570

06436800 HORSE CREEK NEAR VALE, SD--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1964 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1968 to September 1969, October 1971 to September 1978.
WATER TEMPERATURES: October 1968 to September 1969, October 1971 to September 1978.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 8,080 micromhos Feb. 1-3, 1969; minimum daily, 550 micromhos June 19, 1976.
WATER TEMPERATURES: Maximum daily, 33.0°C June 29, 1974, July 28, 1978; minimum daily, 0.0°C on many days during winter periods.

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...	0945	86	1950	8.0	10.0	860	700	200	88	140
NOV										
03...	1610	5.4	5800	8.0	8.0	1900	1600	270	300	630
DEC										
06...	1030	3.6	7700	8.3	.5	2200	1800	160	430	1000
JAN										
29...	1430	2.0	9450	7.9	.0	2900	2200	320	500	1000
MAR										
29...	1100	178	1260	7.6	.5	470	390	96	55	160
APR										
09...	1120	81	2220	7.7	8.0	740	610	130	100	270
MAY										
07...	1130	4.1	4300	8.4	14.0	1300	1200	110	260	590
JUN										
04...	1245	129	2060	8.5	19.5	850	660	200	85	120
JUL										
12...	1115	56	1440	8.2	25.0	830	680	190	87	140
AUG										
06...	1030	125	1840	8.2	23.0	780	630	190	75	110
SEP										
06...	0930	97	1920	8.3	18.5	850	690	200	84	120

06436800 HORSE CREEK NEAR VALE, SD--Continued

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)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)
OCT									
03...	26	2.1	9.7	200	0	160	950	18	.5
NOV									
03...	42	6.3	13	380	0	310	2900	31	.4
DEC									
06...	50	9.3	18	480	0	390	3600	150	.4
JAN									
29...	43	8.1	20	810	0	660	3800	180	.5
MAR									
29...	42	3.2	7.4	91	0	75	650	23	.3
APR									
09...	44	4.3	9.1	150	0	120	1100	39	.4
MAY									
07...	49	7.0	12	190	0	160	2300	87	.4
JUN									
04...	23	1.8	10	210	10	190	890	22	.5
JUL									
12...	27	2.1	7.6	190	0	160	930	21	.5
AUG									
06...	23	1.7	11	190	0	160	880	14	.5
SEP									
06...	34	1.8	8.2	190	0	160	940	22	.5

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	2100	4000	5600	6500	2180	6200	1530					
2	2000	3000	5700	8500	2150	6300	1500					
3	2000	4200	5800	8500	2050	6200	1530					
4	2500	4300	5800	8500	2100	6200	2030					
5	2550	4300	5800	8500	2130	6000	2050					
6	2500	4300	5800	5900	6500	3650	2050					
7	2550	3600	5600	---	6800	3700	2030					
8	2750	3200	5600	---	7000	3360	2050					
9	2750	4300	5600	---	6750	3380	2400					
10	3600	4800	5500	6500	6500	3400	2400					
11	3600	4600	5500	6900	5800	2800	2430					
12	3700	3700	5500	7000	5800	2600	2430					
13	3700	4400	5500	7000	5800	2360	2400					
14	3750	4800	5600	7000	5800	2050	2400					
15	3700	4900	5600	6800	6200	1600	2400					
16	3700	4500	5600	7000	5800	1380	2330					
17	4400	5300	5800	8700	5800	1370	2350					
18	4400	4900	5600	8500	5800	1440	2300					
19	4400	5300	5600	8500	5750	1390	2350					
20	4450	5800	5400	8500	6000	1370	2330					
21	4400	5600	5500	8700	6300	1380	2350					
22	4400	4000	5400	8500	5750	1370	2350					
23	4400	5800	5400	8700	5700	1400	2300					
24	4400	5700	5500	8600	5800	1460	2330					
25	4400	5700	5600	8500	5900	1500	2600					
26	4400	5200	5600	8700	5800	1500	2650					
27	4400	5700	5600	8600	5700	1600	2850					
28	4400	5700	6100	8600	5600	1480	2800					
29	4400	5800	6300	8500	---	1540	2850					
30	4400	5800	6200	8600	---	1470	2850					
31	4400	---	6200	8700	---	2260	---					
MEAN	3660	4770	5670	7980	5330	2700	2310					

06436800 HORSE CREEK NEAR VALE, SD--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 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P) (00671)	BORON, DIS-SOLVED (UG/L AS B) (01020)
OCT									
03...	5.0	1510	2.05	351	.86	.06	.02	.01	320
NOV									
03...	2.5	4360	5.93	63.6	5.5	.03	.00	.00	980
DEC									
06...	5.0	5730	7.79	55.7	29	.03	.01	.01	1200
JAN									
29...	13	6250	8.50	33.7	3.2	.03	.00	.02	1800
MAR									
29...	5.1	1050	1.43	505	2.2	.03	.01	.00	200
APR									
09...	6.0	1750	2.38	383	4.3	.23	.01	.00	260
MAY									
07...	1.9	3480	4.73	38.5	6.5	.13	.13	.00	620
JUN									
04...	6.6	1450	1.97	505	.57	.11	.04	.04	300
JUL									
12...	4.5	1480	2.01	224	.25	.10	.01	.00	300
AUG									
06...	7.8	1390	1.89	469	.81	.08	.06	.05	290
SEP									
06...	6.4	1480	2.01	388	.87	.07	.02	.01	290

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	10.0	.0	.0	.0	.0	.0					
2	12.0	10.0	.0	.0	.0	.0	.0					
3	12.0	10.0	.0	.0	.0	.0	.0					
4	12.0	8.0	.0	.0	.0	.0	2.0					
5	11.0	7.0	.0	.0	.0	.0	4.0					
6	10.0	6.0	.0	.0	.0	.0	4.0					
7	10.0	7.0	.0	---	.0	.0	6.0					
8	12.0	6.0	.0	---	.0	.0	8.0					
9	13.0	5.0	.0	---	.0	.0	8.0					
10	12.0	1.0	.0	.0	.0	.0	8.0					
11	11.0	.0	.0	.0	.0	.0	10.0					
12	11.0	.0	.0	.0	.0	.0	8.0					
13	11.0	.0	.0	.0	.0	.0	10.0					
14	12.0	.0	.0	.0	.0	.0	11.0					
15	12.0	.0	.0	.0	.0	.0	12.0					
16	12.0	.0	.0	.0	.0	.0	13.0					
17	11.0	.0	.0	.0	.0	.0	12.5					
18	11.0	.0	.0	.0	.0	.0	12.0					
19	12.0	.0	.0	.0	.0	.0	12.0					
20	12.0	.0	.0	.0	.0	.0	12.0					
21	11.0	.0	.0	.0	.0	.0	13.0					
22	10.0	.0	.0	.0	.0	.0	13.0					
23	10.0	.0	.0	.0	.0	.0	12.0					
24	9.0	.0	.0	.0	.0	.0	13.0					
25	9.0	.0	.0	.0	.0	.0	9.0					
26	8.0	.0	.0	.0	.0	.0	7.0					
27	5.0	.0	.0	.0	.0	.0	8.0					
28	8.0	.0	.0	.0	.0	.0	8.0					
29	10.0	.0	.0	.0	---	.0	9.5					
30	8.0	.0	.0	.0	---	.0	7.0					
31	8.0	---	.0	.0	---	.0	---					
MEAN	10.5	2.5	.0	.0	.0	.0	8.5					

06437000 BELLE FOURCHE RIVER NEAR STURGIS, SD

LOCATION.--Lat 44°30'47", long 103°08'11", in SE¼NW¼ sec.3, T.6 N., R.8 E., Meade County, Hydrologic Unit 10120202, on right bank near upstream end of bridge on State Highway 34, 0.5 mi (0.8 km) upstream from Bear Butte Creek and 20 mi (32 km) northeast of Sturgis.

DRAINAGE AREA.--5,870 mi^2 (15,200 km^2), approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1945 to current year. Monthly discharge only for some periods, published in WSP 1309.

GAGE.--Water-stage recorder. Datum of gage is 2,526.13 ft (769.964 m) National Geodetic Vertical Datum of 1929. Prior to Oct. 31, 1946, nonrecording gage at same site and datum.

REMARKS.--Records good except those for winter periods, which are poor. Flow regulated by Keyhole Reservoir, usable capacity, 191,600 acre-ft (236 hm^3), 246 mi (396 km) upstream since February 1952. At a point 75 mi (121 km) above station, water is diverted to Belle Fourche Reservoir (see station 06435000), through Inlet Canal (see station 06434500), with other small diversions from the main stem and tributaries for irrigation. Total diversion for irrigation of about 60,000 acres (243 km^2) above station.

AVERAGE DISCHARGE.--34 years, 277 ft^3/s (7.845 m^3/s), 200,700 acre-ft/yr (247 hm^3/yr); median of yearly mean discharges, 230 ft^3/s (6.51 m^3/s), 167,000 acre-ft/yr (206 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 19,100 ft^3/s (541 m^3/s) June 15, 1976, gage height, 16.04 ft (4.889 m), from rating curve extended above 11,000 ft^3/s (312 m^3/s); no flow for many days in 1945, 1950, and Aug. 9, 1961.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,740 ft^3/s (77.6 m^3/s) Aug. 4; maximum gage height observed, 8.55 ft (2.606 m) Mar. 13 (backwater from ice); minimum daily, 2.0 ft^3/s (0.057 m^3/s) Jan. 8-11.

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	300	60	40	7.0	4.5	8.0	340	94	352	252	593	334
2	312	58	38	6.0	5.0	7.0	350	156	324	227	787	309
3	308	60	36	5.0	5.0	8.0	370	233	309	223	794	316
4	233	57	35	4.0	6.0	9.5	380	230	354	231	932	338
5	168	54	35	3.0	7.0	13	400	227	325	261	515	312
6	140	52	35	2.5	6.5	18	390	227	321	266	337	279
7	131	52	35	2.5	6.0	19	350	231	391	245	324	263
8	121	52	37	2.0	6.0	20	300	236	493	237	366	279
9	117	53	38	2.0	7.0	150	221	259	535	240	865	298
10	112	52	39	2.0	10	170	219	269	458	236	768	319
11	110	50	40	2.0	9.0	190	245	277	435	200	542	326
12	103	49	39	2.5	8.5	250	253	274	423	172	512	339
13	99	48	39	3.0	8.0	255	219	268	345	196	487	379
14	97	48	38	3.5	7.0	260	224	259	287	298	442	383
15	94	47	38	4.0	6.0	265	261	246	275	404	451	388
16	94	48	37	5.0	5.0	270	238	235	295	491	415	390
17	94	50	36	5.5	4.5	280	210	263	678	719	377	403
18	90	48	34	6.5	6.0	280	203	255	762	473	329	390
19	88	46	32	7.5	8.0	265	227	252	448	398	351	356
20	86	44	31	8.5	7.5	250	380	187	551	313	393	355
21	81	43	33	10	7.0	250	189	180	574	274	363	338
22	78	42	33	8.0	6.5	250	157	172	486	255	346	308
23	78	42	33	6.5	6.0	260	138	162	616	250	339	301
24	76	43	32	5.5	5.5	290	124	164	459	287	306	307
25	74	44	30	5.0	6.0	300	120	158	337	271	301	301
26	72	43	24	4.5	7.0	260	113	168	295	355	342	292
27	69	42	16	4.5	7.0	300	107	174	305	315	391	296
28	68	42	14	4.5	8.0	320	103	202	323	299	431	312
29	66	41	10	4.5	---	330	101	226	293	431	432	315
30	63	40	9.0	4.5	---	330	99	257	276	581	391	330
31	61	---	8.0	4.5	---	330	---	308	---	523	360	---
TOTAL	3683	1450	974.0	146.0	185.5	6207.5	7031	6849	12325	9923	14582	9856
MEAN	119	48.3	31.4	4.71	6.63	200	234	221	411	320	470	329
MAX	312	60	40	10	10	330	400	308	762	719	932	403
MIN	61	40	8.0	2.0	4.5	7.0	99	94	275	172	301	263
AC-FT	7310	2880	1930	290	368	12310	13950	13580	24450	19680	28920	19550

CAL YR 1978 TOTAL 203703.0 MEAN 558 MAX 6570 MIN 8.0 AC-FT 404000
WTR YR 1979 TOTAL 73212.0 MEAN 201 MAX 932 MIN 2.0 AC-FT 145200

06437000 BELLE FOURCHE RIVER NEAR STURGIS, SD--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1954-58, 1969 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: August 1954 to September 1958, October 1968 to September 1971, October 1973 to current year.
WATER TEMPERATURES: August 1954 to September 1958, October 1968 to September 1971, October 1974 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 5,770 micromhos May 25, 1958; minimum daily, 650 micromhos Feb. 15, 1971.
WATER TEMPERATURES: Maximum daily, 30.0°C June 28, July 4, 7, 9, Aug. 7-10, 1970; minimum daily, 0.0°C on many days during winter periods.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 3,600 micromhos Jan. 5-7; minimum daily, 1,140 micromhos Mar. 24.
WATER TEMPERATURES: Maximum daily, 29.5°C July 12; minimum daily, 0.0°C on many days during winter period.

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...	1315	300	1900	8.2	12.5	840	690	210	77	100
NOV										
06...	1100	51	2750	8.1	3.5	1200	1000	260	140	180
DEC										
06...	1445	34	380	7.6	.0	1500	1200	310	180	250
JAN										
08...	1300	1.8	580	7.2	.0	2300	1700	430	300	330
31...	1100	4.6	3840	7.5	.0	1700	1300	400	170	190
APR										
09...	1430	222	2530	7.8	10.0	790	640	160	95	210
MAY										
08...	1045	231	1440	8.7	12.0	630	570	200	32	61
JUN										
07...	1345	396	1880	8.2	16.5	790	620	200	70	100
JUL										
12...	1400	169	1650	8.2	29.5	810	660	190	81	110
AUG										
06...	1345	330	1840	8.4	25.5	810	670	200	76	95
SEP										
06...	1215	280	1870	8.5	21.5	780	640	190	74	93

06437000 BELLE FOURCHE RIVER NEAR STURGIS, SD--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)	BICAR-BONATE (MG/L AS HCO3) (00440)	CAR-BONATE (MG/L AS CO3) (00445)	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									
03...	20	1.5	9.1	180	0	150	850	12	.5
NOV									
06...	24	2.2	13	250	0	210	1300	24	.5
DEC									
06...	26	2.8	12	380	0	310	1700	38	.6
JAN									
08...	23	3.0	28	750	0	620	2700	48	.8
31...	19	2.0	22	490	0	400	1500	34	.8
APR									
09...	36	3.3	9.2	180	0	150	1000	28	.4
MAY									
08...	17	1.1	6.4	70	0	57	690	8.7	.4
JUN									
07...	21	1.6	9.1	200	0	160	830	14	.5
JUL									
12...	22	1.7	21	180	0	150	870	16	.5
AUG									
06...	20	1.5	9.1	170	0	140	820	14	.6
SEP									
06...	29	1.5	8.3	170	0	140	930	17	.5

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 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P) (00671)	BORON, DIS-SOLVED (UG/L AS B) (01020)
OCT									
03...	4.8	1360	1.85	1100	.85	.04	.01	.00	280
NOV									
06...	4.6	2060	2.80	284	2.4	.01	.00	.00	420
DEC									
06...	8.2	2710	3.69	249	6.1	.02	.01	.01	460
JAN									
08...	13	4240	5.77	20.6	3.5	.04	.04	.01	790
31...	13	2580	3.51	32.0	2.2	.01	.00	.00	490
APR									
09...	5.6	1610	2.19	965	2.6	.40	.02	.00	250
MAY									
08...	3.0	1040	1.41	649	.13	.03	.02	.00	110
JUN									
07...	5.9	1330	1.81	1420	.96	.20	.02	.03	260
JUL									
12...	5.4	1390	1.89	634	.86	.05	.01	.00	250
AUG									
06...	6.0	1310	1.78	1170	.47	.05	.01	.00	300
SEP									
06...	5.2	1410	1.92	1070	.68	.04	.01	.01	280

06437000 BELLE FOURCHE RIVER NEAR STURGIS, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	ALUMINUM, DISSOLVED (UG/L AS AL) (01106)	ARSENIC DISSOLVED (UG/L AS AS) (01000)	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)	IRON, DISSOLVED (UG/L AS FE) (01046)	LEAD, DISSOLVED (UG/L AS PB) (01049)	LITHIUM DISSOLVED (UG/L AS LI) (01130)
APR										
09...	1430	230	17	1	0	0	5	30	14	170
SEP										
06...	1215	0	17	<1	0	<3	1	10	0	90

DATE	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOVERABLE (UG/L AS HG) (71900)	MOLYBDENUM, DISSOLVED (UG/L AS MO) (01060)	NICKEL, DISSOLVED (UG/L AS NI) (01065)	SELENIUM, DISSOLVED (UG/L AS SE) (01145)	SILVER, DISSOLVED (UG/L AS AG) (01075)	STRONTIUM, DISSOLVED (UG/L AS SR) (01080)	VANADIUM, DISSOLVED (UG/L AS V) (01085)	ZINC, DISSOLVED (UG/L AS ZN) (01090)	CYANIDE TOTAL (MG/L AS CN) (00720)
APR										
09...	440	.1	0	5	7	0	1600	.0	40	.03
SEP										
06...	5	.1	<10	1	5	0	2400	<1.0	<3	.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	1750	2500	2450	3300	2600	2060	1530	2200	1920	1640	1680	1760
2	1850	2430	2350	3300	2590	1930	1550	2190	1880	1600	1730	1820
3	1780	2500	2350	3500	2530	1850	1580	2500	1850	1750	1700	1820
4	1760	2500	2450	3500	2450	2160	1630	1570	1810	1660	1700	1780
5	1960	2500	2500	3600	2300	2140	1700	1520	1820	1620	1830	1770
6	2050	2530	2500	3600	2230	2150	1900	1580	1880	1600	1800	1800
7	2150	2580	2550	3600	2180	2230	1900	1560	1760	1690	1800	1850
8	2150	---	2600	3400	2130	---	2130	1520	1780	1590	1800	1840
9	2180	2600	2550	3450	2050	1090	2180	1490	1680	1650	1550	1800
10	2180	---	2520	3450	1980	---	2080	1480	1640	1640	1500	1820
11	2200	2350	2500	3400	1900	1680	1950	1510	1710	1650	1700	1800
12	2350	2600	2500	3300	1930	1410	1800	1530	1690	1750	1700	1780
13	2300	2800	2550	3150	1900	1140	1800	1540	1690	1740	1750	1780
14	2350	2900	2700	3000	1830	1340	1850	1550	1750	1680	1750	1800
15	2350	3200	2700	3100	1900	1490	2050	1550	1840	1770	1760	1780
16	2350	3250	2700	3150	1900	1490	2130	1570	1760	1750	1800	1750
17	2280	3250	2600	3000	1980	1640	2050	1550	1610	1630	1820	1740
18	2250	3100	2500	2800	1950	1400	1900	1540	1710	1650	1850	1740
19	2280	3150	2550	2850	1900	1520	1900	1620	1740	1650	1820	1740
20	2330	3500	2500	2900	---	1280	1650	1640	1600	1660	1800	1740
21	2400	3250	2600	3100	2030	1130	1850	1750	1780	1660	1800	1750
22	2280	3200	2500	3200	1950	1500	1800	1850	1730	1700	1850	1750
23	2330	---	2350	3000	1800	1340	1830	1840	1690	1700	1850	1780
24	2450	3380	2300	3100	1700	1490	1850	1780	1650	1750	1900	1800
25	2380	3330	2300	2850	1650	1560	1900	1850	1720	1720	1900	1820
26	2350	3300	2300	2700	1700	1550	1880	2000	1630	1720	1850	1850
27	2350	3150	2300	2600	1780	1560	1900	2350	1640	1800	1840	1850
28	2400	3000	2400	2600	1900	1420	1930	2500	1530	1790	1800	1850
29	2400	2950	2450	2650	---	1560	1950	2160	1650	1750	1800	1800
30	---	2950	2700	2700	---	1600	1900	2130	1620	1750	1850	1830
31	2380	---	2900	2650	---	1600	---	1960	---	1750	1850	---
MEAN	2220	2920	2510	3110	2030	1600	1870	1790	1730	1690	1780	1790

< Less than.

06437000 BELLE FOURCHE RIVER NEAR STURGIS, SD--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	14.0	3.5	.0	.0	.0	.0	.0	10.0	14.0	21.0	22.5	20.0
2	11.5	5.0	.0	.0	.0	.0	.0	9.5	16.0	24.5	22.0	18.0
3	9.0	5.5	.0	.0	.0	.0	.0	10.5	18.0	29.0	22.0	19.0
4	10.0	6.5	.0	.0	.0	.0	.0	11.0	25.5	23.0	23.5	20.5
5	8.0	4.0	.0	.0	.0	.0	.0	14.5	25.5	21.5	23.0	20.0
6	6.0	1.0	.0	.0	.0	.0	.0	17.5	19.0	21.0	23.0	19.0
7	7.5	1.0	.0	.0	.0	.0	.0	14.0	18.0	22.0	24.0	18.0
8	8.0	---	.0	.0	.0	---	4.0	11.0	17.0	24.0	22.0	20.0
9	9.0	7.0	.0	.0	.0	.0	6.0	9.0	14.5	22.5	21.0	20.5
10	9.0	---	.0	.0	.0	---	6.0	8.0	15.5	23.0	21.0	21.0
11	14.0	.5	.0	.0	.0	.0	7.0	7.0	18.5	23.0	20.5	19.5
12	10.5	.0	.0	.0	.0	.0	3.0	12.0	21.0	29.5	22.0	15.5
13	6.0	.5	.0	.0	.0	.0	4.5	12.0	22.5	27.5	21.0	14.5
14	11.0	.0	.0	.0	.0	.0	9.0	18.5	22.0	22.5	18.0	11.0
15	7.5	.0	.0	.0	.0	.0	14.0	21.5	19.5	21.0	16.5	12.5
16	7.0	.0	.0	.0	.0	.0	9.5	13.0	24.0	21.0	23.5	14.0
17	9.0	.0	.0	.0	.0	.0	11.0	18.0	19.0	19.5	21.0	16.0
18	8.5	.0	.0	.0	.0	.0	14.5	14.5	16.5	21.5	20.5	15.5
19	8.5	.0	.0	.0	.0	.0	13.0	19.0	17.0	22.0	20.5	16.0
20	8.5	.0	.0	.0	---	.0	10.0	21.0	15.5	23.0	20.0	16.0
21	9.0	.0	.0	.0	.0	.0	17.0	14.0	18.5	23.0	18.5	14.0
22	12.0	.0	.0	.0	.0	.0	14.5	20.0	19.5	24.5	18.5	16.5
23	5.5	---	.0	.0	.0	.0	13.0	22.5	23.0	24.5	18.0	15.0
24	7.0	.0	.0	.0	.0	.0	11.0	14.0	23.5	24.5	18.5	15.0
25	7.0	.0	.0	.0	.0	.0	9.5	17.5	20.0	22.0	20.5	15.5
26	5.0	.0	.0	.0	.0	.0	13.5	24.5	20.5	22.0	18.0	17.0
27	5.0	.0	.0	.0	.0	.0	14.5	23.0	22.0	21.5	18.5	20.0
28	8.0	.0	.0	.0	.0	.0	11.0	19.0	21.5	22.5	20.0	15.0
29	10.5	.0	.0	.0	---	.0	13.0	15.0	27.5	22.5	19.0	16.0
30	---	.5	.0	.0	---	.0	9.0	13.0	22.0	22.5	21.0	17.5
31	3.5	---	.0	.0	---	.0	---	16.5	---	22.0	26.0	---
MEAN	8.5	1.5	.0	.0	.0	.0	8.0	15.0	20.0	23.0	21.0	17.0

06438000 BELLE FOURCHE RIVER NEAR ELM SPRINGS, SD

LOCATION.--Lat 44°22'11", long 102°33'56", in NE¼NE¼ sec.29, T.5 N., R.13 E., Meade County, Hydrologic Unit 10120202, on right bank 10 ft (3 m) downstream from highway bridge, 4.3 mi (6.9 km) northwest of Elm Springs and 4.7 mi (7.6 km) downstream from Hay Creek.

DRAINAGE AREA.--7,210 mi^2 (18,670 km^2), approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1928 to June 1932, March 1934 to current year. Monthly discharge only for some periods, published in WSP 1309.

REVISED RECORDS.--WSP 786: Drainage area. WSP 926: 1929, 1931(M), 1935, 1937.

GAGE.--Water-stage recorder. Datum of gage is 2,171.60 ft (661.904 m) National Geodetic Vertical Datum of 1929. Prior to July 27, 1939, nonrecording gage at same site and datum.

REMARKS.--Records good except those over 1,000 ft^3/s (28.3 m^3/s), which are fair and those for winter periods, which are poor. Flow regulated by Keyhole Reservoir, usable capacity, 191,600 acre-ft (236 hm^3), 304 mi (489 km) upstream since February 12, 1952. At a point 133 mi (214 km) above station, water is diverted to Belle Fourche Reservoir (see station 06435000), through Inlet Canal near Belle Fourche (see station 06434500), with other smaller diversions from the main stem and tributaries for irrigation. Total diversion for irrigation of about 60,000 acres (243 km^2) above station.

AVERAGE DISCHARGE.--48 years (water years 1929-31, 1935-79), 367 ft^3/s (10.4 m^3/s), 265,900 acre-ft/yr (328 hm^3/yr); median of yearly mean discharges, 360 ft^3/s (10 m^3/s), 261,000 acre-ft/yr (320 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 45,100 ft^3/s (1,280 m^3/s) June 8, 1964, gage height, 15.90 ft (4.846 m), from rating curve extended above 23,000 ft^3/s (651 m^3/s); no flow for many days in 1936-37, 1939-40, 1961-62.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 1927 reached a stage of 21.8 ft (6.64 m). Flood in spring of 1933 reached a stage of about 20 ft (6.1 m), from floodmarks.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 998 ft^3/s (28.3 m^3/s) June 22, gage height, 2.65 ft (0.808 m); maximum gage height observed, 4.75 ft^3/s (1.448 m) Mar. 15 (backwater from ice); minimum daily, 2.5 ft^3/s (0.071 m^3/s) Feb. 2.

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	259	55	36	6.0	3.0	6.0	516	221	303	329	516	364
2	259	55	38	6.5	2.5	7.0	448	221	342	299	493	350
3	255	55	40	6.5	3.0	10	412	217	320	283	499	333
4	247	55	42	6.0	3.0	15	382	232	320	283	417	337
5	192	57	42	5.5	3.0	20	373	236	337	295	378	342
6	141	57	40	6.0	3.5	25	299	240	316	320	373	320
7	113	57	38	5.5	4.0	30	329	244	316	329	355	291
8	96	55	35	5.5	4.0	35	320	240	382	303	368	283
9	85	55	30	5.5	4.5	46	320	251	454	295	438	295
10	74	50	26	5.5	4.5	60	320	267	470	299	772	320
11	68	40	22	5.5	4.5	70	324	275	432	295	599	333
12	70	38	18	5.0	4.5	85	368	283	417	267	493	350
13	68	34	16	4.5	4.5	100	368	279	402	240	487	360
14	64	26	14	4.0	4.5	140	329	275	342	303	460	382
15	63	27	14	4.5	4.5	170	422	271	308	378	454	387
16	63	27	13	4.5	4.5	200	402	259	299	510	454	397
17	63	27	13	4.5	4.5	250	368	247	465	623	438	397
18	63	28	13	4.5	4.0	360	333	271	691	886	382	407
19	66	28	12	4.5	4.0	560	324	271	659	593	350	392
20	66	29	12	4.5	3.5	800	421	267	516	510	368	373
21	66	29	12	5.0	3.0	724	416	217	758	407	392	368
22	66	29	12	5.0	3.5	647	299	196	779	360	378	350
23	64	29	12	5.0	4.0	605	267	192	678	342	382	329
24	63	29	11	5.0	4.0	528	251	179	730	333	368	320
25	63	30	10	5.0	4.0	569	240	182	482	378	337	329
26	63	31	9.0	5.0	4.5	539	236	182	382	329	368	312
27	61	32	8.0	5.0	5.0	522	232	176	346	342	392	308
28	59	33	7.5	4.5	5.0	623	225	176	382	350	417	312
29	57	33	7.0	4.0	---	647	225	196	397	382	422	324
30	57	34	6.5	3.5	---	581	225	228	368	504	417	329
31	57	---	6.0	3.5	---	617	---	247	---	545	378	---
TOTAL	3051	1164	615.0	155.0	111.0	9591.0	9994	7238	13393	11912	13345	10294
MEAN	98.4	38.8	19.8	5.00	3.96	309	333	233	446	384	430	343
MAX	259	57	42	6.5	5.0	800	516	283	779	886	772	407
MIN	57	26	6.0	3.5	2.5	6.0	225	176	299	240	337	283
AC-FT	6050	2310	1220	307	220	19020	19820	14360	26570	23630	26470	20420

CAL YR 1978 TOTAL 241231.0 MEAN 661 MAX 14200 MIN 6.0 AC-FT 478500
WTR YR 1979 TOTAL 80863.0 MEAN 222 MAX 886 MIN 2.5 AC-FT 160400

06438000 BELLE FOURCHE RIVER NEAR ELM SPRINGS, SD--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

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

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: November 1974 to current year.
WATER TEMPERATURES: October 1974 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 5,000 micromhos Jan. 31, Feb. 7-11; minimum daily, 800 micromhos June 19, 1976.
WATER TEMPERATURES: Maximum daily, 33.5°C June 25, 1977; minimum, 0.0°C on many days during winter periods.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 5,000 micromhos Jan. 31, Feb. 7-11; minimum daily, 1,000 micromhos Mar. 22.
WATER TEMPERATURES: Maximum daily, 28.0°C June 14; minimum daily, 0.0°C on many days during winter period.

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)
OCT										
10...	1030	74	2400	8.8	11.5	2.7	9.1	340	K1	990
NOV										
14...	1300	26	3000	7.8	.0	1.0	11.2	230	340	1400
DEC										
05...	1300	46	3500	7.9	.5	.80	11.2	K7	K10	1500
FEB										
05...	1200	.16	6500	7.6	.0	.50	11.1	K3	K10	2100
APR										
16...	1145	419	2110	7.6	12.0	1100	10.8	50	360	680
MAY										
15...	1200	265	1610	8.2	19.5	25	9.4	K6	K6	760
JUN										
12...	1330	414	1810	7.9	25.0	210	7.6	210	K60	810
AUG										
21...	1100	392	1740	8.2	20.5	80	9.3	200	150	800
SEP										
06...	0815	328	1680	8.1	20.5	21	8.2	90	80	770

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)
OCT										
10...	830	230	100	150	25	2.1	11	--	--	160
NOV										
14...	1300	280	160	210	25	2.5	14	--	--	88
DEC										
05...	1200	320	160	250	27	2.9	15	--	--	280
FEB										
05...	1600	430	240	640	40	6.1	22	--	--	490
APR										
16...	550	150	75	200	39	3.3	8.1	--	--	130
MAY										
15...	630	190	70	80	18	1.3	6.6	--	--	130
JUN										
12...	660	200	75	100	21	1.5	9.0	--	--	150
AUG										
21...	680	180	86	110	34	1.7	8.3	--	--	120
SEP										
06...	650	190	71	100	22	1.6	8.3	--	--	120

K Non-ideal colony count.

06438000 BELLE FOURCHE RIVER NEAR ELM SPRINGS, SD--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)
OCT									
10...	990	22	.5	3.8	1880	1600	2.56	376	.64
NOV									
14...	1700	33	.5	3.6	2500	2450	3.40	175	2.2
DEC									
05...	1600	37	.5	2.7	2810	2550	3.82	349	5.0
FEB									
05...	2400	85	.5	6.3	5520	4120	7.51	2.38	2.2
APR									
16...	870	27	.5	5.5	1570	1410	2.14	1780	1.9
MAY									
15...	750	12	.4	5.8	1300	1190	1.77	930	.04
JUN									
12...	810	10	.5	5.5	1460	1300	1.99	1630	.86
AUG									
21...	890	15	.5	.1	1310	1360	1.78	1390	.33
SEP									
06...	910	15	.5	4.8	1550	1370	2.11	1370	.46

DATE	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN, NH4 + ORG. SUSP. TOTAL (MG/L AS N) (00624)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)
OCT									
10...	.61	.61	.00	.54	.07	1.3	5.5	.01	.02
NOV									
14...	.61	.54	.07	.56	.05	2.8	12	.00	.01
DEC									
05...	1.6	.97	.63	1.6	.00	6.6	29	.00	.00
FEB									
05...	.69	.45	.24	.69	.00	2.9	13	.01	.01
APR									
16...	3.9	3.7	.18	.86	3.0	5.8	26	.02	.88
MAY									
15...	.31	.26	.05	.17	.14	.35	1.6	.01	.03
JUN									
12...	1.0	.95	.05	.39	.61	1.9	8.2	.02	.29
AUG									
21...	1.0	.97	.03	.26	.74	1.3	5.9	.03	.18
SEP									
06...	1.1	1.1	.04	.43	.67	1.6	6.9	.01	.06

DATE	TIME	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C) (00689)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	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)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
OCT									
10...	1030	39	.6	--	720	--	--	144	29
NOV									
14...	1300	--	--	3.5	420	--	--	30	2.1
DEC									
05...	1300	--	--	3.7	--	--	--	298	37
FEB									
05...	1200	--	--	4.9	--	--	--	685	.30
MAR									
20...	1300	4.2	2.3	--	260	--	--	2820	5770
APR									
16...	1145	--	--	24	--	--	--	--	--
MAY									
15...	1200	--	--	3.1	4000	--	--	230	165
JUN									
12...	1330	--	--	10	1800	.710	.630	510	570
JUL									
17...	1225	160	.3	--	7200	.630	.470	2490	3740
AUG									
21...	1100	--	--	8.8	--	--	--	236	250
SEP									
06...	0815	--	--	7.7	--	--	--	114	101

06438000 BELLE FOURCHE RIVER NEAR ELM SPRINGS, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	SED. SUSP. STEVE DIAM. % FINER THAN .062 MM (70331)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM (70337)	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)	SED. SUSP. FALL DIAM. % FINER THAN .250 MM (70344)	SED. SUSP. FALL DIAM. % FINER THAN .500 MM (70345)
OCT 10...	82	--	--	--	--	--	--	--
NOV 14...	89	--	--	--	--	--	--	--
DEC 05...	77	--	--	--	--	--	--	--
FEB 05...	65	--	--	--	--	--	--	--
MAR 20...	90	51	34	74	92	98	100	--
APR 16...	--	70	83	98	--	--	--	--
MAY 15...	90	--	--	--	--	--	--	--
JUN 12...	95	--	--	--	--	--	--	--
JUL 17...	95	57	74	95	96	99	100	--
AUG 21...	89	--	--	--	--	--	--	--
SEP 06...	97	--	--	--	--	--	--	--

DATE	TIME	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	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)
OCT 10...	1030	15	12	2	0	2	0	0	0	0	0
MAR 20...	1300	230	7	1	0	6	40	40	0	16	16
JUL 17...	1225	230	17	1	1	0	40	40	0	18	18

DATE	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)	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)
OCT 10...	0	9	6	3	170	20	20	10	10	210	50
MAR 20...	0	50	44	6	48000	20	88	1	87	1100	1000
JUL 17...	0	110	110	3	45000	10	40	40	0	1100	1100

DATE	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)	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)
OCT 10...	160	.0	.0	.0	5	1	4	30	10	20
MAR 20...	90	.2	.2	.0	9	8	1	180	160	20
JUL 17...	10	.2	.2	.0	5	1	4	170	160	10

06438000 BELLE FOURCHE RIVER NEAR ELM SPRINGS, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)
SEP						
05...	0900	328	21.0	8.2	1810	8.5
05...	1100	328	22.0	9.3	1840	8.2
05...	1300	328	24.0	8.8	1910	8.0
05...	1500	328	25.0	8.7	1800	8.2
05...	1700	328	25.5	8.3	1800	8.4
05...	1900	328	25.5	8.1	1800	8.2
05...	2100	328	24.5	8.0	1750	8.3
05...	2300	328	23.5	7.6	1680	8.4
06...	0100	328	22.5	7.3	1700	8.1
06...	0300	328	22.0	7.9	1700	8.1
06...	0500	328	21.0	8.3	1670	8.1
06...	0700	328	20.5	8.6	1680	8.1
06...	0900	328	20.5	8.2	1680	8.1

PHYTOPLANKTON ANALYSES

DATE	AUG 2,78		SEP 13,78		OCT 10,78		NOV 14,78	
TIME	1300		1400		1030		1300	
TOTAL CELLS/ML	29000		8900		720		420	
DIVERSITY: DIVISION	1.4		1.6		1.6		2.0	
.CLASS	1.8		1.6		1.6		2.1	
..ORDER	2.3		2.3		2.4		2.1	
...FAMILY	2.7		3.3		2.9		2.5	
....GENUS	3.2		3.6		3.0		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	230	1	110	1	--	-	--	-
...COELASTRACEAE								
....COELASTRUM	--	-	--	-	--	-	--	-
...MICRACTINIACEAE								
....GOLENKINIA	--	-	53	1	--	-	--	-
....MICRACTINIUM	--	-	--	-	--	-	--	-
...OOCYSTACEAE								
....ANKISTRODESMUS	3400	12	950	11	86	12	28	7
....DICTYOSPHAERIUM	--	-	210	2	--	-	--	-
....KIRCHNERIELLA	450	2	--	-	--	-	--	-
....OOCYSTIS	450	2	--	-	--	-	--	-
....SELENASTRUM	--	-	110	1	5	1	--	-
...SCENEDESMACEAE								
....ACTINASTRUM	--	-	--	-	--	-	--	-
....SCENEDESMUS	2300	8	1100	13	120#	17	55	13
....TETRASTRUM	910	3	210	2	--	-	--	-
..VOLVOCALES								
...CHLAMYDOMONADACEAE								
....CHLAMYDOMONAS	680	2	370	4	170#	23	--	-
....CHLOROMONAS	--	-	--	-	--	-	--	-
CHRYSOPHYTA								
.BACILLARIOPHYCEAE								
..PENNALES								
...NAVICULACEAE								
....ENTOMONEIS	--	-	--	-	--	-	14	3
..CENTRALES								
...COSCINODISCACEAE								
....CYCLOTELLA	8600#	30	900	10	54	8	--	-
....SKELETONEMA	2500	9	--	-	--	-	--	-
....STEPHANODISCUS	--	-	--	-	5	1	--	-
..PENNALES								
...ACHNANTHACEAE								
....ACHNANTHES	910	3	210	2	32	5	--	-
...GOMPHONEMATACEAE								
....GOMPHONEMA	--	-	110	1	--	-	--	-
...NAVICULACEAE								
....NAVICULA	230	1	630	7	11	2	--	-

06438000 BELLE FOURCHE RIVER NEAR ELM SPRINGS, SD--Continued

PHYTOPLANKTON ANALYSES

DATE	AUG 2,78		SEP 13,78		OCT 10,78		NOV 14,78	
TIME	1300		1400		1030		1300	
TOTAL CELLS/ML	29000		8900		720		420	
DIVERSITY: DIVISION	1.4		1.6		1.6		2.0	
.CLASS	1.8		1.6		1.6		2.1	
..ORDER	2.3		2.3		2.4		2.1	
...FAMILY	2.7		3.3		2.9		2.5	
....GENUS	3.2		3.6		3.0		2.5	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
...NITZSCHIACEAE								
....NITZSCHIA	2000	7	1400#	16	65	9	83#	20
.CHRYSOPHYCEAE								
..CHRYSOMONADALES								
...OCHROMONADACEAE								
....OCHROMONAS	2700	9	53	1	--	-	14	3
CRYPTOPHYTA (CRYPTOMONADS)								
.CRYPTOPHYCEAE								
..CRYPTOMONADALES								
...CRYPTOCHRYSIDACEAE								
....CHROOMONAS	--	-	--	-	--	-	--	-
...CRYPTOMONADACEAE								
....CRYPTOMONAS	230	1	--	-	140#	20	14	3
CYANOPHYTA (BLUE-GREEN ALGAE)								
.CYANOPHYCEAE								
..CHROOCOCCALES								
...CHROOCOCCACEAE								
....ANACYSTIS	3400	12	580	7	--	-	--	-
..HORMOGONALES								
...NOSTOCACEAE								
....ANABAENA	--	-	--	-	--	-	--	-
...OSCILLATORIACEAE								
....LYNGBYA	--	-	1200	13	--	-	--	-
....OSCILLATORIA	--	-	--	-	--	-	170#	40
...RIVULARIACEAE								
....RAPHIDIOPSIS	--	-	690	8	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)								
.EUGLENOPHYCEAE								
..EUGLENALES								
...EUGLENACEAE								
....EUGLENA	--	-	--	-	--	-	--	-
....PHACUS	--	-	--	-	5	1	--	-
....TRACHELOMONAS	--	-	--	-	27	4	42	10

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

....GOMPHONEMA	--	-	--	-	--	-	--	-
...NAVICULACEAE								
....NAVICULA	--		150	4	150	9	140	2
...NITZSCHIACEAE								
....NITZSCHIA	--	-	550	14	310#	17	1700#	24
.CHRYSOPHYCEAE								
..CHRYSOMONADALES								
...OCHROMONADACEAE								
....OCHROMONAS	--	-	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)								
.CRYPTOPHYCEAE								
..CRYPTOMONADALES								
...CRYPTOCHRYSIDACEAE								
....CHROOMONAS	--	-	37	1	--	-	--	-
...CRYPTOMONADACEAE								
....CRYPTOMONAS	--	-	110	3	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)								
.CYANOPHYCEAE								
..CHROOCOCCALES								
...CHROOCOCCACEAE								
....ANACYSTIS	--	-	240	6	--	-	--	-
..HORMOGONALES								
...NOSTOCACEAE								
....ANABAENA	--	-	--	-	--	-	1200#	16
...OSCILLATORIACEAE								
....LYNGBYA	--	-	--	-	--	-	--	-
....OSCILLATORIA	--	-	--	-	--	-	--	-
...RIVULARIACEAE								
....RAPHIDIOPSIS	--	-	--	-	--	-	--	-

06438000 BELLE FOURCHE RIVER NEAR ELM SPRINGS, SD--Continued

PHYTOPLANKTON ANALYSES

DATE TIME	MAR 20,79 1300		MAY 15,79 1200		JUN 12,79 1330		JUL 18,79 1225	
TOTAL CELLS/ML	260		4000		1800		7200	
DIVERSITY: DIVISION	0.0		1.5		1.0		1.5	
.CLASS	0.0		1.5		1.0		1.5	
..ORDER	0.0		1.9		1.6		1.6	
...FAMILY	0.0		2.4		2.3		2.7	
....GENUS	0.0		2.6		2.3		3.1	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)								
.CHLOROPHYCEAE								
..CHLOROCOCCALES								
...CHARACIACEAE								
....SCHROEDERIA	--	-	--	-	--	-	140	2
...COELASTRACEAE								
....COELASTRUM	--	-	--	-	--	-	1200#	16
...MICRACTINIACEAE								
....GOLENKINIA	--	-	37	1	--	-	--	-
....MICRACTINIUM	--	-	--	-	--	-	72	1
...OOCYSTACEAE								
....ANKISTRODESMUS	--	-	200	5	310#	17	220	3
....DICTYOSPHAERIUM	--	-	--	-	--	-	290	4
....KIRCHNERIELLA	--	-	--	-	--	-	72	1
....OOCYSTIS	--	-	--	-	--	-	290	4
....SELENASTRUM	--	-	*	0	--	-	--	-
...SCENEDESMACEAE								
....ACTINASTRUM	--	-	150	4	--	-	290	4
....SCENEDESMUS	--	-	1900#	47	620#	35	1400#	20
....TETRASTRUM	--	-	--	-	--	-	--	-
..VOLVOCALES								
...CHLAMYDOMONADACEAE								
....CHLAMYDOMONAS	--	-	92	2	77	4	--	-
....CHLOROMONAS	--	-	--	-	--	-	72	1
CHRYSOPHYTA								
.BACILLARIOPHYCEAE								
..PENNALES								
...NAVICULACEAE								
....ENTOMONEIS	--	-	--	-	--	-	--	-
..CENTRALES								
...COSCINODISCACEAE								
....CYCLOTELLA	260#	100	--	-	--	-	--	-
....SKELETONEMA	--	-	--	-	--	-	--	-
....STEPHANODISCUS	--	-	440	11	310#	17	--	-
..PENNALES								
...ACHNANTHACEAE								
....ACHNANTHES	--	-	--	-	--	-	--	-
...GOMPHONEMATACEAE								
....GOMPHONEMA	--	-	--	-	--	-	--	-
...NAVICULACEAE								
....NAVICULA	--	-	150	4	150	9	140	2
...NITZSCHIACEAE								
....NITZSCHIA	--	-	550	14	310#	17	1700#	24
.CHRYSOPHYCEAE								
..CHRYSOMONADALES								
...OCHROMONADACEAE								
....OCHROMONAS	--	-	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)								
.CRYPTOPHYCEAE								
..CRYPTOMONADALES								
...CRYPTOCHRYSIDACEAE								
....CHROOMONAS	--	-	37	1	--	-	--	-
...CRYPTOMONADACEAE								
....CRYPTOMONAS	--	-	110	3	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)								
.CYANOPHYCEAE								
..CHROOCOCCALES								
...CHROOCOCCACEAE								
....ANACYSTIS	--	-	240	6	--	-	--	-
..HORMOGONALES								
...NOSTOCACEAE								
....ANABAENA	--	-	--	-	--	-	1200#	16
...OSCILLATORIACEAE								
....LYNGBYA	--	-	--	-	--	-	--	-
....OSCILLATORIA	--	-	--	-	--	-	--	-
...RIVULARIACEAE								
....RAPHIDIOPSIS	--	-	--	-	--	-	--	-

06438000 BELLE FOURCHE RIVER NEAR ELM SPRINGS, SD--Continued

PHYTOPLANKTON ANALYSES

DATE	MAR 20,79		MAY 15,79		JUN 12,79		JUL 18,79	
TIME	1300		1200		1330		1225	
TOTAL CELLS/ML	260		4000		1800		7200	
DIVERSITY: DIVISION	0.0		1.5		1.0		1.5	
.CLASS	0.0		1.5		1.0		1.5	
..ORDER	0.0		1.9		1.6		1.6	
...FAMILY	0.0		2.4		2.3		2.7	
....GENUS	0.0		2.6		2.3		3.1	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
EUGLENOPHYTA (EUGLENOIDS)								
.EUGLENOPHYCEAE								
..EUGLENALES								
...EUGLENACEAE								
....EUGLENA	--	-	55	1	--	-	140	2
....PHACUS	--	-	--	-	--	-	--	-
....TRACHELOMONAS	--	-	--	-	--	-	--	-
....FRAGILARIA	--	-	--	-	--	-	--	-
...NITZSCHIACEAE								
....NITZSCHIA	--	-	--	-	3900	3	--	-
.CHRYSOPHYCEAE								
..CHRYSOMONADALES								
...OCHROMONADACEAE								
....OCHROMONAS	--	-	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)								
.CRYPTOPHYCEAE								
..CRYPTOMONADALES								
...CRYPTOCHRYSIDACEAE								
....CHROOMONAS	--	-	57#	31	--	-	--	-
...CRYPTOMONADACEAE								
....CRYPTOMONAS	--	-	14	8	*	0	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)								
.CYANOPHYCEAE								
..CHROOCOCCALES								
...CHROOCOCCACEAE								
....AGMENELLUM	--	-	--	-	27000#	22	230#	20
....ANACYSTIS	--	-	29#	15	30000#	24	--	-
..HORMOGONALES								
...OSCILLATORIACEAE								
....OSCILLATORIA	--	-	--	-	2900	2	--	-
EUGLENOPHYTA (EUGLENOIDS)								
.EUGLENOPHYCEAE								
..EUGLENALES								
...EUGLENACEAE								
....EUGLENA	--	-	--	-	1100	1	--	-
....TRACHELOMONAS	--	-	57#	31	2500	2	--	-
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%

06438000 BELLE FOURCHE RIVER NEAR ELM SPRINGS, SD--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	1750	2450	2630	3400	4300	4800	1550	2410	1790	1760	1750	2000
2	1800	3160	2900	3300	4200	4800	1550	2460	1770	1800	1720	---
3	1800	3050	2600	3600	4400	3800	1630	2500	1770	1780	1700	---
4	1830	2680	3000	3850	4300	3900	1650	1760	1850	1800	1720	---
5	1820	2490	2640	4000	4200	3800	1700	1750	1870	1750	1700	---
6	1800	2500	2900	4200	4900	3300	1730	1720	1730	1750	1750	1980
7	1850	2650	2550	4300	5000	2410	1730	1730	1740	1730	1790	2000
8	2000	2600	2900	4300	5000	2450	1880	1700	1750	1750	1400	2000
9	2090	2600	2600	4200	5000	1120	1900	1680	1690	1750	1390	2060
10	2160	2700	2900	4200	5000	2190	2050	1650	1640	1710	1410	2060
11	2170	2600	2600	4200	5000	1800	2150	1650	1580	1750	1440	2030
12	2240	2600	2900	4900	4900	1800	1950	1650	1700	1750	1640	2030
13	2250	2600	3100	4800	3000	1100	1950	1690	1680	1730	1700	2050
14	2250	2600	3200	4800	3000	1200	1900	1680	1650	1820	1690	1980
15	2300	2700	2900	4800	3000	1200	1850	1680	1700	1880	1710	2000
16	2340	3200	2900	4800	3000	1000	1980	1710	1660	1860	1750	1980
17	2340	3200	2900	4800	3100	1330	2150	1700	1610	1880	1750	1900
18	2330	3200	2900	4800	3000	1230	2150	1650	1620	1720	1750	1900
19	2350	3150	3100	4900	3000	1160	2030	1650	1610	1710	1800	1870
20	2350	3200	3100	4800	3000	1100	2030	1700	1610	1800	1800	1960
21	2340	3200	3050	4900	3050	1100	1800	1790	1650	1760	1780	1950
22	2400	3200	3400	4900	3000	1000	1800	1970	1620	1800	1760	1940
23	2380	3280	3300	4900	3000	1200	2000	1850	1640	1850	1800	1950
24	2390	3190	3400	4900	3000	1410	2050	2650	1630	1400	1810	1950
25	2400	3200	3400	4800	3000	1420	2050	2150	1580	1790	1810	1970
26	2400	3200	3300	4800	3000	1300	2130	2000	1680	1880	1890	2000
27	2380	3200	3350	4800	3100	1300	2130	2200	1670	1770	1870	2030
28	2430	3200	3300	4900	3000	1500	2130	2150	1600	1800	1780	2040
29	2450	3200	3350	4900	---	1330	2150	2200	1490	1830	1780	2080
30	2450	3220	3300	4800	---	1250	2150	2580	1560	1830	1780	2000
31	2430	---	3300	5000	---	1300	---	2620	---	1820	1850	---
MEAN	2200	2930	3020	4530	3730	1920	1930	1940	1670	1770	1720	1990

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	5.0	.5	.0	.0	.0	.0	15.0	17.0	24.0	24.0	23.0
2	10.5	6.0	.5	.0	.0	.0	.0	20.0	18.0	23.5	24.5	---
3	11.0	6.5	.0	.0	.0	.0	.0	13.0	21.0	21.0	24.0	---
4	11.5	6.0	.0	.0	.0	.5	4.0	12.0	24.0	24.0	23.0	---
5	9.0	5.0	.0	.0	.0	.5	.0	10.5	20.5	21.0	24.5	---
6	6.0	3.5	.0	.0	.0	.5	.0	12.5	21.0	20.0	23.0	25.0
7	7.5	1.0	.0	.0	.0	.0	6.5	15.0	14.5	20.0	21.0	18.0
8	11.0	1.0	.0	.0	.0	.5	5.5	12.0	13.0	17.0	21.5	21.0
9	9.5	1.0	.0	.0	.0	.0	7.5	8.0	14.0	24.0	22.0	23.0
10	17.0	1.0	.0	.0	.0	.5	7.5	6.5	15.5	23.0	23.0	21.0
11	12.5	1.0	.0	.0	.0	1.0	6.0	8.5	20.0	27.0	20.5	18.0
12	11.0	.0	.0	.0	.0	1.0	1.0	10.0	28.0	23.0	23.0	17.0
13	8.0	.0	.0	.0	.0	1.0	3.5	14.0	22.5	22.0	21.0	19.0
14	6.0	.0	.0	.0	.0	1.0	7.0	11.0	24.0	23.0	17.0	21.0
15	8.0	.0	.0	.0	.0	1.0	7.5	15.5	27.0	22.5	17.5	19.0
16	8.5	1.0	.0	.0	.0	1.0	11.0	18.0	20.0	21.0	20.0	15.0
17	8.0	1.0	.0	.0	.0	1.0	12.0	17.0	22.0	20.5	26.0	19.0
18	9.0	1.5	.0	.0	.0	1.0	15.0	22.0	17.0	25.0	23.0	21.0
19	6.5	.0	.0	.0	.0	.5	12.0	16.0	15.0	26.0	22.0	20.5
20	8.5	.5	.0	.0	.0	.5	11.0	12.0	15.0	27.0	21.0	20.0
21	10.0	.5	.0	.0	.0	.5	11.0	15.0	18.0	26.0	19.0	21.0
22	8.5	.0	.0	.0	.0	1.0	12.0	18.0	20.0	25.0	22.0	17.0
23	6.5	.0	.0	.0	.0	.0	16.0	18.5	19.0	24.0	21.5	19.0
24	7.5	.0	.0	.0	.0	.0	10.0	17.0	21.5	26.0	20.5	22.0
25	5.5	.0	.0	.0	.0	.5	12.0	18.0	20.5	22.5	23.0	17.0
26	9.0	1.0	.0	.0	.0	.0	9.0	18.0	21.0	22.0	19.5	18.5
27	11.0	1.0	.0	.0	.0	.5	10.0	19.0	22.0	24.0	24.0	18.0
28	13.0	.0	.0	.0	.0	2.0	12.0	17.5	25.0	25.0	25.0	16.0
29	9.0	.5	.0	.0	---	.5	13.0	15.0	26.0	26.0	26.0	17.0
30	7.0	.5	.0	.0	---	1.0	10.0	17.0	27.0	23.5	28.0	18.0
31	8.5	---	.0	.0	---	.5	---	18.0	---	24.0	21.0	---
MEAN	9.5	1.5	.0	.0	.0	.5	7.5	15.0	20.5	23.5	22.5	19.5

06438500 CHEYENNE RIVER NEAR PLAINVIEW, SD

LOCATION.--Lat 44°31'16", long 101°59'34", in NE¼SW¼ sec.31, T.7 N., R.18 E., Ziebach County, Hydrologic Unit 10120112, near left bank on downstream side of highway bridge, 1.0 mi (1.6 km) downstream from Ash Creek and 10 mi (16 km) southeast of Plainview.

DRAINAGE AREA.--21,600 mi^2 (55,900 km^2), approximately.

PERIOD OF RECORD.--October 1950 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,877.65 ft (572.308 m) National Geodetic Vertical Datum of 1929. Prior to Mar. 22, 1951, nonrecording gage at same site and datum.

REMARKS.--Records good except those for winter periods, which are poor. Flow slightly regulated by Angostura Reservoir 164 mi (264 km) upstream (see station 06401000) since October 1949 and upstream reservoirs on Rapid Creek since 1956 and Belle Fourche River since 1952. Flow also affected by diversions for irrigation of about 70,000 acres (283 km^2) and return flow from irrigated areas. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--29 years, 634 ft^3/s (17.95 m^3/s), 459,300 acre-ft/yr (566 hm^3/yr); median of yearly mean discharges, 610 ft^3/s (17.3 m^3/s), 442,000 acre-ft/yr (540 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 41,700 ft^3/s (1,180 m^3/s) May 26, 1957, from rating curve extended above 18,000 ft^3/s (510 m^3/s); maximum gage height, 11.68 ft (3.560 m) May 26, 1965; no flow Dec. 14, 19-21, 1961.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood late in May 1920 reached a stage of about 17.5 ft (5.33 m), and flood in May 1927 reached a stage of about 14 ft (4.3 m), from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 10,600 ft^3/s (300 m^3/s) June 18, gage height, 8.05 ft (2.454 m); minimum daily, 25 ft^3/s (0.71 m^3/s) Jan. 14, 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	328	168	115	50	27	90	1030	350	256	274	781	417
2	323	162	115	45	28	85	911	312	288	256	703	411
3	317	162	115	40	28	85	888	298	373	252	578	405
4	345	168	115	35	28	90	812	345	339	256	531	405
5	339	178	110	30	28	100	732	411	317	5940	500	398
6	312	178	110	28	28	110	741	398	298	1390	486	417
7	223	178	100	27	30	110	760	398	293	781	486	328
8	219	178	100	28	33	100	760	380	298	604	1180	328
9	194	178	105	28	36	150	630	392	373	1260	4300	307
10	198	178	105	28	37	200	486	411	398	472	1280	298
11	187	170	110	27	37	300	562	465	523	417	1170	373
12	168	120	115	26	36	500	508	872	550	361	823	398
13	168	90	115	26	36	650	966	665	500	293	665	405
14	184	80	115	25	36	600	770	523	400	788	595	424
15	181	90	120	25	37	550	604	444	300	508	622	472
16	175	110	120	27	37	700	732	386	264	630	587	472
17	175	120	115	30	38	1000	684	367	323	888	587	479
18	175	120	115	35	38	1500	639	386	4950	1360	555	508
19	184	115	110	35	37	2500	523	367	1970	1030	444	493
20	194	110	110	36	35	2200	508	312	2040	713	1090	458
21	181	110	110	36	35	2210	670	317	2060	539	1730	430
22	171	115	105	35	40	2100	613	231	1460	472	771	430
23	165	115	105	34	50	1780	516	216	1520	405	562	405
24	171	120	100	34	60	1700	472	209	1600	405	831	380
25	178	125	95	33	70	1690	411	201	1060	380	570	361
26	187	125	90	31	80	1540	392	198	694	380	570	361
27	187	125	85	31	85	1380	356	205	970	430	570	339
28	171	120	80	30	90	1380	350	205	800	500	562	339
29	168	120	70	29	---	1360	350	205	604	656	578	339
30	168	120	60	28	---	1260	350	209	570	713	587	350
31	165	---	55	27	---	1120	---	256	---	888	578	---
TOTAL	6501	4048	3190	979	1180	29140	18726	10934	26391	24241	25872	11930
MEAN	210	135	103	31.6	42.1	940	624	353	880	782	835	398
MAX	345	178	120	50	90	2500	1030	872	4950	5940	4300	508
MIN	165	80	55	25	27	85	350	198	256	252	444	298
AC-FT	12890	8030	6330	1940	2340	57800	37140	21690	52350	48080	51320	23660

CAL YR 1978 TOTAL 441549 MEAN 1210 MAX 19300 MIN 55 AC-FT 875800
WTR YR 1979 TOTAL 163132 MEAN 447 MAX 5940 MIN 25 AC-FT 323600

06439000 CHERRY CREEK NEAR PLAINVIEW, SD

LOCATION.--Lat 44°44'38", long 102°03'11", in SW¼NE¼ sec.16, T.9 N., R.17 E., Meade County, Hydrologic Unit 10120113, on left bank 5 ft (2 m) downstream from bridge on State Highway 73, 0.2 mi (0.3 km) downstream from small right-bank tributary, 6.2 mi (10.0 km) downstream from Red Owl Creek, and 11 mi (18 km) northeast of Plainview.

DRAINAGE AREA.--1,190 mi^2 (3,080 km^2), approximately.

PERIOD OF RECORD.--October 1945 to current year. Monthly discharge only for October and November 1945, published in WSP 1309.

GAGE.--Water-stage recorder. Datum of gage is 2,158.06 ft (657.777 m) National Geodetic Vertical Datum of 1929. Prior to June 8, 1948, nonrecording gage at same site and datum.

REMARKS.--Records good. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--34 years, 46.4 ft^3/s (1.314 m^3/s), 33,620 acre-ft/yr (41.5 hm^3/yr); median of yearly mean discharges, 28 ft^3/s (0.79 m^3/s), 20,300 acre-ft/yr (25 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 17,500 ft^3/s (496 m^3/s) Apr. 1, 1952, gage height, 22.63 ft (6.898 m); no flow for long periods in each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 621 ft^3/s (17.6 m^3/s) June 21, gage height, 7.77 ft (2.368 m), no peak above base of 1,000 ft^3/s (28.3 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	.00	.00	.00	.00	.00	139	14	.58	39	3.0	.00
2	.00	.00	.00	.00	.00	.00	114	12	.32	27	1.8	.00
3	.00	.00	.00	.00	.00	.00	90	10	.11	19	1.4	.00
4	.00	.00	.00	.00	.00	.00	83	8.8	.11	14	.85	.00
5	.00	.00	.00	.00	.00	.00	65	7.5	.02	11	.14	.00
6	.00	.00	.00	.00	.00	.00	51	6.9	.00	7.9	.00	.00
7	.00	.00	.00	.00	.00	.00	42	5.8	.45	5.9	.00	.00
8	.00	.00	.00	.00	.00	.00	45	4.5	.02	3.9	.00	.00
9	.00	.00	.00	.00	.00	.00	63	4.7	.02	2.3	.00	.00
10	.00	.00	.00	.00	.00	.00	71	5.1	.02	1.2	.00	.00
11	.00	.00	.00	.00	.00	.00	85	5.3	.00	.32	.00	.00
12	.00	.00	.00	.00	.00	.00	104	4.6	.00	.66	.00	.00
13	.00	.00	.00	.00	.00	.00	87	4.1	.00	1.1	.00	.00
14	.00	.00	.00	.00	.00	.00	72	3.3	.00	32	.00	.00
15	.00	.00	.00	.00	.00	.00	64	3.1	.00	356	.00	.00
16	.00	.00	.00	.00	.00	.00	67	2.7	.00	382	.00	.00
17	.00	.00	.00	.00	.00	.00	65	2.6	.00	184	.00	.00
18	.00	.00	.00	.00	.00	.00	75	2.4	.00	188	.00	.00
19	.00	.00	.00	.00	.00	.00	58	2.3	1.4	122	.00	.00
20	.00	.00	.00	.00	.00	.25	58	2.0	136	81	.00	.00
21	.00	.00	.00	.00	.00	1.5	63	1.6	488	50	.00	.00
22	.00	.00	.00	.00	.00	6.7	45	1.4	200	39	.00	.00
23	.00	.00	.00	.00	.00	38	151	1.0	90	31	.00	.00
24	.00	.00	.00	.00	.00	95	79	.90	44	23	.00	.00
25	.00	.00	.00	.00	.00	124	57	.90	25	102	.00	.00
26	.00	.00	.00	.00	.00	126	44	.86	17	64	.00	.00
27	.00	.00	.00	.00	.00	138	36	.66	19	23	.00	.00
28	.00	.00	.00	.00	.00	147	29	.36	59	14	.00	.00
29	.00	.00	.00	.00	---	121	22	.59	114	13	.00	.00
30	.00	.00	.00	.00	---	138	17	.38	63	9.3	.00	.00
31	.00	---	.00	.00	---	157	---	.51	---	5.2	.00	---
TOTAL	.00	.00	.00	.00	.00	1092.45	2041	120.86	1258.05	1851.78	7.19	.00
MEAN	.000	.000	.000	.000	.000	35.2	68.0	3.90	41.9	59.7	.23	.000
MAX	.00	.00	.00	.00	.00	157	151	14	488	382	3.0	.00
MIN	.00	.00	.00	.00	.00	.00	17	.36	.00	.32	.00	.00
AC-FT	.00	.00	.00	.00	.00	2170	4050	240	2500	3670	14	.00

CAL YR 1978	TOTAL	45681.10	MEAN	125	MAX	7280	MIN	.00	AC-FT	90610
WTR YR 1979	TOTAL	6371.33	MEAN	17.5	MAX	488	MIN	.00	AC-FT	12640

06439300 CHEYENNE RIVER AT CHERRY CREEK, SD

LOCATION.--Lat 44°36'10", long 101°29'24", in NE¼NW¼ sec.5, T.7 N., R.22 E., Ziebach County, Hydrologic Unit 10120112, on left bank 0.5 mi (0.8 km) east of village of Cherry Creek, 0.5 mi (0.8 km) downstream from Cherry Creek and 1.7 mi (2.7 km) upstream from Plum Creek.

DRAINAGE AREA.--23,900 mi^2 (61,900 km^2), approximately.

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Datum of gage is 1,699.29 ft (517.944 m) National Geodetic Vertical Datum of 1929. Prior to Oct. 17, 1960, nonrecording gage at present site and datum.

REMARKS.--Records good except those for winter periods, which are poor. Flow regulated by Angostura Reservoir 197 mi (317 km) upstream (see station 06401000) since October 1949 and upstream reservoirs on Rapid Creek since 1956 and Belle Fourche River since 1952. Flow also affected by diversions for irrigation of about 70,000 acres (283 km^2) and return flow from irrigated areas. Gage-height telemeter at station.

AVERAGE DISCHARGE.--19 years, 855 ft^3/s (24.21 m^3/s), 619,400 acre-ft/yr (764 hm^3/yr); median of yearly mean discharges, 740 ft^3/s (21.0 m^3/s), 536,000 acre-ft/yr (660 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 43,800 ft^3/s (1,240 m^3/s) June 16, 1967, gage height, 14.75 ft (4.496 m); no flow Jan. 6 to Feb. 2, 1962.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 9,140 ft^3/s (259 m^3/s) July 5, gage height, 7.80 ft (2.377 m); minimum daily, 25 ft^3/s (0.71 m^3/s) Jan. 16, 17.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Nov. 4-10, May 6 to June 18, Aug. 26 to Sept. 25; stage-discharge relation affected by ice Nov. 11 to Mar. 19)

1.5	128	4.0	1,820
2.0	286	5.0	3,120
2.5	535	6.0	4,800
3.0	890		

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	323	180	150	55	29	95	1300	377	252	670	785	475
2	302	186	150	50	30	95	1200	345	294	523	733	437
3	302	180	150	45	30	90	1150	315	323	432	663	406
4	315	180	150	40	30	85	1110	294	336	392	656	387
5	336	171	150	35	29	85	1030	332	311	3620	607	358
6	319	177	140	30	27	96	1050	411	323	1780	523	367
7	259	183	130	30	27	110	986	396	331	1100	470	358
8	228	177	120	32	30	110	962	372	319	1470	634	323
9	208	166	120	33	33	100	882	354	331	1800	2610	286
10	205	166	125	33	35	110	830	382	448	649	2400	282
11	195	170	130	32	38	200	860	396	511	459	1270	306
12	195	150	130	30	40	300	882	523	511	382	1030	327
13	183	120	130	28	40	450	992	800	475	367	800	336
14	186	100	130	27	39	700	1120	567	396	843	691	345
15	183	90	135	27	39	600	875	487	358	1800	712	392
16	186	100	135	25	40	550	898	453	311	1030	649	411
17	180	110	130	25	42	700	938	416	271	1240	614	411
18	180	120	130	30	42	1000	875	392	2160	1250	614	416
19	186	120	125	32	40	3000	770	382	2050	1310	567	426
20	195	120	120	35	38	2390	726	363	2250	1050	554	426
21	202	120	120	37	36	2500	684	336	2180	860	1830	406
22	186	120	120	38	35	2300	906	336	1710	649	1000	392
23	186	130	115	38	40	2100	733	282	1780	523	712	382
24	180	130	110	36	45	1900	600	271	2160	774	636	345
25	180	140	105	36	55	1900	635	278	1780	499	769	331
26	186	145	100	34	65	1800	542	259	1190	421	517	330
27	192	150	90	33	75	1700	487	238	1030	459	481	320
28	192	145	85	32	90	1600	443	238	852	411	663	310
29	183	145	80	31	---	1600	396	238	890	493	561	310
30	180	150	70	30	---	1450	382	245	890	649	554	310
31	177	---	60	30	---	1400	---	256	---	740	561	---
TOTAL	6710	4341	3735	1049	1139	31116	25244	11334	27023	28645	25866	10911
MEAN	216	145	120	33.8	40.7	1004	841	366	901	924	834	364
MAX	336	186	150	55	90	3000	1300	800	2250	3620	2610	475
MIN	177	90	60	25	27	85	382	238	252	367	470	282
AC-FT	13310	8610	7410	2080	2260	61720	50070	22480	53600	56820	51310	21640

CAL YR 1978	TOTAL	624452	MEAN	1711	MAX	28400	MIN 60	AC-FT	1239000
WTR YR 1979	TOTAL	177113	MEAN	485	MAX	3620	MIN 25	AC-FT	351300

06439300 CHEYENNE RIVER AT CHERRY CREEK, SD--Continued
(National stream-quality accounting network station)
(National pesticide water-monitoring network station)

WATER-QUALITY RECORDS

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

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: January 1975 to September 1976.
WATER TEMPERATURES: January 1975 to September 1976, October 1977 to September 1978.
SUSPENDED SEDIMENT DISCHARGE: October 1971 to September 1976 (discontinued).

INSTRUMENTATION.--Water-quality monitor since June 16, 1977 (discontinued September 1979).

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 3,400 micromhos Jan. 27, 28, 1975; minimum daily, 620 micromhos Apr. 25, 1975.
WATER TEMPERATURES: Maximum daily, 35.0°C Aug. 26, 1975; minimum daily, 0.0°C on many days during winter periods.
SEDIMENT CONCENTRATIONS: Maximum daily mean, 66,000 mg/L May 25, 1976; minimum daily mean, 80 mg/L Nov. 15-17, 1972.
SEDIMENT LOADS: Maximum daily, 2,530,000 tons (2,300,000 tonnes) June 12, 1972; minimum daily, 15 tons (14 tonnes) Dec. 14, 1973.

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)
OCT										
18...	1130	180	2550	8.1	9.0	1.5	9.8	K6	K20	930
NOV										
08...	1030	181	2500	7.8	8.0	1.0	8.8	K7	60	940
DEC										
05...	1130	150	2800	8.0	.0	8.7	14.0	--	10	1100
JAN										
09...	1100	33	3900	8.2	.0	2.0	9.0	ND	ND	1500
FEB										
06...	1100	27	3500	7.7	.0	1.0	16.0	K2	ND	1300
MAR										
06...	1130	96	2700	8.3	.0	2.7	14.4	K1	20	990
APR										
04...	1230	1130	1460	7.5	6.0	430	8.0	K20	380	380
MAY										
08...	1115	377	2300	8.1	11.0	14	10.3	K4	K11	920
JUN										
05...	1100	338	2200	7.8	22.0	18	8.8	30	50	870
JUL										
10...	1100	609	1200	7.7	25.5	4800	7.6	1750	4300	420
AUG										
07...	1000	484	1800	7.5	25.0	120	7.8	70	90	660
SEP										
05...	1035	357	1950	8.3	23.0	64	--	40	40	750

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)
OCT										
18...	790	220	92	230	35	3.3	14	170	0	140
NOV										
08...	800	220	95	200	31	2.8	12	--	--	140
DEC										
05...	930	270	110	220	30	2.9	14	--	--	200
JAN										
09...	1300	370	150	350	33	3.9	23	--	--	270
FEB										
06...	930	320	110	300	34	3.7	16	--	--	320
MAR										
06...	740	260	82	210	31	2.9	13	--	--	250
APR										
04...	270	92	37	150	45	3.3	8.4	--	--	110
MAY										
08...	790	210	95	210	33	3.0	12	--	--	130
JUN										
05...	760	200	90	180	31	2.7	11	--	--	110
JUL										
10...	320	130	23	110	36	2.3	11	--	--	100
AUG										
07...	570	160	64	120	28	2.0	10	--	--	98
SEP										
05...	640	180	73	140	40	2.2	9.8	--	--	110

K Non-ideal colony count.
ND Not detected.

06439300 CHEYENNE RIVER AT CHERRY CREEK, SD--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)
OCT									
18...	1200	72	.7	4.1	2020	1920	2.61	982	.06
NOV									
08...	1100	70	.4	2.1	1990	1780	2.71	973	.01
DEC									
05...	1300	81	.5	7.6	2180	2120	2.96	883	1.8
JAN									
09...	1800	130	.5	3.4	3370	2990	4.58	300	1.3
FEB									
06...	1300	130	.6	9.8	2650	2380	3.60	193	1.5
MAR									
06...	1000	110	3.0	9.4	1970	1840	2.68	511	1.3
APR									
04...	520	30	.2	5.5	990	910	1.35	3020	.65
MAY									
08...	1100	51	.5	2.2	1950	1760	2.65	1990	.01
JUN									
05...	1100	36	.5	2.7	1810	1690	2.46	1650	.54
JUL									
10...	510	16	.5	.4	855	861	1.16	1410	.85
AUG									
07...	810	27	.5	6.4	1370	1260	1.86	1790	.02
SEP									
05...	1000	37	.5	7.0	1630	1510	2.22	1570	.20

DATE	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN, NH4 + ORG. SUSP. TOTAL (MG/L AS N) (00624)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)
OCT									
18...	.36	.35	.01	.25	.11	.42	1.9	.00	.02
NOV									
08...	.28	.27	.01	.28	.00	.29	1.3	.00	.01
DEC									
05...	.45	.43	.02	.42	.03	2.3	10	.07	.08
JAN									
09...	.50	.49	.01	.50	.00	1.8	8.0	.04	.05
FEB									
06...	.45	.43	.02	.45	.00	2.0	8.6	.16	.16
MAR									
06...	.64	.59	.05	.44	.20	1.9	8.6	.18	.19
APR									
04...	2.0	1.8	.22	.67	1.3	2.7	12	.03	.47
MAY									
08...	.48	.45	.03	.34	.14	.49	2.2	.01	.04
JUN									
05...	.76	.71	.05	.76	.00	1.3	5.8	.01	.04
JUL									
10...	11	11	.05	.30	11	12	52	.05	1.9
AUG									
07...	.66	.64	.02	.39	.27	.68	3.0	.01	.09
SEP									
05...	.60	.49	.11	.31	.29	.80	3.5	.07	.06

06439300 CHEYENNE RIVER AT CHERRY CREEK, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C) (00689)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	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)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
NOV									
08...	1030	--	--	3.0	350	--	--	327	160
DEC									
05...	1130	--	--	2.7	--	--	--	--	--
FEB									
06...	1100	--	--	3.6	--	--	--	343	25
MAR									
06...	1130	--	--	5.7	1600	--	--	166	43
MAY									
08...	1115	--	--	8.8	8500	--	--	318	324
JUN									
05...	1100	--	--	7.2	24000	44.3	39.8	121	110
AUG									
07...	1000	--	--	9.4	10000	122	114	239	312
SEP									
05...	1035	--	--	8.2	--	--	--	178	172

DATE	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM (70337)	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)	SED. SUSP. FALL DIAM. % FINER THAN .250 MM (70344)	SED. SUSP. FALL DIAM. % FINER THAN .500 MM (70345)
NOV								
08...	80	--	--	--	--	--	--	--
DEC								
05...	--	--	--	--	--	--	--	--
FEB								
06...	65	--	--	--	69	76	99	100
MAR								
06...	74	--	--	--	--	--	--	--
MAY								
08...	--	--	--	--	18	25	35	83
JUN								
05...	89	--	--	--	--	--	--	--
AUG								
07...	96	--	--	--	--	--	--	--
SEP								
05...	97	--	--	--	--	--	--	--

DATE	TIME	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	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)
OCT											
18...	1130	5	5	1	0	1	0	0	0	0	0
JAN											
09...	1100	6	5	2	1	1	20	0	20	2	2
APR											
04...	1230	10	3	2	2	0	20	20	0	7	7
JUL											
10...	1100	13	2	1	1	0	240	240	0	48	48

DATE	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)	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)
OCT											
18...	0	5	1	4	140	20	12	0	12	80	40
JAN											
09...	0	5	0	5	90	50	17	14	3	260	60
APR											
04...	0	14	5	9	6500	370	20	20	0	160	120
JUL											
10...	0	240	240	5	200000	40	110	110	0	2400	2400

06439300 CHEYENNE RIVER AT CHERRY CREEK, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	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)	SELENIUM, DISSOLVED (UG/L AS SE) (01145)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN) (01092)	ZINC, SUSPENDED RECOVERABLE (UG/L AS ZN) (01091)	ZINC, DISSOLVED (UG/L AS ZN) (01090)
OCT										
18...	40	.0	.0	.0	2	0	2	20	0	20
JAN										
09...	200	.1	.1	.0	6	0	6	80	60	20
APR										
04...	40	.0	.0	.0	3	1	2	50	10	40
JUL										
10...	20	1.7	1.6	.1	10	8	2	1000	990	10

DATE	TIME	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)
NOV										
08...	1030	ND	ND	ND	ND	ND	ND	ND	ND	ND
FEB										
06...	1100	ND	--	ND	--	ND	--	ND	--	ND
MAY										
08...	1115	ND	--	ND	--	ND	--	ND	--	ND

DATE	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)
NOV										
08...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
FEB										
06...	--	ND	--	ND	--	ND	--	ND	--	ND
MAY										
08...	--	ND	--	ND	--	ND	--	ND	--	ND

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)
NOV										
08...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
FEB										
06...	--	ND	--	ND	--	ND	--	ND	--	ND
MAY										
08...	--	ND	--	ND	--	ND	--	ND	--	ND

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)	TRITHION TOTAL (UG/L) (39786)	TRITHION, TOTAL IN BOTTOM MATERIAL (UG/KG) (39787)
NOV									
08...	ND	ND	ND	ND	ND	ND	ND	ND	ND
FEB									
06...	--	ND	--	ND	--	ND	--	ND	--
MAY									
08...	--	ND	--	ND	--	ND	--	ND	--

ND Not detected.

06439300 CHEYENNE RIVER AT CHERRY CREEK, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)
SEP						
04...	1200	392	23.0	8.5	--	--
04...	1300	382	23.0	8.9	--	--
04...	1500	377	23.0	9.6	--	--
04...	1800	368	23.5	9.2	--	--
04...	2000	363	23.5	8.5	--	--
04...	2200	358	23.0	8.1	--	--
04...	2400	358	23.0	7.8	--	--
05...	0200	363	22.5	7.6	--	--
05...	0400	363	22.5	7.6	--	--
05...	0600	363	22.0	7.6	--	--
05...	0800	358	22.0	7.8	--	--
05...	1000	358	22.5	8.5	--	--
05...	1200	363	23.0	8.9	--	--

DATE	AUG 7,78	SEP 12,78	NOV 8,78	MAR 6,79
TIME	1030	1400	1030	1130
TOTAL CELLS/ML	36000	14000	350	1600
DIVERSITY: DIVISION	0.9	1.1	0.7	0.2
.CLASS	1.1	1.1	0.7	0.2
..ORDER	1.5	1.2	1.0	0.2
...FAMILY	1.7	1.9	1.2	1.0
....GENUS	2.4	2.2	1.7	0.0

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)								
.CHLOROPHYCEAE								
..CHLOROCOCCALES								
...CHARACIACEAE								
....SCHROEDERIA	--	-	--	-	--	-	--	-
...COELASTRACEAE								
....COELASTRUM	--	-	470	3	--	-	--	-
...MICRACTINIACEAE								
....GOLENKINIA	--	-	--	-	--	-	--	-
....MICRACTINIUM	--	-	--	-	--	-	--	-
...OOCYSTACEAE								
....ANKISTRODESMUS	860	2	980	7	44	13	14	1
....DICTYOSPHAERIUM	--	-	1400	10	220#	63	--	-
....KIRCHNERIELLA	290	1	--	-	--	-	--	-
....OOCYSTIS	1100	3	--	-	--	-	--	-
....TETRAEDRON	--	-	--	-	--	-	--	-
....TREUBARIA	--	-	--	-	--	-	--	-
...SCENEDESMACEAE								
....ACTINASTRUM	1100	3	270	2	--	-	--	-
....SCENEDESMUS	3400	9	3800#	28	--	-	--	-
....TETRASTRUM	1100	3	--	-	--	-	--	-
..TETRASPORALES								
...PALMELLACEAE								
....SPHAEROCYSTIS	--	-	130	1	--	-	--	-
..VOLVOCALES								
...CHLAMYDOMONADACEAE	--	-	--	-	--	-	29	2
....CARTERIA	--	-	--	-	--	-	--	-
....CHLAMYDOMONAS	570	2	*	0	22	6	--	-
CHRYSOPHYTA								
.BACILLARIOPHYCEAE								
..PENNALES								
...NAVICULACEAE								
....ENTOMONEIS	--	-	--	-	--	-	--	-
..CENTRALES								
...COSCINODISCACEAE								
....CYCLOTELLA	20000#	54	130	1	--	-	--	-
....SKELETONEMA	3100	9	--	-	--	-	--	-
....STEPHANODISCUS	--	-	--	-	--	-	--	-
..PENNALES								
...ACHNANTHACEAE								
....ACHNANTHES	--	-	--	-	22	6	--	-

06439300 CHEYENNE RIVER AT CHERRY CREEK, SD--Continued

PHYTOPLANKTON ANALYSES

DATE	AUG 7,78	SEP 12,78	NOV 8,78	MAR 6,79
TIME	1030	1400	1030	1130
TOTAL CELLS/ML	36000	14000	350	1600
DIVERSITY: DIVISION	0.9	1.1	0.7	0.2
.CLASS	1.1	1.1	0.7	0.2
..ORDER	1.5	1.2	1.0	0.2
...FAMILY	1.7	1.9	1.2	1.0
....GENUS	2.4	2.2	1.7	0.0

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
...FRAGILARIACEAE								
....FRAGILARIA	--	-	--	-	--	-	110	7
....SYNEDRA	--	-	--	-	--	-	--	-
...NAVICULACEAE								
....NAVICULA	--	-	--	-	--	-	--	-
...NITZSCHIACEAE								
....NITZSCHIA	3100	9	*	0	44	13	43	3
...SURIRELLACEAE								
....SURIRELLA	--	-	--	-	--	-	57	4
...TABELLARIACEAE								
....TABELLARIA	--	-	--	-	--	-	1300#	84
.CHRYSOPHYCEAE								
..CHRYSOMONADALES								
...OCHROMONADACEAE								
....OCHROMONAS	1400	4	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)								
.CRYPTOPHYCEAE								
..CRYPTOMONADALES								
...CRYPTOMONADACEAE								
....CRYPTOMONAS	290	1	*	0	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)								
.CYANOPHYCEAE								
..CHROOCOCCALES								
...CHROOCOCCACEAE								
....ANACYSTIS	--	-	--	-	--	-	--	-
..HORMOGONALES								
...NOSTOCACEAE								
....ANABAENA	--	-	6200#	46	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)								
.EUGLENOPHYCEAE								
..EUGLENALES								
...EUGLENACEAE								
....TRACHELOMONAS	--	-	--	-	--	-	--	-

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

06439300 CHEYENNE RIVER AT CHERRY CREEK, SD--Continued

PHYTOPLANKTON ANALYSES

DATE	MAY 8,79		JUN 5,79		AUG 7,79	
TIME	1115		1100		1000	
TOTAL CELLS/ML	8500		24000		10000	
DIVERSITY: DIVISION	1.1		1.2		1.0	
.CLASS	1.2		1.2		1.0	
..ORDER	1.8		1.6		1.2	
...FAMILY	2.6		2.4		2.1	
....GENUS	3.2		2.7		2.5	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)						
.CHLOROPHYCEAE						
..CHLOROCOCCALES						
...CHARACIACEAE						
....SCHROEDERIA	--	-	270	1	64	1
...COELASTRACEAE						
....COELASTRUM	--	-	--	-	--	-
...MICRACTINIACEAE						
....GOLENKINIA	--	-	--	-	260	2
....MICRACTINIUM	590	7	--	-	--	-
...OOCYSTACEAE						
....ANKISTRODESMUS	1200	15	4700#	19	1300	13
....DICTYOSPHAERIUM	1300#	15	--	-	900	9
....KIRCHNERIELLA	350	4	--	-	--	-
....OOCYSTIS	--	-	--	-	--	-
....TETRAEDRON	--	-	--	-	64	1
....TREUBARIA	120	1	270	1	--	-
...SCENEDESMACEAE						
....ACTINASTRUM	--	-	--	-	--	-
....SCENEDESMUS	1400#	16	8900#	36	4900#	47
....TETRASTRUM	--	-	--	-	260	2
..TETRASPORALES						
...PALMELLACEAE						
....SPHAEROCYSTIS	--	-	--	-	--	-
..VOLVOCALES						
...CHLAMYDOMONADACEAE	--	-	--	-	--	-
....CARTERIA	59	1	--	-	--	-
....CHLAMYDOMONAS	1200	14	130	1	390	4
CHRYSOPHYTA						
.BACILLARIOPHYCEAE						
..PENNALES						
...NAVICULACEAE						
....ENTOMONEIS	--	-	270	1	--	-
..CENTRALES						
...COSCINODISCACEAE						
....CYCLOTELLA	1500#	17	4000#	16	390	4
....SKELETONEMA	--	-	--	-	--	-
....STEPHANODISCUS	--	-	1900	8	--	-
..PENNALES						
...ACHNANTHACEAE						
....ACHNANTHES	--	-	--	-	--	-

06439300 CHEYENNE RIVER AT CHERRY CREEK, SD--Continued

PHYTOPLANKTON ANALYSES

DATE	MAY 8,79		JUN 5,79		AUG 7,79	
TIME	1115		1100		1000	
TOTAL CELLS/ML	8500		24000		10000	
DIVERSITY: DIVISION	1.1		1.2		1.0	
.CLASS	1.2		1.2		1.0	
..ORDER	1.8		1.6		1.2	
...FAMILY	2.6		2.4		2.1	
....GENUS	3.2		2.7		2.5	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT.
...FRAGILARIACEAE						
....FRAGILARIA	--	-	--	-	--	-
....SYNEDRA	--	-	540	2	--	-
...NAVICULACEAE						
....NAVICULA	--	-	270	1	64	1
...NITZSCHIACEAE						
....NITZSCHIA	240	3	1700	7	130	1
...SURIRELLACEAE						
....SURIRELLA	--	-	--	-	--	-
...TABELLARIACEAE						
....TABELLARIA	--	-	--	-	--	-
.CHRYSOPHYCEAE						
..CHRYSOMONADALES						
...OCHROMONADACEAE						
....OCHROMONAS	59	1	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)						
.CRYPTOPHYCEAE						
..CRYPTOMONADALES						
...CRYPTOMONADACEAE						
....CRYPTOMONAS	--	-	--	-	64	1
CYANOPHYTA (BLUE-GREEN ALGAE)						
.CYANOPHYCEAE						
..CHROOCOCCALES						
...CHROOCOCCACEAE						
....ANACYSTIS	350	4	1500	6	1500	15
..HORMOGONALES						
...NOSTOCACEAE						
....ANABAENA	--	-	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)						
.EUGLENOPHYCEAE						
..EUGLENALES						
...EUGLENACEAE						
....TRACHELOMONAS	180	2	--	-	--	-

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

06439300 CHEYENNE RIVER AT CHERRY CREEK, SD--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	---	---	---	---	---	---	---	2300	2350	1650	1460	1800
2	---	---	---	---	---	---	---	2500	2300	2100	1550	1800
3	---	---	---	---	---	---	---	2500	2600	3000	1650	1850
4	---	---	---	---	---	---	1460	2210	2400	1650	1650	1850
5	---	---	2800	---	---	---	1440	2200	2200	880	1600	1950
6	---	---	---	---	3500	2700	1550	2400	2500	960	1700	1950
7	---	---	---	---	---	---	1600	2300	2800	1200	1800	2000
8	---	2500	---	---	---	---	1700	2300	2200	1500	1010	2000
9	---	---	---	3900	---	---	1800	2000	2300	1600	1380	1950
10	---	---	---	---	---	---	1850	---	2100	1100	1380	1900
11	---	---	---	---	---	---	1750	---	2000	1800	1400	1900
12	---	---	---	---	---	---	1700	---	2100	1750	1460	1900
13	---	---	---	---	---	---	1460	---	2020	1700	1650	1900
14	---	---	---	---	---	---	1500	---	2050	1640	1600	1900
15	---	---	---	---	---	---	1460	---	2000	1400	1650	1900
16	---	---	---	---	---	---	1480	2800	2150	1400	1700	1900
17	---	---	---	---	---	---	1550	1850	2100	1320	1750	1850
18	---	---	---	---	---	---	1600	1900	2050	1000	1750	1850
19	---	---	---	---	---	---	1900	2000	1080	1130	1800	1900
20	---	---	---	---	---	1300	2140	1900	1280	1240	1800	1900
21	---	---	---	---	---	---	1750	1950	1380	1240	1750	1900
22	---	---	---	---	---	---	1800	1950	1300	1000	1650	1900
23	---	---	---	---	---	---	1750	1950	1380	1230	1280	1900
24	---	---	---	---	---	---	1800	2050	1200	1600	1700	1900
25	---	---	---	---	---	---	1850	2100	1160	1500	1750	1950
26	---	---	---	---	---	---	2050	2100	1480	1320	1800	2000
27	---	---	---	---	---	---	2000	2200	1320	1120	1800	2000
28	2400	---	---	---	---	---	2300	2700	1850	1480	1800	1900
29	---	---	---	---	---	---	2100	3400	1600	1550	1800	1900
30	---	---	---	---	---	---	---	3200	1650	1900	1850	2000
31	---	---	---	---	---	---	---	2350	---	1700	1800	---
MEAN	2400	2500	2800	3900	3500	2000	1740	2280	1900	1470	1640	1910

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	---	---	---	---	---	---	---	---	---	32.0	28.0	25.0
2	---	---	---	---	---	---	---	---	---	31.0	30.0	27.0
3	---	---	---	---	---	---	---	---	---	29.0	28.0	28.0
4	---	---	---	---	---	---	6.0	---	---	24.0	27.0	28.0
5	---	---	.0	---	---	---	---	---	22.0	20.0	27.0	23.0
6	---	---	---	---	.0	.0	---	---	---	21.0	26.0	---
7	---	---	---	---	---	---	---	---	---	26.0	25.0	---
8	---	8.0	---	---	---	---	---	11.0	---	29.0	25.0	---
9	---	---	---	.0	---	---	---	---	---	30.0	26.0	---
10	---	---	---	---	---	---	---	---	---	25.5	25.0	---
11	---	---	---	---	---	---	---	---	---	28.0	28.0	---
12	---	---	---	---	---	---	---	---	---	31.0	24.0	---
13	---	---	---	---	---	---	---	---	---	25.0	26.0	---
14	---	---	---	---	---	---	---	---	---	19.0	20.0	---
15	---	---	---	---	---	---	---	---	---	21.0	20.0	---
16	---	---	---	---	---	---	---	---	---	22.0	26.0	---
17	---	---	---	---	---	---	---	---	---	23.0	28.0	---
18	10.0	---	---	---	---	---	---	---	---	27.0	25.0	---
19	---	---	---	---	---	---	---	---	---	28.0	26.0	---
20	---	---	---	---	---	2.0	---	---	---	24.0	20.0	---
21	---	---	---	---	---	---	---	---	---	---	22.0	---
22	---	---	---	---	---	---	---	---	---	30.0	22.0	---
23	---	---	---	---	---	---	---	---	---	27.0	22.0	---
24	---	---	---	---	---	---	---	---	---	29.0	23.0	---
25	---	---	---	---	---	---	---	---	---	---	23.0	---
26	---	---	---	---	---	---	---	---	---	28.0	24.0	---
27	---	---	---	---	---	---	---	---	---	28.0	26.0	---
28	---	---	---	---	---	---	---	---	---	27.0	24.0	---
29	---	---	---	---	---	---	---	---	---	28.0	27.0	---
30	---	---	---	---	---	---	---	---	---	25.0	---	---
31	---	---	---	---	---	---	---	---	---	26.0	23.0	---
MEAN	10.0	8.0	.0	.0	.0	1.0	6.0	11.0	22.0	26.5	25.0	26.0

06439500 CHEYENNE RIVER NEAR EAGLE BUTTE, SD

LOCATION.--Lat 44°41'44", long 101°13'08", in NE¼SE¼ sec.32, T.9 N., R.24 E., Haakon County, Hydrologic Unit 10120112, at discontinued gaging station on downstream side near center of bridge on State Highway 63, 0.5 mi (0.8 km) upstream from Hermaphrodite Creek and 21 mi (33.8 km) south of Eagle Butte.

DRAINAGE AREA.--24,500 mi^2 (63,500 km^2), approximately.

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

REMARKS.--Station is affected by backwater from Oahe Dam; discharge records not available.

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										
18...	0900	--	2550	8.1	9.0	930	790	220	92	230
NOV										
08...	1230	--	2450	7.6	8.0	960	830	230	94	220
DEC										
05...	0900	--	2600	8.1	.0	1100	910	270	110	230
JAN										
09...	1130	--	3700	8.0	--	750	500	200	61	180
FEB										
06...	0900	--	3600	7.8	.0	1300	980	330	110	320
MAR										
06...	0900	--	3000	8.2	.0	1100	780	270	92	230
APR										
04...	1300	--	1800	7.8	6.0	540	430	130	53	170
MAY										
08...	0915	--	2400	8.1	10.0	870	730	200	90	220
JUN										
05...	1130	--	2400	8.0	22.0	900	780	200	97	200
JUL										
10...	0845	--	1660	8.1	24.0	490	360	130	41	170
AUG										
07...	1100	--	1750	7.8	25.0	700	610	170	67	130

06439500 CHEYENNE RIVER NEAR EAGLE BUTTE, SD--Continued

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)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)
OCT									
18...	35	3.3	14	170	0	140	1200	72	.7
NOV									
08...	33	3.1	12	160	0	130	1200	76	.4
DEC									
05...	30	3.0	15	260	0	210	1400	87	.5
JAN									
09...	34	2.9	12	310	0	250	850	45	.3
FEB									
06...	35	3.9	16	360	0	300	1400	120	.5
MAR									
06...	32	3.1	14	330	0	270	1200	110	.6
APR									
04...	40	3.2	7.6	140	0	110	730	46	.4
MAY									
08...	35	3.2	12	170	0	140	1100	59	.5
JUN									
05...	32	2.9	12	140	0	110	1200	39	.5
JUL									
10...	42	3.3	14	160	0	130	680	33	.6
AUG									
07...	28	2.1	11	110	0	90	820	27	.5

DATE	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)	SOLIDS, DISSOLVED (TONS PER DAY) (70302)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	PHOSPHORUS, TOTAL (MG/L AS P) (00665)	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P) (00671)	BORON, DISSOLVED (UG/L AS B) (01020)
OCT									
18...	4.1	1920	2.61	--	.09	.02	.00	.02	340
NOV									
08...	2.1	1910	2.60	--	.01	.00	.00	.00	340
DEC									
05...	7.5	2260	3.07	--	2.1	.05	.04	.01	340
JAN									
09...	14	1520	2.07	--	.06	.05	.02	.00	350
FEB									
06...	6.7	2490	3.39	--	1.1	.08	.08	.05	360
MAR									
06...	8.0	2090	2.84	--	1.1	.14	.13	.06	310
APR									
04...	6.7	1220	1.66	--	1.1	.06	.03	.04	220
MAY									
08...	2.3	1770	2.41	--	.00	.05	.01	.01	320
JUN									
05...	2.5	1820	2.48	--	.16	.05	.01	.00	360
JUL									
10...	17	1160	1.58	--	.00	.10	.03	.00	260
AUG									
07...	7.1	1290	1.75	--	.00	.07	.02	.00	310

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, 1,617.9 ft (493.14 m), affected by wind; minimum since initial filling (corrected), 15,112,000 acre-ft (18,600 hm^3) Dec. 10, 12-14, 1977, elevation, 1,593.0 ft (485.55 m), affected by ice.

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), affected by ice.

MONTHEND ELEVATION, IN FEET NGVD, AND CONTENTS, IN ACRE-FEET, AT 2400, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

Date	Elevation	Contents	Change in contents
Sept. 30	1610.4	20208000	
Oct. 31	1607.0	19099000	-1109000
Nov. 30	1605.6	18623000	-476000
Dec. 31	1604.6	18342000	-281000
CAL YR 1978			+2782000
Jan. 31	1605.9	18765000	+423000
Feb. 28	1607.1	19115000	+350000
Mar. 31	1610.0	20032000	+917000
Apr. 30	1614.30	21479000	+1447000
May 31	1615.25	21808000	+329000
June 30	1615.88	22068000	+260000
July 31	1615.22	21863000	-205000
Aug. 31	1613.36	21120000	-743000
Sept. 30	1611.55	20390000	-730000
WTR YR 1979			+182000

NOTE.--Reservoir frozen over Jan. 3 to Apr. 15.

06440000 MISSOURI RIVER AT PIERRE, SD
(National stream-quality accounting network station)

LOCATION.--Lat 44°22'25", long 100°22'20", in SE¼ sec.21, T.5 N., R.31 E., Hughes County, Hydrologic Unit 10140102, at discontinued gaging station, near right bank on downstream side of pier of Chicago and North Western Transportation Company bridge, 1.3 mi (2.1 km) upstream from Bad River, 5.8 mi (9.3 km) downstream from Oahe Dam, and at mile 1,006.5 (1,716 km).

DRAINAGE AREA.--243,500 mi^2 (630,700 km^2), approximately.

PERIOD OF RECORD.--Water years 1971 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: July 1971 to current year.
WATER TEMPERATURES: July 1971 to current year.

COOPERATION.--Flow completely regulated by Lake Oahe (station 06439980) 5.8 mi (9.3 km) upstream. Discharge furnished by Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 850 micromhos Dec. 2, 1974; minimum daily, 530 micromhos Dec. 24, 1974.
WATER TEMPERATURES: Maximum daily, 24.0°C July 31, Aug. 3, 1977; minimum daily, 0.0°C on many days during winter periods.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 800 micromhos Jan. 7, 26; minimum daily, 680 micromhos Oct. 1-7, 9-11, 22-24.
WATER TEMPERATURES: Maximum daily, 20.5°C June 30, July 5, Sept. 3; minimum daily, 0.0°C on many days during winter period.

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)
OCT										
20...	0900	46200	705	8.1	12.0	.50	8.0	K2	K3	230
NOV										
09...	1330	39300	770	7.8	8.0	.10	9.0	K3	K3	220
DEC										
04...	1600	29000	730	8.2	7.0	7.5	11.2	--	K6	230
JAN										
10...	1215	54900	830	8.4	1.0	1.3	9.4	ND	ND	230
FEB										
08...	1420	22900	700	8.1	1.0	.50	13.0	ND	ND	250
MAR										
05...	0930	31700	870	8.1	-1.0	.50	9.0	K8	K10	250
APR										
09...	1300	20000	910	7.4	3.0	1.6	9.0	2	K6	240
MAY										
10...	1500	48200	820	8.0	2.5	5.0	17.4	K3	K8	250
JUN										
08...	0930	40400	820	7.9	11.0	3.9	7.6	K13	K9	250
JUL										
16...	1300	52400	770	7.7	17.0	5.9	9.5	K135	K290	220
AUG										
06...	1000	48900	790	7.7	16.0	1.7	9.7	30	40	250
SEP										
10...	0900	31000	770	8.5	17.5	2.1	.0	>100	35	250

K Non-ideal colony count.
ND Not detected.

06440000 MISSOURI RIVER AT PIERRE, SD--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)
OCT										
20...	78	55	22	70	39	2.0	4.8	--	--	150
NOV										
09...	69	53	21	64	38	1.9	4.8	--	--	150
DEC										
04...	78	55	22	68	39	2.0	5.9	--	--	150
JAN										
10...	68	55	22	67	38	1.9	5.4	--	--	160
FEB										
08...	95	64	23	66	36	1.8	4.5	--	--	160
MAR										
05...	90	64	22	67	36	1.8	4.9	--	--	160
APR										
09...	84	58	24	74	39	2.1	5.0	--	--	160
MAY										
10...	100	62	23	73	38	2.0	6.1	--	--	150
JUN										
08...	100	61	24	76	39	2.1	4.7	--	--	150
JUL										
16...	70	50	23	72	41	2.1	4.8	--	--	150
AUG										
06...	99	60	24	78	40	2.2	4.7	--	--	150
SEP										
10...	100	60	25	74	38	2.0	4.4	--	--	150

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, NO2+NO3 DISSOLVED (MG/L AS N) (00631)
OCT										
20...	210	9.4	.6	6.7	433	469	.59	54000	.17	--
NOV										
09...	200	8.8	.4	6.7	470	449	.64	49900	.16	--
DEC										
04...	210	9.8	.5	7.3	480	469	.65	37600	.16	--
JAN										
10...	210	13	.4	7.3	492	476	.67	72900	.18	--
FEB										
08...	220	10	.4	7.4	490	492	.67	30300	.18	--
MAR										
05...	210	14	.5	7.6	488	486	.66	41800	.17	--
APR										
09...	210	10	.5	7.0	500	485	.68	27000	.10	--
MAY										
10...	230	13	.5	9.7	512	507	.70	66600	.14	--
JUN										
08...	220	16	.5	2.4	510	495	.69	55600	.13	--
JUL										
16...	230	9.5	.5	6.2	503	486	.68	71200	.10	--
AUG										
06...	250	9.9	.5	6.9	502	524	.68	66300	.15	--
SEP										
10...	200	7.6	.5	6.1	491	468	.67	41100	.11	.12

06440000 MISSOURI RIVER AT PIERRE, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITROGEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITROGEN, NH4 + ORG. SUSP. TOTAL (MG/L AS N) (00624)	NITROGEN, TOTAL (MG/L AS N) (00600)	NITROGEN, TOTAL (MG/L AS NO3) (71887)	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS, TOTAL (MG/L AS P) (00665)	BORON, DISSOLVED (UG/L AS B) (01020)
OCT										
20...	.28	.28	.00	.28	.00	.45	2.0	.01	.01	--
NOV										
09...	.25	.24	.01	.25	.00	.41	1.8	.01	.01	--
DEC										
04...	.35	.33	.02	.35	.00	.51	2.3	.00	.05	--
JAN										
10...	.11	.11	.00	.11	.00	.29	1.3	.03	.03	--
FEB										
08...	.22	.21	.01	.20	.02	.40	1.8	.01	.01	--
MAR										
05...	.26	.22	.04	.26	.00	.43	1.9	.03	.03	--
APR										
09...	.28	.27	.01	.28	.00	.38	1.7	.00	.00	--
MAY										
10...	.26	.25	.01	.26	.00	.40	1.8	.01	.02	--
JUN										
08...	.29	.27	.02	.29	.00	.42	1.9	.03	.05	--
JUL										
16...	.30	.27	.03	.20	.10	.40	1.8	.01	.03	--
AUG										
06...	.13	.12	.01	.13	.00	.28	1.2	.01	.01	--
SEP										
10...	.47	.46	.01	.40	.07	.58	2.6	.00	.05	--

DATE	TIME	CARBON, ORGANIC DISSOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUSPENDED TOTAL (MG/L AS C) (00689)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	PHYTOPLANKTON, TOTAL (CELLS PER ML) (60050)	PERIPHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M (00573)	PERIPHYTON BIOMASS ASH WEIGHT G/SQ M (00572)	SEDIMENT, SUSPENDED (MG/L) (80154)	SEDIMENT DISCHARGE, SUSPENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
NOV										
09...	1330	--	--	3.7	130	--	--	--	--	--
DEC										
04...	1600	--	--	3.3	--	--	--	--	--	--
FEB										
08...	1420	--	--	3.5	--	--	--	--	--	--
MAR										
05...	0930	--	--	3.4	100	--	--	--	--	--
MAY										
10...	1500	--	--	3.6	240	--	--	33	4300	92
JUN										
08...	0930	--	--	--	1600	88.0	86.1	65	7090	82
AUG										
06...	1000	--	--	5.7	64	--	--	70	9240	98
SEP										
10...	0900	--	--	9.2	--	--	--	42	3520	64

DATE	TIME	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DISSOLVED (UG/L AS AS) (01000)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD) (01027)	CADMIUM SUSPENDED RECOVERABLE (UG/L AS CD) (01026)	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)
OCT											
20...	0900	2	2	3	0	3	0	0	0	2	0
JAN											
10...	1215	2	2	1	0	<1	10	10	0	2	0
APR											
09...	1300	2	2	6	5	<1	10	10	0	2	0
JUL											
16...	1300	2	1	<1	0	<1	0	0	0	<3	0

< Less than.

06440000 MISSOURI RIVER AT PIERRE, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	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)	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)
OCT											
20...	2	3	0	3	70	<10	15	0	15	20	20
JAN											
10...	<3	6	3	3	50	<0	6	5	1	50	50
APR											
09...	<3	12	10	2	70	<0	100	93	7	20	10
JUL											
16...	<3	4	2	2	400	10	9	9	0	60	60

DATE	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)	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)
OCT										
20...	4	.0	.0	.0	2	0	2	10	6	4
JAN										
10...	<1	.0	.0	.0	2	0	2	10	7	<3
APR										
09...	6	.0	.0	.0	2	0	2	20	20	<3
JUL										
16...	3	.7	.2	.5	0	0	0	20	20	<3

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	690	720	740	740	760	750	760	750	760	740	720
2	680	690	720	730	740	760	750	760	750	760	740	720
3	680	690	720	740	750	760	750	760	750	760	740	720
4	680	690	730	760	740	760	750	760	750	760	740	720
5	---	690	720	740	740	760	750	---	750	760	740	720
6	680	690	720	750	780	760	760	760	750	760	740	720
7	680	690	720	800	740	760	760	760	750	760	740	720
8	700	690	720	760	740	760	770	760	760	760	740	720
9	680	690	---	750	740	760	760	760	760	760	740	720
10	680	---	720	750	740	750	760	760	760	760	740	720
11	680	690	720	740	740	750	760	760	760	760	740	720
12	700	690	720	---	740	760	760	760	760	760	740	720
13	700	690	720	740	740	760	760	760	760	760	740	720
14	710	690	720	750	740	760	770	760	760	760	730	720
15	710	690	720	750	740	760	780	760	760	750	730	720
16	710	690	720	740	740	760	760	---	760	750	740	720
17	700	690	720	750	740	760	780	760	760	750	740	720
18	700	690	720	740	740	760	790	750	750	750	740	730
19	---	690	720	---	750	760	790	760	750	750	740	730
20	700	690	720	750	740	760	780	750	760	750	730	730
21	700	690	720	770	750	760	770	760	750	750	730	730
22	680	---	720	730	750	760	760	750	750	750	730	730
23	680	690	---	750	---	760	760	760	750	750	730	730
24	680	690	---	760	740	760	770	760	750	730	730	730
25	700	690	---	750	740	770	---	760	750	750	---	730
26	710	700	---	800	740	770	---	760	750	750	---	730
27	710	690	720	760	750	770	770	760	750	750	730	730
28	710	690	720	750	730	770	780	760	760	750	730	730
29	710	690	720	750	---	770	780	740	760	750	---	730
30	710	700	730	740	---	760	780	740	750	750	---	730
31	710	---	---	740	---	760	---	750	---	---	---	---
MEAN	695	691	721	751	743	761	766	757	754	754	737	724

< Less than.

06440000 MISSOURI RIVER AT PIERRE, SD--Continued

PHYTOPLANKTON ANALYSES

DATE	AUG 11,78		SEP 15,78		NOV 9,78		MAR 5,79	
TIME	1320		1100		1330		0930	
TOTAL CELLS/ML	150		41		130		100	
DIVERSITY: DIVISION	0.6		1.4		1.3		0.0	
.CLASS	1.4		1.4		1.3		0.0	
..ORDER	1.4		1.5		1.3		0.0	
...FAMILY	1.7		1.6		1.3		0.6	
....GENUS	1.7		1.6		1.3		0.6	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)								
.CHLOROPHYCEAE								
..CHLOROCOCCALES								
...CHARACIACEAE								
....SCHROEDERIA	22	14	--	-	--	-	--	-
...OOCYSTACEAE								
....ANKISTRODESMUS	--	-	--	-	--	-	--	-
....OOCYSTIS	--	-	--	-	89#	67	--	-
..TETRASPORALES								
...COCCOMYXACEAE								
....ELAKATOTHRIX	--	-	--	-	--	-	--	-
...PALMELLACEAE								
....SPHAEROCYSTIS	--	-	18#	43	--	-	--	-
..VOLVOCALES								
...CHLAMYDOMONADACEAE								
....CHLAMYDOMONAS	--	-	--	-	--	-	--	-
CHRYSOPHYTA								
.BACILLARIOPHYCEAE								
..CENTRALES								
...COSCINODISCACEAE								
....CYCLOTELLA	--	-	2	4	--	-	--	-
..PENNALES								
...DIATOMACEAE								
....DIATOMA	--	-	--	-	--	-	87#	86
...FRAGILARIACEAE								
....ASTERIONELLA	--	-	--	-	--	-	--	-
....FRAGILARIA	--	-	--	-	--	-	--	-
...GOMPHONEMATACEAE								
....GOMPHONEMA	--	-	--	-	--	-	14	14
...NAVICULACEAE								
....NAVICULA	22	14	2	4	--	-	--	-
...NITZSCHIACEAE								
....NITZSCHIA	22	14	2	4	22#	17	--	-
.CHRYSOPHYCEAE								
..CHRYSOMONADALES								
...OCHROMONADACEAE								
....OCHROMONAS	89#	57	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)								
.CRYPTOPHYCEAE								
..CRYPTOMONADALES								
...CRYPTOCHRYSIDACEAE								
....CHROOMONAS	--	-	--	-	--	-	--	-
...CRYPTOMONADACEAE								
....CRYPTOMONAS	--	-	--	-	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)								
.CYANOPHYCEAE								
..CHROOCOCCALES								
...CHROOCOCCACEAE								
....ANACYSTIS	--	-	--	-	--	-	--	-
..HORMOGONALES								
...OSCILLATORIACEAE								
....OSCILLATORIA	--	-	18#	43	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)								
.EUGLENOPHYCEAE								
..EUGLENALES								
...EUGLENACEAE								
....TRACHELOMONAS	--	-	--	-	22#	17	--	-
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%

06440000 MISSOURI RIVER AT PIERRE, SD--Continued

PHYTOPLANKTON ANALYSES

DATE	MAY 10,79	JUN 8,79	AUG 6,79
TIME	1500	0930	1000
TOTAL CELLS/ML	240	1600	64
DIVERSITY: DIVISION	1.3	0.9	1.0
.CLASS	1.3	0.9	1.0
..ORDER	1.3	1.1	1.0
...FAMILY	1.3	1.2	1.5
....GENUS	1.3	1.2	1.5

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)						
.CHLOROPHYCEAE						
..CHLOROCOCCALES						
...CHARACIACEAE						
....SCHROEDERIA	--	-	--	-	--	-
...OOCYSTACEAE						
....ANKISTRODESMUS	29	12	77	5	26#	40
....OOCYSTIS	--	-	--	-	--	-
..TETRASPORALES						
...COCCOMYXACEAE						
....ELAKATOTHRIX	--	-	52	3	--	-
...PALMELLACEAE						
....SPHAEROCYSTIS	--	-	--	-	--	-
..VOLVOCALES						
...CHLAMYDOMONADACEAE						
....CHLAMYDOMONAS	--	-	13	1	--	-
CHRYSOPHYTA						
.BACILLARIOPHYCEAE						
..CENTRALES						
...COSCINODISCACEAE						
....CYCLOTELLA	14	6	13	1	--	-
..PENNALES						
...DIATOMACEAE						
....DIATOMA	--	-	--	-	--	-
...FRAGILARIACEAE						
....ASTERIONELLA	--	-	13	1	--	-
....FRAGILARIA	--	-	26	2	--	-
...GOMPHONEMATACEAE						
....GOMPHONEMA	--	-	--	-	--	-
...NAVICULACEAE						
....NAVICULA	--	-	--	-	--	-
...NITZSCHIACEAE						
....NITZSCHIA	--	-	130	8	--	-
.CHRYSOPHYCEAE						
..CHRYSOMONADALES						
...OCHROMONADACEAE						
....OCHROMONAS	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)						
.CRYPTOPHYCEAE						
..CRYPTOMONADALES						
...CRYPTOCHRYSIDACEAE						
....CHROOMONAS	--	-	--	-	26#	40
...CRYPTOMONADACEAE						
....CRYPTOMONAS	--	-	--	-	13#	20
CYANOPHYTA (BLUE-GREEN ALGAE)						
.CYANOPHYCEAE						
..CHROOCOCCALES						
...CHROOCOCCACEAE						
....ANACYSTIS	170#	71	--	-	--	-
..HORMOGONALES						
...OSCILLATORIACEAE						
....OSCILLATORIA	--	-	1300#	80	--	-
EUGLENOPHYTA (EUGLENOIDS)						
.EUGLENOPHYCEAE						
..EUGLENALES						
...EUGLENACEAE						
....TRACHELOMONAS	--	-	--	-	--	-
PYRRHOPHYTA (FIRE ALGAE)						
.DINOPHYCEAE						
..PERIDINIALES						
...GLENODINIACEAE						
....GLENODINIUM	29	12	--	-	--	-

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

—06440000 MISSOURI RIVER AT PIERRE, SD--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	17.5	13.5	6.0	.0	.0	.0	2.5	8.0	15.5	18.0	19.0	19.5
2	---	13.0	5.0	.0	.0	.0	3.0	8.0	13.0	16.5	19.0	19.5
3	18.0	13.0	3.5	.0	.0	.0	3.0	7.5	13.0	15.5	18.5	20.5
4	17.5	12.5	7.0	.0	.0	.0	3.5	6.0	15.0	18.0	18.5	20.0
5	---	12.0	4.0	.0	.0	1.0	3.0	---	15.5	20.5	18.5	19.5
6	17.5	12.0	5.0	.0	.0	1.0	3.5	7.0	16.0	19.5	19.0	19.5
7	17.0	12.0	5.0	.0	.0	2.5	4.0	7.5	16.0	19.0	18.5	19.5
8	16.5	12.0	5.5	.5	1.0	2.0	4.0	7.5	16.0	16.0	18.0	19.0
9	17.0	11.0	---	.5	.0	2.0	4.0	6.5	16.0	17.0	19.0	19.0
10	17.0	---	6.5	.0	.0	2.5	3.5	6.0	17.0	16.5	19.0	18.5
11	15.5	10.0	5.0	.0	.0	3.0	2.0	8.0	18.5	16.5	19.5	19.5
12	15.0	10.0	4.0	---	.0	3.0	2.5	8.0	18.5	16.0	19.0	19.5
13	14.5	9.0	4.5	.0	.0	3.0	3.0	10.0	18.5	18.0	18.5	19.0
14	15.0	10.0	4.0	.0	.0	2.5	3.0	11.0	19.0	17.5	18.5	19.5
15	15.0	10.0	4.5	.0	.0	2.5	4.0	10.0	18.5	17.0	18.0	19.5
16	14.5	10.0	4.0	.0	.0	3.0	4.5	---	19.5	17.0	18.5	19.0
17	14.5	9.5	4.0	.0	.0	3.0	4.5	10.0	19.0	17.5	18.5	19.0
18	14.5	9.0	3.0	.0	.0	3.0	5.0	12.0	18.5	18.0	19.0	18.5
19	15.0	9.0	3.0	---	.0	3.0	5.0	12.5	18.0	18.0	19.0	18.5
20	12.0	9.0	3.5	.0	.0	3.0	5.0	13.0	18.0	18.5	18.5	18.5
21	14.5	9.0	3.5	.0	.0	2.5	5.5	14.0	19.5	18.5	18.5	18.0
22	14.0	---	4.0	.0	.0	3.0	5.5	14.0	18.5	18.5	19.0	18.0
23	14.0	10.0	---	.0	---	3.0	7.0	14.5	18.5	19.0	19.0	19.0
24	13.5	10.0	---	.0	.0	2.5	6.5	13.5	19.0	19.0	18.5	19.0
25	14.0	8.0	---	.0	.0	1.5	---	13.0	19.0	18.5	---	19.5
26	13.0	6.0	---	.0	.0	2.0	---	14.0	18.5	18.5	---	19.0
27	13.0	7.0	1.5	.0	.0	3.0	6.5	14.5	19.0	19.0	18.5	20.0
28	13.0	7.5	1.0	.0	.0	3.0	6.5	15.0	20.0	19.0	19.0	20.0
29	13.0	6.5	1.0	.0	---	3.0	6.5	15.0	20.0	19.0	---	20.0
30	13.0	6.5	1.0	.0	---	3.0	7.0	14.5	20.5	18.5	---	20.0
31	13.0	---	.0	.0	---	2.5	---	14.5	---	19.0	---	---
MEAN	15.0	10.0	4.0	.0	.0	2.0	4.5	11.0	17.5	18.0	18.5	19.5

06441000 BAD RIVER NEAR MIDLAND, SD

LOCATION.--Lat 44°04'01", long 101°09'36", in NE¼NW¼ sec.7, T.1 N., R.25 E., Haakon County, Hydrologic Unit 10140102, on right bank at downstream side of bridge on State Highway 63, 0.4 mi (0.6 km) southwest of Midland, 2.0 mi (3.2 km) upstream from Mitchell Creek, and 3.7 mi (6.0 km) upstream from Ash Creek.

DRAINAGE AREA.--1,460 mi^2 (3,780 km^2), approximately.

PERIOD OF RECORD.--October 1945 to current year. Prior to February 1946 monthly discharge only, published in WSP 1309.

REVISED RECORDS.--WSP 2117: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,849.14 ft (563.618 m) National Geodetic Vertical Datum of 1929. Prior to Feb. 21, 1961, nonrecording gage, and Feb. 21, 1961, to June 14, 1967, water-stage recorder at site 4.2 mi (6.8 km) downstream at datum 15.72 ft (4.791 m) lower. June 15 to July 26, 1967, nonrecording gage at site 30 ft (9 m) upstream and July 27, 1967, to June 14, 1971, water-stage recorder at site 60 ft (18 m) upstream, both at present datum.

REMARKS.--Records poor. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--34 years, 64.2 ft^3/s (1.818 m^3/s), 46,510 acre-ft/yr (57.3 hm^3/yr); median of yearly mean discharges, 38 ft^3/s (1.08 m^3/s), 27,500 acre-ft/yr (34 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 29,400 ft^3/s (833 m^3/s) June 15, 1967, gage height, 24.44 ft (7.449 m), from floodmarks, 20.10 ft (6.126 m), from floodmarks, at former site and datum, from rating curve extended above 16,000 ft^3/s (453 m^3/s); no flow for many days in each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 718 ft^3/s (20.3 m^3/s) June 25, gage height, 9.87 ft (3.008 m); no other peak above base of 500 ft^3/s (14.2 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	.00	.00	.00	.00	.00	3.2	1.2	.00	39	10	.39
2	.00	.00	.00	.00	.00	.00	2.1	.64	.00	21	8.5	.01
3	.00	.00	.00	.00	.00	.00	1.8	.34	.00	26	3.2	.00
4	.00	.00	.00	.00	.00	.00	2.0	.55	.00	19	1.4	.00
5	.00	.00	.00	.00	.00	.00	1.7	.35	.00	16	.20	.00
6	.00	.00	.00	.00	.00	.00	1.5	.21	.00	59	.27	.00
7	.00	.00	.00	.00	.00	.00	1.1	.20	.00	79	.19	.00
8	.00	.00	.00	.00	.00	.20	1.3	.09	.00	30	.40	.00
9	.00	.00	.00	.00	.00	1.0	1.2	.14	.00	18	.38	.00
10	.00	.00	.00	.00	.00	2.0	2.3	.19	.00	12	102	.00
11	.00	.00	.00	.00	.00	1.5	4.1	.43	.00	8.4	107	.00
12	.00	.00	.00	.00	.00	1.0	7.5	.43	.00	20	16	.00
13	.00	.00	.00	.00	.00	55	7.6	.39	.00	11	7.0	.00
14	.00	.00	.00	.00	.00	19	6.1	.17	.00	14	3.4	.00
15	.00	.00	.00	.00	.00	20	5.6	.06	.00	60	1.4	.00
16	.00	.00	.00	.00	.00	27	12	.21	.00	57	.75	.00
17	.00	.00	.00	.00	.00	24	23	.14	.00	38	.66	.00
18	.00	.00	.00	.00	.00	22	12	.06	.00	20	.94	.00
19	.00	.00	.00	.00	.00	13	9.7	.06	.00	12	1.7	.00
20	.00	.00	.00	.00	.00	14	8.3	.05	28	16	2.4	.00
21	.00	.00	.00	.00	.00	15	6.9	.04	33	12	2.5	.00
22	.00	.00	.00	.00	.00	12	5.0	.02	232	6.4	17	.00
23	.00	.00	.00	.00	.00	11	3.8	.01	131	3.6	14	.00
24	.00	.00	.00	.00	.00	7.9	3.1	.00	109	1.9	4.6	.00
25	.00	.00	.00	.00	.00	8.3	2.7	.00	435	.99	1.6	.00
26	.00	.00	.00	.00	.00	5.8	2.1	.00	187	.66	.92	.00
27	.00	.00	.00	.00	.00	4.9	1.8	.00	174	2.6	2.1	.00
28	.00	.00	.00	.00	.00	5.5	1.6	.00	51	3.2	3.8	.00
29	.00	.00	.00	.00	---	5.9	1.4	.00	36	3.9	3.9	.00
30	.00	.00	.00	.00	---	4.0	1.3	.00	69	3.7	3.2	.00
31	.00	---	.00	.00	---	2.9	---	.00	---	2.7	2.0	---
TOTAL	.00	.00	.00	.00	.00	282.90	143.8	5.98	1485.00	617.05	323.41	.40
MEAN	.000	.000	.000	.000	.000	9.13	4.79	.19	49.5	19.9	10.4	.013
MAX	.00	.00	.00	.00	.00	55	23	1.2	435	79	107	.39
MIN	.00	.00	.00	.00	.00	.00	1.1	.00	.00	.66	.19	.00
AC-FT	.00	.00	.00	.00	.00	561	285	12	2950	1220	641	.8

CAL YR 1978	TOTAL	55358.38	MEAN	152	MAX	8820	MIN	.00	AC-FT	109800
WTR YR 1979	TOTAL	2858.54	MEAN	7.83	MAX	435	MIN	.00	AC-FT	5670

06441500 BAD RIVER NEAR FORT PIERRE, SD

LOCATION.--Lat 44°19'36", long 100°23'02", in NW¼NW¼ sec.10, T.4 N., R.31 E., Stanley County, Hydrologic Unit 10140102, on right bank at downstream side of highway bridge, 2.1 mi (3.4 km) south of Fort Pierre, 4.3 mi (6.9 km) downstream from Willow Creek, and 6.0 mi (9.7 km) upstream from mouth.

DRAINAGE AREA.--3,107 mi^2 (8,047 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1928 to current year. Monthly discharge only for July 1932 to February 1934, published in WSP 1309.

REVISED RECORDS.--WSP 786: Drainage area. WSP 856: 1929(M), 1937.

GAGE.--Water-stage recorder. Datum of gage is 1,427.83 ft (435.203 m) National Geodetic Vertical Datum of 1929. Prior to July 10, 1951, nonrecording gage at same site and datum.

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

AVERAGE DISCHARGE.--51 years, 151 ft^3/s (4.276 m^3/s), 109,400 acre-ft/yr (135 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, 43,800 ft^3/s (1,240 m^3/s) June 18, 1967, gage height, 29.55 ft (9.007 m); no flow for long periods in each year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in April 1927 reached a stage of 30.89 ft (9.415 m), from floodmarks, discharge, about 55,000 ft^3/s (1,560 m^3/s). Flood in July 1905 reached a stage about 2 ft (0.610 m) higher than that in April 1927.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,570 ft^3/s (101 m^3/s) July 24, gage height, 13.45 ft (4.100 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	.01	.00	.00	.00	.00	.00	13	4.1	.06	67	30	3.0
2	.01	.00	.00	.00	.00	.00	13	4.4	.06	53	16	1.4
3	.00	.00	.00	.00	.00	.00	13	3.6	.06	59	11	.97
4	.00	.00	.00	.00	.00	.00	13	.57	.05	28	7.9	5.3
5	.00	.00	.00	.00	.00	.00	15	.13	.05	13	5.8	1.6
6	.00	.00	.00	.00	.00	.00	14	.36	.05	12	4.4	.87
7	.00	.00	.00	.00	.00	.00	15	.66	.04	12	3.3	.31
8	.00	.00	.00	.00	.00	.00	12	.13	.04	9.2	3.6	.10
9	.00	.00	.00	.00	.00	1.0	14	.31	.05	82	3.8	.05
10	.00	.00	.00	.00	.00	2.0	13	3.6	.06	45	9.2	.00
11	.00	.00	.00	.00	.00	5.0	8.8	4.4	.05	25	6.2	.00
12	.00	.00	.00	.00	.00	10	44	5.3	.04	17	4.1	.00
13	.00	.00	.00	.00	.00	100	123	6.2	.03	16	175	.00
14	.00	.00	.00	.00	.00	75	124	6.2	.01	18	77	.00
15	.00	.00	.00	.00	.00	53	106	4.4	.00	259	39	.00
16	.00	.00	.00	.00	.00	56	82	.66	.04	205	23	.00
17	.00	.00	.00	.00	.00	43	48	.17	.04	358	17	.00
18	.00	.00	.00	.00	.00	48	28	.13	.04	203	13	.00
19	.00	.00	.00	.00	.00	43	22	.10	228	120	9.2	.00
20	.00	.00	.00	.00	.00	40	19	.09	346	70	9.2	.00
21	.00	.00	.00	.00	.00	40	15	.06	690	37	10	.00
22	.00	.00	.00	.00	.00	50	15	.08	198	23	7.1	.00
23	.00	.00	.00	.00	.00	48	11	.09	389	47	4.9	.00
24	.00	.00	.00	.00	.00	26	8.8	.09	387	2570	4.1	.00
25	.00	.00	.00	.00	.00	21	7.5	.09	605	957	2.7	.00
26	.00	.00	.00	.00	.00	15	6.6	.09	411	220	2.0	.00
27	.00	.00	.00	.00	.00	13	5.8	.08	488	190	13	.00
28	.00	.00	.00	.00	.00	14	5.3	.08	334	69	22	.00
29	.00	.00	.00	.00	---	17	4.6	.07	246	306	33	.00
30	.00	.00	.00	.00	---	21	4.1	.07	98	181	9.2	.00
31	.00	---	.00	.00	---	17	---	.06	---	87	6.2	---
TOTAL	.02	.00	.00	.00	.00	758.00	823.5	46.37	4420.77	6358.2	581.9	13.60
MEAN	.001	.000	.000	.000	.000	24.5	27.5	1.50	147	205	18.8	.45
MAX	.01	.00	.00	.00	.00	100	124	6.2	690	2570	175	5.3
MIN	.00	.00	.00	.00	.00	.00	4.1	.06	.00	9.2	2.0	.00
AC-FT	.04	.00	.00	.00	.00	1500	1630	92	8770	12610	1150	27

CAL YR 1978	TOTAL	141799.04	MEAN	388	MAX	18000	MIN	.00	AC-FT	281300
WTR YR 1979	TOTAL	13002.36	MEAN	35.6	MAX	2570	MIN	.00	AC-FT	25790

06441500 BAD RIVER NEAR FORT PIERRE, SD--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1946-53, 1972 to September 1978.

PERIOD OF DAILY RECORD.--
SUSPENDED SEDIMENT DISCHARGE: October 1971 to current year.

REMARKS.--Records fair. No flow Oct. 3 to Mar. 8, June 15, Sept. 10-30. Flow affected by ice Mar. 9-14. Sediment discharge records prior to Oct. 1, 1971, on file in the District office, Corps of Engineers, Omaha, NE.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SEDIMENT CONCENTRATIONS: Maximum daily mean, 97,000 mg/L Apr. 21, 1974; minimum daily mean, 0 mg/L on many days each year.
SEDIMENT LOADS: Maximum daily, 783,000 tons (710,000 tonnes) May 2, 1972; minimum daily, 0 ton (0 tonne) on many days each year.

EXTREMES FOR CURRENT YEAR.--
SEDIMENT CONCENTRATIONS: Maximum daily mean, 73,100 mg/L July 24; minimum daily mean, 0 mg/L on many days.
SEDIMENT LOADS: Maximum daily, 507,000 tons (460,000 tonnes) July 24; minimum daily, 0 ton (0 tonne) on many days.

SUSPENDED-SEDIMENT DISCHARGE (TONS/DAY), WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1	.01	20	.00	.00	0	.00	.00	0	.00
2	.01	10	.00	.00	0	.00	.00	0	.00
3	.00	0	.00	.00	0	.00	.00	0	.00
4	.00	0	.00	.00	0	.00	.00	0	.00
5	.00	0	.00	.00	0	.00	.00	0	.00
6	.00	0	.00	.00	0	.00	.00	0	.00
7	.00	0	.00	.00	0	.00	.00	0	.00
8	.00	0	.00	.00	0	.00	.00	0	.00
9	.00	0	.00	.00	0	.00	.00	0	.00
10	.00	0	.00	.00	0	.00	.00	0	.00
11	.00	0	.00	.00	0	.00	.00	0	.00
12	.00	0	.00	.00	0	.00	.00	0	.00
13	.00	0	.00	.00	0	.00	.00	0	.00
14	.00	0	.00	.00	0	.00	.00	0	.00
15	.00	0	.00	.00	0	.00	.00	0	.00
16	.00	0	.00	.00	0	.00	.00	0	.00
17	.00	0	.00	.00	0	.00	.00	0	.00
18	.00	0	.00	.00	0	.00	.00	0	.00
19	.00	0	.00	.00	0	.00	.00	0	.00
20	.00	0	.00	.00	0	.00	.00	0	.00
21	.00	0	.00	.00	0	.00	.00	0	.00
22	.00	0	.00	.00	0	.00	.00	0	.00
23	.00	0	.00	.00	0	.00	.00	0	.00
24	.00	0	.00	.00	0	.00	.00	0	.00
25	.00	0	.00	.00	0	.00	.00	0	.00
26	.00	0	.00	.00	0	.00	.00	0	.00
27	.00	0	.00	.00	0	.00	.00	0	.00
28	.00	0	.00	.00	0	.00	.00	0	.00
29	.00	0	.00	.00	0	.00	.00	0	.00
30	.00	0	.00	.00	0	.00	.00	0	.00
31	.00	0	.00	---	---	---	.00	0	.00
TOTAL	0.02	---	0.00	0.00	---	0.00	0.00	---	0.00

06441500 BAD RIVER NEAR FORT PIERRE, SD--Continued

SUSPENDED-SEDIMENT DISCHARGE (TONS/DAY), WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JANUARY			FEBRUARY			MARCH	
1	.00	0	.00	.00	0	.00	.00	0	.00
2	.00	0	.00	.00	0	.00	.00	0	.00
3	.00	0	.00	.00	0	.00	.00	0	.00
4	.00	0	.00	.00	0	.00	.00	0	.00
5	.00	0	.00	.00	0	.00	.00	0	.00
6	.00	0	.00	.00	0	.00	.00	0	.00
7	.00	0	.00	.00	0	.00	.00	0	.00
8	.00	0	.00	.00	0	.00	.00	0	.00
9	.00	0	.00	.00	0	.00	1.0	50	.14
10	.00	0	.00	.00	0	.00	2.0	200	1.1
11	.00	0	.00	.00	0	.00	5.0	400	5.4
12	.00	0	.00	.00	0	.00	10	800	22
13	.00	0	.00	.00	0	.00	100	3420	923
14	.00	0	.00	.00	0	.00	75	3170	642
15	.00	0	.00	.00	0	.00	53	1070	153
16	.00	0	.00	.00	0	.00	56	1860	281
17	.00	0	.00	.00	0	.00	43	5580	648
18	.00	0	.00	.00	0	.00	48	4900	635
19	.00	0	.00	.00	0	.00	43	3940	457
20	.00	0	.00	.00	0	.00	40	1590	172
21	.00	0	.00	.00	0	.00	40	1780	192
22	.00	0	.00	.00	0	.00	50	2000	270
23	.00	0	.00	.00	0	.00	48	2100	272
24	.00	0	.00	.00	0	.00	26	1120	79
25	.00	0	.00	.00	0	.00	21	750	43
26	.00	0	.00	.00	0	.00	15	730	30
27	.00	0	.00	.00	0	.00	13	700	25
28	.00	0	.00	.00	0	.00	14	660	25
29	.00	0	.00	---	---	---	17	665	31
30	.00	0	.00	---	---	---	21	660	37
31	.00	0	.00	---	---	---	17	500	23
TOTAL	0.00	---	0.00	0.00	---	0.00	758.00	---	4966.64
		APRIL			MAY			JUNE	
1	13	450	16	4.1	388	4.3	.06	130	.0
2	13	400	14	4.4	380	4.5	.06	125	.0
3	13	300	11	3.6	340	3.3	.06	125	.0
4	13	250	8.8	.57	300	.46	.05	120	.0
5	15	252	10	.13	200	.07	.05	120	.0
6	14	250	9.5	.36	275	.27	.05	115	.0
7	15	270	11	.66	300	.53	.04	115	.0
8	12	250	8.1	.13	240	.08	.04	110	.0
9	14	265	10	.31	275	.23	.05	110	.0
10	13	250	8.8	3.6	395	3.8	.06	110	.0
11	8.8	240	5.7	4.4	410	4.9	.05	110	.0
12	44	2400	285	5.3	420	6.0	.04	110	.0
13	123	18500	6140	6.2	430	7.2	.03	90	.0
14	124	27400	9170	6.2	430	7.2	.01	20	.0
15	106	20700	5920	4.4	410	4.9	.00	0	.0
16	82	15700	3480	.66	300	.53	.04	25	.0
17	48	10000	1300	.17	265	.12	.04	95	.0
18	28	2500	189	.13	250	.09	.04	95	.0
19	22	1300	77	.10	200	.05	228	37500	23100
20	19	1160	60	.09	170	.04	346	47300	44200
21	15	1020	41	.06	150	.02	690	52400	97600
22	15	870	35	.08	149	.03	198	10400	5560
23	11	720	21	.09	150	.04	389	38200	40100
24	8.8	580	14	.09	150	.04	387	30800	32200
25	7.5	440	8.9	.09	150	.04	605	48400	79100
26	6.6	440	7.8	.09	150	.04	411	29300	32500
27	5.8	420	6.6	.08	145	.03	488	39500	52000
28	5.3	400	5.7	.08	145	.03	334	7400	6670
29	4.6	395	4.9	.07	140	.03	246	7400	4920
30	4.1	390	4.3	.07	135	.03	98	7100	1880
31	---	---	---	.06	130	.02	---	---	---
TOTAL	823.5	---	26883.1	46.37	---	48.92	4420.77	---	419830.0

06441500 BAD RIVER NEAR FORT PIERRE, SD--Continued

SUSPENDED-SEDIMENT DISCHARGE (TONS/DAY), WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JULY			AUGUST			SEPTEMBER	
1	67	2700	488	30	400	32	3.0	400	3.2
2	53	1800	258	16	350	15	1.4	100	.38
3	59	1500	239	11	300	8.9	.97	40	.10
4	28	400	30	7.9	275	5.9	5.3	180	2.6
5	13	300	11	5.8	260	4.1	1.6	60	.26
6	12	200	6.5	4.4	250	3.0	.87	50	.12
7	12	200	6.5	3.3	235	2.1	.31	40	.03
8	9.2	150	3.7	3.6	240	2.3	.10	30	.01
9	82	11200	2480	3.8	240	2.5	.05	20	.00
10	45	470	57	9.2	300	7.5	.00	0	.00
11	25	220	15	6.2	260	4.4	.00	0	.00
12	17	200	9.2	4.1	250	2.8	.00	0	.00
13	16	260	11	175	27200	12900	.00	0	.00
14	18	290	14	77	10700	2220	.00	0	.00
15	259	30000	21000	39	7500	790	.00	0	.00
16	205	36200	20000	23	11200	696	.00	0	.00
17	358	41000	39600	17	2000	92	.00	0	.00
18	203	11100	6080	13	800	28	.00	0	.00
19	120	3800	1230	9.2	310	7.7	.00	0	.00
20	70	950	180	9.2	280	7.0	.00	0	.00
21	37	500	50	10	240	6.5	.00	0	.00
22	23	200	12	7.1	195	3.7	.00	0	.00
23	47	150	19	4.9	170	2.2	.00	0	.00
24	2570	73100	507000	4.1	140	1.5	.00	0	.00
25	957	31300	80900	2.7	120	.87	.00	0	.00
26	220	17800	10600	2.0	100	.54	.00	0	.00
27	190	20600	10600	13	1120	39	.00	0	.00
28	69	7500	1400	22	1150	68	.00	0	.00
29	306	37800	31200	33	5420	483	.00	0	.00
30	181	18500	9040	9.2	3380	84	.00	0	.00
31	87	2000	470	6.2	1650	28	---	---	---
TOTAL	6358.2	---	743009.9	581.9	---	17548.51	13.60	---	6.70
YEAR	13002.36		1212293.77						

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE (DEG C) (00010)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	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)
APR									
05...	1540	14	3.0	252	9.5	90	90	99	100
MAY									
22...	1500	.09	24.0	149	.04	65	--	--	--
JUN									
22...	0930	206	19.0	12700	7060	99	--	--	--
JUL									
16...	0915	148	17.0	33300	13300	99	--	--	--
24...	1600	3500	22.0	54800	518000	99	100	--	--
AUG									
22...	0945	7.7	22.0	195	4.1	98	--	--	--

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

MAR 12	0.0	MAR 22	2.5	JUN 19	16.5	JUN 28	23.0	JUL 17	20.5	JUL 31	24.0
14	.5	23	1.5	20	19.5	29	24.0	18	23.0	AUG 7	26.0
15	.0	24	5.5	21	22.0	30	24.0	19	25.5	14	18.0
16	2.5	28	4.5	22	21.5	JUL 1	28.5	22	28.0	16	22.0
17	2.5	APR 13	6.0	23	19.0	3	28.5	24	20.5	19	26.0
18	.0	14	9.0	24	19.0	10	29.0	25	25.0	22	22.0
19	.0	18	18.0	25	21.5	12	28.0	26	24.0	29	24.0
20	2.5	25	12.0	26	23.0	14	21.0	29	23.5		
21	2.5	MAY 1	16.5	27	23.5	16	17.0	30	23.0		

06442000 MEDICINE KNOLL CREEK NEAR BLUNT, SD

LOCATION.--Lat 44°33'46", long 99°54'50", in NW¼ sec.31, T.113 N., R.75 W., Sully County, Hydrologic Unit 10140103, on left bank at downstream side of highway bridge, 4.8 mi (7.7 km) northeast of Blunt and 5.5 mi (8.8 km) upstream from South Fork Medicine Knoll Creek.

DRAINAGE AREA.--317 m^2 (821 km^2).

PERIOD OF RECORD.--March 1950 to current year. Prior to October 1959, published as Medicine Creek near Blunt.

REVISED RECORDS.--WRD SD-76-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,611.08 ft (491.057 m) National Geodetic Vertical Datum of 1929. Prior to Oct. 31, 1950, nonrecording gage at same site and datum.

REMARKS.--Records fair. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--29 years, 4.93 ft^3/s (0.140 m^3/s), 3,570 acre-ft/yr (4.40 hm^3/yr); median of yearly mean discharges, 0.90 ft^3/s (0.03 m^3/s), 650 acre-ft/yr (0.80 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,830 ft^3/s (51.8 m^3/s) Apr. 5, 1952, gage height, 12.34 ft (3.761 m), from floodmarks; maximum gage height, 13.2 ft (4.02 m) between Mar. 26-29, 1950, from floodmarks (backwater from ice); no flow for long periods in each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 32 ft^3/s (0.91 m^3/s) July 15, gage height, 8.81 ft (2.685 m), no 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	.00	.00	.00	.00	.00	.00	.01	.00	.18	.00	.93
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.02	.00	.52
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.22
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.08
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.02
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01
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	.10	.00	.00
13	.00	.00	.00	.00	.00	.00	.58	.00	.00	4.9	.00	.00
14	.00	.00	.00	.00	.00	.00	.45	.00	.00	14	.00	.00
15	.00	.00	.00	.00	.00	.00	.34	.00	.00	27	.00	.00
16	.00	.00	.00	.00	.00	.00	.18	.00	.00	25	.00	.00
17	.00	.00	.00	.00	.00	.00	.18	.01	.00	16	.00	.00
18	.00	.00	.00	.00	.00	.00	.52	.52	.00	6.7	.00	.00
19	.00	.00	.00	.00	.00	.00	.39	.72	.15	3.7	.00	.00
20	.00	.00	.00	.00	.00	.00	.34	.34	8.8	3.4	.00	.00
21	.00	.00	.00	.00	.00	.00	.45	.18	12	3.0	.00	.00
22	.00	.00	.00	.00	.00	.00	.25	.06	4.9	4.1	.06	.00
23	.00	.00	.00	.00	.00	.00	.15	.02	2.4	3.0	.13	.00
24	.00	.00	.00	.00	.00	.00	.15	.02	4.6	1.8	.13	.00
25	.00	.00	.00	.00	.00	.00	.10	.01	14	1.7	.06	.00
26	.00	.00	.00	.00	.00	.00	.06	.00	15	1.6	.02	.00
27	.00	.00	.00	.00	.00	.00	.02	.00	10	.78	.02	.00
28	.00	.00	.00	.00	.00	.00	.02	.00	5.4	.18	.28	.00
29	.00	.00	.00	.00	---	.00	.01	.00	2.3	.15	1.3	.00
30	.00	.00	.00	.00	---	.00	.01	.00	.93	.15	1.7	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.03	1.6	---
TOTAL	.00	.00	.00	.00	.00	.00	4.20	1.89	80.48	117.49	5.30	1.78
MEAN	.000	.000	.000	.000	.000	.000	.14	.061	2.68	3.79	.17	.059
MAX	.00	.00	.00	.00	.00	.00	.58	.72	15	27	1.7	.93
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	.00	8.3	3.7	160	233	11	3.5

CAL YR 1978	TOTAL	7269.64	MEAN	19.9	MAX	1550	MIN	.00	AC-FT 14420
WTR YR 1979	TOTAL	211.14	MEAN	.58	MAX	27	MIN	.00	AC-FT 419

06442500 MEDICINE CREEK AT KENNEBEC, SD

LOCATION.--Lat 43°54'17", long 99°52'35", in NW¼NE¼ sec.18, T.105 N., R.75 W., Lyman County, Hydrologic Unit 10140104, on right bank 4 ft (1 m) downstream from highway bridge, 0.5 mi (0.8 km) west of Kennebec and 0.5 mi (0.8 km) downstream from small right-bank tributary.

DRAINAGE AREA.--465 mi^2 (1,200 km^2), approximately.

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

GAGE.--Water-stage recorder. Datum of gage is 1,659.64 ft (505.858 m) National Geodetic Vertical Datum of 1929. Prior to Dec. 28, 1954, nonrecording gage at same site and datum.

REMARKS.--Records fair. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--25 years, 15.1 ft^3/s (0.428 m^3/s), 10,940 acre-ft/yr (13.5 hm^3/yr); median of yearly mean discharges, 6.5 ft^3/s (0.18 m^3/s), 4,700 acre-ft/yr (5.8 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,970 ft^3/s (254 m^3/s) Mar. 28, 1960, gage height, 16.71 ft (5.093 m); no flow for many days each year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in April 1952 reached a stage of 17.0 ft (5.18 m), from floodmarks.

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)
Aug. 10	0045	*393	11.1	*5.44	1.658	Sept. 8	1645	219	6.20	4.06	1.237
Aug. 28	1830	312	8.84	4.84	1.475						

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	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	12
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	6.2
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	4.2
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	3.5
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.8
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.2
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.71
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	85
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	70	51
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	304	12
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	202	5.6
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	158	2.7
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	76	1.6
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	28	.90
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	13	.44
16	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	9.0	.32
17	.00	.00	.00	.00	.00	.00	.03	.00	.00	.00	6.5	.06
18	.00	.00	.00	.00	.00	.00	.05	.00	.00	.00	4.9	.00
19	.00	.00	.00	.00	.00	.00	.07	.00	.00	.00	3.9	.00
20	.00	.00	.00	.00	.00	.00	.06	.00	.00	.00	3.5	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	2.7	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	2.0	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.5	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	9.7	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	7.8	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	3.9	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	2.2	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	112	.00
29	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	175	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	71	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	23	---
TOTAL	.00	.00	.00	.00	.00	.00	.22	.00	.00	.00	1289.60	189.23
MEAN	.000	.000	.000	.000	.000	.000	.007	.000	.000	.000	41.6	6.31
MAX	.00	.00	.00	.00	.00	.00	.07	.00	.00	.00	304	85
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	.00	.4	.00	.00	.00	2560	375

CAL YR 1978 TOTAL 16172.23 MEAN 44.3 MAX 2720 MIN .00 AC-FT 32080
WTR YR 1979 TOTAL 1479.05 MEAN 4.05 MAX 304 MIN .00 AC-FT 2930

06442700 LAKE SHARPE NEAR FORT THOMPSON, SD

LOCATION.--Lat 44°02'18", long 99°26'45", in SE¼ sec.27, T.107 N., R.72 W., Lyman County, Hydrologic Unit 10140101, at left approach wall of powerhouse at Big Bend Dam on Missouri River, 2.5 mi (4.0 km) south of Fort Thompson, and at mile 987.4 (1,588.7 km).

DRAINAGE AREA.--249,300 mi^2 (645,700 km^2), approximately.

PERIOD OF RECORD.--July 1963 to current year (monthend contents only).

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

REMARKS.--Reservoir is formed by earth-fill dam; closure made July 1963; intentional storage began November 1963. Maximum capacity, 1,900,000 acre-ft (2,340 hm^3) below elevation, 1,423.0 ft (433.73 m), top of spillway gates. Normal maximum, 1,725,000 acre-ft (2,130 hm^3) below elevation 1,420.0 ft (432.82 m). Inactive storage, 1,465,000 acre-ft (1,810 hm^3) below elevation 1,415.0 ft (431.29 m). Figures given herein represent elevations at powerhouse and total contents adjusted for wind effect.

The spillway consists of a concrete chute with flat crest at elevation 1,385.0 ft (422.15 m) surmounted by 8 taintor gates, each 40 by 38 ft (12.2 X 11.6 m); design capacity, 390,000 ft^3/s (11,000 m^3/s). Normal releases are through 8 power units (completed in July 1966), with a generating capacity of 58,500 kilowatts each. Maximum release through powerplant about 100,000 ft^3/s (2,830 m^3/s). 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, 1,829,000 acre-ft (2,260 hm^3) Apr. 22, 1971, elevation, 1,421.9 ft (433.40 m), affected by wind; minimum since initial filling, 1,448,000 acre-ft (1,790 hm^3) Sept. 17, 1967, elevation, 1,414.7 ft (431.20 m), affected by wind.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 1,797,000 acre-ft (2,220 hm^3) Nov. 5, elevation, 1,421.3 ft (433.21 m); maximum elevation, 1,421.6 ft (433.30 m) Mar. 5; minimum contents, 1,689,000 acre-ft (2,080 hm^3) June 8, elevation, 1,419.49 ft (432.66 m), affected by wind.

MONTHEND ELEVATION, IN FEET NGVD, AND CONTENTS,
IN ACRE-FEET, AT 2400, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

Date	Elevation	Contents	Change in contents
Sept. 30	1420.3	1742000	
Oct. 31	1421.0	1791000	+49000
Nov. 30	1420.8	1773000	-18000
Dec. 31	1420.3	1715000	-22000
CAL YR 1978			-43000
Jan. 31	1420.5	1760000	+9000
Feb. 28	1420.7	1770000	+10000
Mar. 31	1420.4	1751000	-19000
Apr. 30	1420.26	1745000	-6000
May 31	1420.51	1757000	+12000
June 30	1420.27	1748000	-9000
July 31	1420.19	1736000	-12000
Aug. 31	1420.65	1767000	+31000
Sept. 30	1420.70	1752000	-15000
WTR YR 1979			+10000

NOTE.--Reservoir frozen over Dec. 14 to Apr. 16.

06442950 CROW CREEK NEAR GANN VALLEY, SD

LOCATION.--Lat 43°59'29", long 99°13'07", in NE¼NW¼ sec.15, T.106 N., R.70 W., Buffalo County, Hydrologic Unit 10140105, near center of span at downstream side of highway bridge, 6.4 mi (10.3 km) upstream from Smith Creek, 6.9 mi (11.1 km) downstream from Elm Creek, and 12.0 mi (19.3 km) southwest of Gann Valley.

DRAINAGE AREA.--670 mi^2 (1,740 km^2), approximately.

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

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1,434.73 ft (437.306 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--8 years, 22.2 ft^3/s (0.629 m^3/s), 16,080 acre-ft/yr (19.8 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,900 ft^3/s (110 m^3/s) Mar. 22, 1978, gage height, 14.60 ft (4.450 m); no flow for many days 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. 13	0200	*314	8.89	*5.81	1.771	July 13	0600	169	4.79	4.63	1.411

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	.00	.00	.00	.00	.00	13	1.8	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	11	1.5	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	8.4	1.2	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	7.1	1.0	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	14	1.0	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	13	1.1	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	7.6	1.2	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	3.4	.35	.00	.00	6.3	.00
9	.00	.00	.00	.00	.00	.00	1.8	1.3	.00	.00	22	.00
10	.00	.00	.00	.00	.00	.00	1.5	1.4	.00	1.6	7.4	.00
11	.00	.00	.00	.00	.00	.00	17	1.2	.00	.00	5.4	.00
12	.00	.00	.00	.00	.00	.00	134	1.0	.00	43	2.3	.00
13	.00	.00	.00	.00	.00	.00	185	.60	.00	101	.60	.00
14	.00	.00	.00	.00	.00	.00	38	.30	.00	27	.00	.00
15	.00	.00	.00	.00	.00	.00	26	.10	.00	14	.00	.00
16	.00	.00	.00	.00	.00	.00	18	.05	.00	8.7	.00	.00
17	.00	.00	.00	.00	.00	2.0	15	.03	.00	5.4	.00	.00
18	.00	.00	.00	.00	.00	15	10	.02	.00	3.6	.00	.00
19	.00	.00	.00	.00	.00	40	13	.01	.19	2.2	.00	.00
20	.00	.00	.00	.00	.00	53	27	.00	2.0	.82	.00	.00
21	.00	.00	.00	.00	.00	23	15	.00	.01	.10	.00	.00
22	.00	.00	.00	.00	.00	28	8.7	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	22	5.4	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	13	3.8	.00	.00	39	.00	.00
25	.00	.00	.00	.00	.00	6.3	2.8	.00	.00	23	.00	.00
26	.00	.00	.00	.00	.00	3.4	2.6	.00	.00	14	.00	.00
27	.00	.00	.00	.00	.00	2.9	2.0	.00	.00	7.1	.00	.00
28	.00	.00	.00	.00	.00	2.4	1.4	.00	.00	3.6	.00	.00
29	.00	.00	.00	.00	---	7.2	.80	.28	.00	2.2	.00	.00
30	.00	.00	.00	.00	---	22	.35	1.8	.00	.82	.00	.00
31	.00	---	.00	.00	---	15	---	.10	---	.10	.00	---
TOTAL	.00	.00	.00	.00	.00	255.20	606.65	17.34	2.20	297.24	44.00	.00
MEAN	.000	.000	.000	.000	.000	8.23	20.2	.56	.073	9.59	1.42	.000
MAX	.00	.00	.00	.00	.00	53	185	1.8	2.0	101	22	.00
MIN	.00	.00	.00	.00	.00	.00	.35	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	506	1200	34	4.4	590	87	.00

CAL YR 1978	TOTAL	19070.79	MEAN 52.2	MAX 3450	MIN .00	AC-FT	37830	
WTR YR 1979	TOTAL	1222.63	MEAN 3.35	MAX 185	MIN .00	AC-FT	2430	

06445980 WHITE CLAY CREEK NEAR OGLALA, SD

LOCATION.--Lat 43°08'46", long 102°40'58", in SE¼SE¼ sec.30, T.37 N., R.45 W., Shannon County, Hydrologic Unit 10140201, on left bank at downstream side of bridge on U.S. Highway 18, 4.3 mi (6.9 km) southeast of Oglala, 5.5 mi (8.8 km) upstream from Oglala Dam, and 11 mi (18 km) northwest of Pine Ridge.

DRAINAGE AREA.--340 mi^2 (880 km^2), approximately.

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

GAGE.--Water-stage recorder. Datum of gage is 3,001.54 ft (914.869 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for winter periods, which are poor. Some storage and possible regulation above station. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--14 years, 10.9 ft^3/s (0.309 m^3/s), 7,900 acre-ft/yr (9.74 hm^3/yr); median of yearly mean discharges, 9.0 ft^3/s (0.25 m^3/s), 6,500 acre-ft/yr (8.0 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 659 ft^3/s (18.7 m^3/s) June 16, 1967, gage height, 14.74 ft (4.493 m); maximum gage height, 15.02 ft (4.578 m) Mar. 11, 1966 (backwater from ice); no flow at times in 1965, 1970, 1973-75, 1978.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 70 ft^3/s (1.98 m^3/s) July 24, gage height, 7.92 ft (2.414 m), no peak above base of 150 ft^3/s (4.25 m^3/s); minimum daily discharge, 0.20 ft^3/s (0.006 m^3/s) Jan. 31.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 1 to Nov. 10, Mar. 30 to May 28, Sept. 28-30;
stage-discharge relation affected by ice Nov. 11 to Mar. 29)

4.25	0.14	4.8	5.3	6.0	22
4.3	.5	5.5	15	7.0	42
4.5	2.1				

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	4.9	7.2	9.5	1.0	.30	7.0	16	12	10	15	11	7.5
2	4.9	6.6	9.5	1.0	.30	7.0	16	10	9.9	12	8.9	6.9
3	3.8	6.6	9.0	1.0	.30	6.5	15	10	10	9.6	7.6	6.5
4	4.1	6.5	9.0	1.0	.60	6.5	14	10	9.3	9.7	6.7	6.3
5	4.3	7.2	9.0	1.0	1.0	7.0	14	10	8.3	9.3	6.0	6.3
6	4.8	7.8	8.5	1.0	2.0	8.0	13	10	8.5	9.3	4.3	5.8
7	4.3	8.2	7.5	1.0	3.0	10	13	10	8.9	8.6	4.2	5.7
8	4.2	8.6	7.0	1.0	4.0	9.5	13	9.6	7.8	8.6	3.9	5.6
9	4.0	9.0	7.0	1.0	4.5	9.0	14	11	6.9	7.8	4.3	5.3
10	4.0	9.0	7.5	1.5	5.0	10	14	14	8.3	7.2	6.2	5.2
11	3.7	9.0	8.0	2.0	6.0	11	15	16	8.9	6.9	9.6	5.2
12	3.9	9.5	8.0	1.0	6.0	12	16	16	8.5	6.3	8.5	5.7
13	4.6	10	8.0	.80	7.0	13	16	16	7.2	5.1	6.9	4.1
14	4.5	11	8.0	.50	8.0	14	15	14	6.5	4.9	5.4	5.2
15	4.5	10	8.0	.50	7.0	15	14	13	5.8	4.9	4.9	5.1
16	4.5	8.5	8.0	.50	5.0	18	14	12	6.1	6.2	4.3	5.3
17	4.9	9.0	8.0	.50	5.5	20	14	11	8.2	6.1	3.9	5.1
18	4.9	9.5	8.0	.50	6.0	14	14	12	6.7	23	26	4.8
19	4.5	8.5	8.0	.50	7.0	9.0	14	13	7.8	21	36	4.6
20	4.8	8.5	8.0	.60	7.0	8.0	13	14	8.5	27	36	4.8
21	5.4	9.0	8.0	.80	7.0	9.0	13	11	8.7	20	32	4.9
22	5.7	10	8.0	1.0	6.0	9.0	12	11	7.8	14	26	4.9
23	6.1	10	8.0	1.0	5.5	10	12	10	10	12	20	5.4
24	6.6	10	8.0	1.0	5.5	11	12	9.7	8.6	34	16	5.3
25	7.1	10	7.5	1.5	5.5	15	12	9.9	8.9	16	13	5.3
26	7.8	10	7.0	1.0	6.0	15	12	9.7	8.0	10	12	4.9
27	7.0	10	6.0	.80	6.5	16	12	9.7	7.8	12	11	5.2
28	6.9	10	5.0	.60	7.0	21	11	9.6	13	15	10	5.3
29	6.7	10	4.0	.40	---	19	11	9.3	27	19	9.2	4.6
30	6.9	10	3.0	.30	---	17	11	9.6	21	17	8.7	4.1
31	6.7	---	2.0	.20	---	17	---	10	---	14	8.3	---
TOTAL	161.0	269.2	230.0	26.50	134.50	373.5	405	353.1	282.9	391.5	370.8	160.9
MEAN	5.19	8.97	7.42	.85	4.80	12.0	13.5	11.4	9.43	12.6	12.0	5.36
MAX	7.8	11	9.5	2.0	8.0	21	16	16	27	34	36	7.5
MIN	3.7	6.5	2.0	.20	.30	6.5	11	9.3	5.8	4.9	3.9	4.1
AC-FT	319	534	456	53	267	741	803	700	561	777	735	319

CAL YR 1978 TOTAL 5114.83 MEAN 14.0 MAX 174 MIN .00 AC-FT 10150
WTR YR 1979 TOTAL 3158.90 MEAN 8.65 MAX 36 MIN .20 AC-FT 6270

06446000 WHITE RIVER NEAR OGLALA, SD

LOCATION.--Lat 43°15'17", long 102°49'29", in SW¼NE¼ sec.24, T.38 N., R.47 W., Shannon County, Hydrologic Unit 10140201, on right bank at downstream side of bridge, 3.0 mi (4.8 km) downstream from Blacktail Creek and 7.0 mi (11.3 km) northwest of Oglala.

DRAINAGE AREA.--2,200 mi^2 (5,700 km^2), approximately.

PERIOD OF RECORD.--May 1943 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,853.54 ft (869.759 m) National Geodetic Vertical Datum of 1929. Prior to May 6, 1947, nonrecording gage at same site and datum.

REMARKS.--Records fair except those for winter periods, which are poor. Some diversions for irrigation above station. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--36 years, 54.0 ft^3/s (1.529 m^3/s), 39,120 acre-ft/yr (48.2 hm^3/yr); median of yearly mean discharges, 45 ft^3/s (1.27 m^3/s), 32,600 acre-ft/yr (40 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,200 ft^3/s (147 m^3/s) June 21, 1947, gage height, 23.50 ft (7.163 m), from rating curve extended above 2,800 ft^3/s (79.3 m^3/s) on basis of velocity-area studies; maximum gage height, 23.61 ft (7.196 m) June 16, 1967; no flow at times in 1952, 1954, 1957, 1961, 1964, 1965, 1970-76.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 789 ft^3/s (22.3 m^3/s) Aug. 21, gage height, 13.79 ft (4.203 m); no peak above base of 800 ft^3/s (22.7 m^3/s); minimum daily discharge, 2.4 ft^3/s (0.07 m^3/s) Feb. 2-9.

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	13	6.9	7.1	4.1	2.5	7.8	47	34	33	97	62	30
2	12	7.1	7.3	4.0	2.4	8.8	46	36	32	49	47	25
3	11	7.7	7.1	3.9	2.4	10	71	36	35	35	47	23
4	8.6	15	7.3	3.8	2.4	12	52	36	35	34	69	21
5	7.3	11	7.2	3.8	2.4	17	44	36	32	41	40	20
6	4.6	9.8	7.3	3.7	2.4	20	40	36	33	56	31	20
7	2.7	9.5	7.3	3.7	2.4	25	37	35	31	32	18	19
8	4.5	9.1	7.4	3.6	2.4	30	35	37	28	33	20	19
9	11	9.1	7.1	3.5	2.4	38	36	41	25	80	36	14
10	12	8.9	6.9	3.4	2.5	41	39	46	22	178	140	12
11	11	8.6	6.7	3.2	2.5	45	35	45	17	124	39	11
12	8.0	8.4	6.9	3.0	2.6	50	34	54	13	50	30	12
13	8.9	8.5	7.1	2.9	2.7	60	37	57	12	39	39	12
14	7.5	8.3	7.1	2.8	2.8	70	41	55	13	35	30	8.9
15	6.5	8.3	7.1	2.7	2.9	80	37	81	16	29	19	8.5
16	5.9	7.9	7.1	2.7	3.0	100	41	89	16	24	14	9.3
17	5.9	8.0	7.1	2.7	3.2	130	46	58	17	41	12	11
18	5.9	7.8	7.1	2.8	3.4	170	43	47	15	46	154	13
19	5.8	7.6	6.9	2.7	3.5	187	41	47	16	40	139	11
20	5.8	7.6	6.7	2.7	3.6	137	39	43	19	33	392	10
21	5.5	7.8	6.7	2.7	3.7	126	35	39	17	26	763	10
22	5.3	7.6	6.5	2.6	3.9	80	31	38	17	29	700	6.8
23	5.2	7.5	6.5	2.5	4.1	70	29	37	17	64	568	6.6
24	5.3	7.4	6.3	2.5	4.5	61	28	35	18	211	237	5.0
25	5.8	7.4	6.0	2.5	4.8	62	28	35	27	82	102	3.9
26	6.6	7.3	6.0	2.5	5.2	52	27	35	29	126	74	7.2
27	6.9	7.2	5.4	2.5	6.0	61	27	35	93	211	56	9.8
28	7.0	7.1	5.1	2.5	6.6	48	27	31	140	361	46	7.4
29	7.1	7.2	4.7	2.5	---	52	26	32	140	349	42	7.0
30	7.0	7.1	4.3	2.5	---	54	27	32	139	211	36	5.7
31	7.0	---	4.2	2.5	---	51	---	35	---	116	32	---
TOTAL	226.6	248.7	203.5	93.5	93.2	1955.6	1126	1333	1097	2882	4034	379.1
MEAN	7.31	8.29	6.56	3.02	3.33	63.1	37.5	43.0	36.6	93.0	130	12.6
MAX	13	15	7.4	4.1	6.6	187	71	89	140	361	763	30
MIN	2.7	6.9	4.2	2.5	2.4	7.8	26	31	12	24	12	3.9
AC-FT	449	493	404	185	185	3880	2230	2640	2180	5720	8000	752

CAL YR 1978 TOTAL 24400.1 MEAN 66.8 MAX 1480 MIN 2.7 AC-FT 48400
WTR YR 1979 TOTAL 13672.2 MEAN 37.5 MAX 763 MIN 2.4 AC-FT 27120

06447000 WHITE RIVER NEAR KADOKA, SD

LOCATION.--Lat 43°45'09", long 101°31'28", in SE¼SE¼ sec.30, T.3 S., R.22 E., Black Hills meridian, Jackson County, Hydrologic Unit 10140202, near center of span on downstream side of bridge on State Highway 73, 5.0 mi (8.0 km) upstream from Pass Creek, 5.5 mi (8.8 km) downstream from Cottonwood Creek, and 5.8 mi (9.3 km) south of Kadoka.

DRAINAGE AREA.--5,000 mi^2 (13,000 km^2), approximately.

PERIOD OF RECORD.--July 1942 to current year.

REVISED RECORDS.--WSP 1279: 1944(M), 1948.

GAGE.--Water-stage recorder. Datum of gage is 2,122.18 ft (646.840 m) National Geodetic Vertical Datum of 1929. Prior to June 14, 1949, nonrecording gage, and June 14, 1949, to Mar. 8, 1955, water-stage recorder at site 0.3 mi (0.5 km) downstream at same datum. Mar. 9, 1955, to May 17, 1957, nonrecording gage at present site and datum.

REMARKS.--Records good except those for winter periods, which are poor. Some diversions above station for irrigation. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--37 years, 278 ft^3/s (7.873 m^3/s), 201,400 acre-ft/yr (248 hm^3/yr); median of yearly mean discharges, 270 ft^3/s (7.65 m^3/s), 196,000 acre-ft/yr (240 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 21,700 ft^3/s (615 m^3/s) June 7, 1951, gage height, 13.83 ft (4.215 m), site then in use, from rating curve extended above 16,000 ft^3/s (453 m^3/s); no flow at times in many years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 4, 1942, reached a stage of 16.24 ft (4.950 m) from floodmarks, discharge, about 32,000 ft^3/s (906 m^3/s), from rating curve extended above 16,000 ft^3/s (453 m^3/s). Floods of Mar. 8, 1905, and in spring of 1927 were 1 or 2 ft (0.3 or 0.6 m) higher than flood of June 4, 1942, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 3,600 ft^3/s (102 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)
June 18	0200	7,660	217	10.88	3.316	July 5	0500	8,000	227	11.03	3.362
June 20	1300	5,120	145	9.58	2.920	Aug. 9	0600	8,070	229	11.06	3.371
June 25	0200	5,260	149	9.66	2.944						

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	13	7.5	.00	.00	1.0	231	48	123	260	508	110
2	6.6	13	7.5	.00	.00	2.0	209	49	106	200	274	99
3	8.3	12	7.5	.00	.00	3.0	160	40	94	169	228	88
4	8.3	12	7.5	.00	.00	10	148	40	81	1070	139	77
5	4.5	12	7.0	.00	.00	35	173	32	68	4650	115	37
6	7.4	13	7.0	.00	.00	100	136	34	57	1300	93	40
7	6.1	14	8.0	.00	.00	150	128	36	49	599	66	37
8	6.5	12	9.0	.00	.00	400	120	49	49	330	3210	33
9	6.9	12	10	.00	.00	900	113	40	58	166	4830	33
10	7.4	12	10	.00	.00	1100	88	160	63	128	1120	33
11	5.0	11	10	.00	.00	1000	84	709	68	88	611	33
12	11	11	10	.00	.00	980	408	800	68	66	325	27
13	11	11	10	.00	.00	980	880	422	66	81	169	30
14	10	10	10	.00	.00	1020	496	220	52	183	190	30
15	10	10	10	.00	.00	814	335	145	44	160	118	30
16	10	10	10	.00	.00	787	173	126	36	106	90	27
17	14	9.0	10	.00	.00	835	128	110	1200	142	75	24
18	10	9.0	10	.00	.00	849	118	90	3760	398	64	22
19	16	8.5	10	.00	.00	670	103	101	1250	374	52	21
20	16	8.0	10	.00	.00	444	95	105	3720	169	41	15
21	14	8.5	10	.00	.00	467	95	110	1730	95	794	10
22	14	9.0	10	.00	.00	438	94	113	754	86	735	8.0
23	14	9.0	9.5	.00	.00	379	93	86	1940	77	374	6.0
24	14	9.0	9.5	.00	.00	295	81	81	1260	68	965	5.0
25	12	8.5	9.0	.00	.00	260	71	65	2280	68	689	4.0
26	13	8.0	7.0	.00	.00	224	77	65	369	68	510	3.0
27	17	8.0	5.0	.00	.00	183	62	68	406	371	400	2.0
28	18	8.0	4.0	.00	.00	154	54	72	825	580	205	1.0
29	16	8.0	3.0	.00	---	173	50	75	510	1810	110	.60
30	13	7.5	2.0	.00	---	142	47	57	350	2100	110	.40
31	14	---	.50	.00	---	151	---	73	---	650	110	---
TOTAL	341.0	306.0	250.50	.00	.00	13946.0	5050	4221	21436	16612	17320	886.00
MEAN	11.0	10.2	8.08	.000	.000	450	168	136	715	536	559	29.5
MAX	18	14	10	.00	.00	1100	880	800	3760	4650	4830	110
MIN	4.5	7.5	.50	.00	.00	1.0	47	32	36	66	41	.40
AC-FT	676	607	497	.00	.00	27660	10020 *	8370	42520	32950	34350	1760

CAL YR 1978 TOTAL 114186.50 MEAN 313 MAX 8000 MIN .50 AC-FT 226500
WTR YR 1979 TOTAL 80368.50 MEAN 220 MAX 4830 MIN .00 AC-FT 159400

06447500 LITTLE WHITE RIVER NEAR MARTIN, SD

LOCATION.--Lat 43°10'00", long 101°37'47", in NW¼ sec.19, T.37 N., R.36 W., Bennett County, Hydrologic Unit 10140203, on right bank 70 ft (21 m) downstream from highway culvert and 5.4 mi (8.7 km) east of Martin.

DRAINAGE AREA.--310 mi^2 (803 km^2), approximately, of which about 230 mi^2 (596 km^2) probably contributes directly to surface runoff.

PERIOD OF RECORD.--February 1938 to September 1940, July 1962 to current year. Prior to October 1965, published as South Fork White River near Martin.

GAGE.--Water-stage recorder. Altitude of gage is 3,045 ft (928 m), by barometer. Prior to Aug. 14, 1938, nonrecording gage at same site and datum.

REMARKS.--Records good except those for winter periods, and no gage-height record, Mar. 23 to Apr. 16, Apr. 18 to May 14, which are poor. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--19 years, 19.5 ft^3/s (0.552 m^3/s), 14,130 acre-ft/yr (17.4 hm^3/s); 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, 1,190 ft^3/s (33.7 m^3/s) July 19, 1965, gage height, 12.90 ft (3.932 m), from rating curve extended above 340 ft^3/s (9.63 m^3/s) on basis of computation of peak flow through culvert and flow-over-road measurement of peak flow; maximum gage height, 13.21 ft (4.026 m) Mar. 11, 1966 (backwater from ice); minimum daily discharge, 0.6 ft^3/s (0.017 m^3/s) Aug. 14, 16, 18, 1940; no flow for part of each day Oct. 19, 20, 22, 1962, regulation caused by construction work above station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 5, 1932, reached a stage of 13.3 ft (4.05 m), from floodmarks.

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)
June 25	0200	*156	4.42	*5.01	1.527	July 27	2145	118	3.34	4.48	1.366

Minimum daily discharge, 6.0 ft^3/s (0.17 m^3/s) Dec. 27, 28, Jan. 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	9.7	15	10	6.5	6.5	19	42	24	15	14	15	9.4
2	9.9	15	10	7.0	6.5	24	40	25	16	14	14	9.1
3	10	14	10	7.0	6.7	25	35	25	15	14	16	8.7
4	11	15	10	7.0	7.0	23	28	24	14	17	17	8.2
5	11	15	9.0	7.0	7.5	25	27	24	13	46	15	8.0
6	11	14	8.5	7.0	7.5	30	27	24	12	38	13	7.8
7	11	14	8.5	7.0	7.5	32	28	25	11	26	12	7.4
8	11	14	8.5	7.0	7.5	30	28	27	11	21	11	7.4
9	11	15	9.0	7.2	7.7	28	27	29	11	18	12	7.6
10	11	15	9.0	7.2	8.0	29	30	28	12	16	12	7.6
11	11	13	9.0	7.2	8.3	25	32	27	13	14	11	7.5
12	12	14	9.0	6.5	8.5	22	35	26	12	13	10	7.5
13	12	17	9.0	6.5	8.5	23	40	26	12	12	9.9	7.5
14	12	16	9.0	6.5	8.3	30	44	30	12	12	9.2	7.9
15	12	16	9.0	6.5	8.0	45	42	36	11	11	9.1	8.1
16	13	15	9.2	7.0	8.0	55	41	37	10	11	9.1	8.3
17	13	14	9.2	7.0	8.0	52	40	40	11	11	9.0	8.4
18	13	15	9.5	7.0	8.0	47	39	56	11	13	8.9	8.0
19	13	14	9.5	7.0	8.5	50	38	54	14	13	9.1	7.8
20	13	13	9.5	7.0	9.3	60	37	34	17	13	9.6	7.6
21	13	12	9.5	7.0	14	58	35	30	21	13	10	7.6
22	13	12	9.5	7.0	16	44	35	26	18	12	10	7.6
23	14	11	9.5	7.1	16	45	35	23	24	13	11	7.5
24	14	11	8.5	7.0	15	46	34	21	42	27	11	7.5
25	14	10	7.5	6.7	15	46	31	19	129	23	11	7.5
26	14	11	6.5	6.5	13	45	28	18	39	13	11	7.5
27	14	12	6.0	6.5	12	45	26	17	21	58	11	7.4
28	14	11	6.0	6.2	14	45	26	16	17	47	11	6.6
29	14	10	6.5	6.0	---	45	25	15	19	18	11	6.8
30	14	11	6.5	6.0	---	45	24	15	16	17	11	6.5
31	14	---	6.5	6.3	---	43	---	15	---	16	10	---
TOTAL	382.6	404	266.9	210.4	270.8	1181	999	836	599	604	349.9	232.3
MEAN	12.3	13.5	8.61	6.79	9.67	38.1	33.3	27.0	20.0	19.5	11.3	7.74
MAX	14	17	10	7.2	16	60	44	56	129	58	17	9.4
MIN	9.7	10	6.0	6.0	6.5	19	24	15	10	11	8.9	6.5
AC-FT	759	801	529	417	537	2340	1980	1660	1190	1200	694	461

CAL YR 1978 TOTAL 8801.1 MEAN 24.1 MAX 500 MIN 6.0 AC-FT 17460
WTR YR 1979 TOTAL 6335.9 MEAN 17.4 MAX 129 MIN 6.0 AC-FT 12570

06448000 LAKE CREEK ABOVE REFUGE, NEAR TUTHILL, SD

LOCATION.--Lat 43°05'07", long 101°36'04", in NE¼ sec.19, T.36 N., R.36 W., Bennett County, Hydrologic Unit 10140203, on left wingwall at upstream side of culvert, 80 ft (24 m) downstream from west boundary of LaCreek game refuge and 7.5 mi (12.1 km) southwest of Tuthill.

DRAINAGE AREA.--58 mi^2 (150 km^2), approximately, of which about 23 mi^2 (60 km^2) probably contributes directly to surface runoff.

PERIOD OF RECORD.--February 1938 to September 1940, July 1962 to February 1979 (discontinued).

GAGE.--Water-stage recorder. Altitude of gage is 3,090 ft (942 m), by barometer. Prior to Aug. 9, 1938, nonrecording gage and Aug. 9, 1938, to Sept. 30, 1940, water-stage recorder at site 110 ft (34 m) upstream at same datum.

REMARKS.--Records fair. A few small diversions for irrigation of hay meadows above station. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--18 years (water years 1939-40, 1963-78), 19.6 ft^3/s (0.555 m^3/s), 14,200 acre-ft/yr (17.5 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, 154 ft^3/s (4.36 m^3/s) Mar. 9, 1966, gage height, 2.83 ft (0.863 m); maximum gage height, 3.75 ft (1.143 m) Feb. 12, 1971 (backwater from ice); no flow for part of June 5, 1939.

EXTREMES FOR CURRENT YEAR.--Maximum discharge during period October 1978 to February 1979, 30 ft^3/s (0.85 m^3/s) Dec. 1; maximum gage height, 2.79 ft (0.850 m) Dec. 1 (backwater from ice); minimum daily discharge, 11 ft^3/s (0.31 m^3/s) Jan. 14, 15, Jan. 24 to Feb. 2.

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	17	21	20	12	11							
2	17	21	20	13	11							
3	16	21	19	13	12							
4	16	20	19	13	12							
5	16	20	19	13	12							
6	18	20	18	13	13							
7	17	20	18	14	13							
8	18	20	18	14	14							
9	18	20	19	14	15							
10	18	20	21	14	16							
11	18	20	23	13	16							
12	19	21	24	13	17							
13	18	21	24	12	18							
14	18	21	24	11	18							
15	18	21	24	11	17							
16	18	21	24	12	17							
17	18	21	24	12	18							
18	18	21	24	12	19							
19	17	20	24	12	22							
20	16	20	24	12	22							
21	18	20	24	12	22							
22	17	21	24	12	21							
23	18	21	23	12	21							
24	19	19	22	11	20							
25	19	20	22	11	20							
26	19	20	21	11	21							
27	20	20	20	11	22							
28	21	20	17	11	21							
29	20	20	15	11	---							
30	20	20	12	11	---							
31	22	---	12	11	---							
TOTAL	562	611	642	377	481							
MEAN	18.1	20.4	20.7	12.2	17.2							
MAX	22	21	24	14	22							
MIN	16	19	12	11	11							
AC-FT	1110	1210	1270	748	954							

CAL YR 1978 TOTAL 7468 MEAN 20.5 MAX 62 MIN 12 AC-FT 14810

06449000 LAKE CREEK BELOW REFUGE, NEAR TUTHILL, SD

LOCATION.--Lat 43°08'46", long 101°30'38", in SW¼ sec.30, T.37 N., R.35 W., Bennett County, Hydrologic Unit 10140203, on left bank 400 ft (122 m) downstream from east boundary of LaCreek game refuge, 1.2 mi (1.9 km) southwest of Tuthill and 5.5 mi (8.8 km) upstream from mouth.

DRAINAGE AREA.--120 mi^2 (311 km^2), approximately, of which about 60 mi^2 (155 km^2) probably contributes directly to surface runoff.

PERIOD OF RECORD.--February 1938 to September 1940, July 1962 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 3,055 ft (931 m), by barometer. Prior to Aug. 4, 1938, nonrecording gage at same site and datum.

REMARKS.--Records good. Flow regulated by series of lakes above gage. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--19 years, 15.8 ft^3/s (0.448 m^3/s), 11,450 acre-ft/yr (14.1 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, 178 ft^3/s (5.04 m^3/s) June 18, 1967, gage height, 5.17 ft (1.576 m); maximum gage height, 5.67 ft (1.728 m) Mar. 28, 1975 (backwater from ice); no flow for many days in most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 78 ft^3/s (2.21 m^3/s) Apr. 12, gage height, 3.35 ft (1.021 m); minimum daily, 0.27 ft^3/s (0.008 m^3/s) Nov. 5.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used July 22 to Sept. 11; stage-discharge relation affected by ice Dec. 8, 9, Jan. 22-26, Feb. 15-18)

0.90	0.12	1.7	12
1.0	.45	2.0	20
1.1	1.0	2.5	38
1.2	2.0	3.0	58
1.4	5.3	3.2	67

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	.60	5.2	11	13	33	50	32	38	39	43	21
2	.81	.55	7.3	11	14	33	49	30	37	38	41	21
3	.75	.50	8.0	10	14	33	51	31	38	37	38	21
4	.55	.45	7.9	10	14	34	53	31	38	46	34	20
5	.45	.27	7.6	11	12	35	52	30	38	45	36	20
6	.50	.50	7.5	12	14	35	53	31	34	44	37	20
7	.50	.55	7.8	12	14	35	54	29	31	45	35	19
8	.50	.75	7.5	12	15	34	51	26	28	43	37	19
9	.45	1.0	7.5	12	15	34	51	31	30	45	41	17
10	.45	1.0	7.5	12	15	34	52	36	32	45	39	16
11	.40	1.1	7.7	12	15	35	59	35	30	45	41	15
12	.35	1.1	7.2	12	15	35	65	34	26	45	41	15
13	.31	1.4	7.3	13	15	35	41	34	23	48	40	15
14	.35	1.6	7.3	13	16	36	44	33	20	56	38	15
15	.35	1.4	7.3	13	16	38	44	33	17	52	39	15
16	1.5	1.2	8.1	13	16	42	45	34	16	52	39	15
17	2.0	1.2	7.6	13	17	47	47	34	16	53	37	14
18	1.3	1.5	8.7	13	17	48	53	34	16	51	36	14
19	.93	1.5	9.1	13	17	56	51	36	28	51	37	14
20	.70	1.6	9.4	13	17	59	46	35	30	49	38	9.7
21	.55	1.6	9.2	13	17	60	46	35	19	48	37	6.9
22	.50	1.6	9.4	12	18	61	43	30	18	46	37	6.1
23	.50	1.5	9.4	11	19	60	45	31	29	46	35	6.1
24	.40	1.5	9.7	11	20	59	42	30	32	46	35	5.3
25	1.2	1.5	9.4	12	20	57	42	29	44	47	35	4.2
26	1.5	1.5	9.5	13	26	55	41	27	40	45	35	4.0
27	1.2	1.5	9.7	13	31	54	38	26	39	49	35	3.5
28	.75	1.5	9.7	13	32	53	36	28	38	48	33	2.4
29	.65	1.5	10	13	---	51	34	31	36	46	31	2.0
30	.60	1.5	10	13	---	50	32	33	37	45	29	1.4
31	.81	---	10	13	---	50	---	35	---	43	25	---
TOTAL	22.68	34.97	259.5	378	484	1381	1410	984	898	1438	1134	377.6
MEAN	.73	1.17	8.37	12.2	17.3	44.5	47.0	31.7	29.9	46.4	36.6	12.6
MAX	2.0	1.6	10	13	32	61	65	36	44	56	43	21
MIN	.31	.27	5.2	10	12	33	32	26	16	37	25	1.4
AC-FT	45	69	515	750	960	2740	2800	1950	1780	2850	2250	749

CAL YR 1978 TOTAL 6740.62 MEAN 18.5 MAX 83 MIN .27 AC-FT 13370
WTR YR 1979 TOTAL 8801.75 MEAN 24.1 MAX 65 MIN .27 AC-FT 17460

06449100 LITTLE WHITE RIVER NEAR VETAL, SD

LOCATION.--Lat 43°06'03", long 101°13'49", in NE¼NW¼ sec.17, T.36 N., R.33 W., Bennett County, Hydrologic Unit 10140203, on left bank 120 ft (37 m) downstream from highway bridge, 0.3 mi (0.5 km) downstream from small right-bank tributary, 10.8 mi (17.4 km) southeast of Vetal, and 15.3 mi (24.6 km) upstream from Spring Creek.

DRAINAGE AREA.--590 mi^2 (1,530 km^2), approximately, of which about 415 mi^2 (1,075 km^2) probably contributes directly to surface runoff.

PERIOD OF RECORD.--August 1959 to current year. Prior to October 1965, published as South Fork White River near Vetal.

GAGE.--Water-stage recorder. Datum of gage is 2,780.69 ft (847.554 m) National Geodetic Vertical Datum of 1929. Prior to Nov. 14, 1959, nonrecording gage at same site and datum.

REMARKS.--Records good except those for winter periods, which are poor. Some small diversions for irrigation and some storage in several small lakes above station. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--20 years, 53.8 ft^3/s (1.524 m^3/s), 38,980 acre-ft/yr (48.1 hm^3/yr); median of yearly mean discharges, 53 ft^3/s (1.50 m^3/s), 38,400 acre-ft/yr (47 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,330 ft^3/s (37.7 m^3/s) Mar. 13, 1966, gage height, 7.75 ft (2.362 m); minimum daily, 9.0 ft^3/s (0.25 m^3/s) Dec. 24, 25, 1974.

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)
Mar. 18	0330	189	5.35	4.88	1.487	July 18	1615	200	5.66	4.84	1.475
June 25	1630	*290	8.21	*5.31	1.618						

Minimum daily discharge, 20 ft^3/s (0.57 m^3/s) Oct. 1-4, Nov. 28, Dec. 27, 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	20	33	28	23	27	39	122	62	80	97	88	46
2	20	32	28	23	27	51	116	61	68	96	86	44
3	20	33	26	23	27	66	109	60	67	95	85	42
4	20	32	26	23	28	86	83	59	65	97	84	40
5	21	34	26	25	29	83	80	60	64	78	81	40
6	21	31	24	25	30	80	77	60	63	77	81	38
7	21	31	23	25	30	83	78	59	57	73	80	36
8	21	32	23	25	30	107	79	59	54	72	81	49
9	21	32	24	26	30	104	79	60	53	71	85	38
10	21	32	25	26	31	89	78	63	53	69	86	36
11	21	26	25	26	31	99	93	66	53	68	83	36
12	23	28	25	25	31	91	99	72	52	69	76	36
13	24	35	25	25	31	90	115	67	48	70	76	37
14	25	28	25	25	30	70	130	64	47	68	75	35
15	26	32	25	25	28	78	123	63	43	73	73	36
16	26	36	25	27	27	127	123	63	42	78	71	38
17	26	34	25	27	27	164	122	76	41	80	72	37
18	27	31	26	27	27	170	117	89	40	93	66	36
19	30	25	26	29	29	142	109	93	69	92	65	36
20	30	25	27	29	29	138	109	94	77	83	64	36
21	31	26	27	30	29	153	105	93	65	80	61	34
22	31	30	27	30	31	153	102	93	60	77	60	31
23	32	30	27	30	61	144	101	89	82	76	60	30
24	33	28	27	30	61	129	100	86	116	79	57	30
25	33	29	25	29	52	129	98	81	176	79	54	29
26	33	30	22	27	56	123	79	81	136	93	54	29
27	33	28	20	27	49	123	76	78	114	93	54	27
28	33	20	20	25	38	124	74	77	115	94	54	27
29	33	28	21	25	---	122	66	79	107	92	55	27
30	33	30	22	25	---	121	65	81	101	91	52	26
31	33	---	23	27	---	120	---	81	---	90	50	---
TOTAL	822	901	768	814	956	3398	2907	2269	2208	2543	2169	1062
MEAN	26.5	30.0	24.8	26.3	34.1	110	96.9	73.2	73.6	82.0	70.0	35.4
MAX	33	36	28	30	61	170	130	94	176	97	88	49
MIN	20	20	20	23	27	39	65	59	40	68	50	26
AC-FT	1630	1790	1520	1610	1900	6740	5770	4500	4380	5040	4300	2110

CAL YR 1978 TOTAL 24470 MEAN 67.0 MAX 763 MIN 19 AC-FT 48540
WTR YR 1979 TOTAL 20817 MEAN 57.0 MAX 176 MIN 20 AC-FT 41290

06449400 Rosebud Creek at Rosebud, SD

LOCATION.--Lat 43°14'14", long 100°51'26", in SW¼SW¼NE¼ sec.27, T.38 N., R.30 W., Todd County, Hydrologic Unit 10140203, on left bank 40 ft (12 m) upstream from bridge on Spotted Tail Lane in town of Rosebud, 0.4 mi (0.6 km) downstream from small right bank tributary, and 1.0 mi (1.6 km) downstream from Spotted Tail Dam.

DRAINAGE AREA.--50.8 mi^2 (132 km^2), approximately.

PERIOD OF RECORD.--October 1974 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,531.91 ft (771.726 m) National Geodetic Vertical Datum of 1929. October 1963 to September 1970, low-flow partial-record station 0.26 mi^2 (0.42 km^2) upstream at different datum.

REMARKS.--Record good prior to October 1978 and fair thereafter except those for winter periods, which are fair. Flow regulated by Spotted Tail Dam and Indian Scout Lake, combined capacity, about 50 acre-ft (0.06 hm^3), and some small diversions for irrigation of Spotted Tail Golf Course above station. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--5 years, 7.26 ft^3/s (0.206 m^3/s), 5,260 acre-ft/yr (6.49 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 643 ft^3/s (18.2 m^3/s) July 27, 1976, gage height, 10.34 ft (3.152 m); minimum daily, 0.02 ft^3/s (0.001 m^3/s) June 13, 1978.

EXTREMES FOR CURRENT PERIOD.--Water year 1975: Maximum discharge, 19 ft^3/s (0.54 m^3/s) Apr. 7, gage height, 3.63 ft (1.106 m); maximum gage height, 4.37 ft (1.332 m) Jan. 16 (backwater from ice); minimum daily discharge, 2.9 ft^3/s (0.082 m^3/s) July 29.

Water year 1976: Maximum discharge, 643 ft^3/s (18.2 m^3/s) July 27, gage height, 10.34 ft (3.152 m); minimum daily, 1.7 ft^3/s (0.048 m^3/s) June 11.

Water year 1977: Maximum discharge, 103 ft^3/s (2.92 m^3/s) Sept. 30, gage height, 5.42 ft (1.652 m); minimum daily, 2.9 ft^3/s (0.082 m^3/s) Nov. 27.

Water year 1978: Maximum discharge, 379 ft^3/s (10.7 m^3/s) Mar. 18, gage height, 8.44 ft (2.572 m); minimum daily, 0.02 ft^3/s (0.001 m^3/s) June 13.

Water year 1979: Maximum discharge, 530 ft^3/s (15.0 m^3/s) June 24, gage height, 10.13 ft (3.088 m); minimum daily, 0.04 ft^3/s (0.001 m^3/s) Sept. 5.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.0	7.0	7.5	6.5	6.5	7.2	10	8.4	6.2	4.5	5.5	3.6
2	7.0	7.0	7.0	6.5	6.5	7.0	10	8.4	6.2	4.3	5.2	3.8
3	7.0	7.0	7.5	6.5	6.5	6.7	11	8.1	6.2	4.2	4.5	3.8
4	7.0	7.0	7.5	6.5	5.5	7.2	12	7.8	5.5	4.0	4.3	4.3
5	7.0	7.0	7.2	6.5	4.8	7.2	12	7.8	5.5	4.2	5.2	4.5
6	7.0	7.0	7.2	6.5	4.8	7.2	13	8.1	5.5	5.2	4.3	4.2
7	6.8	7.0	6.7	6.5	5.0	6.7	17	7.8	5.2	7.5	4.2	4.0
8	6.8	7.2	7.0	6.5	5.0	6.5	15	7.8	7.0	6.5	3.8	4.2
9	6.8	7.2	7.5	6.5	5.5	6.7	12	8.4	7.2	6.0	4.2	4.2
10	6.5	7.0	6.7	6.5	5.5	6.7	11	11	6.2	5.0	4.0	4.0
11	6.5	7.0	7.0	7.0	6.0	7.0	11	10	6.0	5.0	4.0	3.6
12	6.5	7.2	7.0	7.0	6.0	7.2	9.6	8.7	6.0	4.7	4.0	4.2
13	6.2	7.5	7.0	7.5	6.5	7.2	9.6	8.4	5.5	4.5	4.5	4.2
14	6.2	7.2	7.0	8.0	6.5	7.0	9.9	7.5	6.2	4.3	5.5	4.2
15	6.2	7.2	7.0	8.0	6.5	7.0	9.3	7.8	5.7	4.2	6.0	4.3
16	6.2	7.2	7.0	7.5	6.5	7.0	9.6	7.8	6.0	3.6	6.0	4.2
17	6.2	7.2	7.2	7.5	6.5	7.8	9.6	7.5	7.8	3.6	5.5	4.0
18	6.2	7.2	7.2	7.5	6.5	8.1	9.3	7.5	7.5	3.8	5.5	4.0
19	6.5	7.2	7.2	7.2	6.5	7.2	8.7	7.5	7.8	3.8	5.2	4.0
20	6.5	7.0	7.2	7.8	6.5	7.8	8.7	7.2	6.7	4.0	4.5	4.3
21	7.0	7.0	7.2	7.2	6.5	8.7	8.7	7.5	8.1	4.2	6.2	4.5
22	6.7	7.0	7.0	6.7	6.5	8.4	8.4	8.1	8.1	4.7	5.7	4.5
23	6.7	7.0	7.0	6.7	6.5	9.0	8.7	11	6.2	4.0	4.7	4.5
24	7.0	7.0	7.0	7.0	6.7	6.0	8.4	8.1	5.5	4.0	4.0	4.5
25	7.0	7.2	7.0	6.7	6.7	6.0	7.8	7.0	5.7	4.0	3.6	4.7
26	7.0	7.0	7.0	6.7	6.7	6.5	7.8	7.0	7.0	3.6	4.0	4.5
27	7.2	7.2	7.0	6.0	6.7	7.0	8.1	7.0	5.7	3.6	4.3	4.7
28	7.2	7.2	7.0	6.5	7.2	8.0	11	6.7	5.2	3.2	4.2	5.5
29	7.2	6.7	7.0	6.5	---	8.0	11	6.5	5.2	2.9	4.3	5.2
30	7.8	7.0	6.8	7.0	---	9.0	9.0	6.2	5.0	4.5	4.0	5.0
31	7.5	---	6.5	7.0	---	9.0	---	6.0	---	7.0	4.2	---
TOTAL	210.4	212.6	219.1	214.0	173.1	228.0	307.2	244.6	187.6	138.6	145.1	129.2
MEAN	6.79	7.09	7.07	6.90	6.18	7.35	10.2	7.89	6.25	4.47	4.68	4.31
MAX	7.8	7.5	7.5	8.0	7.2	9.0	17	11	8.1	7.5	6.2	5.5
MIN	6.2	6.7	6.5	6.0	4.8	6.0	7.8	6.0	5.0	2.9	3.6	3.6
AC-FT	417	422	435	424	343	452	609	485	372	275	288	256

WTR YR 1975 TOTAL 2409.5 MEAN 6.60 MAX 17 MIN 2.9 AC-FT 4780

06449400 Rosebud Creek at Rosebud, SD--Continued

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.7	5.5	6.5	5.5	7.0	6.7	6.5	5.7	5.2	2.6	5.5	3.4
2	5.0	5.5	6.5	5.5	7.0	7.0	6.7	5.5	3.8	7.4	5.2	3.4
3	5.0	5.5	6.7	5.5	7.0	6.7	6.5	5.7	4.0	7.8	4.7	3.0
4	5.0	5.2	7.0	5.5	7.0	6.5	6.7	5.2	3.4	6.2	4.2	3.6
5	5.0	5.2	7.0	5.3	6.5	6.5	6.7	4.5	2.6	4.3	4.3	3.8
6	5.2	5.5	6.0	5.3	6.5	6.7	7.0	4.5	4.0	3.4	5.0	3.8
7	5.0	5.5	6.2	5.4	6.7	7.0	7.5	4.3	3.6	2.7	4.3	3.6
8	5.0	5.5	6.7	5.5	6.7	7.2	7.2	4.7	2.9	2.7	4.2	4.5
9	4.5	5.2	6.5	5.7	7.0	7.0	6.5	5.2	2.1	2.7	3.8	4.5
10	4.7	5.5	6.5	6.0	7.0	6.7	6.5	5.0	2.0	2.9	3.4	4.5
11	5.2	5.2	6.0	6.0	7.2	6.7	6.2	5.0	1.7	2.9	3.6	4.2
12	5.0	5.2	5.7	6.0	7.2	6.0	6.2	5.2	2.6	2.6	3.6	4.3
13	4.7	6.0	6.0	6.5	7.2	7.5	6.2	4.7	7.1	2.5	3.6	4.0
14	5.0	6.2	6.0	6.5	7.5	7.0	6.0	5.2	5.2	3.0	3.6	4.8
15	5.0	6.0	6.0	7.0	7.8	7.0	6.7	5.0	5.7	3.0	4.0	8.8
16	5.5	6.2	5.7	7.0	8.1	7.0	8.1	5.7	4.0	2.7	4.3	4.5
17	5.2	6.2	5.7	7.0	7.8	6.7	7.2	5.5	3.8	2.9	3.6	4.2
18	5.5	6.0	5.7	7.0	7.5	7.0	6.2	4.7	3.8	3.4	3.0	3.8
19	5.5	6.7	5.7	7.2	7.2	7.0	6.5	4.7	3.6	2.7	3.0	3.6
20	5.2	6.2	5.7	7.2	7.2	7.0	6.2	5.0	3.4	2.7	2.7	3.8
21	5.0	6.0	5.7	7.0	7.0	7.0	5.7	5.2	3.0	2.9	2.9	3.8
22	5.2	5.5	5.5	7.0	7.5	7.0	5.7	6.2	2.6	2.7	3.2	3.6
23	6.0	5.5	5.2	7.0	7.2	6.5	7.0	15	4.2	2.5	2.9	3.8
24	7.5	5.3	5.2	7.0	7.0	6.5	6.2	9.0	3.4	2.6	2.9	4.0
25	6.2	5.0	5.5	7.0	7.0	6.5	6.7	6.7	3.0	2.7	4.3	4.0
26	6.5	5.0	5.7	7.0	6.7	6.2	6.0	7.8	2.7	2.9	3.6	4.2
27	7.0	5.3	5.7	7.0	6.7	6.2	6.2	6.7	2.9	119	3.6	4.2
28	6.2	5.5	5.7	6.7	6.7	6.5	6.7	5.2	2.6	12	3.8	4.2
29	6.0	6.0	5.7	7.0	6.5	6.5	6.5	4.2	2.5	6.5	3.8	4.2
30	6.0	6.0	5.7	7.2	---	6.2	5.7	3.6	2.6	5.2	3.6	4.2
31	5.5	---	5.7	7.2	---	6.5	---	4.3	---	4.7	3.4	---
TOTAL	168.0	169.1	185.1	199.7	205.4	208.5	195.7	174.9	104.0	234.8	117.6	124.3
MEAN	5.42	5.64	5.97	6.44	7.08	6.73	6.52	5.64	3.47	7.57	3.79	4.14
MAX	7.5	6.7	7.0	7.2	8.1	7.5	8.1	15	7.1	119	5.5	8.8
MIN	4.5	5.0	5.2	5.3	6.5	6.0	5.7	3.6	1.7	2.5	2.7	3.0
AC-FT	333	335	367	396	407	414	388	347	206	466	233	247

CAL YR 1975 TOTAL 2289.6 MEAN 6.27 MAX 17 MIN 2.9 AC-FT 4540
WTR YR 1976 TOTAL 2087.1 MEAN 5.70 MAX 119 MIN 1.7 AC-FT 4140

06449400 Rosebud Creek at Rosebud, SD--Continued

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.0	5.5	7.0	6.0	13	6.2	9.3	9.9	8.4	7.0	6.5	5.5
2	4.3	5.5	7.2	6.0	13	6.5	9.6	9.9	8.1	7.0	6.2	6.0
3	4.2	6.0	7.2	6.2	11	4.3	9.9	11	8.4	6.7	6.2	6.2
4	4.2	7.0	6.5	6.2	8.4	7.5	9.6	10	8.1	6.7	6.5	6.0
5	4.3	7.5	6.2	6.5	7.5	7.5	9.3	9.6	7.8	6.7	6.7	6.0
6	4.5	7.5	6.2	6.5	6.0	6.5	11	9.3	7.5	6.7	6.7	5.5
7	5.0	7.5	6.5	6.7	6.0	5.7	13	12	7.5	6.7	6.7	5.5
8	4.5	8.1	6.7	6.7	6.2	7.2	13	11	7.8	6.7	7.2	5.5
9	4.3	9.0	7.0	6.7	6.7	8.7	14	12	7.8	9.0	11	5.2
10	4.5	11	6.5	6.7	7.2	8.4	15	11	7.8	7.8	9.0	5.2
11	4.3	12	6.2	6.7	8.1	9.0	14	9.0	7.5	7.2	7.8	5.2
12	4.2	9.0	5.5	6.7	7.2	9.0	15	8.7	11	6.5	6.2	5.5
13	4.2	10	6.2	6.7	8.4	8.5	12	8.4	9.6	6.0	6.0	5.7
14	4.2	11	6.7	7.0	7.8	8.5	12	8.4	8.1	5.7	7.0	5.7
15	4.2	12	6.7	7.0	6.0	8.5	13	8.1	7.8	5.7	6.7	5.7
16	4.3	12	7.0	6.7	6.7	8.5	14	7.8	7.5	6.0	6.5	5.7
17	4.7	14	7.5	6.7	8.1	8.5	12	8.7	19	6.0	6.5	5.7
18	5.2	15	7.2	7.0	7.8	9.0	12	8.4	9.6	5.5	6.0	5.7
19	6.0	14	6.5	7.0	6.5	9.0	14	8.4	8.7	5.0	6.0	6.0
20	5.7	14	5.5	7.0	6.2	8.5	14	7.8	8.1	5.7	6.0	6.0
21	5.7	12	5.7	7.0	7.0	8.0	12	17	8.7	6.5	6.0	6.0
22	5.7	4.5	5.5	6.7	7.5	8.1	12	15	8.1	6.5	6.0	6.0
23	5.7	6.5	5.5	7.0	4.3	9.0	11	10	7.8	6.5	6.2	6.0
24	5.2	6.5	5.2	7.0	11	11	11	9.3	7.5	11	6.2	6.0
25	5.5	6.7	5.2	7.2	6.7	11	11	8.7	7.2	9.3	6.2	6.0
26	6.7	6.7	5.7	7.2	6.2	9.3	12	11	6.7	7.2	6.7	6.2
27	8.4	2.9	6.0	8.4	6.0	9.9	11	11	6.7	10	7.2	6.5
28	11	4.0	5.7	7.5	6.5	11	11	9.3	6.7	8.1	6.5	6.5
29	9.3	6.0	5.7	10	---	11	11	9.0	7.2	7.2	6.0	10
30	5.0	7.0	5.7	9.0	---	7.5	11	8.7	7.2	6.2	6.0	61
31	5.2	---	6.0	12	---	11	---	9.0	---	6.2	5.5	---
TOTAL	164.2	260.4	193.9	221.7	213.0	262.3	358.7	307.4	249.9	215.0	205.9	233.7
MEAN	5.30	8.68	6.25	7.15	7.61	8.46	12.0	9.92	8.33	6.94	6.64	7.79
MAX	11	15	7.5	12	13	11	15	17	19	11	11	61
MIN	4.0	2.9	5.2	6.0	4.3	4.3	9.3	7.8	6.7	5.0	5.5	5.2
AC-FT	326	517	385	440	422	520	711	610	496	426	408	464

CAL YR 1976 TOTAL 2183.4 MEAN 5.97 MAX 119 MIN 1.7 AC-FT 4330
WTR YR 1977 TOTAL 2886.1 MEAN 7.91 MAX 61 MIN 2.9 AC-FT 5720

06449400 Rosebud Creek at Rosebud, SD--Continued

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	36	7.8	7.2	6.0	7.0	7.0	7.0	11	5.2	5.8	5.0	6.5
2	10	5.9	7.0	6.0	6.5	6.7	8.4	11	5.0	2.3	6.0	6.2
3	9.0	1.8	7.0	6.0	6.5	6.5	7.0	11	4.0	4.2	7.8	6.5
4	8.4	15	7.5	6.3	6.7	6.5	8.1	10	3.6	2.6	5.0	6.5
5	8.1	11	7.5	6.5	7.0	8.0	9.3	10	3.6	2.4	4.3	6.0
6	9.3	7.5	7.3	6.5	7.0	9.0	6.7	10	1.6	5.5	4.5	5.5
7	9.9	3.9	7.3	6.5	7.0	12	7.0	10	.60	2.9	4.7	5.2
8	8.1	1.5	7.0	6.3	7.0	11	7.8	9.5	.96	2.1	6.2	5.0
9	6.2	1.3	7.0	6.0	7.0	14	7.2	9.5	.88	2.5	14	5.0
10	2.7	24	7.0	6.0	7.0	13	7.2	9.9	.88	5.0	11	5.7
11	10	16	7.5	6.0	7.0	12	7.8	9.9	.57	2.9	12	5.2
12	15	3.8	8.0	6.3	6.7	14	7.8	31	.72	2.3	10	5.2
13	5.4	3.4	8.4	6.5	6.5	12	7.8	31	.02	1.8	7.5	5.0
14	2.8	3.2	8.4	6.5	6.5	14	8.4	6.0	9.8	2.6	9.0	5.7
15	4.2	3.8	8.7	6.5	6.3	14	9.6	5.0	6.5	1.9	21	5.5
16	4.2	6.7	9.0	6.5	6.0	11	14	5.2	6.9	1.5	15	4.7
17	4.2	8.4	8.5	6.3	6.0	9.0	13	5.0	7.5	15	13	6.5
18	4.7	8.1	7.8	6.0	6.0	126	15	6.2	4.0	22	13	8.7
19	5.0	7.8	7.5	6.0	6.3	102	14	5.7	1.9	2.9	13	7.2
20	5.2	8.0	7.5	6.0	6.5	77	12	5.7	2.7	2.6	13	6.7
21	4.2	8.5	7.0	6.3	6.7	53	12	4.7	3.0	11	12	6.2
22	5.5	9.0	7.0	6.5	7.0	25	18	6.2	7.1	8.4	12	6.0
23	3.5	7.8	7.0	6.5	7.0	13	15	5.5	4.2	4.0	12	5.5
24	3.2	7.8	6.5	6.7	7.0	11	15	6.5	3.4	4.2	10	5.5
25	4.9	8.4	6.5	7.0	6.7	11	13	6.0	6.0	3.2	9.9	5.7
26	12	8.1	6.5	7.0	6.7	11	13	4.7	3.6	3.2	11	5.7
27	17	7.8	6.0	7.0	6.7	9.9	13	4.2	2.6	3.6	11	6.5
28	19	7.8	6.0	7.0	7.0	13	13	8.1	2.4	3.4	15	7.0
29	35	7.5	6.0	7.0	---	15	12	18	1.9	3.4	11	7.2
30	8.1	7.5	6.0	7.2	---	14	12	6.0	1.9	4.3	7.8	7.0
31	9.5	---	6.0	7.2	---	7.8	---	5.0	---	4.3	9.0	---
TOTAL	290.3	229.1	223.6	200.1	187.3	668.4	321.1	287.5	103.03	143.8	315.7	180.8
MEAN	9.36	7.64	7.21	6.45	6.69	21.6	10.7	9.27	3.43	4.64	10.2	6.03
MAX	36	24	9.0	7.2	7.0	126	18	31	9.8	22	21	8.7
MIN	2.7	1.3	6.0	6.0	6.0	6.5	6.7	4.2	.02	1.5	4.3	4.7
AC-FT	576	454	444	397	372	1330	637	570	204	285	626	359

CAL YR 1977 TOTAL 3010.60 MEAN 8.25 MAX 61 MIN 1.3 AC-FT 5970
WTR YR 1978 TOTAL 3150.73 MEAN 8.63 MAX 126 MIN .02 AC-FT 6250

06449400 Rosebud Creek at Rosebud, SD--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	6.7	8.9	9.0	7.5	8.5	8.4	9.1	6.9	6.8	5.3	5.9	.11
2	6.7	13	8.1	7.5	8.6	8.1	8.8	6.5	6.0	5.3	5.7	.07
3	6.7	12	8.1	7.7	8.7	7.7	9.0	6.6	5.6	5.3	5.2	.07
4	9.6	10	8.4	8.0	8.8	9.0	8.8	6.6	5.2	6.4	4.9	.06
5	9.6	6.5	8.4	8.0	9.0	9.6	8.7	6.7	5.1	7.8	5.3	.04
6	9.2	6.9	8.0	8.2	9.5	13	8.5	6.8	7.6	8.1	5.1	.07
7	10	7.0	8.0	8.3	9.2	12	9.1	7.2	8.5	7.1	5.0	2.1
8	8.5	7.2	8.0	8.5	9.0	12	8.2	7.6	7.2	6.8	5.0	14
9	8.3	6.9	7.5	8.7	8.5	9.9	7.8	9.6	8.6	6.9	5.7	.77
10	12	6.9	7.5	9.0	8.6	9.6	8.1	10	7.6	6.9	4.7	.67
11	15	6.6	7.5	9.0	8.3	10	11	8.7	6.5	7.2	4.4	.79
12	8.0	6.7	7.2	9.0	8.8	10	11	7.1	5.6	7.2	4.4	.88
13	2.4	6.9	7.0	8.5	9.1	9.8	11	6.9	5.9	7.2	3.7	.95
14	8.5	7.2	7.0	8.0	10	9.3	10	6.7	5.6	7.0	3.7	1.0
15	9.5	6.8	7.2	8.5	9.0	9.3	9.1	6.6	5.4	6.8	3.6	1.1
16	8.0	6.8	7.2	9.0	8.0	10	8.3	9.5	9.0	8.3	3.3	1.2
17	7.7	6.6	7.5	9.5	8.0	10	8.3	7.8	8.1	8.4	2.9	1.2
18	5.7	5.9	7.8	9.5	8.5	9.6	10	8.4	8.5	7.5	2.8	1.3
19	3.6	5.1	7.8	10	8.6	9.7	9.2	8.2	16	7.3	3.0	1.5
20	3.6	6.2	8.0	10	8.2	9.9	8.2	7.0	16	7.2	3.3	1.7
21	3.2	6.5	8.0	10	7.8	11	7.9	7.2	12	6.9	2.9	1.9
22	2.8	6.9	8.0	10	7.6	10	7.9	7.6	14	6.7	2.4	2.2
23	1.9	7.0	8.0	10	7.1	9.4	7.7	7.2	15	6.7	2.3	2.4
24	1.3	7.0	8.0	9.5	7.6	9.3	7.7	7.3	59	7.7	1.9	2.5
25	1.8	7.0	8.5	9.5	8.3	9.3	7.9	7.1	42	7.7	1.7	2.7
26	2.0	7.6	8.0	9.5	9.1	8.8	7.5	6.9	6.5	6.8	1.8	2.8
27	6.8	7.8	8.0	9.5	8.7	9.0	7.1	6.8	6.3	7.3	5.1	3.0
28	9.0	9.0	8.0	9.0	8.1	9.4	7.3	6.2	6.4	8.7	18	3.6
29	8.4	9.5	7.8	9.0	---	9.6	6.9	6.8	5.7	6.8	4.1	3.8
30	7.5	9.0	7.8	8.5	---	9.7	7.5	7.8	5.5	6.3	.20	4.2
31	7.1	---	7.5	8.5	---	9.1	---	7.1	---	6.1	.13	---
TOTAL	211.1	227.4	242.8	275.4	239.2	301.5	257.6	229.4	327.2	217.7	128.13	58.68
MEAN	6.81	7.58	7.83	8.88	8.54	9.73	8.59	7.40	10.9	7.02	4.13	1.96
MAX	15	13	9.0	10	10	13	11	10	59	8.7	18	14
MIN	1.3	5.1	7.0	7.5	7.1	7.7	6.9	6.2	5.1	5.3	.13	.04
AC-FT	419	451	482	546	474	598	511	455	649	432	254	116

CAL YR 1978 TOTAL 3089.03 MEAN 8.46 MAX 126 MIN .02 AC-FT 6130
WTR YR 1979 TOTAL 2716.11 MEAN 7.44 MAX 59 MIN .04 AC-FT 5390

06449500 LITTLE WHITE RIVER NEAR ROSEBUD, SD

LOCATION.--Lat 43°19'32", long 100°53'00", in SW¼NW¼ sec.28, T.39 N., R.30 W., Todd County, Hydrologic Unit 10140203, on left bank at downstream side of bridge on U.S. Highway 18, 0.3 mi (0.5 km) downstream from Scabby Creek, 0.7 mi (1.1 km) downstream from Soldier Creek, and 6.4 mi (10.3 km) north of Rosebud.

DRAINAGE AREA.--1,020 mi^2 (2,640 km^2), approximately, of which about 760 mi^2 (1,970 km^2) probably contributes directly to surface runoff.

PERIOD OF RECORD.--May 1943 to current year. Prior to October 1965, published as South Fork White River near Rosebud.

REVISED RECORDS.--WSP 1056: 1943, drainage area. WSP 1309: 1946(M).

GAGE.--Water-stage recorder. Datum of gage is 2,294.99 ft (699.513 m) National Geodetic Vertical Datum of 1929. Prior to May 11, 1948, nonrecording gage at same site and datum.

REMARKS.--Records good except those for winter periods, which are poor. Some small diversions for irrigation and some storage in several small lakes above station. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--36 years, 111 ft^3/s (3.144 m^3/s), 80,420 acre-ft/yr (99.2 hm^3/yr); median of yearly mean discharges, 110 ft^3/s (3.12 m^3/s), 79,700 acre-ft/yr (98 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,640 ft^3/s (131 m^3/s) June 11, 1967, gage height, 14.09 ft (4.295 m), from rating curve extended above 1,300 ft^3/s (36.8 m^3/s); minimum daily, 10 ft^3/s (0.28 m^3/s) Jan. 4, 1949, Feb. 20, 1955.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 330 ft^3/s (9.34 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)
June 19	1445	654	18.5	5.65	1.722	June 25	0530	*2,830	80.1	*10.81	3.295

Minimum daily discharge, 36 ft^3/s (1.02 m^3/s) Nov. 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	71	86	82	52	55	75	246	151	116	122	129	79
2	68	77	80	54	60	80	278	116	108	126	120	74
3	57	84	75	54	60	90	262	126	95	122	110	70
4	62	87	75	58	60	130	216	131	91	200	104	68
5	61	74	75	58	60	160	231	116	89	231	104	65
6	58	47	70	60	65	150	202	117	88	118	98	67
7	66	53	65	60	65	140	294	122	88	122	95	74
8	73	57	65	60	65	160	202	133	84	129	109	104
9	75	49	65	62	65	200	189	142	86	122	118	97
10	71	43	65	62	65	190	191	171	89	118	114	82
11	78	55	70	62	70	180	202	158	81	126	112	79
12	77	49	70	60	70	190	246	154	86	140	111	81
13	63	57	70	55	70	170	231	161	104	133	106	71
14	65	50	70	55	70	150	237	146	97	124	100	73
15	72	46	72	55	65	130	246	140	90	126	97	74
16	65	53	72	60	60	150	231	131	115	168	104	76
17	41	57	72	60	60	200	249	124	86	144	102	74
18	40	53	72	65	65	246	208	133	84	146	100	73
19	50	36	72	65	65	278	219	147	201	161	104	71
20	61	39	71	70	70	281	211	145	190	146	106	71
21	54	37	71	70	87	262	184	143	144	135	104	70
22	68	55	71	70	95	262	191	151	149	124	102	70
23	43	62	71	68	92	268	181	140	218	129	100	68
24	52	57	70	68	90	246	208	133	473	122	100	67
25	70	57	70	65	85	294	181	129	845	124	98	68
26	49	71	70	60	80	246	173	125	140	122	97	66
27	52	60	65	60	80	255	163	117	114	151	97	65
28	55	82	60	60	75	231	158	122	120	178	95	64
29	57	78	55	55	---	268	149	116	126	140	97	62
30	71	89	50	55	---	278	135	124	124	131	93	62
31	50	---	50	55	---	310	---	116	---	135	86	---
TOTAL	1895	1800	2131	1873	1969	6270	6314	4180	4521	4315	3212	2185
MEAN	61.1	60.0	68.7	60.4	70.3	202	210	135	151	139	104	72.8
MAX	78	89	82	70	95	310	294	171	845	231	129	104
MIN	40	36	50	52	55	75	135	116	81	118	86	62
AC-FT	3760	3570	4230	3720	3910	12440	12520	8290	8970	8560	6370	4330

CAL YR 1978 TOTAL 46035 MEAN 126 MAX 963 MIN 36 AC-FT 91310
WTR YR 1979 TOTAL 40665 MEAN 111 MAX 845 MIN 36 AC-FT 80660

06450500 LITTLE WHITE RIVER BELOW WHITE RIVER, SD

LOCATION.--Lat 43°36'04", long 100°44'52", in SW¼NW¼ sec.23, T.42 N., R.29 W., Mellette County, Hydrologic Unit 10140203, on left bank at downstream side of bridge on U.S. Highway 83, 1.3 mi (2.1 km) downstream from Pine Creek and 2.0 mi (3.2 km) north of town of White River.

DRAINAGE AREA.--1,570 mi^2 (4,070 km^2), approximately, of which about 1,310 mi^2 (3,390 km^2) probably contributes directly to surface runoff.

PERIOD OF RECORD.--October 1949 to current year. Prior to October 1965, published as South Fork White River below White River.

GAGE.--Water-stage recorder. Datum of gage is 1,912.78 ft (583.015 m) National Geodetic Vertical Datum of 1929. Prior to June 8, 1968, at site 0.8 mi (1.3 km) downstream at datum 4.50 ft (1.372 m) lower.

REMARKS.--Records good except those for winter periods, which are poor. Diurnal fluctuations caused by small powerplant 2.2 mi (3.5 km) upstream. Several small diversions for irrigation and some storage in several small lakes above station. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--30 years, 130 ft^3/s (3.682 m^3/s), 94,180 acre-ft/yr (116 hm^3/yr); median of yearly mean discharges, 130 ft^3/s (3.68 m^3/s), 94,200 acre-ft/yr (116 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,700 ft^3/s (388 m^3/s) June 12, 1967, gage height, 10.02 ft (3.054 m), site and datum then in use; maximum gage height, 11.21 ft (3.417 m) June 7, 1968, site and datum then in use; maximum gage height at present site and datum, 15.46 ft (4.712 m) June 7, 1968, from floodmarks; no flow for parts of several days in 1952, 1954, 1956; minimum daily discharge, 7 ft^3/s (0.20 m^3/s) July 31, Aug. 31, Sept. 1, 1952.

EXTREMES FOR CURRENT YEAR.--Maximum discharge observed, 3,320 ft^3/s (94.0 m^3/s) June 18, gage height, 7.15 ft (2.179 m); minimum daily, 25 ft^3/s (0.71 m^3/s) June 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	53	85	100	55	60	80	271	200	156	124	129	75
2	55	82	95	60	65	80	243	225	139	116	129	112
3	53	85	90	65	65	80	233	218	156	122	125	108
4	52	91	85	65	65	90	226	222	119	158	126	83
5	63	93	85	65	65	110	204	197	122	194	110	74
6	57	86	85	66	70	150	181	229	116	163	80	72
7	67	84	80	66	70	160	183	241	113	127	84	130
8	64	89	75	68	70	150	182	231	104	133	126	157
9	67	96	70	70	70	160	176	279	107	180	237	130
10	69	97	70	70	70	180	178	209	139	198	224	125
11	69	120	75	70	75	200	209	170	198	213	60	119
12	86	93	75	70	75	190	249	199	153	209	57	167
13	68	87	75	65	75	190	232	234	119	207	57	149
14	60	68	75	60	75	170	225	244	38	170	54	120
15	71	73	75	60	75	150	226	256	38	164	56	109
16	84	70	80	60	75	140	199	277	64	161	61	112
17	78	82	80	65	70	150	180	198	25	164	67	109
18	81	68	80	70	65	180	204	198	2070	172	64	112
19	85	73	80	70	65	250	207	219	804	208	63	118
20	73	65	80	75	65	350	195	223	468	203	57	112
21	93	60	80	75	65	370	178	198	305	210	62	116
22	91	65	80	75	67	340	188	223	170	229	68	117
23	86	70	80	75	80	316	219	198	143	274	72	106
24	98	72	80	70	100	298	221	190	262	246	72	106
25	95	70	80	68	100	298	212	194	206	227	69	102
26	99	80	80	68	95	295	207	214	368	230	79	102
27	96	75	75	65	90	285	188	170	263	259	77	106
28	95	77	70	65	85	287	177	174	258	282	88	104
29	89	85	65	65	---	283	185	170	190	442	100	103
30	80	95	60	60	---	292	186	174	124	331	89	103
31	86	---	55	60	---	282	---	163	---	170	79	---
TOTAL	2363	2436	2415	2061	2067	6556	6164	6537	7537	6286	2821	3358
MEAN	76.2	81.2	77.9	66.5	73.8	211	205	211	251	203	91.0	112
MAX	99	120	100	75	100	370	271	279	2070	442	237	167
MIN	52	60	55	55	60	80	176	163	25	116	54	72
AC-FT	4690	4830	4790	4090	4100	13000	12230	12970	14950	12470	5600	6660

CAL YR 1978 TOTAL 69006 MEAN 189 MAX 4110 MIN 37 AC-FT 136900
WTR YR 1979 TOTAL 50601 MEAN 139 MAX 2070 MIN 25 AC-FT 100400

06452000 WHITE RIVER NEAR OACOMA, SD

LOCATION.--Lat 43°44'54", long 99°33'22", in SE¼SW¼ sec.3, T.103 N., R.73 W., Lyman County, Hydrologic Unit 10140204, on left bank at downstream side of bridge on State Highway 47, 1.5 mi (2.4 km) downstream from Wagner Draw, 1.8 mi (2.9 km) upstream from high-water line of Lake Francis Case, and 8.8 mi (14.2 km) southwest of Oacoma.

DRAINAGE AREA.--10,200 mi^2 (26,400 km^2), approximately.

WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WSP 786: Drainage area. WSP 1309: 1929-30(M).

GAGE.--Water-stage recorder. Datum of gage is 1,377.29 ft (419.798 m) National Geodetic Vertical Datum of 1929. See WSP 1709, 1729, or 1917 for history of changes prior to Feb. 27, 1960.

REMARKS.--Records good except those for winter periods, which are poor. Some diversions for irrigation above station. Gage-height telemeter at station.

AVERAGE DISCHARGE.--51 years, 531 ft^3/s (15.04 m^3/s), 384,700 acre-ft/yr (474 hm^3/yr); median of yearly mean discharges, 450 ft^3/s (12.7 m^3/s), 326,000 acre-ft/yr (400 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 51,900 ft^3/s (1,470 m^3/s) Mar. 30, 1952, gage height, 15.40 ft (4.694 m), site and datum then in use; maximum gage height, 23.59 ft (7.190 m) Mar. 14, 1978, ice jam; no flow Aug. 14-28, 1971, July 16-23, 1974, Aug. 29 to Sept. 9, Sept. 13, 1976.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 5,500 ft^3/s (156 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. 12	1500	ice jam		*10.15	3.094	July 7	1600	5,850	166	7.72	2.353
June 21	2300	6,950	197	8.11	2.472	Aug. 10	2200	9,660	274	9.25	2.819
June 26	1700	*11,800	334	9.52	2.902						

Minimum daily discharge, 10 ft^3/s (0.28 m^3/s) Jan. 2.

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	56	67	43	11	21	38	600	275	192	2450	3460	350
2	53	64	42	10	23	37	572	248	180	1450	2170	295
3	47	68	42	11	25	36	560	229	170	974	1180	240
4	48	65	40	11	25	36	542	205	159	848	746	189
5	45	66	40	12	25	36	655	192	162	596	570	168
6	42	68	38	12	25	40	620	186	143	548	472	159
7	42	67	35	13	25	45	572	180	145	3530	364	140
8	44	68	35	13	25	50	522	180	159	2830	403	120
9	45	68	40	13	26	100	472	183	154	1610	350	113
10	48	70	45	13	27	200	461	189	158	1080	2960	106
11	47	70	47	14	27	500	590	199	162	704	4670	106
12	47	65	50	14	27	2500	800	205	165	512	2550	143
13	50	65	50	13	28	2400	1030	210	165	409	1610	127
14	53	60	50	12	28	1920	753	215	140	322	992	104
15	53	60	49	12	27	1770	739	473	122	307	655	88
16	53	55	49	13	25	1630	725	904	137	292	500	81
17	65	50	49	14	25	2030	753	655	135	252	374	74
18	42	48	48	15	27	2000	1060	676	132	229	304	65
19	48	45	48	18	30	1220	832	578	96	248	278	62
20	54	45	48	20	35	1360	690	409	2650	296	252	57
21	56	47	49	22	35	1490	572	345	3200	240	212	56
22	52	48	49	22	34	1740	500	322	4970	240	186	53
23	48	48	49	22	33	1230	445	300	2930	393	165	51
24	60	50	48	21	32	760	403	271	2240	369	156	50
25	62	50	45	21	32	720	369	255	1990	255	198	51
26	62	48	40	21	35	683	345	263	6740	456	641	50
27	62	48	30	21	39	655	331	239	6580	374	383	47
28	65	45	25	21	40	739	322	215	3590	313	779	42
29	66	45	20	20	---	596	295	192	2490	448	620	39
30	67	45	15	20	---	732	267	209	1850	963	530	38
31	67	---	12	20	---	627	---	196	---	872	456	---
TOTAL	1649	1708	1270	495	806	27920	17397	9398	42106	24410	29186	3264
MEAN	53.2	56.9	41.0	16.0	28.8	901	580	303	1404	787	941	109
MAX	67	70	50	22	40	2500	1060	904	6740	3530	4670	350
MIN	42	45	12	10	21	36	267	180	96	229	156	38
AC-FT	3270	3390	2520	982	1600	55380	34510	18640	83520	48420	57890	6470

CAL YR 1978 TOTAL 328126 MEAN 899 MAX 22000 MIN 12 AC-FT 650800
WTR YR 1979 TOTAL 159609 MEAN 437 MAX 6740 MIN 10 AC-FT 316600

06452000 WHITE RIVER NEAR OACOMA, SD--Continued
(National stream-quality accounting network station)
(National pesticide water-monitoring network station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1946-53, 1969, 1972 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1974 to September 1976, October 1977 to current year.
WATER TEMPERATURES: October 1974 to September 1976, October 1978 to September 1979.
SUSPENDED SEDIMENT DISCHARGE: October 1971 to September 1976 (discontinued).

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,880 micromhos Sept. 2, 1976; minimum daily, 370 micromhos Mar. 17, 1975.
WATER TEMPERATURES: Maximum daily, 30.0°C July 30, 1975, July 10, 1976; minimum daily, 0.0°C on many days during winter periods.
SEDIMENT CONCENTRATIONS: Maximum daily mean, 72,300 mg/L Apr. 15, 1974; minimum daily mean, 0 mg/L July 17-23, 1974, Aug. 29 to Sept. 9, Sept. 13, 1976.
SEDIMENT LOADS: Maximum daily, 1,220,000 tons (1,110,000 tonnes) May 29, 1973; 0 ton (0 tonne) July 17-23, 1974, Aug. 29 to Sept. 9, Sept. 13, 1976.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,620 micromhos Feb. 26; minimum daily, 380 micromhos Mar. 19, 20.
WATER TEMPERATURES: Maximum daily, 27.0 July 23; minimum daily, 0.0°C on many days during winter period.

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)
OCT										
19...	1145	48	550	8.2	7.5	6.8	9.7	K280	K30	130
NOV										
07...	1140	66	600	8.1	5.0	40	9.4	K12	50	140
DEC										
04...	1220	40	670	8.3	.0	9.6	14.4	--	80	170
JAN										
08...	1200	13	1300	8.3	.0	4.1	.0	ND	K2	340
FEB										
05...	1330	26	520	7.9	.0	17	10.4	230	190	160
MAR										
05...	1510	36	540	8.0	.0	14	13.0	ND	90	150
APR										
03...	1030	567	650	8.3	2.0	900	14.0	15	450	160
MAY										
07...	1145	179	660	8.1	16.0	170	9.5	70	80	150
JUN										
04...	1230	165	640	7.8	25.0	250	--	90	120	150
JUL										
09...	1215	1600	550	8.0	23.0	13000	7.8	5000	3400	19
AUG										
06...	1100	490	560	7.4	25.0	8000	7.8	K1500	K3200	19
SEP										
11...	0915	106	555	8.2	19.0	560	--	430	800	72

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)
OCT										
19...	0	44	5.4	72	53	2.7	6.3	--	--	160
NOV										
07...	0	47	5.7	68	50	2.5	6.8	--	--	170
DEC										
04...	0	53	8.2	65	44	2.2	8.9	--	--	210
JAN										
08...	0	110	17	91	35	2.1	18	--	--	420
FEB										
05...	0	50	7.7	34	30	1.2	10	--	--	210
MAR										
05...	0	50	7.2	40	34	1.4	8.8	--	--	180
APR										
03...	25	55	6.6	70	47	2.4	4.5	--	--	140
MAY										
07...	0	49	5.7	81	53	2.9	7.5	--	--	180
JUN										
04...	0	40	11	81	53	2.9	8.9	--	--	180
JUL										
09...	0	7.1	.3	100	89	10	5.2	--	--	150
AUG										
06...	0	6.1	1.0	97	90	9.6	5.6	--	--	160
SEP										
11...	0	25	2.2	98	75	5.0	6.2	--	--	130

06452000 WHITE RIVER NEAR OACOMA, SD--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)
OCT									
19...	110	7.4	.5	44	368	386	.50	47.7	.01
NOV									
07...	120	6.5	.4	42	410	399	.56	73.1	.01
DEC									
04...	95	8.2	.5	56	448	421	.61	48.5	.69
JAN									
08...	110	12	.7	91	719	702	.98	25.2	1.1
FEB									
05...	36	4.4	.4	58	338	327	.46	23.7	1.1
MAR									
05...	46	5.9	.5	53	321	320	.44	31.5	.92
APR									
03...	150	8.2	.4	26	395	405	.54	605	.84
MAY									
07...	120	8.9	.5	35	433	416	.59	209	.02
JUN									
04...	130	7.5	.6	38	401	425	.55	179	.02
JUL									
09...	77	3.7	.7	32	323	316	.44	1400	1.4
AUG									
06...	59	3.8	.7	37	318	306	.43	421	1.6
SEP									
11...	160	5.3	.4	28	371	404	.50	106	.25

DATE	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN, NH4 + ORG. SUSP. TOTAL (MG/L AS N) (00624)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)
OCT									
19...	.57	.55	.02	.52	.05	.58	2.6	.01	.03
NOV									
07...	.56	.52	.04	.32	.24	.57	2.5	.04	.15
DEC									
04...	.40	.39	.01	.25	.15	1.1	4.8	.07	.12
JAN									
08...	.69	.65	.04	.69	.00	1.8	7.9	.17	.17
FEB									
05...	.43	.38	.05	.42	.01	1.5	6.8	.17	.20
MAR									
05...	.63	.48	.15	.63	.00	1.6	6.9	.23	.25
APR									
03...	2.0	2.0	.05	.37	1.6	2.8	13	.08	1.0
MAY									
07...	.88	.85	.03	.32	.56	.90	4.0	.01	.31
JUN									
04...	1.1	1.1	.04	.30	.80	1.1	5.0	.04	.40
JUL									
09...	6.1	5.9	.20	.61	5.5	7.5	33	.08	16
AUG									
06...	1.0	.91	.09	1.0	.00	2.6	12	.17	16
SEP									
11...	2.5	2.3	.16	.75	1.8	2.8	12	.03	.40

06452000 WHITE RIVER NEAR OACOMA, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C) (00689)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	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)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
NOV 07...	1140	--	--	4.4	8500	--	--	380	68
DEC 04...	1220	--	--	3.5	--	--	--	--	--
FEB 05...	1330	--	--	3.7	--	--	--	61	4.3
MAR 05...	1510	--	--	5.2	310	--	--	65	6.4
MAY 07...	1145	--	--	12	72000	--	--	350	169
JUN 04...	1230	--	--	12	49000	.240	.160	1260	561
JUL 09...	1215	35	27	--	0	--	--	43700	189000
AUG 06...	1100	--	--	41	27	--	--	13600	18000

DATE	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM (70337)	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)	SED. SUSP. FALL DIAM. % FINER THAN .250 MM (70344)	SED. SUSP. FALL DIAM. % FINER THAN .500 MM (70345)
NOV 07...	96	--	--	--	--	--	--	--
DEC 04...	--	--	--	--	--	--	--	--
FEB 05...	87	--	--	--	--	--	--	--
MAR 05...	87	--	--	--	--	--	--	--
MAY 07...	94	--	--	--	--	--	--	--
JUN 04...	99	91	94	98	--	--	--	--
JUL 09...	97	52	65	86	--	98	99	100
AUG 06...	99	68	85	95	--	--	--	--

DATE	TIME	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	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)
OCT 19...	1145	8	8	7	0	7	0	0	0	1	0
JAN 08...	1200	14	14	1	1	0	10	10	0	1	1
APR 03...	1030	9	6	5	5	0	30	30	0	12	12
JUL 09...	1215	110	25	5	5	0	200	200	0	55	55

DATE	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)	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)
OCT 19...	1	6	0	6	1300	10	80	0	80	60	60
JAN 08...	0	8	1	7	260	30	20	14	6	30	20
APR 03...	0	27	24	3	21000	0	51	51	0	1100	1100
JUL 09...	0	290	290	4	140000	70	290	290	0	11000	11000

06452000 WHITE RIVER NEAR OACOMA, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	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)	SELENIUM, DISSOLVED (UG/L AS SE) (01145)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN) (01092)	ZINC, SUSPENDED RECOVERABLE (UG/L AS ZN) (01091)	ZINC, DISSOLVED (UG/L AS ZN) (01090)
OCT										
19...	2	.0	.0	.0	2	0	2	10	7	<3
JAN										
08...	10	.0	.0	.0	2	0	2	20	0	20
APR										
03...	0	.0	.0	.0	3	1	2	120	110	10
JUL										
09...	10	1.3	1.2	.1	10	5	5	530	530	0

DATE	TIME	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)
NOV										
07...	1140	ND	ND	ND	ND	ND	ND	ND	ND	ND
FEB										
05...	1300	ND	--	ND	--	ND	--	ND	--	ND
MAY										
07...	1145	ND	--	ND	--	ND	--	ND	--	ND

DATE	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)
NOV										
07...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
FEB										
05...	--	ND	--	ND	--	ND	--	ND	--	ND
MAY										
07...	--	ND	--	ND	--	ND	--	ND	--	ND

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)
NOV										
07...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
FEB										
05...	--	ND	--	ND	--	ND	--	ND	--	ND
MAY										
07...	--	ND	--	ND	--	ND	--	ND	--	ND

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)
NOV									
07...	ND	ND	ND	ND	ND	ND	ND	ND	ND
FEB									
05...	--	ND	--	ND	--	ND	--	ND	--
MAY									
07...	--	ND	--	ND	--	ND	--	ND	--

< Less than.
ND Not detected.

06452000 WHITE RIVER NEAR OACOMA, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)
SEP						
10...	1500	159	22.5	11.5	--	--
10...	1700	159	22.5	12.5	--	--
10...	1900	115	22.0	12.0	--	--
10...	2100	113	22.0	11.5	--	--
10...	2300	110	21.5	11.0	--	--
11...	0100	108	21.5	11.0	--	--
11...	0300	106	21.0	10.8	--	--
11...	0500	104	20.5	10.0	--	--
11...	0700	102	20.0	9.5	--	--
11...	0900	106	19.5	9.5	--	--
11...	1100	104	19.5	9.5	--	--
11...	1300	102	19.5	9.4	--	--

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	---	560	680	---	480	480	---	570	570	---	680	600
2	600	560	660	650	480	520	620	620	560	420	590	---
3	620	560	---	680	600	500	650	590	535	420	530	---
4	620	560	670	780	---	---	580	580	540	---	550	580
5	620	---	570	790	520	540	560	590	555	420	---	600
6	620	600	570	860	470	440	560	---	---	420	560	570
7	600	600	600	---	460	260	610	660	550	---	500	620
8	---	560	780	980	460	390	---	600	530	---	620	640
9	580	540	680	740	460	630	610	630	575	550	620	---
10	580	520	---	720	450	630	630	630	---	510	590	610
11	560	---	750	890	---	---	620	650	555	480	570	560
12	540	---	840	750	450	590	880	660	530	460	---	590
13	540	560	840	670	430	510	870	---	520	420	500	510
14	540	630	930	---	420	420	780	570	545	500	500	520
15	---	690	960	600	430	390	700	550	550	---	500	600
16	550	680	940	590	420	390	680	660	550	490	480	---
17	530	630	---	590	420	430	---	570	---	490	460	560
18	540	690	970	560	---	---	620	550	620	490	550	570
19	550	---	850	---	---	380	590	550	720	480	---	570
20	540	780	780	510	420	380	630	---	765	540	490	590
21	540	790	790	---	460	440	560	580	770	490	500	600
22	---	840	730	470	480	470	530	530	700	---	510	600
23	520	---	680	460	750	460	---	550	580	560	510	---
24	520	750	---	450	760	500	540	520	---	740	500	590
25	540	760	---	460	---	---	540	530	545	620	520	590
26	600	---	580	460	1620	500	550	510	515	670	---	580
27	600	670	560	430	620	480	570	---	500	690	720	580
28	540	710	550	---	1420	480	550	---	510	710	650	580
29	---	700	560	420	---	550	---	550	445	---	600	580
30	520	690	560	440	---	650	560	550	420	930	700	---
31	500	---	---	430	---	690	---	570	---	530	700	---
MEAN	562	651	723	615	586	485	624	582	568	543	563	583

06452000 WHITE RIVER NEAR OACOMA, SD--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	---	8.0	.0	---	.0	.0	---	9.0	17.0	---	24.0	24.0
2	13.0	10.0	.0	.0	.0	.0	1.0	10.0	16.0	26.0	24.0	---
3	10.0	10.0	---	.0	.0	.0	2.0	11.0	---	26.0	25.0	---
4	9.0	---	.0	.0	---	---	1.0	10.0	25.0	---	25.0	23.0
5	8.0	6.0	.0	.0	.0	.0	.0	14.0	19.0	21.0	---	21.0
6	8.0	5.0	.0	.0	.0	.0	.0	---	19.0	18.0	25.0	21.0
7	8.0	5.0	.0	---	.0	.0	1.0	16.0	18.0	20.0	26.0	19.0
8	---	9.0	.0	.0	.0	.0	---	11.0	18.0	---	26.0	19.0
9	9.0	8.0	.0	.0	.0	.0	1.0	8.0	16.0	23.0	25.0	---
10	10.0	2.0	---	.0	.0	.0	2.0	5.0	---	24.0	24.0	22.0
11	13.0	---	.0	.0	---	---	1.0	8.0	21.0	26.0	21.0	19.0
12	11.0	---	.0	.0	.0	.0	4.0	12.0	23.0	25.0	---	18.0
13	8.0	.0	.0	.0	.0	.0	4.0	---	24.0	24.0	21.0	14.0
14	8.0	.0	.0	---	.0	.0	8.0	14.0	24.0	24.0	18.0	12.0
15	---	1.0	.0	.0	.0	.0	---	15.0	21.0	---	17.0	12.0
16	7.0	1.0	.0	.0	.0	1.0	13.0	16.0	20.0	20.0	16.0	---
17	9.0	1.0	---	.0	.0	.0	11.0	17.0	---	21.0	21.0	17.0
18	10.0	1.0	.0	.0	---	---	16.0	14.0	17.0	23.0	22.0	17.0
19	7.5	---	.0	---	---	.0	16.0	14.0	17.0	24.0	---	17.0
20	10.0	.0	.0	.0	.0	.0	12.0	---	18.0	25.0	21.0	16.0
21	13.0	.0	.0	---	.0	1.0	12.0	12.0	19.0	25.0	21.0	18.0
22	---	.0	.0	.0	.0	2.0	---	16.0	20.0	---	22.0	15.0
23	4.0	.0	.0	.0	---	1.0	13.0	14.0	19.0	27.0	22.0	---
24	10.0	.0	---	.0	.0	1.0	14.0	15.0	---	26.0	20.0	18.0
25	7.0	.0	---	.0	---	---	9.0	17.0	21.0	26.0	19.0	18.0
26	7.0	---	.0	.0	.0	1.0	10.0	19.0	20.0	25.0	---	19.0
27	6.0	.0	.0	.0	.0	1.0	11.0	---	22.0	25.0	20.0	18.0
28	8.0	.0	.0	---	.0	1.0	9.0	---	22.0	24.0	21.0	17.0
29	---	.0	.0	.0	---	1.0	---	19.0	23.0	---	20.0	17.0
30	9.0	.0	.0	.0	---	.0	5.0	14.0	24.0	22.0	21.0	---
31	7.0	---	---	.0	---	.0	---	13.0	---	23.0	22.0	---
MEAN	9.0	2.5	.0	.0	.0	.5	7.0	13.0	20.0	23.5	22.0	18.0

06452000 WHITE RIVER NEAR OACOMA, SD--Continued

PHYTOPLANKTON ANALYSES

DATE	SEP 11,78		NOV 7,78		MAR 5,79		MAY 7,79	
TIME	1400		1140		1510		1145	
TOTAL CELLS/ML	3200		8500		310		72000	
DIVERSITY: DIVISION	0.0		1.6		1.0		1.0	
.CLASS	0.0		1.6		1.0		1.0	
..ORDER	0.0		2.0		1.0		1.1	
...FAMILY	0.0		2.5		1.4		2.2	
....GENUS	0.0		3.3		1.4		3.1	
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
...COELASTRACEAE								
....COELASTRUM	--	-	--	-	--	-	2600	4
...HYDRODICTYACEAE								
....PEDIASTRUM	--	-	--	-	--	-	2600	4
...OOCYSTACEAE								
....ANKISTRODESMUS	--	-	570	7	44	14	9800	14
....DICTYOSPHAERIUM	--	-	2400#	28	--	-	2000	3
....FRANCEIA	--	-	71	1	--	-	--	-
....KIRCHNERIELLA	--	-	210	3	--	-	4200	6
....OOCYSTIS	--	-	*	0	--	-	2300	3
....SELENASTRUM	--	-	*	0	--	-	--	-
....TETRAEDRON	--	-	--	-	--	-	--	-
...SCENEDESMACEAE								
....ACTINASTRUM	--	-	--	-	--	-	1300	2
....CRUCIGENIA	--	-	--	-	--	-	--	-
....SCENEDESMUS	--	-	930	11	130#	43	19000#	26
....TETRASTRUM	--	-	140	2	--	-	10000	15
..TETRASPORALES								
...COCCOMYXACEAE								
....ELAKATOTHRIX	--	-	--	-	--	-	--	-
..VOLVOCALES								
...CHLAMYDOMONADACEAE								
....CHLAMYDOMONAS	--	-	--	-	--	-	--	-
...PHACOTACEAE								
....PTEROMONAS	--	-	--	-	--	-	*	0
CHRYSOPHYTA								
.BACILLARIOPHYCEAE								
..CENTRALES								
...COSCINODISCACEAE								
....CYCLOTELLA	--	-	360	4	--	-	*	0
..PENNALES								
...FRAGILARIACEAE								
....FRAGILARIA	--	-	180	2	--	-	--	-
...NAVICULACEAE								
....PINNULARIA	--	-	*	0	--	-	--	-
...NITZSCHIACEAE								
....NITZSCHIA	--	-	1000	12	130#	43	5900	8
...SURIRELLACEAE								
....SURIRELLA	--	-	*	0	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)								
.CYANOPHYCEAE								
..CHROOCOCCALES								
...CHROOCOCCACEAE								
....ANACYSTIS	--	-	1100	13	--	-	11000#	15
..HORMOGONALES								
...OSCILLATORIACEAE								
....OSCILLATORIA	3200#	100	680	8	--	-	--	-
..CHROOCOCCALES								
...CHROOCOCCACEAE								
....GOMPHOSPHAERIA	--	-	430	5	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)								
.EUGLENOPHYCEAE								
..EUGLENALES								
...EUGLENACEAE								
....TRACHELOMONAS	--	-	250	3	--	-	--	-

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

06452000 WHITE RIVER NEAR OACOMA, SD--Continued

PHYTOPLANKTON ANALYSES

DATE	JUN 4,79	JUL 9,79	AUG 6,79
TIME	1230	1215	1100
TOTAL CELLS/ML	49000	0	27
DIVERSITY: DIVISION	0.5	0.0	1.0
.CLASS	0.5	0.0	1.0
..ORDER	0.6	0.0	1.0
...FAMILY	1.6	0.0	1.0
....GENUS	2.7	0.0	1.0

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)						
.CHLOROPHYCEAE						
..CHLOROCOCCALES						
...CHARACIACEAE						
....SCHROEDERIA	--	-	--	-	--	-
...COELASTRACEAE						
....COELASTRUM	1800	4	--	-	--	-
...HYDRODICTYACEAE						
....PEDIASTRUM	2400	5	--	-	--	-
...OOCYSTACEAE						
....ANKISTRODESMUS	450	1	--	-	--	-
....DICTYOSPHAERIUM	600	1	--	-	--	-
....FRANCEIA	--	-	--	-	--	-
....KIRCHNERIELLA	600	1	--	-	--	-
....OOCYSTIS	3000	6	--	-	--	-
....SELENASTRUM	750	2	--	-	--	-
....TETRAEDRON	450	1	--	-	--	-
...SCENEDESMACEAE						
....ACTINASTRUM	--	-	--	-	--	-
....CRUCIGENIA	3600	7	--	-	--	-
....SCENEDESMUS	22000#	46	--	-	--	-
....TETRASTRUM	7800#	16	--	-	--	-
..TETRASPORALES						
...COCCOMYXACEAE						
....ELAKATOTHRIX	*	0	--	-	--	-
..VOLVOCALES						
...CHLAMYDOMONADACEAE						
....CHLAMYDOMONAS	300	1	--	-	--	-
...PHACOTACEAE						
....PTEROMONAS	--	-	--	-	--	-
CHRYSOPHYTA						
.BACILLARIOPHYCEAE						
..CENTRALES						
...COSCINODISCACEAE						
....CYCLOTELLA	1200	2	--	-	--	-
..PENNALES						
...FRAGILARIACEAE						
....FRAGILARIA	--	-	--	-	--	-
...NAVICULACEAE						
....PINNULARIA	--	-	--	-	--	-
...NITZSCHIACEAE						
....NITZSCHIA	*	0	--	-	14#	50
...SURIRELLACEAE						
....SURIRELLA	--	-	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)						
.CYANOPHYCEAE						
..CHROOCOCCALES						
...CHROOCOCCACEAE						
....ANACYSTIS	2900	6	--	-	--	-
..HORMOGONALES						
...OSCILLATORIACEAE						
....OSCILLATORIA	--	-	--	-	--	-
..CHROOCOCCALES						
...CHROOCOCCACEAE						
....GOMPHOSPHAERIA	--	-	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)						
.EUGLENOPHYCEAE						
..EUGLENALES						
...EUGLENACEAE						
....TRACHELOMONAS	--	-	--	-	14#	50

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

06452500 LAKE FRANCIS CASE AT PICKSTOWN, SD

LOCATION.--Lat 43°04'05", long 98°33'15", in SE¼ sec.5, T.95 N., R.65 W., Charles Mix County, Hydrologic Unit 10140101, in tower 6 of outlet works at Fort Randall Dam, on Missouri River at Pickstown, 1.0 mi (1.6 km) upstream from Randall Creek, and at mile 880.0 (1,415.9 km).

DRAINAGE AREA.--263,500 mi^2 (682,500 km^2), approximately.

PERIOD OF RECORD.--December 1952 to current year (monthend contents only). Prior to October 1964, published as Fort Randall Reservoir at Pickstown.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to Mar. 25, 1953, elevations determined from temporary nonrecording gages.

REMARKS.--Reservoir is formed by earthfill dam; storage began in December 1952; initial closure made July 1952. Maximum capacity, 5,816,000 acre-ft (7,170 hm^3) below elevation 1,375.0 ft (419.10 m), top of spillway gates. Normal maximum, 4,834,000 acre-ft (5,960 hm^3) below elevation 1,365.0 ft (416.05 m). Inactive storage, 1,336,000 acre-ft (1,650 hm^3) below elevation 1,310.0 ft (399.29 m). No dead storage; elevation of invert of lowest outlet is 1,227.0 ft (373.99 m). Figures given herein represent elevations at outlet works and total contents adjusted for wind effect.

The spillway consists of 21 taintor gates, each 40 ft (12.2 m) wide by 29 ft (8.8 m) high; spillway capacity, 490,000 ft^3/s (13,900 m^3/s) at pool elevation 1,375 ft (419.10 m). Crest of spillway is at elevation 1,346 ft (410.26 m). Normal releases are through 12 tunnels 22 ft (6.7 m) in diameter. Installation of power units in 8 of these tunnels was completed in January 1956; maximum release through power tunnels is 46,000 ft^3/s (1,300 m^3/s); maximum release through 4 other tunnels is 130,000 ft^3/s (3,680 m^3/s) at pool elevation 1,375 ft (419.10 m). Water is used for flood control, navigation, power, and incidental uses.

COOPERATION.--Elevations and contents furnished by Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 5,087,000 acre-ft (6,270 hm^3) June 20, 1962, elevation, 1,364.2 ft (415.81 m), affected by wind; minimum since initial filling, 1,450,000 acre-ft (1,790 hm^3) Oct. 23, 1956, elevation, 1,311.5 ft (399.75 m), affected by wind.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 4,250,000 acre-ft (5,240 hm^3) Apr. 2, elevation, 1,361.07 ft (414.85 m); minimum contents, 2,451,000 acre-ft (3,020 hm^3) Dec. 5, 6, elevation, 1,337.8 ft (407.76 m).

MONTHEND ELEVATION, IN FEET NGVD, AND CONTENTS, IN ACRE-FEET, AT 2400, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

Date	Elevation	Contents	Change in contents
Sept. 30	1354.0	3620000	
Oct. 31	1349.0	3232000	-388000
Nov. 30	1339.3	2544000	-688000
Dec. 31	1342.9	2786000	+242000
CAL YR 1978			-224000
Jan. 31	1348.1	3159000	+373000
Feb. 28	1352.1	3469000	+310000
Mar. 31	1360.2	4193000	+724000
Apr. 30	1357.52	3932000	-261000
May 31	1356.81	3858000	-74000
June 30	1356.86	3861000	+3000
July 31	1356.67	3837000	-24000
Aug. 31	1356.50	3842000	+5000
Sept. 30	1352.87	3493000	-349000
WTR YR 1979			-127000

NOTE.--Reservoir frozen over Dec. 26 to Apr. 9.

06453000 MISSOURI RIVER AT FORT RANDALL DAM, SD

LOCATION.--Lat 43°03'54", long 98°33'11", in NW¼NE¼ sec.8, T.95 N., R.65 W., Charles Mix County, Hydrologic Unit 10170101, in powerhouse of Fort Randall Dam on Missouri River at Pickstown, 0.8 mi (1.3 km) upstream from Randall Creek, and at mile 879.8 (1,415.6 km).

DRAINAGE AREA.--263,500 mi^2 (682,500 km^2), approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1947 to current year. Prior to October 1969 published as "below Fort Randall Dam".

GAGE.--Totalizing flowmeters on each turbine in Fort Randall powerhouse. Prior to Nov. 10, 1965, water-stage recorder at site 7.0 mi (11.3 km) downstream at datum 1,230.00 ft (374.904 m) National Geodetic Vertical Datum of 1929 and Nov. 10, 1965, to June 30, 1969, at datum 5.00 ft (1.524 m) lower (Corps of Engineers bench mark).

REMARKS.--Records good. Flow completely regulated by Lake Francis Case (see station 06452500). Many diversions for irrigation above station.

COOPERATION.--Daily discharge determined from flow through turbines furnished by Corps of Engineers.

AVERAGE DISCHARGE.--32 years, 25,350 ft^3/s (717.9 m^3/s), 18,363,000 acre-ft/yr (22.6 km^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 447,000 ft^3/s (12,700 m^3/s) Apr. 12, 1952; maximum gage height, 20.82 ft (6.346 m) Apr. 12, 1952 (site and datum then in use); minimum daily discharge, 100 ft^3/s (2.83 m^3/s) Mar. 29, 1962.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in April 1943 reached a stage of about 16.5 ft (5.03 m). Maximum stage known, in April 1881, was about 5 ft (1.5 m) higher than that of April 1943, both at site 7.0 mi (11.3 km) downstream.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge during year, 53,200 ft^3/s (1,510 m^3/s) Oct. 12; minimum daily, 1,100 ft^3/s (31.2 m^3/s) Mar. 23.

CORRECTION.--The average discharge for water year 1978 is 25,160 ft^3/s (712.5 m^3/s); the previously published figure was not the average.

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	51400	52000	44000	24200	21100	16900	14100	33000	36500	32000	33600	31300
2	51400	51000	39400	25700	21200	16000	18700	28000	37100	32300	33200	31800
3	51400	51000	34200	24800	20500	12300	20500	29500	29500	32700	33400	31400
4	51600	51000	32600	23100	20700	10100	24500	35200	38700	32500	33800	28800
5	51600	51000	27900	24100	20000	10000	27200	34000	43500	33300	32300	27800
6	51600	51100	25000	23200	21900	10000	26300	28300	41000	33300	34900	28900
7	52000	51500	25100	22600	22300	10100	24100	35800	41000	34700	36200	34300
8	52300	51600	23300	24000	20500	13100	24000	34100	39900	30300	36600	34300
9	52600	51500	23300	22200	21200	11600	25000	34200	40700	31400	37700	30700
10	52500	52000	22500	20500	21100	15400	23600	31600	32300	30900	35100	30900
11	52800	52000	20200	16000	21300	13400	24000	28500	41800	31400	34200	28400
12	53200	52000	20200	14400	21100	12600	23700	29500	41100	36300	31800	26000
13	52800	52000	14800	12800	20800	11200	24300	29000	41700	39000	36100	25100
14	52300	52000	18100	13000	20800	4800	22200	35400	41500	39300	34600	34100
15	52500	52000	21400	13500	18900	4300	22300	38900	40500	37800	35400	34200
16	52400	52000	22400	13300	18800	4300	24000	36200	37600	36700	37600	31600
17	52600	52000	22800	15100	18200	7000	26200	36900	33300	38400	37000	31800
18	52500	52000	23200	15900	19200	12300	25000	38600	37700	32000	35300	35800
19	52600	52000	23300	15400	19200	2900	23600	38600	37400	34300	34100	37200
20	52500	52000	23700	15800	20100	2500	20800	30400	33500	34800	33300	35000
21	52400	52000	20300	15300	20200	2600	21600	36700	35900	32000	28500	36100
22	52500	52000	19500	16300	18000	1200	18600	37500	32100	34600	29600	38200
23	52400	52000	21100	18400	16100	1100	26900	37600	33400	35200	27700	38200
24	52600	52000	21200	20000	16000	1200	29700	38200	29700	34900	27900	39000
25	52600	52000	22900	22300	19300	1200	30500	38400	31800	36900	28600	38200
26	52500	52000	24400	22400	21100	5500	30300	39300	33500	38000	28500	37200
27	52500	52000	25000	21800	22000	10600	29400	35700	36400	38700	26200	35600
28	52400	52000	23600	21000	23200	14300	29200	38000	40600	38500	24300	35000
29	52400	51000	23300	21400	---	21200	25900	38400	37700	38600	26600	38100
30	52100	48000	22700	21900	---	16900	33700	37600	32200	38900	30900	33200
31	52000	---	23100	22100	---	14300	---	36600	---	36800	31100	---
TOTAL	1621000	1548700	754500	602500	564800	290900	739900	1079700	1109600	1086500	1006100	998200
MEAN	52290	51620	24340	19440	20170	9384	24660	34830	36990	35050	32450	33270
MAX	53200	52000	44000	25700	23200	21200	33700	39300	43500	39300	37700	39000
MIN	51400	48000	14800	12800	16000	1100	14100	28000	29500	30300	24300	25100
AC-FT	3215000	3072000	1497000	1195000	1120000	577000	1468000	2142000	2201000	2155000	1996000	1980000

CAL YR 1978 TOTAL 11843600 MEAN 32450 MAX 53200 MIN 800 AC-FT 23490000
WTR YR 1979 TOTAL 11402400 MEAN 31240 MAX 53200 MIN 1100 AC-FT 22620000

06453000 MISSOURI RIVER AT FORT RANDALL DAM, SD--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: October 1974 to September 1978.
WATER TEMPERATURES: October 1974 to September 1978.
DISSOLVED OXYGEN: October 1974 to September 1978.

INSTRUMENTATION.--Water-quality monitor since June 1973.

REMARKS.--Water is supplied to the monitor from the raw water intake located in the penstocks. This location is 121 ft (37 m) below the normal pool surface. Depth of observation is 1,227 ft (374 m) above mean sea level. Records prior to October 1974 are on file in the District office, Corps of Engineers, Omaha, NE. In addition to the water-quality monitor, samples were collected once a month.

COOPERATION.--Records of specific conductance, water temperature, dissolved oxygen and pH were furnished by Corps of Engineers.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily mean, 850 micromhos Mar. 10, 1975; minimum daily mean, 606 micromhos Dec. 7, 1976.
WATER TEMPERATURES: Maximum daily mean, 25.5°C Aug. 9, 12-16, 25, 1975, July 31 to Aug. 2, Aug. 5, 10, 1977, Aug. 25, 1978; minimum daily mean, 0.0°C Jan. 21-26, 1975.
DISSOLVED OXYGEN: Maximum daily mean, 13.2 mg/L Jan. 2, 3, Feb. 5-11, 14-21, 1975; minimum daily mean, 6.7 mg/L Aug. 6, 8, 1977.

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)
OCT										
23...	1200	52500	730	8.0	14.0	3.4	9.8	K2	K1	240
NOV										
14...	1100	43900	770	7.9	8.5	4.7	11.7	K3	K8	230
DEC										
20...	0800	29300	750	8.0	1.0	5.3	12.8	K2	K2	230
JAN										
30...	1100	35300	880	8.0	1.5	1.1	--	K1	K1	250
FEB										
21...	1200	30300	860	8.0	.5	.90	11.3	0	0	250
MAR										
22...	0845	4000	890	7.9	1.5	.40	12.6	2	--	260
APR										
19...	1500	30100	770	8.1	5.5	18	13.1	ND	ND	240
MAY										
14...	1100	42200	750	8.1	9.0	5.0	12.7	K8	K7	240
JUN										
25...	1100	42100	770	8.1	18.0	4.8	8.7	6	.8	230
JUL										
17...	1100	41800	760	8.4	20.5	1.8	7.8	K6	K6	230
AUG										
27...	1215	28000	680	8.3	24.0	1.7	7.5	--	K6	240
SEP										
24...	1130	39000	810	8.7	21.0	.80	8.5	K2	K2	240

K Non-ideal colony count.
ND Not detected.

06453000 MISSOURI RIVER AT FORT RANDALL DAM, SD--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)
OCT										
23...	88	59	22	71	39	2.0	4.8	--	--	150
NOV										
14...	89	57	21	67	38	1.9	4.8	--	--	140
DEC										
20...	80	56	22	73	40	2.1	5.0	--	--	150
JAN										
30...	97	61	23	70	38	1.9	4.9	--	--	150
FEB										
21...	100	62	23	76	39	2.1	5.0	--	--	150
MAR										
22...	100	67	23	69	36	1.9	4.9	--	--	160
APR										
19...	90	58	23	69	38	1.9	5.0	--	--	150
MAY										
14...	89	61	21	69	38	1.9	4.7	--	--	150
JUN										
25...	80	54	23	72	40	2.1	4.8	--	--	150
JUL										
17...	68	55	22	76	40	2.2	14	--	--	160
AUG										
27...	90	58	23	82	54	2.3	5.1	--	--	150
SEP										
24...	78	59	22	77	52	2.2	5.3	--	--	160

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)
OCT									
23...	210	9.8	.4	6.7	469	474	.64	66500	.12
NOV									
14...	200	9.2	.4	6.7	464	450	.63	55000	.12
DEC									
20...	220	9.6	.4	7.0	476	483	.65	37700	.16
JAN									
30...	240	5.6	.5	6.9	505	502	.69	48100	.15
FEB									
21...	230	8.1	.5	7.3	502	502	.68	41100	.12
MAR									
22...	220	12	.5	7.5	497	500	.68	5370	.15
APR									
19...	220	9.9	.5	7.0	491	483	.67	39900	.12
MAY									
14...	220	9.8	.5	9.1	482	485	.66	54900	.05
JUN									
25...	230	11	.5	5.2	497	491	.68	56500	.04
JUL									
17...	230	16	.4	5.3	509	515	.69	57400	.05
AUG									
27...	240	10	.5	5.3	507	514	.69	38300	.05
SEP									
24...	210	11	.5	6.3	506	488	.69	53300	.09

06453000 MISSOURI RIVER AT FORT RANDALL DAM, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITROGEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITROGEN, NH4 + ORG. SUSP. TOTAL (MG/L AS N) (00624)	NITROGEN, TOTAL (MG/L AS N) (00600)	NITROGEN, TOTAL (MG/L AS NO3) (71887)	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS, TOTAL (MG/L AS P) (00665)
OCT									
23...	3.6	3.6	.02	.36	3.2	3.7	16	.01	.01
NOV									
14...	.21	.20	.01	.21	.00	.33	1.5	.00	.02
DEC									
20...	.37	.35	.02	.34	.03	.53	2.3	.02	.05
JAN									
30...	.28	.24	.04	.14	.14	.43	1.9	.01	.02
FEB									
21...	.29	.24	.05	.13	.16	.41	1.8	.02	.02
MAR									
22...	.19	.13	.06	.14	.05	.34	1.5	.00	.01
APR									
19...	.25	.20	.05	.19	.06	.37	1.6	.01	.02
MAY									
14...	.23	.21	.02	.14	.09	.28	1.2	.01	.02
JUN									
25...	.20	.17	.03	.01	.19	.24	1.1	.01	.02
JUL									
17...	.27	.19	.08	.27	.00	.32	1.4	.02	.02
AUG									
27...	.13	.13	.00	.13	.00	.18	.80	.01	.01
SEP									
24...	.52	.51	.01	.35	.17	.61	2.7	.02	.03

DATE	TIME	CARBON, ORGANIC DISSOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUSPENDED TOTAL (MG/L AS C) (00689)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	PHYTOPLANKTON, TOTAL (CELLS PER ML) (60050)	PERIPHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M (00573)	PERIPHYTON BIOMASS ASH WEIGHT G/SQ M (00572)	SEDIMENT, SUSPENDED (MG/L) (80154)	SEDIMENT DISCHARGE, SUSPENDED (T/DAY) (80155)
NOV									
14...	1100	--	--	3.4	--	--	--	77	9130
DEC									
20...	0800	--	--	3.2	0	--	--	100	7910
FEB									
21...	1200	--	--	3.9	--	--	--	41	3350
MAR									
22...	0845	--	--	4.4	390	--	--	62	670
MAY									
14...	1100	--	--	4.7	1300	--	--	45	5130
JUN									
25...	1100	--	--	3.1	530	--	--	48	5460
JUL									
17...	1100	3.7	.2	--	190	--	--	37	4180
AUG									
27...	1215	--	--	9.0	130000	--	--	--	--
SEP									
24...	1130	--	--	3.6	1100	--	--	37	3900

DATE	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM (70337)	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)	SED. SUSP. FALL DIAM. % FINER THAN .250 MM (70344)	SED. SUSP. FALL DIAM. % FINER THAN .500 MM (70345)
NOV								
14...	95	--	--	--	--	--	--	--
DEC								
20...	78	--	--	--	--	--	--	--
FEB								
21...	94	--	--	--	--	--	--	--
MAR								
22...	96	--	--	--	--	--	--	--
MAY								
14...	76	--	--	--	--	--	--	--
JUN								
25...	88	--	--	--	--	--	--	--
JUL								
17...	78	--	--	--	--	--	--	--
AUG								
27...	--	--	--	--	--	--	--	--
SEP								
24...	77	--	--	--	--	--	--	--

06453000 MISSOURI RIVER AT FORT RANDALL DAM, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	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)
OCT											
23...	1200	2	2	1	0	1	0	0	0	0	0
JAN											
30...	1100	2	2	1	0	1	10	0	10	2	0
APR											
19...	1500	2	2	23	0	23	0	0	0	<3	0
JUL											
17...	1100	2	2	<1	0	<1	0	0	0	<3	0

DATE	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)	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)
OCT											
23...	0	4	0	4	140	20	20	0	20	20	20
JAN											
30...	<3	5	2	3	140	0	6	3	3	40	0
APR											
19...	<3	5	3	2	220	<0	17	11	6	20	20
JUL											
17...	<3	3	3	0	30	10	4	4	0	20	10

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	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)	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)
OCT										
23...	0	.0	.0	.0	2	0	2	10	0	10
JAN										
30...	40	.0	.0	.0	1	0	1	20	10	6
APR										
19...	2	.0	.0	.0	1	0	1	20	20	<3
JUL										
17...	10	.1	.0	.1	1	0	1	10	7	<3

< Less than.

06453000 MISSOURI RIVER AT FORT RANDALL DAM, SD--Continued

PHYTOPLANKTON ANALYSES

DATE	AUG 29,78		SEP 25,78		DEC 20,78		MAR 22,79		MAY 14,79	
TIME	1500		1100		0800		0845		1100	
TOTAL CELLS/ML	110		960		0		390		1300	
DIVERSITY: DIVISION	1.5		1.2		0.0		0.5		0.7	
.CLASS	1.5		1.5		0.0		0.5		1.1	
..ORDER	1.6		2.0		0.0		1.4		1.2	
...FAMILY	1.9		2.0		0.0		1.4		1.2	
....GENUS	1.9		2.0		0.0		1.6		1.2	
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	--	-	--	-	--	-	--	-	--	-
...MICRACTINIACEAE										
....GOLENKINIA	--	-	--	-	--	-	--	-	--	-
...OOCYSTACEAE										
....ANKISTRODESMUS	--	-	--	-	--	-	--	-	42	3
....DICTYOSPHAERIUM	--	-	--	-	--	-	--	-	--	-
....KIRCHNERIELLA	--	-	--	-	--	-	--	-	--	-
....OOCYSTIS	--	-	--	-	--	-	--	-	--	-
....QUADRIGULA	7	6	--	-	--	-	--	-	--	-
...SCENEDESMACEAE										
....ACTINASTRUM	--	-	--	-	--	-	--	-	--	-
....CRUCIGENIA	21#	19	--	-	--	-	--	-	--	-
....SCENEDESMUS	--	-	--	-	--	-	--	-	--	-
....TETRASTRUM	--	-	--	-	--	-	--	-	--	-
..TETRASPORALES										
...COCCOMYXACEAE										
....ELAKATOTHRIX	--	-	--	-	--	-	--	-	28	2
...PALMELLACEAE										
....SPHAEROCYSTIS	--	-	--	-	--	-	--	-	--	-
..VOLVOCALES										
...CHLAMYDOMONADACEAE										
....CHLAMYDOMONAS	2	2	--	-	--	-	15	4	--	-
...PHACOTACEAE										
....PHACOTUS	--	-	14	1	--	-	--	-	--	-
....PTEROMONAS	--	-	--	-	--	-	--	-	--	-
CHRYSOPHYTA										
.BACILLARIOPHYCEAE										
..CENTRALES										
...COSCINODISCACEAE										
....CYCLOTELLA	2	2	28	3	--	-	140#	36	--	-
....MELOSIRA	--	-	--	-	--	-	--	-	--	-
....STEPHANODISCUS	2	2	--	-	--	-	--	-	--	-
..PENNALES										
...CYMBELLACEAE										
....CYMBELLA	2	2	--	-	--	-	--	-	--	-
...FRAGILARIACEAE										
....ASTERIONELLA	--	-	--	-	--	-	25	6	1000#	79
....FRAGILARIA	--	-	--	-	--	-	200#	50	--	-
...NITZSCHIACEAE										
....NITZSCHIA	2	2	42	4	--	-	--	-	--	-
.CHRYSOPHYCEAE										
..CHRYSOMONADALES										
...OCHROMONADACEAE										
....OCHROMONAS	--	-	350#	36	--	-	--	-	130	10
CRYPTOPHYTA (CRYPTOMONADS)										
.CRYPTOPHYCEAE										
..CRYPTOMONADALES										
...CRYPTOCHRYSIDACEAE										
....CHROOMONAS	--	-	--	-	--	-	--	-	--	-
...CRYPTOMONADACEAE										
....CRYPTOMONAS	9	8	28	3	--	-	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)										
.CYANOPHYCEAE										
..CHROOCOCCALES										
...CHROOCOCCACEAE										
....AGMENELLUM	--	-	110	12	--	-	--	-	--	-
....ANACYSTIS	68#	59	--	-	--	-	--	-	42	3
..HORMOGONALES										
...OSCILLATORIACEAE										
....OSCILLATORIA	--	-	390#	41	--	-	--	-	--	-

06453000 MISSOURI RIVER AT FORT RANDALL DAM, SD--Continued

PHYTOPLANKTON ANALYSES

DATE	AUG 29,78	SEP 25,78	DEC 20,78	MAR 22,79	MAY 14,79
TIME	1500	1100	0800	0845	1100
TOTAL CELLS/ML	110	960	0	390	1300
DIVERSITY: DIVISION	1.5	1.2	0.0	0.5	0.7
.CLASS	1.5	1.5	0.0	0.5	1.1
..ORDER	1.6	2.0	0.0	1.4	1.2
...FAMILY	1.9	2.0	0.0	1.4	1.2
....GENUS	1.9	2.0	0.0	1.6	1.2

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	--	-	--	-	--	-	--	-	--	-
....TRACHELOMONAS	--	-	--	-	--	-	15	4	--	-
PYRRHOPHYTA (FIRE ALGAE)										
.DINOPHYCEAE										
..PERIDINIALES										
...GLENODINIACEAE										
....GLENODINIUM	--	-	--	-	--	-	--	-	28	2

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

DATE	JUN 25,79	JUL 17,79	AUG 27,79	SEP 24,79
TIME	1100	1100	1215	1130
TOTAL CELLS/ML	530	190	130000	1100
DIVERSITY: DIVISION	0.9	1.9	1.7	1.3
.CLASS	0.9	1.9	1.7	1.3
..ORDER	1.0	2.0	2.0	1.5
...FAMILY	1.0	2.3	2.2	1.5
....GENUS	1.0	2.3	3.2	1.5

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)								
.CHLOROPHYCEAE								
..CHLOROCOCCALES								
...CHARACIACEAE								
....SCHROEDERIA	--	-	--	-	--	-	14	1
...MICRACTINIACEAE								
....GOLENKINIA	--	-	--	-	720	1	--	-
...OOCYSTACEAE								
....ANKISTRODESMUS	--	-	--	-	1100	1	--	-
....DICTYOSPHAERIUM	--	-	--	-	5400	4	--	-
....KIRCHNERIELLA	--	-	--	-	720	1	--	-
....OOCYSTIS	--	-	14	8	1400	1	--	-
....QUADRIGULA	--	-	--	-	--	-	--	-
...SCENEDESMACEAE								
....ACTINASTRUM	--	-	--	-	8600	7	--	-
....CRUCIGENIA	--	-	--	-	2200	2	--	-
....SCENEDESMUS	--	-	--	-	3600	3	--	-
....TETRASTRUM	--	-	--	-	3900	3	--	-
..TETRASPORALES								
...COCCOMYXACEAE								
....ELAKATOTHRIX	--	-	--	-	--	-	--	-
...PALMELLACEAE								
....SPHAEROCYSTIS	--	-	--	-	--	-	670#	59
..VOLVOCALES								
...CHLAMYDOMONADACEAE								
....CHLAMYDOMONAS	370#	71	14	8	--	-	--	-
...PHACOTACEAE								
....PHACOTUS	--	-	--	-	--	-	14	1
....PTEROMONAS	--	-	--	-	*	0	--	-
CHRYSOPHYTA								
.BACILLARIOPHYCEAE								
..CENTRALES								
...COSCINODISCACEAE								
....CYCLOTELLA	13	2	--	-	23000#	18	--	-
....MELOSIRA	--	-	--	-	7900	6	200#	18
....STEPHANODISCUS	--	-	--	-	--	-	--	-
..PENNALES								
...CYMBELLACEAE								
....CYMBELLA	--	-	--	-	--	-	--	-
...FRAGILARIACEAE								
....ASTERIONELLA	140#	27	--	-	--	-	--	-

06453000 MISSOURI RIVER AT FORT RANDALL DAM, SD--Continued

PHYTOPLANKTON ANALYSES

DATE	JUN 25,79	JUL 17,79	AUG 27,79	SEP 24,79
TIME	1100	1100	1215	1130
TOTAL CELLS/ML	530	190	130000	1100
DIVERSITY: DIVISION	0.9	1.9	1.7	1.3
.CLASS	0.9	1.9	1.7	1.3
..ORDER	1.0	2.0	2.0	1.5
...FAMILY	1.0	2.3	2.2	1.5
....GENUS	1.0	2.3	3.2	1.5

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
....FRAGILARIA	--	-	--	-	--	-	--	-
...NITZSCHIACEAE								
....NITZSCHIA	--	-	--	-	3900	3	--	-
.CHRYSOPHYCEAE								
..CHRYSOMONADALES								
...OCHROMONADACEAE								
....OCHROMONAS	--	-	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)								
.CRYPTOPHYCEAE								
..CRYPTOMONADALES								
...CRYPTOCHRYSIDACEAE								
....CHROOMONAS	--	-	57#	31	--	-	--	-
...CRYPTOMONADACEAE								
....CRYPTOMONAS	--	-	14	8	*	0	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)								
.CYANOPHYCEAE								
..CHROOCOCCALES								
...CHROOCOCCACEAE								
....AGMENELLUM	--	-	--	-	27000#	22	230#	20
....ANACYSTIS	--	-	29#	15	30000#	24	--	-
..HORMOGONALES								
...OSCILLATORIACEAE								
....OSCILLATORIA	--	-	--	-	2900	2	--	-
EUGLENOPHYTA (EUGLENOIDS)								
.EUGLENOPHYCEAE								
..EUGLENALES								
...EUGLENACEAE								
....EUGLENA	--	-	--	-	1100	1	--	-
....TRACHELOMONAS	--	-	57#	31	2500	2	--	-
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%

06464500 KEYA PAHA RIVER AT WEWELA, SD

LOCATION.--Lat 43°01'42", long 99°46'45", in SE¼ sec.24, T.95 N., R.76 W., Tripp County, Hydrologic Unit 10150006, on left bank 13 ft (4 m) downstream from bridge on U.S. Highway 183, 1.0 mi (1.6 km) north of Wewela, 4.5 mi (7.2 km) upstream from Holt Creek, and 11.5 mi (18.5 km) downstream from Lost Creek.

DRAINAGE AREA.--1,070 mi² (2,770 km²), approximately.

PERIOD OF RECORD.--November 1937 to September 1940, October 1947 to current year. Monthly discharge only for October 1947, published in WSP 1309.

GAGE.--Water-stage recorder. Datum of gage is 2,049.78 ft (624.773 m) National Geodetic Vertical Datum of 1929. Prior to June 21, 1957, nonrecording gage at site 13 ft (4 m) upstream at same datum.

REMARKS.--Records good except those for winter periods, which are poor. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--34 years (water years 1939-40, 1948-79), 68.3 ft³/s (1.934 m³/s), 49,480 acre-ft/yr (61.0 hm³/s); median of yearly mean discharges, 58 ft³/s (1.64 m³/s), 42,000 acre-ft/yr (52 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,430 ft³/s (154 m³/s) Mar. 31, 1952, gage height, 13.08 ft (3.987 m); maximum gage height, 13.5 ft (4.11 m) Mar. 25, 1950, from floodmark (backwater from ice); no flow Jan. 10 to Feb. 15, 1949, Aug. 19 to Sept. 14, 1976.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 250 ft³/s (7.08 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. 14	1245	ice jam		*4.39	1.338	June 21	0345	485	13.7	3.50	1.067
Mar. 24	1345	485	13.7	3.53	1.076	June 26	1130	260	7.36	2.62	0.799
June 17	0645	*707	20.0	4.11	1.253						

Minimum daily discharge, 3.1 ft³/s (0.088 m³/s) Jan. 13, 14, 23-26, Jan. 30 to Feb. 2.

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	27	25	3.6	3.1	11	172	74	54	127	54	21
2	23	27	24	3.8	3.1	12	157	72	51	107	49	21
3	24	27	24	3.8	3.2	14	171	70	51	86	44	19
4	25	27	25	3.8	3.3	15	171	67	51	77	39	18
5	25	26	25	3.7	3.5	16	168	65	50	75	36	18
6	25	27	24	3.8	3.8	18	159	60	45	77	34	18
7	26	27	23	3.8	4.0	20	151	61	42	77	31	18
8	26	28	23	3.9	3.9	30	150	70	40	74	30	25
9	26	28	23	3.9	4.0	50	147	91	44	69	30	29
10	26	28	24	3.7	4.3	80	143	115	50	66	29	23
11	25	28	25	3.5	4.5	95	148	128	48	59	28	21
12	25	27	25	3.3	4.8	90	188	129	47	55	29	24
13	26	27	25	3.1	5.0	80	237	128	42	53	28	25
14	26	25	26	3.1	5.0	70	248	120	39	53	28	24
15	26	26	25	3.3	4.8	60	244	105	36	57	27	23
16	26	27	25	3.5	5.0	70	232	95	143	56	28	22
17	26	27	24	3.5	5.2	100	207	86	572	55	26	21
18	26	26	24	3.5	5.6	200	189	84	325	53	26	20
19	26	25	24	3.5	6.0	276	159	82	197	50	27	19
20	26	24	24	3.6	6.2	259	140	81	160	48	28	18
21	26	25	24	3.5	6.0	311	129	82	301	49	29	18
22	26	25	24	3.2	6.0	349	122	76	154	51	29	17
23	26	26	24	3.1	6.0	373	115	72	135	60	28	17
24	27	26	23	3.1	5.8	376	111	68	164	75	27	17
25	27	27	23	3.1	6.0	362	102	70	158	66	26	17
26	26	26	23	3.1	7.0	324	95	67	185	57	26	16
27	27	25	22	3.2	8.0	273	91	65	136	55	25	16
28	27	25	15	3.2	9.0	199	86	61	168	57	25	16
29	27	26	7.0	3.2	---	204	84	60	163	81	25	17
30	27	25	5.0	3.1	---	194	80	62	149	75	24	17
31	27	---	3.5	3.1	---	182	---	60	---	60	23	---
TOTAL	800	790	680.5	106.6	142.1	4713	4596	2526	3800	2060	938	595
MEAN	25.8	26.3	22.0	3.44	5.08	152	153	81.5	127	66.5	30.3	19.8
MAX	27	28	26	3.9	9.0	376	248	129	572	127	54	29
MIN	23	24	3.5	3.1	3.1	11	80	60	36	48	23	16
AC-FT	1590	1570	1350	211	282	9350	9120	5010	7540	4090	1860	1180

CAL YR 1978 TOTAL 40109.5 MEAN 110 MAX 2500 MIN 3.5 AC-FT 79560
WTR YR 1979 TOTAL 21747.2 MEAN 59.6 MAX 572 MIN 3.1 AC-FT 43140

06467000 LEWIS AND CLARK LAKE NEAR YANKTON, SD

LOCATION.--Lat 42°50'56", long 97°28'54", in SW¼ sec.7, T.33 N., R.1 W., Cedar County, NE, Hydrologic Unit 10170101, in powerhouse of Gavins Point Dam on Missouri River, 3.75 mi (6.0 km) southwest of Yankton, 13.6 mi (21.9 km) upstream from James River, 32.5 mi (52.3 km) downstream from Niobrara River, and at mile 811.0 (1,304.9 km).

DRAINAGE AREA.--279,500 mi^2 (723,900 km^2), approximately.

PERIOD OF RECORD.--July 1955 to current year (monthend contents only). Prior to October 1955, published as Gavins Point Reservoir near Yankton.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to Dec. 9, 1955, recorder at temporary location on wall of intake structure unit 3.

REMARKS.--Reservoir is formed by earthfill dam; storage began in July 1955. Maximum capacity, 541,000 acre-ft (667 hm^3) below elevation 1,210.0 ft (368.81 m), top of spillway gates. Normal maximum, 477,000 acre-ft (588 hm^3) below elevation 1,208.0 ft (368.20 m). Inactive storage, 156,000 acre-ft (192 hm^3) below elevation 1,195.0 ft (364.24 m). Dead storage, 18,000 acre-ft (22.2 hm^3) below elevation 1,180.0 ft (359.66 m) crest of spillway. Figures given herein represent elevations at powerhouse and total contents adjusted for wind effect.

The spillway consists of 14 taintor gates, each 40 ft (12.2 m) wide by 30 ft (9.1 m) high; spillway capacity, 280,000 ft^3/s (7,930 m^3/s) at pool elevation 1,210.0 ft (368.81 m). Crest of spillway is at elevation 1,180.0 ft (359.66 m). Normal releases are through 3 power units, installation completed in January 1957; maximum release through power units is 35,000 ft^3/s (991 m^3/s) at pool elevation, 1,210.0 ft (368.81 m). Water is used for flood control, navigation, power, and incidental uses.

COOPERATION.--Elevations and contents furnished by Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 565,000 acre-ft (697 hm^3) Apr. 1, 1960, elevation, 1,210.7 ft (369.02 m), affected by wind; minimum since initial filling, 61,950 acre-ft (76.4 hm^3) Apr. 23, 1956, elevation, 1,188.1 ft (362.13 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 477,000 acre-ft (588 hm^3) Jan. 12, elevation, 1,208.8 ft (368.44 m); minimum, 345,000 acre-ft (425 hm^3) Feb. 26, elevation, 1,204.0 ft (366.98 m).

MONTHEND ELEVATION, IN FEET NGVD, AND CONTENTS,
IN ACRE-FEET, AT 2400, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

Date	Elevation	Contents	Change in contents
Sept. 30	1207.7	447000	
Oct. 31	1208.1	459000	+12000
Nov. 30	1207.7	445000	-14000
Dec. 31	1206.9	423000	-22000
CAL YR 1978			-48000
Jan. 31	1207.7	447000	+24000
Feb. 28	1204.2	349000	-98000
Mar. 31	1204.7	364000	+15000
Apr. 30	1204.53	362000	-2000
May 31	1205.32	380000	+18000
June 30	1206.18	403000	+23000
July 31	1207.49	440000	+37000
Aug. 31	1207.75	448000	+8000
Sept. 30	1208.07	458000	+10000
WTR YR 1979			+11000

NOTE.--Reservoir frozen over Dec. 7 to Apr. 10.

06467500 MISSOURI RIVER AT YANKTON, SD

LOCATION.--Lat 42°51'58", long 97°23'37", in SW¼SW¼ sec.18, T.93 N., R.55 W., Yankton County, Hydrologic Unit 10170101, near left bank in downstream end of left pier of Meridian Highway Bridge on U.S. Highway 81, 5.2 mi (8.4 km) downstream from Gavins Point Dam, 6.0 mi (9.7 km) upstream from James River, and at mile 805.8 (1,296.5 km).

DRAINAGE AREA.--279,500 mi^2 (723,900 km^2), approximately.

PERIOD OF RECORD.--October 1930 to current year. Monthly discharge only for some periods, published in WSP 1309. Gage-height records collected at same site March 1873 to November 1886, March 1905 to May 1908 (fragmentary), August 1921 to date (except winter months prior to 1932), are contained in reports of the U.S. Weather Bureau.

GAGE.--Water-stage recorder. Datum of gage is 1,139.68 ft (347.374 m) National Geodetic Vertical Datum of 1929. Prior to Sept. 20, 1932, nonrecording gage, and Sept. 20, 1932, to Mar. 9, 1967, water-stage recorder at present site and at datum 20.0 ft (6.096 m) higher.

REMARKS.--Records good. Flow completely regulated by Lewis and Clark Lake 5.2 mi (8.4 km) upstream since July 1955 (see station 06467000). Many diversions for irrigation and water supply above station. Corps of Engineers gage-height telemeter at station. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--49 years, 26,350 ft^3/s (746.2 m^3/s), 19,090,000 acre-ft/yr (23.5 km^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 480,000 ft^3/s (13,600 m^3/s) Apr. 13, 1952; maximum gage height, 35.5 ft (10.82 m) Apr. 13, 14, 1952 (present datum); minimum daily discharge, 2,700 ft^3/s (76.5 m^3/s) Nov. 15, 16, 1940.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known, 50.5 ft (15.39 m) Apr. 5, 1881 (ice jam), present datum.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 53,700 ft^3/s (1,520 m^3/s) Oct. 12, gage height, 21.29 ft (6.489 m); minimum daily discharge, 9,310 ft^3/s (264 m^3/s) Mar. 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	51900	52800	49800	23000	22800	21500	20800	36800	41100	37300	37300	32700
2	51800	52900	46100	23000	23000	20000	21400	33800	41200	37200	37200	32900
3	51700	52900	42300	23000	23000	18800	23800	31500	41200	37200	37300	32900
4	51600	53100	38700	23000	23000	15000	25800	34500	41600	37200	37300	32900
5	51400	53000	33000	22900	23000	15000	27800	36800	42700	37100	37300	32700
6	51500	53000	30000	22900	23000	15000	29300	37000	43300	37000	37300	32500
7	51600	52200	27000	23000	23000	15000	29400	36900	43600	36800	37300	32500
8	51700	52800	24000	23000	23000	15000	29300	36900	43500	36700	37300	32400
9	52700	52900	23000	23000	22900	15000	29500	37000	43500	36700	37600	32300
10	53400	52800	23000	21700	23000	15000	30100	36900	43600	36700	37400	32400
11	53400	52600	22900	17000	23000	15000	30700	36900	43500	37800	37300	33000
12	53500	52900	23000	17000	23000	15000	29900	37000	43500	39400	37300	33000
13	53300	52800	22900	17000	23000	16000	29100	37000	43700	39200	37300	34200
14	53300	52700	22900	17000	23000	15800	29200	36800	43900	39200	37400	36600
15	53300	52800	23000	17000	23000	15800	29300	37700	43700	39200	37400	37100
16	53200	52900	23000	17000	23000	15700	29500	39500	42500	39400	37400	37300
17	53200	52700	23000	17000	23000	15700	28600	40200	41800	39500	37400	37400
18	53200	52000	23000	17000	23000	15700	26600	40200	41800	39700	37500	37600
19	53200	52900	23000	17000	23000	13400	27300	40200	41500	38400	37800	37500
20	53200	52900	23000	18000	23000	9310	28800	40200	40000	36600	37800	38000
21	53200	53000	23000	18000	23000	11400	29000	40200	39500	36700	36000	38500
22	53200	53000	23000	18000	23000	11500	28900	40200	39000	36800	33000	39000
23	53000	52800	23000	18500	23000	11300	28900	40700	37300	36800	32400	39000
24	53000	52800	23000	20000	23000	11300	29600	40800	37200	36800	31000	39000
25	53000	52200	23000	21000	23000	11400	30700	40900	37100	36900	31200	39000
26	53000	53000	23000	22000	22900	12200	31100	40900	37100	36800	31100	40800
27	53000	53000	23000	22900	22900	14600	32100	41000	37100	37000	31100	40700
28	53000	53100	23000	22900	22900	16700	33000	41200	37100	36900	31100	40000
29	53000	53100	23000	22800	---	19300	34100	41200	37100	37100	31700	39600
30	53200	52400	23000	22800	---	20800	35800	41300	37200	37100	32800	40000
31	52900	---	23000	22800	---	20800	---	41100	---	37100	32700	---
TOTAL	1635600	1584000	819600	631200	643400	474010	869400	1193300	1226900	1164300	1102000	1083500
MEAN	52760	52800	26440	20360	22980	15290	28980	38490	40900	37560	35550	36120
MAX	53500	53100	49800	23000	23000	21500	35800	41300	43900	39700	37800	40800
MIN	51400	52000	22900	17000	22800	9310	20800	31500	37100	36600	31000	32300
AC-FT	3244000	3142000	1626000	1252000	1276000	940200	1724000	2367000	2434000	2309000	2186000	2149000

CAL YR 1978 TOTAL 12953000 MEAN 35490 MAX 53500 MIN 12300 AC-FT 25690000
WTR YR 1979 TOTAL 12427210 MEAN 34050 MAX 53500 MIN 9310 AC-FT 24650000

06471000 JAMES RIVER AT COLUMBIA, SD

LOCATION.--Lat 45°37'05", long 98°19'30", in NE¼NW¼ sec.29, T.125 N., R.62 W., Brown County, Hydrologic Unit 10160003, on left bank 10 ft (3 m) downstream from highway bridge, 0.8 mi (1.3 km) northwest of Columbia, 2.4 mi (3.9 km) upstream from Chicago and North Western Transportation Company bridge, 3.6 mi (5.8 km) upstream from Elm River, and 9.4 mi (15.1 km) downstream from Columbia Road Dam.

DRAINAGE AREA.--7,050 mi^2 (18,300 km^2), approximately, of which about 3,000 mi^2 (7,770 km^2) is probably noncontributing.

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Datum of gage is 1,275.01 ft (388.623 m) National Geodetic Vertical Datum of 1929. Prior to Oct. 5, 1957, nonrecording gage at same site and datum.

REMARKS.--Records fair, except those for winter periods or periods of backwater from Elm River, which are poor. Flow regulated by Arrowwood and Jim Lakes, and Jamestown Reservoir, combined capacity, 246,000 acre-ft (303 hm^3), the largest of which is Jamestown Reservoir, capacity, 229,470 acre-ft (283 hm^3), 168 mi (270 km) upstream since May 1953.

AVERAGE DISCHARGE.--34 years, 110 ft^3/s (3.115 m^3/s), 79,700 acre-ft/yr (98.3 hm^3/yr); median of yearly mean discharges, 64 ft^3/s (1.81 m^3/s), 46,400 acre-ft/yr (57 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,420 ft^3/s (153 m^3/s) May 24, 25, 1950, gage height, 16.89 ft (5.148 m), from graph based on gage readings; maximum gage height, 17.09 ft (5.209 m) Apr. 22, 1969; maximum daily reverse flow, 1,860 ft^3/s (52.7 m^3/s) Apr. 8, 1952, backwater from Elm River.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,340 ft^3/s (66.3 m^3/s) May 3, gage height, 16.15 ft (4.923 m); maximum daily reverse flow, 295 ft^3/s (8.35 m^3/s) Apr. 20 (backwater from Elm River).

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	49	20	.12	.00	.00	43	2000	895	483	375	194
2	64	49	15	.06	.00	.00	42	2170	868	467	373	169
3	65	50	13	.03	.00	.00	41	2310	852	445	370	146
4	62	50	12	.02	.00	.00	40	2310	834	428	366	131
5	61	50	12	.00	.00	.00	45	2240	814	417	364	122
6	58	49	11	.00	.00	.00	50	2170	794	397	360	117
7	56	49	11	.00	.00	.00	80	2070	773	377	354	115
8	57	50	11	.00	.00	.00	100	1970	758	365	351	115
9	54	50	10	.00	.00	.00	115	1880	736	357	343	115
10	54	52	10	.00	.00	.00	130	1880	713	341	333	115
11	54	53	11	.00	.00	.00	140	1790	696	331	317	117
12	51	56	11	.00	.00	.00	150	1660	667	324	293	117
13	52	56	12	.00	.00	.00	140	1560	649	318	275	118
14	51	48	12	.00	.00	.00	110	1520	620	320	254	119
15	52	53	13	.00	.00	.00	40	1450	610	318	234	120
16	51	51	13	.00	.00	.00	-60	1350	594	318	222	120
17	51	48	14	.00	.00	.00	-155	1250	584	321	207	120
18	51	43	14	.00	.00	.00	-235	1220	562	326	180	118
19	51	36	14	.00	.00	1.0	-290	1200	582	323	157	118
20	51	30	15	.00	.00	40	-295	1180	614	321	150	120
21	50	31	16	.00	.00	60	-260	1160	625	320	160	122
22	49	32	16	.00	.00	70	-140	1140	631	324	158	133
23	48	32	15	.00	.00	68	180	1140	625	328	149	141
24	48	32	12	.00	.00	65	720	1100	612	347	171	145
25	48	32	8.0	.00	.00	60	1250	1040	596	360	202	149
26	48	33	4.5	.00	.00	52	1270	1020	574	373	201	151
27	48	33	2.5	.00	.00	50	1380	991	553	388	200	152
28	48	33	1.3	.00	.00	48	1520	969	536	383	204	152
29	49	34	.70	.00	---	47	1790	945	518	382	204	153
30	49	27	.40	.00	---	45	1960	927	501	381	204	154
31	48	---	.20	.00	---	44	---	911	---	377	203	---
TOTAL	1643	1291	330.60	.23	.00	650.00	9901	46523	19986	11260	7934	3978
MEAN	53.0	43.0	10.7	.007	.000	21.0	330	1501	666	363	256	133
MAX	65	56	20	.12	.00	70	1960	2310	895	483	375	194
MIN	48	27	.20	.00	.00	.00	-295	911	501	318	149	115
AC-FT	3260	2560	656	.5	.00	1290	19640	92280	39640	22330	15740	7890

CAL YR 1978 TOTAL 52485.30 MEAN 144 MAX 1170 MIN -980 AC-FT 104100
WTR YR 1979 TOTAL 103496.83 MEAN 284 MAX 2310 MIN -295 AC-FT 205300

06471000 JAMES RIVER AT COLUMBIA, SD--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1949-64, 1967 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1966 to current year.
WATER TEMPERATURES: October 1966 to September 1978.

REMARKS.--No flow Jan. 5 to Mar. 18.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 2,500 micromhos Mar. 1, 1974, Jan. 27-29, Jan. 31, 1979; minimum daily, 240 micromhos Mar. 17, 1972.
WATER TEMPERATURES: Maximum daily, 32.0°C June 29, July 10, 1970; minimum daily, 0.0°C on many days during winter periods.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 2,500 micromhos Jan. 27-29, 31; minimum daily, 350 micromhos Apr. 29.

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)
OCT										
12...	1050	51	790	8.5	11.0	--	--	--	--	270
NOV										
15...	1645	54	970	8.2	--	--	--	--	--	340
DEC										
19...	1630	14	1360	7.8	.5	--	--	--	--	430
APR										
13...	0900	139	1040	8.1	.0	2.8	10.7	240	K50	410
MAY										
23...	1130	1140	430	8.1	14.5	--	10.5	K4	ND	170
JUN										
12...	1700	661	620	7.4	22.0	2.0	8.0	10	K7	230
JUL										
18...	1300	327	680	7.7	23.5	1.0	5.3	220	ND	220
AUG										
15...	0945	235	650	7.9	17.0	1.3	6.5	60	80	280
SEP										
12...	1100	117	690	7.6	7.6	1.3	--	280	190	--

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)
OCT										
12...	6	53	33	76	37	2.0	14	320	0	260
NOV										
15...	41	72	38	84	34	2.0	17	360	0	300
DEC										
19...	48	83	53	110	35	2.3	18	460	0	380
APR										
13...	99	83	49	94	32	2.0	17	--	--	310
MAY										
23...	40	40	--	23	21	.8	--	--	--	--
JUN										
12...	40	54	23	39	26	1.1	13	--	--	190
JUL										
18...	0	47	24	47	32	1.4	3.7	--	--	240
AUG										
15...	29	67	27	53	39	1.4	9.5	--	--	250
SEP										
12...	--	--	--	--	--	--	--	--	--	260

K Non-ideal colony count.
ND Not detected.

06471000 JAMES RIVER AT COLUMBIA, SD--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, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)
OCT 12...	170	29	.3	11	--	545	.74	75.6	--	.01
NOV 15...	190	34	.2	11	--	624	.85	91.0	--	.04
DEC 19...	250	44	.2	18	--	805	1.09	30.6	--	.25
APR 13...	230	42	.2	16	748	718	1.02	281	.21	--
MAY 23...	68	--	--	--	275	255	.37	846	--	--
JUN 12...	100	17	.2	6.0	388	366	.53	692	.02	--
JUL 18...	63	15	.2	18	417	363	.57	368	.01	--
AUG 15...	88	14	.2	23	405	432	.55	257	.00	--
SEP 12...	82	20	.2	--	430	--	.58	136	.14	.13

DATE	NITRO-GEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, AMMONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN, NH4 + ORG. SUSP. TOTAL (MG/L AS N) (00624)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	BORON, DIS-SOLVED (UG/L AS B) (01020)
OCT 12...	--	--	--	--	--	--	--	.18	.20	240
NOV 15...	--	--	--	--	--	--	--	.08	.08	280
DEC 19...	--	--	--	--	--	--	--	.13	.13	310
APR 13...	2.4	1.6	.83	1.5	.90	2.6	12	.14	.30	--
MAY 23...	--	.77	--	--	.15	.83	3.7	--	--	--
JUN 12...	.87	.84	.03	.87	.00	.89	3.9	.27	.27	--
JUL 18...	1.0	.96	.04	1.0	.00	1.0	4.5	.28	.40	--
AUG 15...	.94	.92	.02	.94	.00	.94	4.2	.04	.38	--
SEP 12...	1.5	1.2	.35	1.4	.10	1.6	7.3	.00	.43	--

DATE	TIME	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	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)
APR 13...	0900	4	4	0	0	<1	0	0	0	<3	0
JUL 18...	1300	4	4	27	0	27	0	0	0	<3	0

DATE	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)	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)
APR 13...	<3	8	6	2	310	20	22	22	0	570	0
JUL 18...	<3	14	14	0	80	30	12	10	2	220	20

< Less than.

06471000 JAMES RIVER AT COLUMBIA, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	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)	SELENIUM, DISSOLVED (UG/L AS SE) (01145)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN) (01092)	ZINC, SUSPENDED RECOVERABLE (UG/L AS ZN) (01091)	ZINC, DISSOLVED (UG/L AS ZN) (01090)
APR										
13...	570	.3	.2	.1	0	0	0	30	30	<3
JUL										
18...	200	.8	.8	.0	0	0	0	40	40	<3

DATE	TIME	CARBON, ORGANIC DISSOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUSPENDED TOTAL (MG/L AS C) (00689)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	PHYTOPLANKTON, TOTAL (CELLS PER ML) (60050)	PERIPHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M (00573)	PERIPHYTON BIOMASS ASH WEIGHT G/SQ M (00572)	SEDIMENT, SUSPENDED (MG/L) (80154)	SEDIMENT DISCHARGE, SUSPENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
MAY										
23...	1130	--	--	11	610	--	--	39	120	87
JUN										
12...	1700	--	--	14	13	--	--	43	77	92
JUL										
18...	1300	82	.2	--	1000	--	--	30	26	93
AUG										
15...	0945	--	--	15	2000	--	--	35	22	88
SEP										
12...	1100	--	--	23	--	--	--	35	11	94

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS) (00061)	TEMPERATURE (DEG C) (00010)	OXYGEN, DISSOLVED (MG/L) (00300)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	PH (UNITS) (00400)
SEP						
12...	1030	117	18.5	3.3	690	7.6
12...	1215	117	18.5	3.8	690	7.7
12...	1415	117	18.5	4.5	690	7.8
12...	1710	117	19.0	5.8	700	7.8
12...	1925	117	18.5	6.1	690	7.9
12...	2110	117	17.5	5.9	690	7.9
12...	2300	117	17.0	5.4	700	7.9
13...	0100	118	17.0	5.0	700	7.9
13...	0305	118	16.5	4.6	700	7.8
13...	0500	118	15.0	4.4	720	7.7
13...	0715	118	14.5	4.2	710	7.8
13...	0930	118	14.0	4.2	720	7.9

< Less than.

06471000 JAMES RIVER AT COLUMBIA, SD--Continued

PHYTOPLANKTON ANALYSES

DATE	MAY 23,79	JUN 12,79	JUL 18,79	AUG 15,79
TIME	1130	1700	1300	0945
TOTAL CELLS/ML	610	13	1000	2000
DIVERSITY: DIVISION	1.4	0.0	1.5	1.3
.CLASS	1.4	0.0	1.5	1.3
..ORDER	1.6	0.0	1.7	1.4
...FAMILY	2.0	0.0	1.9	1.8
....GENUS	2.3	0.0	1.9	2.0

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)								
.CHLOROPHYCEAE								
..CHLOROCOCCALES								
...HYDRODICTYACEAE								
....PEDIASTRUM	--	-	--	-	--	-	100	5
...OOCYSTACEAE								
....ANKISTRODESMUS	13	2	13#	100	86	9	52	3
....SELENASTRUM	--	-	--	-	--	-	13	1
....WESTELLA	--	-	--	-	--	-	310#	16
...SCENEDESMACEAE								
....CRUCIGENIA	260#	43	--	-	--	-	--	-
....SCENEDESMUS	52	9	--	-	29	3	100	5
..VOLVOCALES								
...CHLAMYDOMONADACEAE								
....CHLAMYDOMONAS	13	2	--	-	--	-	13	1
..ZYGNEMATALES								
...DESMIDIACEAE								
....COSMARIUM	--	-	--	-	14	1	--	-
CHRYSOPHYTA								
.BACILLARIOPHYCEAE								
..CENTRALES								
...COSCINODISCACEAE								
....CYCLOTELLA	13	2	--	-	110	11	26	1
..PENNALES								
...ACHNANTHACEAE								
....COCCONEIS	--	-	--	-	--	-	13	1
...EUNOTIACEAE								
....EUNOTIA	--	-	--	-	14	1	--	-
...NITZSCHIACEAE								
....NITZSCHIA	64	11	--	-	43	4	26	1
CRYPTOPHYTA (CRYPTOMONADS)								
.CRYPTOPHYCEAE								
..CRYPTOMONADALES								
...CRYPTOCHRYSIDACEAE								
....CHROOMONAS	140#	23	--	-	14	1	--	-
...CRYPTOMONADACEAE								
....CRYPTOMONAS	52	9	--	-	43	4	52	3
CYANOPHYTA (BLUE-GREEN ALGAE)								
.CYANOPHYCEAE								
..CHROOCOCCALES								
...CHROOCOCCACEAE								
....ANACYSTIS	--	-	--	-	--	-	13	1
..HORMOGONALES								
...NOSTOCACEAE								
....ANABAENA	--	-	--	-	640#	64	--	-
...OSCILLATORIACEAE								
....OSCILLATORIA	--	-	--	-	--	-	1200#	63
EUGLENOPHYTA (EUGLENOIDS)								
.EUGLENOPHYCEAE								
..EUGLENALES								
...EUGLENACEAE								
....EUGLENA	--	-	--	-	--	-	13	1

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

06471000 JAMES RIVER AT COLUMBIA, SD--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	780	910	850	1070		---	1160	480	550	660	680	690
2	790	---	880	1230		---	1180	460	550	660	680	690
3	780	860	860	1010		---	1140	460	520	660	690	690
4	790	860	890	1400		---	1230	420	530	660	680	690
5	800	870	900	1410		---	1230	420	540	660	680	700
6	800	870	880	1550		---	1220	410	560	660	680	690
7	810	870	910	1490		---	1240	400	560	670	680	700
8	810	860	910	1670		---	1130	400	570	660	680	700
9	820	880	950	1090		---	1120	400	570	670	680	700
10	820	870	950	1560		---	1160	380	580	660	680	700
11	820	870	970	1900		---	1160	370	590	680	690	700
12	760	900	960	1100		---	1140	370	600	680	700	700
13	760	900	960	1430		---	1120	380	600	670	710	700
14	760	900	970	1850		---	1040	390	610	670	710	700
15	760	940	960	1480		---	970	400	630	680	720	700
16	770	940	1160	770		---	970	410	630	680	720	710
17	780	940	990	1700		---	930	390	630	700	730	710
18	770	920	1010	2050		---	930	400	640	700	730	710
19	780	940	1010	2250		1500	930	420	600	680	740	700
20	780	970	1000	2350		1500	900	420	580	700	720	710
21	790	960	1000	2450		1460	900	420	550	680	680	710
22	790	980	1000	2350		1360	830	420	560	680	700	720
23	800	980	1040	2450		1310	770	420	580	680	680	720
24	800	970	1040	2400		1300	790	430	590	690	680	720
25	800	980	1030	2050		1330	850	460	610	650	700	720
26	800	990	1080	940		1440	760	470	620	620	750	730
27	780	---	1080	2500		1340	610	480	630	630	700	730
28	820	1000	1100	2550		1200	500	490	640	630	690	730
29	820	990	1100	2550		1260	350	500	640	630	750	730
30	820	1020	1070	2050		1270	530	490	650	650	700	---
31	850	---	1120	2550		1280	---	500	---	650	700	---
MEAN	794	926	988	1780		1350	960	428	590	666	700	707

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	5.0	.0	.0		---	.0	7.0	---	25.0	22.0	
2	12.0	5.0	.0	.0		---	.0	8.0	---	25.0	23.0	
3	12.0	6.0	.0	.0		---	.0	7.0	---	26.0	23.0	
4	11.0	5.5	.0	.0		---	.0	8.0	---	24.0	22.0	
5	10.0	6.0	.0	.0		---	.0	10.0	---	23.0	23.0	
6	9.5	5.0	.0	.0		---	.0	8.0	---	23.0	24.0	
7	7.0	5.5	.0	.0		---	.0	8.0	---	21.0	24.0	
8	8.0	6.0	.0	.0		---	1.0	10.0	---	20.0	23.0	
9	12.0	7.0	.0	.0		---	.0	8.0	---	23.0	23.0	
10	10.0	6.0	.0	.0		---	.5	8.0	---	24.0	21.0	
11	11.0	5.0	.0	.0		---	1.0	5.0	15.0	24.0	20.0	
12	10.0	5.0	.0	.0		---	1.0	7.0	18.0	24.0	20.0	
13	10.0	4.0	.0	.0		---	.5	10.0	21.0	25.0	19.0	
14	8.0	3.0	2.0	.0		---	1.0	10.0	22.0	22.0	16.0	
15	8.0	.0	3.0	.0		---	3.0	11.0	21.0	20.0	18.0	
16	7.0	.0	2.5	.0		---	5.0	13.0	10.0	20.0	16.0	
17	8.0	1.0	1.0	.0		---	8.0	14.0	18.0	18.0	16.0	
18	6.0	.0	.0	.0		---	10.0	13.0	20.0	20.0	20.0	
19	7.0	.0	.0	.0		1.0	12.0	12.0	19.0	22.0	18.0	
20	9.0	.0	.5	.0		.0	11.0	13.0	17.0	23.0	20.0	
21	11.0	.0	1.0	.0		1.0	12.0	11.0	17.0	24.0	20.0	
22	10.0	.0	.0	.0		1.0	11.0	13.0	20.0	25.0	20.0	
23	7.0	.0	.0	.0		.0	11.0	11.0	17.0	25.0	18.0	
24	6.0	.0	.0	.0		.0	12.0	11.0	18.0	23.0	16.0	
25	7.0	.0	.5	.0		.0	9.0	14.0	20.0	25.0	17.0	
26	5.0	.5	.0	.0		.0	8.0	15.0	22.0	23.0	18.0	
27	7.0	.0	.0	.0		.0	9.0	15.0	22.0	23.0	18.0	
28	7.0	.0	.5	.0		.0	8.0	18.0	22.0	22.0	20.0	
29	5.0	.0	.0	.0		1.0	8.0	21.0	22.0	24.0	18.0	
30	8.0	.0	.0	.0		.0	7.0	16.0	24.0	24.0	20.0	
31	4.0	---	.0	.0		.5	---	15.0	---	22.0	22.0	
MEAN	8.5	2.5	.5	.0		.5	5.0	11.5	19.5	23.0	20.0	

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, ND, 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), 7,970 acre-ft/yr (9.8 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,930 ft^3/s (168 m^3/s) Apr. 11, 1969; maximum gage height, 16.05 ft (4.892 m) Apr. 11, 1969 (backwater from ice); no flow for long periods in each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,340 ft^3/s (66.3 m^3/s) at 1500 hours, Apr. 20, gage height, 11.32 ft (3.450 m); no other peak above base of 50 ft^3/s (1.416 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	.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

06471500 ELM RIVER AT WESTPORT, SD

LOCATION.--Lat 45°39'22", long 98°29'48", in SW¼NW¼ sec.12, T.125 N., R.64 W., Brown County, Hydrologic Unit 10160004, on right bank 12 ft (3.7 m) downstream from highway bridge, 0.5 mi (0.8 km) north of Westport, 0.7 mi (1.1 km) upstream from Chicago, Milwaukee, St. Paul and Pacific Railroad bridge, 9.3 mi (15.0 km) downstream from Willow Creek, and 30.4 mi (48.9 km) upstream from mouth.

DRAINAGE AREA.--1,680 mi² (4,350 km²), approximately, of which about 510 mi² (1,320 km²) is probably noncontributing.

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

GAGE.--Water-stage recorder. Datum of gage is 1,309.3 ft (399.07 m) National Geodetic Vertical Datum of 1929. Prior to Aug. 6, 1951, and Apr. 8 to Sept. 9, 1952, nonrecording gage 12 ft (3.7 m) upstream at same datum. Aug. 6, 1951, to Apr. 7, 1952, water-stage recorder at present site and datum.

REMARKS.--Records good except those for winter periods, which are poor. Flow regulated for Aberdeen municipal water supply by Elm Lake and other small reservoirs upstream, combined capacity, about 16,000 acre-ft (19.7 hm³). Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--34 years, 48.1 ft³/s (1.362 m³/s), 34,850 acre-ft/yr (43.0 hm³/yr); median of yearly mean discharges, 25 ft³/s (0.71 m³/s), 18,100 acre-ft/yr (22 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,600 ft³/s (357 m³/s) Apr. 10, 1969, gage height, 22.11 ft (6.739 m); no flow for many days in most years prior to 1960.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,350 ft³/s (94.9 m³/s) at 1000 hours, Apr. 21, gage height, 13.95 ft (4.252 m); no other peak above base of 100 ft³/s (2.83 m³/s); minimum daily discharge, 0.03 ft³/s (0.001 m³/s) Oct. 30.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Dec. 13-23, Apr. 18-27; stage-discharge relation affected by ice Nov. 19 to Dec. 12, Dec. 24 to Apr. 17)

4.0	0.10	4.3	3.2	4.6	16	5.5	120	8.0	748
4.1	.70	4.4	5.8	4.8	31	6.0	215	11.0	1,910
4.2	1.6	4.5	9.7	5.1	62	7.0	451	14.0	3,450

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	1.9	.08	7.0	2.6	2.4	3.2	4.0	230	34	16	8.6	1.3
2	1.7	1.4	6.5	2.5	2.3	3.3	5.5	196	31	40	8.9	1.3
3	1.7	3.8	5.8	2.4	2.2	3.5	8.0	179	30	41	11	1.3
4	1.5	4.5	5.5	2.4	2.1	3.6	11	188	28	38	13	1.4
5	2.2	4.5	5.2	2.3	2.0	3.8	15	171	26	31	12	1.5
6	1.2	4.1	4.8	2.4	2.2	3.9	22	157	24	25	10	1.5
7	.49	4.4	4.6	2.5	2.1	4.1	30	143	20	22	9.6	1.4
8	.63	4.4	4.3	2.7	2.0	4.2	45	134	15	20	9.1	1.5
9	.84	4.4	4.2	3.0	1.9	4.4	60	129	11	18	8.7	1.6
10	.83	4.4	4.0	3.3	1.9	4.5	85	124	8.5	17	6.5	1.7
11	1.0	4.1	4.3	3.5	1.9	4.6	120	129	7.0	14	5.3	2.1
12	1.2	4.4	3.9	3.9	1.8	4.8	180	131	6.2	11	4.6	1.9
13	.63	4.3	3.6	4.2	1.8	5.0	250	121	5.5	11	4.4	1.8
14	.70	6.3	3.4	4.5	1.9	5.2	350	107	8.5	12	3.3	1.7
15	.77	8.1	3.4	4.8	1.9	5.4	450	94	7.1	12	3.0	1.7
16	.92	8.1	3.4	5.0	2.0	5.5	650	88	5.9	9.9	2.8	1.6
17	.49	8.4	3.4	5.3	2.1	5.6	875	80	6.0	9.6	2.8	1.6
18	.70	8.5	3.4	5.4	2.2	5.6	1220	77	5.6	8.8	2.6	1.5
19	.63	8.2	3.5	5.6	2.2	5.4	1700	71	14	7.8	2.2	1.6
20	.49	7.5	3.6	5.8	2.3	5.1	2490	66	52	7.0	1.9	1.7
21	.56	7.6	3.5	5.6	2.3	4.8	3250	65	57	6.0	2.1	4.0
22	.77	7.8	3.6	5.3	2.4	4.4	2980	66	36	5.2	2.4	5.0
23	.43	8.0	3.6	4.5	2.5	4.2	2400	60	28	8.5	2.4	5.2
24	.25	8.2	2.6	4.0	2.6	3.9	1400	54	24	16	2.0	4.9
25	.92	8.4	2.8	4.4	2.7	3.6	691	49	21	9.3	1.6	4.9
26	.70	8.6	2.9	4.1	2.8	3.4	498	46	17	16	1.5	5.0
27	.20	8.8	3.0	3.7	2.9	3.3	400	44	14	17	1.4	5.2
28	.08	9.0	3.1	3.4	3.1	3.1	341	40	13	18	1.9	5.1
29	.05	9.0	3.0	3.1	---	3.0	294	39	11	15	1.5	8.6
30	.03	8.2	2.8	2.8	---	2.9	256	40	10	13	1.3	9.7
31	.05	---	2.7	2.6	---	2.9	---	39	---	9.7	1.3	---
TOTAL	24.56	187.48	121.4	117.6	62.5	130.2	21080.5	3157	576.3	504.8	149.7	89.3
MEAN	.79	6.25	3.92	3.79	2.23	4.20	703	102	19.2	16.3	4.83	2.98
MAX	2.2	9.0	7.0	5.8	3.1	5.6	3250	230	57	41	13	9.7
MIN	.03	.08	2.6	2.3	1.8	2.9	4.0	39	5.5	5.2	1.3	1.3
AC-FT	49	372	241	233	124	258	41810	6260	1140	1000	297	177

CAL YR 1978 TOTAL 43892.72 MEAN 120 MAX 3600 MIN .03 AC-FT 87060
WTR YR 1979 TOTAL 26201.34 MEAN 71.8 MAX 3250 MIN .03 AC-FT 51970

06471898 MOCCASIN CREEK NEAR WARNER, SD

LOCATION.--Lat 45°17'55", long 98°29'42", in NW¼NW¼NW¼ sec.13, T.121 N., R.64 W., Brown County, Hydrologic Unit 10160003, on right bank at downstream side of highway bridge, 40 ft (12 m) upstream from Chicago, Milwaukee, St. Paul and Pacific Railroad bridge, 21.5 mi (34.6 km) upstream from mouth, 2.0 mi (3.2 km) south of Warner and 11.3 mi (18.2 km) south of Aberdeen.

DRAINAGE AREA.--256 mi^2 (663 km^2).

PERIOD OF RECORD.--October 1976 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,274.35 ft (388.422 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records poor. Several observations of water temperature and specific conductance were made during the year.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 387 ft^3/s (11.0 m^3/s) Apr. 1, gage height, 7.66 ft (2.335 m); no flow for many days each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 87 ft^3/s (2.46 m^3/s) Apr. 15, gage height, 5.80 ft (1.768 m); no flow Dec. 31 to Mar. 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	2.9	1.4	.50	.00	.00	.00	1.7	18	5.4	9.1	7.5	3.1
2	2.9	1.5	.45	.00	.00	.00	1.9	18	5.0	7.9	8.6	2.9
3	2.8	1.5	.41	.00	.00	.00	2.0	17	5.1	7.4	8.3	2.7
4	2.8	1.5	.38	.00	.00	.00	2.1	17	5.2	6.9	7.9	2.5
5	2.8	1.6	.35	.00	.00	.00	2.3	17	4.9	6.2	7.8	2.4
6	2.6	1.5	.33	.00	.00	.00	2.5	17	4.8	5.9	9.3	2.4
7	2.4	1.5	.31	.00	.00	.00	2.7	19	4.7	5.6	9.9	2.4
8	2.2	1.5	.29	.00	.00	.00	3.5	20	4.4	5.5	10	2.4
9	2.2	1.5	.28	.00	.00	.00	5.0	20	4.2	5.2	9.0	2.4
10	2.1	1.5	.29	.00	.00	.00	8.0	21	4.1	5.0	8.0	2.4
11	2.0	1.5	.32	.00	.00	.00	15	21	3.7	4.8	6.5	2.5
12	1.9	1.4	.34	.00	.00	.00	22	21	3.4	4.9	5.3	2.5
13	1.7	1.4	.36	.00	.00	.00	35	21	3.0	4.7	4.5	2.5
14	1.7	1.3	.38	.00	.00	.00	60	20	2.6	4.6	3.8	2.5
15	1.7	1.3	.40	.00	.00	.00	86	17	2.3	4.4	3.1	2.5
16	1.6	1.2	.41	.00	.00	.00	81	14	2.1	3.9	2.7	2.4
17	1.5	1.1	.42	.00	.00	.00	75	14	2.0	3.6	2.7	2.4
18	1.6	.95	.43	.00	.00	.00	69	12	1.8	3.4	2.7	2.4
19	1.5	.70	.44	.00	.00	.00	64	11	7.4	3.5	2.8	2.4
20	1.5	.40	.46	.00	.00	.05	65	10	16	3.2	2.7	2.4
21	1.6	.41	.46	.00	.00	.15	53	9.2	16	2.9	3.6	2.3
22	1.6	.43	.43	.00	.00	.50	45	9.0	24	3.1	3.8	2.3
23	1.5	.45	.38	.00	.00	.60	39	8.4	36	3.0	4.1	2.3
24	1.4	.47	.30	.00	.00	.70	35	8.1	37	2.8	3.4	2.3
25	1.6	.50	.23	.00	.00	.80	32	7.3	33	2.6	2.7	2.3
26	1.5	.52	.18	.00	.00	.90	29	7.3	28	3.7	2.6	2.2
27	1.4	.54	.13	.00	.00	1.0	26	6.8	23	4.0	2.6	2.2
28	1.4	.57	.10	.00	.00	1.2	23	6.1	19	3.5	3.2	2.2
29	1.4	.60	.06	.00	---	1.3	22	6.2	15	3.5	3.3	2.2
30	1.4	.55	.02	.00	---	1.4	19	6.5	12	3.9	3.3	2.2
31	1.5	---	.00	.00	---	1.5	---	5.8	---	5.4	3.2	---
TOTAL	58.7	31.29	9.84	.00	.00	10.10	926.7	425.7	335.1	144.1	158.9	72.6
MEAN	1.89	1.04	.32	.000	.000	.33	30.9	13.7	11.2	4.65	5.13	2.42
MAX	2.9	1.6	.50	.00	.00	1.5	86	21	37	9.1	10	3.1
MIN	1.4	.40	.00	.00	.00	.00	1.7	5.8	1.8	2.6	2.6	2.2
AC-FT	116	62	20	.00	.00	20	1840	844	665	286	315	144

CAL YR 1978 TOTAL 7128.78 MEAN 19.5 MAX 369 MIN .00 AC-FT 14140
WTR YR 1979 TOTAL 2173.03 MEAN 5.95 MAX 86 MIN .00 AC-FT 4310

06473000 JAMES RIVER AT ASHTON, SD

LOCATION.--Lat 44°59'54", long 98°28'50", in NW¼NW¼NE¼ sec.36, T.118 N., R.64 W., Spink County, Hydrologic Unit 10160006, on right bank at downstream side of highway bridge, 0.9 mi (1.4 km) east of Ashton, 6.1 mi (9.8 km) upstream from Snake Creek, and 14.2 mi (22.8 km) upstream from Turtle Creek.

DRAINAGE AREA.--11,000 mi² (28,500 km²), approximately, of which about 4,190 mi² (10,900 km²) is probably noncontributing.

WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WSP 1209: 1947.

GAGE.--Water-stage recorder. Datum of gage is 1,244.4 ft (379.29 m) National Geodetic Vertical Datum of 1929. Prior to Nov. 26, 1957, nonrecording gage at present site and Nov. 26, 1957, to Oct. 7, 1974, water-stage recorder at site 900 ft (274 m) upstream all at present datum.

REMARKS.--Records good except those for winter periods, which are poor. Flow regulated by Arrowwood and Jim Lakes, and Jamestown Reservoir, combined capacity, 246,000 acre-ft (303 hm³), the largest of which is Jamestown Reservoir, capacity, 229,470 acre-ft (283 hm³), 285 mi (459 km) upstream since May 1953. Occasional backwater and reverse flow caused by Snake Creek during most years. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--34 years, 162 ft³/s (4.588 m³/s), 117,400 acre-ft/yr (145 hm³/yr); median of yearly mean discharges, 110 ft³/s (3.12 m³/s), 79,700 acre-ft/yr (98 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,680 ft³/s (161 m³/s) Apr. 24, 1969, gage height, 20.63 ft (6.288 m); maximum gage height, 21.17 ft (6.453 m) Apr. 13, 1969 (backwater from Snake Creek); maximum daily reverse flow, 2,100 ft³/s (59.5 m³/s) Apr. 9, 1969 (backwater from Snake Creek).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,060 ft³/s (58.3 m³/s) May 18, gage height, 14.86 ft (4.529 m); minimum daily, 0.70 ft³/s (0.020 m³/s) Feb. 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	48	48	41	10	.78	1.4	140	948	1320	920	578	250
2	47	48	40	9.0	.76	1.4	145	977	1280	916	564	244
3	48	48	40	7.0	.74	1.4	155	1000	1250	913	547	240
4	48	47	40	5.0	.72	1.4	160	1030	1230	910	537	235
5	49	47	40	4.0	.70	1.5	170	1120	1200	908	524	231
6	48	47	40	3.3	.73	1.5	180	1330	1180	911	516	226
7	47	47	39	2.8	.77	1.5	190	1600	1150	907	507	221
8	47	48	37	2.5	.83	1.5	200	1810	1120	907	504	216
9	47	50	36	2.2	.88	1.5	210	1910	1090	907	502	210
10	46	50	36	1.8	.92	1.6	220	1950	1070	903	493	207
11	46	49	36	1.5	.95	1.6	240	1960	1040	900	484	198
12	47	47	36	1.2	1.0	1.6	280	1950	1020	890	475	183
13	48	47	36	1.0	1.0	1.6	350	1950	993	884	469	173
14	51	44	35	.90	1.0	1.7	420	1970	974	877	461	167
15	51	44	35	.80	1.1	1.7	524	2000	954	864	452	158
16	51	44	34	.82	1.1	1.7	577	2010	935	852	443	153
17	53	44	33	.85	1.1	1.8	611	2040	908	838	437	150
18	51	44	33	.93	1.1	2.0	633	2040	885	814	431	147
19	51	44	32	1.0	1.2	3.0	648	2030	885	783	421	146
20	50	43	31	1.1	1.2	10	663	1990	896	755	413	145
21	49	44	30	1.0	1.2	20	681	1930	903	720	411	144
22	49	44	30	1.0	1.2	50	708	1880	905	688	392	141
23	49	43	28	.95	1.2	80	741	1830	910	658	378	140
24	48	43	27	.92	1.3	85	780	1770	916	644	362	138
25	49	43	26	.90	1.3	90	813	1700	919	623	342	136
26	48	43	26	.88	1.3	95	843	1630	920	634	323	135
27	48	43	25	.86	1.3	100	864	1560	921	643	306	135
28	48	43	23	.85	1.4	110	885	1500	924	628	315	134
29	47	43	22	.83	---	120	906	1430	924	620	293	135
30	48	41	18	.82	---	125	923	1400	922	614	269	136
31	48	---	14	.80	---	130	---	1360	---	597	258	---
TOTAL	1505	1360	999	67.51	28.78	1046.4	14860	51605	30544	24628	13407	5274
MEAN	48.5	45.3	32.2	2.18	1.03	33.8	495	1665	1018	794	432	176
MAX	53	50	41	10	1.4	130	923	2040	1320	920	578	250
MIN	46	41	14	.80	.70	1.4	140	948	885	597	258	134
AC-FT	2990	2700	1980	134	57	2080	29470	102400	60580	48850	26590	10460

CAL YR 1978 TOTAL 118490.33 MEAN 325 MAX 1670 MIN -450 AC-FT 235000
WTR YR 1979 TOTAL 145324.69 MEAN 398 MAX 2040 MIN .70 AC-FT 288300

06473000 JAMES RIVER AT ASHTON, SD--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water year 1978.

PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: October 1977 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: Maximum daily, 28.0°C July 3, 1978; minimum daily, 0.0°C on several days during November to December 1978.

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					---	8.0	18.0	---	24.0	24.0
2	15.0	8.0					---	8.0	18.0	26.0	26.0	---
3	13.0	8.0					1.0	9.0	---	27.0	26.0	---
4	12.0	---					1.0	10.0	20.0	---	25.0	24.0
5	11.0	---					1.0	11.0	20.0	24.0	---	24.0
6	10.0	6.0					.0	---	21.0	23.0	26.0	23.0
7	9.0	5.0					.0	13.0	20.0	22.0	27.0	21.0
8	---	7.0					---	13.0	20.0	---	27.0	22.0
9	---	6.0					---	10.0	19.0	23.0	26.0	---
10	12.0	4.0					---	7.0	---	24.0	25.0	21.0
11	13.0	---					---	6.0	20.0	25.0	24.0	21.0
12	12.0	---					---	9.0	20.0	26.0	---	20.0
13	10.0	.0					---	---	22.0	26.0	23.0	19.0
14	10.0	.0					---	12.0	23.0	25.0	22.0	18.0
15	---	.0					---	13.0	23.0	---	21.0	18.0
16	9.0	.0					---	16.0	22.0	23.0	20.0	---
17	9.0	.0					---	17.0	---	23.0	21.0	18.0
18	8.0	.0					---	16.0	21.0	23.0	23.0	18.0
19	9.0	---					13.0	16.0	20.0	25.0	---	18.0
20	10.0	---					12.0	---	20.0	25.0	23.0	18.0
21	11.0	---					12.0	14.0	20.0	27.0	22.0	17.0
22	---	---					---	15.0	21.0	---	22.0	---
23	8.0	---					12.0	14.0	20.0	27.0	21.0	---
24	9.0	---					13.0	15.0	---	27.0	21.0	17.0
25	8.0	---					11.0	16.0	21.0	27.0	22.0	18.0
26	8.0	---					11.0	17.0	23.0	25.0	---	19.0
27	7.0	---					9.0	---	23.0	24.0	22.0	19.0
28	7.0	---					9.0	---	24.0	24.0	21.0	18.0
29	---	---					---	20.0	24.0	---	22.0	17.0
30	8.0	---					8.0	19.0	25.0	25.0	23.0	---
31	8.0	---					---	18.0	---	24.0	24.0	---
MEAN	10.0	3.5					7.5	13.0	21.0	25.0	23.5	19.5

06473000 JAMES RIVER AT ASHTON, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)
DEC						
12...	1245	36	.0	7.2	820	--
12...	1330	36	.0	7.2	840	7.8
12...	1535	36	.0	7.1	840	7.8
12...	1735	36	.0	7.1	840	8.0
12...	1930	36	.0	7.2	860	7.8
12...	2140	36	.0	7.2	860	7.7
12...	2320	36	.0	6.8	880	7.4
13...	0100	36	.0	7.1	860	8.0
13...	0325	36	.0	6.8	860	8.0
13...	0530	36	.0	6.8	880	8.1
13...	0740	36	.0	6.8	880	8.1
13...	0915	36	.0	6.9	880	8.2
13...	1135	36	.0	6.8	880	8.1
APR						
10...	1550	234	.0	9.7	860	8.0
10...	1700	234	.0	9.8	--	--
10...	1900	234	.0	10.5	--	--
10...	2100	234	.0	10.4	--	--
10...	2300	234	.0	9.2	840	8.1
11...	0100	234	.0	9.2	--	--
11...	0300	234	.0	9.4	--	--
11...	0500	234	.0	9.5	--	--
11...	0700	234	.0	9.4	840	8.0
11...	0900	234	.0	9.7	--	--
11...	1100	234	.0	9.8	--	--
11...	1300	234	.0	9.9	--	--
11...	1500	234	.0	10.0	--	--
11...	1700	234	.0	10.1	830	8.1
JUL						
02...	1135	915	26.0	4.2	660	7.9
02...	1335	915	26.0	4.4	690	7.9
02...	1525	917	26.5	4.8	680	7.8
02...	1725	915	27.0	4.8	690	7.9
02...	1935	915	27.0	4.5	690	7.8
02...	2120	915	27.0	4.5	690	8.0
02...	2315	917	26.5	4.4	700	7.9
03...	0130	919	26.0	4.2	720	8.0
03...	0340	915	26.0	4.2	720	7.9
03...	0520	913	26.0	4.1	720	7.9
03...	0800	913	26.0	3.8	720	7.9
03...	0925	917	26.0	3.7	720	7.9
03...	1120	915	26.5	3.7	720	7.9
03...	1240	920	26.5	3.9	730	8.0
SEP						
13...	1320	172	19.0	8.3	830	8.2
13...	1520	172	19.0	8.3	830	8.4
13...	1715	172	19.0	8.6	830	8.4
13...	1910	172	19.0	8.7	830	8.4
13...	2125	171	18.5	8.2	840	8.4
13...	2315	170	18.5	8.0	840	8.4
14...	0120	169	18.0	7.8	850	8.3
14...	0320	169	18.0	7.6	850	8.3
14...	0525	169	17.0	7.4	850	8.2
14...	0730	168	17.0	7.5	840	8.3
14...	0910	167	17.0	7.5	840	8.4
14...	1145	167	17.0	7.7	840	8.4

06473700 SNAKE CREEK NEAR ASHTON, SD

LOCATION.--Lat 45°01'50", long 98°34'26", in SW¼SW¼ sec.17, T.118 N., R.64 W., Spink County, Hydrologic Unit 10160008, on right downstream wingwall of bridge, 700 ft (210 m) downstream from South Fork Snake Creek, 4.5 mi (7.2 km) northwest of Ashton, and 21.5 mi (34.6 km) upstream from mouth.

DRAINAGE AREA.--2,620 mi^2 (6,790 km^2), approximately, of which about 850 mi^2 (2,200 km^2) is probably noncontributing.

PERIOD OF RECORD.--October 1955 to September 1969, October 1976 to current year. (October 1969 to September 1972 maximum discharge only.)

GAGE.--Water-stage recorder. Altitude of gage is 1,265 ft (385 m), from topographic map. Prior to Oct. 1, 1957, water-stage recorder at site 10.7 mi (17.2 km) downstream at different datum. Oct. 1, 1957, to May 26, 1958, wire-weight gage, May 27, 1958, to Sept. 30, 1969, water-stage recorder, and Oct. 1, 1969, to Sept. 30, 1972, crest-stage gage all at present site and datum.

REMARKS.--Records fair. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--17 years (water years 1956-69, 1977-79), 23.8 ft^3/s (0.674 m^3/s), 17,240 acre-ft/yr (21.3 hm^3/yr); median of yearly mean discharges, 6.0 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, 6,980 ft^3/s (198 m^3/s) Apr. 10, 1969, gage height, 17.21 ft (5.246 m); no flow for many days in 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)
Mar. 23	2230	*150	4.25	a*10.98	3.347
Apr. 24	0300	108	3.06	7.82	2.384
Sept. 5	0130	90	2.55	7.69	2.344

a Ice jam.
No flow Dec. 31 to Mar. 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	5.3	2.0	.64	.00	.00	.00	75	55	14	5.4	6.5	16
2	4.9	2.0	.60	.00	.00	.00	73	50	13	5.0	6.4	12
3	4.8	1.8	.54	.00	.00	.00	68	47	12	4.7	6.3	30
4	4.6	1.9	.49	.00	.00	.00	61	44	11	4.5	6.2	82
5	4.2	1.6	.43	.00	.00	.00	52	41	11	4.4	6.2	88
6	4.1	1.7	.37	.00	.00	.00	52	39	10	4.3	6.1	78
7	4.0	1.9	.32	.00	.00	.00	47	39	9.7	4.2	6.1	65
8	4.0	1.8	.28	.00	.00	.00	40	36	9.3	4.0	6.1	52
9	3.8	1.8	.25	.00	.00	.00	36	35	8.8	3.9	7.2	40
10	3.6	2.5	.20	.00	.00	.00	34	35	8.5	3.7	6.5	31
11	3.4	1.9	.20	.00	.00	.00	32	34	8.3	3.6	4.5	24
12	3.3	1.7	.21	.00	.00	.00	37	34	8.0	3.5	3.5	19
13	3.2	1.5	.22	.00	.00	.00	49	32	7.5	3.4	2.5	14
14	3.3	1.4	.22	.00	.00	.00	64	30	7.5	3.3	2.0	9.6
15	3.1	1.2	.23	.00	.00	.00	62	29	7.3	3.2	1.9	8.5
16	3.1	1.1	.24	.00	.00	.00	66	27	7.1	3.1	1.8	7.3
17	2.9	1.0	.24	.00	.00	.05	69	25	7.0	3.1	1.7	5.8
18	2.9	.95	.24	.00	.00	4.0	63	24	6.6	3.0	1.6	4.5
19	2.9	.88	.25	.00	.00	10	55	23	8.0	3.0	1.6	3.6
20	2.8	.80	.25	.00	.00	20	54	22	9.9	2.9	1.5	2.9
21	2.7	.73	.25	.00	.00	45	53	20	11	3.1	1.4	2.5
22	2.5	.66	.25	.00	.00	70	66	19	11	3.9	1.4	2.2
23	2.6	.67	.23	.00	.00	115	95	18	11	5.0	1.3	1.9
24	2.6	.69	.20	.00	.00	110	109	17	11	5.8	1.3	1.7
25	2.3	.71	.16	.00	.00	103	94	15	9.6	6.6	1.2	1.6
26	2.3	.72	.13	.00	.00	96	82	14	8.4	8.0	1.2	1.4
27	2.2	.73	.10	.00	.00	88	72	13	7.8	7.4	10	1.3
28	2.2	.73	.07	.00	.00	84	66	12	7.0	6.4	30	1.2
29	2.1	.72	.04	.00	---	82	62	11	6.1	6.0	32	1.1
30	2.0	.71	.02	.00	---	80	59	13	5.6	6.3	24	1.1
31	2.0	---	.00	.00	---	78	---	15	---	6.6	21	---
TOTAL	99.7	38.50	7.87	.00	.00	985.05	1847	868	273.0	141.3	211.0	609.2
MEAN	3.22	1.28	.25	.000	.000	31.8	61.6	28.0	9.10	4.56	6.81	20.3
MAX	5.3	2.5	.64	.00	.00	115	109	55	14	8.0	32	88
MIN	2.0	.66	.00	.00	.00	.00	32	11	5.6	2.9	1.2	1.1
AC-FT	198	76	16	.00	.00	1950	3660	1720	541	280	419	1210

CAL YR 1978	TOTAL	33526.77	MEAN	91.9	MAX	2880	MIN	.00	AC-FT	66500
WTR YR 1979	TOTAL	5080.62	MEAN	13.9	MAX	115	MIN	.00	AC-FT	10080

06473750 WOLF CREEK NEAR REE HEIGHTS, SD

LOCATION.--Lat 44°36'25", long 99°13'54", in SW¼SW¼ sec.11, T.113 N., R.70 W., Hand County, Hydrologic Unit 10160009, near right bank on downstream side of highway bridge, 0.3 mi (0.5 km) downstream from small left-bank tributary, 6.5 mi (10.5 km) north of Ree Heights, and 13.8 mi (22.2 km) upstream from Lake Louise dam.

DRAINAGE AREA.--265 mi^2 (686 km^2), approximately.

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

GAGE.--Water-stage recorder. Datum of gage is 1,614.16 ft (491.996 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Flow regulated by small reservoir 0.5 mi (0.8 km) upstream, capacity, about 1,100 acre-ft (1.36 hm^3).

AVERAGE DISCHARGE.--20 years, 4.10 ft^3/s (0.116 m^3/s), 2,970 acre-ft/yr (3.66 hm^3/yr); median of yearly mean discharges, 0.13 ft^3/s (0.004 m^3/s), 94 acre-ft/yr (0.12 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 990 ft^3/s (28.0 m^3/s) Apr. 5, 1969, gage height, 9.33 ft (2.844 m); maximum gage height, 9.57 ft (2.917 m) Mar. 14, 1966 (backwater from ice); no flow for many days each year.

EXTREMES FOR CURRENT YEAR.--No flow during year. No peak above base of 40 ft^3/s (1.13 m^3/s).

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 4360.23 MEAN 11.9 MAX 321 MIN .00 AC-FT 8650
WTR YR 1979 TOTAL 0.00 MEAN .000 MAX .00 MIN .00 AC-FT .00

06474000 TURTLE CREEK NEAR TULARE, SD

LOCATION.--Lat 44°44'06", long 98°35'09", in SE¼SE¼ sec.25, T.115 N., R.65 W., Spink County, Hydrologic Unit 10160009, on left bank at downstream side of highway bridge, 3.9 mi (6.3 km) west of Tulare and 8.9 mi (14.3 km) downstream from Wolf Creek.

DRAINAGE AREA.--1,120 mi^2 (2,900 km^2), approximately.

PERIOD OF RECORD.--August 1953 to September 1956, September 1965 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,300 ft (396 m), by barometer. Prior to Oct. 6, 1965, nonrecording gage at same site and datum.

REMARKS.--Records fair except those for winter period, which are poor. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--17 years, 14.6 ft^3/s (0.413 m^3/s), 10,580 acre-ft/yr (13.0 hm^3/yr); median of yearly mean discharges, 2.1 ft^3/s (0.06 m^3/s) 1,500 acre-ft/yr (1.8 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, about 6,000 ft^3/s (170 m^3/s) Apr. 5, 1969; maximum gage height, 18.51 ft (5.642 m) Apr. 5, 1969 (backwater from ice); no flow for many days each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 87 ft^3/s (2.464 m^3/s) Apr. 26, gage height, 5.77 ft (1.759 m); no 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	.00	.23	.00	.00	.00	3.4	27	.26	.05	.10	.08
2	.00	.00	.22	.00	.00	.00	3.2	27	.23	.05	.10	.08
3	.00	.00	.21	.00	.00	.00	2.8	25	.21	.05	.09	.07
4	.00	.00	.20	.00	.00	.00	2.6	23	.20	.04	.09	.06
5	.00	.00	.19	.00	.00	.00	2.3	21	.17	.04	.08	.07
6	.00	.00	.19	.00	.00	.00	2.1	20	.16	.04	.07	.06
7	.00	.00	.18	.00	.00	.00	1.7	21	.14	.03	.07	.05
8	.00	.00	.17	.00	.00	.00	1.7	18	.12	.03	.07	.05
9	.00	.00	.16	.00	.00	.00	1.6	16	.11	.03	.08	.04
10	.00	.00	.15	.00	.00	.00	1.6	16	.10	.03	.07	.04
11	.00	.00	.16	.00	.00	.00	1.9	14	.09	.03	.06	.03
12	.00	.00	.17	.00	.00	.00	3.9	12	.09	.05	.06	.03
13	.00	.00	.18	.00	.00	.00	5.0	10	.08	.06	.05	.03
14	.00	.00	.20	.00	.00	.00	6.1	8.4	.07	.06	.05	.02
15	.00	.00	.21	.00	.00	.00	6.1	9.0	.07	.06	.04	.02
16	.00	.00	.22	.00	.00	.05	5.5	3.0	.07	.05	.04	.02
17	.00	.01	.23	.00	.00	1.0	4.2	3.0	.07	.04	.04	.02
18	.00	.01	.24	.00	.00	15	3.4	2.2	.07	.04	.03	.01
19	.00	.02	.24	.00	.00	12	4.6	1.7	.07	.04	.03	.01
20	.00	.02	.24	.00	.00	9.5	7.6	1.2	.09	.03	.04	.01
21	.00	.03	.24	.00	.00	7.0	5.0	.92	.08	.03	.05	.01
22	.00	.04	.24	.00	.00	5.0	4.2	.79	.08	.03	.06	.01
23	.00	.06	.24	.00	.00	4.0	3.6	.61	.08	.04	.07	.01
24	.00	.08	.24	.00	.00	3.0	4.2	.48	.09	.08	.06	.01
25	.00	.13	.20	.00	.00	2.5	40	.38	.08	.09	.06	.01
26	.00	.18	.15	.00	.00	1.8	77	.35	.08	.07	.06	.01
27	.00	.21	.12	.00	.00	2.2	58	.32	.08	.07	.05	.01
28	.00	.23	.09	.00	.00	2.5	46	.30	.08	.07	.08	.01
29	.00	.25	.05	.00	---	2.8	40	.28	.07	.10	.09	.01
30	.00	.24	.02	.00	---	3.9	32	.30	.06	.12	.09	.00
31	.00	---	.00	.00	---	3.9	---	.28	---	.11	.08	---
TOTAL	.00	1.51	5.58	.00	.00	76.15	381.3	279.51	3.25	1.66	2.01	.89
MEAN	.000	.050	.18	.000	.000	2.46	12.7	9.02	.11	.054	.065	.030
MAX	.00	.25	.24	.00	.00	15	77	27	.26	.12	.10	.08
MIN	.00	.00	.00	.00	.00	.00	1.6	.28	.06	.03	.03	.00
AC-FT	.00	3.0	11	.00	.00	151	756	554	6.4	3.3	4.0	1.8

CAL YR 1978 TOTAL 19748.49 MEAN 54.1 MAX 3400 MIN .00 AC-FT 39170
WTR YR 1979 TOTAL 751.86 MEAN 2.06 MAX 77 MIN .00 AC-FT 1490

06474300 MEDICINE CREEK NEAR ZELL, SD

LOCATION.--Lat 44°45'52", long 98°42'13", in NW¼NW¼ sec.19, T.115 N., R.65 W., Spink County, Hyrologic Unit 10160009, on downstream side at center of bridge on State Highway 26, 3.8 mi (6.1 km) upstream from Cottonwood Lake and 9.2 mi (14.8 km) south of Zell.

DRAINAGE AREA.--210 mi^2 (540 km^2), approximately.

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

GAGE.--Water-stage recorder. Altitude of gage is 1,320 ft (402 m), from topographic map.

REMARKS.--Records good except those for winter periods, which are poor. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--20 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, 2.0 ft^3/s (0.06 m^3/s), 1,400 acre-ft/yr (1.7 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,210 ft^3/s (62.6 m^3/s) Apr. 5, 1969, gage height, 12.41 ft (3.783 m); no flow for many days in most years.

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)
Mar. 21	0800	*100	2.832	a*6.84	2.085	Sept. 2	1500	42	1.189	5.42	1.652
Aug. 14	0400	56	1.586	5.84	1.780						

a Ice jam.
No flow Dec. 29 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	.01	.01	.01	.00	.00	.00	8.8	6.6	.34	.08	.05	13
2	.01	.01	.01	.00	.00	.00	7.6	5.6	.34	.08	.05	34
3	.01	.01	.01	.00	.00	.00	5.3	4.8	.30	.08	12	36
4	.01	.01	.01	.00	.00	.00	4.8	4.2	.26	.08	19	28
5	.01	.01	.01	.00	.00	.00	3.8	3.6	.22	.08	17	22
6	.01	.01	.01	.00	.00	.00	3.7	3.2	.20	.08	14	19
7	.01	.01	.01	.00	.00	.00	3.3	3.0	.16	.09	12	16
8	.01	.01	.01	.00	.00	.00	3.1	2.6	.14	.08	10	14
9	.01	.01	.01	.00	.00	.00	2.8	2.4	.14	.08	11	13
10	.01	.01	.01	.00	.00	.00	2.6	2.4	.14	.08	13	11
11	.01	.01	.01	.00	.00	.00	3.0	2.5	.12	.07	22	9.7
12	.01	.01	.01	.00	.00	.00	4.7	2.1	.10	.09	30	8.0
13	.01	.01	.01	.00	.00	.00	10	1.9	.09	.09	38	6.7
14	.01	.01	.01	.00	.00	.00	12	1.7	.08	.06	52	5.7
15	.01	.01	.01	.00	.00	.00	12	1.6	.08	.06	42	4.6
16	.01	.01	.01	.00	.00	.05	13	1.4	.08	.05	33	3.8
17	.01	.01	.01	.00	.00	2.5	11	1.3	.08	.05	27	3.1
18	.01	.01	.01	.00	.00	4.0	9.0	1.1	.08	.05	22	2.4
19	.01	.01	.01	.00	.00	6.0	8.3	1.0	.12	.05	19	1.9
20	.01	.01	.01	.00	.00	15	12	.90	.10	.05	18	1.4
21	.01	.01	.01	.00	.00	90	14	.80	.09	.05	17	1.1
22	.01	.01	.01	.00	.00	80	12	.66	.08	.05	15	.95
23	.01	.01	.01	.00	.00	30	12	.58	.08	.05	14	.80
24	.01	.01	.01	.00	.00	20	14	.54	.09	.06	12	.70
25	.01	.01	.01	.00	.00	29	22	.50	.08	.05	11	.58
26	.01	.01	.01	.00	.00	20	18	.50	.08	.06	10	.50
27	.01	.01	.01	.00	.00	17	14	.42	.08	.05	9.4	.46
28	.01	.01	.01	.00	.00	12	11	.38	.09	.05	10	.38
29	.01	.01	.00	.00	---	9.0	9.0	.38	.08	.06	12	.28
30	.01	.01	.00	.00	---	9.2	7.7	.50	.08	.06	15	.26
31	.01	---	.00	.00	---	9.7	---	.42	---	.06	14	---
TOTAL	.31	.30	.28	.00	.00	353.45	274.5	59.58	4.00	2.03	550.50	259.31
MEAN	.010	.010	.009	.000	.000	11.4	9.15	1.92	.13	.065	17.8	8.64
MAX	.01	.01	.01	.00	.00	90	22	6.6	.34	.09	52	36
MIN	.01	.01	.00	.00	.00	.00	2.6	.38	.08	.05	.05	.26
AC-FT	.6	.6	.6	.00	.00	701	544	118	7.9	4.0	1090	514

CAL YR 1978 TOTAL 7067.27 MEAN 19.4 MAX 1690 MIN .00 AC-FT 14020
WTR YR 1979 TOTAL 1504.26 MEAN 4.12 MAX 90 MIN .00 AC-FT 2980

06475000 JAMES RIVER NEAR REDFIELD, SD

LOCATION.--Lat 44°55'13", long 98°25'52" in SW¼NW¼ sec.28, T.117 N., R.63 W., Spink County, Hydrologic Unit 10160006, on right bank at downstream side of highway bridge, 5.2 mi (8.4 km) northeast of Redfield and 5.2 mi (8.4 km) downstream from Turtle Creek.

DRAINAGE AREA.--14,800 mi^2 (38,300 km^2), approximately, of which about 4,600 mi^2 (11,900 km^2) is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1950 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,236.3 ft (376.82 m) National Geodetic Vertical Datum of 1929. Prior to July 26, 1951, nonrecording gage at same site and datum.

REMARKS.--Records good except those for winter periods, which are poor. Flow regulated by Arrowwood and Jamestown Reservoir, combined capacity, 246,000 acre-ft (303 hm^3), the largest of which is Jamestown Reservoir, capacity, 229,470 acre-ft (283 hm^3), 303 mi (488 km) upstream since May 1953. Low flow affected by wind at times. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--29 years, 194 ft^3/s (5.494 m^3/s), 140,600 acre-ft/yr (173 hm^3/yr); median of yearly mean discharges, 130 ft^3/s (3.68 m^3/s), 94,200 acre-ft/yr (120 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,310 ft^3/s (207 m^3/s) Apr. 13, 1969, gage height, 24.93 ft (7.599 m); no flow for many days in most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,060 ft^3/s (58.3 m^3/s) May 18; minimum daily discharge, 1.6 ft^3/s (0.045 m^3/s) Feb. 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	41	48	48	15	2.2	2.6	160	1010	1370	911	545	287
2	40	49	46	14	2.0	2.6	170	1020	1320	909	529	275
3	38	48	45	12	1.9	2.7	180	1040	1280	901	511	273
4	42	55	47	11	1.8	2.7	190	1060	1240	893	496	281
5	39	50	47	10	1.6	2.7	200	1100	1210	889	480	266
6	40	47	47	8.6	1.7	2.8	210	1230	1180	884	470	255
7	45	52	44	7.5	1.8	2.8	220	1440	1150	887	456	255
8	54	50	43	6.4	1.9	2.8	230	1640	1140	885	454	261
9	53	51	41	5.3	2.0	2.9	250	1810	1120	878	464	260
10	52	56	40	4.5	2.0	2.9	270	1890	1090	873	476	252
11	54	48	41	4.2	2.1	2.9	300	1940	1050	865	486	235
12	50	50	43	3.8	2.1	3.0	380	1960	1030	865	494	220
13	49	53	42	3.5	2.1	3.1	450	1970	997	857	487	202
14	48	44	41	3.2	2.2	3.3	521	1970	982	847	480	184
15	46	49	40	3.0	2.2	3.5	542	1990	954	833	476	168
16	49	50	41	3.2	2.3	4.0	584	2030	933	819	478	157
17	57	49	40	3.5	2.3	6.0	631	2050	907	806	469	140
18	46	49	38	3.8	2.3	9.0	667	2060	891	788	462	123
19	46	46	38	4.1	2.3	20	687	2050	903	768	457	128
20	47	47	39	4.5	2.4	50	672	2020	904	734	455	113
21	47	48	36	5.0	2.4	80	681	1990	899	703	468	109
22	41	51	35	4.8	2.4	90	702	1940	899	672	443	131
23	48	51	33	4.4	2.5	100	754	1880	901	649	422	119
24	57	50	31	4.0	2.5	105	820	1830	908	627	407	109
25	41	49	28	3.7	2.5	110	875	1770	911	597	393	108
26	39	49	27	3.4	2.5	115	914	1700	913	614	374	122
27	41	51	25	3.1	2.6	120	933	1630	912	612	358	113
28	46	51	23	2.9	2.6	130	950	1570	913	600	376	97
29	52	50	21	2.7	---	140	967	1510	912	590	350	96
30	50	49	19	2.5	---	145	982	1460	911	579	323	100
31	46	---	17	2.3	---	150	---	1410	---	562	311	---
TOTAL	1444	1490	1146	169.9	61.2	1417.3	16092	51970	30730	23897	13850	5439
MEAN	46.6	49.7	37.0	5.48	2.19	45.7	536	1676	1024	771	447	181
MAX	57	56	48	15	2.6	150	982	2060	1370	911	545	287
MIN	38	44	17	2.3	1.6	2.6	160	1010	891	562	311	96
AC-FT	2860	2960	2270	337	121	2810	31920	103100	60950	47400	27470	10790

CAL YR 1978 TOTAL 169132.00 MEAN 463 MAX 3700 MIN .00 AC-FT 335500
WTR YR 1979 TOTAL 147706.40 MEAN 405 MAX 2060 MIN 1.6 AC-FT 293000

06475000 JAMES RIVER NEAR REDFIELD, SD--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water year 1978.

PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: October 1977 to current year.

REMARKS.--Recorder with temperature attachment, continuous ethyl alcohol-actuated thermograph since Oct. 1, 1977.

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	3.0	.0	---		---	.0	---	19.0	28.0	26.0	
2	15.0	3.0	.0	---		---	.0	---	18.0	28.0	26.0	
3	15.0	3.0	.0	---		---	.0	---	19.0	29.0	27.0	
4	13.0	3.0	.0	---		---	.0	---	19.0	31.0	27.0	
5	12.0	3.0	.0	---		---	.0	---	19.0	29.0	27.0	
6	14.0	2.0	.0	---		---	.0	---	20.0	27.0	28.0	
7	10.0	2.0	.0	---		---	.0	---	20.0	25.0	28.0	
8	10.0	1.0	.0	---		---	.0	---	20.0	24.0	28.0	
9	10.0	1.0	.0	---		---	.0	---	19.0	24.0	28.0	
10	10.0	1.0	.0	---		---	.0	---	19.0	26.0	27.0	
11	10.0	.0	.0	---		---	.0	---	19.0	27.0	26.0	
12	10.0	.0	.0	---		.0	1.0	---	19.0	28.0	25.0	
13	8.0	.0	.0	---		.0	1.0	---	21.0	29.0	24.0	
14	9.0	.0	.0	---		.0	1.0	---	23.0	28.0	23.0	
15	9.0	.0	.0	---		.0	1.0	---	26.0	27.0	21.0	
16	9.0	.0	.0	---		.0	2.0	---	26.0	27.0	---	
17	7.0	.0	.0	---		.0	4.0	---	26.0	25.0	---	
18	7.0	.0	.0	.0		.0	8.0	17.0	24.0	24.0	---	
19	7.0	.0	.0	.0		.0	12.0	17.0	23.0	26.0	---	
20	7.0	.0	.0	.0		.0	13.0	16.0	22.0	27.0	---	
21	7.0	.0	.0	.0		.0	---	16.0	22.0	28.0	---	
22	7.0	.0	.0	.0		.0	---	16.0	22.0	29.0	---	
23	6.0	.0	.0	.0		.0	---	15.0	22.0	31.0	---	
24	6.0	.0	.0	.0		.0	---	15.0	22.0	31.0	---	
25	6.0	.0	.0	---		.0	---	15.0	22.0	31.0	---	
26	6.0	.0	.0	---		.0	---	16.0	24.0	30.0	---	
27	5.0	.0	.0	---		.0	---	18.0	24.0	28.0	---	
28	5.0	.0	.0	---		.0	---	19.0	26.0	27.0	---	
29	5.0	.0	.0	---		.0	---	21.0	26.0	26.0	---	
30	4.0	.0	.0	---		.0	---	21.0	27.0	27.0	---	
31	4.0	---	.0	---		.0	---	19.0	---	26.0	---	
MEAN	8.5	.5	.0	.0		.0	2.0	17.0	22.0	27.5	26.0	

06475000 JAMES RIVER NEAR REDFIELD, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)
DEC						
12...	1110	44	.0	6.3	800	6.6
12...	1310	43	.0	6.4	840	7.6
12...	1515	43	.0	6.4	840	7.7
12...	1810	43	.0	6.0	840	8.0
12...	1900	43	.0	6.2	860	8.2
12...	2115	42	.0	5.9	840	7.8
12...	2300	42	.0	5.6	860	7.8
13...	0100	42	.0	6.0	840	8.0
13...	0310	42	.0	6.0	880	8.3
13...	0510	42	.0	6.0	880	8.0
13...	0720	42	.0	5.9	880	8.2
13...	0900	42	.0	5.7	880	7.8
13...	1115	42	.0	5.8	880	8.1
APR						
10...	1330	270	.0	10.2	670	8.1
10...	1400	270	.0	10.2	--	--
10...	1600	272	.0	10.2	--	--
10...	1800	275	.0	10.2	--	--
10...	2000	280	.0	10.2	--	--
10...	2200	285	.0	10.1	670	8.2
10...	2400	290	.0	10.0	--	--
11...	0200	290	.0	9.8	--	--
11...	0400	295	.0	9.6	--	--
11...	0600	300	.0	9.8	670	8.1
11...	0800	300	.0	10.2	--	--
11...	1000	300	.0	10.4	--	--
11...	1200	300	.0	10.6	--	--
11...	1400	300	.0	10.8	680	8.1
JUL						
02...	1100	910	26.0	4.7	660	7.9
02...	1315	910	26.5	4.8	680	7.9
02...	1510	910	27.0	4.8	690	7.9
02...	1705	910	27.0	5.3	700	7.8
02...	1920	908	27.0	5.2	700	7.9
02...	2105	908	27.0	4.9	700	8.0
02...	2255	908	26.5	4.6	700	8.0
03...	0105	908	26.0	4.6	710	8.0
03...	0310	908	25.5	4.3	730	8.0
03...	0500	905	25.5	4.4	730	8.0
03...	0710	905	26.0	4.2	730	8.0
03...	0915	902	26.0	4.2	730	8.0
03...	1105	902	26.5	4.4	730	7.9
03...	1200	900	26.5	4.3	730	8.0
SEP						
13...	1300	206	19.0	7.8	840	8.2
13...	1500	203	19.0	8.2	850	8.4
13...	1700	200	19.0	8.4	870	8.4
13...	1855	198	19.0	8.5	870	8.2
13...	2110	196	18.5	8.4	880	8.4
13...	2300	195	18.0	8.3	890	8.4
14...	0105	195	18.0	8.2	880	8.4
14...	0300	193	17.0	7.9	900	8.4
14...	0505	193	16.0	7.7	910	8.4
14...	0710	192	16.0	7.6	890	8.4
14...	0855	192	16.0	7.7	890	8.4
14...	1130	190	17.0	7.9	870	8.3

06476000 JAMES RIVER AT HURON, SD

LOCATION.--Lat 44°21'49", long 98°11'56", in SW¼SE¼NE¼ sec.6, T.110 N., R.61 W., Beadle County, Hydrologic Unit 10160006, on right bank 15 ft (5 m) upstream from city dam at Huron, 135 ft (41 m) downstream from Chicago and North Western Transportation Co. bridge and 165 ft (50 m) upstream from bridge on business loop U.S. Highway 14.

DRAINAGE AREA.--16,800 mi^2 (43,500 km), approximately, of which about 4,790 mi^2 (12,400 km^2) is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1928 to September 1932, August 1943 to current year. Monthly discharge only for some periods, published in WSP 1309. Gage-height records collected at site about 100 ft (30 m) downstream for period of open water each year July 1902 to June 1914 and for period March to June 1915-23 are in reports of U.S. Weather Bureau.

GAGE.--Water-stage recorder and concrete dam. Datum of gage is 1,223.44 ft (372.905 m) National Geodetic Vertical Datum of 1929. Aug. 29, 1928, to Mar. 15, 1929, nonrecording gage at site 100 ft (30 m) downstream at about same datum. Mar. 16, 1929, to June 30, 1932, nonrecording gage 165 ft (50 m) downstream at present datum. Aug. 3, 1943, to Oct. 17, 1951, nonrecording gage at site 15 ft (5 m) downstream at present datum.

REMARKS.--Records good above 100 ft^3/s (2.832 m^3/s) and fair below. Flow regulated by Arrowwood and Jim Lakes, and Jamestown Reservoir, combined capacity, 246,000 acre-ft (303 hm^3), the largest of which is Jamestown Reservoir, capacity 229,470 acre-ft (283 hm^3), 365 mi (587 km) upstream since May 1953. Satellite telemeter at station.

AVERAGE DISCHARGE.--40 years, 239 ft^3/s (6.768 m^3/s), 173,200 acre-ft/yr (214 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, 9,000 ft^3/s (255 m^3/s) Apr. 13, 1969, gage height, 16.70 ft (5.090 m); no flow for long periods in most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood between Apr. 11 and 13, 1881, reached a stage of 19.8 ft (6.04 m), from U.S. Weather Bureau publication. Flood of Mar. 22, 1922, reached a stage of 16.5 ft (5.03 m).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,130 ft^3/s (60.3 m^3/s) May 19, gage height, 10.62 ft (3.237 m); no flow Oct. 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	66	50	46	30	14	3.3	195	1040	1470	876	572	394
2	66	54	46	30	14	2.3	204	1120	1420	864	612	361
3	69	58	50	27	14	3.3	222	1100	1390	907	579	317
4	67	46	46	24	14	3.3	231	1100	1360	887	579	262
5	67	58	46	24	12	2.3	240	1130	1280	867	526	284
6	65	50	46	21	12	3.3	240	1150	1280	869	518	284
7	64	50	42	21	12	21	251	1240	1210	844	545	273
8	57	54	42	21	12	42	273	1370	1210	880	529	262
9	63	66	46	18	10	54	295	1540	1170	873	344	262
10	58	50	46	18	10	58	306	1670	1180	872	284	262
11	61	54	42	18	12	62	372	1790	1120	849	306	262
12	60	54	42	18	12	66	460	1880	1050	897	361	251
13	62	50	42	18	10	66	438	1960	1010	904	438	240
14	59	46	42	16	10	66	447	1970	1000	877	460	231
15	67	54	42	16	10	66	519	1970	1120	864	449	222
16	52	54	38	16	10	71	631	1950	1120	838	438	213
17	57	54	42	14	10	86	696	2040	1050	817	471	213
18	23	54	38	14	10	86	747	2100	1000	781	471	195
19	.00	54	42	16	10	129	870	2070	942	793	482	168
20	.99	54	38	16	8.5	168	1140	2110	1010	762	460	168
21	27	54	38	16	7.0	136	990	2050	966	748	471	150
22	42	50	38	16	7.0	110	966	2040	938	706	482	129
23	27	50	38	16	7.0	86	906	1990	928	652	482	122
24	46	50	38	14	5.5	71	966	1930	927	683	449	116
25	50	50	38	14	5.5	76	1050	1840	912	661	427	110
26	42	50	38	16	5.5	81	1040	1810	929	627	416	92
27	46	50	34	16	3.3	98	1050	1740	920	593	394	92
28	42	50	34	16	4.3	116	1050	1640	926	579	405	86
29	38	46	30	16	---	136	1100	1630	914	601	438	71
30	46	46	34	14	---	150	1080	1650	898	609	416	81
31	46	---	34	14	---	177	---	1540	---	582	361	---
TOTAL	1535.99	1560	1258	564	271.6	2295.8	18975	52160	32650	24162	14165	6173
MEAN	49.5	52.0	40.6	18.2	9.70	74.1	633	1683	1088	779	457	206
MAX	69	66	50	30	14	177	1140	2110	1470	907	612	394
MIN	.00	46	30	14	3.3	2.3	195	1040	898	579	284	71
AC-FT	3050	3090	2500	1120	539	4550	37640	103500	64760	47930	28100	12240

CAL YR 1978 TOTAL 212743.10 MEAN 583 MAX 5790 MIN .00 AC-FT 422000
WTR YR 1979 TOTAL 155770.39 MEAN 427 MAX 2110 MIN .00 AC-FT 309000

06476000 JAMES RIVER AT HURON, SD--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1949-52, 1956 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: September 1956 to October 1970, September 1971 to current year.
WATER TEMPERATURES: September 1956 to October 1970, September 1971 to current year.

REMARKS.--No flow Oct. 19.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 3,170 micromhos Mar. 14, 1965; minimum daily, 175 micromhos Mar. 30, Apr. 2, 1960.
WATER TEMPERATURES: Maximum daily, 31.0°C June 2, 1968; minimum daily, 0.0°C on many days during winter periods.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,690 micromhos Mar. 1; minimum daily, 450 micromhos May 9, 10.
WATER TEMPERATURES: Maximum daily, 27.0°C July 23, Aug. 7; minimum daily, 0.0°C on many days during winter period.

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)
OCT										
02...	1435	66	910	8.0	16.0	290	0	67	30	69
26...	1415	42	1000	8.2	9.0	360	28	80	38	87
NOV										
28...	1530	42	1340	7.9	.5	420	50	92	46	98
DEC										
21...	0830	38	1380	7.5	1.5	430	41	95	46	120
JAN										
29...	1345	16	1620	7.5	.0	530	83	120	57	140
FEB										
23...	1230	7.0	1880	7.5	.0	630	110	140	69	150
MAR										
23...	1100	116	890	7.1	.0	280	71	66	29	65
APR										
25...	1340	1060	640	7.4	11.5	180	74	41	19	47
MAY										
29...	1535	1630	497	8.3	5.0	180	32	43	18	31
JUN										
22...	1100	978	600	8.0	20.0	230	38	53	23	41
AUG										
01...	1030	580	780	8.2	23.5	240	0	49	28	58
SEP										
05...	0950	251	750	--	24.0	260	0	58	28	58
28...	1400	66	870	8.6	19.0	290	0	65	31	65

06476000 JAMES RIVER AT HURON, SD--Continued

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)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)
OCT									
02...	33	1.8	12	370	0	300	84	41	.2
26...	33	2.0	18	400	0	330	170	50	.2
NOV									
28...	32	2.1	20	450	0	370	210	70	.3
DEC									
21...	36	2.5	25	470	0	390	220	61	.2
JAN									
29...	35	2.6	21	550	0	450	290	68	.3
FEB									
23...	33	2.6	20	640	0	530	350	76	.4
MAR									
23...	32	1.7	16	260	0	210	170	31	.2
APR									
25...	34	1.5	15	130	0	110	150	29	.2
MAY									
29...	26	1.0	12	180	0	148	17	16	.2
JUN									
22...	27	1.2	13	230	0	190	100	17	.2
AUG									
01...	47	1.6	15	310	0	250	120	28	.2
SEP									
05...	44	1.6	12	--	--	270	140	31	.2
28...	44	1.7	14	--	--	290	130	30	.2

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	870		1200	1120	1460	1690	1080	630	510	610	790	760
2	870		1220	1120	1440	1650	1090	600	510	620	800	750
3	870		1220	1130	1520	1640	980	540	520	660	800	750
4	880		1230	1160	1510	1630	860	530	520	670	780	760
5	890		1240	1140	1520	1620	820	500	530	690	780	770
6	890		1190	1150	1520	1620	780	500	530	710	770	770
7	880		1200	1140	1540	1620	630	490	530	710	780	800
8	880		1200	1140	1540	1600	520	470	520	700	790	810
9	880		1210	1140	1540	1600	530	450	530	710	780	810
10	890		1190	1150	1540	1550	540	450	530	700	800	830
11	900		1220	1170	1550	1550	550	460	530	690	790	830
12	910		1180	1170	1550	1560	500	520	550	700	780	830
13	910		1200	1200	1560	1510	520	540	550	690	780	850
14	910		1200	1170	1560	1330	520	550	560	700	790	840
15	910		1190	1180	1560	1300	570	560	560	710	780	850
16	910		1200	1150	1560	1310	570	550	560	720	780	890
17	910		1190	1210	1570	1300	610	560	570	710	780	890
18	920		1180	1210	1570	1200	650	560	580	730	780	910
19	920		1180	1250	1580	1200	660	530	600	730	780	930
20	920		1170	1240	1570	1170	660	520	590	750	750	920
21	920		1140	1240	1580	1000	690	500	600	740	780	920
22	920		1160	1240	1580	710	690	500	600	750	780	900
23	930		1160	1270	1580	720	700	500	610	750	780	910
24	930		1090	1290	1580	870	650	490	610	740	780	890
25	910		1140	1320	1580	880	650	500	620	750	780	890
26	940		1140	1320	1580	930	620	480	620	760	770	890
27	940		1130	1330	1580	930	650	480	630	770	770	880
28	940		1130	1330	1580	980	660	480	610	760	770	890
29	950		1120	1330	---	1000	640	480	620	770	770	870
30	950		1120	1340	---	1040	640	490	610	760	770	870
31	960		1120	1360	---	1060	---	480	---	770	770	---
MEAN	910		1180	1220	1550	1280	674	513	567	717	780	849

06476000 JAMES RIVER AT HURON, SD--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 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P) (00671)	BORON, DIS-SOLVED (UG/L AS B) (01020)
OCT									
02...	18	504	.69	89.8	.03	.33	.18	.16	200
26...	20	661	.90	75.0	.04	.25	.17	.12	280
NOV									
28...	19	778	1.06	88.2	.04	.27	.27	.13	340
DEC									
21...	20	843	1.15	86.5	.04	7.4	.34	7.8	350
JAN									
29...	23	993	1.35	42.9	.25	.51	.51	.39	400
FEB									
23...	24	7	.01	.13	.37	.56	.52	.51	440
MAR									
23...	10	523	.71	164	1.3	.63	.57	.51	210
APR									
25...	13	388	.53	1110	1.8	.57	.42	.37	180
MAY									
29...	--	291	.40	1280	.01	.31	.25	.17	100
JUN									
22...	8.2	369	.50	974	.10	.35	.24	.21	140
AUG									
01...	21	473	.64	741	.11	.29	.29	.22	190
SEP									
05...	22	512	.70	347	.02	.40	.23	.17	210
28...	19	529	.72	94.3	.01	.33	.20	.18	230

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		.0	.0	.0	.0	1.0	10.0	18.0	24.0	24.0	23.0
2	14.0		.0	.0	.0	.0	1.0	10.0	18.0	24.0	24.0	23.0
3	14.0		.0	.0	.0	.0	1.0	10.0	18.0	25.0	25.0	23.0
4	13.0		.0	.0	.0	.0	1.0	10.0	20.0	25.0	25.0	24.0
5	12.0		.0	.0	.0	.0	1.0	10.0	20.0	25.0	25.0	25.0
6	12.0		.0	.0	.0	.0	1.0	10.0	20.0	25.0	25.0	24.0
7	10.0		.0	.0	.0	.0	1.0	12.0	20.0	23.0	27.0	24.0
8	10.0		.0	.0	.0	.0	1.0	12.0	20.0	22.0	26.0	22.0
9	10.0		.0	.0	.0	.0	1.0	12.0	20.0	24.0	26.0	21.0
10	10.0		.0	.0	.0	.0	1.0	12.0	20.0	24.0	26.0	21.0
11	11.0		.0	.0	.0	.0	1.0	11.0	20.0	25.0	26.0	20.0
12	11.0		.0	.0	.0	.0	1.0	12.0	21.0	24.0	25.0	20.0
13	11.0		.0	.0	.0	.0	1.0	12.0	21.0	24.0	25.0	19.0
14	10.0		.0	.0	.0	.0	1.0	12.0	22.0	24.0	25.0	17.0
15	10.0		.0	.0	.0	.0	1.0	12.0	23.0	24.0	24.0	16.0
16	8.0		.0	.0	.0	.0	1.0	12.0	23.0	25.0	19.0	16.0
17	8.0		.0	.0	.0	.0	1.0	14.0	23.0	23.0	19.0	16.0
18	8.0		.0	.0	.0	.0	1.0	15.0	21.0	24.0	20.0	16.0
19	8.0		.0	.0	.0	.0	1.0	15.0	21.0	24.0	20.0	16.0
20	8.0		.0	.0	.0	.0	1.0	14.0	21.0	25.0	19.0	16.0
21	10.0		.0	.0	.0	.0	1.0	15.0	20.0	26.0	20.0	16.0
22	8.0		.0	.0	.0	.0	1.0	15.0	21.0	26.0	20.0	16.0
23	8.0		.0	.0	.0	.0	2.0	15.0	21.0	27.0	21.0	16.0
24	8.0		.0	.0	.0	.0	4.0	15.0	21.0	26.0	20.0	17.0
25	8.0		.0	.0	.0	.0	8.0	15.0	22.0	26.0	20.0	16.0
26	8.0		.0	.0	.0	1.0	8.0	15.0	23.0	26.0	21.0	17.0
27	8.0		.0	.0	.0	1.0	10.0	15.0	23.0	26.0	21.0	17.0
28	8.0		.0	.0	.0	1.0	10.0	15.0	23.0	26.0	21.0	16.0
29	7.0		.0	.0	---	1.0	10.0	20.0	24.0	25.0	20.0	16.0
30	7.0		.0	.0	---	1.0	10.0	18.0	24.0	26.0	23.0	16.0
31	7.0		.0	.0	---	1.0	---	18.0	---	26.0	24.0	---
MEAN	9.5		.0	.0	.0	.0	3.0	13.5	21.0	25.0	23.0	19.0

06476500 SAND CREEK NEAR ALPENA, SD

LOCATION.--Lat 44°09'15", long 98°26'06", in NE¼NE¼ sec.19, T.108 N., R.63 W., Jerauld County, Hydrologic Unit 10160006, on left bank 5 ft (2 m) downstream from highway bridge, 4.0 mi (6.4 km) southwest of Alpena, 7.0 mi (11.3 km) upstream from Chicago, Milwaukee, St. Paul and Pacific Railroad bridge, and 10.5 mi (16.9 km) upstream from interlink with Cain Creek.

DRAINAGE AREA.--240 mi^2 (622 km^2), approximately.

PERIOD OF RECORD.--March 1950 to current year.

REVISED RECORDS.--WSP 1309: 1950(M).

GAGE.--Water-stage recorder. Altitude of gage is 1,315 ft (401 m). Prior to Sept. 17, 1951, nonrecording gage at same site and datum.

REMARKS.--Records good except those for period of no gage-height record Apr. 11 to May 30, which are poor. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--29 years, 9.17 ft^3/s (0.260 m^3/s), 6,640 acre-ft/yr (8.19 hm^3/yr); median of yearly mean discharges, 6.0 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, 2,240 ft^3/s (63.4 m^3/s) Mar. 28, 1960, gage height, 13.35 ft (4.069 m); maximum gage height, 14.1 ft (4.30 m) Mar. 28, 1950 (backwater from ice); no flow for many days in each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5.0 ft^3/s (0.14 m^3/s) Apr. 15, gage height, unknown; stage did not reach bottom of crest-stage gage 8.49 ft (2.588 m) 24 ft^3/s (0.68 m^3/s), no peak above base of 50 ft^3/s (1.416 m^3/s); no flow for many days.

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

7.4	0	7.8	1.7
7.5	.12	7.9	3.1
7.6	.40	8.0	6.1
7.7	.88		

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	1.5	.01	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	1.3	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	1.1	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.95	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.85	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.80	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.90	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	1.0	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	1.2	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	1.5	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.02	1.8	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.10	2.2	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.30	1.9	.00	.12	.00	.00
14	.00	.00	.00	.00	.00	.00	1.5	1.7	.00	.66	.00	.00
15	.00	.00	.00	.00	.00	.00	4.0	1.3	.00	1.1	.00	.00
16	.00	.00	.00	.00	.00	.00	3.0	1.0	.00	1.2	.00	.00
17	.00	.00	.00	.00	.00	.00	2.1	.85	.00	1.2	.00	.00
18	.00	.00	.00	.00	.00	.00	1.6	.75	.00	.88	.00	.00
19	.00	.00	.00	.00	.00	.00	1.4	.60	.00	.64	.00	.00
20	.00	.00	.00	.00	.00	.00	1.2	.50	.00	.42	.00	.00
21	.00	.00	.00	.00	.00	.00	1.1	.40	.00	.27	.00	.00
22	.00	.00	.00	.00	.00	.00	1.0	.30	.00	.13	.00	.00
23	.00	.00	.00	.00	.00	.00	.95	.22	.00	.08	.00	.00
24	.00	.00	.00	.00	.00	.00	.87	.17	.00	.20	.00	.00
25	.00	.00	.00	.00	.00	.00	.80	.14	.00	.14	.00	.00
26	.00	.00	.00	.00	.00	.00	1.5	.12	.00	.08	.00	.00
27	.00	.00	.00	.00	.00	.00	2.9	.10	.00	.03	.00	.00
28	.00	.00	.00	.00	.00	.00	2.5	.08	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.00	2.0	.07	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	1.7	.05	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.03	---	.00	.00	---
TOTAL	.00	.00	.00	.00	.00	.00	30.54	25.38	.01	7.15	.00	.00
MEAN	.000	.000	.000	.000	.000	.000	1.02	.82	.000	.23	.000	.000
MAX	.00	.00	.00	.00	.00	.00	4.0	2.2	.01	1.2	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.03	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	.00	61	50	.02	14	.00	.00

CAL YR 1978	TOTAL	4633.72	MEAN 12.7	MAX	782	MIN .00	AC-FT 9190	
WTR YR 1979	TOTAL	63.08	MEAN .17	MAX	4.0	MIN .00	AC-FT 125	

06477000 JAMES RIVER NEAR FORESTBURG, SD

LOCATION.--Lat 43°58'26", long 98°04'14", in SW¼SW¼NW¼ sec.20, T.106 N., R.60 W., Sanborn County, Hydrologic Unit 10160011, on right bank 5.0 ft (2 m) downstream from highway bridge, 3.8 mi (6.1 km) southeast of Forestburg, 5.4 mi (8.7 km) downstream from Chicago, Milwaukee, St. Paul and Pacific Railroad bridge, and 6.1 mi (9.8 km) downstream from Sand Creek.

DRAINAGE AREA.--18,600 mi^2 (48,200 km^2), approximately, of which about 4,790 mi^2 (12,400 km^2) is probably noncontributing.

PERIOD OF RECORD.--March 1950 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,208.34 ft (368.302 m) National Geodetic Vertical Datum of 1929 (Bureau of Reclamation bench mark). Prior to Sept. 5, 1951, nonrecording gage at same site and datum.

REMARKS.--Records good except those for winter periods, which are poor. Flow regulated by Arrowwood and Jim Lakes, and Jamestown Reservoir, combined capacity, 246,000 acre-ft (303 hm^3), the largest of which is Jamestown Reservoir, capacity, 229,470 acre-ft (283 hm^3), 408 mi (656 km) upstream since May 1953. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--29 years, 287 ft^3/s (8.128 m^3/s), 207,900 acre-ft/yr (256 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, 12,500 ft^3/s (354 m^3/s) Apr. 9, 1969, gage height, 17.16 ft (5.230 m); no flow at times in 1950, 1955, 1959, 1961, 1970, 1976, 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--Floods in March 1920 and March 1922 reached a stage of about 18 ft (5.49 m), from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,920 ft^3/s (54.4 m^3/s) May 22, gage height, 11.21 ft (3.416 m); minimum daily, 6.3 ft^3/s (0.178 m^3/s) Mar. 10, 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	54	38	47	24	14	7.2	199	1040	1650	856	599	344
2	52	37	46	22	13	7.6	209	1040	1590	841	582	334
3	52	39	46	21	14	7.2	203	1060	1530	834	566	322
4	52	49	46	20	13	6.9	224	1070	1480	845	551	296
5	50	55	46	19	14	6.6	272	1080	1440	851	536	270
6	54	58	46	18	14	6.6	237	1090	1390	840	516	266
7	52	58	46	17	14	6.6	205	1110	1350	829	496	262
8	51	56	46	17	13	6.6	239	1160	1310	823	516	248
9	49	57	46	16	13	6.6	239	1230	1280	828	505	243
10	49	59	46	15	12	6.3	241	1330	1250	826	428	243
11	48	70	45	14	12	6.3	274	1450	1220	822	330	247
12	47	68	45	14	11	6.6	326	1530	1180	855	286	250
13	46	61	45	13	11	9.2	376	1610	1130	867	310	250
14	46	48	44	13	11	40	397	1670	1060	871	359	243
15	45	49	42	12	11	130	393	1720	1010	851	395	233
16	47	55	41	13	10	140	414	1760	1060	832	407	220
17	45	53	40	14	10	160	485	1790	1090	814	412	207
18	44	48	39	14	9.8	170	564	1830	1060	793	422	201
19	44	54	39	14	9.1	190	628	1860	1020	776	432	194
20	42	44	40	15	8.3	210	744	1890	979	764	441	178
21	30	56	39	16	7.6	220	900	1910	977	744	439	172
22	20	54	34	15	7.2	230	960	1910	972	719	435	156
23	15	51	33	15	7.2	240	938	1910	949	691	435	134
24	13	49	35	14	6.7	220	902	1910	928	715	426	119
25	19	49	35	14	6.8	190	907	1900	912	690	414	113
26	33	49	34	13	7.0	170	948	1870	901	668	397	108
27	41	51	33	13	7.4	153	969	1830	893	646	386	101
28	41	51	31	13	7.4	148	986	1800	885	629	370	97
29	38	50	29	13	---	142	995	1750	878	615	363	96
30	37	48	27	13	---	162	1020	1730	870	612	361	84
31	38	---	26	13	---	185	---	1690	---	610	357	---
TOTAL	1294	1564	1237	477	294.5	3190.3	16394	48530	34244	23957	13472	6231
MEAN	41.7	52.1	39.9	15.4	10.5	103	546	1565	1141	773	435	208
MAX	54	70	47	24	14	240	1020	1910	1650	871	599	344
MIN	13	37	26	12	6.7	6.3	199	1040	870	610	286	84
AC-FT	2570	3100	2450	946	584	6330	32520	96260	67920	47520	26720	12360

CAL YR 1978 TOTAL 220443.13 MEAN 604 MAX 4770 MIN .21 AC-FT 437200
WTR YR 1979 TOTAL 150884.80 MEAN 413 MAX 1910 MIN 6.3 AC-FT 299300

06477500 FIRESTEEL CREEK NEAR MOUNT VERNON, SD

LOCATION.--Lat 43°46'30", long 98°14'33", in SW¼SW¼ sec.26, T.104 N., R.62 W., Davison County, Hydrologic Unit 10160011, near center of span on downstream side of highway bridge, 4.5 mi (7.2 km) north of Mount Vernon, 5.2 mi (8.4 km) downstream from West Firesteel Creek, and 12 mi (19 km) northwest of Mitchell.

DRAINAGE AREA.--540 mi^2 (1,400 km^2), approximately.

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

GAGE.--Water-stage recorder. Datum of gage is 1,297.22 ft (395.393 m) National Geodetic Vertical Datum of 1929. Prior to Nov. 28, 1972, nonrecording gage and crest-stage gage.

REMARKS.--Records fair except those for winter periods, which are poor. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--24 years, 21.8 ft^3/s (0.617 m^3/s), 15,790 acre-ft/yr (19.5 hm^3/yr); median of yearly mean discharges, 8.4 ft^3/s (0.24 m^3/s), 6,100 acre-ft/yr (7.5 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,610 ft^3/s (187 m^3/s) Apr. 4, 1969, gage height, 15.34 ft (4.676 m); maximum gage height, 17.12 ft (5.218 m) Apr. 3, 1969 (backwater from ice); no flow for many days in each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 10 ft^3/s (0.283 m^3/s) Mar. 7; maximum gage height, 3.86 ft (1.177 m) (backwater from ice); no 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	.02	.02	.01	.00	.00	.48	1.1	.16	.00	.10	.00
2	.00	.02	.02	.01	.00	.00	.45	1.2	.10	.00	.06	.00
3	.01	.02	.02	.01	.00	.01	.40	1.0	.16	.00	.04	.00
4	.01	.02	.02	.01	.00	.01	.35	.89	.16	.00	.03	.00
5	.00	.02	.02	.01	.00	.01	.30	.89	.20	.00	.01	.00
6	.00	.02	.02	.01	.00	.20	.55	.60	.13	.00	.01	.00
7	.00	.02	.02	.01	.00	3.0	.45	.89	.25	.00	.03	.00
8	.00	.01	.02	.01	.00	4.5	.45	.95	.16	.00	.60	.00
9	.01	.01	.02	.01	.00	4.0	.50	1.4	.13	.00	.45	.00
10	.01	.01	.02	.01	.00	5.0	.71	1.4	.16	.00	.50	.00
11	.02	.02	.03	.01	.00	4.5	1.1	1.5	.10	.00	.40	.00
12	.02	.03	.03	.01	.00	4.5	2.0	1.6	.05	.01	.02	.00
13	.03	.04	.03	.00	.00	1.3	2.0	.95	.10	.02	.01	.00
14	.03	.05	.03	.00	.00	3.0	2.2	1.0	.05	.02	.02	.00
15	.02	.04	.03	.00	.00	3.0	2.6	.89	.03	.03	.01	.00
16	.04	.05	.03	.00	.00	1.2	1.3	.55	.02	.01	.01	.00
17	.05	.05	.03	.00	.00	1.6	1.0	.52	.02	.00	.01	.00
18	.02	.03	.03	.00	.00	4.2	.50	.50	.02	.01	.02	.00
19	.02	.04	.03	.00	.00	5.5	.60	.45	.02	.01	.02	.00
20	.01	.04	.03	.00	.00	2.2	.60	.35	.13	.02	.02	.00
21	.02	.05	.03	.00	.00	1.2	.65	.35	.10	.02	.02	.00
22	.01	.03	.03	.00	.00	1.1	.60	.35	.08	.02	.03	.00
23	.01	.03	.03	.00	.00	1.2	.50	.35	.08	.02	.02	.00
24	.02	.03	.02	.00	.00	1.4	.60	.20	.06	.45	.02	.00
25	.02	.03	.02	.00	.00	1.3	.60	.35	.02	.50	.03	.00
26	.02	.03	.02	.00	.00	.95	2.0	.25	.01	.06	.04	.00
27	.02	.03	.02	.00	.00	1.1	2.2	.30	.02	.08	.01	.00
28	.01	.02	.02	.00	.00	.71	2.0	.25	.01	.10	.01	.00
29	.01	.02	.02	.00	---	.60	1.7	.13	.00	.16	.00	.00
30	.02	.02	.02	.00	---	.71	1.4	.10	.00	.20	.00	.00
31	.01	---	.02	.00	---	.50	---	.16	---	.16	.00	---
TOTAL	.47	.85	.75	.12	.00	58.50	30.79	21.42	2.53	1.90	2.55	.00
MEAN	.015	.028	.024	.004	.000	1.89	1.03	.69	.084	.061	.082	.000
MAX	.05	.05	.03	.01	.00	5.5	2.6	1.6	.25	.50	.60	.00
MIN	.00	.01	.02	.00	.00	.00	.30	.10	.00	.00	.00	.00
AC-FT	.9	1.7	1.5	.2	.00	116	61	42	5.0	3.8	5.1	.00

CAL YR 1978	TOTAL	10434.97	MEAN	28.6	MAX	2000	MIN	.00	AC-FT 20700
WTR YR 1979	TOTAL	119.88	MEAN	.33	MAX	5.5	MIN	.00	AC-FT 238

06478052 ENEMY CREEK NEAR MITCHELL, SD

LOCATION.--Lat 43°38'33", long 97°59'09", in NE¼NE¼ sec.13, T.102 N., R.60 W., Davison County, Hydrologic Unit 10160011, on left bank 3 ft (0.9 m) downstream from highway bridge, 4.5 mi (7.2 km) southeast of Mitchell, and 7.3 mi (11.7 km) above mouth.

DRAINAGE AREA.--181 mi^2 (469 km^2), approximately.

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

REVISED RECORDS.--WDR SD-78-1: 1977.

GAGE.--Water-stage recorder. Altitude of gage is 1,280 ft (390 m), from topographic map.

REMARKS.--Records good except those for winter periods, which are poor. Several observations of water temperature and specific conductance were made during the year.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,390 ft^3/s (39.4 m^3/s) Mar. 19, 1978, gage height, 11.27 ft (3.435 m); maximum gage height, 12.54 ft (3.822 m) Mar. 19, 1978 (backwater from ice); no flow for many days in 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)
Mar. 20	1530	ice jam		*6.36	1.939	Mar. 23	1830	43	1.22	6.15	1.875
Mar. 21	0015	46	1.30	6.19	1.887	Mar. 25	0300	22	0.62	5.82	1.774

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	.00	.07	.00	.00	.00	6.1	4.7	3.4	.32	.32	.00
2	.00	.00	.07	.00	.00	.00	6.1	4.3	2.2	.26	.35	.00
3	.00	.00	.08	.00	.00	.00	5.5	3.9	1.5	.14	.36	.00
4	.00	.00	.09	.00	.00	.00	5.4	3.7	.94	.10	.33	.00
5	.00	.00	.09	.00	.00	.02	5.7	3.4	.70	.09	.19	.00
6	.00	.00	.07	.00	.00	1.0	5.2	3.2	.55	.07	.14	.00
7	.00	.00	.08	.00	.00	8.0	5.2	3.5	1.3	.07	.09	.00
8	.00	.00	.08	.00	.00	7.8	5.0	4.1	1.4	.05	.32	.00
9	.00	.00	.07	.00	.00	7.6	5.0	5.0	.99	.05	.62	.00
10	.00	.00	.06	.00	.00	7.1	5.0	6.5	1.5	.03	.34	.00
11	.00	.00	.07	.00	.00	6.7	6.1	8.0	1.9	.02	.25	.00
12	.00	.00	.07	.00	.00	6.2	12	7.4	1.0	.01	.20	.00
13	.00	.00	.08	.00	.00	5.8	15	6.8	.55	.01	.13	.00
14	.00	.00	.08	.00	.00	5.4	17	6.3	.35	.02	.10	.00
15	.00	.00	.09	.00	.00	5.2	16	5.8	.24	.01	.07	.00
16	.00	.00	.09	.00	.00	5.0	13	5.3	.17	.00	.06	.00
17	.00	.00	.09	.00	.00	6.0	12	4.9	.17	.00	.06	.00
18	.00	.03	.09	.00	.00	8.0	10	4.5	.23	.00	.04	.00
19	.00	.06	.08	.00	.00	11	9.0	4.1	.23	.00	.05	.00
20	.00	.06	.07	.00	.00	15	8.2	3.7	.46	.00	.10	.00
21	.00	.06	.07	.00	.00	32	7.4	3.5	.64	.00	.14	.00
22	.00	.06	.07	.00	.00	24	6.6	3.2	.39	.00	.15	.00
23	.00	.07	.06	.00	.00	25	6.0	2.9	.33	.01	.21	.00
24	.00	.09	.05	.00	.00	20	5.4	2.7	.28	.11	.16	.00
25	.00	.09	.04	.00	.00	17	5.0	2.6	.20	.07	.13	.00
26	.00	.09	.03	.00	.00	12	6.0	2.5	.20	.05	.08	.00
27	.00	.08	.03	.00	.00	8.8	7.0	2.4	.24	.04	.06	.00
28	.00	.08	.02	.00	.00	7.2	6.2	2.2	.30	.03	.04	.00
29	.00	.08	.02	.00	---	6.4	5.6	2.1	.43	2.6	.02	.00
30	.00	.08	.01	.00	---	6.0	5.0	3.5	.43	2.0	.01	.00
31	.00	---	.00	.00	---	6.6	---	4.4	---	.58	.00	---
TOTAL	.00	.93	1.97	.00	.00	270.82	232.7	131.1	23.22	6.74	5.12	.00
MEAN	.000	.031	.064	.000	.000	8.74	7.76	4.23	.77	.22	.17	.000
MAX	.00	.09	.09	.00	.00	32	17	8.0	3.4	2.6	.62	.00
MIN	.00	.00	.00	.00	.00	.00	5.0	2.1	.17	.00	.00	.00
AC-FT	.00	1.8	3.9	.00	.00	537	462	260	46	13	10	.00

CAL YR 1978	TOTAL	5057.78	MEAN 13.9	MAX 1040	MIN .00	AC-FT	10030	
WTR YR 1979	TOTAL	672.60	MEAN 1.84	MAX 32	MIN .00	AC-FT	1330	

06478390 WOLF CREEK NEAR CLAYTON, SD

LOCATION.--Lat 43°22'18", long 97°36'12", in SE¼SE¼SW¼ sec.20, T.99 N., R.57 W., Hutchinson County, Hydrologic Unit 10160011, on left bank 5 ft (2 m) upstream from highway bridge, 4.1 mi (6.6 km) upstream from mouth and 5.6 mi (9.0 km) southeast of Clayton.

DRAINAGE AREA.--386 mi^2 (1,000 km^2), approximately.

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

GAGE.--Water-stage recorder. Altitude of gage is 1,210 ft (369 m), from topographic map.

REMARKS.--Records good except those for winter periods, which are poor. Several observations of water temperature and specific conductance were made during the year.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,280 ft^3/s (36.2 m^3/s) Mar. 22, 1979, gage height, 11.97 ft (3.648 m); maximum gage height, 12.22 ft (3.725 m) Mar. 19, 1979 (backwater from ice); no flow at times in 1976, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 175 ft^3/s (4.96 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	1245	900	25.5	a*12.22	3.725	Apr. 12	1715	529	15.0	8.52	2.597
Mar. 22	2230	*1,280	36.2	11.97	3.648	July 29	0945	274	7.76	6.83	2.082
Mar. 25	0500	653	18.5	9.45	2.880						

a Ice jam.
Minimum daily discharge 0.45 ft^3/s (0.013 m^3/s) Feb. 9.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Mar. 21 to Apr. 9, Apr. 23 to May 11, July 17-30; stage-discharge relation affected by ice Nov. 27 to Mar. 20)

2.7	0.28	3.0	2.4	4.0	29	6.0	165
2.8	.76	3.1	3.9	4.5	51	8.0	435
2.9	1.4	3.4	9.7	5.0	80	11.0	1,130

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	3.5	1.7	2.0	.83	.53	.68	129	29	12	3.3	16	7.5
2	3.1	1.9	2.0	.80	.52	.87	118	32	9.2	2.8	13	7.3
3	3.1	2.0	2.0	.75	.51	.87	103	29	8.6	2.7	13	7.1
4	3.0	1.9	1.9	.73	.51	.82	85	26	7.4	2.3	13	6.2
5	3.1	1.9	1.9	.70	.50	.84	80	24	6.7	2.2	12	5.4
6	2.8	1.6	1.9	.68	.49	3.0	69	22	6.3	2.1	11	5.3
7	2.6	1.7	1.9	.65	.48	5.0	63	20	9.3	2.0	9.7	4.6
8	2.7	1.7	1.9	.63	.47	10	57	23	9.0	2.1	10	4.0
9	2.7	1.8	1.9	.60	.45	10	56	36	11	2.0	11	3.4
10	2.4	1.7	1.8	.58	.46	11	50	82	13	1.9	9.9	2.9
11	2.4	1.7	1.8	.55	.48	18	65	141	10	1.9	9.1	3.4
12	2.3	1.6	1.8	.54	.52	30	355	109	7.7	1.7	8.6	10
13	3.1	2.8	1.8	.52	.55	50	382	77	5.8	1.7	9.0	8.8
14	2.6	2.4	1.8	.50	.60	55	249	59	4.9	1.7	8.7	5.9
15	2.4	2.2	1.8	.50	.64	45	200	47	4.3	1.6	8.0	4.6
16	2.0	2.2	1.7	.51	.64	50	171	37	5.6	1.5	7.5	3.7
17	2.1	2.3	1.7	.53	.64	100	141	32	5.1	2.0	6.9	3.2
18	2.1	2.2	1.6	.54	.63	700	113	30	4.2	1.3	6.8	2.8
19	2.2	2.9	1.5	.55	.62	800	91	27	3.4	1.5	9.1	2.6
20	2.3	2.4	1.5	.56	.58	700	87	24	6.7	3.5	21	2.8
21	2.2	2.3	1.4	.56	.49	521	80	21	8.0	2.9	30	2.6
22	2.0	2.4	1.4	.54	.47	885	66	19	8.2	32	15	2.3
23	1.9	2.5	1.3	.59	.48	1050	55	17	6.7	14	11	2.0
24	2.1	2.5	1.3	.58	.48	549	51	14	6.0	8.3	9.8	1.9
25	2.1	2.3	1.2	.58	.49	581	48	13	4.9	10	10	1.7
26	2.0	2.1	1.1	.58	.49	517	45	12	4.0	10	9.4	1.5
27	1.9	2.1	1.1	.56	.53	360	40	12	7.5	12	7.8	1.4
28	1.9	2.2	1.0	.56	.57	334	35	11	6.6	12	7.1	1.3
29	2.0	2.1	.96	.55	---	254	33	11	4.9	56	6.9	1.3
30	1.8	2.1	.90	.54	---	203	30	13	3.8	36	6.9	1.3
31	1.7	---	.86	.54	---	153	---	15	---	23	7.3	---
TOTAL	74.1	63.2	48.72	18.43	14.82	7998.08	3147	1064	210.8	258.0	334.5	118.8
MEAN	2.39	2.11	1.57	.59	.53	258	105	34.3	7.03	8.32	10.8	3.96
MAX	3.5	2.9	2.0	.83	.64	1050	382	141	13	56	30	10
MIN	1.7	1.6	.86	.50	.45	.68	30	11	3.4	1.3	6.8	1.3
AC-FT	147	125	97	37	29	15860	6240	2110	418	512	663	236

CAL YR 1978 TOTAL 14585.37 MEAN 40.0 MAX 1100 MIN .37 AC-FT 28930
WTR YR 1979 TOTAL 13350.45 MEAN 36.6 MAX 1050 MIN .45 AC-FT 26480

06478500 JAMES RIVER NEAR SCOTLAND, SD

LOCATION.--Lat 43°11'09", long 97°38'07", in SW¼SW¼ sec.30, T.97 N., R.57 W., Hutchinson County, Hydrologic Unit 10160011, on right bank 5.0 ft (2 m) downstream from highway bridge, 0.3 mi (0.5 km) upstream from Dawson Creek and 5.2 mi (8.4 km) northeast of Scotland.

DRAINAGE AREA.--21,550 mi^2 (55,810 km^2), approximately, of which about 4,790 mi^2 (12,400 km^2) is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1928 to current year. Monthly discharge only for some periods, published in WSP 1309.

REVISED RECORDS.--WSP 786: Drainage area. WSP 956: 1937-38. WSP 1279: 1932, 1948.

GAGE.--Water-stage recorder and rock and earth control. Datum of gage is 1,168.51 ft (356.162 m) National Geodetic Vertical Datum of 1929. Prior to Nov. 28, 1972, at site 0.25 mi (0.4 km) downstream at present datum.

REMARKS.--Records good except those for winter periods, which are poor. Flow regulated by Arrowwood and Jim Lakes, and Jamestown Reservoir, combined capacity, 246,000 acre-ft (303 hm^3), the largest of which is Jamestown Reservoir, capacity, 229,470 acre-ft (283 hm^3), 527 mi (848 km) upstream since May 1953. Occasional backwater caused by Dawson Creek; reverse flow occurred for part of May 15, 1961, from information by local residents.

AVERAGE DISCHARGE.--51 years, 381 ft^3/s (10.79 m^3/s), 276,000 acre-ft/yr (340 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, 15,200 ft^3/s (430 m^3/s) Apr. 3, 1962, gage height, 18.74 ft (5.712 m); no flow for many days in some years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,400 ft^3/s (96.3 m^3/s) Mar. 23, gage height, 13.43 ft (4.093 m); minimum daily, 27 ft^3/s (0.76 m^3/s) 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	88	48	66	56	36	30	354	963	1980	826	849	346
2	84	48	64	55	35	28	332	985	2000	786	773	337
3	79	49	63	49	35	28	325	1000	1990	772	735	344
4	78	50	62	45	35	27	308	1010	1970	759	707	323
5	75	53	62	40	35	28	298	1010	1940	771	681	315
6	74	53	62	42	34	29	302	1000	1910	777	656	302
7	70	56	63	40	35	32	290	994	1870	805	628	305
8	65	57	63	39	35	35	290	1020	1830	823	608	274
9	62	57	62	35	35	37	304	1120	1790	848	604	269
10	61	64	61	35	35	38	290	1310	1760	845	621	273
11	64	74	62	35	34	39	301	1490	1720	857	623	286
12	65	81	64	34	34	42	534	1590	1670	772	595	322
13	67	81	65	33	33	45	1020	1570	1590	730	559	334
14	69	83	65	32	33	50	1110	1550	1510	749	472	321
15	65	83	62	33	32	60	1000	1550	1370	767	409	302
16	61	86	63	34	32	200	866	1560	1290	789	359	273
17	59	84	63	35	32	600	764	1570	1230	798	358	263
18	57	85	65	36	32	1300	712	1610	1130	811	388	256
19	58	78	63	36	32	1600	687	1650	1070	809	406	252
20	60	76	65	38	31	1900	754	1680	1060	815	439	234
21	57	73	64	40	31	2000	795	1720	1070	814	460	220
22	55	71	63	38	31	2200	839	1740	1060	833	457	209
23	57	69	64	39	31	3000	882	1760	1000	838	448	193
24	58	67	65	34	31	3240	939	1810	952	801	443	186
25	58	66	64	34	31	2820	986	1850	898	794	459	185
26	60	69	62	34	31	2320	1010	1870	836	789	442	170
27	62	71	61	35	31	1810	998	1870	820	778	407	149
28	53	68	61	35	31	1170	962	1880	820	770	408	138
29	49	68	62	36	---	741	933	1890	857	786	386	135
30	46	68	59	36	---	535	950	1910	877	898	378	123
31	45	---	57	36	---	428	---	1960	---	915	354	---
TOTAL	1961	2036	1947	1181	923	26412	20135	46492	41870	24925	16112	7639
MEAN	63.3	67.9	62.8	38.1	33.0	852	671	1500	1396	804	520	255
MAX	88	86	66	56	36	3240	1110	1960	2000	915	849	346
MIN	45	48	57	32	31	27	290	963	820	730	354	123
AC-FT	3890	4040	3860	2340	1830	52390	39940	92220	83050	49440	31960	15150

CAL YR 1978 TOTAL 318069 MEAN 871 MAX 5990 MIN 12 AC-FT 630900
WTR YR 1979 TOTAL 191633 MEAN 525 MAX 3240 MIN 27 AC-FT 380100

06478500 JAMES RIVER NEAR SCOTLAND, SD--Continued
(National stream-quality accounting network station)
(National pesticide water-monitoring network station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1956-64, 1967-73, 1975 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1974 to current year.
WATER TEMPERATURES: January 1953 to September 1969, October 1974 to current year.

REMARKS.--Prior to October 1969, continuous temperature thermograph at station.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 2,660 micromhos Jan. 9, 1977; minimum daily, 300 micromhos Mar. 19, 1977.
WATER TEMPERATURES: Maximum, 32.0°C Aug. 1, 2, 1957; minimum daily, 0.0°C on many days during winter periods.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 2,100 micromhos Mar. 1; minimum daily, 510 micromhos Mar. 14-19.
WATER TEMPERATURES: Maximum daily, 27.0°C July 14; minimum daily, 0.0°C on many days during winter period.

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)
OCT										
24...	1000	60	1280	7.9	8.5	10	10.1	100	120	580
NOV										
14...	1430	83	1600	8.0	3.5	2.9	11.7	80	140	630
DEC										
20...	1150	64	1860	7.8	.5	3.6	12.2	100	120	690
JAN										
30...	1330	36	2220	7.5	.0	1.9	--	130	90	890
FEB										
21...	1315	31	2240	7.6	.0	4.6	2.4	210	K10	910
MAR										
21...	1440	2000	650	7.0	.0	26	9.7	130	570	240
APR										
19...	1145	670	1100	8.6	13.5	27	12.0	K20	220	460
MAY										
14...	1300	1540	830	8.2	12.5	32	11.2	100	100	310
JUN										
25...	1330	989	720	7.7	23.0	70	5.6	225	270	250
JUL										
17...	1300	685	740	8.2	25.0	63	7.0	100	70	250
AUG										
27...	1530	408	830	8.2	24.0	24	8.2	70	135	340
SEP										
24...	1530	185	1040	8.6	18.5	1.8	7.9	--	--	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)
OCT										
24...	270	140	57	72	21	1.3	17	--	--	310
NOV										
14...	320	150	63	94	24	1.6	17	--	--	310
DEC										
20...	300	160	70	120	27	2.0	20	--	--	390
JAN										
30...	430	220	83	140	25	2.0	20	--	--	460
FEB										
21...	470	230	82	140	25	2.0	18	--	--	440
MAR										
21...	140	60	22	25	17	.7	15	--	--	100
APR										
19...	280	110	46	76	26	1.5	15	--	--	180
MAY										
14...	160	75	30	51	25	1.3	16	--	--	150
JUN										
25...	62	58	26	46	27	1.3	14	--	--	190
JUL										
17...	36	54	27	53	30	1.5	14	--	--	210
AUG										
27...	76	77	35	68	41	1.6	14	--	--	260
SEP										
24...	31	82	38	72	29	1.6	13	--	--	330

K Non-ideal colony count.

06478500 JAMES RIVER NEAR SCOTLAND, SD--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)
OCT									
24...	400	38	.3	13	954	924	1.30	155	.00
NOV									
14...	430	46	.3	15	1030	1000	1.40	231	.05
DEC									
20...	530	56	.3	21	1280	1210	1.74	221	.28
JAN									
30...	640	72	.4	24	1580	1480	2.15	154	.68
FEB									
21...	680	71	.5	24	1620	1510	2.20	136	.81
MAR									
21...	170	20	.1	9.2	396	381	.54	2140	1.7
APR									
19...	380	40	.2	1.5	829	777	1.13	1500	.25
MAY									
14...	240	25	.2	6.5	552	534	.75	2300	.02
JUN									
25...	150	24	.3	9.7	463	442	.63	1240	.13
JUL									
17...	160	26	.2	12	490	472	.67	906	.01
AUG									
27...	200	27	.3	20	586	598	.80	646	.01
SEP									
24...	240	26	.3	19	650	689	.88	325	.12

DATE	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN, NH4 + ORG. SUSP. TOTAL (MG/L AS N) (00624)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)
OCT									
24...	4.6	4.6	.02	.91	3.7	4.6	20	.07	.19
NOV									
14...	.94	.93	.01	.90	.04	.99	4.4	.08	.14
DEC									
20...	1.3	1.2	.07	1.0	.30	1.6	7.0	.17	.23
JAN									
30...	1.7	1.2	.51	1.4	.30	2.4	11	.29	.35
FEB									
21...	1.5	.89	.61	1.4	.10	2.3	10	.32	.37
MAR									
21...	2.2	1.3	.92	2.0	.20	3.9	17	.55	.68
APR									
19...	2.3	2.1	.17	.80	1.5	2.6	11	.15	.38
MAY									
14...	1.6	1.6	.04	.72	.88	1.6	7.2	.17	.36
JUN									
25...	1.8	1.6	.16	.97	.83	1.9	8.5	.11	.51
JUL									
17...	1.9	1.9	.05	1.4	.50	1.9	8.5	.08	.38
AUG									
27...	1.6	1.6	.05	.35	1.3	1.6	7.1	.18	.35
SEP									
24...	2.2	2.2	.03	1.0	1.2	2.3	10	.20	.39

06478500 JAMES RIVER NEAR SCOTLAND, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C) (00689)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	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)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
NOV									
14...	1430	--	--	10	--	--	--	107	24
DEC									
20...	1150	--	--	13	170000	--	--	133	23
FEB									
21...	1315	--	--	13	--	--	--	192	16
MAR									
21...	1440	--	--	18	1400	--	--	101	545
MAY									
14...	1300	--	--	18	46000	--	--	90	374
JUN									
25...	1330	--	--	18	7100	--	--	230	614
JUL									
17...	1300	10	3.6	--	45000	--	--	202	374
AUG									
27...	1530	--	--	23	640	--	--	95	105
SEP									
24...	1530	--	--	20	140000	--	--	94	47

DATE	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM (70337)	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)	SED. SUSP. FALL DIAM. % FINER THAN .250 MM (70344)	SED. SUSP. FALL DIAM. % FINER THAN .500 MM (70345)
NOV								
14...	55	--	--	--	--	--	--	--
DEC								
20...	63	--	--	--	--	--	--	--
FEB								
21...	53	--	--	--	--	--	--	--
MAR								
21...	65	--	--	--	--	--	--	--
MAY								
14...	89	--	--	--	--	--	--	--
JUN								
25...	97	--	--	--	--	--	--	--
JUL								
17...	96	--	--	--	--	--	--	--
AUG								
27...	66	--	--	--	--	--	--	--
SEP								
24...	92	--	--	--	--	--	--	--

DATE	TIME	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	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)
OCT											
24...	1000	4	4	13	10	3	10	10	0	1	1
JAN											
30...	1330	4	4	4	0	4	20	10	10	2	0
APR											
19...	1145	4	3	2	0	2	10	10	0	<3	0
JUL											
17...	1300	6	4	<1	0	<1	10	10	0	2	0

DATE	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)	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)
OCT											
24...	0	4	1	3	440	10	340	290	48	1000	590
JAN											
30...	<3	5	2	3	260	10	8	1	7	1100	0
APR											
19...	<3	10	8	2	1700	<0	22	9	13	840	490
JUL											
17...	<3	9	7	2	4400	0	9	7	2	1000	990

< Less than.

06478500 JAMES RIVER NEAR SCOTLAND, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	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)	SELENIUM, DISSOLVED (UG/L AS SE) (01145)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN) (01092)	ZINC, SUSPENDED RECOVERABLE (UG/L AS ZN) (01091)	ZINC, DISSOLVED (UG/L AS ZN) (01090)
OCT 24...	410	.0	.0	.0	0	0	0	10	0	10
JAN 30...	1100	.0	.0	.0	1	0	1	20	20	5
APR 19...	350	.1	.1	.0	1	0	1	30	30	<3
JUL 17...	10	.1	.1	.0	0	0	0	30	20	10

DATE	TIME	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)
NOV 14...	1430	ND	ND	ND	ND	ND	ND	ND	ND	ND
FEB 21...	1315	ND	--	ND	--	ND	--	ND	--	ND

DATE	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)
NOV 14...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
FEB 21...	--	ND	--	ND	--	ND	--	ND	--	ND

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)
NOV 14...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
FEB 21...	--	ND	--	ND	--	ND	--	ND	--	ND

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)
NOV 14...	ND	ND	ND	ND	ND	ND	ND	ND	ND
FEB 21...	--	ND	--	ND	--	ND	--	ND	--

< Less than.
ND Not detected.

06478500 JAMES RIVER NEAR SCOTLAND, SD--Continued

PHYTOPLANKTON ANALYSES

DATE	AUG 30,78		SEP 25,78		DEC 20,78		MAR 21,79		MAY 14,79	
TIME	0900		1345		1150		1440		1300	
TOTAL CELLS/ML	25000		210000		170000		1400		46000	
DIVERSITY: DIVISION	1.6		1.4		1.1		1.8		0.8	
.CLASS	1.6		1.4		1.1		1.8		0.8	
..ORDER	2.2		1.9		1.3		2.3		0.9	
...FAMILY	2.6		2.0		1.5		3.0		2.3	
....GENUS	3.3		2.5		1.7		3.6		2.9	
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	*	0	--	-	--	-	--	-	--	-
...CHLOROCOCCACEAE										
....PLANKTOSPHAERIA	--	-	--	-	1400	1	--	-	--	-
...HYDRODICTYACEAE										
....PEDIASTRUM	--	-	--	-	--	-	--	-	2200	5
...MICRACTINIACEAE										
....GOLENKINIA	--	-	--	-	*	0	--	-	--	-
....MICRACTINIUM	--	-	2800	1	1700	1	--	-	8500#	18
...OOCYSTACEAE										
....ANKISTRODESMUS	*	0	2100	1	5200	3	86	6	1700	4
....CHODATELLA	--	-	--	-	--	-	--	-	--	-
....CLOSTERIOPSIS	--	-	--	-	--	-	--	-	*	0
....DICTYOSPHAERIUM	1300	5	--	-	3800	2	--	-	7800#	17
....KIRCHNERIELLA	--	-	--	-	3500	2	--	-	--	-
....OOCYSTIS	--	-	*	0	--	-	--	-	3600	8
....RADIOCOCCUS	1000	4	--	-	--	-	--	-	--	-
....SELENASTRUM	--	-	2800	1	--	-	10	1	280	1
....TREUBARIA	130	1	--	-	--	-	--	-	--	-
...SCENEDESMACEAE										
....ACTINASTRUM	540	2	--	-	--	-	--	-	980	2
....CRUCIGENIA	810	3	11000	5	4200	2	180	13	--	-
....SCENEDESMUS	3100	13	5500	3	3100	2	260#	19	10000#	23
....TETRASTRUM	270	1	1400	1	--	-	--	-	560	1
..TETRASPORALES										
...COCCOMYXACEAE										
....ELAKATOTHRIX	--	-	--	-	--	-	--	-	--	-
...PALMELLACEAE										
....SPHAEROCYSTIS	3000	12	--	-	5900	4	--	-	--	-
..VOLVOCALES										
...CHLAMYDOMONADACEAE										
....CHLAMYDOMONAS	*	0	*	0	*	0	--	-	420	1
...PHACOTACEAE										
....PHACOTUS	--	-	--	-	--	-	--	-	--	-
CHRYSOPHYTA										
.CHRYSOPHYCEAE										
..CHRYSOMONADALES										
...CHRYSOSPHAERACEAE										
....CHRYSOSPHAERA	--	-	--	-	120000#	75	--	-	--	-

06478500 JAMES RIVER NEAR SCOTLAND, SD--Continued

PHYTOPLANKTON ANALYSES

DATE	AUG 30,78		SEP 25,78		DEC 20,78		MAR 21,79		MAY 14,79	
TIME	0900		1345		1150		1440		1300	
TOTAL CELLS/ML	25000		210000		170000		1400		46000	
DIVERSITY: DIVISION	1.6		1.4		1.1		1.8		0.8	
.CLASS	1.6		1.4		1.1		1.8		0.8	
..ORDER	2.2		1.9		1.3		2.3		0.9	
...FAMILY	2.6		2.0		1.5		3.0		2.3	
....GENUS	3.3		2.5		1.7		3.6		2.9	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
.BACILLARIOPHYCEAE										
..CENTRALES										
...COSCINODISCACEAE										
....CYCLOTELLA	2400	10	51000#	24	1400	1	120	9	8900#	19
....MELOSIRA	5000#	20	4900	2	--	-	160	12	--	-
..PENNALES										
...ACHNANTHACEAE										
....COCCONEIS	610	2	--	-	--	-	--	-	--	-
...CYMBELLACEAE										
....CYMBELLA	*	0	--	-	--	-	10	1	--	-
...FRAGILARIACEAE										
....SYNEDRA	*	0	--	-	--	-	25	2	--	-
...GOMPHONEMATACEAE										
....GOMPHONEMA	--	-	--	-	--	-	10	1	--	-
...NAVICULACEAE										
....GYROSIGMA	610	2	*	0	--	-	*	0	--	-
....NAVICULA	*	0	--	-	--	-	60	4	--	-
...NITZSCHIACEAE										
....NITZSCHIA	270	1	3500	2	--	-	40	3	280	1
...SURIRELLACEAE										
....CYMATOPLEURA	--	-	--	-	--	-	*	0	--	-
....SURIRELLA	--	-	--	-	--	-	20	1	--	-
.CHRYSOPHYCEAE										
..CHRYSOMONADALES										
...OCHROMONADACEAE										
....OCHROMONAS	--	-	--	-	--	-	--	-	*	0
.XANTHOPHYCEAE										
..HETEROCOCCALES										
...CENTRITRACTACEAE										
....CENTRITRACTUS	--	-	--	-	--	-	--	-	--	-
...CHLOROTHECIACEAE										
....OPHIOCYTIUM	--	-	*	0	--	-	--	-	--	-

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)
SEP						
23...	1530	186	18.5	7.9	--	--
24...	1500	186	18.5	7.9	--	--
24...	1700	186	18.5	9.0	--	--
24...	1900	186	19.0	10.0	--	--
24...	2100	186	19.0	9.5	--	--
24...	2300	186	18.5	9.0	--	--
25...	0100	186	17.5	8.6	--	--
25...	0300	186	17.5	8.4	--	--
25...	0500	186	17.0	8.0	--	--
25...	0700	186	17.0	7.4	--	--
25...	0900	186	17.0	7.6	--	--
25...	1100	186	17.5	7.7	--	--
25...	1300	186	18.0	7.8	--	--
25...	1500	186	18.5	8.2	--	--

06478500 JAMES RIVER NEAR SCOTLAND, SD--Continued

PHYTOPLANKTON ANALYSES

DATE	AUG 30,78		SEP 25,78		DEC 20,78		MAR 21,79		MAY 14,79	
TIME	0900		1345		1150		1440		1300	
TOTAL CELLS/ML	25000		210000		170000		1400		46000	
DIVERSITY: DIVISION	1.6		1.4		1.1		1.8		0.8	
.CLASS	1.6		1.4		1.1		1.8		0.8	
..ORDER	2.2		1.9		1.3		2.3		0.9	
...FAMILY	2.6		2.0		1.5		3.0		2.3	
....GENUS	3.3		2.5		1.7		3.6		2.9	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CRYPTOPHYTA (CRYPTOMONADS)										
.CRYPTOPHYCEAE										
..CRYPTOMONADALES										
...CRYPTOCHRYSIDACEAE										
....CHROOMONAS	200	1	--	-	--	-	--	-	--	-
...CRYPTOMONADACEAE										
....CRYPTOMONAS	--	-	--	-	--	-	20	1	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)										
.CYANOPHYCEAE										
..CHROOCOCCALES										
...CHROOCOCCACEAE										
....AGMENELLUM	--	-	11000	5	--	-	--	-	--	-
....ANACYSTIS	--	-	96000#	45	3800	2	45	3	--	-
..HORMOGONALES										
...NOSTOCACEAE										
....ANABAENA	--	-	--	-	--	-	130	9	--	-
...OSCILLATORIACEAE										
....LYNGBYA	--	-	--	-	3500	2	--	-	--	-
....OSCILLATORIA	5000#	20	17000	8	--	-	100	7	--	-
EUGLENOPHYTA (EUGLENOIDS)										
.EUGLENOPHYCEAE										
..EUGLENALES										
...EUGLENACEAE										
....EUGLENA	--	-	--	-	--	-	*	0	--	-
....PHACUS	--	-	*	0	--	-	--	-	--	-
....TRACHELOMONAS	--	-	1400	1	3500	2	55	4	280	1
PYRRHOPHYTA (FIRE ALGAE)										
.DINOPHYCEAE										
..PERIDINIALES										
...PERIDINIACEAE										
....PERIDINIUM	--	-	*	0	--	-	--	-	--	-

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

06478500 JAMES RIVER NEAR SCOTLAND, SD--Continued

PHYTOPLANKTON ANALYSES

DATE	JUN 25,79		JUL 17,79		AUG 27,79		SEP 24,79	
TIME	1330		1300		1530		1530	
TOTAL CELLS/ML	7100		45000		640		140000	
DIVERSITY: DIVISION	1.7		1.6		1.2		1.6	
.CLASS	1.7		1.7		1.2		1.6	
..ORDER	2.1		2.1		1.8		1.7	
...FAMILY	2.2		2.3		1.8		2.1	
....GENUS	3.0		2.9		1.9		3.2	
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								
....PLANKTOSPHAERIA	--	-	--	-	--	-	--	-
...HYDRODICTYACEAE								
....PEDIASTRUM	--	-	--	-	--	-	--	-
...MICRACTINIACEAE								
....GOLENKINIA	--	-	300	1	--	-	--	-
....MICRACTINIUM	--	-	--	-	--	-	*	0
...OOCYSTACEAE								
....ANKISTRODESMUS	100	1	300	1	--	-	2700	2
....CHODATELLA	--	-	--	-	--	-	*	0
....CLOSTERIOPSIS	--	-	--	-	--	-	--	-
....DICTYOSPHAERIUM	--	-	300	1	--	-	14000	10
....KIRCHNERIELLA	--	-	1500	3	--	-	2700	2
....OOCYSTIS	--	-	1800	4	230#	36	8900	6
....RADIOCOCCUS	--	-	--	-	--	-	--	-
....SELENASTRUM	--	-	600	1	--	-	2400	2
....TREUBARIA	--	-	--	-	--	-	--	-
...SCENEDESMACEAE								
....ACTINASTRUM	--	-	--	-	--	-	2400	2
....CRUCIGENIA	1000	14	3600	8	--	-	--	-
....SCENEDESMUS	880	12	3000	7	--	-	12000	9
....TETRASTRUM	--	-	--	-	--	-	4100	3
..TETRASPORALES								
...COCCOMYXACEAE								
....ELAKATOTHRIX	--	-	--	-	57	9	--	-
...PALMELLACEAE								
....SPHAEROCYSTIS	--	-	--	-	--	-	--	-
..VOLVOCALES								
...CHLAMYDOMONADACEAE								
....CHLAMYDOMONAS	150	2	--	-	--	-	*	0
...PHACOTACEAE								
....PHACOTUS	--	-	--	-	43	7	--	-
CHRYSOPHYTA								
.CHRYSOPHYCEAE								
..CHRYSOMONADALES								
...CHRYSOSPHAERACEAE								
....CHRYSOSPHAERA	--	-	--	-	--	-	--	-

06478500 JAMES RIVER NEAR SCOTLAND, SD--Continued

PHYTOPLANKTON ANALYSES

DATE	JUN 25,79		JUL 17,79		AUG 27,79		SEP 24,79	
TIME	1330		1300		1530		1530	
TOTAL CELLS/ML	7100		45000		640		140000	
DIVERSITY: DIVISION	1.7		1.6		1.2		1.6	
.CLASS	1.7		1.7		1.2		1.6	
..ORDER	2.1		2.1		1.8		1.7	
...FAMILY	2.2		2.3		1.8		2.1	
....GENUS	3.0		2.9		1.9		3.2	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
.BACILLARIOPHYCEAE								
..CENTRALES								
...COSCINODISCACEAE								
....CYCLOTELLA	1300#	19	21000#	46	--	-	5500	4
....MELOSIRA	1500#	21	1200	3	--	-	1700	1
..PENNALES								
...ACHNANTHACEAE								
....COCCONEIS	--	-	--	-	--	-	--	-
...CYMBELLACEAE								
....CYMBELLA	--	-	--	-	--	-	--	-
...FRAGILARIACEAE								
....SYNEDRA	--	-	--	-	--	-	--	-
...GOMPHONEMATACEAE								
....GOMPHONEMA	--	-	--	-	--	-	--	-
...NAVICULACEAE								
....GYROSIGMA	100	1	--	-	--	-	--	-
....NAVICULA	100	1	--	-	--	-	--	-
...NITZSCHIACEAE								
....NITZSCHIA	52	1	2400	5	--	-	2700	2
...SURIRELLACEAE								
....CYMATOPLEURA	--	-	--	-	--	-	--	-
....SURIRELLA	100	1	--	-	--	-	*	0
.CHRYSOPHYCEAE								
..CHRYSOMONADALES								
...OCHROMONADACEAE								
....OCHROMONAS	--	-	--	-	--	-	1000	1
.XANTHOPHYCEAE								
..HETEROCOCCALES								
...CENTRITRACTACEAE								
....CENTRITRACTUS	--	-	600	1	--	-	--	-
...CHLOROTHECIACEAE								
....OPHIOCYTIUM	--	-	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)								
.CRYPTOPHYCEAE								
..CRYPTOMONADALES								
...CRYPTOCHRYSIDACEAE								
....CHROOMONAS	--	-	--	-	--	-	--	-
...CRYPTOMONADACEAE								
....CRYPTOMONAS	--	-	300	1	--	-	3100	2
CYANOPHYTA (BLUE-GREEN ALGAE)								
.CYANOPHYCEAE								
..CHROOCOCCALES								
...CHROOCOCCACEAE								
....AGMENELLUM	--	-	--	-	--	-	22000#	16
....ANACYSTIS	1300#	19	4200	9	290#	44	47000#	34
..HORMOGONALES								
...NOSTOCACEAE								
....ANABAENA	--	-	3300	7	--	-	--	-
...OSCILLATORIACEAE								
....LYNGBYA	--	-	--	-	--	-	--	-
....OSCILLATORIA	--	-	--	-	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)								
.EUGLENOPHYCEAE								
..EUGLENALES								
...EUGLENACEAE								
....EUGLENA	100	1	600	1	14	2	--	-
....PHACUS	210	3	--	-	14	2	--	-
....TRACHELOMONAS	100	1	300	1	--	-	3800	3
PYRRHOPHYTA (FIRE ALGAE)								
.DINOPHYCEAE								
..PERIDINIALES								
...PERIDINIACEAE								
....PERIDINIUM	--	-	--	-	--	-	--	-

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

06478500 JAMES RIVER NEAR SCOTLAND, SD--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	1100	1310	1490	1900	1700	2100	1000	950	620	720	850	910
2	1130	1290	1490	1900	1800	2000	1250	920	610	730	850	920
3	1120	1290	1490	1860	1650	2050	1240	900	610	760	940	910
4	1120	1290	1500	1770	1340	2050	1240	890	610	780	940	900
5	1120	1290	1500	1860	1600	2050	---	900	610	760	950	910
6	1080	1370	1520	1560	1600	2070	1240	900	610	760	950	910
7	1150	1360	1600	1850	1550	2070	1240	900	610	770	900	920
8	1100	1350	1600	1900	1480	1880	1170	930	650	770	910	920
9	1100	1350	1620	1810	1450	1880	1180	930	660	750	920	920
10	1040	1340	1600	1900	1950	1850	1180	930	650	750	930	930
11	1160	1340	1560	1900	1900	1850	1170	920	650	750	900	920
12	1160	1330	1560	1920	1980	1870	1100	930	650	750	920	920
13	1180	1330	1560	1850	1880	1880	1100	930	650	760	940	970
14	1180	1330	1550	1850	1900	510	1040	700	670	760	940	960
15	1180	1330	1570	1880	1970	510	1090	700	660	790	940	960
16	1230	1350	1520	1880	1680	510	1140	700	670	790	940	960
17	1230	1350	1460	1850	2050	510	1100	690	680	780	940	970
18	1230	1350	1520	1720	1950	510	980	700	750	780	940	1010
19	1230	1340	1520	1780	1850	510	970	700	690	780	930	1010
20	1230	1360	1570	1780	1860	520	940	700	700	780	950	1000
21	1240	1420	1570	1770	2050	670	850	700	720	850	940	1010
22	1240	1420	1550	1750	2050	680	850	690	720	840	940	1000
23	1240	1420	1550	1800	2100	670	810	700	730	860	950	1010
24	1250	1470	1550	1800	1880	680	800	690	730	850	930	1040
25	1290	1470	1750	1850	2100	690	830	700	730	860	920	1040
26	1300	1450	1750	1850	2080	680	860	620	740	840	930	1040
27	1260	1470	1740	1880	2050	920	800	610	790	840	910	1040
28	1260	1470	1740	1620	2070	930	840	620	790	870	920	1040
29	1280	1460	1730	1370	---	930	880	620	790	860	930	1040
30	1270	1500	1750	1670	---	920	880	610	790	860	910	1040
31	1290	---	1850	1730	---	940	---	610	---	860	930	---
MEAN	1190	1370	1590	1800	1840	1220	1030	774	685	795	925	971

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	15.0	9.0	1.0	.0	.0	2.0	5.0	10.0	20.0	25.0	25.0	22.0
2	15.0	9.0	1.0	.0	.0	2.0	5.0	10.0	20.0	25.0	25.0	23.0
3	14.0	8.0	2.0	.0	.0	2.0	5.0	10.0	21.0	24.0	25.0	24.0
4	13.0	8.0	2.0	-1.0	.0	2.0	5.0	10.0	21.0	23.0	25.0	26.0
5	13.0	8.0	2.0	-1.0	.0	2.0	5.0	11.0	22.0	22.0	24.0	26.0
6	13.0	8.0	1.0	-1.0	.0	2.0	5.0	12.0	22.0	21.0	24.0	25.0
7	12.0	7.0	1.0	-1.0	.0	2.0	5.0	12.0	22.0	21.0	24.0	24.0
8	12.0	7.0	1.0	.0	.0	2.0	7.0	13.0	22.0	22.0	23.0	24.0
9	12.0	7.0	1.0	.0	.0	2.0	7.0	13.0	21.0	22.0	23.0	23.0
10	12.0	6.0	1.0	.0	1.0	1.0	10.0	14.0	20.0	24.0	23.0	23.0
11	12.0	5.0	1.0	.0	1.0	1.0	10.0	14.0	20.0	24.0	23.0	22.0
12	11.0	4.0	1.0	.0	1.0	1.0	10.0	16.0	20.0	26.0	22.0	20.0
13	10.0	4.0	1.0	.0	1.0	2.0	11.0	16.0	20.0	26.0	22.0	19.0
14	10.0	3.0	1.0	.0	1.0	2.0	11.0	16.0	20.0	27.0	21.0	18.0
15	10.0	3.0	1.0	.0	---	2.0	11.0	17.0	19.0	25.0	20.0	18.0
16	9.0	3.0	1.0	.0	1.0	3.0	11.0	17.0	19.0	24.0	20.0	18.0
17	9.0	2.0	1.0	.0	1.0	3.0	12.0	17.0	20.0	23.0	20.0	18.0
18	9.0	2.0	1.0	.0	1.0	3.0	12.0	17.0	21.0	23.0	20.0	19.0
19	9.0	1.0	1.0	1.0	1.0	3.0	12.0	17.0	22.0	23.0	20.0	20.0
20	9.0	1.0	1.0	1.0	1.0	3.0	13.0	17.0	22.0	23.0	21.0	20.0
21	8.0	1.0	1.0	1.0	1.0	3.0	14.0	18.0	22.0	23.0	21.0	21.0
22	8.0	1.0	1.0	1.0	1.0	3.0	15.0	18.0	22.0	24.0	21.0	21.0
23	7.0	1.0	1.0	.0	1.0	3.0	15.0	18.0	22.0	24.0	22.0	21.0
24	7.0	1.0	1.0	.0	2.0	3.0	15.0	18.0	22.0	25.0	22.0	21.0
25	7.0	1.0	1.0	.0	2.0	2.0	14.0	18.0	23.0	25.0	21.0	21.0
26	8.0	1.0	1.0	1.0	2.0	2.0	13.0	19.0	23.0	25.0	21.0	22.0
27	8.0	1.0	1.0	1.0	2.0	4.0	12.0	19.0	24.0	25.0	21.0	22.0
28	8.0	2.0	1.0	.0	2.0	4.0	12.0	20.0	24.0	25.0	20.0	22.0
29	8.0	2.0	1.0	.0	---	4.0	11.0	20.0	25.0	24.0	20.0	22.0
30	9.0	2.0	1.0	.0	---	5.0	10.0	19.0	25.0	24.0	20.0	22.0
31	9.0	---	.0	.0	---	5.0	---	19.0	---	24.0	20.0	---
MEAN	10.0	4.0	1.0	.0	1.0	2.5	10.0	15.5	21.5	24.0	22.0	21.5

06478540 LITTLE VERMILLION RIVER NEAR SALEM, SD
(Hydrologic bench-mark station)

LOCATION.--Lat 43°47'39", long 97°22'02", in SW¼ sec.19, T.104 N., R.54 W., McCook County, Hydrologic Unit 10170102, on right wingwall at downstream end of culvert on county highway, 2.0 mi (3.2 km) upstream from small left-bank tributary and 5.2 mi (8.4 km) northeast of Salem.

DRAINAGE AREA.--51.0 mi^2 (132 km^2), approximately.

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

GAGE.--Water-stage recorder and concrete dam.

REMARKS.--Records good. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--13 years, 2.27 ft^3/s (0.064 m^3/s), 1,640 acre-ft/yr (2.02 hm^3/yr); median of yearly mean discharges, 1.5 ft^3/s (0.04 m^3/s), 1,100 acre-ft/yr (1.4 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 676 ft^3/s (19.1 m^3/s) Mar. 21, 1978, gage height, 7.79 ft (2.374 m); maximum gage height, 8.53 ft (2.600 m) Apr. 5, 1969 (backwater from ice); no flow for many days each year.

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. 18	2200	45	1.27	5.86	1.786	Apr. 14	1200	30	0.85	5.22	1.591
Mar. 23	1000	*105	2.97	*6.50	1.981	May 10	1900	27	0.76	4.62	1.408
Mar. 24	1430	100	2.83	6.46	1.969	July 29	1800	28	0.79	4.65	1.417

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	.00	.00	.00	.00	.00	18	2.8	1.1	.16	41	.20
2	.00	.00	.00	.00	.00	.00	15	3.4	.67	.09	3.0	.11
3	.00	.00	.00	.00	.00	.00	13	3.0	.31	.04	2.1	.11
4	.00	.00	.00	.00	.00	.00	11	2.8	.22	.00	1.4	.07
5	.00	.00	.00	.00	.00	.00	8.7	2.8	.17	.00	.75	.01
6	.00	.00	.00	.00	.00	.00	6.0	2.6	.14	.00	.28	.00
7	.00	.00	.00	.00	.00	.00	4.8	2.4	.13	.00	.14	.00
8	.00	.00	.00	.00	.00	.00	4.4	3.8	.11	.00	.53	.00
9	.00	.00	.00	.00	.00	.00	4.1	12	.16	.00	1.6	.00
10	.00	.00	.00	.00	.00	.00	3.4	24	.31	.00	1.2	.00
11	.00	.00	.00	.00	.00	.00	7.1	26	.22	.00	.83	.00
12	.00	.00	.00	.00	.00	.00	22	24	.18	.05	.67	.00
13	.00	.00	.00	.00	.00	.00	27	19	.13	.17	.53	.10
14	.00	.00	.00	.00	.00	.00	30	19	.08	.12	.35	.24
15	.00	.00	.00	.00	.00	.00	28	15	.02	.06	.24	.28
16	.00	.00	.00	.00	.00	.00	25	11	.21	.03	.19	.22
17	.00	.00	.00	.00	.00	.00	20	7.7	.46	.00	.17	.18
18	.00	.00	.00	.00	.00	20	15	4.8	.24	.00	.12	.10
19	.00	.00	.00	.00	.00	35	12	3.6	.19	.01	.28	.04
20	.00	.00	.00	.00	.00	44	9.8	3.0	1.0	.07	1.6	.00
21	.00	.00	.00	.00	.00	57	6.6	2.4	1.4	.06	1.6	.00
22	.00	.00	.00	.00	.00	89	5.5	2.8	1.0	.28	1.5	.00
23	.00	.00	.00	.00	.00	91	5.1	2.1	1.1	.31	1.5	.00
24	.00	.00	.00	.00	.00	75	3.8	2.0	1.6	2.3	1.5	.00
25	.00	.00	.00	.00	.00	56	3.8	1.8	1.6	3.1	1.6	.00
26	.00	.00	.00	.00	.00	42	3.4	1.6	1.2	3.6	1.6	.00
27	.00	.00	.00	.00	.00	33	3.0	1.3	1.1	5.1	1.5	.00
28	.00	.00	.00	.00	.00	30	2.8	1.0	.75	3.8	1.3	.00
29	.00	.00	.00	.00	---	27	2.8	.67	.31	15	1.2	.00
30	.00	.00	.00	.00	---	24	2.8	1.7	.22	20	1.0	.00
31	.00	---	.00	.00	---	21	---	1.6	---	8.2	.26	---
TOTAL	.00	.00	.00	.00	.00	644.00	323.9	211.67	16.33	62.55	71.54	1.66
MEAN	.000	.000	.000	.000	.000	20.8	10.8	6.83	.54	2.02	2.31	.055
MAX	.00	.00	.00	.00	.00	91	30	26	1.6	20	41	.28
MIN	.00	.00	.00	.00	.00	.00	2.8	.67	.02	.00	.12	.00
AC-FT	.00	.00	.00	.00	.00	1280	642	420	32	124	142	3.3

CAL YR 1978 TOTAL 2868.41 MEAN 7.86 MAX 480 MIN .00 AC-FT 5690
WTR YR 1979 TOTAL 1331.65 MEAN 3.65 MAX 91 MIN .00 AC-FT 2640

06478690 WEST FORK VERMILLION RIVER NEAR PARKER, SD

LOCATION.--Lat 43°24'55", long 97°12'18", in NE¼NE¼ sec.10, T.99 N., R.54 W., Turner County, Hydrologic Unit 10170102, on left downstream wingwall of bridge, 3.7 mi (6.0 km) northwest of Parker and 13.9 mi (22.4 km) upstream from confluence with East Fork Vermillion River.

DRAINAGE AREA.--370 mi^2 (958 km^2), approximately.

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

GAGE.--Water-stage recorder. Altitude of gage is 1,340 ft (408 m), from topographic map. Prior to Oct. 11, 1973, nonrecording gage and crest-stage gage at same site and datum.

REMARKS.--Records fair except those for winter periods, which are poor. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--18 years, 22.1 ft^3/s (0.626 m^3/s), 16,010 acre-ft/yr (19.7 hm^3/yr); median of yearly mean discharges, 9.0 ft^3/s (0.25 m^3/s), 6,500 acre-ft/yr (8.0 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,340 ft^3/s (123 m^3/s) Mar. 28, 1962, gage height, 12.33 ft (3.758 m); no flow for many days in most years.

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)
Mar. 22	2100	*1,940	54.9	a*10.81	3.295	Apr. 13	0100	548	15.5	6.59	2.009
Mar. 29	2300	502	14.2	6.41	1.954	May 11	0330	372	10.5	5.56	1.695

a Ice jam.
Minimum daily discharge, 0.34 ft^3/s (0.010 m^3/s) Feb. 3, 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	2.2	.49	.66	.62	.40	.53	285	23	14	23	20	5.2
2	1.8	.49	.66	.62	.37	.56	253	23	13	18	18	4.5
3	1.5	.49	.65	.62	.34	.59	205	22	13	14	17	20
4	1.4	.49	.65	.61	.34	.60	173	20	13	12	15	14
5	1.2	.53	.65	.61	.35	.62	166	19	12	11	14	10
6	1.2	.53	.65	.61	.35	.64	135	14	12	9.8	13	6.6
7	1.2	.53	.64	.61	.35	.67	128	14	12	9.0	14	5.5
8	1.2	.49	.64	.61	.36	.70	122	26	13	8.5	15	3.5
9	1.1	.49	.64	.61	.36	.73	105	64	14	8.0	16	1.8
10	1.1	.49	.64	.61	.37	.75	82	245	15	7.6	15	1.3
11	.93	.49	.64	.61	.37	.77	123	324	16	7.6	15	1.1
12	.93	.49	.64	.61	.38	.80	424	193	15	9.0	14	1.7
13	.80	.49	.64	.61	.39	.85	502	121	14	11	14	2.5
14	.86	.49	.64	.61	.40	.90	318	47	12	12	14	2.6
15	.86	.45	.64	.60	.41	1.0	204	27	11	11	13	2.4
16	.80	.45	.64	.60	.42	3.0	163	26	15	12	13	2.0
17	.74	.45	.64	.60	.43	10	135	26	30	12	14	1.8
18	.63	.45	.64	.60	.44	20	108	25	35	10	16	1.6
19	.63	.68	.64	.60	.44	150	92	25	50	9.2	18	1.4
20	.63	.68	.64	.60	.44	700	81	25	70	9.0	17	1.3
21	.63	.68	.64	.60	.44	1000	72	25	100	9.2	15	1.1
22	.63	.68	.64	.60	.44	1650	61	25	108	15	14	1.0
23	.63	.68	.64	.60	.45	1830	50	20	90	55	13	.94
24	.63	.68	.63	.60	.45	910	45	19	70	45	12	.86
25	.49	.68	.63	.60	.45	530	40	19	50	45	11	.80
26	.49	.68	.63	.58	.45	466	41	17	37	25	10	.75
27	.49	.68	.63	.55	.47	417	38	16	30	20	9.2	.72
28	.49	.67	.63	.52	.50	300	36	16	24	19	8.0	.68
29	.49	.67	.62	.49	---	430	28	15	25	69	7.3	.64
30	.49	.67	.62	.46	---	459	25	14	29	27	6.6	.60
31	.49	---	.62	.43	---	346	---	14	---	22	6.0	---
TOTAL	27.66	16.91	19.81	18.20	11.36	9231.71	4240	1509	962	574.9	417.1	98.89
MEAN	.89	.56	.64	.59	.41	298	141	48.7	32.1	18.5	13.5	3.30
MAX	2.2	.68	.66	.62	.50	1830	502	324	108	69	20	20
MIN	.49	.45	.62	.43	.34	.53	25	14	11	7.6	6.0	.60
AC-FT	55	34	39	36	23	18310	8410	2990	1910	1140	827	196

CAL YR 1978 TOTAL 19860.24 MEAN 54.4 MAX 1430 MIN .05 AC-FT 39390
WTR YR 1979 TOTAL 17127.54 MEAN 46.9 MAX 1830 MIN .34 AC-FT 33970

06479000 VERMILLION RIVER NEAR WAKONDA, SD

LOCATION.--Lat 42°59'27", long 96°57'49", in SW¼NW¼ sec.2, T.94 N., R.52 W., Clay County, Hydrologic Unit 10170102, on left bank 40 ft (12 m) downstream from bridge on State Highway 19, 4.3 mi (6.9 km) downstream from Frog Creek, 7.4 mi (11.9 km) southeast of Wakonda, and 29.6 mi (47.6 km) upstream from mouth.

DRAINAGE AREA.--1,680 mi^2 (4,351 km^2), approximately.

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

GAGE.--Water-stage recorder. Datum of gage is 1,150.9 ft (350.79 m) National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Prior to Sept. 2, 1954, nonrecording gage and crest-stage gage at site 40 ft (12 m) upstream at same datum. Since Dec. 27, 1951, supplementary nonrecording gage on relief bridge.

REMARKS.--Records fair October to March and good thereafter. At times during periods of high stage, part of flow leaves main channel through levee breaks and bypasses gage through overflow channel on left bank. Several observations of water temperature and specific conductance were made during the year. National Weather Service gage-height telemeter at station.

AVERAGE DISCHARGE.--34 years, 113 ft^3/s (3.200 m^3/s), 81,870 acre-ft/yr (101 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, 9,880 ft^3/s (280 m^3/s) Apr. 8, 1969; maximum gage height, 17.17 ft (5.233 m) Apr. 6, 1969; no flow at times in 1951, 1956-59, 1975-77.

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)
Mar. 25	2130	*4,860	138	*16.57	5.051	May 12	2245	1,220	34.6	12.87	3.923
Apr. 15	1045	1,210	34.3	12.78	3.895						

Minimum daily discharge, 1.6 ft^3/s (0.045 m^3/s) Feb. 14.

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	30	21	16	7.3	3.4	9.7	2080	231	155	108	130	101
2	30	20	15	6.4	3.1	11	1930	232	150	101	103	87
3	29	20	15	5.9	3.2	12	1740	232	143	94	92	78
4	28	20	15	5.9	2.9	14	1560	232	144	90	85	70
5	27	19	16	6.0	2.5	12	1410	220	139	84	82	65
6	26	19	15	6.9	2.5	15	1230	206	132	80	77	61
7	24	18	14	7.4	2.3	18	1130	192	125	77	72	62
8	23	18	13	7.4	2.3	21	977	182	117	75	69	78
9	22	18	13	7.5	2.0	32	835	199	118	72	72	79
10	23	19	13	8.4	1.7	24	745	665	131	69	66	73
11	23	19	13	9.0	1.8	32	666	1070	130	66	63	66
12	21	20	14	9.6	1.7	36	788	1200	130	62	61	72
13	23	20	14	10	1.7	40	994	1190	124	60	60	81
14	23	20	13	9.9	1.6	40	1160	1050	113	58	59	78
15	22	19	13	9.7	3.2	39	1210	807	105	56	58	75
16	20	18	13	9.1	5.9	38	1130	596	106	54	58	72
17	19	19	13	8.7	5.5	43	958	463	106	53	58	67
18	20	18	13	8.7	5.8	163	780	391	109	51	60	62
19	20	17	13	8.6	6.3	976	592	351	112	50	71	57
20	24	18	13	8.0	6.7	1080	513	322	138	49	78	53
21	16	17	13	7.5	6.8	1140	445	293	134	47	85	49
22	8.4	16	13	7.5	7.4	1850	407	263	176	49	89	46
23	7.9	16	13	6.9	7.1	2200	377	236	240	63	87	43
24	9.4	17	12	6.1	7.4	2500	345	213	217	55	87	41
25	14	17	11	5.8	7.1	3700	330	196	195	52	91	39
26	36	18	11	5.6	7.4	4680	319	182	177	50	114	36
27	30	17	11	5.4	8.1	4020	302	170	159	56	161	34
28	23	15	11	4.6	8.7	3270	279	159	143	65	197	32
29	18	18	11	4.2	---	2750	257	149	129	76	168	30
30	18	17	9.2	4.0	---	2450	240	151	117	100	141	28
31	22	---	8.2	3.6	---	2230	---	153	---	116	119	---
TOTAL	679.7	548	400.4	221.6	126.1	33445.7	25729	12196	4214	2138	2813	1815
MEAN	21.9	18.3	12.9	7.15	4.50	1079	858	393	140	69.0	90.7	60.5
MAX	36	21	16	10	8.7	4680	2080	1200	240	116	197	101
MIN	7.9	15	8.2	3.6	1.6	9.7	240	149	105	47	58	28
AC-FT	1350	1090	794	440	250	66340	51030	24190	8360	4240	5580	3600

CAL YR 1978 TOTAL 70821.59 MEAN 194 MAX 2580 MIN .20 AC-FT 140500
WTR YR 1979 TOTAL 84326.50 MEAN 231 MAX 4680 MIN 1.6 AC-FT 167300

06479438 BIG SIOUX RIVER NEAR WATERTOWN, SD

LOCATION.--Lat 45°00'22", long 97°09'53", in NE¼NE¼NE¼ sec.16, T.118 N., R.52 W., Codington County, Hydrologic Unit 10170202, on left bank at downstream side of county highway bridge, 4.9 mi (7.9 km) downstream from Mahoney Creek, 6.5 mi (10.5 km) upstream from inlet-outlet to Lake Kampeska, and 7.5 mi (12.1 km) northwest of Watertown.

DRAINAGE AREA.--241 mi^2 (624 km^2), approximately.

PERIOD OF RECORD.--October 1972 to current year.

REVISED RECORDS.--WDR SD-78-1: 1973-74(M), 1976-77(M).

GAGE.--Water-stage recorder. Datum of gage is 1,725.81 ft (526.027 m) National Geodetic Vertical Datum of 1929 (South Dakota Department of Transportation bench mark).

REMARKS.--Records good except those for winter periods, which are poor. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--7 years, 23.2 ft^3/s (0.657 m^3/s), 16,810 acre-ft/yr (20.7 hm^3/yr). The figure published in the 1978 report was in error; the correct figure is 6 years, 18.8 ft^3/s (0.532 m^3/s) 13,620 acre-ft/yr (16.8 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,720 ft^3/s (105 m^3/s) Mar. 30, 1978, gage height, 11.07 ft (3.374 m); no flow at times in 1974-79.

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)
Apr. 13	0115	*1,780	50.4	*a9.82	2.993	Aug. 6	0745	342	9.69	7.43	2.265
Apr. 17	0730	1,230	34.8	9.09	2.771						

a Ice jam.
No flow Jan. 2 to Mar. 15.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Stage-discharge relation affected by ice Nov. 11 to Apr. 15)

3.5	0.39	4.0	11	5.5	94	7.0	270	9.0	1,160
3.6	1.8	4.5	31	6.0	140	7.5	364	10.0	2,150
3.7	4.0	5.0	61	6.5	194	8.0	540		

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	4.2	2.0	1.6	.01	.00	.00	85	86	31	33	8.4	21
2	2.8	2.0	1.6	.00	.00	.00	100	82	29	28	8.6	18
3	2.5	2.0	1.5	.00	.00	.00	120	75	26	24	9.3	15
4	2.6	2.0	1.5	.00	.00	.00	135	69	23	21	10	13
5	2.4	1.6	1.4	.00	.00	.00	155	64	22	18	72	11
6	2.4	1.8	1.4	.00	.00	.00	180	61	19	16	315	10
7	2.9	2.0	1.4	.00	.00	.00	210	60	18	15	208	9.8
8	3.1	2.0	1.3	.00	.00	.00	240	59	16	14	108	9.1
9	3.1	2.0	1.3	.00	.00	.00	280	58	16	13	71	8.9
10	3.1	2.0	1.2	.00	.00	.00	330	58	15	12	57	8.5
11	2.9	2.0	1.2	.00	.00	.00	400	57	15	11	48	8.2
12	3.1	2.1	1.2	.00	.00	.00	1040	56	15	10	39	7.8
13	3.3	2.2	1.1	.00	.00	.00	1390	53	15	10	30	7.5
14	3.3	2.3	1.1	.00	.00	.00	828	50	14	10	24	7.3
15	2.9	2.4	1.0	.00	.00	.00	526	46	13	9.2	20	7.1
16	2.7	2.5	1.0	.00	.00	.05	936	43	14	8.5	18	6.5
17	2.7	2.6	1.0	.00	.00	1.0	1170	39	17	7.8	17	5.6
18	2.7	2.6	1.0	.00	.00	8.0	999	36	20	7.3	16	5.1
19	2.4	2.5	1.1	.00	.00	30	736	34	24	7.1	14	5.7
20	2.7	2.4	1.1	.00	.00	55	485	31	37	7.0	12	5.2
21	2.7	2.3	1.0	.00	.00	70	359	29	94	6.2	12	5.0
22	2.4	2.2	.96	.00	.00	100	264	27	231	5.7	12	4.8
23	2.4	2.2	.91	.00	.00	150	198	26	247	4.7	11	4.5
24	2.0	2.1	.86	.00	.00	130	160	25	187	5.4	11	3.9
25	1.6	2.1	.75	.00	.00	110	137	24	133	5.4	10	3.5
26	2.0	2.0	.40	.00	.00	95	120	22	94	9.1	9.9	3.3
27	1.8	2.0	.25	.00	.00	80	107	21	69	10	9.3	3.3
28	2.7	1.9	.15	.00	.00	70	96	20	54	11	12	3.2
29	2.4	1.8	.10	.00	---	60	92	19	46	11	17	3.8
30	2.0	1.7	.05	.00	---	70	89	25	39	10	24	3.7
31	2.0	---	.03	.00	---	75	---	30	---	9.6	23	---
TOTAL	81.8	63.3	30.46	.01	.00	1104.05	11967	1385	1593	370.0	1256.5	229.3
MEAN	2.64	2.11	.98	.000	.000	35.6	399	44.7	53.1	11.9	40.5	7.64
MAX	4.2	2.6	1.6	.01	.00	150	1390	86	247	33	315	21
MIN	1.6	1.6	.03	.00	.00	.00	85	19	13	4.7	8.4	3.2
AC-FT	162	126	60	.02	.00	2190	23740	2750	3160	734	2490	455

CAL YR 1978 TOTAL 22078.18 MEAN 60.5 MAX 3450 MIN .00 AC-FT 43790
WTR YR 1979 TOTAL 18080.42 MEAN 49.5 MAX 1390 MIN .00 AC-FT 35860

06479515 WILLOW CREEK NEAR WATERTOWN, SD

LOCATION.--Lat 44°54'17", long 97°03'31", in NE¼NW¼ sec.34, T.117 N., R.52 W., Codington County, Hydrologic Unit 10170202, on right bank 5 ft (2 m) downstream from bridge, 4.7 mi (7.6 km) upstream from mouth, and 2.8 mi (4.5 km) east of Watertown.

DRAINAGE AREA.--125 mi^2 (324 km^2), approximately.

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

GAGE.--Water-stage recorder. Datum of gage is 1,721.24 ft (524.634 m) National Geodetic Vertical Datum of 1929 (South Dakota Department of Transportation bench mark).

REMARKS.--Records good except those for winter periods, which are poor. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--8 years, 15.7 ft^3/s (0.445 m^3/s), 11,370 acre-ft/yr (14.0 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,930 ft^3/s (83.0 m^3/s) Mar. 31, 1978, gage height, 7.02 ft (2.140 m); maximum gage height, 9.86 ft (3.005 m) Mar. 15, 1972 (backwater from ice); no flow for many days each year.

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. 12	0830	*1,200	34.0	*a7.22	2.201	Apr. 20	2030	380	10.8	4.96	1.512
Apr. 16	0345	658	18.6	5.39	1.643	June 16	0900	580	16.4	5.33	1.625

a Ice jam.
No flow Jan. 2 to Mar. 5.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Stage-discharge relation affected by ice Jan. 6 to Apr. 13)

3.15	0	3.4	0.90	3.7	6.5	4.3	113
3.2	.11	3.5	1.5	3.8	15	4.6	205
3.3	.50	3.6	2.6	3.9	30	5.0	390

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	.96	.73	.70	.09	.00	.00	3.6	123	26	12	4.6	12
2	.90	.74	.69	.00	.00	.00	4.0	115	24	12	4.1	9.9
3	.87	.74	.62	.00	.00	.00	4.5	110	19	11	4.1	9.5
4	.94	.74	.62	.00	.00	.00	5.2	105	16	11	8.5	7.4
5	.90	.65	.62	.00	.00	.00	5.8	97	14	11	87	7.1
6	.92	.62	.61	.00	.00	.02	6.4	96	11	11	60	7.1
7	.95	.64	.43	.00	.00	.04	7.2	96	10	10	33	7.1
8	.95	.66	.44	.00	.00	.07	8.0	89	9.8	10	20	7.1
9	.91	.71	.38	.00	.00	.09	25	84	9.5	9.3	26	7.1
10	.89	.72	.32	.00	.00	.11	60	87	9.5	8.6	45	6.5
11	.84	.73	.33	.00	.00	.13	150	87	8.9	7.7	33	6.5
12	.81	.78	.38	.00	.00	.15	460	80	8.9	7.7	20	6.5
13	.78	.93	.44	.00	.00	.18	550	75	8.7	7.7	15	6.3
14	.80	.85	.50	.00	.00	.21	158	70	7.9	7.1	12	5.9
15	.80	1.2	.51	.00	.00	.25	141	66	6.5	6.9	10	5.9
16	.78	1.2	.54	.00	.00	.30	260	62	207	6.5	11	5.9
17	.82	1.1	.55	.00	.00	.35	202	59	111	6.5	11	4.1
18	.77	.97	.54	.00	.00	.42	250	53	61	6.5	10	3.7
19	.74	.92	.54	.00	.00	.50	212	50	40	6.2	9.5	3.4
20	.76	.89	.54	.00	.00	.60	251	49	37	5.9	9.5	3.2
21	.78	.86	.51	.00	.00	.80	234	46	49	5.9	9.5	2.9
22	.76	.86	.49	.00	.00	1.0	191	42	40	5.8	9.5	2.9
23	.71	.86	.51	.00	.00	1.3	181	40	30	5.3	9.5	2.6
24	.74	.82	.49	.00	.00	1.6	179	38	25	6.0	9.5	2.6
25	.71	.82	.40	.00	.00	2.1	166	38	22	5.9	9.4	2.4
26	.70	.82	.38	.00	.00	2.6	159	35	18	7.7	9.5	2.4
27	.70	.82	.41	.00	.00	3.0	150	32	17	8.1	10	2.0
28	.72	.80	.42	.00	.00	2.8	142	29	16	7.1	17	1.9
29	.74	.78	.42	.00	---	2.5	139	27	14	6.7	15	1.8
30	.76	.72	.23	.00	---	2.9	133	26	13	5.9	18	1.6
31	.70	---	.19	.00	---	3.2	---	26	---	5.2	17	---
TOTAL	25.11	24.68	14.75	.09	.00	27.22	4437.7	2032	889.7	244.2	567.2	155.3
MEAN	.81	.82	.48	.003	.000	.88	148	65.5	29.7	7.88	18.3	5.18
MAX	.96	1.2	.70	.09	.00	3.2	550	123	207	12	87	12
MIN	.70	.62	.19	.00	.00	.00	3.6	26	6.5	5.2	4.1	1.6
AC-FT	50	49	29	.2	.00	54	8800	4030	1760	484	1130	308

CAL YR 1978 TOTAL 12818.84 MEAN 35.1 MAX 2000 MIN .04 AC-FT 25430
WTR YR 1979 TOTAL 8417.95 MEAN 23.1 MAX 550 MIN .00 AC-FT 16700

06479525 BIG SIOUX RIVER NEAR CASTLEWOOD, SD

LOCATION.--Lat 44°43'54", long 97°02'39", in SW¼SW¼ sec.26, T.115 N., R.52 W., Hamlin County, Hydrologic Unit 10170202, on right bank at upstream side of highway bridge on State Highway 22, 3.25 mi (5.2 km) east of intersection of U.S. Highway 81 and State Highway 22, and 1.0 mi (1.6 km) northwest of Castlewood.

PERIOD OF RECORD.--October 1976 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,667.52 ft (508.260 m) National Geodetic Vertical Datum of 1929 (South Dakota Department of Transportation bench mark).

REMARKS.--Records good except those for winter periods, which are poor. Several observations of water temperature and specific conductance were made during the year.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,740 ft^3/s (49.3 m^3/s) Mar. 31, 1978, gage height, 11.10 ft (3.383 m); maximum gage height, 11.24 ft (3.426 m) Apr. 13, 1979; no flow for many days in each year.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 450 ft^3/s (12.7 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. 13	2330	--	--	*11.24	3.426	Apr. 21	1315	1,120	31.7	10.59	3.228
Apr. 14	0030	*1,440	40.8	--	--	June 17	0300	1,260	35.7	10.27	3,130

No flow Jan. 7 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	21	11	8.9	.60	.00	.00	100	560	157	87	46	46
2	20	11	8.8	.25	.00	.00	115	521	154	85	44	41
3	20	11	8.6	.15	.00	.00	130	474	145	81	43	36
4	20	11	8.5	.06	.00	.00	150	438	139	76	48	33
5	20	12	8.4	.03	.00	.00	170	404	116	71	62	33
6	20	12	8.3	.01	.00	.00	185	377	118	67	122	36
7	19	12	8.2	.00	.00	.00	210	368	113	66	95	34
8	18	11	8.0	.00	.00	.00	240	360	108	67	76	32
9	18	11	7.8	.00	.00	.00	270	342	101	65	120	32
10	18	11	7.6	.00	.00	.00	285	330	105	62	137	31
11	18	10	7.9	.00	.00	.00	300	337	101	60	107	29
12	17	11	8.3	.00	.00	.00	885	318	97	61	89	30
13	17	11	8.6	.00	.00	.00	1330	302	92	62	79	30
14	17	12	9.2	.00	.00	.00	1260	286	89	62	68	29
15	16	13	9.5	.00	.00	.00	828	267	96	60	60	28
16	16	12	9.0	.00	.00	.03	704	252	444	58	57	28
17	15	12	8.5	.00	.00	.15	834	245	906	56	55	27
18	15	12	7.8	.00	.00	.50	844	232	302	53	53	26
19	15	11	7.0	.00	.00	2.5	966	219	177	52	52	25
20	15	11	6.4	.00	.00	10	1040	215	171	50	49	25
21	15	11	5.8	.00	.00	40	1090	198	187	46	48	24
22	14	11	5.4	.00	.00	55	1020	193	157	45	49	25
23	14	10	4.0	.00	.00	70	943	184	134	44	48	24
24	14	10	2.0	.00	.00	85	904	172	120	47	46	24
25	14	10	1.8	.00	.00	110	875	163	110	50	45	25
26	13	9.8	1.6	.00	.00	100	809	160	104	56	42	25
27	13	9.6	1.5	.00	.00	90	739	150	96	63	40	24
28	12	9.4	1.4	.00	.00	80	687	143	100	61	51	29
29	12	9.2	1.2	.00	---	70	655	141	104	56	56	37
30	12	9.0	.90	.00	---	80	616	162	91	54	50	37
31	12	---	.70	.00	---	90	---	162	---	51	48	---
TOTAL	500	327.0	191.60	1.10	.00	883.18	19184	8675	4934	1874	1985	905
MEAN	16.1	10.9	6.18	.035	.000	28.5	639	280	164	60.5	64.0	30.2
MAX	21	13	9.5	.60	.00	110	1330	560	906	87	137	46
MIN	12	9.0	.70	.00	.00	.00	100	141	89	44	40	24
AC-FT	992	649	380	2.2	.00	1750	38050	17210	9790	3720	3940	1800

CAL YR 1978 TOTAL 34217.02 MEAN 93.7 MAX 1700 MIN .00 AC-FT 67870
WTR YR 1979 TOTAL 39459.88 MEAN 108 MAX 1330 MIN .00 AC-FT 78270

06479529 STRAY HORSE CREEK NEAR CASTLEWOOD, SD

LOCATION.--Lat 44°43'52", long 96°57'23", in NE¼NE¼NW¼ sec.33, T.115 N., R.51 W., Hamlin County, Hydrologic Unit 10170202, on right bank at downstream side of bridge on State Highway 22, 3.5 mi (5.6 km) east of Castlewood, 6.4 mi (10.3 km) upstream from mouth, and 7.0 mi (11.3 km) north of Dempster.

DRAINAGE AREA.--73.7 mi^2 (191 km^2), approximately.

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

GAGE.--Water-stage recorder. Datum of gage is 1,703.88 ft (519.343 m) National Geodetic Vertical Datum of 1929 (South Dakota Department of Transportation bench mark).

REMARKS.--Records good except those for winter periods, which are poor. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--11 years, 11.5 ft^3/s (0.326 m^3/s), 8,330 acre-ft/yr (10.3 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, 14,000 ft^3/s (396 m^3/s) Apr. 7, 1969, gage height, 14.65 ft (4.465 m), from rating curve extended above 3,500 ft^3/s (99.1 m^3/s) on basis of contracted-opening measurement of peak flow; no flow for many days each year.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 175 ft^3/s (4.96 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	2315	400	11.3	*a10.86	3.310	June 16	1430	508	14.4	8.33	2.539
Apr. 13	--	*900	25.5	ice jam		Aug. 9	1130	390	11.0	8.07	2.460

a Ice jam.
No flow Jan. 1 to Mar. 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	.32	.24	.34	.00	.00	.00	6.0	17	7.7	3.1	1.3	3.2
2	.28	.24	.33	.00	.00	.00	12	15	7.1	2.9	.81	2.4
3	.21	.26	.33	.00	.00	.00	25	13	5.8	2.7	.65	1.8
4	.21	.28	.32	.00	.00	.00	60	11	4.7	2.4	1.2	1.6
5	.21	.28	.32	.00	.00	.00	103	10	3.6	2.2	4.1	1.4
6	.22	.28	.32	.00	.00	.00	118	10	3.4	2.0	20	1.3
7	.30	.25	.31	.00	.00	.00	135	12	3.1	1.8	11	1.3
8	.31	.24	.31	.00	.00	.00	145	13	2.8	1.6	5.8	1.4
9	.31	.24	.30	.00	.00	.00	160	16	3.1	1.5	164	1.2
10	.28	.25	.30	.00	.00	.00	180	24	3.5	1.4	90	1.3
11	.28	.26	.33	.00	.00	.00	230	26	3.4	1.3	38	.93
12	.28	.28	.35	.00	.00	.00	330	21	3.1	1.2	16	.85
13	.28	.32	.37	.00	.00	.00	450	15	2.7	1.1	9.6	.80
14	.28	.34	.39	.00	.00	.00	213	12	2.2	1.0	6.4	.80
15	.25	.37	.40	.00	.00	.00	311	9.9	1.9	.92	4.2	.80
16	.21	.40	.38	.00	.00	.00	393	8.5	178	.86	3.6	.80
17	.26	.40	.36	.00	.00	.00	251	7.6	135	.80	3.2	.75
18	.27	.39	.34	.00	.00	.02	270	6.9	52	.75	2.8	.62
19	.24	.38	.30	.00	.00	.04	170	6.3	28	.79	2.6	.57
20	.26	.37	.25	.00	.00	.07	122	5.4	27	.88	3.4	.63
21	.28	.35	.22	.00	.00	.12	77	5.0	38	.84	3.4	.55
22	.28	.35	.20	.00	.00	.25	48	4.3	31	.79	3.7	.55
23	.28	.35	.19	.00	.00	.40	36	4.2	21	.66	4.8	.55
24	.25	.34	.18	.00	.00	.80	29	3.7	14	1.0	5.8	.46
25	.24	.31	.17	.00	.00	1.5	26	3.2	11	1.0	4.1	.42
26	.21	.31	.15	.00	.00	2.2	22	3.1	8.6	2.6	2.9	.40
27	.24	.31	.14	.00	.00	2.9	18	3.1	6.6	6.6	2.5	.39
28	.24	.35	.12	.00	.00	3.5	16	2.6	5.5	5.1	2.4	.33
29	.24	.34	.09	.00	---	4.5	17	2.2	4.4	4.0	2.2	.34
30	.28	.34	.05	.00	---	4.0	18	6.7	3.7	2.6	2.2	.31
31	.26	---	.02	.00	---	3.5	---	11	---	1.7	2.4	---
TOTAL	8.06	9.42	8.18	.00	.00	23.80	3991.0	308.7	621.9	58.09	425.06	28.75
MEAN	.26	.31	.26	.000	.000	.77	133	9.96	20.7	1.87	13.7	.96
MAX	.32	.40	.40	.00	.00	4.5	450	26	178	6.6	164	3.2
MIN	.21	.24	.02	.00	.00	.00	6.0	2.2	1.9	.66	.65	.31
AC-FT	16	19	16	.00	.00	47	7920	612	1230	115	843	57

CAL YR 1978 TOTAL 8334.76 MEAN 22.8 MAX 938 MIN .00 AC-FT 16530
WTR YR 1979 TOTAL 5482.96 MEAN 15.0 MAX 450 MIN .00 AC-FT 10880

06479640 HIDEWOOD CREEK NEAR ESTELLINE, SD

LOCATION.--Lat 44°36'42", long 96°54'17", in SW¼NW¼ sec.12, T.113 N., R.51 W., Hamlin County, Hydrologic Unit 10170202, on left bank at upstream side of highway bridge, 2.7 mi (4.3 km) north of Estelline, 2.8 mi (4.5 km) southeast of Dempster, and 4.7 mi (7.6 km) upstream from mouth.

DRAINAGE AREA.--164 mi^2 (425 km^2), approximately.

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

GAGE.--Water-stage recorder. Altitude of gage is 1,665 ft (507 m).

REMARKS.--Records good except those for winter periods, which are poor. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--11 years, 26.2 ft^3/s (0.742 m^3/s), 18,980 acre-ft/yr (23.4 hm^3/yr); median of yearly mean discharges, 19 ft^3/s (0.54 m^3/s), 13,800 acre-ft/yr (17 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,630 ft^3/s (103 m^3/s) Apr. 7, 1969, gage height, 11.36 ft (3.463 m); maximum gage height, 11.55 ft (3.520 m) Apr. 8, 1969 (backwater from collapsed bridge), no flow at times in 1969, 1971, 1974-77.

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)
Apr. 13	0100	600	17.0	*10.08	3.072	June 17	0230	853	24.2	7.27	2.216
Apr. 16	--	*900	25.5	ice jam		Aug. 5	0530	336	9.52	5.49	1.673

a Ice jam.
No flow for many days.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 20 to Dec. 2, Apr. 17 to May 22; stage-discharge relation affected by ice Dec. 25 to Apr. 16)

2.08	0	2.3	2.2	2.9	22	5.0	238
2.1	.04	2.4	4.1	3.4	55	6.0	454
2.2	.69	2.6	9.5	4.2	130	7.0	766

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	.07	.80	.00	.00	.00	45	88	25	20	12	25
2	.59	.04	.80	.00	.00	.00	60	79	23	19	11	23
3	.72	.04	.92	.00	.00	.00	75	72	21	18	9.8	22
4	.74	.08	.98	.00	.00	.00	90	64	20	16	22	21
5	.80	.12	1.1	.00	.00	.00	110	59	18	16	213	21
6	.74	.04	1.5	.00	.00	.00	140	54	18	16	64	20
7	.87	.04	1.5	.00	.00	.00	180	55	18	16	33	19
8	.98	.04	1.5	.00	.00	.00	230	54	18	15	25	19
9	.94	.04	1.6	.00	.00	.00	240	61	17	16	31	18
10	1.2	.06	1.7	.00	.00	.00	250	81	17	14	77	17
11	1.2	.19	1.3	.00	.00	.00	275	77	18	13	76	17
12	.85	.09	1.2	.00	.00	.00	550	64	17	12	39	17
13	.90	.36	1.2	.00	.00	.00	525	55	16	12	32	16
14	1.1	.36	1.3	.00	.00	.02	470	48	14	12	29	16
15	.70	.41	1.4	.00	.00	.03	580	43	14	11	27	16
16	.49	.36	1.1	.00	.00	.05	800	40	219	10	27	15
17	.37	.34	1.1	.00	.00	.09	705	37	463	9.9	26	14
18	.41	.37	1.2	.00	.00	.15	593	35	109	9.4	25	13
19	.34	.41	1.2	.00	.00	.25	487	34	53	9.4	24	13
20	.29	.41	1.3	.00	.00	.45	388	31	74	8.8	25	12
21	.40	.41	.92	.00	.00	.70	304	30	101	8.6	27	12
22	.34	.41	.75	.00	.00	1.3	244	28	67	8.9	29	11
23	.41	.41	.85	.00	.00	2.0	209	27	46	10	29	11
24	.36	.41	.80	.00	.00	3.5	184	26	38	16	28	10
25	.50	.41	.75	.00	.00	6.0	157	25	33	13	27	9.8
26	.50	.50	.66	.00	.00	10	136	24	29	31	26	9.6
27	.50	.50	.55	.00	.00	15	121	22	26	85	26	8.7
28	.46	.74	.40	.00	.00	18	107	21	24	34	26	8.5
29	.59	.80	.20	.00	---	23	109	20	23	26	25	8.2
30	.85	.80	.09	.00	---	28	100	28	22	18	24	7.8
31	.59	---	.02	.00	---	35	---	28	---	14	24	---
TOTAL	20.32	9.26	30.69	.00	.00	143.54	8464	1410	1601	538.0	1118.8	450.6
MEAN	.66	.31	.99	.000	.000	4.63	282	45.5	53.4	17.4	36.1	15.0
MAX	1.2	.80	1.7	.00	.00	35	800	88	463	85	213	25
MIN	.29	.04	.02	.00	.00	.00	45	20	14	8.6	9.8	7.8
AC-FT	40	18	61	.00	.00	285	16790	2800	3180	1070	2220	894

CAL YR 1978 TOTAL 19182.22 MEAN 52.6 MAX 1330 MIN .02 AC-FT 38050
WTR YR 1979 TOTAL 13786.21 MEAN 37.8 MAX 800 MIN .00 AC-FT 27340

06479910 SIXMILE CREEK NEAR BROOKINGS, SD

LOCATION.--Lat 44°20'46", long 96°44'51", in NE¼SE¼ sec.7, T.110 N., R.49 W., Brookings County, Hydrologic Unit 10170202, on left bank 8 ft (2 m) downstream from bridge, 0.7 mi (1.1 km) upstream from Interstate Highway 29 and 2.7 mi (4.3 km) northeast of Brookings.

DRAINAGE AREA.--54.0 mi^2 (140 km^2), approximately.

PERIOD OF RECORD.--September 1970 to current year. February 1951 to August 1970 (gage heights and discharge measurements only in files of Corps of Engineers).

REVISED RECORDS.--WRD SD-76-1: 1975.

GAGE.--Water-stage recorder. Datum of gage is 1,618.57 ft (493.340 m) National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Prior to Sept. 1, 1970, at datum 3.00 ft (0.914 m) higher, and Sept. 1, 1970, to Nov. 2, 1975, at datum 2.00 ft (0.610 m) higher.

REMARKS.--Records good except those for winter periods, which are poor. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--9 years, 7.27 ft^3/s (0.206 m^3/s), 5,270 acre-ft/yr (6.50 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 936 ft^3/s (26.5 m^3/s) Mar. 28, 1978, gage height, 9.45 ft (2.880 m); maximum gage height, 10.17 ft (3.100 m) Mar. 24, 1978 (backwater from ice); no flow for many days in 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. 12	1445	*700	19.8	*a9.50	2.896	June 17	1930	296	8.38	7.13	2.173
Apr. 16	1145	328	9.29	7.75	2.362	June 21	1700	314	8.89	7.24	2.207

a Ice jam.
No flow Jan. 1 to Mar. 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	.35	.48	.55	.00	.00	.00	4.0	4.7	34	5.9	2.8	3.0
2	.33	.49	.53	.00	.00	.00	10	5.8	17	5.5	2.8	2.5
3	.33	.50	.50	.00	.00	.00	25	4.1	10	4.8	3.2	2.2
4	.37	.52	.48	.00	.00	.00	52	3.3	8.2	4.2	4.5	2.0
5	.41	.51	.46	.00	.00	.00	60	2.9	7.0	3.6	4.0	1.9
6	.41	.49	.45	.00	.00	.00	65	2.7	6.5	3.1	4.9	2.0
7	.41	.50	.43	.00	.00	.00	72	2.6	5.9	2.8	7.0	1.9
8	.41	.51	.40	.00	.00	.00	82	2.9	5.2	2.7	5.5	1.8
9	.41	.54	.35	.00	.00	.00	95	4.9	5.2	2.4	5.7	1.6
10	.41	.55	.30	.00	.00	.00	110	16	6.4	2.2	5.7	1.5
11	.43	.54	.32	.00	.00	.00	180	28	6.4	2.1	33	1.5
12	.43	.56	.35	.00	.00	.00	550	27	5.5	2.0	41	1.9
13	.41	.58	.38	.00	.00	.00	509	13	4.9	2.0	18	2.4
14	.39	.60	.40	.00	.00	.00	201	7.4	4.3	1.9	10	2.7
15	.41	.62	.42	.00	.00	.00	171	5.5	4.0	1.8	7.5	2.5
16	.43	.61	.42	.00	.00	.00	266	4.8	6.8	1.9	6.3	2.2
17	.43	.60	.40	.00	.00	.00	214	4.3	122	2.0	5.6	2.0
18	.43	.58	.37	.00	.00	.02	126	4.0	170	2.1	5.1	1.8
19	.45	.56	.34	.00	.00	.05	111	3.9	67	2.3	5.5	1.6
20	.47	.55	.30	.00	.00	.10	78	3.6	70	2.6	8.8	1.5
21	.47	.54	.27	.00	.00	.15	44	3.4	200	2.1	11	1.4
22	.47	.52	.24	.00	.00	.25	23	3.9	172	1.7	9.2	1.3
23	.45	.51	.20	.00	.00	.40	12	3.9	71	1.4	8.5	1.2
24	.45	.50	.17	.00	.00	.55	7.4	3.6	36	1.9	8.2	1.2
25	.49	.50	.15	.00	.00	.75	5.9	3.6	22	2.8	7.4	1.1
26	.49	.52	.12	.00	.00	1.0	4.7	3.4	14	3.0	6.4	1.1
27	.49	.56	.10	.00	.00	1.3	3.5	3.1	11	3.5	5.6	1.0
28	.49	.60	.07	.00	.00	1.6	2.7	3.0	8.7	3.5	5.1	.99
29	.49	.60	.05	.00	---	1.9	5.4	3.6	7.4	3.7	4.6	.96
30	.49	.58	.02	.00	---	2.2	5.0	15	6.6	3.8	3.9	.96
31	.49	---	.02	.00	---	2.8	---	58	---	3.2	3.5	---
TOTAL	13.39	16.32	9.56	.00	.00	13.07	3094.6	255.9	1115.0	88.5	260.3	51.71
MEAN	.43	.54	.31	.000	.000	.42	103	8.25	37.2	2.85	8.40	1.72
MAX	.49	.62	.55	.00	.00	2.8	550	58	200	5.9	41	3.0
MIN	.33	.48	.02	.00	.00	.00	2.7	2.6	4.0	1.4	2.8	.96
AC-FT	27	32	19	.00	.00	26	6140	508	2210	176	516	103

CAL YR 1978 TOTAL 6546.63 MEAN 17.9 MAX 571 MIN .00 AC-FT 12990
WTR YR 1979 TOTAL 4918.35 MEAN 13.5 MAX 550 MIN .00 AC-FT 9760

06480000 BIG SIOUX RIVER NEAR BROOKINGS, SD

LOCATION.--Lat 44°10'48", long 96°44'55", in NW¼NW¼ sec.8, T.108 N., R.49 W., Moody County, Hydrologic Unit 10170203, on right bank 3 ft (1 m) downstream from highway bridge, 2.2 mi (3.5 km) downstream from Medary Creek and 9.5 mi (15.3 km) southeast of Brookings.

DRAINAGE AREA.--4,420 mi^2 (11,450 km^2), approximately, of which about 1,970 mi^2 (5,100 km^2) is probably noncontributing.

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

GAGE.--Water-stage recorder. Datum of gage is 1,551.91 ft (473.022 m) National Geodetic Vertical Datum of 1929. Prior to May 30, 1959, nonrecording gage at present site and datum.

REMARKS.--Records good except those for winter periods, which are poor. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--26 years, 165 ft^3/s (4.673 m^3/s), 119,500 acre-ft/yr (147 hm^3/yr); median of yearly mean discharges, 110 ft^3/s (3.12 m^3/s), 79,700 acre-ft/yr (98 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 33,900 ft^3/s (960 m^3/s) Apr. 9, 1969, gage height, 14.77 ft (4.502 m); no flow at times in 1956, 1959, 1976, 1977.

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. 3	unknown	1,300	36.8	ice jam		May 12	0745	1,260	35.7	8.27	2.521
Apr. 14	0600	*4,720	134	*11.71	3.569						

Minimum daily discharge, 2.1 ft^3/s (0.059 m^3/s) Feb. 25-28.

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	46	35	27	4.4	3.1	2.2	1000	1280	466	309	162	159
2	45	36	26	4.1	3.0	2.2	1150	1250	482	282	157	152
3	43	36	25	3.8	3.0	2.3	1250	1190	452	264	158	143
4	44	36	23	3.6	2.9	2.3	1100	1120	408	246	145	135
5	43	35	22	3.4	2.9	2.4	1000	1040	364	231	137	129
6	44	35	20	3.4	2.9	2.5	950	975	331	218	131	123
7	44	34	17	3.6	2.9	2.6	850	917	307	208	161	120
8	43	35	15	3.7	2.8	2.7	960	889	285	202	181	117
9	43	36	13	3.7	2.8	2.9	1030	903	274	194	208	114
10	43	36	12	3.8	2.8	3.1	1100	1010	280	188	212	109
11	42	35	10	3.8	2.9	3.3	1230	1180	278	180	206	109
12	42	36	9.0	3.7	3.0	3.7	1640	1240	270	189	254	113
13	40	35	8.4	3.6	3.0	4.0	3710	1170	257	198	301	116
14	40	34	8.2	3.4	3.1	4.5	4590	1060	242	191	283	109
15	39	33	8.0	3.1	2.7	5.0	4180	950	235	180	244	105
16	39	32	7.8	3.0	2.4	6.5	3760	861	260	170	220	102
17	38	31	7.6	3.1	2.3	8.0	3280	788	311	165	204	99
18	38	30	7.4	3.2	2.2	10	2910	713	351	160	191	96
19	38	29	7.3	3.3	2.3	13	2780	650	499	157	195	91
20	38	28	7.3	3.4	2.3	18	2650	614	682	153	219	91
21	38	28	7.2	3.4	2.4	40	2330	578	845	148	274	86
22	38	28	7.0	3.5	2.4	100	2020	553	895	143	257	83
23	36	29	6.5	3.4	2.4	200	1830	531	864	143	244	79
24	36	29	5.5	3.3	2.3	400	1670	500	812	164	227	78
25	37	30	5.0	3.3	2.1	700	1570	470	750	175	215	76
26	36	29	5.1	3.4	2.1	680	1480	450	666	171	201	73
27	36	29	5.2	3.5	2.1	640	1400	428	563	171	190	71
28	36	29	5.3	3.4	2.1	610	1330	403	472	172	180	70
29	36	28	5.2	3.3	---	600	1320	386	400	191	172	69
30	36	28	5.0	3.3	---	700	1310	415	347	194	163	68
31	35	---	4.7	3.2	---	800	---	449	---	179	163	---
TOTAL	1232	964	342.7	108.1	73.2	5571.2	57380	24963	13648	5936	6255	3085
MEAN	39.7	32.1	11.1	3.49	2.61	180	1913	805	455	191	202	103
MAX	46	36	27	4.4	3.1	800	4590	1280	895	309	301	159
MIN	35	28	4.7	3.0	2.1	2.2	850	386	235	143	131	68
AC-FT	2440	1910	680	214	145	11050	113800	49510	27070	11770	12410	6120

CAL YR 1978 TOTAL 131985.7 MEAN 362 MAX 5620 MIN 4.7 AC-FT 261800
WTR YR 1979 TOTAL 119558.2 MEAN 328 MAX 4590 MIN 2.1 AC-FT 237100

06481000 BIG SIOUX RIVER NEAR DELL RAPIDS, SD

LOCATION.--Lat 43°47'25", long 96°44'42", in NW¼NW¼ sec.29, T.104 N., R.49 W., Minnehaha County, Hydrologic Unit 10170203, on left bank at downstream side of highway bridge, 0.2 mi (0.3 km) downstream from confluence of divided channels and 3.0 mi (4.8 km) southwest of Dell Rapids.

DRAINAGE AREA.--5,060 mi² (13,100 km²), approximately, of which about 1,970 mi² (5,100 km²) is probably noncontributing.

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Datum of gage is 1,455.99 ft (443.786 m) National Geodetic Vertical Datum of 1929. Prior to Nov. 11, 1949, nonrecording gage and Nov. 11, 1949, to Sept. 30, 1951, water-stage recorder, at present site at datum 0.04 ft (0.012 m) lower.

REMARKS.--Records good except those for winter periods, which are poor. National Weather Service gage-height telemeter at station.

AVERAGE DISCHARGE.--31 years, 261 ft³/s (7.392 m³/s), 189,100 acre-ft/yr (233 hm³/yr); median of yearly mean discharges, 200 ft³/s (5.66 m³/s), 145,000 acre-ft/yr (180 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 41,300 ft³/s (1,170 m³/s) Apr. 9, 1969, gage height, 16.47 ft (5.020 m); no flow Aug. 25 to Oct. 17, 1976.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,000 ft³/s (28.3 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. 16	2300	*4,830	137	*12.07	3.679	Aug. 9	1915	1,130	32.0	6.75	2.057
May 12	1445	1,790	50.7	8.22	2.057						

Minimum daily discharge, 9.0 ft³/s (0.225 m³/s) Feb. 1-4.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Nov. 7 to Dec. 4, Apr. 12 to May 25; stage-discharge relation affected by ice Dec. 5 to Apr. 11)

2.4	7.9	2.9	26	3.5	109	6.0	875	11.0	3,370
2.7	18	3.2	51	4.0	230	9.0	2,050	13.0	6,250

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	47	35	13	9.0	12	1000	1680	552	437	210	271
2	57	46	34	12	9.0	13	1050	1670	573	392	205	247
3	55	46	34	11	9.0	13	1250	1610	582	359	196	238
4	55	47	33	11	9.0	13	1350	1540	570	333	189	226
5	54	45	32	11	10	13	1600	1440	535	311	180	212
6	54	46	29	11	10	13	1450	1350	494	293	165	198
7	53	45	27	12	10	14	1350	1260	447	282	152	190
8	55	45	24	12	10	14	1350	1210	406	270	274	371
9	54	44	22	12	10	14	1400	1210	390	259	688	311
10	53	42	20	12	10	13	1500	1560	384	246	744	226
11	51	39	20	12	10	13	1700	1750	366	236	434	215
12	51	44	20	12	11	14	2370	1770	345	276	321	283
13	49	43	20	11	11	16	3280	1720	345	522	283	386
14	50	38	19	10	12	18	3960	1640	336	436	295	305
15	49	38	19	10	12	20	4040	1500	315	336	311	261
16	49	41	19	10	12	27	4620	1350	342	278	310	238
17	49	42	18	11	11	40	4750	1190	513	252	289	216
18	47	41	18	11	10	60	4420	1080	545	234	268	203
19	47	38	18	11	10	80	3980	997	467	226	279	195
20	47	34	17	11	11	150	3520	921	583	236	376	176
21	47	35	17	11	12	200	3260	859	721	230	582	166
22	46	37	17	10	13	270	3100	817	764	369	669	160
23	49	37	16	10	13	600	2870	770	866	218	522	151
24	50	37	15	11	12	900	2580	735	926	209	452	142
25	45	36	13	11	12	820	2310	706	889	217	403	140
26	46	36	13	11	11	780	2130	673	826	209	375	135
27	46	36	14	11	12	750	1990	637	757	212	359	130
28	47	36	15	10	12	780	1870	604	672	207	335	120
29	49	35	15	10	---	800	1790	567	580	207	314	119
30	48	36	14	10	---	850	1710	561	496	209	288	117
31	47	---	13	10	---	900	---	540	---	209	278	---
TOTAL	1558	1212	640	341	303.0	8220	73550	35917	16587	8710	10746	6348
MEAN	50.3	40.4	20.6	11.0	10.8	265	2452	1159	553	281	347	212
MAX	59	47	35	13	13	900	4750	1770	926	522	744	386
MIN	45	34	13	10	9.0	12	1000	540	315	207	152	117
AC-FT	3090	2400	1270	676	601	16300	145900	71240	32900	17280	21310	12590

CAL YR 1978 TOTAL 161057.0 MEAN 441 MAX 5000 MIN 13 AC-FT 319500
WTR YR 1979 TOTAL 164132.0 MEAN 450 MAX 4750 MIN 9.0 AC-FT 325600

06481000 BIG SIOUX RIVER NEAR DELL RAPIDS, SD--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1960-62, 1968 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1967 to September 1970, October 1973 to current year.
WATER TEMPERATURES: October 1967 to September 1971, October 1974 to September 1975.
SUSPENDED SEDIMENT DISCHARGE: October 1967 to September 1976.

REMARKS.--There are many days of no samples during the year.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 2,100 micromhos Jan. 27, 1977; minimum daily, 140 micromhos Apr. 9, 1969.
WATER TEMPERATURES: Maximum daily, 33.5°C July 7, 12, 16, 20, 1974; minimum daily, 0.0°C on many days during winter periods.
SEDIMENT CONCENTRATIONS: Maximum daily mean, 619 mg/L Apr. 19, 1974; minimum daily mean, 0 mg/L Aug. 25 to Sept. 30, 1976.
SEDIMENT LOADS: Maximum daily, 40,600 tons (36,800 tonnes) Apr. 9, 1969; minimum daily, 0 ton (0 tonne) Aug. 8, 9, 14, Aug. 24 to Sept. 30, 1976.

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 (JTU) (00070)	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, 0.45 UM-MF (COLS./ 100 ML) (31616)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)
OCT												
04...	1150	54	770	8.0	13.0	14	6.8	44	280	130	506	.69
26...	0830	46	800	8.1	6.0	6	11.8	99	410	220	538	.73
NOV												
07...	0830	44	850	8.1	5.0	6	13.2	33	--	--	558	.76
16...	0900	42	930	8.2	1.0	7	10.7	48	150	90	552	.75
DEC												
05...	1030	32	1160	7.9	.0	4	13.4	9	120	90	709	.96
18...	1145	18	1300	7.9	.0	2	12.1	31	90	70	790	1.07
JAN												
12...	1430	12	1800	7.8	--	--	8.5	20	K1	ND	779	1.06
25...	1030	11	1380	--	.0	2	12.7	28	35	70	937	1.27
FEB												
09...	1120	10	1500	7.6	.0	23	10.1	22	190	120	807	1.10
22...	1145	13	1210	7.4	.0	6	4.0	14	350	60	765	1.04
MAR												
14...	1000	--	1180	7.7	.0	1	--	15	--	--	727	.99
20...	1330	150	420	7.3	.0	6	10.8	92	ND	70	235	.32
APR												
03...	1245	1250	400	7.8	.5	12	11.7	55	2100	79	268	.36
17...	1345	4770	375	7.3	8.0	66	9.8	57	90	80	247	.34
MAY												
07...	1030	1270	750	7.9	13.0	--	9.4	37	400	320	511	.69
15...	1200	1500	830	7.9	12.0	--	10.6	44	350	230	562	.76
JUN												
05...	1100	536	760	7.5	20.0	--	8.8	35	380	220	575	.78
26...	1100	584	750	7.8	21.5	--	7.0	120	730	420	560	.76
JUL												
11...	1040	245	890	7.7	26.0	--	6.4	29	760	410	592	.81
18...	1115	235	850	8.1	22.5	--	7.1	31	2600	1090	585	.80
AUG												
29...	1100	316	800	8.3	20.0	--	8.6	35	3200	K1050	584	.79
SEP												
11...	1115	215	840	8.1	22.0	--	--	49	--	--	562	.76
26...	1015	137	940	8.4	16.0	--	9.4	190	K700	330	629	.86

K Non-ideal colony count.
ND Not detected.

06481000 BIG SIOUX RIVER NEAR DELL RAPIDS, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	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, 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)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)
OCT											
04...	73.8	31	.00	.00	.01	1.5	1.5	1.5	.20	.02	11
26...	66.8	32	.01	--	.01	1.4	1.4	1.4	.16	--	17
NOV											
07...	66.3	26	.01	.01	.01	2.1	2.1	2.1	.12	.01	7.4
16...	62.6	35	.01	--	.02	1.5	1.5	1.5	.12	--	7.7
DEC											
05...	61.3	18	.94	.96	.10	1.4	1.5	2.4	.15	.00	9.6
18...	38.4	4	2.1	--	.30	.90	1.2	3.3	.13	--	5.5
JAN											
12...	25.2	7	2.4	2.5	2.0	350	350	350	.25	.22	5.5
25...	27.8	5	2.1	--	2.1	.70	2.8	4.9	.24	--	4.4
FEB											
09...	21.8	5	2.0	1.9	2.1	.40	2.5	4.5	.20	.20	3.9
22...	26.9	35	2.2	--	1.8	.50	2.3	4.5	.23	--	4.2
MAR											
14...	--	11	2.4	2.1	1.1	.40	1.5	3.9	.23	.01	3.0
20...	95.2	21	2.8	--	1.3	3.1	4.4	7.2	.12	--	31
APR											
03...	904	31	2.1	2.0	.57	1.5	2.1	4.2	.51	.46	21
17...	3180	148	1.9	--	.25	2.1	2.3	4.2	.41	--	27
MAY											
07...	1750	51	.08	.09	.02	1.1	1.1	1.2	.17	.10	12
15...	2280	20	.17	--	.03	.94	.97	1.1	.18	--	13
JUN											
05...	832	41	.07	.11	.06	1.2	1.3	1.4	.12	.12	14
26...	883	80	.64	--	.08	1.3	1.4	2.0	.34	--	38
JUL											
11...	392	47	.96	.90	.04	1.2	1.2	2.2	.25	.13	14
18...	371	71	1.2	--	.07	1.1	1.2	2.4	.26	--	12
AUG											
29...	498	90	.50	--	.02	1.5	1.5	2.0	.34	--	18
SEP											
11...	326	--	7.1	.64	.05	.45	.50	7.6	.41	.18	17
26...	233	--	.66	--	.02	1.9	1.9	2.6	.31	--	15

DATE	TIME	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)	CAR-BONATE (MG/L AS CO3) (00445)
OCT											
04...	1150	350	160	73	40	32	16	.7	6.9	230	0
NOV											
07...	0830	380	180	78	45	34	16	.8	6.3	240	0
DEC											
05...	1030	480	210	110	51	40	15	.8	7.0	340	0
JAN											
12...	1430	630	290	150	63	55	16	1.0	8.7	--	--
FEB											
09...	1120	540	210	130	53	46	15	.9	6.3	400	0
MAR											
14...	1000	--	--	--	--	--	--	--	--	130	0
APR											
03...	1245	170	89	40	16	8.4	9	.3	9.4	93	0
MAY											
07...	1030	380	160	88	40	17	9	.4	7.2	270	0
JUN											
05...	1100	430	180	100	44	27	12	.6	8.2	300	0
JUL											
11...	1040	380	120	82	43	28	22	.6	7.5	320	0
SEP											
11...	1115	400	160	92	41	26	12	.6	7.6	--	--

06481000 BIG SIOUX RIVER NEAR DELL RAPIDS, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

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, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	BORON, DISSOLVED (UG/L AS B) (01020)	SEDIMENT, SUSPENDED (MG/L) (80154)	SEDIMENT DISCHARGE, SUSPENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT										
04...	190	180	39	.2	2.8	487	110	92	13	84
NOV										
07...	200	230	29	.3	.6	542	160	73	8.7	76
DEC										
05...	280	240	42	.3	9.4	672	150	99	8.6	--
JAN										
12...	340	330	56	.4	26	905	220	198	6.4	--
FEB										
09...	330	270	43	.3	26	781	170	98	2.6	--
MAR										
14...	110	250	30	.4	21	--	140	--	--	--
APR										
03...	76	88	14	.2	13	244	80	38	128	--
MAY										
07...	220	170	13	.2	11	480	90	96	329	--
JUN										
05...	250	200	19	.3	9.4	556	130	--	--	--
JUL										
11...	260	210	21	.3	18	572	100	129	85	--
SEP										
11...	240	200	21	.3	18	553	120	167	97	--

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	800	770	920	---	---	1080	---	700	870	860	800	910
2	720	770	---	1060	---	1080	370	660	860	910	810	910
3	720	750	---	---	---	1070	400	730	870	910	810	910
4	720	790	---	---	---	---	410	740	860	---	760	920
5	730	790	---	---	---	1040	420	740	870	830	710	920
6	730	800	---	1040	---	1050	430	750	860	920	730	920
7	730	800	---	---	---	1060	430	770	870	890	750	920
8	730	790	920	1400	---	1050	430	760	870	900	590	820
9	730	800	980	1380	---	---	450	760	---	920	480	600
10	720	790	---	---	---	---	440	760	870	920	420	750
11	720	---	990	---	---	1100	460	760	860	920	510	870
12	720	---	1010	---	---	1030	440	770	860	900	620	880
13	730	790	1090	---	---	1040	---	770	870	700	660	830
14	740	820	1050	---	---	1030	360	820	880	720	700	870
15	730	810	1020	---	---	1030	370	840	880	800	700	910
16	730	810	1080	---	---	1020	380	830	880	850	700	---
17	750	820	---	---	---	700	360	820	---	860	640	---
18	740	840	---	---	---	---	380	830	880	900	670	950
19	---	---	990	---	---	1040	400	830	870	890	690	960
20	740	840	---	---	---	330	420	850	850	930	690	950
21	730	820	---	---	---	360	450	830	850	870	650	960
22	---	910	---	---	---	300	470	860	850	---	540	960
23	740	---	960	---	1100	320	500	820	850	870	620	970
24	760	910	---	---	---	330	520	860	850	900	660	970
25	780	910	---	1180	---	---	540	850	---	900	690	960
26	770	---	---	---	1030	300	560	820	860	880	720	950
27	770	---	---	---	1020	310	580	860	850	890	730	940
28	760	910	1000	---	1020	360	---	840	860	900	770	960
29	---	---	---	---	---	380	620	840	870	---	770	970
30	760	920	---	---	---	390	630	810	890	900	800	---
31	770	---	---	---	---	370	---	840	---	920	800	---
MEAN	742	824	1000	1210	1040	737	453	797	865	877	684	905

06481000 BIG SIOUX RIVER NEAR DELL RAPIDS, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	ARSENIC TOTAL (UG/L AS AS) (01002)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)
OCT									
26...	0830	2	4	330	1	230	.0	1	0
NOV									
16...	0900	1	4	300	15	200	.0	1	10
DEC									
18...	1145	2	4	250	8	180	.0	2	100
JAN									
25...	1030	2	6	160	7	470	.0	3	30
FEB									
22...	1145	2	8	340	22	410	.1	3	30
MAR									
14...	1000	2	5	190	38	180	.3	6	20
APR									
17...	1345	4	12	4500	25	290	.1	1	30
MAY									
15...	1200	--	3	640	12	130	--	--	20
JUN									
26...	1100	6	6	2300	140	330	.3	1	30
JUL									
18...	1115	5	11	1800	13	290	.1	1	30
AUG									
29...	1100	2	4	2100	6	400	.2	1	10
SEP									
26...	1015	5	4	1900	8	480	.1	1	20

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	18.0	12.0	2.0	---	---	.0	1.0	8.0	17.0	27.0	27.0	27.0
2	19.0	12.0	---	.0	---	.0	4.0	8.0	24.0	26.0	27.0	27.0
3	17.0	12.0	---	---	---	.0	2.0	7.0	22.0	25.0	23.0	26.0
4	16.0	12.0	---	---	---	---	2.0	8.0	23.0	---	26.0	27.0
5	12.0	9.0	---	---	---	.0	2.0	9.0	22.0	27.0	29.0	26.0
6	13.0	6.0	---	.0	---	.0	2.0	10.0	21.0	23.0	32.0	25.0
7	15.0	8.0	---	---	---	.0	3.0	15.0	22.0	24.0	27.0	19.0
8	16.0	9.0	1.0	.0	---	.0	3.0	14.0	20.0	26.0	25.0	21.0
9	14.0	9.0	2.0	.0	---	.0	2.0	11.0	---	26.0	24.0	23.0
10	17.0	6.0	---	---	---	---	2.0	9.0	19.0	28.0	24.0	22.0
11	17.0	4.0	5.0	---	---	.0	2.0	7.0	22.0	26.0	23.0	23.0
12	14.0	---	4.0	---	---	.0	2.0	8.0	22.0	27.0	22.0	19.0
13	13.0	3.0	4.0	---	---	.0	4.0	10.0	25.0	27.0	22.0	16.0
14	12.0	3.0	5.0	---	---	.0	4.0	11.0	23.0	28.0	23.0	17.0
15	12.0	3.0	6.0	---	---	.0	6.0	12.0	24.0	27.0	19.0	16.0
16	12.0	4.0	6.0	---	---	.0	8.0	17.0	23.0	24.0	18.0	---
17	13.0	3.0	---	---	---	.0	9.0	19.0	---	26.0	20.0	---
18	12.0	3.0	---	---	---	---	12.0	17.0	18.0	24.0	22.0	17.0
19	---	---	5.0	---	---	.0	12.0	17.0	22.0	23.0	22.0	21.0
20	16.0	2.0	---	---	---	2.0	13.0	17.0	20.0	26.0	22.0	17.0
21	13.0	1.0	---	---	---	2.0	13.0	17.0	22.0	25.0	24.0	18.0
22	---	1.0	---	---	---	5.0	13.0	16.0	20.0	---	22.0	19.0
23	8.0	---	2.0	---	.0	2.0	15.0	17.0	20.0	27.0	22.0	20.0
24	12.0	3.0	---	---	---	.0	12.0	15.0	---	27.0	23.0	20.0
25	12.0	2.0	---	.0	---	---	12.0	17.0	24.0	25.0	23.0	20.0
26	9.0	---	---	---	.0	.0	10.0	21.0	25.0	27.0	23.0	22.0
27	8.0	---	---	---	.0	1.0	---	21.0	25.0	24.0	20.0	22.0
28	12.0	2.0	1.0	---	.0	4.0	9.0	19.0	26.0	25.0	22.0	21.0
29	---	---	---	---	---	2.0	8.0	24.0	27.0	---	24.0	21.0
30	11.0	2.0	---	---	---	2.0	---	19.0	27.0	27.0	27.0	---
31	12.0	---	---	---	---	2.0	---	17.0	---	26.0	28.0	---
MEAN	13.5	5.5	3.5	.0	.0	1.0	6.5	14.0	22.5	26.0	23.5	21.0

06481500 SKUNK CREEK AT SIOUX FALLS, SD

LOCATION.--Lat 43°32'01", long 96°47'26", in NW¼SW¼ sec.24, T.101 N., R.50 W., Minnehaha County, Hydrologic Unit 10170203, on right bank 5 ft (2 m) downstream from bridge on Marion Road, 1.3 mi (2.1 km) upstream from mouth, 1.8 mi (2.9 km) downstream from small right-bank tributary, and 4.0 mi (6.4 km) southwest of Sioux Falls.

DRAINAGE AREA.--570 mi^2 (1,480 km^2), approximately.

PERIOD OF RECORD.--May 1948 to September 1971 (published as "near Sioux Falls"). October 1971 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,405.10 ft (428.274 m) National Geodetic Vertical Datum of 1929 (Corps of Engineers bench mark). Prior to Oct. 24, 1949, nonrecording gage, and Oct. 24, 1949, to Apr. 28, 1972, water-stage recorder, both at site 1.9 mi (3.1 km) upstream at datum 10.19 ft (3.106 m) higher.

REMARKS.--Records good except those for winter periods, which are poor. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--31 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, 25 ft^3/s (0.71 m^3/s), 18,100 acre-ft/yr (22 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 29,400 ft^3/s (833 m^3/s) June 17, 1957, gage height, 17.78 ft (5.419 m), site and datum then in use, from rating curve extended above 8,100 ft^3/s (229 m^3/s) on basis of slope-area measurement of peak flow; no flow at times in many years.

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. 20	0015	1,690	47.9	8.16	2.487	Apr. 12	1015	1,240	35.1	7.28	2.219
Mar. 22	1615	*4,230	120	*11.81	3.600	May 10	1400	914	25.9	6.03	1.838
Mar. 25	1845	706	20.0	5.77	1.759	Sept. 3	1545	598	16.9	5.05	1.539
Mar. 29	0230	1,100	31.2	6.96	2.121						

Minimum daily discharge, 0.75 ft^3/s (0.021 m^3/s) Jan. 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	4.5	4.1	4.4	2.3	1.2	1.2	411	86	35	42	60	66
2	4.4	4.2	4.3	2.2	1.3	1.2	340	93	34	34	55	61
3	4.3	4.4	4.4	1.7	1.3	1.3	308	88	31	27	51	273
4	4.2	5.0	3.9	1.6	1.4	3.3	290	77	28	23	50	180
5	4.1	6.1	3.5	1.5	1.4	2.2	290	68	27	21	44	124
6	3.7	7.6	3.6	1.5	1.5	1.6	204	61	25	18	42	94
7	3.3	8.0	3.4	1.4	1.5	1.4	212	54	26	17	47	72
8	3.0	8.0	3.2	1.3	1.3	1.2	222	53	26	16	51	60
9	3.0	7.0	3.2	1.1	1.3	1.0	204	100	26	16	67	53
10	3.1	7.3	2.8	1.1	1.2	.90	176	712	32	14	67	48
11	3.8	9.8	2.9	1.0	1.2	.80	188	638	31	13	74	47
12	3.7	8.1	3.1	1.0	1.1	1.0	1030	378	30	15	88	68
13	3.5	9.0	3.1	.90	1.1	1.0	756	272	28	25	83	116
14	3.2	7.6	2.9	.85	1.1	.95	438	206	25	21	83	118
15	3.4	8.1	2.9	.75	1.1	.86	325	159	21	20	81	119
16	3.1	8.4	2.9	.85	1.0	.95	282	125	31	24	73	96
17	3.2	7.9	2.9	1.0	1.0	3.1	288	101	60	22	66	85
18	3.2	8.0	2.8	1.1	1.1	100	281	84	69	19	62	71
19	3.2	6.7	2.8	1.2	1.2	800	262	77	104	18	65	61
20	3.2	6.6	2.9	1.2	1.2	1190	257	71	181	17	70	54
21	3.2	6.2	2.9	1.2	1.3	934	220	63	208	17	111	49
22	3.1	5.9	2.9	1.2	1.3	2880	176	57	212	61	138	45
23	3.1	5.9	2.9	1.2	1.2	1610	150	49	166	145	139	42
24	3.0	5.4	2.7	1.2	1.2	640	130	44	128	118	113	40
25	3.3	5.4	2.6	1.1	1.3	560	118	41	89	118	93	37
26	3.7	5.1	2.7	1.1	1.3	507	110	38	67	96	88	34
27	3.4	6.5	2.5	1.0	1.2	351	101	36	53	76	82	32
28	3.3	5.4	2.5	1.0	1.2	441	92	33	46	67	81	30
29	3.3	4.8	2.6	1.1	---	906	95	31	47	112	78	30
30	3.0	4.8	2.5	1.1	---	703	98	36	61	151	74	28
31	3.9	---	2.1	1.2	---	479	---	35	---	84	72	---
TOTAL	107.4	197.3	94.8	37.95	34.5	12124.96	8054	3966	1947	1467	2348	2233
MEAN	3.46	6.58	3.06	1.22	1.23	391	268	128	64.9	47.3	75.7	74.4
MAX	4.5	9.8	4.4	2.3	1.5	2880	1030	712	212	151	139	273
MIN	3.0	4.1	2.1	.75	1.0	.80	92	31	21	13	42	28
AC-FT	213	391	188	75	68	24050	15980	7870	3860	2910	4660	4430

CAL YR 1978 TOTAL 21212.95 MEAN 58.1 MAX 2200 MIN .30 AC-FT 42080
WTR YR 1979 TOTAL 32611.91 MEAN 89.3 MAX 2880 MIN .75 AC-FT 64690

06482020 BIG SIOUX RIVER AT NORTH CLIFF AVENUE, AT SIOUX FALLS, SD

LOCATION.--Lat 43°34'01", long 96°42'39", in SW¼NW¼ sec.10, T.101 N., R.49 W., Minnehaha County, Hydrologic Unit 10170203, on right bank 20 ft (6 m) downstream from bridge on North Cliff Avenue and 4.1 mi (6.6 km) upstream from Slip Up Creek.

DRAINAGE AREA.--5,770 mi² (14,940 km²), approximately, of which about 1,970 mi² (5,100 km²) is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1962 to September 1971 (gage heights and discharge measurements only in files of Corps of Engineers). October 1971 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,294.18 ft (394.466 m) National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Prior to Dec. 15, 1971, nonrecording gage 20 ft (6 m) upstream at same datum.

REMARKS.--Records good. National Weather Service gage-height telemeter at station.

AVERAGE DISCHARGE.--8 years, 313 ft³/s (8.864 m³/s), 226,800 acre-ft/yr (280 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,020 ft³/s (170 m³/s) Mar. 24, 1978, gage height, 17.54 ft (5.346 m); maximum gage height, 17.62 ft (5.371 m) Mar. 22, 1978; minimum daily discharge, 2.1 ft³/s (0.059 m³/s) Jan. 14, 1972.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Apr. 10, 1969, reached a stage of 27.45 ft (8.367 m), discharge, 40,700 ft³/s (1,150 m³/s).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,000 ft³/s (28.3 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. 20	0330	2,090	59.2	11.37	3.466	May 11	0230	2,400	68.0	12.65	3.856
Mar. 23	0245	*5,990	170	*16.95	5.166	June 24	1315	1,170	33.1	8.92	2.719
Mar. 29	1415	2,200	62.3	12.01	3.661	July 29	1100	1,040	29.5	8.57	2.612
Apr. 18	0100	4,570	129	16.21	4.941	Aug. 10	0845	1,220	34.6	9.08	2.768

Minimum daily discharge, 20 ft³/s (0.566 m³/s) Feb. 11, 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	84	68	58	29	25	27	1690	1740	631	594	319	379
2	87	65	54	31	25	30	1610	1720	637	529	399	350
3	81	65	50	32	24	29	1520	1670	729	485	310	548
4	81	60	54	31	25	23	1530	1610	679	433	283	520
5	80	60	53	30	26	27	1660	1530	634	401	274	372
6	78	62	49	28	25	31	1640	1440	600	375	269	355
7	78	62	47	25	24	35	1710	1360	604	356	267	318
8	75	62	44	28	24	30	1820	1310	529	342	411	335
9	81	60	42	28	24	30	1720	1560	542	330	651	471
10	79	61	38	27	22	26	1740	2150	529	316	1100	351
11	77	56	43	27	20	30	1950	2320	488	301	940	335
12	75	60	45	27	23	37	2910	2110	469	294	780	511
13	65	71	45	24	24	39	3490	2000	447	420	700	563
14	59	60	44	24	25	35	3550	1870	436	524	640	526
15	68	60	47	23	24	35	3710	1730	423	414	600	451
16	67	65	45	25	23	41	3910	1580	575	347	570	387
17	70	70	42	25	23	61	4320	1420	598	313	540	348
18	70	65	44	27	20	165	4450	1300	734	267	600	314
19	70	43	45	27	22	1100	4040	1200	721	264	720	292
20	70	54	45	25	25	1900	3600	1100	808	273	860	275
21	68	61	44	22	25	1440	3190	1020	995	277	750	256
22	68	60	45	25	26	3010	2990	963	1070	626	680	238
23	67	58	43	25	25	4520	2820	899	1100	425	600	228
24	69	61	38	24	23	1990	2620	851	1160	386	550	221
25	71	60	37	25	22	1720	2430	815	1120	387	600	210
26	64	60	40	25	26	1700	2220	797	1040	362	650	201
27	64	61	41	24	28	1230	2070	734	995	345	565	194
28	61	52	41	21	27	1270	1940	698	859	323	505	190
29	62	62	39	23	---	1990	1870	676	758	514	469	186
30	67	58	36	25	---	1940	1770	726	690	418	427	176
31	67	---	32	25	---	1730	---	642	---	355	396	---
TOTAL	2223	1822	1370	807	675	26271	76490	41541	21600	11996	17425	10101
MEAN	71.7	60.7	44.2	26.0	24.1	847	2550	1340	720	387	562	337
MAX	87	71	58	32	28	4520	4450	2320	1160	626	1100	563
MIN	59	43	32	21	20	23	1520	642	423	264	267	176
AC-FT	4410	3610	2720	1600	1340	52110	151700	82400	42840	23790	34560	20040

CAL YR 1978 TOTAL 191374 MEAN 524 MAX 5550 MIN 30 AC-FT 379600
WTR YR 1979 TOTAL 212321 MEAN 582 MAX 4520 MIN 20 AC-FT 421100

06482020 BIG SIOUX RIVER AT NORTH CLIFF AVENUE, AT SIOUX FALLS, SD--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water year 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 (DEG C) (00010)	TUR-BID-ITY (JTU) (00070)	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, 0.45 UM-MF (COLS./ 100 ML) (31616)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)
OCT											
04...	1300	82	1480	8.1	16.0	7	10.3	72	190	190	903
25...	1430	76	1600	7.8	13.0	6	11.2	79	340	260	988
NOV											
07...	1000	66	1500	7.7	9.5	6	11.2	54	--	--	908
15...	1410	54	2140	7.4	10.0	4	11.1	59	3100	2200	1120
DEC											
05...	1130	59	2010	8.0	6.0	4	12.6	39	3900	2700	1100
18...	1300	49	1950	7.9	8.0	4	10.1	35	3500	2700	1070
JAN											
12...	1210	27	1750	8.0	.5	8	11.5	66	K10	ND	1440
25...	1200	26	2630	--	9.0	4	12.0	77	7100	610	1460
FEB											
09...	1200	24	3100	7.6	.0	5	12.9	96	3300	600	1690
22...	1245	28	2670	7.9	8.5	6	9.0	87	4100	0	1430
MAR											
14...	1200	--	1250	7.8	7.0	13	--	100	--	--	1400
20...	1530	1810	580	7.0	.0	31	14.7	100	ND	130	299
APR											
03...	1445	1540	580	7.9	1.5	28	14.4	59	6100	640	318
17...	1400	4250	430	7.6	8.0	76	12.1	64	140	110	282
MAY											
07...	1140	1370	880	7.8	13.5	--	9.8	57	440	370	1370
15...	1300	1730	1040	7.9	13.0	--	10.4	37	7900	4900	662
JUN											
05...	1150	642	1020	8.0	20.0	--	9.4	39	4000	2700	671
26...	1300	1040	890	7.9	22.0	--	8.4	41	4100	3200	577
JUL											
11...	1150	306	1020	7.8	26.0	--	8.4	35	6000	4600	790
18...	1230	286	1040	8.1	23.5	--	7.9	41	3700	2600	687
AUG											
07...	1545	273	1180	8.4	22.5	--	8.5	47	11000	8600	771
29...	0840	471	1010	8.2	20.0	--	8.7	35	5000	1320	709
SEP											
11...	1330	340	108	7.9	23.0	--	--	39	--	--	663
26...	1315	205	1460	8.1	19.5	--	9.2	210	4670	2200	205

DATE	TIME	ARSENIC TOTAL (UG/L AS AS) (01002)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)
OCT									
25...	1430	2	4	610	6	320	.0	2	20
NOV									
15...	1410	--	5	520	9	320	--	--	20
DEC									
18...	1300	2	4	460	19	320	.0	3	20
JAN									
25...	1200	1	5	230	13	400	.0	2	40
FEB									
22...	1245	2	8	230	22	420	.1	2	30
MAR									
14...	1200	2	16	520	46	540	.3	3	60
APR									
17...	1400	4	15	5700	29	390	.1	1	40
MAY									
15...	1300	--	8	930	18	190	--	--	40
JUN									
26...	1300	5	5	2000	290	320	.1	1	20
JUL									
18...	1230	5	30	1200	28	310	.1	1	50
AUG									
29...	0840	1	4	1500	10	320	.1	1	10
SEP									
26...	1315	4	4	--	9	380	.1	1	20

K Non-ideal colony count.
ND Not detected.

06482020 BIG SIOUX RIVER AT NORTH CLIFF AVENUE, AT SIOUX FALLS, SD--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)	SOLIDS, SUSP. TOTAL, RESIDUE AT 110 DEG. C (MG/L) (70299)	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)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)
OCT											
04...	1.23	200	22	1.6	9.3	.00	8.0	9.6	43	5.6	13
25...	1.34	203	28	2.0	4.7	1.3	6.0	8.0	35	5.8	16
NOV											
07...	1.23	162	21	.55	7.9	.20	8.1	8.7	38	4.7	14
15...	1.52	163	36	3.0	12	1.0	13	16	71	7.0	12
DEC											
05...	1.50	175	25	.68	13	1.0	14	15	65	5.2	14
18...	1.46	142	2	1.7	20	.00	20	22	96	5.7	15
JAN											
12...	1.96	105	8	1.7	34	3.0	37	39	170	8.4	21
25...	1.99	102	2	1.4	16	.00	2.7	4.1	18	8.1	15
FEB											
09...	2.30	110	6	.54	29	.00	2.8	3.3	15	9.8	20
22...	1.94	108	13	.43	25	5.0	30	30	130	9.9	24
MAR											
14...	1.90	--	40	.54	15	7.0	22	23	100	7.8	25
20...	.41	1460	78	2.7	1.6	5.5	7.1	9.8	43	.12	35
APR											
03...	.43	1320	110	2.3	.57	1.8	2.4	4.7	21	.45	21
17...	.38	3240	198	1.9	.27	2.1	2.4	4.3	19	.42	26
MAY											
07...	1.86	5070	42	.26	1.9	2.8	4.7	5.0	22	.95	19
15...	.90	3090	41	.61	2.9	4.9	7.8	8.4	37	1.7	22
JUN											
05...	.91	1160	16	.16	1.6	1.6	3.2	3.4	15	1.2	12
26...	.78	1620	83	1.1	.55	1.6	2.1	3.2	14	.00	16
JUL											
11...	1.07	653	33	1.7	1.3	1.4	2.7	4.4	19	.44	13
18...	.93	531	59	2.3	1.0	1.9	2.9	5.2	23	4.0	13
AUG											
07...	1.05	568	75	.81	1.2	2.2	3.4	4.2	19	.02	19
29...	.96	902	59	1.6	1.5	.60	2.1	3.7	16	.16	17
SEP											
11...	.90	609	--	2.6	1.4	.70	2.1	4.7	21	2.3	15
26...	.28	113	--	2.3	4.5	1.5	6.0	8.3	37	4.5	19

DATE	TIME	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)
OCT								
04...	1300	370	160	87	38	160	47	3.6
JAN								
12...	1210	500	230	120	49	320	57	6.2
APR								
03...	1445	200	87	48	20	11	10	.3
JUL								
11...	1150	460	210	110	44	87	29	1.8

DATE	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)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)
OCT								
04...	12	260	0	210	220	220	13	878
JAN								
12...	22	330	0	270	350	400	21	1440
APR								
03...	10	140	0	110	100	14	13	285
JUL								
11...	11	--	--	250	240	110	17	769

06482610 SPLIT ROCK CREEK AT CORSON, SD

LOCATION.--Lat 43°36'59", long 96°33'54", in NE¼NW¼ sec.26, T.102 N., R.48 W., Minnehaha County, Hydrologic Unit 10170203, on left bank 6 ft (2 m) downstream from highway bridge, 0.3 mi (0.5 km) east of Corson and 3.4 mi (5.5 km) upstream from mouth.

DRAINAGE AREA.--475 mi^2 (1,230 km^2), approximately.

PERIOD OF RECORD.--October 1965 to current year. February 1951 to September 1965 (gage heights and discharge measurements only in files of Corps of Engineers).

GAGE.--Water-stage recorder. Datum of gage is 1,304.22 ft (397.526 m) National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Prior to Aug. 15, 1964, nonrecording gage at datum 0.15 ft (0.046 m) higher and Aug. 15, 1964, to Sept. 3, 1970, nonrecording gage at present site and datum.

REMARKS.--Records good except those for winter periods, which are poor. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--14 years, 66.9 ft^3/s (1.895 m^3/s), 48,470 acre-ft/yr (59.8 hm^3/yr); median of yearly mean discharges, 46 ft^3/s (1.30 m^3/s), 33,300 acre-ft/yr (41 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 17,800 ft^3/s (504 m^3/s) Apr. 8, 1969, gage height, 15.00 ft (4.572 m); no flow at times most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1951, 15.41 ft (4.697 m) June 17, 1957, discharge, 19,300 ft^3/s (547 m^3/s).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 500 ft^3/s (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. 22	2200	*10,500	297	*12.65	3.856	June 16	1600	610	17.3	4.59	1.399
Mar. 28	2100	1,980	56.1	7.14	2.176	June 20	1430	566	16.0	4.48	1.366
Apr. 8	2115	654	18.5	4.89	1.490	Aug. 9	1115	5,100	144	9.58	2.920
Apr. 13	1400	4,040	114	9.07	2.765	Aug. 20	0030	1,180	33.4	5.78	1.762
May 11	0015	1,110	31.4	5.77	1.759	Aug. 27	0845	826	23.4	5.15	1.570

Minimum daily discharge, 5.8 ft^3/s (0.164 m^3/s) Jan. 31, Feb. 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	13	7.7	8.8	11	5.8	7.1	1140	113	67	67	34	214
2	11	8.1	9.3	11	5.8	7.2	992	124	65	60	64	168
3	11	8.3	13	11	5.8	8.2	804	127	64	55	68	118
4	11	7.9	13	11	5.9	9.8	788	112	59	49	40	96
5	11	7.6	12	11	6.0	7.6	783	99	53	43	30	81
6	11	7.3	11	11	6.1	7.2	607	90	50	40	28	93
7	11	7.2	11	11	6.3	7.2	510	80	55	38	27	76
8	11	7.3	12	11	6.3	8.0	611	77	89	36	119	193
9	10	7.2	13	11	6.1	8.3	572	154	66	35	3870	84
10	10	6.8	13	11	6.0	8.4	476	795	67	32	1130	76
11	10	6.7	13	11	5.9	8.6	478	954	77	31	424	78
12	10	7.1	11	10	6.1	8.8	2650	836	63	31	339	243
13	10	8.1	10	10	6.2	9.0	3380	615	53	49	297	388
14	10	10	9.8	9.7	6.3	9.5	1920	397	47	77	256	312
15	10	8.7	10	9.5	6.3	9.5	841	293	44	68	204	216
16	9.5	9.6	10	9.3	6.1	12	556	222	235	55	154	167
17	9.4	10	9.9	9.1	6.0	15	479	176	165	57	122	152
18	8.9	8.8	11	8.9	6.0	100	397	146	132	63	107	130
19	9.3	8.3	10	8.7	6.0	300	344	123	145	57	169	106
20	8.8	8.0	10	8.4	6.1	700	312	112	511	56	592	89
21	8.8	8.0	10	8.1	6.2	1550	266	99	419	164	399	77
22	7.9	8.4	11	7.9	6.3	7510	220	89	291	141	389	67
23	8.4	8.6	11	7.5	6.4	5060	189	83	223	119	340	61
24	8.4	8.8	12	7.3	6.6	1500	165	78	219	100	271	55
25	7.9	8.8	11	7.0	7.0	1400	149	73	238	77	219	51
26	7.8	8.8	11	6.9	7.1	1360	136	70	199	57	205	46
27	7.7	8.6	11	6.6	7.1	917	119	71	149	47	512	44
28	7.5	8.3	11	6.4	7.1	1130	105	68	114	42	320	42
29	7.5	9.8	11	6.2	---	1590	114	63	92	50	203	40
30	8.0	8.8	11	6.0	---	1650	119	66	78	44	176	38
31	7.5	---	11	5.8	---	1270	---	67	---	37	164	---
TOTAL	293.3	247.6	341.8	280.3	174.9	26188.4	20222	6472	4129	1877	11272	3601
MEAN	9.46	8.25	11.0	9.04	6.25	845	674	209	138	60.5	364	120
MAX	13	10	13	11	7.1	7510	3380	954	511	164	3870	388
MIN	7.5	6.7	8.8	5.8	5.8	7.1	105	63	44	31	27	38
AC-FT	582	491	678	556	347	51940	40110	12840	8190	3720	22360	7140

CAL YR 1978 TOTAL 34984.7 MEAN 95.8 MAX 3000 MIN 1.1 AC-FT 69390
WTR YR 1979 TOTAL 75099.3 MEAN 206 MAX 7510 MIN 5.8 AC-FT 149000

06485500 BIG SIOUX RIVER AT AKRON, IA

LOCATION.--Lat 42°49'42", long 96°33'45", in NW¼SW¼ sec.31, T.93 N., R.48 W., Plymouth County, Hydrologic Unit 10170203, on left bank at west edge of Akron, 0.6 mi (1.0 km) downstream from bridge on State Highway 48, and 2.3 mi (3.7 km) upstream from Union Creek.

DRAINAGE AREA.--9,030 mi² (23,390 km²), approximately, of which about 1,970 mi² (5,100 km²) is probably noncontributing.

WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WSP 1309: 1929(M), 1931-33(M), 1936(M), 1938(M), 1940(M). WSP 1389: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,118.90 ft (341.041 m) National Geodetic Vertical Datum of 1929. Prior to Dec. 3, 1934, nonrecording gage at bridge 300 ft (91 m) upstream at same datum.

REMARKS.--Records good except those for the winter months, which are poor. National Weather Service gage-height telemeter at station.

AVERAGE DISCHARGE.--51 years, 855 ft³/s (24.21 m³/s), 619,400 acre-ft/yr (764 hm³/yr); median of yearly mean discharges, 730 ft³/s (20.7 m³/s), 529,000 acre-ft/yr (650 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 80,800 ft³/s (2,290 m³/s) Apr. 9, 1969, gage height, 22.99 ft (7.007 m); minimum daily, 4.0 ft³/s (0.11 m³/s) Jan. 17, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 3,500 ft³/s (99.1 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. 25	1230	*30,500	864	*a21.74	6.626	Aug. 12	1700	4,380	124	12.70	3.871
Apr. 1	1300	13,100	371	18.18	5.541	Aug. 25	1700	5,770	163	14.81	4.514
Apr. 16	0345	12,600	357	18.16	5.535	Aug. 30	0800	4,690	133	13.29	4.051
May 13	unknown	8,330	236	16.80	5.121						

a Ice jam.
Minimum daily discharge, 58 ft³/s (1.64 m³/s) Feb. 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	245	174	155	87	62	78	12900	3560	1710	1690	1220	2730
2	239	178	145	83	61	79	11500	3570	1630	1570	1150	2330
3	237	182	140	78	60	80	9130	3560	1580	1450	1040	2140
4	226	186	135	75	60	80	7710	3490	1540	1350	1060	2060
5	227	188	130	73	59	80	6710	3330	1540	1250	985	1990
6	226	182	125	72	59	84	6230	3130	1510	1170	861	1920
7	225	184	120	76	59	90	5980	2930	1430	1110	765	1640
8	223	181	115	78	59	100	5400	2770	1380	1070	708	1720
9	220	181	110	80	58	110	5120	2800	1380	1040	692	1790
10	213	182	105	82	60	120	5320	3490	1400	1000	1550	1760
11	211	182	105	80	62	125	5230	4700	1430	979	3480	1630
12	210	188	106	75	64	130	5140	5910	1470	948	4290	1540
13	211	198	108	70	66	135	5780	8130	1440	909	3750	1780
14	207	197	110	65	67	140	7650	7570	1410	884	2490	2580
15	205	191	112	62	69	150	11200	5920	1340	902	2020	3200
16	197	190	116	64	68	200	12100	4980	1290	1050	1760	3230
17	185	204	118	66	66	270	9510	4220	1280	1080	1600	2620
18	183	205	120	68	68	800	7910	3760	1520	996	1800	2170
19	182	149	120	70	71	1700	7430	3450	1870	930	2510	1900
20	186	151	120	70	74	3400	7330	3190	1990	895	2300	1710
21	186	150	118	68	77	4200	7110	2960	2130	846	2770	1530
22	186	170	114	66	78	5800	6650	2720	2430	898	3640	1390
23	179	190	110	65	79	13000	6050	2500	2710	1190	4130	1270
24	179	200	105	62	77	24000	5500	2320	2710	1600	4800	1180
25	184	210	98	64	72	29000	5130	2180	2500	1750	5470	1110
26	175	205	95	66	70	18900	4830	2070	2380	1450	4550	1050
27	176	195	98	66	74	13300	4550	2000	2280	1220	3250	1000
28	177	180	100	65	77	11000	4210	1930	2140	1080	3530	954
29	182	175	98	64	---	9790	3890	1830	2010	997	4140	908
30	181	165	95	63	---	10600	3670	1780	1840	1100	4590	870
31	176	---	92	62	---	12200	---	1710	---	1110	3530	---
TOTAL	6239	5513	3538	2185	1876	159741	206870	108460	53270	35514	80431	53702
MEAN	201	184	114	70.5	67.0	5153	6896	3499	1776	1146	2595	1790
MAX	245	210	155	87	79	29000	12900	8130	2710	1750	5470	3230
MIN	175	149	92	62	58	78	3670	1710	1280	846	692	870
AC-FT	12380	10940	7020	4330	3720	316800	410300	215100	105700	70440	159500	106500

CAL YR 1978 TOTAL 477045 MEAN 1307 MAX 17600 MIN 92 AC-FT 946200
WTR YR 1979 TOTAL 717339 MEAN 1965 MAX 29000 MIN 58 AC-FT 1423000

06485500 BIG SIOUX RIVER AT AKRON, IA--Continued
(National stream-quality accounting network station)
(National pesticide water-monitoring network station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1967 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, 2,310 micromhos Jan. 20, 1977; minimum daily, 260 micromhos Mar. 20, 23, 1978.
WATER TEMPERATURES: Maximum daily, 31.0°C Feb. 19, 1975, July 23, 1976; minimum daily, 0.0°C on many days during winter periods.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,500 micromhos Mar. 1; minimum daily, 370 micromhos Mar. 27.
WATER TEMPERATURES: Maximum daily, 27.0 Aug. 7; minimum daily, 0.0°C on many days during winter period.

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)
OCT										
25...	1030	187	980	8.3	9.0	2.8	11.2	230	340	460
NOV										
15...	1000	191	1180	7.9	1.0	3.0	12.3	320	420	460
DEC										
19...	1120	120	1480	8.0	.0	2.3	12.8	260	340	530
JAN										
31...	0930	62	1600	7.5	.0	2.7	--	150	110	550
FEB										
22...	0830	78	1640	7.2	.0	3.4	2.6	110	K40	510
MAR										
21...	0915	4200	410	7.3	.0	54	10.3	680	660	110
APR										
18...	1115	7920	530	7.5	10.0	54	9.6	150	130	260
MAY										
15...	0900	6060	790	7.8	11.5	38	9.4	710	170	390
JUN										
26...	0800	2400	770	8.1	21.5	90	7.1	420	1200	390
JUL										
18...	0815	1010	800	8.7	23.0	48	8.4	90	100	340
AUG										
28...	1300	3570	740	8.2	19.5	68	7.8	6930	3530	380
SEP										
24...	1215	1100	970	8.4	19.5	32	--	550	150	490

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)
OCT										
25...	220	110	45	53	20	1.1	7.2	--	--	240
NOV										
15...	220	110	44	59	22	1.2	6.1	--	--	240
DEC										
19...	240	130	49	82	25	1.6	7.7	--	--	290
JAN										
31...	250	140	48	110	30	2.0	10	--	--	300
FEB										
22...	250	130	44	110	32	2.1	8.6	--	--	260
MAR										
21...	23	30	9.3	13	17	.5	17	--	--	90
APR										
18...	120	66	23	10	8	.3	6.4	--	--	140
MAY										
15...	180	97	35	20	10	.4	7.4	--	--	210
JUN										
26...	170	95	36	20	10	.4	6.2	--	--	220
JUL										
18...	130	71	39	30	16	.7	5.2	--	--	210
AUG										
28...	130	93	35	19	15	.4	8.3	--	--	250
SEP										
24...	180	120	45	26	10	.5	5.7	--	--	310

K Non-ideal colony count.

06485500 BIG SIOUX RIVER AT AKRON, IA--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)
OCT									
25...	250	62	.4	3.1	677	675	.92	342	.00
NOV									
15...	220	72	.4	7.3	692	663	.94	357	2.0
DEC									
19...	270	100	.3	14	871	827	1.18	282	2.6
JAN									
31...	260	150	.5	20	943	921	1.28	158	2.5
FEB									
22...	270	150	.4	20	938	889	1.28	198	2.4
MAR									
21...	48	11	.2	6.4	211	189	.29	2390	2.8
APR									
18...	110	14	.2	12	349	326	.47	7460	3.3
MAY									
15...	170	22	.3	16	530	494	.72	8670	3.7
JUN									
26...	170	13	.4	17	516	490	.70	3340	3.4
JUL									
18...	170	31	.4	8.7	529	482	.72	1440	.45
AUG									
28...	120	24	.4	22	515	472	.70	4960	3.7
SEP									
24...	180	28	.5	19	643	631	.87	1910	4.6

DATE	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN, NH4 + ORG. SUSP. TOTAL (MG/L AS N) (00624)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)
OCT									
25...	2.5	2.5	.02	.54	2.0	2.5	11	.47	.72
NOV									
15...	1.4	1.3	.06	.50	.90	3.4	15	.76	1.1
DEC									
19...	3.5	1.0	2.5	3.2	.30	6.1	27	1.6	2.2
JAN									
31...	6.8	1.0	5.8	6.1	.70	9.3	41	1.9	1.9
FEB									
22...	6.0	.00	6.2	6.0	.00	8.4	37	1.8	2.0
MAR									
21...	6.4	3.5	2.9	5.6	.80	9.2	41	1.1	1.5
APR									
18...	2.0	1.6	.39	1.1	.90	5.3	23	.23	.43
MAY									
15...	1.7	1.6	.11	.88	.82	5.4	24	.25	.40
JUN									
26...	2.2	2.2	.03	.79	1.4	5.6	25	.27	.56
JUL									
18...	2.4	2.4	.04	.62	1.8	2.9	13	.07	.37
AUG									
28...	1.2	1.1	.06	.57	.63	4.9	22	.02	.64
SEP									
24...	1.1	1.1	.02	.92	.18	5.7	25	.27	.44

06485500 BIG SIOUX RIVER AT AKRON, IA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C) (00689)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	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)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
NOV									
15...	1000	--	--	8.5	--	--	--	86	44
DEC									
19...	1120	--	--	4.2	6700	--	--	99	32
FEB									
22...	0830	--	--	5.5	--	--	--	97	20
MAR									
21...	0915	--	--	13	4700	--	--	193	2190
MAY									
15...	0900	--	--	17	4900	--	--	133	2180
JUN									
26...	0800	--	--	18	930	--	--	290	1880
JUL									
18...	0815	29	8.2	--	190000	--	--	196	534
AUG									
28...	1300	--	--	21	22000	--	--	266	2560
SEP									
24...	1215	--	--	8.8	--	--	--	168	499
25...	1215	--	--	--	160000	--	--	--	--

DATE	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM (70337)	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)	SED. SUSP. FALL DIAM. % FINER THAN .250 MM (70344)	SED. SUSP. FALL DIAM. % FINER THAN .500 MM (70345)
NOV								
15...	98	--	--	--	--	--	--	--
DEC								
19...	94	--	--	--	--	--	--	--
FEB								
22...	92	--	--	--	--	--	--	--
MAR								
21...	67	--	--	--	98	99	99	100
MAY								
15...	87	--	--	--	--	--	--	--
JUN								
26...	90	--	--	--	--	--	--	--
JUL								
18...	95	--	--	--	--	--	--	--
AUG								
28...	87	--	--	--	--	--	--	--
SEP								
24...	77	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--

DATE	TIME	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	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)
OCT											
25...	1030	4	4	10	9	1	10	10	0	0	0
JAN											
31...	0930	3	3	2	0	2	10	10	0	2	1
APR											
18...	1115	3	2	1	0	1	10	10	0	0	0
JUL											
18...	0815	5	4	<1	0	<1	0	0	0	<3	0

< Less than.

06485500 BIG SIOUX RIVER AT AKRON, IA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	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)	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)
OCT											
25...	0	4	1	3	730	20	220	220	3	280	210
JAN											
31...	1	5	1	4	400	50	15	12	3	1600	0
APR											
18...	0	10	8	2	54000	60	17	5	12	1700	1700
JUL											
18...	<3	11	10	1	2500	10	6	6	0	430	430

DATE	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)	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)
OCT										
25...	70	.0	.0	.0	2	0	2	20	10	10
JAN										
31...	1600	.2	.2	.0	2	0	2	70	10	60
APR										
18...	20	.1	.1	.0	2	0	2	40	0	40
JUL										
18...	<1	.1	.1	.0	2	0	2	30	20	6

DATE	TIME	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)	DDE, TOTAL (UG/L) (39365)	DDE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39368)	DDT, TOTAL (UG/L) (39370)
NOV										
15...	1000	ND	ND	ND	ND	ND	--	ND	--	ND
FEB										
22...	0830	ND	--	ND	--	ND	--	ND	--	ND

DATE	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)	ETHION, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39399)	HEPTA-CHLOR, TOTAL (UG/L) (39410)
NOV										
15...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
FEB										
22...	--	ND	--	ND	--	ND	--	ND	--	ND

DATE	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)	METH-OXY-CHLOR, TOTAL (UG/L) (39480)	METH-OXY-CHLOR, TOT. IN BOTTOM MATL. (UG/KG) (39481)	METHYL PARA-THION, TOTAL (UG/L) (39600)
NOV										
15...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
FEB										
22...	--	ND	--	ND	--	ND	--	ND	--	ND

< Less than.
ND Not detected.

06485500 BIG SIOUX RIVER AT AKRON, IA--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)
NOV 15...	ND	ND	ND	ND	ND	ND	ND	ND	ND
FEB 22...	--	ND	--	ND	--	ND	--	ND	--

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS) (00061)	TEMPERATURE (DEG C) (00010)	OXYGEN, DISSOLVED (MG/L) (00300)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	PH (UNITS) (00400)
SEP						
25...	1200	1100	19.5	10.0	--	--
25...	1300	1100	19.5	10.7	--	--
25...	1400	1100	19.5	11.2	--	--
25...	1600	1090	20.0	12.0	--	--
25...	1800	1090	20.0	12.2	--	--
25...	2000	1090	20.5	12.0	--	--
25...	2200	1080	20.0	11.5	--	--
25...	2400	1080	20.0	11.0	--	--
26...	0200	1080	20.0	10.5	--	--
26...	0400	1070	20.0	10.0	--	--
26...	0600	1070	19.5	9.8	--	--
26...	0800	1060	19.5	9.0	--	--
26...	1000	1060	19.5	9.0	--	--
26...	1200	1050	19.5	10.0	--	--

ND Not detected.

06485500 BIG SIOUX RIVER AT AKRON, IA--Continued

PHYTOPLANKTON ANALYSES

DATE	AUG 24,78		SEP 26,78		DEC 19,78		MAR 21,79		MAY 15,79	
TIME	0930		0845		1120		0915		0900	
TOTAL CELLS/ML	61000		860000		6700		4700		4900	
DIVERSITY: DIVISION	1.5		1.2		1.0		1.0		1.0	
.CLASS	1.5		1.2		1.0		1.0		1.0	
..ORDER	2.0		1.5		1.2		1.7		1.3	
...FAMILY	2.4		1.6		1.3		2.6		2.1	
....GENUS	3.2		2.0		1.3		2.8		3.4	
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										
...OOCYSTACEAE										
....DICHOTOMOCOCCUS	--	-	--	-	--	-	--	-	470	10
...CHARACIACEAE										
....SCHROEDERIA	3300	5	--	-	--	-	81	2	--	-
...COELASTRACEAE										
....COELASTRUM	--	-	--	-	--	-	330	7	--	-
...MICRACTINIACEAE										
....GOLENKINIA	--	-	*	0	--	-	--	-	--	-
....MICRACTINIUM	--	-	12000	1	--	-	--	-	370	8
...OOCYSTACEAE										
....ANKISTRODESMUS	670	1	6200	1	180	3	81	2	690	14
....CHODATELLA	--	-	--	-	46	1	--	-	--	-
....DICTYOSPHAERIUM	1100	2	--	-	--	-	--	-	120	3
....KIRCHNERIELLA	--	-	--	-	--	-	--	-	900#	18
....NEPHROCYTIUM	--	-	--	-	--	-	--	-	--	-
....OOCYSTIS	--	-	8300	1	--	-	--	-	--	-
....RADIOCOCCUS	890	1	--	-	--	-	--	-	--	-
....SELENASTRUM	--	-	--	-	--	-	--	-	370	8
...SCENEDESMACEAE										
....ACTINASTRUM	7100	12	--	-	180	3	--	-	120	3
....CRUCIGENIA	890	1	--	-	--	-	--	-	--	-
....SCENEDESMUS	12000#	20	42000	5	--	-	570	12	340	7
....TETRASTRUM	890	1	--	-	--	-	--	-	120	3
..TETRASPORALES										
...PALMELLACEAE										
....SPHAEROCYSTIS	2700	4	--	-	--	-	--	-	--	-
..VOLVOCALES										
...CHLAMYDOMONADACEAE										
....CARTERIA	--	-	--	-	46	1	--	-	--	-
....CHLAMYDOMONAS	*	0	*	0	320	5	--	-	--	-
...PHACOTACEAE										
....PTEROMONAS	--	-	--	-	--	-	--	-	--	-
..ZYGNEMATALES										
...DESMIDIACEAE										
....STAURASTRUM	*	0	--	-	--	-	--	-	--	-
CHRYSOPHYTA										
.BACILLARIOPHYCEAE										
..CENTRALES										
...COSCINODISCACEAE										
....CYCLOTELLA	12000#	19	180000#	20	5200#	77	2200#	47	720	15
....MELOSIRA	1100	2	35000	4	--	-	81	2	--	-
..PENNALES										
...DIATOMACEAE										
....OPEPHORA	--	-	*	0	--	-	--	-	--	-
...FRAGILARIACEAE										
....FRAGILARIA	--	-	--	-	--	-	120	3	--	-
....SYNEDRA	--	-	--	-	46	1	120	3	--	-
...GOMPHONEMATACEAE										
....GOMPHONEMA	--	-	--	-	--	-	160	3	--	-
...NAVICULACEAE										
....GYROSIGMA	--	-	--	-	--	-	41	1	--	-
....NAVICULA	*	0	--	-	--	-	240	5	62	1
...NITZSCHIACEAE										
....NITZSCHIA	--	-	6200	1	--	-	410	9	440	9
...SURIRELLACEAE										
....CYMATOPLEURA	--	-	--	-	--	-	41	1	--	-
....SURIRELLA	--	-	--	-	46	1	41	1	--	-
.CHRYSOPHYCEAE										
..CHRYSOMONADALES										
...OCHROMONADACEAE										
....DINOBRYON	--	-	*	0	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)										
.CRYPTOPHYCEAE										
..CRYPTOMONADALES										
...CRYPTOMONADACEAE										
....CRYPTOMONAS	--	-	--	-	--	-	--	-	62	1

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

06485500 BIG SIOUX RIVER AT AKRON, IA--Continued

PHYTOPLANKTON ANALYSES

DATE	AUG 24,78		SEP 26,78		DEC 19,78		MAR 21,79		MAY 15,79	
TIME	0930		0845		1120		0915		0900	
TOTAL CELLS/ML	61000		860000		6700		4700		4900	
DIVERSITY: DIVISION	1.5		1.2		1.0		1.0		1.0	
.CLASS	1.5		1.2		1.0		1.0		1.0	
..ORDER	2.0		1.5		1.2		1.7		1.3	
...FAMILY	2.4		1.6		1.3		2.6		2.1	
....GENUS	3.2		2.0		1.3		2.8		3.4	
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										
....AGMENELLUM	14000#	23	22000	3	--	-	--	-	--	-
....ANACYSTIS	1800	3	510000#	59	--	-	--	-	62	1
....COCCOCHLORIS	--	-	--	-	--	-	81	2	--	-
..HORMOGONALES										
...NOSTOCACEAE										
....ANABAENA	1600	3	--	-	--	-	--	-	--	-
...OSCILLATORIACEAE										
....OSCILLATORIA	--	-	34000	4	690	10	--	-	--	-
...RIVULARIACEAE										
....RAPHIDIOPSIS	*	0	--	-	--	-	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)										
.EUGLENOPHYCEAE										
..EUGLENALES										
...EUGLENACEAE										
....EUGLENA	*	0	*	0	--	-	--	-	--	-
....PHACUS	--	-	--	-	--	-	--	-	31	1
....TRACHELOMONAS	--	-	--	-	--	-	81	2	--	-

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

06485500 BIG SIOUX RIVER AT AKRON, IA--Continued

PHYTOPLANKTON ANALYSES

DATE	JUN 26,79	JUL 18,79	AUG 28,79	SEP 25,79
TIME	0800	0815	1300	1215
TOTAL CELLS/ML	930	190000	22000	160000
DIVERSITY: DIVISION	0.8	1.5	1.4	1.1
.CLASS	0.8	1.5	1.4	1.1
..ORDER	0.8	1.6	1.7	1.4
...FAMILY	0.9	1.9	2.1	1.5
....GENUS	0.9	2.3	2.9	2.0

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)								
.CHLOROPHYCEAE								
..CHLOROCOCCALES								
...OOCYSTACEAE								
....DICHOTOMOCOCCUS	--	-	--	-	--	-	--	-
...CHARACIACEAE								
....SCHROEDERIA	--	-	--	-	--	-	--	-
...COELASTRACEAE								
....COELASTRUM	--	-	--	-	--	-	--	-
...MICRACTINIACEAE								
....GOLENKINIA	--	-	--	-	--	-	--	-
....MICRACTINIUM	--	-	1000	1	--	-	--	-
...OOCYSTACEAE								
....ANKISTRODESMUS	--	-	2100	1	430	2	--	-
....CHODATELLA	--	-	1000	1	140	1	1200	1
....DICTYOSPHAERIUM	--	-	41000#	22	2300	10	--	-
....KIRCHNERIELLA	--	-	--	-	2100	10	--	-
....NEPHROCYTIUM	--	-	--	-	--	-	6200	4
....OOCYSTIS	--	-	--	-	--	-	--	-
....RADIOCOCCUS	--	-	--	-	--	-	--	-
....SELENASTRUM	--	-	--	-	--	-	1200	1
...SCENEDESMACEAE								
....ACTINASTRUM	--	-	--	-	2300	10	5000	3
....CRUCIGENIA	--	-	4200	2	--	-	--	-
....SCENEDESMUS	720#	78	8400	4	860	4	5000	3
....TETRASTRUM	--	-	--	-	570	3	--	-
..TETRASPORALES								
...PALMELLACEAE								
....SPHAEROCYSTIS	--	-	--	-	--	-	--	-
..VOLVOCALES								
...CHLAMYDOMONADACEAE								
....CARTERIA	--	-	--	-	--	-	--	-
....CHLAMYDOMONAS	--	-	--	-	--	-	5000	3
...PHACOTACEAE								
....PTEROMONAS	--	-	--	-	140	1	--	-
..ZYGNEMATALES								
...DESMIDIACEAE								
....STAURASTRUM	--	-	--	-	--	-	--	-
CHRYSOPHYTA								
.BACILLARIOPHYCEAE								
..CENTRALES								
...COSCINODISCACEAE								
....CYCLOTELLA	--	-	85000#	45	8600#	39	100000#	65
....MELOSIRA	--	-	8400	4	1000	5	11000	7
..PENNALES								
...DIATOMACEAE								
....OPEPHORA	--	-	--	-	--	-	--	-
...FRAGILARIACEAE								
....FRAGILARIA	--	-	--	-	--	-	--	-
....SYNEDRA	--	-	--	-	--	-	--	-
...GOMPHONEMATACEAE								
....GOMPHONEMA	--	-	--	-	--	-	--	-
...NAVICULACEAE								
....GYROSIGMA	--	-	--	-	--	-	--	-
....NAVICULA	52	6	--	-	--	-	--	-
...NITZSCHIACEAE								
....NITZSCHIA	150#	17	4200	2	1300	6	5000	3
...SURIRELLACEAE								
....CYMATOPLEURA	--	-	--	-	--	-	--	-
....SURIRELLA	--	-	--	-	--	-	--	-
.CHRYSOPHYCEAE								
..CHRYSOMONADALES								
...OCHROMONADACEAE								
....DINOBRYON	--	-	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)								
.CRYPTOPHYCEAE								
..CRYPTOMONADALES								
...CRYPTOMONADACEAE								
....CRYPTOMONAS	--	-	--	-	--	-	1200	1

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

06485500 BIG SIOUX RIVER AT AKRON, IA--Continued

PHYTOPLANKTON ANALYSES

DATE	JUN 26,79		JUL 18,79		AUG 28,79		SEP 25,79	
TIME	0800		0815		1300		1215	
TOTAL CELLS/ML	930		190000		22000		160000	
DIVERSITY: DIVISION	0.8		1.5		1.4		1.1	
.CLASS	0.8		1.5		1.4		1.1	
..ORDER	0.8		1.6		1.7		1.4	
...FAMILY	0.9		1.9		2.1		1.5	
....GENUS	0.9		2.3		2.9		2.0	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CYANOPHYTA (BLUE-GREEN ALGAE)								
.CYANOPHYCEAE								
..CHROOCOCCALES								
...CHROOCOCCACEAE								
....AGMENELLUM	--	-	33000#	18	2300	10	--	-
....ANACYSTIS	--	-	--	-	--	-	16000	10
....COCCOCHLORIS	--	-	--	-	--	-	--	-
..HORMOGONALES								
...NOSTOCACEAE								
....ANABAENA	--	-	--	-	--	-	--	-
...OSCILLATORIACEAE								
....OSCILLATORIA	--	-	--	-	--	-	--	-
...RIVULARIACEAE								
....RAPHIDIOPSIS	--	-	--	-	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)								
.EUGLENOPHYCEAE								
..EUGLENALES								
...EUGLENACEAE								
....EUGLENA	--	-	--	-	140	1	--	-
....PHACUS	--	-	--	-	--	-	--	-
....TRACHELOMONAS	--	-	1000	1	--	-	--	-

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

06485500 BIG SIOUX RIVER AT AKRON, IA--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	800	990	1140	1200	1460	1500	390	770	900	900	740	820
2	810	980	1110	1210	1460	1460	420	790	860	940	640	880
3	810	990	1110	1190	1480	1320	470	810	920	930	670	910
4	810	1020	1160	1180	1430	1300	500	800	930	920	730	920
5	830	1010	1140	1160	1460	1280	530	830	880	900	770	870
6	860	970	1160	1220	1820	1260	550	840	910	900	720	860
7	890	920	1160	1260	1490	1320	570	850	880	920	720	870
8	890	980	1160	1260	1400	1360	590	850	900	910	740	890
9	870	990	1190	1260	1380	1400	610	800	930	890	750	790
10	920	1000	1210	1260	1300	1380	610	790	930	870	740	880
11	980	1030	1230	1350	1330	1330	580	810	920	860	620	870
12	950	1020	1070	1350	1370	1300	590	690	940	850	390	840
13	970	1000	1140	1320	1420	1300	650	670	930	840	420	860
14	950	980	1150	1260	1420	1310	580	740	910	860	520	870
15	950	1010	1150	1250	1420	1360	490	790	910	870	590	800
16	910	1020	1230	1270	1420	1370	480	820	920	900	620	780
17	960	1020	1260	1270	1400	1010	500	850	900	910	680	850
18	950	1030	1110	1250	1360	---	530	890	910	860	710	900
19	950	1040	1230	1340	1390	---	550	900	910	830	550	930
20	980	1040	1200	1360	1420	---	550	890	870	810	670	950
21	980	1030	1100	1340	1460	---	550	860	870	850	720	970
22	1030	1050	1200	1310	1460	---	570	920	870	810	580	1000
23	980	1110	1220	1260	1370	---	610	920	870	830	530	1000
24	960	1170	1220	1320	1380	---	620	910	870	730	450	980
25	970	1170	1200	1370	1350	---	630	880	770	770	530	1010
26	990	1170	1220	1360	1380	---	660	920	780	620	670	1000
27	1000	1130	1130	1390	1440	370	690	900	780	720	710	1000
28	1000	1170	1120	1370	1500	410	710	910	780	740	750	970
29	990	1160	1100	1310	---	450	730	910	780	820	690	980
30	980	1160	1180	1320	---	430	740	880	780	800	550	990
31	950	---	1220	1380	---	400	---	910	---	840	630	---
MEAN	931	1050	1170	1290	1430	1120	575	842	877	845	639	908

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	1.0	.0	.0	2.0	3.0	7.0	16.0	24.0	23.0	23.0
2	16.0	8.0	.0	.0	.0	2.0	2.0	8.0	16.0	24.0	24.0	23.0
3	14.0	9.0	1.0	.0	.0	1.0	2.0	8.0	18.0	26.0	23.0	23.0
4	12.0	10.0	.0	.0	.0	2.0	3.0	8.0	18.0	25.0	25.0	23.0
5	12.0	9.0	1.0	.0	.0	1.0	4.0	9.0	19.0	23.0	26.0	23.0
6	9.0	7.0	.0	.0	.0	2.0	2.0	12.0	20.0	22.0	26.0	22.0
7	7.0	5.0	.0	.0	.0	.0	3.0	14.0	21.0	21.0	27.0	21.0
8	8.0	9.0	.0	.0	.0	1.0	4.0	15.0	20.0	21.0	26.0	19.0
9	12.0	7.0	.0	.0	.0	2.0	4.0	12.0	17.0	22.0	24.0	20.0
10	12.0	7.0	.0	.0	.0	1.0	3.0	10.0	15.0	23.0	23.0	22.0
11	13.0	5.0	1.0	.0	.0	1.0	4.0	8.0	17.0	25.0	22.0	21.0
12	12.0	3.0	1.0	1.0	.0	1.0	3.0	9.0	19.0	26.0	21.0	20.0
13	11.0	4.0	1.0	.0	1.0	2.0	4.0	8.0	19.0	26.0	21.0	16.0
14	11.0	2.0	.0	.0	1.0	2.0	4.0	9.0	22.0	26.0	19.0	15.0
15	9.0	.0	1.0	.0	1.0	.0	5.0	12.0	24.0	25.0	18.0	14.0
16	8.0	1.0	1.0	.0	.0	1.0	6.0	14.0	23.0	23.0	17.0	15.0
17	8.0	1.0	.0	.0	.0	3.0	8.0	16.0	19.0	22.0	18.0	16.0
18	9.0	.0	1.0	.0	.0	2.0	10.0	17.0	17.0	21.0	20.0	17.0
19	8.0	.0	1.0	.0	1.0	2.0	12.0	16.0	18.0	22.0	19.0	16.0
20	8.0	.0	.0	.0	1.0	2.0	12.0	16.0	17.0	23.0	21.0	17.0
21	12.0	.0	.0	1.0	.0	2.0	11.0	15.0	19.0	23.0	20.0	16.0
22	9.0	.0	1.0	1.0	1.0	2.0	13.0	15.0	21.0	22.0	21.0	15.0
23	7.0	2.0	.0	.0	1.0	1.0	16.0	15.0	21.0	24.0	21.0	15.0
24	6.0	2.0	.0	.0	.0	1.0	13.0	15.0	20.0	25.0	19.0	16.0
25	9.0	2.0	.0	.0	.0	1.0	13.0	15.0	20.0	25.0	19.0	16.0
26	7.0	2.0	.0	.0	.0	1.0	12.0	17.0	22.0	25.0	20.0	17.0
27	7.0	1.0	.0	.0	1.0	1.0	9.0	17.0	23.0	23.0	20.0	17.0
28	6.0	.0	.0	.0	1.0	2.0	7.0	18.0	24.0	24.0	19.0	17.0
29	7.0	2.0	.0	.0	---	2.0	9.0	19.0	24.0	23.0	19.0	16.0
30	9.0	1.0	.0	.0	---	1.0	8.0	20.0	24.0	22.0	20.0	16.0
31	7.0	---	.0	.0	---	2.0	---	17.0	---	23.0	22.0	---
MEAN	9.5	3.5	.5	.0	.5	1.5	7.0	13.5	20.0	23.5	21.5	18.0

06486000 MISSOURI RIVER AT SIOUX CITY, IA
(National stream-quality accounting network station)

LOCATION.--Lat 42°29'10", long 96°24'47", in NW¼SE¼ sec.16, T.29 N., R.9 E., sixth principal meridian, Dakota County, NE, Hydrologic Unit 10230001, on right bank on upstream side of bridge on U.S. Highway 77 at South Sioux City, NE, 2.0 mi (3.2 km) downstream from Big Sioux River, and at mile 732.3 (1,178.3 km).

DRAINAGE AREA.--314,600 mi^2 (814,800 km^2), approximately.

PERIOD OF RECORD.--October 1897 to current year in reports of Geological Survey. Prior to October 1928 and October 1931 to September 1938, monthly discharges only published in WSP 1310. January 1879 to December 1890 (monthly discharges only) in House Document 238, 73rd Congress, 2d session, Missouri River. Gage-height records collected in this vicinity September 1878 to December 1899 are contained in reports of Missouri River Commission and since July 1889 are contained in reports of U.S. Weather Bureau.

REVISED RECORDS.--WSP 716: 1929-30. WSP 876: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,056.98 ft (322.168 m) National Geodetic Vertical Datum of 1929. Sept. 2, 1878, to Dec. 31, 1905, nonrecording gages at various locations within 1.7 mi (2.7 km) of present site and at various datums. Jan. 1, 1906, to Feb. 14, 1935, nonrecording gage, and Feb. 15, 1935, to Sept. 30, 1969, water-stage recorder at present site at datum 19.98 ft (6.090 m) higher, and Oct. 1, 1969, to Sept. 30, 1970, at datum 20.00 ft (6.096 m) higher.

REMARKS.--Records good except those for winter period, which are poor. Flow regulated by upstream main-stem reservoirs. National Weather Service gage height telemeter at station.

AVERAGE DISCHARGE.--82 years, 32,070 ft^3/s (908.2 m^3/s), 23,230,000 acre-ft/yr (28,600 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 441,000 ft^3/s (12,500 m^3/s) Apr. 14, 1952, gage height, 24.28 ft (7.401 m), datum then in use; minimum, 2,500 ft^3/s (70.8 m^3/s) Dec. 29, 1941; minimum gage height observed, 10.68 ft (3.255 m) Dec. 6, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 57,800 ft^3/s (1,640 m^3/s) Nov. 5, gage height, 23.48 ft (7.157 m); minimum daily, 15,000 ft^3/s (425 m^3/s) Mar. 22; minimum gage height, 13.52 ft (4.121 m) Jan. 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	53200	56300	55400	24500	23500	23500	37000	41200	45500	41700	39400	37900
2	53600	56500	52700	24500	23500	23000	36500	43500	45800	41500	40000	36700
3	54100	56900	47500	24500	23500	22000	36300	42200	45900	42100	40200	35700
4	54500	57300	43400	24000	23500	20000	37200	38600	46100	41600	39300	35500
5	55000	57600	39800	24000	23500	19000	38300	40700	46000	40900	38900	35800
6	54400	56900	35100	24000	23500	18000	39600	42800	46600	40000	38400	37500
7	53700	56500	32200	24000	23500	17500	39700	41500	47100	40100	37600	35300
8	53700	56000	30000	24000	23500	17500	39700	40900	46700	40200	38100	34900
9	53900	56500	28000	24000	23500	17000	38200	40800	47700	40400	39800	35100
10	55000	56900	27000	24000	23500	17000	36900	43600	48600	40000	39600	35300
11	56000	56600	26700	24000	23500	16500	37100	45700	48500	39500	40500	35400
12	56100	56600	25600	22000	23500	16500	38100	45200	47700	39500	42600	37400
13	56300	56500	25700	19000	23500	16500	37000	45200	46900	41600	43500	38700
14	56100	56200	25400	18500	23500	16500	35900	46800	46000	41000	42400	39200
15	56800	55900	26100	18500	23500	16500	37400	47600	46100	41300	40700	42500
16	56500	55700	26400	18000	24000	16500	40400	46600	46100	41700	40600	43400
17	56500	56000	26300	18000	25000	17000	42800	47500	44800	42600	40500	42500
18	57000	56000	27200	18000	25000	20000	41700	47600	43600	42500	39700	41200
19	57000	54800	26900	18000	25000	30000	38900	47100	44100	42400	50100	40000
20	57400	55600	27000	17500	25000	20000	39000	46300	46100	41600	44200	39800
21	57000	55800	26000	17500	24500	17000	40500	46400	44300	38800	42100	40400
22	56500	55900	27200	17500	24500	15000	40000	46400	43800	39300	40800	40400
23	55300	55700	27000	18000	24500	25000	39500	46200	43600	39400	37300	41300
24	55600	55500	25800	18000	24000	32000	38900	46700	41300	39700	36800	41700
25	56200	55500	27100	18500	24000	35200	39000	46500	41200	40500	35700	41400
26	56500	55700	27000	20000	23500	37700	39400	46300	40900	40700	38300	41200
27	57000	56900	26500	21000	23500	40400	38000	46100	41900	40800	38000	41300
28	56600	56800	26500	22000	23500	43000	36300	46200	42400	39800	35800	41400
29	56200	57200	26500	23000	---	38600	39300	46500	42200	39200	36100	40800
30	56400	56200	25000	23500	---	39100	39900	47300	41700	41000	36800	39700
31	56500	---	25000	23500	---	39100	---	46900	---	41200	38400	---
TOTAL	1726600	1688500	944000	655500	668500	742600	1158500	1392900	1349200	1262600	1232200	1169400
MEAN	55700	56280	30450	21150	23880	23950	38620	44930	44970	40730	39750	38980
MAX	57400	57600	55400	24500	25000	43000	42800	47600	48600	42600	50100	43400
MIN	53200	54800	25000	17500	23500	15000	35900	38600	40900	38800	35700	34900
AC-FT	3425000	3349000	1872000	1300000	1326000	1473000	2298000	2763000	2676000	2504000	2444000	2320000

CAL YR 1978 TOTAL 14340900 MEAN 39290 MAX 61200 MIN 14300 AC-FT 28450000
WTR YR 1979 TOTAL 13990500 MEAN 38330 MAX 57600 MIN 15000 AC-FT 27750000

As the number of streams on which streamflow information is likely to be desired far exceeds the number of stream-gaging stations feasible to operate at one time, the Geological Survey collects limited streamflow data at sites other than stream-gaging stations. When limited streamflow data are collected on a systematic basis over a period of years for use in hydrologic analyses, the site at which the data are collected is called a partial-record station. Data collected at these partial-record stations are usable in floodflow analyses.

Crest-stage partial-record stations

The following table contains annual maximum discharges for crest-stage stations. A crest-stage gage is a device which will register the peak stage occurring between inspections of the gage. A stage-discharge relation for each gage is developed from discharge measurements made by indirect measurements of peak flow or by current meter. The date of the maximum discharge is not always certain, but is usually determined by comparison with nearby continuous-record stations, weather records, or local inquiry. Only the maximum discharge for each water year is given. Information on some lower floods may have been obtained, but is not published herein. The years given in the period of record represent water years for which the annual maximum has been determined.

Annual maximum discharge at crest-stage partial-record stations

Station No.	Station name	Location	Drainage area (mi^2)	Period of record	Annual maximum Date	Annual maximum Gage height (feet)	Annual maximum Discharge (ft^3/s)
		Minnesota River basin					
05289950	Little Minnesota River tributary at Sisseton, SD	Lat 45°39'38", long 97°04'21", in NW¼ sec.32, T.126 N., R.51 W., Roberts County, Hydrologic Unit 07020001, at culvert on State Highway 10, 0.6 mile (1.0 km) west of Sisseton.	4.21	1970-79[a]	6-20-79	10.90	393
05290300	North Fork Whetstone River tributary near Wilmot, SD	Lat 45°26'02", long 96°57'33", in SE¼ sec.18, T.123 N., R.50 W., Roberts County, Hydrologic Unit 07020001, at culvert on county highway, 6.0 miles (9.7 km) northwest of Wilmot.	.96	1970-79[a]	6-20-79	4.55	53
05292600	North Fork Yellow Bank River tributary near Stockholm, SD	Lat 45°06'28", long 96°49'19", in SE¼SE¼SE¼ sec.16, T.119 N., R.50 W., Grant County, Hydrologic Unit 07020001, at culvert on State Highway 20, 1.0 mile (1.6 km) northwest of Stockholm.	8.15	1970-79[a]	6-20-79	5.65	105
		Spring Creek basin					
06354845	Spring Creek tributary near Greenway, SD	Lat 45°54'45", long 99°36'48", in SW¼ sec.12, T.128 N., R.73 W., McPherson County, Hydrologic Unit 10130102, at culvert on State Highway 47, 4.8 miles (7.7 km) east of Greenway.	.99	1970-79[a]	4- -79	[b]7.53	[c]50
		Grand River basin					
06355400	North Fork Grand River tributary near Lodgepole, SD	Lat 45°55'45", long 102°39'04", in NW¼ sec.28, T.23 N., R.12 E., Perkins County, Hydrologic Unit 10130301, at culvert on county highway, 9.0 miles (14.5 km) north of Lodgepole.	3.07	1970-79[a]	8-27-79	11.05	847
06356150	North Jack Creek near Ludlow, SD	Lat 45°47'15", long 103°23'43", in SW¼NW¼NW¼ sec.16, T.21 N., R.6 E., Harding County, Hydrologic Unit 10130302, at culvert on U.S. Highway 85, 3.4 miles (5.5 km) southwest of Ludlow.	1.69	1970-79[a]	5- -79	4.30	33
06356600	South Fork Grand River tributary near Bison, SD	Lat 45°35'54", long 102°39'28", in NE¼ sec.21, T.19 N., R.12 E., Perkins County, Hydrologic Unit 10130302, at culvert on county highway, 10 miles (16 km) northwest of Bison.	[d]1.0	1970-79[a]	4- -79	[b]7.76	[c]90
		Deadman Creek basin					
06358520	Deadman Creek tributary near Mobridge, SD	Lat 45°28'15", long 100°29'54", in NW¼ sec.1, T.17 N., R.29 E., Dewey County, Hydrologic Unit 10130102, at culvert on county highway, 5.5 miles (8.8 km) southwest of Mobridge.	.30	1956-79	7- 1-79	7.66	79

See footnotes at end of the table.

Annual maximum discharge at crest-stage partial-record stations--Continued

Station No.	Station name	Location	Drainage area (mi^2)	Period of record	Annual maximum Date	Annual maximum Gage height (feet)	Annual maximum Discharge (ft^3/s)
		Blue Blanket Creek basin					
06358540	Blue Blanket Creek tributary near Glenham, SD	Lat 45°32'12", long 100°12'01", in NW¼NW¼NW¼ sec.30, T.124 N., R.77 W., Walworth County, Hydrologic Unit 10130102, at culvert on U.S. Highway 12, 3.5 miles (5.6 km) east of Glenham.	0.62	1970-79[a]	7- 1-79	3.22	5.6
		Moreau River basin					
06358550	Battle Creek tributary near Castle Rock, SD	Lat 45°02'57", long 103°32'56", in NE¼ sec.31, T.13 N., R. 5 E., Butte County, Hydrologic Unit 10130304, at culvert on U.S. Highway 85, 8.7 miles (14.0 km) northwest of Castle Rock.	1.57	1969-79[a]	7-26-79	5.90	117
06358600	South Fork Moreau River tributary near Redig, SD	Lat 45°11'55", long 103°34'05", in SE¼SE¼ sec.1, T.14 N., R.4 E., Butte County, Hydrologic Unit 10130304, at culvert on former U.S. Highway 85, 5 miles (8 km) south of Redig, 26.2 miles (42.2 km) south of Buffalo.	2.33	1956, 1958-79	4- -79	[b]2.49	[c]35
06359300	Deep Creek tributary near Maurine, SD	Lat 45°01'34", long 102°32'29", in SW¼SE¼ sec.4, T.12 N., R.13 E., Meade County, Hydrologic Unit 10130305, at culvert on U.S. Highway 212, 2.6 miles (4.2 km) east of Maurine.	1.26	1970-79[a]	4- -79	[b]4.63	[c]5.0
06359700	Thunder Butte Creek tributary near Meadow, SD	Lat 45°26'39", long 102°05'21", in SE¼ sec.12, T.17 N., R.16 E., Perkins County, Hydrologic Unit 10130306, at culvert on State Highway 20, 8.5 miles (13.7 km) southeast of Meadow, 15.7 miles (25.3 km) west of Glad Valley.	[d]3.0	1970-79[a]	4- -79	[b]3.35	[c]5.0
06359850	Elm Creek tributary near Dupree, SD	Lat 45°03'12", long 101°38'39", in SW¼ sec.26, T.13 N., R.20 E., Ziebach County, Hydrologic Unit 10130306, at culvert on U.S. Highway 212, 1.8 miles (2.9 km) west of Dupree.	[d]5.0	1970-79[a]	4- -79	--	[c]25
06360350	Little Moreau River tributary near Firesteel, SD	Lat 45°24'16", long 101°13'30", in NE¼SE¼ sec.25, T.17 N., R.23 E., Dewey County, Hydrologic Unit 10130306, at culvert on State Highway 63, 3.5 miles (5.6 km) southeast of Firesteel.	[d]2.75	1970-79[a]	4- -79	3.40	12
		Swan Creek basin					
06361020	Swan Lake Creek tributary near Bowdle, SD	Lat 45°26'57", long 99°44'34", in SW¼ sec.23, T.123 N., R.74 W., Walworth County, Hydrologic Unit 10130105, at culvert on U.S. Highway 12, 3.7 miles (6.0 km) west of Bowdle.	27.1	1970-79[a]	4- -79	3.11	5.7
		Cheyenne River basin					
06396200	Fiddle Creek near Edgemont, SD	Lat 43°18'16", long 103°59'46", in SE¼ sec.33, T.8 S., R. 1 E., Fall River County, Hydrologic Unit 10120106, at culvert on U.S. Highway 18 and 85A, 9 miles (14 km) west of Edgemont.	.64	1956-79	8-20-79	2.50	30
06396300	Cottonwood Creek tributary near Edgemont, SD	Lat 43°17'48", long 103°52'02", in SW¼ sec.3, T.9 S., R.2 E., Fall River County, Hydrologic Unit 10120106, at culvert on U.S. Highway 18 and 85A, 2.5 miles (4.0 km) west of Edgemont.	.09	1956-79	8-20-79	3.35	19

See footnotes at end of the table.

Annual maximum discharge at crest-stage partial-record stations--Continued

Station No.	Station name	Location	Drainage area (mi^2)	Period of record	Annual maximum Date	Gage height (feet)	Discharge (ft^3/s)
		Cheyenne River basin - Continued					
06396350	Red Canyon Creek tributary near Pringle, SD	Lat 43°32'22", long 103°39'20", in SW¼ sec.9, T.6 S., R.4 E., Custer County, Hydrologic Unit 10120109, at culvert on State Highway 89, 0.5 mile (0.8 km) northwest of Argyle, and 5.5 miles (8.8 km) southwest of Pringle.	0.20	1970-79[a]	1979	--	[c]1.0
06399300	Hat Creek tributary near Ardmore, SD	Lat 43°05'42", long 103°40'25", in NW¼ sec.16, T.11 S., R.4 E., Fall River County, Hydrologic Unit 10120108, at culvert on State Highway 71, 5.0 miles (8.0 km) north of Ardmore.	3.74	1956-79[a]	7- 5-79	4.66	96
06400900	Horsehead Creek tributary near Smithwick, SD	Lat 43°17'16", long 103°19'08", in NW¼ sec.8, T.9 S., R.7 E., Fall River County, Hydrologic Unit 10120106, at culvert on U.S. Highway 18 and 385, 12 miles (19 km) southeast of Hot Springs, and 5.3 miles (8.5 km) west of Smithwick.	1.52	1969-79[a]	1979	--	(e)
06402100	Fall River tributary at Hot Springs, SD	Lat 43°24'58", long 103°29'18", in NW¼NE¼ sec.26, T.7 S., R.5 E., Fall River County, Hydrologic Unit 10120109, at culvert on State Highway 71, 0.5 mile (0.8 km) south of Hot Springs.	3.81	1970-79[a]	6-16-79	3.80	29
06403800	Battle Creek tributary near Keystone, SD	Lat 43°55'28", long 103°27'44", in NW¼NE¼NE¼ sec.36, T.1 S., R.5 E., Pennington County, Hydrologic Unit 10120109, at culvert on U.S. Highway 16, 2.8 miles (4.5 km) northwest of Keystone.	.63	1956-79	7- 4-79	5.36	15
06406100	Battle Creek tributary near Hermosa, SD	Lat 43°50'10", long 103°09'43", in SE¼NE¼ sec.33, T.2 S., R.8 E., Custer County, Hydrologic Unit 10120109, at culvert on county highway, 1.3 miles (2.1 km) east of Hermosa.	3.49	1970-79[a]	7- -79	--	[c]20
06406800	Newton Fork near Hill City, SD	Lat 43°58'03", long 103°38'24", in NE¼NE¼ sec.16, T.1 S., R.4 E., Pennington County, Hydrologic Unit 10120109, at culvert on Forest Service Road 17, 3.9 miles (6.3 km) northwest of Hill City.	8.17	1969-79[a]	7-28-79	3.47	8.3
06406900	Palmer Creek near Hill City, SD	Lat 43°56'12", long 103°30'36", in NE¼SE¼NW¼ sec.27, T.1 S., R.5 E., Pennington County, Hydrologic Unit 10120109, at culvert on U.S. Highway 16, 3.0 miles (4.8 km) east of Hill City.	13.3	1956-79	7-15-79	3.49	--
06408850	Silver Creek near Rochford, SD	Lat 44°07'24", long 103°41'53", in NE¼NE¼ sec.24, T.2 N., R.3 E., Pennington County, Hydrologic Unit 10120110, at culvert on Forest Service Road 291, 0.3 mile (0.5 km) upstream from mouth, and 1.1 miles (1.8 km) east of Rochford.	6.23	1969-79[a]	7- 4-79	3.34	3.4
06408900	Heeley Creek near Hill City, SD	Lat 43°58'57", long 103°50'02", in NW¼NW¼ sec.12, T.1 S., R.2 E., Pennington County, Hydrologic Unit 10120110, at culvert on Forest Service Road 291, 2.8 miles (4.5 km) south of Deerfield, and 13.5 miles (21.7 km) northwest of Hill City.	4.88	1969-79[a]	4- -79	--	[c]5.0

See footnotes at end of the table.

Annual maximum discharge at crest-stage partial-record stations--Continued

Station No.	Station name	Location	Drainage area (mi^2)	Period of record	Annual maximum Date	Gage height (feet)	Discharge (ft^3/s)
		Cheyenne River basin - Continued					
06421750	Rapid Creek tributary near Farmingdale, SD	Lat 43°56'30", long 102°48'43", in SE¼SW¼ sec.21, T.1 S., R.11 E., Pennington County, Hydrologic Unit 10120110, at culvert on State Highway 40, 3.8 miles (6.1 km) southeast of Farmingdale.	1.50	1970-79[a]	7- 4-79	(f)	[c]2.0
06423400	Bull Creek tributary near Wall, SD	Lat 43°53'55", long 102°14'18", in NW¼SW¼ sec.5, T.2 S., R.16 E., Pennington County, Hydrologic Unit 10120111, at culvert on U.S. Highway 16A, 6.2 miles (10.0 km) south of Wall.	.39	1970-78[h]	--	--	--
06434800	Owl Creek tributary near Belle Fourche, SD	Lat 44°49'32", long 103°51'06", in NE¼SE¼ sec.15, T.10 N., R.2 E., Butte County, Hydrologic Unit 10120202, at culvert on U.S. Highway 85, 10.2 miles (16.4 km) north of Belle Fourche.	3.06	1970-79[a]	6-17-79	3.03	59
06437100	Boulder Creek near Deadwood, SD	Lat 44°23'28", long 103°39'38", in NE¼SW¼ sec.17, T.5 N., R.4 E., Lawrence County, Hydrologic Unit 10120202, at culvert on U.S. Highway 14A, 3.5 miles (5.6 km) east of Deadwood.	1.32	1956-79	4- -79	--	[c]40
06439050	Cherry Creek tributary near Avance, SD	Lat 44°48'33", long 102°03'18", in SW¼ sec.21, T.10 N., R.17 E., Meade County, Hydrologic Unit 10120113, at culvert on State Highway 73, 12.5 miles (20.1 km) southeast of Avance.	.60	1956-79	6-20-79	2.98	12
06439080	Cherry Creek tributary No. 3 near Avance, SD	Lat 44°51'03", long 102°03'36", in SW¼ sec.3, T.10 N., R.17 E., Meade County, Hydrologic Unit 10120113, at bridge on State Highway 73, 11 miles (17.7 km) southeast of Avance.	4.58	1956-79	6-20-79	2.58	10
06439100	Beaver Creek near Faith, SD	Lat 44°56'21", long 102°02'37", in SW¼ sec.3, T.11 N., R.17 E., Meade County, Hydrologic Unit 10120113, at bridge on State Highway 73, 6 miles (10 km) south of Faith.	37.1	1956-79	6-20-79	6.22	70
06439400	Plum Creek tributary near Milesville, SD	Lat 44°21'34", long 101°25'42", in S½ sec.26, T.5 N., R.22 E., Haakon County, Hydrologic Unit 10120112, at culvert on State Highway 34, 14.5 miles (23.3 km) southeast of Milesville.	[d]0.5	1970-79[a]	6- -79	(f)	[c]3.0
		Bad River basin					
06440700	Brady Creek tributary near Philip, SD	Lat 43°55'14", long 101°39'40", in NE¼NE¼ sec.36, T.1 S., R.20 E., Jackson County, Hydrologic Unit 10140102, at culvert on State Highway 73, 8.1 miles (13.0 km) south of Philip.	4.84	1970-78[h]	--	--	--
06441200	Powell Creek tributary near Fort Pierre, SD	Lat 44°22'39", long 100°35'16", in NW¼SW¼ sec.23, T.5 N., R.29 E., Stanley County, Hydrologic Unit 10140102, at culvert on U.S. Highway 14, 10.2 miles (16.4 km) west of Fort Pierre.	.40	1970-79[a]	6- -79	(f)	[c]5.0

See footnotes at end of the table.

Annual maximum discharge at crest-stage partial-record stations--Continued

Station No.	Station name	Location	Drainage area (mi^2)	Period of record	Annual maximum Date	Gage height (feet)	Discharge (ft^3/s)
		Hilgers Gulch basin					
06441530	Hilgers Gulch tributary near Pierre, SD	Lat 44°23'52", long 100°18'57", in SE¼SW¼SE¼ sec.22, T.111 N., R.79 W., Hughes County, Hydrologic Unit 10140101, at culvert on U.S. Highway 14 and 83, 1 mile (2 km) upstream from mouth, and 3 miles (5 km) northeast of Pierre.	1.33	1968-79[a]	7-23-79	5.17	84
06441580	Hilgers Gulch at Pierre, SD	Lat 44°22'10", long 100°20'30", in SE¼SW¼ sec.33, T.111 N., R.79 W., Hughes County, Hydrologic Unit 10140101, on right bank at culvert on Church Street, 0.7 mile (1.1 km) upstream from mouth, in city of Pierre.	6.49	1967-79[a]	7-23-79	(f)	[c]25
		Mush Creek basin					
06441650	Mush Creek near Pierre, SD	Lat 44°20'13", long 100°12'42", in NE¼ sec.16, T.110 N., R.78 W., Hughes County, Hydrologic Unit 10140101, at bridge on State Highway 34, 7.5 miles (12.1 km) east of Pierre.	14.2	1956-79	6- -79	--	[c]10
		Unnamed Missouri River tributary					
06442050	Missouri River tributary near DeGrey, SD	Lat 44°17'45", long 99°58'58", in SW¼ sec.28, T.110 N., R.76 W., Hughes County, Hydrologic Unit 10140101, at culvert on State Highway 34, 3.2 miles (5.1 km) northwest of DeGrey.	1.73	1956-79	4-17-78 6-19-79	[g]2.85 4.04	[g]192 385
		Medicine Creek basin					
06442350	North Fork Medicine Creek near Vivian, SD	Lat 43°57'06", long 100°19'25", in SW¼ sec.28, T.106 N., R.79 W., Lyman County, Hydrologic Unit 10140104, at bridge on U.S. Highway 83, 2.5 miles (4.0 km) northwest of Vivian.	47.0	1956-79	1979	(f)	[c]5.0
06442400	Medicine Creek tributary No. 2 near Vivian, SD	Lat 44°02'03", long 100°19'28", in NE¼ sec.32, T.107 N., R.79 W., Lyman County, Hydrologic Unit 10140104, at culvert on U.S. Highway 83, 8 miles (13 km) northwest of Vivian.	9.21	1956-79	7-23-79	3.32	35
		Crow Creek basin					
06442850	Elm Creek tributary near Ree Heights, SD	Lat 44°25'05", long 99°12'17", in NW¼SW¼ sec.13, T.111 N., R.70 W., Hand County, Hydrologic Unit 10140105, at culvert on county highway, 6.5 miles (10.5 km) south of Ree Heights.	.70	1969-79[a]	4- -79	[b]5.09	[c]5.0
06442960	Smith Creek tributary near Gann Valley, SD	Lat 44°01'34", long 98°43'41", in NE¼SE¼ sec.34, T.107 N., R.66 W., Jerauld County, Hydrologic Unit 10140105, at culvert on county highway, 8.7 miles (14.0 km) southwest of Wessington Springs and 13.9 miles (20.9 km) east of Gann Valley.	5.85	1972-79	7-12-79	2.82	2.5
		White River basin					
06445990	South Fork Blacktail Creek tributary near Oelrichs, SD	Lat 43°11'18", long 103°08'20", in NW¼ sec.14, T.10 S., R.8 E., Fall River County, Hydrologic Unit 10140201, at culvert on U.S. Highway 18, 4.2 miles (6.8 km) east of Oelrichs.	3.60	1969-79[a]	3- -79	[b]4.23	[c]2.0

See footnotes at end of the table.

Annual maximum discharge at crest-stage partial-record stations--Continued

Station No.	Station name	Location	Drainage area (mi^2)	Period of record	Annual maximum Date	Gage height (feet)	Discharge (ft^3/s)
		White River basin - Continued					
06446250	Porcupine Creek tributary near Rockyford, SD	Lat 43°26'05", long 102°25'45", in SE¼SE¼ sec.17, T.40 N., R.43 W., Shannon County, Hydrologic Unit 10140201, at culvert on county road, 5 miles (8 km) southeast of village of Rockyford.	1.65	1968, 1970-79[a]	7- 4-79	8.30	346
06446400	Cain Creek tributary at Imlay, SD	Lat 43°42'59", long 102°23'23", in SE¼NW¼ sec.12, T.4 S., R.14 E., Pennington County, Hydrologic Unit 10140201, at bridge on State Highway 40, 0.5 mile (0.8 km) east of Imlay.	15.8	1956-79	7- 4-79	7.24	1,120
06446550	White River tributary near Interior, SD	Lat 43°44'51", long 101°56'50", in SE¼ sec.27, T.3 S., R.18 E., Jackson County, Hydrologic Unit 10140202, in Badlands National Park, at culvert on U.S. Highway 16A, 2.3 miles (3.7 km) northeast of Interior.	.32	1956-79	6-17-79	8.80	570
06446800	Cottonwood Creek near Wanblee, SD	Lat 43°34'35", long 101°32'15", in NW¼NW¼ sec.31, T.42 N., R.35 W., Washabaugh County, Hydrologic Unit 10140202, at culvert on State Highway 40, 6.2 miles (10.0 km) east of Wanblee.	[d]1.7	1971-78[h]	--	--	--
06447200	Black Pipe Creek tributary near Norris, SD	Lat 43°27'42", long 101°08'05", in NW¼NW¼ sec.8, T.40 N., R.32 W., Mellette County, Hydrologic Unit 10140202, at culvert on State Highway 63, 3.2 miles (5.1 km) east of Norris.	4.19	1971-79[a]	7- 4-79	7.38	143
06447490	Little White River tributary near Martin, SD	Lat 43°10'20", long 101°41'02", in SE¼SW¼ sec.15, T.37 N., R.37 W., Bennett County, Hydrologic Unit 10140203, at culvert on U.S. Highway 18, 2.3 miles (3.7 km) east of Martin.	[d]8.9	1971-79	1979	(f)	[c]20
06449700	Little Oak Creek near Mission, SD	Lat 43°19'45", long 100°42'33", in NW¼ sec.25, T.39 N., R.29 W., Todd County, Hydrologic Unit 10140203, at culvert on U.S. Highway 83, 3.2 miles (5.1 km) northwest of Mission.	2.58	1956-79	6-16-79	3.99	134
06451750	Cottonwood Creek tributary near Winner, SD	Lat 43°23'11", long 100°01'13", in NW¼ sec.24, T.99 N., R.78 W., Tripp County, Hydrologic Unit 10140204, at culvert on U.S. Highway 18, 7.5 miles (12.1 km) west of Winner.	[d]4.0	1971-79	6-16-79	4.34	111
		Fivemile Creek basin					
06452250	Fivemile Creek tributary near Iona, SD	Lat 43°29'23", long 99°26'08", in SE¼ sec.11, T.100 N. (corrected), R.73 W., Gregory County, Hydrologic Unit 10140101, at culvert on State Highway 47, 3.8 miles (6.1 km) south of Iona.	2.35	1970-79[a]	6-16-79	3.36	66
		Choteau Creek basin					
06453150	Choteau Creek tributary near Tripp, SD	Lat 43°14'20", long 98°02'35", in NE¼NW¼ sec.10, T.97 N., R.61 W., Hutchinson County, Hydrologic Unit 10170101, at culvert on U.S. Highway 18, 3.7 miles (6.0 km) west of Tripp.	.54	1970-79[a]	4-12-79	[b]4.18	[c]20

See footnotes at end of the table.

Annual maximum discharge at crest-stage partial-record stations--Continued

Station No.	Station name	Location	Drainage area (mi^2)	Period of record	Annual maximum Date	Gage height (feet)	Discharge (ft^3/s)
		Choteau Creek basin - Continued					
06453250	Choteau Creek tributary near Wagner, SD	Lat 43°04'54", long 98°19'04", in NE¼NW¼ sec.5, T.95 N., R.63 W., Charles Mix County, Hydrologic Unit 10170101, at culvert on State Highway 46, 1.1 miles (1.8 km) west of Wagner.	15.6	1970-79[a]	4- -79	3.80	45
		James River basin					
06471050	Elm River tributary near Leola, SD	Lat 45°50'40", long 98°46'03", in NE¼SE¼ sec.3, T.127 N., R.66 W., McPherson County, Hydrologic Unit 10160004, at culvert on county highway, 12.2 miles (19.6 km) northeast of Leola.	18.0	1956-79	4- -79	[b]3.90	[c]20
06471400	Willow Creek tributary near Leola, SD	Lat 45°44'10", long 98°45'45", in SW¼ sec.11, T.126 N., R.66 W., McPherson County, Hydrologic Unit 10160004, at culvert on former State Highway 10, 8.5 miles (13.7 km) northeast of Leola.	6.69	1956-79	4- -79	1.46	5.8
06472200	Mud Creek tributary near Groton, SD	Lat 45°26'37", long 98°02'22", in SW¼ sec.22, T.123 N., R.60 W., Brown County, Hydrologic Unit 10160005, at culvert on U.S. Highway 12, 3.2 miles (5.1 km) east of Groton.	56.7	1960-69, 1974-79	4-10-79	--	[c]50
06472250	Mud Creek tributary No. 2 near Groton, SD	Lat 45°26'36", long 98°02'52", in SE¼ sec.21, T.123 N., R.60 W., Brown County, Hydrologic Unit 10160005, at culvert on U.S. Highway 12, 2.7 miles (4.3 km) east of Groton.	75.8	1960-79	6-20-79	4.19	58
06473300	Preachers Run tributary at Ipswich, SD	Lat 45°27'08", long 99°01'45", in SE¼ sec.21, T.123 N., R.68 W., Edmunds County, Hydrologic Unit 10160008, at culvert on county highway, 0.3 mile (0.5 km) north of U.S. Highway 12, at Ipswich.	7.88	1971-79	6-20-79	(f)	[c]15
06473350	South Fork Snake Creek tributary near Seneca, SD	Lat 45°03'00", long 99°23'36", in SE¼NE¼ sec.9, T.118 N., R.71 W., Faulk County, Hydrologic Unit 10160008, at culvert on U.S. Highway 212, 5.3 miles (8.5 km) east of Seneca.	4.54	1971-79	4- -79	[b]3.25	[c]5.0
06473400	North Fork Snake Creek tributary near Wecota, SD	Lat 45°09'26", long 99°07'26", in NE¼NE¼ sec.3, T.119 N., R.69 W., Faulk County, Hydrologic Unit 10160008, at culvert on county highway, 1.1 miles (1.8 km) south of Wecota.	2.69	1971-79[a]	6-20-79	4.25	25
06473820	Shaefer Creek near Orient, SD	Lat 44°46'46", long 99°02'39", in NW¼NW¼ sec.17, T.115 N., R.68 W., Hand County, Hydrologic Unit 10160009, on downstream side of bridge on county highway, 8.5 miles (13.7 km) southeast of Orient.	51.3	1956-79	6-20-79	2.84	105
06473850	Shaefer Creek tributary near Orient, SD	Lat 44°43'49", long 98°59'17", in SE¼NE¼ sec.34, T.115 N., R.68 W., Hand County, Hydrologic Unit 10160009, at culvert on State Highway 45, 13 miles (21 km) southeast of Orient.	5.17	1956-79	4-11-79	[b]5.21	[c]100

See footnotes at end of the table.

Annual maximum discharge at crest-stage partial-record stations--Continued

Station No.	Station name	Location	Drainage area (mi^2)	Period of record	Annual maximum Date	Gage height (feet)	Discharge (ft^3/s)
		James River basin - Continued					
06473880	Shaefer Creek tributary near Miller, SD	Lat 44°42'20", long 98°59'17", in NE¼ sec.10, T.114 N., R.68 W., Hand County, Hydrologic Unit 10160009, at culvert on State Highway 45, 13 miles (21 km) north of Miller.	5.95	1956-79	8-28-79	4.60	116
06475500	Dry Run near Frankfort, SD	Lat 44°56'17", long 98°19'43", in NW¼NW¼ sec.20, T.117 N., R.62 W., Spink County, Hydrologic Unit 10160006, at highway bridge, 400 ft (120 m) downstream from small right-bank tributary, 4.4 miles (7.1 km) north of Frankfort, and 8.1 miles (13.0 km) upstream from mouth.	225	1955-69‡, 1970-78[h]	--	--	--
06475550	Dry Run tributary near Frankfort, SD	Lat 44°55'45", long 98°18'31", in W½NW¼SW¼ sec.21, T.117 N., R.62 W., Spink County, Hydrologic Unit 10160006, at culvert on county highway, 0.6 mile (1.0 km) upstream from mouth, and 3.5 miles (5.6 km) north of Frankfort.	4.19	1967-79[a]	4- -79	[b]3.40	[c]5.0
06475850	Foster Creek tributary near Carpenter, SD	Lat 44°37'59", long 98°03'42", in SE¼SE¼ sec.32, T.114 N., R.60 W., Spink County, Hydrologic Unit 10160006, at culvert on State Highway 28, 7.3 miles (11.7 km) west of Carpenter.	4.93	1972-79	4- -79	[b]4.00	[c]10
06475950	Shue Creek tributary near Yale, SD	Lat 44°27'48", long 97°59'18", in NW¼SW¼ sec.36, T.112 N., R.60 W., Beadle County, Hydrologic Unit 10160006, at culvert on county highway, 2 miles (3 km) north of Yale.	6.90	1968-79[a]	4- -79	(f)	[c]3.0
06477140	Rock Creek tributary near Roswell, SD	Lat 44°02'24", long 97°42'34", in SW¼SW¼ sec.29, T.107 N., R.57 W., Miner County, Hydrologic Unit 10160011, at culvert on county highway, 2.2 miles (3.5 km) north of Roswell.	5.67	1970-79[a]	4- -79	[b]4.28	[c]25
06477150	Rock Creek near Fulton, SD	Lat 43°45'39", long 97°54'25", in NW¼NW¼ sec.3, T.103 N., R.59 W., Hanson County, Hydrologic Unit 10160011, near right bank on downstream wingwall of highway bridge, 4.9 miles (7.9 km) northwest of Fulton and 9.5 miles (15.3 km) upstream from mouth.	270	1966-72‡, 1973-79[a]	4- -79	[b]4.31	[c]25
06477400	Firesteel Creek tributary near Wessington Springs, SD	Lat 44°04'26", long 98°34'52", in NW¼ sec.13, T.107 N., R.65 W., Jerauld County, Hydrologic Unit 10160011, at culvert on State Highway 34, 0.8 mile (1.3 km) west of Wessington Springs.	.22	1968-79[a]	4- -79	[b]3.59	[c]10
06478050	Enemy Creek tributary near Mount Vernon, SD	Lat 43°36'19", long 98°15'55", in NE¼SE¼ sec.28, T.102 N., R.62 W., Davison County, Hydrologic Unit 10160011, at culvert on county highway, 7.3 miles (11.7 km) south of Mount Vernon.	3.38	1969-79[a]	7-29-79	4.62	21
06478200	Coffee Creek tributary near Parkston, SD	Lat 43°27'26", long 97°59'42", in SE¼SE¼ sec.24, T.100 N., R.61 W., Hutchinson County, Hydrologic Unit 10160011, at culvert on State Highway 37, 4.2 miles (6.8 km) north of Parkston.	.81	1968-79[a]	9-12-79	4.74	74

See footnotes at end of the table.

Annual maximum discharge at crest-stage partial-record stations--Continued

Station No.	Station name	Location	Drainage area (mi^2)	Period of record	Annual maximum Date	Gage height (feet)	Discharge (ft^3/s)
		James River basin - Continued					
06478260	North Branch Dry Creek near Parkston, SD	Lat 43°22'13", long 97°50'51", in NE¼NW¼ sec.29, T.99 N., R.59 W., Hutchinson County, Hydrologic Unit 10160011, at bridge on county highway, 7.5 miles (12.1 km) southeast of Parkston.	54.1	1956-78[h]	--	--	--
06478280	South Branch Dry Creek near Parkston, SD	Lat 43°21'22", long 97°49'35", in NW¼ sec.33, T.99 N., R.59 W., Hutchinson County, Hydrologic Unit 10160011, at bridge on county highway, 8.3 miles (13.4 km) southeast of Parkston.	25.8	1956-79	4- -79	[b]4.57	[c]30
06478300	Dry Creek near Parkston, SD	Lat 43°22'18", long 97°49'23", in SE¼ sec.21, T.99 N., R.59 W., Hutchinson County, Hydrologic Unit 10160011, at bridge on county highway, 8.5 miles (13.7 km) southeast of Parkston.	99.2	1956-79	4- -79	[b]5.95	[c]50
06478400	Lonetree Creek tributary near Kaylor, SD	Lat 43°17'18", long 97°50'10", in NE¼SE¼ sec.20, T.98 N., R.59 W., Hutchinson County, Hydrologic Unit 10160011, at culvert on county highway, 7.2 miles (11.6 km) north of Kaylor.	3.65	1970-79[a]	4- -79	[b]5.34	[c]30
		Vermillion River basin					
06478630	West Fork Vermillion River near DeSmet, SD	Lat 44°12'54", long 97°33'04", in NW¼SW¼ sec.27, T.109 N., R.56 W., Kingsbury County, Hydrologic Unit 10170102, at culvert on State Highway 25, 11.5 miles (18.5 km) south of DeSmet.	5.34	1970-79[a]	4- -79	[b]3.45	[c]3.0
06478650	West Fork Vermillion River tributary near Monroe, SD	Lat 43°28'35", long 97°15'39", in SW¼SW¼ sec.17, T.100 N., R.54 W., Turner County, Hydrologic Unit 10170102, at culvert on county highway, 3.2 miles (5.1 km) north of Marion, and 2.2 miles (3.5 km) west of Monroe.	2.74	1969-79[a]	4- -79	[b]12.10	[c]50
06478820	Saddlerock Creek tributary near Beresford, SD	Lat 43°12'21", long 96°45'51", in NE¼NW¼NW¼ sec.21, T.97 N., R.50 W., Lincoln County, Hydrologic Unit 10170102, at culvert on county highway, 9 miles (14 km) north of Beresford.	2.22	1956-79	5-10-79	4.07	51
06478840	Saddlerock Creek near Beresford, SD	Lat 43°12'55", long 96°49'33", in SE¼SE¼ sec.14, T.97 N., R.51 W., Lincoln County, Hydrologic Unit 10170102, at bridge on county highway, 9.5 miles (15.3 km) northwest of Beresford.	23.1	1956-70, 1972-79	5-10-79	6.92	460
06478950	Ash Creek near Beresford, SD	Lat 43°05'01", long 96°50'08", in NE¼NW¼ sec.2, T.95 N., R.51 W., Clay County, Hydrologic Unit 10170102, at culvert on State Highway 46, 2.1 miles (3.4 km) west of Beresford.	5.00	1969-79[a]	5-10-79	5.58	365
06479020	Smoky Run near Irene, SD	Lat 43°04'56", long 97°19'12", in SE¼SE¼SE¼ sec.34, T.96 N., R.55 W., Yankton County, Hydrologic Unit 10170102, at culvert on State Highway 46, 0.1 mile (0.2 km) west of Mayfield, and 8.0 miles (12.9 km) west of Irene.	4.96	1969-79[a]	4- -79	[b]4.35	[c]10

See footnotes at end of the table.

Annual maximum discharge at crest-stage partial-record stations--Continued

Station No.	Station name	Location	Drainage area (mi^2)	Period of record	Annual maximum Date	Gage height (feet)	Discharge (ft^3/s)
		Big Sioux River basin					
06479260	Big Sioux River tributary No. 3 near Summit, SD	Lat 45°13'30", long 97°06'27", in SE¼ sec.25, T.121 N., R.52 W., Grant County, Hydrologic Unit 10170202, at culvert on county highway, 6.5 miles (10.5 km) southwest of Summit, 11.5 miles (18.5 km) southeast of Waubay.	6.61	1956-78[h]	--	--	--
06479350	Soo Creek tributary near South Shore, SD	Lat 45°06'22", long 97°01'12", in NW¼NE¼ sec.24, T.119 N., R.52 W., Codington County, Hydrologic Unit 10170202, at culvert on State Highway 20, 3.8 miles (6.1 km) west of South Shore.	1.56	1970-79[a]	4- -79	[b]7.42	[c]25
06479550	Dolph Creek tributary near Lake Norden, SD	Lat 44°35'15", long 97°19'37", in SW¼SW¼ sec.16, T.113 N., R.54 W., Hamlin County, Hydrologic Unit 10170201, at culvert on State Highway 28, 5.4 miles (8.7 km) west of Lake Norden.	5.91	1970-79[a]	6-16-79	3.77	24
06479750	Peg Munky Run near Estelline, SD	Lat 44°34'22", long 96°51'15", in N½ sec.29, T.113 N., R.50 W., Deuel County, Hydrologic Unit 10170202, at bridge on State Highway 28, 2.5 miles (4.0 km) east of Estelline.	25.2	1956-79	4- -79	[b]8.13	[c]400
06479800	North Deer Creek near Estelline, SD	Lat 44°27'44", long 96°47'13", in SE¼ sec.35, T.112 N., R.50 W., Brookings County, Hydrologic Unit 10170202, at bridge on U.S. Highway 77, 9.8 miles (15.8 km) southeast of Estelline.	48.3	1956-79	4- -79	[b]7.74	[c]300
06479810	North Deer Creek tributary near Brookings, SD	Lat 44°22'44", long 96°47'14", in NW¼SW¼NW¼ sec.36, T.111 N., R.50 W., Brookings County, Hydrologic Unit 10170202, at culvert on U.S. Highway 77, 4.5 miles (7.2 km) north of Brookings.	.33	1969-79[a]	4- -79	[b]6.38	[c]20
06479950	Deer Creek near Brookings, SD	Lat 44°23'03", long 96°37'19", in SW¼ sec.29, T.111 N., R.48 W., Brookings County, Hydrologic Unit 10170202, at culvert on county highway, 9.8 miles (15.8 km) northeast of Brookings.	4.04	1956-79	5-30-79	4.40	117
06480720	Bachelor Creek tributary near Wentworth, SD	Lat 44°00'28", long 97°00'02", in NE¼NE¼NW¼ sec.7, T.106 N., R.51 W., Lake County, Hydrologic Unit 10170203, at culvert on State Highway 34, 1.8 miles (2.9 km) northwest of Wentworth.	1.03	1969-79[a]	4- -79	[b]8.70	[c]20
06482600	West Pipestone Creek tributary near Garretson, SD	Lat 43°42'12", long 96°36'43", in SE¼SE¼ sec.20, T.103 N. R.48 W., Minnehaha County, Hydrologic Unit 10170203, at culvert on county highway, 5.3 miles (8.5 km) west of Garretson.	2.16	1969-79[a]	3-20-79	[b]10.26	[c]250
06485550	West Union Creek near Alcester, SD	Lat 42°56'18", long 96°38'00", in SW¼SE¼ sec.21, T.94 N., R.49 W., Union County, Hydrologic Unit 10170203, at culvert on county highway, 5.7 miles (9.2 km) south of Alcester.	3.48	1969-79[a]	4- -79	[b]7.47	[c]100

‡ Operated as a continuous-record gaging station.
a Discontinued Sept. 30, 1979.
b Backwater from ice.
c Estimated.
d Approximate.
e No evidence of any flow during the water year.
f Peak stage did not reach bottom of gage.
g Revised.
h Discontinued Sept. 30, 1978.

Station name	Tributary to	Location	Date	Discharge (ft^3/s)
		Cheyenne River basin		
Elk Creek Site No. 1	Cheyenne River	Lat 44°12'19", long 103°01'49", in NE¼NE¼SE¼ sec.21, T.3 N., R.9 E., Meade County, at bridge on county road 4.2 mi (6.8 km) downstream from Dry Creek and 11.5 mi (18.5 km) northeast of Rapid City.	5-14-79	5.4
			5-29-79	7.4
			6-25-79	[a].05
			6-25-79	1.5
			7-10-79	0
			7-24-79	[a].01
			8- 8-79	0
			8-22-79	0
			8-30-79	.27
Elk Creek Site No. 2	Cheyenne River	Lat 44°11'15", long 102°55'47", in SW¼NW¼SW¼ sec.28, T.3 N., R.10 E., Meade County, at bridge on county road 7.4 mi (11.9 km) downstream from Antelope Creek and 7.5 miles (12.1 km) northwest of New Underwood.	5-14-79	4.4
			5-29-79	15
			6-13-79	.36
			6-25-79	1.8
			7-10-79	[a].10
			7-24-79	0
			8- 8-79	0
			8-21-79	[a].03
			8-30-79	.51
Elk Creek Site No. 3	Cheyenne River	Lat 44°11'15", long 102°49'46", in SE¼NE¼SE¼ sec.30, T.3 N., R.11 E., Meade County, at bridge on county road, 1.6 mi (2.6 km) south of Viewfield and 6.9 mi (11.1 km) north of New Underwood.	5-14-79	4.6
			5-29-79	27
			6-13-79	0
			6-25-79	1.1
			7-10-79	0
			7-24-79	0
			8- 8-79	0
			8-22-79	0
			8-30-79	0
Sand Creek	Redwater Creek	Lat 44°32'01", long 104°05'22", in SW¼SW¼ sec.32, T.53 N., R.60 W., Crook County, 0.6 mi (1.0 km) downstream from Bear Gulch and 0.7 mi (1.1 km) south of Beulah, WY.	6-28-77	38
			8- 1-77	33
			3-28-78	22
			5- 2-78	43
			7-13-78	37
			10- 2-78	30
			12-13-79	34
			1- 8-79	41
			4- 9-79	35
			5- 7-79	32
			6- 4-79	26
			7- 9-79	33
			8-28-79	32
Sand Creek	Redwater Creek	Lat 44°31'54", long 104°05'07", in NE¼ NW¼ sec.5, T.52 N., R.60 W., Crook County, 50 ft (15 m) downstream from Bear Gulch and 0.7 mi (1.1 km) south of Beulah, WY.	6-28-77	33
			8- 1-77	28
			3-28-78	25
			5- 2-78	37
			7-13-78	29
			10- 2-78	26
			12-13-78	25
			1- 8-79	30
			4- 9-79	24
			5- 7-79	27
			6- 4-79	19
			7- 9-79	27
			8-27-79	24

a Estimated.

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)
06334500 - LITTLE MISSOURI R AT CAMP CROOK SD (LAT 45 32 49 LONG 103 58 23)					
OCT , 1978					
23...	1415	11	15.5	--	1593
NOV					
02...	0800	13	4.0	--	2180
DEC					
12...	1000	11	.0	--	2620
JAN , 1979					
09...	1045	2.2	.0	--	3060
31...	0915	3.5	.0	--	2500
MAR					
06...	1045	1.8	.0	--	6500
21...	1315	828	.0	--	830
APR					
17...	1515	644	14.0	--	980
MAY					
08...	1345	58	10.0	--	1400
JUN					
05...	0945	38	19.0	--	2020
JUL					
10...	1315	15	26.0	--	1880
AUG					
08...	0845	20	18.0	--	1300
SEP					
05...	0930	16	18.5	--	1820
06355500 - NORTH FORK GRAND R NEAR WHITE BUTTE SD (LAT 45 48 10 LONG 102 21 45)					
OCT , 1978					
18...	1140	5.3	9.0	12.0	3200
NOV					
15...	0810	9.4	.0	-9.0	2930
DEC					
14...	1315	5.9	.0	7.0	4000
JAN , 1979					
09...	1300	.10	.0	-10.0	4000
FEB					
12...	1610	.26	.0	-7.0	4100
MAR					
21...	1005	4.4	1.0	-2.0	2800
APR					
03...	0935	490	.5	8.0	1400
MAY					
08...	1440	106	10.0	7.0	2250
JUN					
06...	1010	19	18.0	18.0	2800
26...	1400	16	24.0	26.0	3000
JUL					
31...	0815	20	22.0	15.0	3000
AUG					
28...	0905	332	15.0	18.0	1500
SEP					
25...	1300	11	16.0	19.0	2400

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)
06356000 - SOUTH FORK GRAND R AT BUFFALO SD (LAT 45 34 34 LONG 103 32 38)					
OCT , 1978					
03...	1030	2.6	10.0	--	1586
NOV					
02...	1030	3.0	4.0	--	2200
DEC					
12...	1200	3.0	.0	--	--
JAN , 1979					
09...	1300	1.9	.0	--	2000
31...	1130	2.2	.0	--	1600
MAR					
06...	1400	2.5	1.0	--	1950
21...	1615	27	.0	--	443
APR					
17...	1700	32	15.0	--	660
MAY					
08...	1100	4.1	8.0	--	1820
JUN					
05...	1300	2.9	21.5	--	1990
JUL					
10...	1015	2.5	21.5	--	2020
AUG					
08...	1030	2.1	19.0	--	1500
SEP					
05...	1130	2.0	19.5	--	1900
06356500 - SOUTH FORK GRAND R NEAR CASH SD (LAT 45 38 56 LONG 102 38 27)					
OCT , 1978					
18...	1415	16	9.0	13.0	2600
NOV					
14...	1515	6.7	.0	-3.0	2320
DEC					
14...	1120	10	.0	7.0	3000
MAR , 1979					
21...	1145	207	1.0	-1.0	550
APR					
03...	0750	133	.5	-10.0	720
MAY					
08...	1210	37	10.0	10.0	2100
JUN					
06...	1140	17	18.0	18.0	2450
26...	1120	24	24.0	24.0	2100
JUL					
31...	1015	36	22.0	18.0	1100
AUG					
28...	1130	16	20.0	23.0	2200
SEP					
25...	1025	8.5	16.0	18.0	2400

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)
06359500 - MOREAU R NEAR FAITH SD (LAT 45 11 52 LONG 102 09 22)					
OCT , 1978					
19...	0955	8.1	9.0	15.0	2040
NOV					
14...	1325	17	.0	.0	2200
DEC					
13...	1025	8.1	.0	4.0	3400
MAR , 1979					
20...	1515	326	1.5	6.0	430
APR					
02...	1440	459	3.0	1.0	1200
MAY					
08...	0915	37	10.0	5.0	1700
JUN					
05...	1455	12	28.5	28.0	2300
26...	0825	165	25.0	24.0	1500
JUL					
30...	1555	78	18.0	22.0	800
AUG					
27...	1330	26	25.0	22.0	1230
SEP					
24...	1425	3.4	18.0	20.0	2200
06392900 - BEAVER CR AT MALLO CAMP NEAR FOUR CORNERS WY (LAT 44 05 04 LONG 104 03 41)					
OCT , 1978					
11...	1245	2.3	6.0	--	515
NOV					
15...	1100	.99	--	--	570
JAN , 1979					
15...	1300	2.4	.5	--	--
MAR					
06...	1230	2.6	2.5	--	480
APR					
18...	1500	4.3	11.0	--	440
MAY					
16...	1115	2.4	9.0	--	445
JUN					
15...	1140	3.5	11.5	--	400
JUL					
19...	1155	3.3	11.5	--	600
SEP					
12...	1215	2.5	8.0	--	432
06392950 - STOCKADE BEAVER CR NEAR NEWCASTLE WY (LAT 43 51 30 LONG 104 06 23)					
OCT , 1978					
11...	1130	13	12.0	--	2060
NOV					
15...	1430	14	1.5	--	2270
DEC					
08...	1145	13	.0	--	2550
JAN , 1979					
10...	1030	14	1.0	--	2000
MAR					
06...	1045	16	4.0	--	2200
APR					
19...	1030	12	10.0	--	1860
MAY					
16...	1415	10	18.0	--	1820
JUN					
15...	1030	12	15.5	--	1900
JUL					
19...	0940	17	14.5	--	2250
SEP					
12...	0930	14	12.0	--	2040

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)
06395000 - CHEYENNE R AT EDGEMONT SD (LAT 43 18 20 LONG 103 49 14)					
OCT , 1978					
17...	0830	13	5.0	--	6400
NOV					
15...	0830	17	.0	--	9100
DEC					
19...	0830	15	.0	--	4000
JAN , 1979					
18...	0845	4.9	.0	--	3200
FEB					
21...	0900	5.8	.0	--	--
MAR					
20...	0915	404	1.0	--	2280
APR					
25...	0845	45	8.0	--	3900
MAY					
22...	0900	34	14.5	--	3760
JUN					
19...	0915	465	13.5	--	1970
21...	1130	204	22.0	--	1360
JUL					
23...	1630	8.6	28.5	--	3400
AUG					
08...	1215	54	26.0	--	1660
SEP					
11...	0930	18	14.0	--	2700
06400000 - HAT CR NEAR EDGEMONT SD (LAT 43 14 46 LONG 103 35 16)					
MAR , 1979					
20...	1430	1.4	3.0	--	1260
APR					
25...	1230	.22	16.5	--	3200
MAY					
21...	1630	.38	22.0	--	2590
06400497 - CASCADE SPRINGS NEAR HOT SPRINGS SD (LAT 43 20 20 LONG 103 33 08)					
NOV , 1978					
15...	1100	19	20.0	--	2630
JAN , 1979					
18...	1045	18	20.0	--	2700
FEB					
21...	1350	18	21.0	--	2700
APR					
25...	1500	17	22.0	--	3300
MAY					
22...	1400	21	20.5	--	2190
JUN					
19...	1200	21	19.0	--	2590
JUL					
24...	1630	22	27.0	--	2600
SEP					
11...	1230	20	20.0	--	2780
SEP					
27...	1300	18	21.0	--	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)
06402000 - FALL R AT HOT SPRINGS SD (LAT 43 25 50 LONG 103 28 33)					
OCT , 1978					
17...	1145	23	23.5	--	1340
DEC					
19...	1000	21	21.0	--	1340
JAN , 1979					
18...	1300	21	22.0	--	1300
FEB					
21...	1145	25	22.0	--	1360
MAR					
20...	1645	22	23.0	--	1300
APR					
26...	0900	23	24.0	--	1120
MAY					
22...	1515	20	25.5	--	1250
JUN					
19...	1515	23	24.5	--	1310
JUL					
25...	0945	20	26.0	--	1300
SEP					
11...	1415	19	26.0	--	1290
06402500 - BEAVER CR NEAR BUFFALO GAP SD (LAT 43 27 56 LONG 103 18 22)					
OCT , 1978					
18...	0900	10	10.5	--	2840
NOV					
15...	1340	6.9	2.5	--	318
DEC					
19...	1145	12	5.5	--	2610
JAN , 1979					
18...	1415	13	1.0	--	2450
FEB					
22...	0910	12	5.0	--	2670
MAR					
21...	1430	12	6.5	--	2470
APR					
26...	1415	1.4	9.0	--	2800
MAY					
23...	0940	1.2	11.5	--	2830
JUN					
20...	0830	.87	12.0	--	3000
JUL					
26...	1600	.96	24.5	--	2900
SEP					
12...	1530	10	16.5	--	2730

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)
06404000 - BATTLE CR NEAR KEYSTONE SD (LAT 43 52 18 LONG 103 20 09)					
OCT , 1978					
19...	1145	1.3	8.0	--	390
NOV					
16...	1345	1.1	1.5	--	440
DEC					
14...	0945	1.4	.0	--	295
JAN , 1979					
18...	1245	.53	.0	--	470
FEB					
25...	0930	1.1	.0	--	440
MAR					
22...	0945	3.0	.5	--	260
APR					
23...	1550	3.8	17.0	--	245
MAY					
25...	1100	1.9	15.0	--	298
JUN					
21...	1415	5.8	21.0	--	220
JUL					
04...	1115	210	16.0	--	120
05...	1000	65	17.0	--	135
27...	0915	38	18.0	--	
AUG					
14...	0945	12	16.0	--	180
SEP					
13...	1445	3.4	14.0	--	255
06404998 - GRACE COOLIDGE CR NR GAME LODGE NR CUSTER (LAT 43 45 40 LONG 103 21 49)					
OCT , 1978					
18...	1530	1.3	11.0	--	220
NOV					
16...	1045	.96	.5	--	250
DEC					
14...	1115	.85	.0	--	210
JAN , 1979					
18...	1000	1.1	.0	--	250
FEB					
23...	1230	1.4	.0	--	270
MAR					
22...	1145	1.3	3.0	--	190
APR					
23...	1400	1.7	16.0	--	175
MAY					
23...	1515	.98	14.0	--	194
JUN					
21...	1000	1.3	14.5	--	190
JUL					
04...	1000	101	20.0	--	125
05...	1200	46	19.5	--	140
06...	1030	29	19.0	--	115
25...	1330	22	20.0	--	135
AUG					
14...	1130	18	15.0	--	132
SEP					
13...	1230	7.6	13.0	--	140

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)
06406000 - BATTLE CR AT HERMOSA SD (LAT 43 49 41 LONG 103 11 44)					
OCT , 1978					
19...	0945	5.1	8.0	--	728
NOV					
16...	1215	6.1	1.5	--	950
DEC					
14...	1400	6.1	.5	--	730
JAN , 1979					
18...	1130	5.2	.0	--	800
FEB					
23...	1430	4.2	.5	--	870
MAR					
22...	1500	5.1	5.5	--	690
APR					
23...	1115	5.4	13.0	--	650
MAY					
25...	0915	3.8	15.0	--	669
JUN					
21...	1230	3.5	17.0	--	640
JUL					
25...	1615	8.6	22.0	--	595
SEP					
13...	0915	12	11.5	--	580
06408500 - SPRING CR NEAR HERMOSA SD (LAT 43 56 30 LONG 103 09 33)					
OCT , 1978					
19...	0800	1.7	8.0	--	1140
NOV					
16...	1530	4.8	.5	--	565
DEC					
14...	1515	2.2	.0	--	1020
MAR , 1979					
23...	1000	2.0	2.0	--	920
APR					
27...	0945	1.5	9.0	--	930
MAY					
25...	0745	1.1	16.5	--	930
JUN					
21...	0845	.70	16.0	--	850
JUL					
27...	1100	.53	23.0	--	830
AUG					
14...	1345	.56	19.0	--	870
SEP					
17...	0845	.10	13.5	--	1060
06410000 - CASTLE CR BELOW DEERFIELD DAM SD (LAT 44 01 45 LONG 103 46 53)					
OCT , 1978					
05...	1000	28	11.0	--	400
NOV					
13...	1100	2.0	4.0	--	390
JAN , 1979					
04...	1400	2.1	3.0	--	--
FEB					
12...	1030	16	2.0	--	375
APR					
16...	1015	22	4.0	--	480
MAY					
15...	1040	16	11.0	--	443
JUN					
13...	1045	16	8.0	--	490
JUL					
18...	0935	17	8.0	--	443
28...	1330	12	10.0	--	450
AUG					
20...	1030	14	9.0	--	422
SEP					
04...	1015	21	9.0	--	452

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)
06410500 - RAPID CR ABOVE PACTOLA RES NEAR SILVER CITY SD (LAT 44 05 05 LONG 103 34 48)					
OCT , 1978					
11...	0850	41	6.0	--	460
NOV					
08...	1000	23	5.5	--	450
DEC					
07...	1045	20	.0	--	455
JAN , 1979					
04...	1015	15	.5	--	378
FEB					
06...	1130	18	.5	--	460
MAR					
12...	0930	42	1.5	--	452
APR					
16...	1230	60	9.0	--	--
MAY					
14...	1030	44	7.5	--	420
JUN					
14...	1200	41	15.5	--	410
JUL					
02...	1315	36	16.5	--	450
AUG					
14...	1015	45	12.0	--	365
SEP					
10...	0830	49	14.0	--	392
06412500 - RAPID CR ABOVE CANYON LAKE NEAR RAPID CITY SD (LAT 44 03 04 LONG 103 18 47)					
OCT , 1978					
12...	1045	32	9.5	--	350
NOV					
06...	1545	18	5.5	--	380
DEC					
04...	1345	21	1.5	--	380
JAN , 1979					
02...	1415	11	.0	--	410
FEB					
05...	1145	27	9.0	--	430
MAR					
12...	1430	39	4.5	--	400
APR					
19...	1600	38	14.0	--	358
MAY					
15...	1530	34	15.0	--	375
JUN					
14...	1030	121	14.0	--	395
JUL					
03...	1230	57	20.0	--	372
AUG					
15...	1245	33	16.5	--	366
SEP					
11...	1200	31	15.0	--	368

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)
06414000 - RAPID CR AT RAPID CITY SD (LAT 44 05 09 LONG 103 14 31)					
OCT , 1978					
12...	0915	46	10.0	--	465
NOV					
06...	1430	36	12.0	--	515
DEC					
04...	1145	39	4.0	--	515
FEB , 1979					
08...	1415	57	2.5	--	476
MAR					
12...	1600	57	9.0	--	553
APR					
19...	1030	59	14.0	--	450
MAY					
16...	0930	37	14.5	--	442
JUN					
14...	0915	82	16.0	--	440
JUL					
03...	1500	44	24.5	--	445
AUG					
15...	1400	56	20.5	--	465
SEP					
11...	1400	45	20.5	--	448
06422500 - BOXELDER CR NEAR NEMO SD (LAT 44 08 38 LONG 103 27 16)					
OCT , 1978					
11...	1415	7.7	11.0	--	430
NOV					
08...	1430	8.3	9.5	--	345
DEC					
08...	1045	6.0	.5	--	420
JAN , 1979					
02...	1245	3.6	.0	--	420
FEB					
05...	1000	5.2	.5	--	370
MAR					
13...	0900	12	.5	--	333
APR					
12...	1400	12	1.0	--	260
MAY					
15...	1100	8.7	12.5	--	280
JUN					
14...	0815	4.1	14.5	--	343
JUL					
09...	1010	10	19.5	--	284
AUG					
14...	1445	7.3	16.0	--	292
SEP					
11...	0850	4.2	13.0	--	320

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)
06423500 - CHEYENNE R NEAR WASTA SD (LAT 44 04 52 LONG 102 24 03)					
OCT , 1978					
10...	1045	109	13.5	--	2080
NOV					
07...	1030	115	7.0	--	2100
DEC					
06...	1230	98	.0	--	2380
FEB , 1979					
07...	1015	54	.0	--	2580
MAR					
28...	1445	536	2.5	--	1620
APR					
17...	0945	248	13.0	--	1520
MAY					
16...	1015	119	19.5	--	1950
JUN					
12...	1030	81	23.5	--	2170
JUL					
05...	1145	1680	21.5	--	665
AUG					
13...	1130	126	22.0	--	1550
SEP					
17...	1200	89	19.0	--	2280
06425500 - ELK CR NEAR ELM SPRINGS SD (LAT 44 14 54 LONG 102 30 10)					
DEC , 1978					
05...	1015	--	.0	--	600
MAR , 1979					
14...	0930	2.2	.0	--	4000
APR					
16...	0930	12	10.5	--	1280
MAY					
15...	1110	2.8	19.0	--	1925
JUN					
12...	1135	--	26.0	--	3380
JUL					
17...	1000	.20	22.0	--	4350

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)
06428500 - BELLE FOURCHE R AT WY-SD STATE LINE (LAT 44 44 59 LONG 104 02 49)					
OCT , 1978					
05...	1230	29	11.5	--	1950
12...	0900	31	10.0	--	1900
NOV					
03...	0800	31	4.5	--	2120
09...	0910	39	6.5	--	1800
DEC					
07...	0900	--	.0	--	2200
11...	1530	24	.0	--	2500
31...	1300	18	--	--	--
JAN , 1979					
06...	1430	--	.0	--	2800
09...	1615	4.8	.0	--	3200
30...	1630	8.2	.0	--	2500
FEB					
01...	0900	--	.0	--	3000
MAR					
07...	0845	12	.0	--	3500
15...	0810	202	.5	--	1280
APR					
10...	1400	113	11.5	--	--
15...	0830	166	7.0	--	1800
MAY					
08...	1700	54	11.5	--	1970
10...	1430	73	8.5	--	2000
JUN					
06...	1100	128	18.5	--	1910
10...	0820	127	14.5	--	1310
JUL					
11...	0800	40	20.5	--	1580
19...	0920	82	22.0	--	1500
AUG					
07...	1645	63	26.0	--	1400
15...	0915	61	14.5	--	1330
SEP					
04...	1130	21	21.5	--	1630
12...	0800	25	13.5	--	2110
06429500 - COLD SPRINGS CR AT BUCKHORN WY (LAT 44 09 14 LONG 104 04 39)					
OCT , 1978					
11...	1400	4.6	7.0	--	460
NOV					
15...	1310	2.8	--	--	500
DEC					
08...	1330	8.1	.0	--	615
JAN , 1979					
10...	1430	2.3	.5	--	470
MAR					
06...	1410	4.4	3.0	--	460
APR					
18...	1400	6.0	14.0	--	--
MAY					
16...	0930	4.2	10.5	--	465
JUN					
15...	1330	5.2	16.0	--	365
JUL					
19...	1450	5.2	17.5	--	418
SEP					
12...	1420	5.1	9.0	--	418

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)
06429905 - SAND CR NEAR RANCH A NEAR BEULAH WY (LAT 44 31 13 LONG 104 05 00)					
NOV , 1978					
01...	1300	29	11.0	--	860
DEC					
13...	1130	26	6.0	--	810
JAN , 1979					
08...	1215	27	2.0	--	790
30...	1200	25	1.0	--	850
MAR					
05...	1415	25	14.5	--	778
APR					
09...	1530	23	13.5	--	810
MAY					
07...	1315	24	11.5	--	740
JUN					
04...	1200	25	14.5	--	829
JUL					
09...	1600	26	19.5	--	720
AUG					
28...	1300	22	14.0	--	750
06430000 - MURRAY DITCH AT WY-SD STATE LINE (LAT 44 34 35 LONG 104 02 58)					
OCT , 1978					
02...	1530	5.9	12.5	--	1425
JUN , 1979					
04...	1700	10	20.5	--	1480
JUL					
11...	1030	20	16.0	--	1500
AUG					
07...	1330	13	20.0	--	1280
28...	0915	.53	15.0	--	1440
06430500 - REDWATER CR AT WY-SD STATE LINE (LAT 44 34 26 LONG 104 02 54)					
OCT , 1978					
04...	0910	35	--	--	--
05...	0915	31	10.0	--	1480
NOV					
01...	1500	39	10.0	--	1670
07...	1045	47	--	--	--
DEC					
13...	0830	39	3.5	--	1360
27...	1530	40	--	--	--
JAN , 1979					
08...	1615	41	.0	--	1570
30...	1400	42	.0	--	1380
FEB					
14...	1245	40	--	--	--
MAR					
05...	1600	40	8.0	--	1600
APR					
10...	1100	38	10.0	--	--
MAY					
07...	1630	38	13.0	--	1420
JUN					
04...	1545	21	20.0	--	1480
JUL					
11...	1130	8.3	19.5	--	1630
AUG					
07...	1430	24	21.0	--	1370
28...	1015	40	15.0	--	1490

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)
06431500 - SPEARFISH CR AT SPEARFISH SD (LAT 44 28 57 LONG 103 51 40)					
OCT , 1978					
02...	1100	56	9.5	--	450
NOV					
01...	0900	57	4.5	--	500
DEC					
13...	1400	54	2.0	--	420
JAN , 1979					
08...	1015	50	.5	--	540
30...	0930	44	.5	--	450
MAR					
05...	1115	51	3.0	--	547
APR					
09...	1155	50	8.0	--	435
MAY					
07...	1000	56	8.5	--	425
JUN					
04...	0945	64	9.0	--	488
JUL					
09...	1030	53	12.5	--	395
AUG					
07...	1015	43	13.0	--	395
27...	1100	47	10.5	--	--
06433000 - REDWATER RIVER ABOVE BELLE FOURCHE SD (LAT 44 40 02 LONG 103 50 20)					
OCT , 1978					
04...	0900	131	10.5	--	1220
NOV					
03...	1000	163	7.0	--	1360
DEC					
11...	1400	200	.5	--	1300
JAN , 1979					
10...	1530	124	.0	--	1580
31...	1400	119	.0	--	1280
MAR					
06...	1700	177	4.0	--	1550
APR					
10...	1730	169	10.0	--	1120
MAY					
09...	1215	163	8.0	--	1100
JUN					
07...	1015	9.7	13.5	--	1380
JUL					
11...	1515	10	24.5	--	1280
AUG					
09...	1000	133	19.0	--	1090
SEP					
04...	1700	88	22.5	--	1040
06433500 - HAY CR AT BELLE FOURCHE SD (LAT 44 40 01 LONG 103 50 46)					
MAR , 1979					
07...	1600	6.4	.5	--	1420
22...	1515	3.2	3.0	--	1630
APR					
10...	1530	1.5	11.0	--	3130
MAY					
09...	1400	2.5	5.0	--	2600
JUN					
07...	1230	1.2	14.0	--	2220
AUG					
09...	0800	2.9	18.5	--	1060

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)
06436000 - BELLE FOURCHE R NEAR FRUITDALE SD (LAT 44 41 27 LONG 103 44 14)					
OCT , 1978					
04...	1030	10	11.5	--	1920
NOV					
02...	1515	3.7	11.0	--	2580
DEC					
11...	1200	3.9	.0	--	2950
JAN , 1979					
10...	1215	2.9	.0	--	3670
31...	1600	4.0	.0	--	2400
MAR					
07...	1415	4.0	.0	--	3500
APR					
10...	1000	4.2	10.0	--	2100
MAY					
09...	1030	231	9.0	--	1360
JUN					
07...	0830	12	15.0	--	1870
JUL					
11...	1415	4.8	25.0	--	1780
AUG					
08...	1545	13	23.0	--	1820
SEP					
04...	1530	10	25.0	--	1960
06436700 - INDIAN CR NEAR ARPAN SD (LAT 44 48 51 LONG 103 41 22)					
APR , 1979					
18...	1130	38	16.0	--	1750
AUG					
08...	1330	14	21.5	--	1970
SEP					
04...	1330	.10	24.0	--	1880
06438500 - CHEYENNE R NEAR PLAINVIEW SD (LAT 44 31 16 LONG 101 59 34)					
OCT , 1978					
17...	1115	178	10.0	-2.0	2500
NOV					
14...	1030	66	.0	-2.0	2650
DEC					
12...	1050	114	.0	-5.0	3000
JAN , 1979					
08...	1100	28	.0	-15.0	3700
FEB					
12...	1200	36	.0	-10.0	2600
APR					
02...	1055	877	1.5	-7.0	1750
MAY					
07...	1115	388	14.0	24.0	2440
JUN					
05...	1135	351	21.5	25.0	2150
25...	1115	1110	22.0	24.0	1750
JUL					
30...	1235	698	23.0	23.0	1520
AUG					
27...	0900	582	20.0	21.0	1550
SEP					
24...	1020	368	16.0	18.0	2000

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)
06439000 - CHERRY CR NEAR PLAINVIEW SD (LAT 44 44 38 LONG 102 03 11)					
MAR , 1979					
20...	1320	.36	1.5	7.0	1750
APR					
02...	1220	112	2.0	-2.0	1060
MAY					
07...	1255	5.7	15.0	26.0	2400
JUN					
05...	1215	.02	24.5	26.0	2700
25...	1255	23	23.0	24.0	860
JUL					
30...	1405	9.2	24.0	25.0	860
06441000 - BAD R NEAR MIDLAND SD (LAT 44 04 01 LONG 101 09 36)					
MAR , 1979					
13...	0920	55	.0	.0	3060
20...	0930	21	.0	1.0	720
APR					
17...	0850	25	12.0	13.0	1260
MAY					
15...	0830	.04	14.5	16.5	1400
JUL					
10...	0920	13	25.0	27.0	370
AUG					
07...	1015	.22	25.5	28.0	920
06442000 - MEDICINE KNOLL CR NEAR BLUNT SD (LAT 44 33 46 LONG 099 54 50)					
APR , 1979					
17...	1425	.20	10.0	18.5	520
JUN					
28...	1155	5.4	25.0	24.0	650
JUL					
26...	1420	1.6	22.0	21.0	730
AUG					
23...	1200	.14	19.0	24.0	600
06442500 - MEDICINE CR AT KENNEBEC SD (LAT 43 54 17 LONG 099 52 35)					
APR , 1979					
20...	1300	.06	16.0	18.0	1070
AUG					
09...	1620	48	24.5	28.0	300
SEP					
10...	1030	13	21.0	18.0	440
06442950 - CROW CR NEAR GANN VALLEY SD (LAT 43 59 29 LONG 099 13 07)					
MAR , 1979					
22...	1615	35	3.0	3.0	570
APR					
20...	0840	36	10.0	10.0	570
MAY					
17...	--	.04	--	--	1750
AUG					
09...	1420	14	25.5	29.5	580

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)
06445980 - WHITE CLAY CR NEAR OGLALA SD (LAT 43 08 46 LONG 102 40 58)					
OCT , 1978					
16...	1345	4.5	8.0	--	700
NOV					
14...	1345	11	.0	--	610
DEC					
18...	1045	8.1	.0	--	--
JAN , 1979					
17...	0930	.50	.0	--	830
FEB					
20...	1100	7.2	.0	--	750
MAR					
19...	1115	8.0	.5	--	470
APR					
24...	1115	12	14.0	--	470
MAY					
21...	1115	12	16.0	--	555
JUN					
18...	1200	6.4	14.0	--	468
JUL					
24...	1000	59	20.0	--	200
AUG					
07...	1630	4.2	27.5	--	460
SEP					
10...	1130	4.9	20.0	--	485
06446000 - WHITE R NEAR OGLALA SD (LAT 43 15 17 LONG 102 49 29)					
OCT , 1978					
16...	1230	6.0	7.5	--	1070
NOV					
14...	1230	8.4	.0	--	1060
DEC					
18...	1245	7.0	.0	--	1360
JAN , 1979					
17...	1130	2.7	.0	--	1500
FEB					
20...	1300	3.6	.0	--	1760
APR					
24...	1340	28	14.0	--	820
MAY					
21...	1345	39	18.5	--	642
JUN					
18...	1330	15	16.0	--	660
AUG					
07...	1515	20	27.0	--	525
SEP					
10...	1315	12	22.0	--	1080

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)
06447000 - WHITE R NEAR KADOKA SD (LAT 43 45 09 LONG 101 31 28)					
OCT , 1978					
02...	1300	5.6	14.5	16.5	800
NOV					
03...	0930	12	10.0	12.0	810
27...	1200	8.0	.0	-5.0	1030
DEC					
19...	1125	9.9	.0	3.0	1000
MAR , 1979					
13...	1300	970	.0	.0	340
20...	1220	436	.0	3.0	520
APR					
17...	1105	128	12.0	15.0	570
MAY					
15...	1105	144	16.5	20.0	540
JUN					
12...	1145	67	23.0	28.0	670
JUL					
10...	1155	130	27.0	31.0	510
AUG					
07...	1240	64	27.0	31.0	580
SEP					
05...	1350	37	26.0	25.0	700
06447500 - LITTLE WHITE R NEAR MARTIN SD (LAT 43 10 00 LONG 101 37 47)					
OCT , 1978					
03...	0850	10	10.0	2.0	230
NOV					
02...	1310	15	6.0	20.0	240
27...	1620	12	.0	-5.0	240
DEC					
20...	0900	9.6	.0	.0	200
JAN , 1979					
23...	0750	7.1	.0	-5.0	280
FEB					
20...	1500	9.3	.0	1.0	300
MAR					
21...	0810	58	.0	.0	270
APR					
17...	1515	40	16.0	27.0	360
MAY					
13...	1540	36	17.0	22.0	340
JUN					
12...	1530	12	25.0	27.0	300
JUL					
10...	1500	15	28.0	31.0	310
AUG					
07...	1655	12	27.5	30.0	375
SEP					
05...	1550	8.0	26.0	28.0	270
06448000 - LAKE CR ABOVE REFUGE NEAR TUTHILL SD (LAT 43 05 07 LONG 101 36 04)					
OCT , 1978					
03...	0955	15	10.0	9.0	110
NOV					
02...	1220	21	6.0	18.0	120
27...	1520	21	1.0	-5.0	110
DEC					
19...	1500	24	.0	2.0	120
JAN , 1979					
23...	0900	12	.0	-5.0	130
FEB					
20...	1355	22	3.0	2.0	230

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)
06449000 - LAKE CR BELOW REFUGE NEAR TUTHILL SD (LAT 43 08 46 LONG 101 30 38)					
OCT , 1978					
03...	1125	.75	12.0	13.0	540
NOV					
02...	1030	.50	6.0	16.0	680
27...	1410	1.6	.5	-5.0	760
DEC					
19...	1330	9.2	.0	3.0	820
JAN , 1979					
23...	1020	11	1.0	.0	820
FEB					
20...	1210	16	3.0	-1.0	660
MAR					
20...	1445	56	.0	6.0	420
APR					
17...	1330	46	12.0	27.0	330
MAY					
15...	1320	33	15.0	21.0	370
JUN					
12...	1345	26	24.0	29.0	490
JUL					
10...	1405	45	24.0	32.0	420
AUG					
07...	1550	35	26.0	30.0	440
SEP					
06...	0820	21	20.0	18.0	410
06449100 - LITTLE WHITE R NEAR VETAL SD (LAT 43 06 03 LONG 101 13 49)					
OCT , 1978					
03...	1335	20	15.5	15.0	310
NOV					
02...	0855	32	6.0	8.0	320
28...	0820	17	.0	-5.0	310
DEC					
20...	1100	27	.0	-1.0	390
JAN , 1979					
24...	1335	30	.0	-2.0	460
FEB					
21...	0820	29	.0	-12.0	370
MAR					
21...	1010	156	.0	2.0	320
APR					
18...	0855	120	13.0	17.0	310
MAY					
16...	0810	61	14.0	13.0	340
JUN					
13...	0810	48	19.0	19.0	400
JUL					
11...	0815	68	22.5	24.5	360
AUG					
08...	0755	79	21.5	17.0	350
SEP					
06...	1010	38	20.0	23.0	330

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)
06449400 - ROSEBUD CR AT ROSEBUD SD (LAT 43 14 09 LONG 100 51 12)					
OCT , 1978					
03...	1530	6.7	15.0	17.5	330
NOV					
01...	1400	7.7	6.0	20.0	320
28...	1305	9.0	2.5	5.0	350
DEC					
20...	1510	8.1	.0	2.0	400
JAN , 1979					
23...	1430	10	.5	-12.0	380
FEB					
21...	1155	7.8	2.0	-1.0	370
MAR					
21...	1350	11	1.0	4.0	400
APR					
18...	1200	9.8	15.0	23.0	370
MAY					
16...	1125	11	16.0	17.0	300
JUN					
13...	1150	6.7	25.0	28.0	340
JUL					
11...	1005	7.2	23.0	29.5	330
AUG					
08...	1145	5.2	--	25.0	330
SEP					
06...	1350	.25	26.0	28.0	410
06449500 - LITTLE WHITE R NEAR ROSEBUD SD (LAT 43 19 32 LONG 100 53 00)					
OCT , 1978					
04...	0940	63	10.0	15.0	310
NOV					
01...	1455	83	6.0	18.0	360
28...	1145	78	.0	1.0	315
DEC					
20...	1320	71	.0	2.0	350
JAN , 1979					
24...	1530	68	.0	-5.0	400
FEB					
21...	1030	87	.0	-5.0	340
MAR					
21...	1235	263	.0	3.0	350
APR					
18...	1050	197	13.0	21.0	340
MAY					
16...	0955	131	16.0	17.0	350
JUN					
13...	1000	102	19.0	22.0	380
JUL					
11...	1145	126	26.5	31.0	330
AUG					
08...	1030	108	24.0	23.5	330
SEP					
06...	1225	69	23.0	26.0	340

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)
06450500 - LITTLE WHITE R BELOW WHITE RIVER SD (LAT 43 36 04 LONG 100 44 52)					
OCT , 1978					
04...	1200	54	18.5	19.0	290
NOV					
01...	1150	80	5.0	18.0	380
28...	1455	77	.0	3.0	320
DEC					
21...	0850	80	.0	2.0	360
JAN , 1979					
25...	0820	68	.0	-18.0	360
FEB					
22...	1125	67	.0	-8.0	380
MAR					
22...	0845	347	2.0	2.0	340
APR					
18...	1400	206	15.0	25.0	410
MAY					
16...	1355	188	16.5	25.0	490
JUN					
13...	1335	96	24.0	35.0	400
JUL					
09...	1000	162	24.0	26.0	400
AUG					
08...	1405	99	24.0	28.0	405
SEP					
07...	1240	66	18.0	22.0	410
06464500 - KEYA PAHA R AT WEWELA SD (LAT 43 01 42 LONG 099 46 45)					
OCT , 1978					
04...	1655	25	15.5	21.0	450
NOV					
01...	0910	27	4.5	6.0	530
29...	0935	26	.0	-.5	460
DEC					
21...	1315	24	.0	2.0	500
JAN , 1979					
24...	1040	3.1	.0	-15.0	500
FEB					
22...	0830	5.9	.0	-10.0	--
APR					
02...	1150	150	1.0	.0	500
19...	1030	156	18.0	15.0	490
MAY					
17...	0910	87	17.0	19.5	500
JUN					
14...	0930	40	24.0	20.0	460
JUL					
02...	1305	111	26.0	25.0	520
AUG					
09...	0805	30	22.0	19.5	460
SEP					
07...	0935	18	17.0	17.0	440

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)
06467500 - MISSOURI R AT YANKTON SD (LAT 42 51 58 LONG 097 23 37)					
OCT , 1978					
19...	1325	53200	11.0	19.5	810
NOV					
07...	1310	53000	11.0	15.5	670
29...	1645	53200	3.5	-2.5	360
DEC					
12...	1150	25100	.0	5.5	700
JAN , 1979					
04...	1625	23900	--	5.0	690
MAR					
13...	1230	15700	1.5	.0	780
APR					
10...	1200	29300	4.0	10.5	700
25...	1145	30700	13.0	7.0	690
MAY					
10...	1115	36800	--	3.0	--
23...	1245	40600	15.0	18.0	690
JUN					
14...	1200	43800	20.0	33.5	700
JUL					
11...	1130	36700	22.0	31.5	780
25...	1200	36800	24.5	27.0	790
AUG					
09...	1210	37500	26.0	29.0	810
28...	1200	30900	24.0	25.0	--
SEP					
12...	1215	33000	22.5	10.0	800
26...	1145	40500	19.5	26.0	800
06471200 - MAPLE R AT ND-SD STATE LINE (LAT 45 56 20 LONG 098 27 08)					
OCT , 1978					
12...	1315	.13	11.5	7.0	--
APR , 1979					
12...	1425	456	--	--	--
MAY					
17...	1100	52	16.0	17.0	980
JUN					
12...	1010	8.4	21.0	24.5	1160
JUL					
17...	1150	5.0	22.5	24.0	1270
AUG					
15...	1250	.55	20.0	21.0	1550
SEP					
11...	1200	.02	19.5	19.5	1680
06471500 - ELM R AT WESTPORT SD (LAT 45 39 22 LONG 098 29 48)					
OCT , 1978					
12...	1515	.89	13.0	9.5	1160
NOV					
15...	1245	7.6	.0	--	1180
DEC					
19...	1305	3.4	.5	-.5	810
JAN , 1979					
17...	1055	5.3	.5	-20.5	970
FEB					
08...	1555	2.0	.5	-23.0	740
MAR					
13...	1145	5.0	.0	-6.5	--
27...	1045	3.3	1.0	.0	780
APR					
12...	1715	177	--	--	--
18...	1330	1240	7.5	15.5	300
MAY					
17...	1330	79	18.0	18.0	840
JUN					
12...	1250	6.1	22.5	28.0	1100
JUL					
17...	1630	9.7	25.5	26.0	1250
AUG					
15...	1425	3.1	21.0	22.0	1260
SEP					
11...	1520	2.0	--	--	1310

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)
06471898 - MOCCASIN CR NEAR WARNER SD (LAT 45 17 55 LONG 098 29 42)					
OCT , 1978					
13...	0830	1.7	9.5	4.5	2550
NOV					
16...	1105	1.2	.0	--	2500
DEC					
20...	1015	.46	.0	-10.0	4200
APR , 1979					
13...	1425	35	.0	4.0	920
17...	1545	72	10.5	--	830
MAY					
17...	1700	14	19.0	21.5	2100
JUN					
13...	0925	3.2	21.0	25.0	2500
AUG					
14...	1640	3.7	19.0	17.5	2400
SEP					
12...	0945	2.5	17.5	21.0	2620
06473000 - JAMES R AT ASHTON SD (LAT 45 00 02 LONG 098 28 57)					
OCT , 1978					
13...	1025	47	10.0	4.5	920
DEC					
20...	1345	31	.0	-9.5	1200
JAN , 1979					
18...	1110	.93	.5	-12.5	1800
FEB					
09...	1245	.88	.5	-10.0	1780
MAR					
14...	1450	1.7	.0	-6.5	3200
APR					
19...	1135	648	13.0	17.5	650
MAY					
18...	1025	2040	16.0	22.0	470
JUN					
11...	1600	1040	21.5	28.0	550
JUL					
19...	1200	792	24.5	32.0	770
AUG					
14...	1425	457	21.0	17.0	770
SEP					
13...	1500	173	19.5	21.0	870

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)
06473700 - SNAKE CR NEAR ASHTON SD (LAT 45 01 50 LONG 098 34 26)					
OCT , 1978					
12...	1235	3.2	--	--	715
DEC					
20...	1145	.25	.0	-10.0	1320
MAR , 1979					
23...	1605	135	--	--	640
APR					
11...	1310	31	.0	--	--
MAY					
16...	1540	26	21.0	26.0	760
JUN					
13...	1625	7.5	21.5	26.0	920
JUL					
16...	1740	3.1	23.5	25.5	980
AUG					
14...	1520	2.0	23.0	18.0	830
SEP					
13...	1220	14	18.0	19.5	880
06474000 - TURTLE CR NEAR TULARE SD (LAT 44 44 06 LONG 098 35 09)					
DEC , 1978					
18...	1135	.24	.5	-4.0	1670
MAR , 1979					
28...	1245	2.5	1.5	5.0	730
APR					
17...	1035	4.4	10.0	--	570
MAY					
16...	1120	3.0	17.0	21.0	850
JUN					
11...	1145	.09	23.5	27.0	730
JUL					
16...	1230	.05	22.5	25.0	790
AUG					
14...	1040	.05	20.0	15.0	940
SEP					
10...	1035	.04	22.0	21.5	1020
06474300 - MEDICINE CR NEAR ZELL SD (LAT 44 45 52 LONG 098 42 13)					
OCT , 1978					
12...	1415	.01	--	--	1880
NOV					
14...	1200	.01	1.0	-4.0	1820
DEC					
18...	1230	.01	.0	-4.0	1750
MAR , 1979					
28...	1035	12	1.0	--	570
MAY					
16...	1230	1.5	17.0	21.0	1570
JUN					
11...	1245	.12	21.0	27.0	1820
JUL					
16...	1445	.05	22.0	27.0	1950
AUG					
14...	1210	53	20.0	17.0	560
SEP					
10...	1200	11	22.0	22.0	660

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)
06475000 - JAMES R NEAR REDFIELD SD (LAT 44 55 13 LONG 098 25 52)					
OCT , 1978					
13...	1200	49	10.0	5.0	1010
NOV					
14...	1540	40	.0	-6.0	850
DEC					
18...	1620	38	.0	-7.5	1170
JAN , 1979					
18...	1505	3.8	.5	-4.5	1600
FEB					
09...	1520	2.0	.5	-17.5	2000
MAR					
12...	1405	3.0	.0	4.5	3500
APR					
19...	1230	689	11.5	20.0	600
MAY					
18...	1300	2060	17.0	22.0	490
JUN					
14...	1010	985	22.5	31.0	560
JUL					
19...	1545	760	25.0	33.5	780
AUG					
16...	1120	476	19.0	19.0	730
SEP					
14...	1135	185	18.0	18.0	880
06476500 - SAND CR NEAR ALPENA SD (LAT 44 09 15 LONG 098 26 06)					
APR , 1979					
27...	1020	2.9	8.0	9.0	1280
MAY					
31...	1220	.03	17.0	14.5	1600
06477000 - JAMES R NEAR FORESTBURG SD (LAT 43 58 26 LONG 098 04 14)					
OCT , 1978					
19...	1710	44	11.0	20.0	1200
NOV					
28...	1215	51	.0	-6.0	1190
DEC					
13...	1700	45	.0	-2.0	1360
JAN , 1979					
31...	1335	13	.0	-8.0	1500
FEB					
27...	1615	7.3	.0	-1.0	1700
APR					
27...	0900	967	11.5	6.0	650
MAY					
31...	1010	1700	17.5	10.5	500
JUN					
21...	1300	975	22.5	25.5	640
JUL					
27...	1215	646	27.0	23.5	770
AUG					
30...	1200	364	24.5	29.0	760
SEP					
27...	1245	101	19.5	26.5	940

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)
06477500 - FIRESTEEL CR NEAR MOUNT VERNON SD (LAT 43 46 30 LONG 098 14 33)					
OCT , 1978					
18...	1005	.02	--	--	--
NOV					
20...	1125	.02	.0	-14.0	2850
DEC					
11...	1115	.03	1.0	1.0	3100
MAR , 1979					
20...	1235	2.3	2.0	9.0	1260
APR					
24...	0920	.76	16.0	18.5	1680
MAY					
22...	0935	.38	15.0	21.0	1320
JUN					
18...	1015	.02	19.0	20.0	2100
JUL					
23...	1115	.01	31.0	29.0	2450
AUG					
27...	1020	.01	22.5	25.0	2200
06478052 - ENEMY CR NEAR MITCHELL SD (LAT 43 38 33 LONG 097 59 09)					
NOV , 1978					
20...	1340	.06	.0	-12.0	1900
DEC					
11...	1220	.08	1.0	1.0	2250
MAR , 1979					
22...	1320	30	1.5	1.5	880
APR					
17...	1510	12	--	--	2050
MAY					
25...	1140	2.6	18.0	19.5	2100
JUN					
21...	0950	.59	20.0	21.0	2150
JUL					
27...	0700	.03	23.0	17.0	2100
AUG					
15...	1345	3.1	21.0	22.0	--
SEP					
11...	1520	2.0	--	--	--
06478390 - WOLF CR NEAR CLAYTON SD (LAT 43 22 18 LONG 097 36 12)					
OCT , 1978					
18...	1315	2.1	10.0	10.5	2200
NOV					
20...	1600	2.4	.0	-11.0	2150
DEC					
13...	1040	1.8	.0	-2.5	2450
JAN , 1979					
22...	1300	.54	.0	-4.5	2450
FEB					
20...	1250	.59	.0	-5.5	2350
MAR					
21...	1300	483	.5	2.0	490
28...	1450	314	5.0	10.5	540
APR					
24...	1440	49	16.5	18.5	1240
MAY					
22...	1240	19	17.5	22.0	1650
JUN					
20...	1100	8.1	18.5	22.0	2100
JUL					
23...	1405	11	28.5	31.5	1750
AUG					
27...	1300	8.2	23.0	25.0	1660
SEP					
24...	1350	1.9	19.0	18.0	2000

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)
06478540 - LITTLE VERMILLION R NEAR SALEM SD (LAT 43 47 39 LONG 097 22 02)					
MAR , 1979					
20...	1050	34	.5	20.0	270
28...	1405	30	--	6.0	360
APR					
26...	1645	3.3	13.0	7.5	870
MAY					
25...	0940	1.8	17.0	15.0	990
JUN					
20...	1555	1.4	21.0	22.0	1090
JUL					
26...	1610	3.9	28.0	29.0	900
AUG					
29...	1545	1.0	26.0	28.0	930
06478690 - WEST FORK VERMILLION R NEAR PARKER SD (LAT 43 24 55 LONG 097 12 18)					
OCT , 1978					
18...	1220	.59	8.0	8.5	1750
NOV					
21...	1330	.67	.0	-11.0	1920
DEC					
13...	1215	.64	.0	-2.0	1800
JAN , 1979					
24...	0945	.60	.0	-23.5	1220
FEB					
22...	1125	.44	.5	-1.0	1170
MAR					
21...	0950	1110	.5	2.5	--
22...	1625	1870	1.0	.0	350
28...	1155	270	7.0	4.0	600
APR					
26...	1450	42	13.5	18.5	1270
MAY					
25...	0815	20	15.0	14.5	1340
JUN					
20...	1320	69	20.0	21.5	1040
JUL					
26...	1300	25	27.0	30.5	1650
AUG					
29...	1330	7.3	24.0	25.5	1130
SEP					
26...	1505	.75	20.0	24.0	1450
06479000 - VERMILLION R NEAR WAKONDA SD (LAT 42 59 27 LONG 096 57 49)					
OCT , 1978					
18...	1510	19	9.0	12.0	1400
NOV					
21...	1055	17	.0	-14.0	1280
JAN , 1979					
23...	1630	6.8	.0	-9.0	1160
FEB					
21...	1550	7.1	.0	5.5	1100
MAR					
21...	1620	1180	1.0	6.0	430
22...	1055	1920	1.0	2.0	450
27...	1400	4000	1.0	4.0	500
29...	1310	2760	4.0	3.5	610
APR					
26...	1030	323	13.0	13.5	1280
MAY					
24...	1550	211	18.0	21.0	1240
JUN					
19...	1615	110	22.5	28.0	1550
JUL					
25...	1505	51	27.0	33.0	1240
AUG					
29...	1000	173	21.0	22.0	1200
SEP					
25...	1505	39	19.0	25.0	1240

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)
06479438 - BIG SIOUX R NEAR WATERTOWN SD (LAT 45 00 22 LONG 097 09 53)					
OCT , 1978					
03...	1630	2.6	10.0	9.0	610
30...	1710	1.9	7.0	3.5	570
DEC					
07...	1035	1.4	.0	.0	720
APR , 1979					
13...	1030	1340	.5	.0	180
20...	0915	513	9.0	6.0	320
JUN					
05...	1545	21	21.5	25.5	650
JUL					
19...	0905	7.2	21.0	21.0	620
AUG					
09...	1540	71	25.0	27.5	470
SEP					
10...	1545	8.6	20.0	17.0	640
06479515 - WILLOW CR NEAR WATERTOWN SD (LAT 44 54 17 LONG 097 03 31)					
OCT , 1978					
02...	1700	.92	16.5	12.0	960
31...	0950	.68	3.0	4.5	970
DEC					
07...	1235	.50	.0	-13.0	1250
MAR , 1979					
08...	1110	.07	.0	-3.0	--
27...	0820	3.0	.0	-10.0	--
APR					
13...	0815	668	.0	-1.5	190
20...	1020	213	9.0	6.0	420
JUN					
05...	1735	12	22.0	22.5	610
JUL					
19...	1100	6.6	24.0	26.5	730
AUG					
10...	0920	42	21.0	17.5	580
SEP					
10...	1715	6.7	20.0	16.0	720
06479529 - STRAY HORSE CR NEAR CASTLEWOOD SD (LAT 44 43 52 LONG 096 57 23)					
OCT , 1978					
02...	1255	.33	16.5	19.5	1010
31...	1335	.25	8.0	8.0	1080
DEC					
06...	1615	.32	.5	-15.5	1250
MAR , 1979					
27...	0940	2.9	.0	-10.0	520
APR					
05...	1110	103	--	-23.5	--
13...	1545	345	.5	3.0	230
19...	1440	160	12.0	15.5	510
JUN					
06...	0915	3.5	20.0	23.5	670
JUL					
18...	1400	.76	24.0	28.0	960
AUG					
10...	1115	90	21.5	20.0	430
SEP					
11...	1200	1.0	20.0	18.5	830

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)
06479640 - HIDEWOOD CR NEAR ESTELLINE SD (LAT 44 36 42 LONG 096 54 17)					
OCT , 1978					
02...	1145	.63	13.0	19.5	1030
31...	1505	.80	5.5	8.5	1040
DEC					
06...	1450	1.5	.0	-14.0	1150
APR , 1979					
14...	1005	471	.5	1.0	260
19...	1130	494	11.0	13.0	390
JUN					
06...	1105	18	21.0	25.0	670
JUL					
18...	1135	9.5	21.5	25.5	920
AUG					
09...	1000	30	22.0	21.5	660
22...	1120	28	20.5	23.0	--
SEP					
11...	1335	17	20.0	20.5	20
06479910 - SIXMILE CR NR BROOKINGS SD (LAT 44 20 46 LONG 096 44 51.01)					
OCT , 1978					
04...	1110	.34	8.0	7.5	960
NOV					
01...	0905	.46	1.0	4.5	920
DEC					
06...	1200	.45	.0	-17.0	1020
APR , 1979					
04...	1540	53	.5	7.0	410
13...	1300	493	1.0	4.0	250
18...	1535	131	13.0	20.0	440
JUN					
06...	1340	6.3	22.0	24.5	630
JUL					
18...	0930	2.2	20.0	20.5	890
AUG					
08...	1705	5.4	26.0	24.5	840
SEP					
11...	1645	1.4	22.0	19.0	890
06480000 - BIG SIOUX RIVER NEAR BROOKINGS SD (LAT 44 10 48 LONG 096 44 55)					
OCT , 1978					
04...	1300	45	10.0	9.0	790
NOV					
01...	1040	35	5.0	12.0	750
DEC					
06...	1010	20	.0	-18.0	980
JAN , 1979					
10...	1040	3.8	.0	-19.0	1090
FEB					
07...	1605	3.0	.0	-19.0	840
MAR					
06...	1530	2.5	.0	2.5	890
APR					
04...	1245	1110	1.0	--	450
13...	1600	3890	2.0	6.5	420
18...	1235	2900	12.5	18.0	410
JUN					
06...	1600	329	22.0	26.5	800
JUL					
17...	1535	164	23.5	24.0	890
AUG					
08...	1500	182	26.0	24.5	690
SEP					
12...	0920	113	19.0	14.0	850

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)
06481500 - SKUNK CR AT SIOUX FALLS SD (LAT 43 32 01 LONG 096 47 26)					
OCT , 1978					
05...	1000	4.3	10.0	6.5	1030
NOV					
02...	1000	4.2	5.0	15.0	920
06...	1550	6.7	8.0	8.0	930
DEC					
05...	0930	3.5	.5	-2.0	1180
JAN , 1979					
08...	1400	1.3	.0	-7.1	1350
FEB					
07...	0935	1.5	.0	-19.5	910
MAR					
06...	0915	1.6	.0	2.0	1000
20...	1705	1130	.5	7.0	--
28...	0830	311	1.0	7.0	610
APR					
18...	0905	288	12.5	17.0	850
JUN					
08...	0745	27	21.0	12.0	1100
JUL					
17...	1215	22	24.0	24.0	1180
AUG					
07...	0925	47	26.5	25.0	1060
SEP					
13...	0900	118	16.5	6.5	1000
06482610 - SPLITROCK CR AT CORSON SD (LAT 43 36 59 LONG 096 33 54.01)					
OCT , 1978					
05...	1405	12	10.0	11.0	590
NOV					
02...	1350	8.6	7.5	15.0	580
JAN , 1979					
09...	1205	11	.5	10.0	930
FEB					
07...	1220	6.3	.0	-18.5	720
MAR					
06...	1145	7.2	.0	3.0	540
20...	1500	621	2.0	6.0	300
27...	1540	782	.5	1.0	320
APR					
17...	1620	470	11.0	16.5	450
JUN					
07...	1335	48	23.5	21.5	700
JUL					
16...	1645	55	25.0	22.0	600
AUG					
08...	1245	32	25.0	26.0	570
SEP					
12...	1600	410	18.5	18.5	610

BEADLE COUNTY

442112098174001. Local number, 110N62W 9BCCC.
LOCATION.--Lat 44°21'12", long 98°17'40", Hydrologic Unit 10160006, at southwest corner of city well field, 3.5 mi (5.6 km) west of Huron.
Owner: City of Huron.
AQUIFER.--Glacial Outwash.
WELL CHARACTERISTICS.--Drilled unused public supply artesian well, diameter 12 in (0.305 m), depth 74 ft (22.6 m), perforated 38 to 74 ft (11.6 to 22.6 m).
DATUM.--Land-surface datum is 1,306.93 ft (398.352 m) above mean sea level. Measuring point: Top of platform 2.00 ft (0.610 m) above land-surface datum.
PERIOD OF RECORD.--February 1954 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 10.81 ft (3.295 m) below land-surface datum, Feb. 5, 1954, lowest, 43.60 ft (13.289 m) below land-surface datum, Aug. 27, 1976.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
INSTANTANEOUS OBSERVATIONS AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	37.59	35.61	34.11	33.46	31.59	30.43	29.34	28.67	32.53	36.56	42.26	41.40
10	37.15	35.43	34.35	33.16	31.48	30.47	29.18	---	32.91	38.51	42.95	41.77
15	36.92	35.32	34.21	32.73	31.19	---	29.30	---	32.55	38.30	43.10	41.53
20	36.49	35.35	33.96	32.33	30.77	---	29.06	---	32.30	39.25	42.01	41.12
25	---	34.73	33.79	32.00	30.86	---	28.78	---	32.32	40.79	41.07	40.36
EOM	35.99	34.40	33.82	31.89	30.50	---	28.82	---	34.35	41.95	41.12	39.82

WTR YR 1979 HIGH 28.38 MAY 7 LOW 43.10 AUG 15

443000098005001. Local number, 112N60W22AAAA.
LOCATION.--Lat 44°30'00", long 98°00'50", Hydrologic Unit 10160006, 5 mi (8 km) north of Yale.
Owner: South Dakota Department of Natural Resource Development.
AQUIFER.--Tulare.
WELL CHARACTERISTICS.--Drilled observation artesian well, diameter 1.25 in (0.0318 m), depth 99 ft (30.2 m), cased to 99 ft (30.2 m).
DATUM.--Altitude of land-surface datum is 1,332 ft (406 m). Measuring point: Top of casing 1.20 ft (0.366 m) above land-surface datum.
PERIOD OF RECORD.--June 1960, March 1962 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 19.6 ft (5.974 m) below land-surface datum, June 1, 1978; lowest measured, 27.8 ft (8.47 m) below land-surface datum, Nov. 30, 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	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 3	27.2	DEC 5	27.13	MAY 4	22.4	JUN 4	23.1	JUL 24	26.9	SEP 27	27.1
NOV 27	27.2	JAN 29	27.1	MAY 24	22.1	JUN 26	24.6	AUG 23	27.0		

443758098225701. Local number, 113N63W 2BBBB.
LOCATION.--Lat 44°37'58", long 98°22'57", Hydrologic Unit 10160006, 1.0 mi (1.6 km) east of Hitchcock.
Owner: U.S. Bureau of Reclamation.
AQUIFER.--Tulare.
WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 4 in (0.102 m), depth 71 ft (21.6 m), perforated 19 to 71 ft (5.8 to 21.6 m).
DATUM.--Land-surface datum is 1,307.81 ft (398.620 m) above mean sea level. Measuring point: Top of casing 2.20 ft (0.671 m) above land-surface datum (since August 1973).
PERIOD OF RECORD.--February 1953 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 25.09 ft (7.647 m) below land-surface datum, Oct. 11, 1973; lowest measured, 28.03 ft (8.544 m) below land-surface datum, Feb. 16, 1953.

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	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 3	26.5	JAN 29	26.3	MAY 3	26.7	JUN 27	26.7	AUG 7	26.8	SEP 25	26.8
OCT 26	26.0	FEB 13	26.61	MAY 24	26.7	JUL 10	26.5	AUG 21	26.7		
NOV 29	26.4	MAR 22	26.6	JUN 25	26.78	JUL 24	26.6	SEP 5	26.7		

BON HOMME COUNTY

425643097571001. Local number, 94N60W21BCCC.
LOCATION.--Lat 42°56'43", long 97°57'10", Hydrologic Unit 10170101, 7 mi (11 km) southwest of Tyndall.
Owner: U.S. Geological Survey.
AQUIFER.--Glacial Outwash.
WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 3 in (0.08 m), depth 64 ft (19.5 m), sandpoint 56 to 64 ft (17.1 to 19.5 m).
DATUM.--Land-surface datum is 1,334.52 ft (406.762 m) above mean sea level. Measuring point: Top of recorder platform 2.50 ft (0.762 m) above land-surface datum.
PERIOD OF RECORD.--1966-68, 1970 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 18.66 ft (5.688 m) below land-surface datum, June 10, 1972; lowest, 27.39 ft (8.351 m) below land-surface datum, Nov. 1, 1977.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
INSTANTANEOUS OBSERVATIONS AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	23.93	24.50	24.89	25.31		---	22.79	---	23.01		---	25.04
10	24.00	24.57	24.98	25.36		25.77	22.71	---	23.18		24.59	25.10
15	24.11	24.69	24.99	25.34		25.21	22.38	---	23.21		24.75	25.22
20	24.19	24.80	25.06	25.38		24.21	22.52	---	23.32		24.81	25.26
25	24.24	24.82	25.14	25.46		23.28	22.36	---	23.46		24.90	25.34
EOM	24.44	24.86	25.25	25.56		22.94	22.71	22.94	23.54		24.96	25.37

WTR YR 1979 HIGH 22.31 APR 16 AND OTHERS LOW 25.84 MAR 6 AND OTHERS

BROWN COUNTY

451947098355201. Local number, 121N65W 1AAAA (Three Wells No. 1, West).
LOCATION.--Lat 45°19'47", long 98°35'52", Hydrologic Unit 10160003, 5 mi (8 km) west of Warner.
Owner: U.S. Bureau of Reclamation.
AQUIFER.--Middle James.
WELL CHARACTERISTICS.--Drilled observation artesian well, diameter 1 in (0.025 m), depth 144 ft (43.9 m), perforated 60 to 144 ft (18.3 to 43.9 m).
DATUM.--Land-surface datum is 1,336.73 ft (407.435 m) above mean sea level. Measuring point: Top of casing 2.20 ft (0.671 m) above land-surface datum.
PERIOD OF RECORD.--February 1952 to March 1958, September 1967 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 25.96 ft (7.913 m) below land-surface datum, Sept. 13, 1967; lowest measured, 36.8 ft (11.22 m) below land-surface datum, Aug. 21, 1979.

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	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 17	31.7	FEB 27	30.44	JUN 27	32.1	JUL 11	34.7	AUG 8	34.7	SEP 12	35.5
DEC 1	30.8	JUN 13	31.6	JUN 28	31.86	JUL 25	34.7	AUG 21	36.8		

451946098292201. Local number, 122N64W36CCDD (Warner Pt 12).
LOCATION.--Lat 45°19'46", long 98°29'22", Hydrologic Unit 10160003, at Warner.
Owner: U.S. Bureau of Reclamation.
AQUIFER.--Lake Sediments.
WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 4 in (0.102 m), depth 48 ft (14.6 m), perforated 6 to 48 ft (1.8 to 14.6 m).
DATUM.--Land-surface datum is 1,298.70 ft (395.844 m) above mean sea level. Measuring point: Top of casing 2.00 ft (0.610 m) above land-surface datum.
PERIOD OF RECORD.--February 1953 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 9.70 ft (2.957 m) below land-surface datum, May 4, 1978; lowest measured, 24.44 ft (7.449 m) below land-surface datum, Apr. 1, 1968.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	WATER LEVEL	DATE	WATER LEVEL
FEB 27	18.82	JUN 28	11.32

CAMPBELL COUNTY

454327100013601. Local number, 126N76W15CCCC (R-83).
LOCATION.--Lat 45°43'27", long 100°01'36", Hydrologic Unit 10130106, 2 mi (3 km) east of Mound City.
Owner: U.S. Geological Survey.
AQUIFER.--Grand.
WELL CHARACTERISTICS.--Drilled observation artesian well, diameter 1.25 in (0.0318 m), depth 237 ft (72.2 m), screened 234 to 237 ft (71.3 to 72.2 m).
DATUM.--Altitude of land-surface datum is 1,688 ft (515 m). Measuring point: Top of casing 4.60 ft (1.402 m) above land-surface datum.
PERIOD OF RECORD.--May 1967 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 15.27 ft (4.654 m) below land-surface datum, Jan. 17, 1973; lowest measured, 34.25 ft (10.439 m) below land-surface datum, Sept. 28, 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	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 16	29.60	JAN 11	26.95	MAR 7	24.52	MAY 9	23.34	JUN 27	26.98	AUG 29	33.05
NOV 6	29.19	FEB 7	25.15	APR 4	23.84	JUN 7	24.20	AUG 1	28.87	SEP 26	33.15
DEC 6	27.35										

CLAY COUNTY

430223096590001. Local number, 95N52W21AAAA (CU-66A).
LOCATION.--Lat 43°02'23", long 96°59'00", Hydrologic Unit 10170102, 5 mi (8 km) south of Centerville.
Owner: South Dakota Department of Natural Resource Development.
AQUIFER.--Lower Vermillion-Missouri.
WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 2 in (0.051 m), depth 84 ft (25.6 m), cased to 84 ft (25.6 m), open end.
DATUM.--Altitude of land-surface datum is 1,231 ft (375 m). Measuring point: Top of casing 2.20 ft (0.671 m) above land-surface datum.
PERIOD OF RECORD.--July 1966 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 52.40 ft (15.972 m) below land-surface datum, Apr. 25, 1969; lowest measured, 60.94 ft (18.575 m) below land-surface datum, Aug. 29, 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	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 10	57.9	NOV 29	57.92	MAR 6	58.52	JUN 21	55.1	JUL 19	56.1	AUG 30	57.1
OCT 31	58.0	JAN 3	58.19	MAY 2	54.09	JUL 5	55.6	JUL 31	56.8	SEP 13	57.11
NOV 2	57.58	JAN 31	58.46	JUN 7	55.2	JUL 11	55.57	AUG 16	56.9	SEP 18	57.1

HAND COUNTY

444828098433901. Local number, 115N66W 2AAAA (Cottonwood Deep).
LOCATION.--Lat 44°48'28", long 98°43'39", Hydrologic Unit 10160009, 2 mi (3 km) west of Cottonwood Lake.
Owner: U.S. Bureau of Reclamation.
AQUIFER.--Glacial Outwash.
WELL CHARACTERISTICS.--Drilled observation artesian well, diameter 4 in (0.101 m), depth 62 ft (18.9 m), perforated 40 to 62 ft (12.2 to 18.9 m).
DATUM.--Land-surface datum is 1,359.65 ft (414.421 m) above mean sea level. Measuring point: Top of casing 3.30 ft (1.006 m) above land-surface datum.
PERIOD OF RECORD.--January 1953 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 20.20 ft (6.157 m) below land-surface datum, July 31, 1953; lowest measured, 27.86 ft (8.491 m) below land-surface datum, Mar. 14, 1978.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	WATER LEVEL	DATE	WATER LEVEL
FEB 13	25.95	JUN 25	25.75

MINNEHAHA COUNTY

434540096461501. Local number, 104N49W31CCCC (S-24).
LOCATION.--Lat 43°45'40", long 96°46'15", Hydrologic Unit 10170203, 1.0 mi (1.6 km) west of Baltic.
Owner: South Dakota Department of Natural Resource Development.
AQUIFER.--Big Sioux.
WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 1.25 in (0.0318 m), depth 26 ft (7.9 m).
DATUM.--Altitude of land-surface datum is 1,465.09 ft (446.559 m) above mean sea level. Measuring point: Top of casing 1.70 ft (0.518 m) above land-surface datum.
PERIOD OF RECORD.--April 1957 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 4.63 ft (1.411 m) below land-surface datum, May 23, 1969; lowest measured, 15.27 ft (4.654 m) below land-surface datum, July 29, 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	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 1	11.54	JAN 4	12.64	MAR 7	13.34	MAY 3	5.73	JUL 11	6.57	SEP 13	6.69
NOV 30	12.08	FEB 1	12.96	APR 4	7.88	MAY 31	5.71				

SANBORN COUNTY

440040097555001. Local number, 106N59W 5DDDD (SM 66J).
LOCATION.--Lat 44°00'40", long 97°55'50", Hydrologic Unit 10160011, at Artesian, at west edge of city limits.
Owner: South Dakota Department of Natural Resource Development.
AQUIFER.--Floyd.
WELL CHARACTERISTICS.--Drilled observation artesian well, diameter 2 in (0.051 m) depth 147 ft (44.8 m), cased to 147 ft (44.8 m), open end.
DATUM.--Land-surface datum is 1,313.62 ft (400.391 m) above mean sea level. Measuring point: Top of casing 2.20 ft (0.671 m) above land-surface datum.
REMARKS.--Prior to 1976, described as "near" Artesian.
PERIOD OF RECORD.--June 1966 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 7.50 ft (2.286 m) below land-surface datum, June 27, 1968; lowest measured, 12.5 ft (3.81 m) below land-surface datum, Sept. 13, 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	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 2	11.9	MAY 2	11.3	JUN 21	11.3	JUL 18	11.5	AUG 15	11.6	SEP 20	11.6
NOV 30	11.9	MAY 21	11.3								

440600098151001. Local number, 107N62W10AAAA (S67D).
LOCATION.--Lat 44°06'00", long 98°15'10", Hydrologic Unit 10160011, 4 mi (6 km) north of Woonsocket.
Owner: South Dakota Department of Natural Resource Development.
AQUIFER.--Warren.
WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 2 in (0.051 m), depth 13 ft (4.0 m), cased to 13 ft (4.0 m), open end.
DATUM.--Land-surface datum is 1,298.98 ft (395.929 m) above mean sea level. Measuring point: Top of casing 1.80 ft (0.549 m) above land-surface datum.
PERIOD OF RECORD.--August 1967 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 2.22 ft (0.677 m) below land-surface datum, Apr. 3, 1973; lowest measured, 8.9 ft (2.71 m) below land-surface datum, Sept. 13, 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	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 2	8.1	MAY 2	8.2	MAY 22	8.2	JUN 21	8.2	AUG 16	8.1	SEP 18	8.3

SPINK COUNTY

444219098300801. Local number, 114N64W11BBBB.
LOCATION.--Lat 44°42'19", long 98°30'08", Hydrologic Unit 10160006, 2 mi (3 km) south of Tulare.
Owner: U.S. Bureau of Reclamation.
AQUIFER.--Glacial Outwash.
WELL CHARACTERISTICS.--Drilled observation artesian well, diameter 4 in (0.101 m), depth 60 ft (18.3 m), perforated 20 to 60 ft (6.1 to 18.3 m).
DATUM.--Land-surface datum is 1,310.8 ft (399.5 m) above mean sea level. Measuring point: Top of casing 3.22 ft (0.98 m) above land-surface datum.
PERIOD OF RECORD.--February 1953 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 3.19 ft (0.972 m) below land-surface datum, Aug. 20, 1959; lowest, 27.89 ft (8.502 m) below land-surface datum, Aug. 31, 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
OCT 27	15.34	FEB 13	12.87	JUN 25	11.96

444458098385501. Local number, 115N65W28AAAA (PT 9).
LOCATION.--Lat 44°44'58", long 98°38'55", Hydrologic Unit 10160009, 7 mi (11 km) west of Tulare.
Owner: U.S. Bureau of Reclamation.
AQUIFER.--Glacial Outwash.
WELL CHARACTERISTICS.--Drilled unused irrigation water-table well, diameter 8 in (0.203 m), depth 105 ft (32.0 m), perforated 58 to 105 ft (17.7 to 32.0 m).
DATUM.--Land-surface datum is 1,340.43 ft (408.563 m) above mean sea level. Measuring point: Top of recorder platform 3.20 ft (0.975 m) above land-surface datum.
PERIOD OF RECORD.--July 1952 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 22.06 ft (6.724 m) below land-surface datum, June 20, 1953; lowest, 36.46 ft (11.113 m) below land-surface datum, Aug. 20, 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
OCT 27	27.99	FEB 13	26.98	JUN 25	27.05

UNION COUNTY

430405096463201. Local number, 95N50W 8ABBD.
LOCATION.--Lat 43°04'05", long 96°46'32", Hydrologic Unit 10170102, at Beresford.
Owner: J. J. Dolan.
AQUIFER.--Glacial Outwash.
WELL CHARACTERISTICS.--Dug unused water-table well, diameter 24 in (0.610 m), depth 42 ft (12.8 m).
DATUM.--Altitude of land-surface datum is 1,515 ft (462 m). Measuring point: Top of casing 2.50 ft (0.762 m) above land-surface datum.
PERIOD OF RECORD.--August 1936 to 1944, 1946 to July 1979. Well destroyed.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 0.51 ft (0.155 m) below land-surface datum, Apr. 11, 1947; lowest measured, 14.77 ft (4.502 m) below land-surface datum, May 2, 1957.

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	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 29	5.54	MAR 6	6.98	APR 3	5.33	MAY 2	2.76	MAY 31	1.33	JUL 11	4.11
JAN 3	6.15										

YANKTON COUNTY

425240097252001. Local number, 93N56W14AA.
LOCATION.--Lat 42°52'40", long 97°25'20", Hydrologic Unit 10170101, at Yankton.
Owner: John Kayser.
AQUIFER.--Niobrara Formation.
WELL CHARACTERISTICS.--Bored stock artesian well, diameter 18 in (0.457 m), depth 80 ft (24.4 m).
DATUM.--Altitude of land-surface datum is 1,200 ft (366 m). Measuring point: Base of pump 4.50 ft (1.372 m) above land-surface datum.
PERIOD OF RECORD.--March 1947 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 33.12 ft (10.098 m) below land-surface datum, Jan. 31, 1979; lowest measured, 51.16 ft (15.594 m) below land-surface datum, Nov. 17, 1960.

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	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 1	51.08	JAN 31	33.12	APR 3	39.20	MAY 30	40.88	JUL 10	41.76	SEP 12	46.65
JAN 3	33.42	MAR 6	44.78	MAY 2	41.39						

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

STATION NUMBER	LOCAL IDENT-I-FIER	DATE OF SAMPLE	TIME	GEO-LOGIC UNIT	DEPTH OF WELL, TOTAL (FEET) (72008)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE (DEG C) (00010)	HARD-NESS (MG/L AS CACO3) (00900)
			AURORA						
433450098193001	101N63W 1ADDA	79-08-29	1430	211NBRR	275	1600	7.7	11.7	93
433442098302101	101N64W 4DACA	79-08-29	1700	112CRSC	400	3300	7.2	10.9	840
433511098322301	101N64W 5BBAB	79-08-29	1750	211DKOT	860	2600	7.3	13.0	1200
433050098435501	101N66W34BB	79-08-30	1700	211DKOT	953	2750	6.7	15.0	1300
433527098205501	102N63W35DACC	79-08-29	1530	211CDLL	400	1250	7.8	12.0	--
433543098444601	102N66W33CABB	79-08-30	1600	211NBRR	292	4200	7.6	10.0	270
434318098241101	103N63W16CCBB	79-07-31	1210	211DKOT	670	2700	7.5	13.3	1300
		79-08-29	1320	211DKOT	670	2600	6.9	14.0	--
434316098233501	103N63W16DCBB	79-07-31	1048	211CDLL	240	2600	7.9	13.0	68
434300098215301	103N63W22AAAD	79-07-31	1002	211NBRR	145	1140	7.2	10.8	360
434312098313101	103N64W17DDCD	79-07-31	1318	211NBRR	210	3000	7.4	11.0	530
434409098390101	103N65W 8DCBD	79-08-30	1200	211DKOT	780	2800	7.1	10.0	1100
434345098425601	103N66W15AAAA	79-08-30	1300	211DKOT	876	2850	7.4	11.0	--
434357098454201	103N66W17BAAD	79-08-30	1350	211DKOT	840	2750	6.9	14.0	1400
435046098330301	104N64W 6ACBA	79-08-28	1130	211DKOT	640	2700	7.9	14.6	--
435014098385201	104N65W 5DCDD	79-08-31	1244	112PLSC	169	1130	7.9	8.2	71
435116098235701	105N63W33CDBB	79-08-29	1130	211DKOT	750	2500	6.9	15.0	--
435117098331701	105N64W31DAAC2	79-08-28	1430	211CDLL	345	4200	7.9	11.5	100
435108098293201	105N64W34DDAA	79-08-29	1030	211NBRR	200	3000	7.5	11.2	95
435130098363701	105N65W35BCBC	79-07-30	1600	211DKOT	980	2600	7.6	15.8	1300
435101098475402	105N66W31CDDA2	79-08-31	1610	211DKOT	1195	2800	7.1	11.5	1400
435105098445201	105N66W34CCBB	79-08-31	1500	211DKOT	1061	2850	7.4	12.2	1300
			BEADLE						
443412098093401	113N61W27CBBB	79-07-27	1000	211DKOT	900	2800	7.7	17.0	780
			BROWN						
452144098145102	122N62W23DADD2	79-07-31	1000	217INKR	1148	2730	7.7	15.0	620
452604098305601	123N64W27DDAA	79-07-30	0930	211DKOT	1125	2770	7.8	17.5	370
452729098382401	123N65W22AAD	79-07-28	1640	221SNDC	1343	2480	7.3	19.5	1000
			BUTTE						
434832103150501	3S 7E11ABAD	79-08-02	--	217LKOT	476	666	7.3	13.6	310
443905103501201	8N 2E14DC	79-07-16	--	217LKOT	430	841	7.5	11.9	330
445441104012401	11N 1E17DCAD	79-07-03	--	217INKR	2478	2260	7.6	18.2	120
			CHARLES MIX						
430826098190601	96N63W 8CDA	79-08-04	1030	211DKOT	672	2080	7.4	15.0	780
			DAVISON						
433416098002701	101 60 10AAAD	79-08-28	1040	--	--	2175	7.7	16.5	--
433324098035601	101 60 17BCBB	79-08-28	--	--	--	2200	7.1	14.5	--
433055098021801	101N60W28CDDC	79-08-28	1220	--	--	2500	7.6	20.5	600
433009098013801	101N60W33DDAA	79-08-28	--	--	--	2350	7.6	14.0	190
433427098100601	101N61W 5DDBA	79-08-29	1335	--	--	2350	7.8	18.0	65
433116098172701	101N62W29ACDA	79-08-29	1245	--	--	1900	8.0	12.0	--
		79-08-29	1248	--	--	1900	8.0	12.0	54
433740098144602	102 62 22AAAD2	79-08-29	1200	--	--	2600	7.1	14.0	--
433743097591101	102N60W24BBCC	79-08-28	0955	--	--	2625	7.1	12.0	1300
434008098084702	102N61W 4ADDA2	79-08-29	1110	--	--	2500	7.2	14.5	1200
			FALL RIVER						
432653103580501	7S 1E14BAAC	79-07-02	--	221SNDC	780	2350	6.4	13.5	250
432638103585201	7S 1E15ACDA	79-07-02	--	217LKOT	545	1545	7.3	12.6	490
432816103513801	7S 2E 3ACDD	79-08-31	--	221SNDC	247	2170	7.3	12.6	880
432113103224801	8S 6E14CBBA	79-08-29	--	217INKR	1998	1670	7.1	28.0	890
			GREGORY						
431945099052001	98N70W11C	79-08-04	1600	211DKOT	850	1920	6.8	34.0	000
			HAAKON						
440202101394001	1N20E24BCAB	79-08-06	1300	217INKR	2562	3390	7.5	56.0	33
440256101242701	1N22E13ADAA	79-08-16	--	217NCSL	2008	4250	7.3	44.9	24
440253101180801	1N23E13BCAD	79-08-16	--	217NCSL	2024	3240	7.5	39.2	17

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

STATION NUMBER	DATE OF SAMPLE	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)
					AURORA						
433450098193001	79-08-29	0	24	8.0	350	90	16	21	530	0	430
433442098302101	79-08-29	750	240	58	450	61	6.8	31	110	0	90
433511098322301	79-08-29	1100	360	82	120	17	1.5	25	160	0	130
433050098435501	79-08-30	1200	370	100	110	15	1.3	23	160	0	130
433527098205501	79-08-29	--	--	--	--	--	--	13	--	--	--
433543098444601	79-08-30	0	35	44	850	95	23	1.9	600	0	490
434318098241101	79-07-31	1100	370	81	160	27	2.0	27	160	0	130
	79-08-29	--	--	--	--	--	--	27	--	--	--
434316098233501	79-07-31	0	19	5.1	570	94	30	11	480	0	390
434300098215301	79-07-31	42	92	32	100	37	2.3	13	390	0	320
434312098313101	79-07-31	130	71	85	570	69	11	19	480	0	390
434409098390101	79-08-30	1000	310	85	180	25	2.3	23	140	0	110
434345098425601	79-08-30	--	--	--	--	--	--	25	--	--	--
434357098454201	79-08-30	1300	380	110	100	13	1.2	21	160	0	130
435046098330301	79-08-28	--	--	--	--	--	--	30	--	--	--
435014098385201	79-08-31	0	3.5	15	230	86	12	7.6	510	0	420
435116098235701	79-08-29	--	--	--	--	--	--	23	--	--	--
435117098331701	79-08-28	0	32	5.8	860	94	37	11	660	0	540
435108098293201	79-08-29	0	25	7.9	610	92	27	14	630	0	520
435130098363701	79-07-30	1100	380	78	100	18	1.2	21	170	0	140
435101098475402	79-08-31	1200	370	110	110	21	1.3	4.0	160	0	130
435105098445201	79-08-31	1100	350	94	130	18	1.6	19	170	0	140
					BEADLE						
443412098093401	79-07-27	630	210	60	360	50	5.6	22	--	--	144
					BROWN						
452144098145102	79-07-31	480	170	47	430	67	7.5	28	--	--	144
452604098305601	79-07-30	210	100	28	520	80	12	23	--	--	160
452729098382401	79-07-28	860	270	80	250	43	3.4	31	--	--	149
					BUTTE						
434832103150501	79-08-02	99	81	27	8.5	6	.2	3.2	262	0	210
443905103501201	79-07-16	100	77	32	41	21	1.0	8.5	280	0	230
445441104012401	79-07-03	0	30	10	450	92	18	5.4	281	0	230
					CHARLES MIX						
430826098190601	79-08-04	610	230	48	150	35	2.3	20	--	--	167
					DAVISON						
433416098002701	79-08-28	--	--	--	--	--	--	22	--	--	--
433324098035601	79-08-28	--	--	--	--	--	--	19	--	--	--
433055098021801	79-08-28	160	170	42	390	58	6.9	21	530	0	430
433009098013801	79-08-28	0	49	16	460	83	15	17	440	0	360
433427098100601	79-08-29	0	18	4.8	560	94	30	14	450	0	370
433116098172701	79-08-29	--	--	--	--	--	--	16	--	--	--
	79-08-29	0	14	4.7	400	92	24	17	440	0	360
433740098144602	79-08-29	--	--	--	--	--	--	22	--	--	--
433743097591101	79-08-28	1100	360	86	140	25	1.7	4.6	180	0	150
434008098084702	79-08-29	1100	350	78	170	23	2.1	22	170	0	140
					FALL RIVER						
432653103580501	79-07-02	100	56	26	430	79	12	5.7	182	0	150
432638103585201	79-07-02	280	120	46	89	38	1.8	16	257	0	210
432816103513801	79-08-31	670	170	110	160	28	2.4	6.1	262	--	215
432113103224801	79-08-29	670	270	51	47	13	.7	9.9	266	--	218
					GREGORY						
431945099052001	79-08-04	890	310	60	77	17	1.0	20	--	--	134
					HAAKON						
440202101394001	79-08-06	0	9.7	1.9	800	98	62	9.8	--	--	804
440256101242701	79-08-16	0	6.9	1.4	1100	99	100	7.0	1263	0	1040
440253101180801	79-08-16	0	3.9	1.6	800	99	86	5.6	1388	0	1140

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)	IODIDE, DIS-SOLVED (MG/L AS I) (71865)	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, NITRATE TOTAL (MG/L AS N) (00620)
					AURORA						
433450098193001	79-08-29	390	62	1.2	--	--	11	--	1130	1.54	--
433442098302101	79-08-29	1700	78	.4	--	--	28	--	2650	3.60	--
433511098322301	79-08-29	1300	80	2.2	--	--	8.9	--	2060	2.80	--
433050098435501	79-08-30	1300	130	2.8	.6	.01	8.3	2220	2140	3.02	--
433527098205501	79-08-29	--	--	--	--	--	--	--	--	--	--
433543098444601	79-08-30	210	930	1.8	--	--	11	--	2390	3.25	--
434318098241101	79-07-31	1300	110	1.9	--	--	9.8	--	2140	2.91	--
	79-08-29	--	--	--	--	--	--	--	--	--	--
434316098233501	79-07-31	750	67	1.5	--	--	7.1	--	1670	2.27	--
434300098215301	79-07-31	250	12	.4	--	--	30	--	724	.98	--
434312098313101	79-07-31	980	73	.8	--	--	18	--	2060	2.80	--
434409098390101	79-08-30	1200	98	2.5	--	--	8.3	--	1980	2.69	--
434345098425601	79-08-30	--	--	--	--	--	--	--	--	--	--
434357098454201	79-08-30	1300	110	2.9	--	--	8.4	--	2120	2.86	--
435046098330301	79-08-28	--	--	--	--	--	--	--	--	--	--
435014098385201	79-08-31	32	59	1.6	--	--	9.0	--	611	.83	--
435116098235701	79-08-29	--	--	--	--	--	--	--	--	--	--
435117098331701	79-08-28	250	820	1.6	--	--	7.7	--	2320	3.16	--
435108098293201	79-08-29	660	210	.8	--	--	14	--	1860	2.53	--
435130098363701	79-07-30	1200	68	2.5	--	--	8.9	--	1950	2.65	--
435101098475402	79-08-31	1400	100	2.9	--	--	9.3	--	2190	2.98	--
435105098445201	79-08-31	1300	84	2.8	--	--	9.1	--	2080	2.83	--
					BEADLE						
443412098093401	79-07-27	1300	120	1.4	.5	.02	9.0	2180	2180	2.96	--
					BROWN						
452144098145102	79-07-31	1200	84	.3	.4	.01	2.3	2080	2060	2.83	--
452604098305601	79-07-30	1200	69	.7	.3	.02	7.9	2020	2050	2.75	--
452729098382401	79-07-28	1200	50	.4	.2	.01	37	2090	2020	2.84	--
					BUTTE						
434832103150501	79-08-02	160	2.0	.3	.0	.00	17	450	429	.61	.30
443905103501201	79-07-16	220	1.6	.4	.0	.00	7.7	537	529	.73	.01
445441104012401	79-07-03	670	170	1.5	.3	.02	13	1480	<1490	2.01	.00
					CHARLES MIX						
430826098190601	79-08-04	820	97	2.9	.6	.03	9.0	1570	1490	2.14	--
					DAVISON						
433416098002701	79-08-28	--	--	--	--	--	--	--	--	--	--
433324098035601	79-08-28	--	--	--	--	--	--	--	--	--	--
433055098021801	79-08-28	980	56	.4	--	--	16	--	1940	2.64	--
433009098013801	79-08-28	720	83	.6	--	--	8.8	--	1580	2.15	--
433427098100601	79-08-29	670	140	1.1	--	--	7.2	--	1650	2.24	--
433116098172701	79-08-29	--	--	--	--	--	--	--	--	--	--
	79-08-29	440	94	1.8	--	--	6.8	--	1200	1.63	--
433740098144602	79-08-29	--	--	--	--	--	--	--	--	--	--
433743097591101	79-08-28	1300	110	2.0	--	--	6.6	--	2100	2.86	--
434008098084702	79-08-29	1300	110	2.4	--	--	7.0	--	2130	2.90	--
					FALL RIVER						
432653103580501	79-07-02	1000	21	.4	.2	.05	8.6	1710	1640	2.33	.03
432638103585201	79-07-02	590	8.9	.3	.1	.01	8.2	1090	1010	1.48	.00
432816103513801	79-08-31	1000	8.6	.4	.1	.01	10	1720	1600	2.34	.61
432113103224801	79-08-29	760	19	.6	.1	.01	13	1360	1310	1.85	.00
					GREGORY						
431945099052001	79-08-04	850	100	2.5	.6	.01	17	1570	1530	2.14	--
					HAAKON						
440202101394001	79-08-06	790	140	5.3	.8	.19	26	2180	2270	2.96	--
440256101242701	79-08-16	14	920	2.6	9.2	3.8	20	2750	2710	3.74	.00
440253101180801	79-08-16	12	420	3.3	3.9	1.7	21	2000	1960	2.72	.00

< Less than.

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

STATION NUMBER	DATE OF SAMPLE	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, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P) (00671)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)
					AURORA						
433450098193001	79-08-29	--	--	.00	--	--	--	.01	.01	--	--
433442098302101	79-08-29	--	--	.00	--	--	--	.00	.00	--	--
433511098322301	79-08-29	--	--	.01	--	--	--	.00	.00	--	--
433050098435501	79-08-30	--	--	.06	--	--	--	--	.01	0	1
433527098205501	79-08-29	--	--	--	--	--	--	--	--	--	--
433543098444601	79-08-30	--	--	.01	--	--	--	.00	.01	--	--
434318098241101	79-07-31	--	--	.00	--	--	--	--	.00	--	--
	79-08-29	--	--	--	--	--	--	--	--	--	--
434316098233501	79-07-31	--	--	.00	--	--	--	--	.00	--	--
434300098215301	79-07-31	--	--	.00	--	--	--	--	.00	--	--
434312098313101	79-07-31	--	--	.59	--	--	--	--	.00	--	--
434409098390101	79-08-30	--	--	.00	--	--	--	.00	.01	--	--
434345098425601	79-08-30	--	--	--	--	--	--	--	--	--	--
434357098454201	79-08-30	--	--	.00	--	--	--	.00	.01	--	--
435046098330301	79-08-28	--	--	--	--	--	--	--	--	--	--
435014098385201	79-08-31	--	--	.09	--	--	--	.06	.08	--	--
435116098235701	79-08-29	--	--	--	--	--	--	--	--	--	--
435117098331701	79-08-28	--	--	.25	--	--	--	.02	.03	--	--
435108098293201	79-08-29	--	--	.01	--	--	--	.03	.70	--	--
435130098363701	79-07-30	--	--	.00	--	--	--	--	.00	--	--
435101098475402	79-08-31	--	--	.00	--	--	--	.00	.01	--	--
435105098445201	79-08-31	--	--	.00	--	--	--	.01	.01	--	--
					BEADLE						
443412098093401	79-07-27	--	--	--	--	8.5	--	.01	--	20	0
					BROWN						
452144098145102	79-07-31	--	--	--	--	4.5	--	.05	--	0	1
452604098305601	79-07-30	--	--	--	--	4.7	--	.03	--	0	0
452729098382401	79-07-28	--	--	--	--	3.4	--	.01	--	0	0
					BUTTE						
434832103150501	79-08-02	.02	.32	--	.00	.00	--	.00	--	0	3
443905103501201	79-07-16	.00	.01	--	.34	.28	--	.01	--	0	0
445441104012401	79-07-03	.00	.00	--	.74	.62	--	.00	--	160	0
					CHARLES MIX						
430826098190601	79-08-04	--	--	--	--	.88	--	.01	--	0	0
					DAVISON						
433416098002701	79-08-28	--	--	--	--	--	--	--	--	--	--
433324098035601	79-08-28	--	--	--	--	--	--	--	--	--	--
433055098021801	79-08-28	--	--	.01	--	--	--	.00	.01	--	--
433009098013801	79-08-28	--	--	.01	--	--	--	.00	.01	--	--
433427098100601	79-08-29	--	--	.75	--	--	--	.01	.00	--	--
433116098172701	79-08-29	--	--	--	--	--	--	--	--	--	--
	79-08-29	--	--	.04	--	--	--	.00	.01	--	--
433740098144602	79-08-29	--	--	--	--	--	--	--	--	--	--
433743097591101	79-08-28	--	--	.01	--	--	--	.00	.03	--	--
434008098084702	79-08-29	--	--	.28	--	--	--	.00	.01	--	--
					FALL RIVER						
432653103580501	79-07-02	.02	.05	--	.47	.26	--	.01	--	100	0
432638103585201	79-07-02	.02	.01	--	.12	.10	--	.00	--	140	2
432816103513801	79-08-31	.02	.63	--	.02	.59	--	.00	--	10	2
432113103224801	79-08-29	.00	.00	--	.17	.48	--	.00	--	0	3
					GREGORY						
431945099052001	79-08-04	--	--	--	--	2.2	--	.01	--	0	1
					HAAKON						
440202101394001	79-08-06	--	--	--	--	1.9	--	.01	--	0	2
440256101242701	79-08-16	.00	.00	--	2.7	2.4	--	.27	--	20	1
440253101180801	79-08-16	.02	.01	--	2.1	2.0	--	.00	--	10	1

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

STATION NUMBER	DATE OF SAMPLE	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)
				AURORA			
433450098193001	79-08-29	--	5000	--	--	--	--
433442098302101	79-08-29	--	2600	--	--	--	--
433511098322301	79-08-29	--	480	--	--	--	--
433050098435501	79-08-30	0	230	0	10	0	0
433527098205501	79-08-29	--	--	--	--	--	--
433543098444601	79-08-30	--	10000	--	--	--	--
434316098241101	79-07-31	--	560	--	--	--	--
	79-08-29	--	--	--	--	--	--
434316098233501	79-07-31	--	5300	--	--	--	--
434300098215301	79-07-31	--	650	--	--	--	--
434312098313101	79-07-31	--	3900	--	--	--	--
434409098390101	79-08-30	--	1400	--	--	--	--
434345098425601	79-08-30	--	--	--	--	--	--
434357098454201	79-08-30	--	330	--	--	--	--
435046098330301	79-08-28	--	--	--	--	--	--
435014098385201	79-08-31	--	1300	--	--	--	--
435116098235701	79-08-29	--	--	--	--	--	--
435117098331701	79-08-28	--	5500	--	--	--	--
435108098293201	79-08-29	--	4100	--	--	--	--
435130098363701	79-07-30	--	360	--	--	--	--
435101098475402	79-08-31	--	280	--	--	--	--
435105098445201	79-08-31	--	300	--	--	--	--
				BEADLE			
443412098093401	79-07-27	0	1300	0	10	--	0
				BROWN			
452144098145102	79-07-31	0	880	0	0	--	0
452604098305601	79-07-30	0	1800	0	0	--	0
452729098382401	79-07-28	0	680	0	10	--	0
				BUTTE			
434832103150501	79-08-02	50	30	<1	0	--	2
443905103501201	79-07-16	20	30	<1	0	--	0
445441104012401	79-07-03	0	470	0	0	--	1
				CHARLES MIX			
430826098190601	79-08-04	20	730	<1	0	--	0
				DAVISON			
433416098002701	79-08-28	--	--	--	--	--	--
433324098035601	79-08-28	--	--	--	--	--	--
433055098021801	79-08-28	--	3900	--	--	--	--
433009098013801	79-08-28	--	5000	--	--	--	--
433427098100601	79-08-29	--	5000	--	--	--	--
433116098172701	79-08-29	--	--	--	--	--	--
	79-08-29	--	4500	--	--	--	--
433740098144602	79-08-29	--	--	--	--	--	--
433743097591101	79-08-28	--	550	--	--	--	--
434008098084702	79-08-29	--	710	--	--	--	--
				FALL RIVER			
432653103580501	79-07-02	0	500	0	0	--	0
432638103585201	79-07-02	10	110	<1	0	--	0
432816103513801	79-08-31	0	420	0	0	--	4
432113103224801	79-08-29	20	70	<1	0	--	1
				GREGORY			
431945099052001	79-08-04	30	180	<1	0	--	1
				HAAKON			
440202101394001	79-08-06	0	1800	0	0	--	0
440256101242701	79-08-16	500	3500	0	0	--	2
440253101180801	79-08-16	200	3400	0	10	--	5

< Less than.

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

STATION NUMBER	DATE OF SAMPLE	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, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	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)
					AURORA						
433450098193001	79-08-29	--	420	--	--	20	--	--	--	--	--
433442098302101	79-08-29	--	1200	--	--	2800	--	--	--	--	--
433511098322301	79-08-29	--	4600	--	--	150	--	--	--	--	--
433050098435501	79-08-30	--	3300	0	140	170	.3	--	2	2	0
433527098205501	79-08-29	--	--	--	--	--	--	--	--	--	--
433543098444601	79-08-30	--	1500	--	--	60	--	--	--	--	--
434318098241101	79-07-31	--	3500	--	--	180	--	--	--	--	--
	79-08-29	--	--	--	--	--	--	--	--	--	--
434316098233501	79-07-31	--	200	--	--	10	--	--	--	--	--
434300098215301	79-07-31	--	1300	--	--	160	--	--	--	--	--
434312098313101	79-07-31	--	440	--	--	80	--	--	--	--	--
434409098390101	79-08-30	--	4000	--	--	140	--	--	--	--	--
434345098425601	79-08-30	--	--	--	--	--	--	--	--	--	--
434357098454201	79-08-30	--	3100	--	--	160	--	--	--	--	--
435046098330301	79-08-28	--	--	--	--	--	--	--	--	--	--
435014098385201	79-08-31	--	90	--	--	1	--	--	--	--	--
435116098235701	79-08-29	--	--	--	--	--	--	--	--	--	--
435117098331701	79-08-28	--	70	--	--	20	--	--	--	--	--
435108098293201	79-08-29	--	120	--	--	180	--	--	--	--	--
435130098363701	79-07-30	--	6800	--	--	170	--	--	--	--	--
435101098475402	79-08-31	--	6000	--	--	170	--	--	--	--	--
435105098445201	79-08-31	--	5100	--	--	140	--	--	--	--	--
					BEADLE						
443412098093401	79-07-27	1400	1400	0	160	70	--	.2	0	--	0
					BROWN						
452144098145102	79-07-31	2300	2000	0	140	60	--	.0	0	--	0
452604098305601	79-07-30	2700	2500	0	160	160	--	.1	0	--	0
452729098382401	79-07-28	3500	3400	0	150	140	--	.0	0	--	0
					BUTTE						
434832103150501	79-08-02	--	100	0	20	4	--	.0	<10	--	3
443905103501201	79-07-16	--	1600	0	40	70	--	.0	<10	--	0
445441104012401	79-07-03	--	1400	0	80	30	--	.0	9	--	0
					CHARLES MIX						
430826098190601	79-08-04	2800	2600	0	220	150	--	.0	<10	--	0
					DAVISON						
433416098002701	79-08-28	--	--	--	--	--	--	--	--	--	--
433324098035601	79-08-28	--	--	--	--	--	--	--	--	--	--
433055098021801	79-08-28	--	130	--	--	330	--	--	--	--	--
433009098013801	79-08-28	--	590	--	--	30	--	--	--	--	--
433427098100601	79-08-29	--	50	--	--	20	--	--	--	--	--
433116098172701	79-08-29	--	--	--	--	--	--	--	--	--	--
	79-08-29	--	60	--	--	20	--	--	--	--	--
433740098144602	79-08-29	--	--	--	--	--	--	--	--	--	--
433743097591101	79-08-28	--	2200	--	--	230	--	--	--	--	--
434008098084702	79-08-29	--	1100	--	--	440	--	--	--	--	--
					FALL RIVER						
432653103580501	79-07-02	--	910	0	180	30	--	.1	5	--	0
432638103585201	79-07-02	--	3600	0	80	200	--	.2	<10	--	0
432816103513801	79-08-31	--	20	0	160	10	--	.8	2	--	360
432113103224801	79-08-29	--	3000	0	90	120	--	.2	<10	--	0
					GREGORY						
431945099052001	79-08-04	1200	1400	0	150	150	--	.0	<10	--	0
					HAAKON						
440202101394001	79-08-06	80	40	0	380	20	--	.0	12	--	0
440256101242701	79-08-16	--	60	2	290	10	--	.0	0	--	0
440253101180801	79-08-16	--	60	0	210	20	--	1.2	0	--	0

< Less than.

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

STATION NUMBER	DATE OF SAMPLE	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)	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)	GROSS BETA, DIS-SOLVED (PCI/L AS SR/YT-90) (80050)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90) (80060)
					AURORA						
433450098193001	79-08-29	--	--	--	--	--	--	--	--	--	--
433442098302101	79-08-29	--	--	--	--	--	--	--	--	--	--
433511098322301	79-08-29	--	--	--	--	--	--	--	--	--	--
433050098435501	79-08-30	0	8700	3.0	10	<40	1.0	21	<.4	19	<.4
433527098205501	79-08-29	--	--	--	--	<12	<.4	12	<.4	11	<.4
433543098444601	79-08-30	--	--	--	--	--	--	--	--	--	--
434318098241101	79-07-31	--	--	--	--	--	--	--	--	--	--
	79-08-29	--	--	--	--	<40	<.4	29	<.4	26	<.4
434316098233501	79-07-31	--	--	--	--	--	--	--	--	--	--
434300098215301	79-07-31	--	--	--	--	--	--	--	--	--	--
434312098313101	79-07-31	--	--	--	--	--	--	--	--	--	--
434409098390101	79-08-30	--	--	--	--	--	--	--	--	--	--
434345098425601	79-08-30	--	--	--	--	<42	.9	20	.5	19	.5
434357098454201	79-08-30	--	--	--	--	<38	.8	20	.5	18	.6
435046098330301	79-08-28	--	--	--	--	<33	.5	25	.5	23	.4
435014098385201	79-08-31	--	--	--	--	--	--	--	--	--	--
435116098235701	79-08-29	--	--	--	--	<45	.4	29	<.4	26	<.4
435117098331701	79-08-28	--	--	--	--	<40	<.4	<18	<.4	<17	<.4
435108098293201	79-08-29	--	--	--	--	<35	<.4	18	<.4	16	<.4
435130098363701	79-07-30	--	--	--	--	--	--	--	--	--	--
435101098475402	79-08-31	--	--	--	--	--	--	--	--	--	--
435105098445201	79-08-31	--	--	--	--	<41	.6	22	.6	21	.6
					BEADLE						
443412098093401	79-07-27	--	5900	1.0	10	<40	<.4	26	<.4	24	<.4
					BROWN						
452144098145102	79-07-31	--	4300	2.0	30	<40	<.4	36	<.4	33	<.4
452604098305601	79-07-30	--	3000	1.0	20	<37	<.4	27	<.4	24	<.4
452729098382401	79-07-28	--	7000	1.0	30	<48	<.4	39	<.4	36	<.4
					BUTTE						
434832103150501	79-08-02	--	760	2.0	50	14	<.4	4.3	.5	3.9	.5
443905103501201	79-07-16	--	1500	1.0	10	23	2.0	13	.7	12	.8
445441104012401	79-07-03	--	3300	1.6	10	<22	<.4	<9.8	<.4	<9.1	<.4
					CHARLES MIX						
430826098190601	79-08-04	--	6100	2.0	<3	<30	<.4	24	<.4	22	<.4
					DAVISON						
433416098002701	79-08-28	--	--	--	--	<22	<.4	22	<.4	20	<.4
433324098035601	79-08-28	--	--	--	--	<31	3.5	22	.9	20	.9
433055098021801	79-08-28	--	--	--	--	--	--	--	--	--	--
433009098013801	79-08-28	--	--	--	--	<31	<.4	22	<.4	20	<.4
433427098100601	79-08-29	--	--	--	--	--	--	--	--	--	--
433116098172701	79-08-29	--	--	--	--	<17	.6	14	<.4	13	<.4
	79-08-29	--	--	--	--	--	--	--	--	--	--
433740098144602	79-08-29	--	--	--	--	92	7.6	78	6.7	71	7.1
433743097591101	79-08-28	--	--	--	--	<45	4.0	54	2.1	49	2.2
434008098084702	79-08-29	--	--	--	--	--	--	--	--	--	--
					FALL RIVER						
432653103580501	79-07-02	--	2200	.0	40	--	--	--	--	--	--
432638103585201	79-07-02	--	3600	1.1	20	--	--	--	--	--	--
432816103513801	79-08-31	--	5900	4.0	90	110	.4	21	7.5	19	7.8
432113103224801	79-08-29	--	6500	<1.0	690	82	7.9	25	3.7	22	3.8
					GREGORY						
431945099052001	79-08-04	--	6600	1.0	<3	<31	<.4	22	<.4	20	<.4
					HAAKON						
440202101394001	79-08-06	--	500	3.0	10	<41	<.4	<15	<.4	<14	<.4
440256101242701	79-08-16	--	460	15	40	<56	<.4	29	<.4	27	<.4
440253101180801	79-08-16	--	280	9.0	30	<46	<.4	<15	<.4	<14	<.4

< Less than.

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

STATION NUMBER	LOCAL IDENTIFIER	DATE OF SAMPLE	TIME	GEOLOGIC UNIT	GROSS ALPHA, DISSOLVED (PCI/L AS U-NAT) (01515)	GROSS ALPHA, SUSP. TOTAL (PCI/L AS U-NAT) (01516)	RADIUM 226, DISSOLVED, RADON METHOD (PCI/L) (09511)	URANIUM DISSOLVED, EXTRACTION (UG/L) (80020)	CARBON, ORGANIC DISSOLVED (MG/L AS C) (00681)
				AURORA					
433450098193001	101N63W 1ADDA	79-08-29	1430	211NRRR	--	--	--	--	--
433442098302101	101N64W 4DACA	79-08-29	1700	112CRSC	--	--	--	--	--
433511098322301	101N64W 5BBAB	79-08-29	1750	211DKOT	--	--	--	--	--
433050098435501	101N66W34BB	79-08-30	1700	211DKOT	<27	.7	.70	.05	--
433527098205501	102N63W35DACC	79-08-29	1530	211CDLL	<8.2	<.3	.49	.02	--
433543098444601	102N66W33CABB	79-08-30	1600	211NBRR	--	--	--	--	--
434318098241101	103N63W16CCBB	79-07-31	1210	211DKOT	--	--	--	--	--
		79-08-29	1320	211DKOT	<27	<.3	.28	.03	--
434316098233501	103N63W16DCBB	79-07-31	1048	211CDLL	--	--	--	--	--
434300098215301	103N63W22AAAD	79-07-31	1002	211NBRR	--	--	--	--	--
434312098313101	103N64W17DDCD	79-07-31	1318	211NBRR	--	--	--	--	--
434409098390101	103N65W 8DCBD	79-08-30	1200	211DKOT	--	--	--	--	--
434345098425601	103N66W15AAAA	79-08-30	1300	211DKOT	<29	.6	.88	<.01	--
434357098454201	103N66W17BAAD	79-08-30	1350	211DKOT	<26	.5	.91	.10	--
435046098330301	104N64W 6ACBA	79-08-28	1130	211DKOT	<22	.3	.27	.06	--
435014098385201	104N65W 5DCDD	79-08-31	1244	112PLSC	--	--	--	--	--
435116098235701	105N63W33CDBB	79-08-29	1130	211DKOT	<31	.3	.65	.03	--
435117098331701	105N64W31DAAC2	79-08-28	1430	211CDLL	<27	<.3	.18	<.01	--
435108098293201	105N64W34DDAA	79-08-29	1030	211NBRR	<24	<.3	1.8	.08	--
435130098363701	105N65W35BCBC	79-07-30	1600	211DKOT	--	--	--	--	--
435101098475402	105N66W31CDDA2	79-08-31	1610	211DKOT	--	--	--	--	--
435105098445201	105N66W34CCBB	79-08-31	1500	211DKOT	<28	.4	.85	.03	--
				BEADLE					
443412098093401	113N61W27CBBB	79-07-27	1000	211DKOT	<27	<.3	.60	.08	.0
				BROWN					
452144098145102	122N62W23DADD2	79-07-31	1000	217INKR	<27	<.3	.57	.08	3.5
452604098305601	123N64W27DDAA	79-07-30	0930	211DKOT	<25	<.3	.52	.17	3.5
452729098382401	123N65W22AAD	79-07-28	1640	221SNDC	<33	<.3	2.8	.05	.0
				BUTTE					
434832103150501	3S 7E11ABAD	79-08-02	--	217LKOT	9.5	<.3	.81	6.4	.7
443905103501201	8N 2E14DC	79-07-16	--	217LKOT	16	1.4	2.1	.90	.7
445441104012401	11N 1E17DCAD	79-07-03	--	217INKR	<15	<.3	.28	--	1.8
				CHARLES MIX					
430826098190601	96N63W 8CDA	79-08-04	1030	211DKOT	<20	<.3	.90	.03	.3
				DAVISON					
433416098002701	101 60 10AAAD	79-08-28	1040	--	<15	<.3	.24	.09	--
433324098035601	101 60 17BCBB	79-08-28	--	--	<21	2.4	1.3	.21	--
433055098021801	101N60W28CDDC	79-08-28	1220	--	--	--	--	--	--
433009098013801	101N60W33DDAA	79-08-28	--	--	<21	<.3	.14	.05	--
433427098100601	101N61W 5DDBA	79-08-29	1335	--	--	--	--	--	--
433116098172701	101N62W29ACDA	79-08-29	1245	--	<12	.4	.16	.08	--
		79-08-29	1248	--	--	--	--	--	--
433740098144602	102 62 22AAAD2	79-08-29	1200	--	63	5.2	12	.14	--
433743097591101	102N60W24BBCC	79-08-28	0955	--	<31	2.7	8.6	.36	--
434008098084702	102N61W 4ADDA2	79-08-29	1110	--	--	--	--	--	--
				FALL RIVER					
432653103580501	7S 1E14BAAC	79-07-02	--	221SNDC	--	--	--	--	2.4
432638103585201	7S 1E15ACDA	79-07-02	--	217LKOT	--	--	7.4	--	13
432816103513801	7S 2E 3ACDD	79-08-31	--	221SNDC	75	.3	.25	60	5.6
432113103224801	8S 6E14CBBA	79-08-29	--	217INKR	56	5.4	3.7	.38	--
				GREGORY					
431945099052001	98N70W11C	79-08-04	1600	211DKOT	<21	<.3	.86	.10	.0
				HAAKON					
440202101394001	1N20E24BCAB	79-08-06	1300	217INKR	<28	<.3	2.3	.08	1.9
440256101242701	1N22E13ADAA	79-08-16	--	217NCSL	<38	<.3	1.4	<.01	4.6
440253101180801	1N23E13BCAD	79-08-16	--	217NCSL	<31	<.3	.84	<.01	1.5

< Less than.

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

STATION NUMBER	DATE OF SAMPLE	CYANIDE TOTAL (MG/L AS CN) (00720)	OXYGEN, DIS-SOLVED (MG/L) (00300)	SULFIDE TOTAL (MG/L AS S) (00745)	
AURORA					
433450098193001	79-08-29	--	--	--	
433442098302101	79-08-29	--	--	--	
433511098322301	79-08-29	--	--	--	
433050098435501	79-08-30	--	--	--	
433527098205501	79-08-29	--	--	--	
433543098444601	79-08-30	--	--	--	
434318098241101	79-07-31	--	--	--	
	79-08-29	--	--	--	
434316098233501	79-07-31	--	--	--	
434300098215301	79-07-31	--	--	--	
434312098313101	79-07-31	--	--	--	
434009098390101	79-08-30	--	--	--	
434345098425601	79-08-30	--	--	--	
434357098454201	79-08-30	--	--	--	
435046098330301	79-08-28	--	--	--	
435014098385201	79-08-31	--	--	--	
435116098235701	79-08-29	--	--	--	
435117098331701	79-08-28	--	--	--	
435108098293201	79-08-29	--	--	--	
435130098363701	79-07-30	--	--	--	
435101098475402	79-08-31	--	--	--	
435105098445201	79-08-31	--	--	--	
BEADLE					
443412098093401	79-07-27	--	--	.4	
BROWN					
452144098145102	79-07-31	--	--	.4	
452604098305601	79-07-30	--	--	--	
452729098382401	79-07-28	--	--	.6	
BUTTE					
434832103150501	79-08-02	--	--	.8	
443905103501201	79-07-16	--	.0	.1	77
445441104012401	79-07-03	--	--	.4	30
CHARLES MIX					
430826098190601	79-08-04	--	--	.2	230
DAVISON					
433416098002701	79-08-28	--	--	--	--
433324098035601	79-08-28	--	--	--	--
433055098021801	79-08-28	--	--	--	170
433009098013801	79-08-28	--	--	--	49
433427098100601	79-08-29	--	--	--	18
433116098172701	79-08-29	--	--	--	--
	79-08-29	--	--	--	14
433740098144602	79-08-29	--	--	--	--
433743097591101	79-08-28	--	--	--	360
434008098084702	79-08-29	--	--	--	350
FALL RIVER					
432653103580501	79-07-02	--	.0	.1	56
432638103585201	79-07-02	--	.3	.3	120
432816103513801	79-08-31	--	--	.1	170
432113103224801	79-08-29	--	--	.3	270
GREGORY					
431945099052001	79-08-04	--	--	.2	310
HAAKON					
440202101394001	79-08-06	--	--	.5	9.7
440256101242701	79-08-16	--	--	.2	6.9
440253101180801	79-08-16	--	--	.2	3.9

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

STATION NUMBER	LOCAL IDENTIFIER	DATE OF SAMPLE	TIME	GEOLOGIC UNIT	DEPTH OF WELL, TOTAL (FEET) (72008)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	PH (UNITS) (00400)	TEMPERATURE (DEG C) (00010)	HARDNESS (MG/L AS CACO3) (00900)
				HAAKON					
440325101141301	1N24E 9CADD	79-08-06	1630	221SNDC	2370	6100	7.2	57.0	440
440312101081101	1N25E 8DCCC	79-08-23	--	217FLRV	2245	3300	7.9	56.0	32
441400101203501	3N23E10BCAA	79-08-21	--	217NCSL	2662	3480	7.6	47.1	53
441158101172201	3N23E24DD	79-08-23	--	217FLRV	2650	5750	7.7	49.0	65
441146101211801	3N23E28ABBC	79-08-17	--	217FLRV	2655	5380	7.1	53.2	89
441033101173301	3N23E36DAB	79-08-23	--	217FLRV	2572	6150	7.5	50.7	58
441324101132401	3N24E15BBD	79-08-22	--	217FLRV	2571	5180	8.0	45.6	48
441209101141501	3N24E21CAA	79-08-23	--	217FLRV	2600	5360	7.8	47.2	39
441030101112201	3N24E35ADC	79-08-23	--	217FLRV	2563	5330	8.0	46.5	35
441910100203001	4N23E15BD	79-08-21	--	217FLRV	2750	2800	8.0	31.4	15
441608101183001	4N23E35AA	79-08-22	--	217NCSL	2354	6180	7.5	34.8	57
443040101123001	6N24E 3BAAA	79-08-07	0930	310MNLS	2600	4290	7.7	47.0	34
443133101212001	7N23E33BCBC	79-08-15	--	217FLRV	2710	3650	8.2	47.1	26
				HAND					
441653099153301	109N70W 4BABD	79-07-24	1135	310MNLS	1945	2410	6.7	26.8	1500
443401098422601	113N66W25DADA2	79-07-27	1515	217INKR	1195	2540	7.0	19.0	1400
445236099173801	116N70W 7ADA	79-07-28	1000	221SNDC	1929	2370	7.0	25.0	1500
				HANSON					
434537097472301	104N58W33DDDD	79-08-29	0945	--	--	2380	7.3	12.0	820
				HUGHES					
434555098051201	104N61W36DDAA	79-07-26	0800	211DKOT	340	2330	7.2	17.0	1300
442134100202601	110N79W 4AAC	79-07-25	0800	331MDSN	2176	2420	6.8	41.7	1500
				JACKSON					
435534101283701	1S22E28DAAA	79-08-13	--	217INKR	2880	3910	5.2	28.0	32
435320101125401	2S24E11BDAC	79-08-23	--	217INKR	2590	5500	7.4	26.7	85
435155101142001	2S24E15CCDC	79-08-16	--	217DKOT	2370	2970	7.9	40.7	15
435110101123001	2S24E23DADD	79-08-14	--	211DKOT	2427	3130	7.7	46.5	15
435030101140001	2S24E27CADA	79-08-14	--	211DKOT	2432	2970	7.7	34.4	--
435207101104001	2S25E18CDAD	79-08-15	--	211DKOT	2420	3360	7.5	36.7	20
				JERAULD					
435757098243401	106N63W28BBBD	79-08-29	1400	211NBRR	165	2200	7.7	11.0	71
435947098310601	106N64W 9DCCD	79-06-19	1445	211DKOT	910	2650	6.6	15.0	1000
435743098293701	106N64W27ADAB	79-08-29	1205	211CDLL	350	3700	8.0	12.0	36
435835098401501	106N65W19AADC	79-08-27	1300	112CRLK	125	1650	7.2	11.0	630
435658098365001	106N65W34AABA	79-09-05	1330	211DKOT	1020	2850	7.5	14.4	1300
435824098442401	106N66W22BDDA	79-09-04	1145	112CRLK	46	2700	7.1	3.5	730
440022098503101	106N67W11BBAA	79-09-04	1400	112CRCK	175	1900	7.2	4.5	320
435700098504001	106N67W26CCDB	79-06-20	1440	211DKOT	1000	2800	7.3	14.5	1200
440321098245601	107N63W20DDBD	79-08-28	1240	211NBRR	165	2270	7.6	11.7	160
440128098253601	107N63W32CDCC	79-06-20	1115	211DKOT	800	2700	7.5	15.5	840
440634098400301	107N65W 5BBBA	79-07-25	1630	211DKOT	1420	2440	7.4	17.0	1200
440437098342701	107N65W13ADBD	79-06-19	1200	112PLSC	38	1490	7.0	10.5	670
440258098400601	107N65W29BCBA	79-08-27	1500	112CRLK	220	1600	6.7	10.5	600
441052098221101	108N63W11BBCD	79-08-22	1045	211DKOT	975	2700	7.7	17.5	770
440933098245401	108N63W17DADC	79-06-14	1510	112WRRN	83	2350	7.2	10.5	660
440904098252001	108N63W20ABCC	79-06-14	1420	112WRRN	88	2100	6.8	10.8	630
441126098391101	108N65W 5ADDD	79-08-30	1030	211DKOT	1045	2100	8.0	17.0	1000
440833098401901	108N65W19DADD	79-08-28	1510	112PLSC	245	1800	7.7	10.8	250
441004098543702	108N67W 7DDDB2	79-06-20	1130	--	1865	2650	7.2	21.0	1300
440842098531801	108N67W20ADDD	79-08-30	1300	112CRCK	95	1750	6.8	10.0	950
				LAWRENCE					
442720103380601	6N 2E28ABCC	79-08-27	--	221SNDC	140	1540	7.0	10.5	910
443451103403801	7N 4E 7CDCA	79-08-28	--	217FLRV	300	1050	7.2	11.0	330
				MCPHERSON					
455527098490301	128N66W 8ABBC	79-07-29	1000	361RDRV	1907	2400	7.0	27.0	1200
455148098525302	128N67W35BBCD2	79-07-29	1430	310MNLS	1691	2370	7.3	24.5	1100
				MARSHALL					
454027097432201	125N57W 6BABA	79-07-31	1600	211DKOT	1242	3110	8.9	13.5	36

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

STATION NUMBER	DATE OF SAMPLE	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)
HAAKON											
440325101141301	79-08-06	0	36	85	1400	97	29	13	--	--	519
440312101081101	79-08-23	0	9.6	1.7	850	98	66	7.4	644	0	530
441400101203501	79-08-21	0	16	3.0	900	97	54	9.4	904	0	740
441158101172201	79-08-23	0	21	3.0	950	96	51	10	560	0	460
441146101211801	79-08-17	0	29	3.6	1300	97	61	12	648	0	530
441033101173301	79-08-23	0	18	3.0	900	97	52	9.8	668	0	550
441324101132401	79-08-22	0	13	3.7	850	97	54	9.2	556	0	460
441209101141501	79-08-23	0	12	2.1	850	98	60	8.6	712	0	580
441030101112201	79-08-23	0	9.1	2.8	800	98	59	7.9	560	0	460
441910100203001	79-08-21	0	4.1	1.1	650	99	74	6.2	1032	0	850
441608101183001	79-08-22	0	19	2.0	1300	98	76	10	1581	0	1300
443040101123001	79-08-07	0	8.6	3.0	1000	98	75	9.6	--	--	708
443133101212001	79-08-15	0	8.8	1.0	900	98	77	5.5	637	0	520
HAND											
441653099153301	79-07-24	1300	430	100	59	8	.7	20	--	--	149
443401098422601	79-07-27	1200	390	93	170	27	2.0	22	--	--	135
445236099173801	79-07-28	1300	420	100	69	12	.8	20	--	--	151
HANSON											
434537097472301	79-08-29	630	230	59	280	42	4.3	20	230	0	190
HUGHES											
434555098051201	79-07-26	1200	380	92	130	17	1.6	27	--	--	147
442134100202601	79-07-25	1300	420	100	56	8	.6	21	--	--	152
JACKSON											
435534101283701	79-08-13	0	10	1.6	850	98	66	7.2	997	0	820
435320101125401	79-08-23	0	27	3.9	1300	97	62	12	1012	0	830
435155101142001	79-08-16	0	4.6	.7	700	99	80	4.6	1004	0	820
435110101123001	79-08-14	0	4.4	.8	740	99	85	5.0	230	0	190
435030101140001	79-08-14	--	--	--	--	--	--	5.1	1170	--	960
435207101104001	79-08-15	0	6.2	.9	700	99	70	5.6	911	0	750
JERAULD											
435757098243401	79-08-29	0	19	5.8	490	93	25	11	760	0	620
435947098310601	79-06-19	920	290	77	180	27	2.4	25	150	0	120
435743098293701	79-08-29	0	9.0	3.4	780	97	56	7.9	800	0	660
435835098401501	79-08-27	300	180	44	100	32	1.7	17	400	0	330
435658098365001	79-09-05	1100	380	74	94	14	1.2	15	160	0	130
435824098442401	79-09-04	390	200	55	150	31	2.4	13	410	0	340
440022098503101	79-09-04	0	91	22	190	55	4.6	16	410	0	340
435700098504001	79-06-20	1200	350	80	130	19	1.6	21	--	0	1590
440321098245601	79-08-28	0	40	15	530	91	18	14	790	0	650
440128098253601	79-06-20	840	230	65	270	50	4.1	5.4	--	0	60
440634098400301	79-07-25	1100	340	89	130	19	1.6	21	--	--	159
440437098342701	79-06-19	270	190	46	79	20	1.3	14	480	0	390
440258098400601	79-08-27	150	170	43	53	21	.9	16	550	0	450
441052098221101	79-08-22	640	210	59	360	50	5.7	21	160	0	130
440933098245401	79-06-14	210	180	50	180	37	3.1	14	540	0	440
440904098252001	79-06-14	140	160	55	230	44	4.0	14	600	0	490
441126098391101	79-08-30	890	270	80	220	32	3.0	21	140	0	110
440833098401901	79-08-28	15	75	14	260	73	7.2	17	280	0	230
441004098543702	79-06-20	1100	360	85	110	16	1.4	21	--	0	133
440842098531801	79-08-30	490	270	66	47	13	.7	18	560	0	460
LAWRENCE											
442720103380601	79-08-27	570	210	93	13	5	.2	7.6	416	--	341
443451103403801	79-08-28	95	80	30	100	51	2.4	9.4	280	--	230
MCPHERSON											
455527098490301	79-07-29	1100	340	91	160	28	2.0	23	--	--	149
455148098525302	79-07-29	910	290	81	200	37	2.7	26	--	--	156
MARSHALL											
454027097432201	79-07-31	0	14	.2	800	97	58	15	--	--	340

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)	IODIDE, DIS-SOLVED (MG/L AS I) (71865)	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, NITRATE TOTAL (MG/L AS N) (00620)
HAAKON											
440325101141301	79-08-06	2200	320	2.9	1.4	.24	27	4330	4400	5.89	--
440312101081101	79-08-23	1200	140	3.0	.7	.13	26	2830	2560	3.85	.00
441400101203501	79-08-21	830	350	1.9	1.5	.35	27	2450	2590	3.33	.00
441158101172201	79-08-23	1400	170	1.9	.7	.11	26	2880	2860	3.92	.00
441146101211801	79-08-17	1700	320	3.8	1.2	.17	26	3990	3720	5.43	.00
441033101173301	79-08-23	1100	210	2.0	1.0	.15	26	2810	2600	3.82	.00
441324101132401	79-08-22	1200	140	1.7	.7	.10	25	2550	2520	3.47	.00
441209101141501	79-08-23	1200	140	2.1	.8	.16	25	2550	2590	3.47	.00
441030101112201	79-08-23	1200	130	3.0	.7	.10	25	2560	2460	3.48	.00
441910100203001	79-08-21	330	280	2.0	1.6	.49	27	1720	1810	2.34	.00
441608101183001	79-08-22	15	1300	2.5	9.5	4.4	23	3440	3470	4.68	.00
443040101123001	79-08-07	1300	300	3.8	1.3	.15	22	2920	3080	3.97	--
443133101212001	79-08-15	1300	160	3.8	.6	.07	22	140	2720	.19	.00
HAND											
441653099153301	79-07-24	1400	75	3.2	.3	.01	11	2260	2200	3.07	--
443401098422601	79-07-27	1300	110	.3	.4	.01	9.9	2270	2180	3.09	--
445236099173801	79-07-28	1300	72	.3	.3	.01	11	2220	2090	3.02	--
HANSON											
434537097472301	79-08-29	1000	110	.4	--	--	28	--	1840	2.50	--
HUGHES											
434555098051201	79-07-26	1300	110	2.1	.4	.01	9.0	2250	2150	3.06	--
442134100202601	79-07-25	1300	100	1.6	.4	.01	24	2240	2130	3.05	--
JACKSON											
435534101283701	79-08-13	990	140	5.6	.7	.15	25	2470	2530	3.36	.01
435320101125401	79-08-23	1800	260	1.8	1.3	.28	28	4030	3940	5.48	.00
435155101142001	79-08-16	610	91	2.9	.7	.22	25	1910	1940	2.60	.01
435110101123001	79-08-14	530	180	3.1	1.6	.05	29	1980	1610	2.69	.01
435030101140001	79-08-14	--	--	--	--	--	--	--	--	--	.00
435207101104001	79-08-15	140	96	2.5	.8	.25	29	2110	1430	2.87	.00
JERAULD											
435757098243401	79-08-29	370	93	.7	--	--	13	--	1380	1.88	--
435947098310601	79-06-19	1100	56	2.1	--	--	9.6	--	1820	2.48	--
435743098293701	79-08-29	550	400	1.9	--	--	7.5	--	2160	2.94	--
435835098401501	79-08-27	560	12	.3	--	--	32	--	1150	1.56	--
435658098365001	79-09-05	1300	79	2.7	--	--	8.7	--	2040	2.77	--
435824098442401	79-09-04	720	13	.2	--	--	27	--	1380	1.88	--
440022098503101	79-09-04	390	17	.4	--	--	30	--	961	1.31	--
435700098504001	79-06-20	1300	60	2.7	--	--	6.8	--	1960	2.67	--
440321098245601	79-08-28	500	86	.7	--	--	21	--	1600	2.18	--
440128098253601	79-06-20	1300	53	2.0	--	--	10	--	1940	2.64	--
440634098400301	79-07-25	1300	59	2.3	.2	.01	11	2140	2060	2.91	--
440437098342701	79-06-19	420	10	.3	.1	.03	32	860	1030	1.17	--
440258098400601	79-08-27	290	4.1	.2	--	--	33	--	886	1.21	--
441052098221101	79-08-22	1200	92	2.1	.4	.01	9.2	119	2040	.16	--
440933098245401	79-06-14	610	18	.3	--	--	27	--	1350	1.84	--
440904098252001	79-06-14	550	19	.2	.1	.01	29	1360	1360	1.85	--
441126098391101	79-08-30	1200	67	2.4	--	--	11	--	1940	2.64	--
440833098401901	79-08-28	440	150	.3	--	--	30	--	1130	1.54	--
441004098543702	79-06-20	1300	60	2.9	--	--	10	--	2030	2.76	--
440842098531801	79-08-30	620	9.0	.4	--	--	34	--	1340	1.82	--
LAWRENCE											
442720103380601	79-08-27	580	4.2	.4	.0	.00	9.7	1180	1130	1.60	2.1
443451103403801	79-08-28	330	2.6	.4	.0	.01	7.0	712	700	.97	.01
MCPHERSON											
455527098490301	79-07-29	1200	53	.7	.2	.01	6.2	2100	1980	2.86	--
455148098525302	79-07-29	1200	48	.4	.2	.01	34	2060	1990	2.80	--
MARSHALL											
454027097432201	79-07-31	1200	240	.2	1.0	.05	8.4	2400	2490	3.26	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

STATION NUMBER	DATE OF SAMPLE	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, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P) (00671)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)
					HAAKON						
440325101141301	79-08-06	--	--	--	--	3.6	--	.02	--	10	1
440312101081101	79-08-23	.00	.00	--	2.4	2.1	--	.00	--	30	0
441400101203501	79-08-21	.02	.00	--	2.7	2.3	--	.00	--	10	0
441158101172201	79-08-23	.00	.00	--	2.5	2.3	--	.00	--	20	0
441146101211801	79-08-17	.00	.00	--	3.0	2.9	--	.00	--	20	0
441033101173301	79-08-23	.00	.00	--	2.5	2.3	--	.00	--	20	0
441324101132401	79-08-22	.00	.00	--	2.4	2.3	--	.01	--	30	0
441209101141501	79-08-23	.00	.00	--	2.3	2.2	--	.00	--	20	0
441030101112201	79-08-23	.00	.00	--	2.3	2.4	--	.10	--	30	0
441910100203001	79-08-21	.00	.00	--	2.1	1.7	--	.06	--	20	0
441608101183001	79-08-22	.02	.00	--	2.9	3.5	--	.02	--	20	1
443040101123001	79-08-07	--	--	--	--	2.7	--	--	--	10	1
443133101212001	79-08-15	.02	.01	--	2.1	1.7	--	.00	--	20	0
					HAND						
441653099153301	79-07-24	--	--	--	--	.49	--	.01	--	0	0
443401098422601	79-07-27	--	--	--	--	1.3	--	.01	--	10	0
445236099173801	79-07-28	--	--	--	--	.56	--	.01	--	20	0
					HANSON						
434537097472301	79-08-29	--	--	.02	--	--	--	.01	.00	--	--
					HUGHES						
434555098051201	79-07-26	--	--	--	--	2.4	--	.01	--	0	0
442134100202601	79-07-25	--	--	--	--	.23	--	.01	--	0	1
					JACKSON						
435534101283701	79-08-13	.00	.01	--	1.9	1.7	--	.01	--	0	1
435320101125401	79-08-23	.00	.00	--	3.3	3.1	--	.97	--	0	0
435155101142001	79-08-16	.00	.01	--	1.7	1.6	--	.02	--	10	1
435110101123001	79-08-14	.02	.03	--	1.9	1.7	--	.03	--	0	1
435030101140001	79-08-14	.00	.00	--	1.8	--	--	--	--	--	--
435207101104001	79-08-15	.02	.02	--	1.9	1.7	--	.00	--	0	1
					JERAULD						
435757098243401	79-08-29	--	--	.02	--	--	--	.05	.47	--	--
435947098310601	79-06-19	--	--	.01	--	--	--	--	.00	--	--
435743098293701	79-08-29	--	--	.32	--	--	--	.10	.75	--	--
435835098401501	79-08-27	--	--	.10	--	--	--	.01	.66	--	--
435658098365001	79-09-05	--	--	.00	--	--	--	.01	.01	--	--
435824098442401	79-09-04	--	--	.01	--	--	--	.02	.01	--	--
440022098503101	79-09-04	--	--	.00	--	--	--	.02	.03	--	--
435700098504001	79-06-20	--	--	.00	--	--	--	.00	.03	--	--
440321098245601	79-08-28	--	--	.00	--	--	--	.03	.00	--	--
440128098253601	79-06-20	--	--	.00	--	--	--	.00	.05	--	--
440634098400301	79-07-25	--	--	--	--	1.8	--	.01	--	0	0
440437098342701	79-06-19	--	--	.00	--	--	--	--	.00	0	1
440258098400601	79-08-27	--	--	.01	--	--	--	.01	.01	--	--
441052098221101	79-08-22	--	--	.01	--	--	--	--	.00	40	0
440933098245401	79-06-14	--	--	.28	--	--	--	--	.00	--	--
440904098252001	79-06-14	--	--	.01	--	--	--	--	.03	0	9
441126098391101	79-08-30	--	--	.15	--	--	--	.00	.03	--	--
440833098401901	79-08-28	--	--	.03	--	--	--	.02	.03	--	--
441004098543702	79-06-20	--	--	.00	--	--	--	.00	.01	--	--
440842098531801	79-08-30	--	--	.22	--	--	--	.01	.03	--	--
					LAWRENCE						
442720103380601	79-08-27	.02	2.1	--	.03	.52	--	.00	--	0	0
443451103403801	79-08-28	.00	.01	--	.47	.66	--	.00	--	0	1
					MCPHERSON						
455527098490301	79-07-29	--	--	--	--	1.0	--	.03	--	0	0
455148098525302	79-07-29	--	--	--	--	1.6	--	.01	--	0	0
					MARSHALL						
454027097432201	79-07-31	--	--	--	--	2.1	--	.08	--	0	0

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

STATION NUMBER	DATE OF SAMPLE	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)
				HAAKON			
440325101141301	79-08-06	0	2300	0	0	--	0
440312101081101	79-08-23	0	1700	0	0	--	2
441400101203501	79-08-21	0	2000	0	10	--	4
441158101172201	79-08-23	100	1600	0	0	--	1
441146101211801	79-08-17	0	30	0	10	--	5
441033101173301	79-08-23	100	1900	0	10	--	1
441324101132401	79-08-22	0	1700	0	10	--	0
441209101141501	79-08-23	0	1800	0	0	--	1
441030101112201	79-08-23	0	1700	0	10	--	2
441910100203001	79-08-21	0	1600	0	10	--	1
441608101183001	79-08-22	300	6000	0	0	--	1
443040101123001	79-08-07	0	500	0	0	--	0
443133101212001	79-08-15	0	1700	0	10	--	0
				HAND			
441653099153301	79-07-24	0	170	0	10	--	0
443401098422601	79-07-27	0	270	0	10	--	0
445236099173801	79-07-28	0	210	1	10	--	0
				HANSON			
434537097472301	79-08-29	--	830	--	--	--	--
				HUGHES			
434555098051201	79-07-26	0	510	0	0	--	0
442134100202601	79-07-25	0	180	0	0	--	0
				JACKSON			
435534101283701	79-08-13	0	1800	0	0	--	3
435320101125401	79-08-23	0	1400	0	10	--	6
435155101142001	79-08-16	0	1900	0	0	--	1
435110101123001	79-08-14	100	1700	0	0	--	1
435030101140001	79-08-14	--	--	--	--	--	--
435207101104001	79-08-15	0	1900	0	10	--	1
				JERAULD			
435757098243401	79-08-29	--	3200	--	--	--	--
435947098310601	79-06-19	--	460	--	--	--	--
435743098293701	79-08-29	--	6000	--	--	--	--
435835098401501	79-08-27	--	780	--	--	--	--
435658098365001	79-09-05	--	280	--	--	--	--
435824098442401	79-09-04	--	630	--	--	--	--
440022098503101	79-09-04	--	730	--	--	--	--
435700098504001	79-06-20	--	390	--	--	--	--
440321098245601	79-08-28	--	2600	--	--	--	--
440128098253601	79-06-20	--	560	--	--	--	--
440634098400301	79-07-25	0	420	0	10	--	0
440437098342701	79-06-19	0	470	1	0	2	0
440258098400601	79-08-27	--	360	--	--	--	--
441052098221101	79-08-22	0	850	0	0	0	1
440933098245401	79-06-14	--	660	--	--	--	--
440904098252001	79-06-14	0	550	1	0	0	0
441126098391101	79-08-30	--	580	--	--	--	--
440833098401901	79-08-28	--	4400	--	--	--	--
441004098543702	79-06-20	--	280	--	--	--	--
440842098531801	79-08-30	--	210	--	--	--	--
				LAWRENCE			
442720103380601	79-08-27	10	60	<1	0	--	2
443451103403801	79-08-28	10	80	<1	0	--	0
				MCPHERSON			
455527098490301	79-07-29	0	380	0	0	--	0
455148098525302	79-07-29	0	830	0	10	--	0
				MARSHALL			
454027097432201	79-07-31	0	3900	0	0	--	0

< Less than.

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

STATION NUMBER	DATE OF SAMPLE	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, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	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)
					HAAKON						
440325101141301	79-08-06	2300	2600	0	490	50	--	.0	1	--	0
440312101081101	79-08-23	--	100	0	300	10	--	.0	0	--	0
441400101203501	79-08-21	--	460	0	290	50	--	.1	0	--	0
441158101172201	79-08-23	--	360	0	350	10	--	.3	2	--	0
441146101211801	79-08-17	--	2200	0	470	20	--	.1	2	--	0
441033101173301	79-08-23	--	1100	0	340	0	--	.0	3	--	0
441324101132401	79-08-22	--	370	0	340	30	--	.5	0	--	0
441209101141501	79-08-23	--	220	0	320	10	--	.1	0	--	0
441030101112201	79-08-23	--	150	0	300	20	--	.0	0	--	0
441910100203001	79-08-21	--	120	0	220	50	--	.0	0	--	0
441608101183001	79-08-22	--	120	0	390	0	--	2.6	0	--	0
443040101123001	79-08-07	70	40	0	300	30	--	.1	0	--	0
443133101212001	79-08-15	--	70	0	260	40	--	.2	0	--	0
					HAND						
441653099153301	79-07-24	2500	2400	0	100	160	--	.2	0	--	0
443401098422601	79-07-27	2000	2200	0	120	150	--	.3	0	--	0
445236099173801	79-07-28	2200	2100	0	90	130	--	.2	0	--	0
					HANSON						
434537097472301	79-08-29	--	30	--	--	2400	--	--	--	--	--
					HUGHES						
434555098051201	79-07-26	2000	1900	1	160	110	--	.2	0	--	1
442134100202601	79-07-25	220	180	0	100	40	--	.4	0	--	0
					JACKSON						
435534101283701	79-08-13	--	1100	0	320	20	--	.2	8	--	0
435320101125401	79-08-23	--	7000	0	490	80	--	.0	0	--	0
435155101142001	79-08-16	--	620	0	160	20	--	.3	0	--	0
435110101123001	79-08-14	--	300	0	150	20	--	1.1	0	--	0
435030101140001	79-08-14	--	--	--	--	--	--	--	--	--	--
435207101104001	79-08-15	--	1200	0	180	20	--	.7	0	--	0
					JERAULD						
435757098243401	79-08-29	--	60	--	--	30	--	--	--	--	--
435947098310601	79-06-19	--	4500	--	--	110	--	--	--	--	--
435743098293701	79-08-29	--	50	--	--	30	--	--	--	--	--
435835098401501	79-08-27	--	180	--	--	2100	--	--	--	--	--
435658098365001	79-09-05	--	7600	--	--	190	--	--	--	--	--
435824098442401	79-09-04	--	490	--	--	1800	--	--	--	--	--
440022098503101	79-09-04	--	680	--	--	1200	--	--	--	--	--
435700098504001	79-06-20	--	9400	--	--	200	--	--	--	--	--
440321098245601	79-08-28	--	240	--	--	80	--	--	--	--	--
440128098253601	79-06-20	--	1800	--	--	80	--	--	--	--	--
440634098400301	79-07-25	5300	5100	0	160	130	--	.3	0	--	0
440437098342701	79-06-19	--	150	0	120	2400	1.0	--	4	4	0
440258098400601	79-08-27	--	4200	--	--	1000	--	--	--	--	--
441052098221101	79-08-22	--	1100	0	160	90	--	--	0	3	0
440933098245401	79-06-14	--	50	--	--	2000	--	--	--	--	--
440904098252001	79-06-14	--	2600	0	160	430	.0	--	0	2	0
441126098391101	79-08-30	--	1700	--	--	140	--	--	--	--	--
440833098401901	79-08-28	--	50	--	--	770	--	--	--	--	--
441004098543702	79-06-20	--	4700	--	--	200	--	--	--	--	--
440842098531801	79-08-30	--	150	--	--	400	--	--	--	--	--
					LAWRENCE						
442720103380601	79-08-27	--	60	0	70	<1	--	.0	<10	--	1
443451103403801	79-08-28	--	900	0	60	40	--	.0	<10	--	0
					MCPHERSON						
455527098490301	79-07-29	1500	1500	0	130	130	--	.2	0	--	0
455148098525302	79-07-29	3400	3400	0	160	150	--	.0	1	--	0
					MARSHALL						
454027097432201	79-07-31	2000	400	0	180	20	--	.2	13	--	0

< Less than.

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

STATION NUMBER	DATE OF SAMPLE	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)	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)	GROSS BETA, DIS-SOLVED (PCI/L AS SR/YT-90) (80050)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90) (80060)
					HAAKON						
440325101141301	79-08-06	--	1400	5.0	30	<83	2.7	40	2.9	37	3.1
440312101081101	79-08-23	--	460	2.0	10	<58	<.4	<16	<.4	<15	<.4
441400101203501	79-08-21	--	450	8.0	10	79	<.4	53	<.4	49	<.4
441158101172201	79-08-23	--	500	3.0	20	210	.9	55	.5	49	.5
441146101211801	79-08-17	--	1100	7.0	30	180	13	71	9.2	65	9.8
441033101173301	79-08-23	--	600	4.0	10	83	1.0	26	<.4	24	.4
441324101132401	79-08-22	--	480	2.0	10	<66	<.4	24	<.4	22	<.4
441209101141501	79-08-23	--	450	--	10	<52	<.4	<44	<.4	<43	<.4
441030101112201	79-08-23	--	380	2.0	10	<55	<.4	<17	<.4	<15	<.4
441910100203001	79-08-21	--	220	7.0	0	<34	<.4	<16	<.4	<15	<.4
441608101183001	79-08-22	--	630	--	50	<110	<.4	<29	<.4	<27	<.4
443040101123001	79-08-07	--	500	--	20	<60	<.4	<22	<.4	<21	<.4
443133101212001	79-08-15	--	320	2.0	10	<48	<.4	<18	<.4	<16	<.4
					HAND						
441653099153301	79-07-24	--	9500	1.0	20	<49	<.4	29	<.4	26	<.4
443401098422601	79-07-27	--	1900	1.0	30	<11	.7	16	<.4	15	<.4
445236099173801	79-07-28	--	1900	1.0	30	<49	<.4	31	<.4	28	<.4
					HANSON						
434537097472301	79-08-29	--	--	--	--	--	--	--	--	--	--
					HUGHES						
434555098051201	79-07-26	--	6700	1.0	20	<36	<.4	26	<.4	24	<.4
442134100202601	79-07-25	--	10000	1.0	10	220	<.4	73	<.4	65	<.4
					JACKSON						
435534101283701	79-08-13	--	420	2.0	10	<44	2.2	<18	.8	<17	.8
435320101125401	79-08-23	--	940	7.0	80	<120	1.2	<29	1.6	<25	1.7
435155101142001	79-08-16	--	250	2.0	10	<33	<.4	<13	<.4	<12	<.4
435110101123001	79-08-14	--	240	5.0	10	<39	<.4	<14	<.4	<13	<.4
435030101140001	79-08-14	--	--	--	--	<38	<.7	<14	<.8	<13	<.9
435207101104001	79-08-15	--	270	3.0	10	<39	<.5	<15	<.6	<14	<.7
					JERAULD						
435757098243401	79-08-29	--	--	--	--	--	--	--	--	--	--
435947098310601	79-06-19	--	--	--	--	--	--	--	--	--	--
435743098293701	79-08-29	--	--	--	--	--	--	--	--	--	--
435835098401501	79-08-27	--	--	--	--	--	--	--	--	--	--
435658098365001	79-09-05	--	--	--	--	<37	1.0	20	.7	19	.7
435824098442401	79-09-04	--	--	--	--	--	--	--	--	--	--
440022098503101	79-09-04	--	--	--	--	--	--	--	--	--	--
435700098504001	79-06-20	--	--	--	--	--	--	--	--	--	--
440321098245601	79-08-28	--	--	--	--	<26	.8	19	<.4	18	<.4
440128098253601	79-06-20	--	--	--	--	--	--	--	--	--	--
440634098400301	79-07-25	--	8500	3.0	40	<37	<.4	30	<.4	27	<.4
440437098342701	79-06-19	0	1200	.0	20	--	--	--	--	--	--
440258098400601	79-08-27	--	--	--	--	--	--	--	--	--	--
441052098221101	79-08-22	0	5100	1.0	20	<39	<.4	33	<.4	30	<.4
440933098245401	79-06-14	--	--	--	--	--	--	--	--	--	--
440904098252001	79-06-14	0	1300	.9	20	--	--	--	--	--	--
441126098391101	79-08-30	--	--	--	--	--	--	--	--	--	--
440833098401901	79-08-28	--	--	--	--	--	--	--	--	--	--
441004098543702	79-06-20	--	--	--	--	--	--	--	--	--	--
440842098531801	79-08-30	--	--	--	--	--	--	--	--	--	--
					LAWRENCE						
442720103380601	79-08-27	--	4600	<1.0	40	<30	<.4	8.6	<.4	7.5	<.4
443451103403801	79-08-28	--	1400	<1.0	60	13	.7	14	.5	13	.6
					MCPHERSON						
455527098490301	79-07-29	--	9600	1.0	40	99	<.4	42	<.4	39	<.4
455148098525302	79-07-29	--	7600	1.0	30	<45	<.4	41	<.4	37	<.4
					MARSHALL						
454027097432201	79-07-31	--	370	4.0	20	<41	.8	<18	.4	<17	.4

< Less than.

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

STATION NUMBER	LOCAL IDENTIFIER	DATE OF SAMPLE	TIME	GEOLOGIC UNIT	GROSS ALPHA, DISSOLVED (PCI/L AS U-NAT) (01515)	GROSS ALPHA, SUSP. TOTAL (PCI/L AS U-NAT) (01516)	RADIUM 226, DISSOLVED, RADON METHOD (PCI/L) (09511)	URANIUM DISSOLVED, EXTRACTION (UG/L) (80020)	CARBON, ORGANIC DISSOLVED (MG/L AS C) (00681)
HAAKON									
440325101141301	1N24E 9CADD	79-08-06	1630	221SNDC	<56	1.8	3.9	.11	2.3
440312101081101	1N25E 8DCCC	79-08-23	--	217FLRV	<39	<.3	1.0	.13	--
441400101203501	3N23E10BCAA	79-08-21	--	217NCSL	54	<.3	1.9	.06	17
441158101172201	3N23E24DD	79-08-23	--	217FLRV	140	.6	12	.14	.3
441146101211801	3N23E28ABBC	79-08-17	--	217FLRV	120	8.8	6.4	<.01	.2
441033101173301	3N23E36DAB	79-08-23	--	217FLRV	56	.7	6.2	.07	32
441324101132401	3N24E15BBD	79-08-22	--	217FLRV	<45	<.3	1.6	.04	9.9
441209101141501	3N24E21CAA	79-08-23	--	217FLRV	<35	<.3	1.7	.02	39
441030101112201	3N24E35ADC	79-08-23	--	217FLRV	<37	<.3	.98	.06	13
441910100203001	4N23E15BD	79-08-21	--	217FLRV	<23	<.3	.75	.06	1.2
441608101183001	4N23E35AA	79-08-22	--	217NCSL	<75	<.3	2.1	.06	40
443040101123001	6N24E 3BAAA	79-08-07	0930	310MNLS	<41	<.3	1.6	.09	1.6
443133101212001	7N23E33BCBC	79-08-15	--	217FLRV	<33	<.3	.63	<.01	5.9
HAND									
441653099153301	109N70W 4BABD	79-07-24	1135	310MNLS	<33	<.3	3.5	.02	.0
443401098422601	113N66W25DADA2	79-07-27	1515	217INKR	<7.5	.5	2.8	.03	1.7
445236099173801	116N70W 7ADA	79-07-28	1000	221SNDC	<33	<.3	3.2	.03	2.8
HANSON									
434537097472301	104N58W33DDDD	79-08-29	0945	--	--	--	--	--	--
HUGHES									
434555098051201	104N61W36DDAA	79-07-26	0800	211DKOT	<24	<.3	.39	.03	1.0
442134100202601	110N79W 4AAC	79-07-25	0800	331MDSN	150	<.3	19	.04	3.3
JACKSON									
435534101283701	1S22E28DAAA	79-08-13	--	217INKR	<30	1.5	2.1	.07	22
435320101125401	2S24E11BDAC	79-08-23	--	217INKR	<82	.8	1.6	.06	--
435155101142001	2S24E15CCDC	79-08-16	--	217DKOT	<22	<.3	.53	.14	6.0
435110101123001	2S24E23DADD	79-08-14	--	211DKOT	<27	<.3	.58	<.01	.5
435030101140001	2S24E27CADA	79-08-14	--	211DKOT	<26	<.5	.71	.11	.7
435207101104001	2S25E18CDAD	79-08-15	--	211DKOT	<27	<.3	.50	.08	.8
JERAULD									
435757098243401	106N63W28BBBD	79-08-29	1400	211NBRR	--	--	--	--	--
435947098310601	106N64W 9DCCD	79-06-19	1445	211DKOT	--	--	--	--	--
435743098293701	106N64W27ADAB	79-08-29	1205	211CDLL	--	--	--	--	--
435835098401501	106N65W19AADC	79-08-27	1300	112CRLK	--	--	--	--	--
435658098365001	106N65W34AABA	79-09-05	1330	211DKOT	<25	.7	.38	.04	--
435824098442401	106N66W22BDDA	79-09-04	1145	112CRLK	--	--	--	--	--
440022098503101	106N67W11BBAA	79-09-04	1400	112CRCK	--	--	--	--	--
435700098504001	106N67W26CCDB	79-06-20	1440	211DKOT	--	--	--	--	--
440321098245601	107N63W20DDBD	79-08-28	1240	211NBRR	<18	.5	.95	.11	--
440128098253601	107N63W32CDCC	79-06-20	1115	211DKOT	--	--	--	--	--
440634098400301	107N65W 5BABA	79-07-25	1630	211DKOT	<25	<.3	.47	.05	1.2
440437098342701	107N65W13ADBD	79-06-19	1200	112PLSC	--	--	--	--	--
440258098400601	107N65W29BCBA	79-08-27	1500	112CRLK	--	--	--	--	--
441052098221101	108N63W11BBCD	79-08-22	1045	211DKOT	<27	<.3	.63	<.01	--
440933098245401	108N63W17DADC	79-06-14	1510	112WRRN	--	--	--	--	--
440904098252001	108N63W20ABCC	79-06-14	1420	112WRRN	--	--	--	--	--
441126098391101	108N65W 5ADDD	79-08-30	1030	211DKOT	--	--	--	--	--
440833098401901	108N65W19DADD	79-08-28	1510	112PLSC	--	--	--	--	--
441004098543702	108N67W 7DDDB2	79-06-20	1130	--	--	--	--	--	--
440842098531801	108N67W20ADDD	79-08-30	1300	112CRCK	--	--	--	--	--
LAWRENCE									
442720103380601	6N 2E28ABCC	79-08-27	--	221SNDC	<20	<.3	.31	1.8	9.1
443451103403801	7N 4E 7CDCA	79-08-28	--	217FLRV	8.8	.5	1.3	1.4	5.5
MCPHERSON									
455527098490301	128N66W 8ABBC	79-07-29	1000	361RDRV	67	<.3	11	.23	1.3
455148098525302	128N67W35BBCD2	79-07-29	1430	310MNLS	<31	<.3	6.1	.15	.0
MARSHALL									
454027097432201	125N57W 6BABA	79-07-31	1600	211DKOT	<28	.5	.10	.03	1.1

< Less than.

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

STATION NUMBER	DATE OF SAMPLE	CYANIDE TOTAL (MG/L AS CN) (00720)	OXYGEN, DIS- SOLVED (MG/L) 00300)	SULFIDE TOTAL (MG/L AS S) (00745)
HAAKON				
440325101141301	79-08-06	--	--	.3
440312101081101	79-08-23	--	--	.5
441400101203501	79-08-21	--	--	2.1
441158101172201	79-08-23	--	--	.4
441146101211801	79-08-17	--	.3	.6
441033101173301	79-08-23	--	--	.6
441324101132401	79-08-22	--	--	.4
441209101141501	79-08-23	--	--	.5
441030101112201	79-08-23	--	--	.5
441910100203001	79-08-21	--	--	5.1
441608101183001	79-08-22	--	--	.5
443040101123001	79-08-07	--	--	7.9
443133101212001	79-08-15	--	.0	4.3
HAND				
441653099153301	79-07-24	--	--	.0
443401098422601	79-07-27	--	--	.2
445236099173801	79-07-28	--	--	.1
HANSON				
434537097472301	79-08-29	--	--	--
HUGHES				
434555098051201	79-07-26	--	--	.2
442134100202601	79-07-25	--	--	.9
JACKSON				
435534101283701	79-08-13	--	.0	.3
435320101125401	79-08-23	--	--	.4
435155101142001	79-08-16	--	.6	.1
435110101123001	79-08-14	--	--	.2
435030101140001	79-08-14	--	.0	.0
435207101104001	79-08-15	--	.5	.0
JERAULD				
435757098243401	79-08-29	--	--	--
435947098310601	79-06-19	--	--	--
435743098293701	79-08-29	--	--	--
435835098401501	79-08-27	--	--	--
435658098365001	79-09-05	--	--	--
435824098442401	79-09-04	--	--	--
440022098503101	79-09-04	--	--	--
435700098504001	79-06-20	--	--	--
440321098245601	79-08-28	--	--	--
440128098253601	79-06-20	--	--	--
440634098400301	79-07-25	--	--	.3
440437098342701	79-06-19	--	--	--
440258098400601	79-08-27	--	--	--
441052098221101	79-08-22	--	--	--
440933098245401	79-06-14	--	--	--
440904098252001	79-06-14	--	--	--
441126098391101	79-08-30	--	--	--
440833098401901	79-08-28	--	--	--
441004098543702	79-06-20	--	--	--
440842098531801	79-08-30	--	--	--
LAWRENCE				
442720103380601	79-08-27	--	.4	.3
443451103403801	79-08-28	--	.2	.2
MCPHERSON				
455527098490301	79-07-29	--	--	.0
455148098525302	79-07-29	--	--	.7
MARSHALL				
454027097432201	79-07-31	--	--	.8

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

STATION NUMBER	LOCAL IDENTIFIER	DATE OF SAMPLE	TIME	GEOLOGIC UNIT	DEPTH OF WELL, TOTAL (FEET) (72008)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	PH (UNITS) (00400)	TEMPERATURE (DEG C) (00010)	HARDNESS (MG/L AS CACO3) (00900)
			MEADE						
440949103140401	2N 7E 2ACAD	79-08-01	--	217LKOT	1000	645	7.3	16.7	180
442047103011801	5N 9E34CCBD	79-07-17	--	217LKOT	2370	961	6.7	12.3	3
			MINER						
435226097402501	105N 57W 28ADAB	79-08-23	1300	211CDLL	--	1300	7.6	11.5	--
435250097301201	105N56W24CDBA	79-08-15	1400	--	--	2000	6.7	9.8	610
435607097450001	105N58W 2AAAD	79-08-16	1330	--	--	2080	7.2	11.6	760
435333097461601	105N58W22AAAB	79-08-16	1410	--	--	2650	7.3	11.0	880
435142097503901	105N58W31BACC	79-07-26	1400	211DKOT	630	2700	7.3	13.0	1100
435709097244101	106N 55W 27DDD	79-08-17	1305	--	--	2050	7.2	9.0	1000
440029097392601	106N 57W 10ABAA	79-08-24	0845	211NBRR	--	2325	7.0	12.0	--
440033097312801	106N56W 2CDCC	79-08-15	1445	--	--	2770	6.9	12.5	650
440346097315301	107N 56W 22ADAA	79-08-24	1015	211DKOT	--	3195	8.4	16.0	--
440628097254201	107N55W 38BCD	79-08-17	1050	--	--	2350	7.7	11.5	110
440307097305901	107N56W26ABAA	79-08-17	1145	--	--	3800	7.4	11.0	730
440317097460301	107N58W23CCCA	79-08-16	1200	--	--	2300	7.9	11.0	120
440734097330601	108N 56W 28DDDD	79-08-24	1100	211CDLL	--	2600	8.2	13.0	--
440721097292401	108N55W31BBCC	79-08-17	1000	--	--	3160	7.3	14.0	1200
440830097330601	108N56W21DDAD	79-08-17	0935	--	--	4000	8.6	16.0	62
440648097421901	108N57W32CDBA	79-08-16	1055	--	--	3750	8.0	10.4	68
			MINNEHAHA						
434508096372701	103N48W 5CACA	78-10-11	1510	400SOUX	--	935	7.5	9.0	490
		79-04-18	1530	400SOUX	--	960	7.3	10.0	520
434414096380301	103N48W 7DAC	78-10-10	1430	112PLSC	--	1000	7.2	14.0	520
		79-04-19	0930	112PLSC	--	910	7.4	3.5	470
434432096364201	103N48W 8ADA	78-10-10	1545	112PLSC	--	1490	6.8	10.5	800
		79-04-19	1245	112PLSC	--	1360	7.0	7.0	720
		79-08-02	0930	112PLSC	--	1490	7.0	--	--
434435096374802	103N48W 8BCCB2	78-10-11	1415	400SOUX	--	1525	7.2	10.0	890
434429096361801	103N48W 9BDCB	78-10-11	1100	400SOUX	--	745	7.4	10.0	380
		79-04-19	1400	400SOUX	--	760	7.4	--	390
		79-08-02	1230	400SOUX	--	789	7.3	10.0	--
434400096362201	103N48W 9CCDA	78-10-10	1500	400SOUX	--	2300	7.1	10.0	1100
434400096362201	103N48W 9CCDA	79-04-18	1645	400SOUX	--	3450	7.1	10.0	1800
		79-08-02	1145	400SOUX	--	3150	7.1	9.0	--
434332096371501	103N48W17ACCC	78-10-11	1230	400SOUX	--	890	7.4	10.0	470
		79-04-19	1500	400SOUX	--	880	7.3	9.5	490
434339096381101	103N48W18ACA	78-10-11	1330	400SOUX	--	1880	7.5	9.0	1100
		79-04-19	1415	400SOUX	--	1880	7.6	--	1100
			MOODY						
440441096403601	107N49W14ABBC	79-08-01	1900	211CRLL	470	2390	7.3	9.0	1000
			PENNINGTON						
440330103080001	1N 8E10DADD	79-08-02	--	217LKOT	1930	723	7.1	26.4	310
435944102145801	1N15E36ADCC	79-07-19	--	217FLRV	3209	1061	8.6	39.0	6
440800103131301	2N 7E13BDAA	79-08-01	--	217NCSL	665	740	7.1	14.2	280
434755102145201	3S16E 7DBBB	79-08-22	--	217INKR	2885	860	7.8	39.5	46
441520102144401	4N16E31CCDC	79-08-20	--	217FLRV	3474	1640	8.8	31.5	9
442300102035301	5N17E21AACC	79-08-21	--	217FLRV	3079	3810	7.7	44.0	20
			ROBERTS						
454535096495801	127N49W29BBBC	79-08-01	1200	211DKOT	530	3725	8.2	11.0	270
			SANBORN						
440825098145601	108N62W26BBBC RONNIE UTT	79-08-26	1100	211NBRR	--	2500	--	11.0	100
			TRIPP						
432457099325201	99N74W 1CDCD	79-08-05	0930	211DKOT	1500	1820	7.6	16.5	860
433830099452501	102N75W14BCB	79-09-05	--.	217NCSL	1315	2180	7.2	36.8	1200
			UNION						
424113096411301	91N49W19BCCA	79-08-02	1400	211DKOT	325	1825	7.1	12.5	770

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

STATION NUMBER	DATE OF SAMPLE	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)
MEADE											
440949103140401	79-08-01	4	47	15	52	47	1.7	9.2	216	0	180
442047103011801	79-07-17	0	1.2	.1	220	99	52	1.0	341	14	300
MINER											
435226097402501	79-08-23	--	--	--	--	--	--	15	--	--	--
435250097301201	79-08-15	310	170	45	310	60	5.5	15	370	0	300
435607097450001	79-08-16	500	220	51	190	35	3.0	16	320	0	260
435333097461601	79-08-16	740	260	56	450	59	6.6	21	170	0	140
435142097503901	79-07-26	930	300	76	240	32	3.2	24	--	--	144
435709097244101	79-08-17	750	250	95	97	24	1.3	23	320	0	260
440029097392601	79-08-24	--	--	--	--	--	--	21	--	--	--
440033097312801	79-08-15	430	180	47	360	62	6.2	18	270	0	220
440346097315301	79-08-24	--	--	--	--	--	--	11	--	--	--
440628097254201	79-08-17	0	28	9.1	450	89	19	13	330	0	270
440307097305901	79-08-17	370	200	55	600	63	9.7	25	430	0	350
440317097460301	79-08-16	0	33	10	450	88	18	8.7	360	0	300
440734097330601	79-08-24	--	--	--	--	--	--	7.0	--	--	--
440721097292401	79-08-17	870	330	88	230	29	2.9	18	380	0	310
440830097330601	79-08-17	0	9.7	9.1	750	95	42	13	450	11	390
440648097421901	79-08-16	0	19	5.0	800	96	42	8.2	620	0	510
MINNEHAHA											
434508096372701	78-10-11	180	140	33	16	7	.3	3.9	370	0	300
	79-04-18	220	150	35	17	7	.3	3.9	360	0	300
434414096380301	78-10-10	13	100	66	25	9	.5	2.3	620	0	510
	79-04-19	22	84	62	29	12	.6	3.1	540	0	440
434432096364201	78-10-10	160	190	80	20	5	.3	10	790	0	650
	79-04-19	73	170	72	24	7	.4	23	790	0	650
	79-08-02	--	--	--	--	--	--	--	--	--	--
434435096374802	78-10-11	600	240	71	23	5	.3	4.4	360	0	300
434429096361801	78-10-11	73	93	35	20	10	.4	3.0	370	0	300
	79-04-19	66	100	35	22	11	.5	3.0	400	0	330
	79-08-02	--	--	--	--	--	--	--	--	--	--
434400096362201	78-10-10	720	220	140	45	8	.6	4.9	490	0	400
434400096362201	79-04-18	1400	340	230	96	10	1.0	7.7	460	0	380
	79-08-02	--	--	--	--	--	--	--	--	--	--
434332096371501	78-10-11	150	140	30	17	7	.3	4.2	390	0	320
	79-04-19	180	150	29	19	8	.4	4.1	380	0	310
434339096381101	78-10-11	800	300	90	32	6	.4	6.0	390	0	320
	79-04-19	820	300	90	35	6	.5	5.6	370	0	300
MOODY											
440441096403601	79-08-01	640	270	81	190	37	2.6	19	--	--	366
PENNINGTON											
440330103080001	79-08-02	77	75	29	32	18	.8	7.2	282	0	230
435944102145801	79-07-19	0	2.0	.3	270	98	47	3.1	390	11	340
440800103131301	79-08-01	98	74	23	30	18	.8	8.2	224	0	180
434755102145201	79-08-22	0	15	2.0	190	90	12	7.3	311	0	260
441520102144401	79-08-20	0	2.9	.3	400	99	60	3.4	341	19	310
442300102035301	79-08-21	0	7.0	.4	1000	99	100	5.2	1932	0	1580
ROBERTS											
454535096495801	79-08-01	0	11	59	850	98	23	9.8	--	--	361
SANBORN											
440825098145601	79-08-26	0	25	9.0	470	93	21	8.1	750	--	620
TRIPP											
432457099325201	79-08-05	810	250	55	82	22	1.2	20	--	--	52
433830099452501	79-09-05	1000	350	65	120	23	1.5	20	168	0	140
UNION											
424113096411301	79-08-02	600	240	41	97	25	1.5	21	--	--	173

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)	IODIDE, DIS-SOLVED (MG/L AS I) (71865)	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, NITRATE TOTAL (MG/L AS N) (00620)
					MEADE						
440949103140401	79-08-01	180	2.4	.5	.0	.01	8.3	413	423	.56	.04
442047103011801	79-07-17	160	4.7	2.6	.1	.01	8.3	553	581	.75	.01
					MINER						
435226097402501	79-08-23	--	--	--	--	--	--	--	--	--	--
435250097301201	79-08-15	990	4.3	1.2	--	.16	24	1780	1750	2.42	--
435607097450001	79-08-16	890	40	1.8	--	--	8.6	--	1600	1.88	--
435333097461601	79-08-16	180	130	2.2	--	--	7.8	--	1190	1.62	--
435142097503901	79-07-26	1200	130	2.4	.5	.02	8.0	2180	2080	2.96	--
435709097244101	79-08-17	910	25	1.5	--	--	11	--	1580	2.15	--
440029097392601	79-08-24	--	--	--	--	--	--	--	--	--	--
440033097312801	79-08-15	1100	11	2.9	--	.08	9.4	2010	1870	2.73	--
440346097315301	79-08-24	--	--	--	--	--	--	--	--	--	--
440628097254201	79-08-17	770	24	.6	--	--	8.5	--	1470	2.00	--
440307097305901	79-08-17	1600	33	.4	--	--	28	--	2770	3.77	--
440317097460301	79-08-16	740	91	1.1	--	--	11	--	1530	2.42	--
440734097330601	79-08-24	--	--	--	--	--	--	--	--	--	--
440721097292401	79-08-17	1300	13	.4	--	--	28	--	2200	2.99	--
440830097330601	79-08-17	1000	200	4.7	--	--	8.6	--	2230	3.03	--
440648097421901	79-08-16	660	480	1.6	--	--	7.5	--	2290	3.11	--
					MINNEHAHA						
434508096372701	78-10-11	230	1.7	.7	.0	.01	24	--	633	.86	.07
	79-04-18	230	1.4	.8	.0	.01	27	--	643	.87	.06
434414096380301	78-10-10	56	18	.9	.3	.01	25	--	600	.82	.07
	79-04-19	61	17	.9	.1	.00	18	--	543	.74	.34
434432096364201	78-10-10	63	56	.5	.7	.04	27	--	908	1.23	16
	79-04-19	56	62	.4	.5	.04	24	--	835	1.14	2.7
	79-08-02	--	67	--	--	--	--	--	--	--	5.5
434435096374802	78-10-11	650	3.4	.6	.1	.00	16	--	1190	1.62	.04
434429096361801	78-10-11	66	4.8	.7	.2	.00	27	--	456	.62	4.8
	79-04-19	81	3.9	.8	.1	.00	30	--	487	.66	3.3
	79-08-02	--	3.7	--	--	--	--	--	--	--	3.3
434400096362201	78-10-10	120	130	.5	.9	.02	23	--	1060	1.44	37
434400096362201	79-04-18	360	360	.5	2.1	.04	23	--	2530	3.44	210
	79-08-02	--	290	--	--	--	--	--	--	--	260
434332096371501	78-10-11	200	1.3	.4	.1	.00	22	--	609	.83	.21
	79-04-19	200	1.2	.4	.0	.00	26	--	619	.84	.03
434339096381101	78-10-11	840	7.7	.4	.2	.02	22	--	1490	2.03	.00
	79-04-19	830	7.1	.4	.1	.02	22	--	1480	2.01	.01
					MOODY						
440441096403601	79-08-01	1100	11	.6	.4	.15	10	1960	1920	2.67	--
					PENNINGTON						
440330103080001	79-08-02	210	7.8	.8	.0	.01	12	480	515	.65	.01
435944102145801	79-07-19	240	8.1	2.3	.1	.01	17	700	747	.95	.02
440800103131301	79-08-01	160	2.2	.3	.0	.00	9.3	506	426	.69	.02
434755102145201	79-08-22	240	5.6	1.8	.1	.01	30	611	647	.83	.00
441520102144401	79-08-20	550	14	2.2	.1	--	24	1060	1190	1.44	.00
442300102035301	79-08-21	32	430	2.7	2.2	.40	23	2520	2460	3.43	.00
					ROBERTS						
454535096495801	79-08-01	1100	300	6.4	1.4	.07	7.0	2470	2580	3.36	--
					SANBORN						
440825098145601	79-08-26	130	350	1.2	2.1	.25	12	1350	1380	1.84	.00
					TRIPP						
432457099325201	79-08-05	740	120	2.3	.8	.01	5.9	1400	1320	1.90	--
433830099452501	79-09-05	960	200	2.9	1.2	.01	19	1900	<1840	2.58	.00
					UNION						
424113096411301	79-08-02	720	46	2.2	.3	.02	11	1330	1290	1.81	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

STATION NUMBER	DATE OF SAMPLE	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)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOSPHORUS, TOTAL (MG/L AS P) (00665)	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P) (00671)	ALUMINUM, DISSOLVED (UG/L AS AL) (01106)	ARSENIC DISSOLVED (UG/L AS AS) (01000)
MEADE											
440949103140401	79-08-01	.00	.04	--	.01	.19	--	.01	--	0	0
442047103011801	79-07-17	.00	.01	--	.39	.36	--	.04	--	0	0
MINER											
435226097402501	79-08-23	--	--	--	--	--	--	--	--	--	--
435250097301201	79-08-15	--	--	.04	--	--	--	--	--	0	1
435607097450001	79-08-16	--	--	4.3	--	--	--	.01	.00	--	--
435333097461601	79-08-16	--	--	.03	--	--	--	.01	.00	--	--
435142097503901	79-07-26	--	--	--	--	2.6	--	.01	--	0	0
435709097244101	79-08-17	--	--	.01	--	--	--	.01	.00	--	--
440029097392601	79-08-24	--	--	--	--	--	--	--	--	--	--
440033097312801	79-08-15	--	--	.04	--	--	--	--	--	0	0
440346097315301	79-08-24	--	--	--	--	--	--	--	--	--	--
440628097254201	79-08-17	--	--	.61	--	--	--	.02	.03	--	--
440307097305901	79-08-17	--	--	2.8	--	--	--	.01	.01	--	--
440317097460301	79-08-16	--	--	.14	--	--	--	.04	.01	--	--
440734097330601	79-08-24	--	--	--	--	--	--	--	--	--	--
440721097292401	79-08-17	--	--	.82	--	--	--	.07	.06	--	--
440830097330601	79-08-17	--	--	.05	--	--	--	.05	.04	--	--
440648097421901	79-08-16	--	--	.03	--	--	--	.06	.03	--	--
MINNEHAHA											
434508096372701	78-10-11	.01	.08	.10	.02	--	.01	--	--	0	--
	79-04-18	.02	.08	.11	.04	--	.01	--	--	0	--
434414096380301	78-10-10	.01	.08	.11	.00	--	.01	--	--	0	--
	79-04-19	.02	.36	.28	.09	--	.04	--	--	0	--
434432096364201	78-10-10	.04	16	16	.01	--	.01	--	--	10	--
	79-04-19	.35	3.0	3.0	.63	--	.23	--	--	0	--
	79-08-02	.02	5.5	--	.07	.05	.03	--	--	--	--
434435096374802	78-10-11	.01	.05	.07	.01	--	.00	--	--	0	--
434429096361801	78-10-11	.01	4.8	5.3	.00	--	.03	--	--	0	--
	79-04-19	.02	3.3	3.1	.02	--	.01	--	--	0	--
	79-08-02	.02	3.3	--	.01	.57	.03	--	--	--	--
434400096362201	78-10-10	.02	37	30	.00	--	.02	--	--	0	--
434400096362201	79-04-18	.04	210	200	.05	--	.03	--	--	0	--
	79-08-02	.06	260	--	.04	.84	.04	--	--	--	--
434332096371501	78-10-11	.02	.23	.11	.28	--	.00	--	--	40	--
	79-04-19	.02	.05	.12	.32	--	.00	--	--	0	--
434339096381101	78-10-11	.02	.02	.04	.44	--	.06	--	--	20	--
	79-04-19	.02	.03	.03	.62	--	.03	--	--	0	--
MOODY											
440441096403601	79-08-01	--	--	--	--	1.1	--	.01	--	0	0
PENNINGTON											
440330103080001	79-08-02	.00	.01	--	.00	.03	--	.00	--	0	1
435944102145801	79-07-19	.00	.02	--	.51	.49	--	.01	--	10	0
440800103131301	79-08-01	.00	.02	--	.01	.00	--	.01	--	0	0
434755102145201	79-08-22	.00	.00	--	.95	.50	--	.00	--	20	0
441520102144401	79-08-20	.00	.00	--	.95	.86	--	.17	--	40	0
442300102035301	79-08-21	.00	.00	--	1.9	1.8	--	.02	--	30	1
ROBERTS											
454535096495801	79-08-01	--	--	--	--	2.5	--	.04	--	10	0
SANBORN											
440825098145601	79-08-26	.02	.00	--	2.3	2.2	--	.03	--	0	53
TRIPP											
432457099325201	79-08-05	--	--	--	--	.45	--	.01	--	10	1
433830099452501	79-09-05	.00	.00	--	.38	.41	--	.01	--	0	1
UNION											
424113096411301	79-08-02	--	--	--	--	.37	--	.01	--	0	4

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

STATION NUMBER	DATE OF SAMPLE	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)
				MEADE			
440949103140401	79-08-01	20	100	1	10	--	0
442047103011801	79-07-17	8	190	<1	0	--	0
				MINER			
435226097402501	79-08-23	--	--	--	--	--	--
435250097301201	79-08-15	10	1000	<1	0	<3	2
435607097450001	79-08-16	--	760	--	--	--	--
435333097461601	79-08-16	--	830	--	--	--	--
435142097503901	79-07-26	0	500	0	10	--	0
435709097244101	79-08-17	--	1200	--	--	--	--
440029097392601	79-08-24	--	--	--	--	--	--
440033097312801	79-08-15	10	1600	<1	0	<3	1
440346097315301	79-08-24	--	--	--	--	--	--
440628097254201	79-08-17	--	2700	--	--	--	--
440307097305901	79-08-17	--	2100	--	--	--	--
440317097460301	79-08-16	--	3500	--	--	--	--
440734097330601	79-08-24	--	--	--	--	--	--
440721097292401	79-08-17	--	810	--	--	--	--
440830097330601	79-08-17	--	3900	--	--	--	--
440648097421901	79-08-16	--	5800	--	--	--	--
				MINNEHAHA			
434508096372701	78-10-11	--	210	--	0	--	--
	79-04-18	--	200	--	0	--	--
434414096380301	78-10-10	--	90	--	0	--	--
	79-04-19	--	70	--	0	--	--
434432096364201	78-10-10	--	90	--	0	--	--
	79-04-19	--	100	--	0	--	--
	79-08-02	--	--	--	--	--	--
434435096374802	78-10-11	--	330	--	0	--	--
434429096361801	78-10-11	--	110	--	0	--	--
	79-04-19	--	120	--	0	--	--
	79-08-02	--	--	--	--	--	--
434400096362201	78-10-10	--	70	--	0	--	--
434400096362201	79-04-18	--	80	--	10	--	--
	79-08-02	--	--	--	--	--	--
434332096371501	78-10-11	--	320	--	0	--	--
	79-04-19	--	320	--	0	--	--
434339096381101	78-10-11	--	500	--	0	--	--
	79-04-19	--	520	--	0	--	--
				MOODY			
440441096403601	79-08-01	0	1100	0	0	--	0
				PENNINGTON			
440330103080001	79-08-02	20	50	<1	10	--	2
435944102145801	79-07-19	10	150	<1	0	--	1
440800103131301	79-08-01	9	80	1	0	--	0
434755102145201	79-08-22	40	110	<1	10	--	4
441520102144401	79-08-20	20	370	<1	0	--	11
442300102035301	79-08-21	200	2500	0	10	--	13
				ROBERTS			
454535096495801	79-08-01	0	14000	0	0	--	0
				SANBORN			
440825098145601	79-08-26	0	4100	0	0	--	0
				TRIPP			
432457099325201	79-08-05	20	280	<1	0	--	0
433830099452501	79-09-05	0	210	0	10	--	7
				UNION			
424113096411301	79-08-02	20	350	<1	0	--	0

< Less than.

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

STATION NUMBER	DATE OF SAMPLE	IRON, TOTAL RECOVERABLE (UG/L AS FE) (01045)	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 TOTAL RECOVERABLE (UG/L AS HG) (71900)	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)
					MEADE						
440949103140401	79-08-01	--	70	0	70	60	--	.0	<10	--	2
442047103011801	79-07-17	--	260	0	40	4	--	.0	<10	--	0
					MINER						
435226097402501	79-08-23	--	--	--	--	--	--	--	--	--	--
435250097301201	79-08-15	--	550	0	170	190	.4	--	<10	2	0
435607097450001	79-08-16	--	2600	--	--	140	--	--	--	--	--
435333097461601	79-08-16	--	1300	--	--	140	--	--	--	--	--
435142097503901	79-07-26	1500	1400	0	140	130	--	.3	0	--	0
435709097244101	79-08-17	--	6700	--	--	160	--	--	--	--	--
440029097392601	79-08-24	--	--	--	--	--	--	--	--	--	--
440033097312801	79-08-15	--	1100	0	140	70	.6	--	<10	0	0
440346097315301	79-08-24	--	--	--	--	--	--	--	--	--	--
440628097254201	79-08-17	--	80	--	--	20	--	--	--	--	--
440307097305901	79-08-17	--	360	--	--	720	--	--	--	--	--
440317097460301	79-08-16	--	120	--	--	30	--	--	--	--	--
440734097330601	79-08-24	--	--	--	--	--	--	--	--	--	--
440721097292401	79-08-17	--	90	--	--	1200	--	--	--	--	--
440830097330601	79-08-17	--	20	--	--	20	--	--	--	--	--
440648097421901	79-08-16	--	130	--	--	10	--	--	--	--	--
					MINNEHAHA						
434508096372701	78-10-11	--	50	--	--	--	.0	--	--	--	--
	79-04-18	--	10	--	--	--	.1	--	--	--	--
434414096380301	78-10-10	--	50	--	--	--	.0	--	--	--	--
	79-04-19	--	10	--	--	--	.1	--	--	--	--
434432096364201	78-10-10	--	190	--	--	--	.0	--	--	--	--
	79-04-19	--	40	--	--	--	.1	--	--	--	--
	79-08-02	--	150	--	--	70	--	--	--	--	--
434435096374802	78-10-11	--	30	--	--	--	.0	--	--	--	--
434429096361801	78-10-11	--	270	--	--	--	.0	--	--	--	--
	79-04-19	--	50	--	--	--	.1	--	--	--	--
	79-08-02	--	100	--	--	20	--	--	--	--	--
434400096362201	78-10-10	--	70	--	--	--	.0	--	--	--	--
434400096362201	79-04-18	--	40	--	--	--	.1	--	--	--	--
	79-08-02	--	70	--	--	20	--	--	--	--	--
434332096371501	78-10-11	--	380	--	--	--	.0	--	--	--	--
	79-04-19	--	270	--	--	--	.1	--	--	--	--
434339096381101	78-10-11	--	2400	--	--	--	.0	--	--	--	--
	79-04-19	--	3000	--	--	--	.1	--	--	--	--
					MOODY						
440441096403601	79-08-01	2700	12000	0	130	570	--	.0	0	--	0
					PENNINGTON						
440330103080001	79-08-02	--	0	0	60	3	--	1.9	<10	--	0
435944102145801	79-07-19	--	40	0	70	10	--	.0	10	--	0
440800103131301	79-08-01	--	5700	0	50	120	--	.4	<10	--	2
434755102145201	79-08-22	--	820	0	100	40	--	.0	6	--	0
441520102144401	79-08-20	--	30	0	140	5	--	.2	7	--	0
442300102035301	79-08-21	--	110	0	270	10	--	.1	0	--	0
					ROBERTS						
454535096495801	79-08-01	1300	150	0	100	20	--	.0	10	--	0
					SANBORN						
440825098145601	79-08-26	--	250	0	100	10	--	.0	410	--	0
					TRIPP						
432457099325201	79-08-05	2000	350	0	140	80	--	.0	<10	--	0
433830099452501	79-09-05	--	6200	0	120	140	--	.1	3	--	0
					UNION						
424113096411301	79-08-02	2200	2100	0	210	110	--	.0	<10	--	0

< Less than.

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

STATION NUMBER	DATE OF SAMPLE	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)	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)	GROSS BETA, DIS-SOLVED (PCI/L AS SR/YT-90) (80050)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90) (80060)
					MEADE						
440949103140401	79-08-01	--	1700	2.0	170	48	<.4	20	.5	19	.6
442047103011801	79-07-17	--	30	<1.0	<3	<9.1	<.4	<3.5	<.4	<3.3	<.4
					MINER						
435226097402501	79-08-23	--	--	--	--	<12	<.4	15	<.4	14	<.4
435250097301201	79-08-15	0	1800	2.0	<3	--	--	--	--	--	--
435607097450001	79-08-16	--	--	--	--	--	--	--	--	--	--
435333097461601	79-08-16	--	--	--	--	--	--	--	--	--	--
435142097503901	79-07-26	--	7700	1.0	10	<33	<.4	23	<.4	21	<.4
435709097244101	79-08-17	--	--	--	--	--	--	--	--	--	--
440029097392601	79-08-24	--	--	--	--	<40	<.4	21	<.4	19	<.4
440033097312801	79-08-15	0	5600	1.0	<3	--	--	--	--	--	--
440346097315301	79-08-24	--	--	--	--	<42	1.0	<15	1.3	<14	1.3
440628097254201	79-08-17	--	--	--	--	--	--	--	--	--	--
440307097305901	79-08-17	--	--	--	--	--	--	--	--	--	--
440317097460301	79-08-16	--	--	--	--	--	--	--	--	--	--
440734097330601	79-08-24	--	--	--	--	<29	<.4	<12	<.4	<11	<.4
440721097292401	79-08-17	--	--	--	--	--	--	--	--	--	--
440830097330601	79-08-17	--	--	--	--	--	--	--	--	--	--
440648097421901	79-08-16	--	--	--	--	--	--	--	--	--	--
					MINNEHAHA						
434508096372701	78-10-11	0	--	--	100	--	--	--	--	--	--
	79-04-18	0	--	--	150	--	--	--	--	--	--
434414096380301	78-10-10	0	--	--	160	--	--	--	--	--	--
	79-04-19	0	--	--	750	--	--	--	--	--	--
434432096364201	78-10-10	0	--	--	10	--	--	--	--	--	--
	79-04-19	0	--	--	10	--	--	--	--	--	--
	79-08-02	0	--	--	30	--	--	--	--	--	--
434435096374802	78-10-11	0	--	--	10	--	--	--	--	--	--
434429096361801	78-10-11	0	--	--	50	--	--	--	--	--	--
	79-04-19	0	--	--	20	--	--	--	--	--	--
	79-08-02	0	--	--	50	--	--	--	--	--	--
434400096362201	78-10-10	0	--	--	140	--	--	--	--	--	--
434400096362201	79-04-18	0	--	--	80	--	--	--	--	--	--
	79-08-02	0	--	--	170	--	--	--	--	--	--
434332096371501	78-10-11	0	--	--	250	--	--	--	--	--	--
	79-04-19	0	--	--	550	--	--	--	--	--	--
434339096381101	78-10-11	0	--	--	220	--	--	--	--	--	--
	79-04-19	0	--	--	230	--	--	--	--	--	--
					MOODY						
440441096403601	79-08-01	--	2700	4.0	120	<40	.6	22	.6	20	.6
					PENNINGTON						
440330103080001	79-08-02	--	1800	<1.0	20	220	3.3	43	2.7	39	2.9
435944102145801	79-07-19	--	70	<1.0	<3	<10	<.4	<4.4	<.4	<4.2	<.4
440800103131301	79-08-01	--	1900	3.0	770	<6.5	<.4	9.6	<.4	9.0	.4
434755102145201	79-08-22	--	550	<1.0	40	47	1.9	18	1.1	17	1.1
441520102144401	79-08-20	--	120	<1.0	10	<25	<.4	10	<.4	9.0	<.4
442300102035301	79-08-21	--	280	4.0	20	<49	<.4	<17	<.4	<16	<.4
					ROBERTS						
454535096495801	79-08-01	--	500	4.0	20	<42	<.4	<19	<.4	<18	<.4
					SANBORN						
440825098145601	79-08-26	--	430	13	70	83	<.4	22	.6	20	.7
					TRIPP						
432457099325201	79-08-05	--	6600	1.0	40	<27	<.4	24	<.4	21	<.4
433830099452501	79-09-05	--	7800	--	40	<36	2.0	29	1.3	26	1.3
					UNION						
424113096411301	79-08-02	--	4900	1.0	<3	37	<.4	27	<.4	25	<.4

< Less than.

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

STATION NUMBER	LOCAL IDENTIFIER	DATE OF SAMPLE	TIME	GEOLOGIC UNIT	GROSS ALPHA, DISSOLVED (PCI/L AS U-NAT) (01515)	GROSS ALPHA, SUSP. TOTAL (PCI/L AS U-NAT) (01516)	RADIUM 226, DISSOLVED, RADON METHOD (PCI/L) (09511)	URANIUM DISSOLVED, EXTRACTION (UG/L) (80020)	CARBON, ORGANIC DISSOLVED (MG/L AS C) (00681)
				MEADE					
440949103140401	2N 7E 2ACAD	79-08-01	--	217LKOT	33	<.3	5.3	5.6	1.1
442047103011801	5N 9E34CCBD	79-07-17	--	217LKOT	<6.2	<.3	.23	.07	5.7
				MINER					
435226097402501	105N 57W 28ADAB	79-08-23	1300	211CDLL	<8.2	<.3	.12	<.01	--
435250097301201	105N56W24CDBA	79-08-15	1400	--	--	--	--	--	--
435607097450001	105N58W 2AAAD	79-08-16	1330	--	--	--	--	--	--
435333097461601	105N58W22AAAB	79-08-16	1410	--	--	--	--	--	--
435142097503901	105N58W31BACC	79-07-26	1400	211DKOT	<22	<.3	.17	.03	1.3
435709097244101	106N 55W 27DDD	79-08-17	1305	--	--	--	--	--	--
440029097392601	106N 57W 10ABAA	79-08-24	0845	211NBRR	<27	<.3	1.9	.09	--
440033097312801	106N56W 2CDCC	79-08-15	1445	--	--	--	--	--	--
440346097315301	107N 56W 22ADAA	79-08-24	1015	211DKOT	<29	.7	.10	.04	--
440628097254201	107N55W 3BBCD	79-08-17	1050	--	--	--	--	--	--
440307097305901	107N56W26ABAA	79-08-17	1145	--	--	--	--	--	--
440317097460301	107N58W23CCCA	79-08-16	1200	--	--	--	--	--	--
440734097330601	108N 56W 28DDDD	79-08-24	1100	211CDLL	<20	<.3	.16	.05	--
440721097292401	108N55W31BBCC	79-08-17	1000	--	--	--	--	--	--
440830097330601	108N56W21DDAD	79-08-17	0935	--	--	--	--	--	--
440648097421901	108N57W32CDBA	79-08-16	1055	--	--	--	--	--	--
				MINNEHAHA					
434508096372701	103N48W 5CACA	78-10-11	1510	400SOUX	--	--	--	--	1.0
		79-04-18	1530	400SOUX	--	--	--	--	1.2
434414096380301	103N48W 7DAC	78-10-10	1430	112PLSC	--	--	--	--	3.9
		79-04-19	0930	112PLSC	--	--	--	--	5.1
434432096364201	103N48W 8ADA	78-10-10	1545	112PLSC	--	--	--	--	6.6
		79-04-19	1245	112PLSC	--	--	--	--	17
		79-08-02	0930	112PLSC	--	--	--	--	8.9
434435096374802	103N48W 8BCCB2	78-10-11	1415	400SOUX	--	--	--	--	.5
434429096361801	103N48W 9BDCB	78-10-11	1100	400SOUX	--	--	--	--	.6
		79-04-19	1400	400SOUX	--	--	--	--	1.0
		79-08-02	1230	400SOUX	--	--	--	--	1.3
434400096362201	103N48W 9CCDA	78-10-10	1500	400SOUX	--	--	--	--	6.9
434400096362201	103N48W 9CCDA	79-04-18	1645	400SOUX	--	--	--	--	14
		79-08-02	1145	400SOUX	--	--	--	--	12
434332096371501	103N48W17ACCC	78-10-11	1230	400SOUX	--	--	--	--	1.1
		79-04-19	1500	400SOUX	--	--	--	--	1.8
434339096381101	103N48W18ACA	78-10-11	1330	400SOUX	--	--	--	--	1.8
		79-04-19	1415	400SOUX	--	--	--	--	2.3
				MOODY					
440441096403601	107N49W14ABBC	79-08-01	1900	211CRLL	<27	.4	.10	.04	5.0
				PENNINGTON					
440330103080001	1N 8E10DADD	79-08-02	--	217LKOT	150	2.2	24	7.1	.5
435944102145801	1N15E36ADCC	79-07-19	--	217FLRV	<6.8	<.3	.26	.05	3.6
440800103131301	2N 7E13BDAA	79-08-01	--	217NCSL	<4.4	<.3	.33	1.3	2.2
434755102145201	3S16E 7DBBB	79-08-22	--	217INKR	32	1.3	3.8	.06	--
441520102144401	4N16E31CCDC	79-08-20	--	217FLRV	<17	<.3	.24	.04	--
442300102035301	5N17E21AACC	79-08-21	--	217FLRV	<33	<.3	.86	.16	--
				ROBERTS					
454535096495801	127N49W29BBBC	79-08-01	1200	211DKOT	<29	<.3	.07	.03	5.8
				SANBORN					
440825098145601	108N62W26BBBC RONNIE UTT	79-08-26	1100	211NBRR	56	<.3	2.9	28	3.6
				TRIPP					
432457099325201	99N74W 1CDCD	79-08-05	0930	211DKOT	<18	<.3	.83	.15	.0
433830099452501	102N75W14BCB	79-09-05	--	217NCSL	<24	1.4	1.4	<.01	--
				UNION					
424113096411301	91N49W19BCCA	79-08-02	1400	211DKOT	25	<.3	1.6	.07	1.6

< Less than.

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

STATION NUMBER	DATE OF SAMPLE	CYANIDE TOTAL (MG/L AS CN) (00720)	OXYGEN, DIS- SOLVED (MG/L) (00300)	SULFIDE TOTAL (MG/L AS S) (00745)
		MEADE	MEADE	
440949103140401	79-08-01	--	--	.1
442047103011801	79-07-17	--	.0	.3
		MINER	MINER	
435226097402501	79-08-23	--	--	--
435250097301201	79-08-15	--	--	--
435607097450001	79-08-16	--	--	--
435333097461601	79-08-16	--	--	--
435142097503901	79-07-26	--	--	.2
435709097244101	79-08-17	--	--	--
440029097392601	79-08-24	--	--	--
440033097312801	79-08-15	--	--	--
440346097315301	79-08-24	--	--	--
440628097254201	79-08-17	--	--	--
440307097305901	79-08-17	--	--	--
440317097460301	79-08-16	--	--	--
440734097330601	79-08-24	--	--	--
440721097292401	79-08-17	--	--	--
440830097330601	79-08-17	--	--	--
440648097421901	79-08-16	--	--	--
		MINNEHAH	MINNEHAHA	
434508096372701	78-10-11	.00	--	--
	79-04-18	.00	--	--
434414096380301	78-10-10	.00	--	--
	79-04-19	.00	--	--
434432096364201	78-10-10	.00	--	--
	79-04-19	.00	--	--
	79-08-02	.00	--	--
434435096374802	78-10-11	.00	--	--
434429096361801	78-10-11	.00	--	--
	79-04-19	.00	--	--
	79-08-02	.00	--	--
434400096362201	78-10-10	.03	--	--
434400096362201	79-04-18	.07	--	--
	79-08-02	.05	--	--
434332096371501	78-10-11	.00	--	--
	79-04-19	.00	--	--
434339096381101	78-10-11	.00	--	--
	79-04-19	.00	--	--
		MOODY	MOODY	
440441096403601	79-08-01	--	--	.0
		PENNINGTI	PENNINGTON	
440330103080001	79-08-02	--	--	.1
435944102145801	79-07-19	--	.2	.2
440800103131301	79-08-01	--	--	.2
434755102145201	79-08-22	--	--	.6
441520102144401	79-08-20	--	--	.5
442300102035301	79-08-21	--	--	.6
		ROBERTS	ROBERTS	
454535096495801	79-08-01	--	--	.3
		SANBORN	SANBORN	
440825098145601	79-08-26	--	.6	.1
		TRIPP	TRIPP	
432457099325201	79-08-05	--	--	.0
433830099452501	79-09-05	--	--	.4
		UNION	UNION	
424113096411301	79-08-02	--	--	.1

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

STATION NUMBER	LOCAL IDENTIFIER	DATE OF SAMPLE	TIME	GEOLOGIC UNIT	DEPTH OF WELL, TOTAL (FEET) (72008)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	PH (UNITS) (00400)	TEMPERATURE (DEG C) (00010)	HARDNESS (MG/L AS CACO3) (00900)
425440097212501	93N55W 4BBC	79-07-03	1200	YANKTON 211DKOT	407	2090	7.1	15.0	990

STATION NUMBER	DATE OF SAMPLE	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)
425440097212501	79-07-03	850	300	57	67	16	.9	21	--	--	142

STATION NUMBER	DATE OF SAMPLE	SULFATE DISSOLVED (MG/L AS SO4) (00945)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	BROMIDE DISSOLVED (MG/L AS BR) (71870)	IODIDE, DISSOLVED (MG/L AS I) (71865)	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, NITRATE TOTAL (MG/L AS N) (00620)
425440097212501	79-07-03	910	82	2.8	.5	.01	8.0	1640	1540	2.23	--

STATION NUMBER	DATE OF SAMPLE	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)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOSPHORUS, TOTAL (MG/L AS P) (00665)	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P) (00671)	ALUMINUM, DISSOLVED (UG/L AS AL) (01106)	ARSENIC DISSOLVED (UG/L AS AS) (01000)
425440097212501	79-07-03	--	--	--	--	.53	--	.01	--	0	0

STATION NUMBER	DATE OF SAMPLE	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)	COUNTY	SITE
425440097212501	79-07-03	20	690	<1	0	--	0	135	GW

STATION NUMBER	DATE OF SAMPLE	IRON, TOTAL RECOVERABLE (UG/L AS FE) (01045)	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 TOTAL RECOVERABLE (UG/L AS HG) (71900)	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)
425440097212501	79-07-03	17000	1800	0	190	180	--	.0	<10	--	0

< Less than.

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

STATION NUMBER	DATE OF SAMPLE	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)	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)	GROSS BETA, DIS-SOLVED (PCI/L AS SR/YT-90) (80050)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90) (80060)
					YANKTON						
425440097212501	79-07-03	--	6700	1.0	<3	<38	1.7	28	1.0	25	1.0

STATION NUMBER	LOCAL IDENT-I-FIER	DATE OF SAMPLE	TIME	GEO-LOGIC UNIT	GROSS ALPHA, DIS-SOLVED (PCI/L AS U-NAT) (01515)	GROSS ALPHA, SUSP. TOTAL (PCI/L AS U-NAT) (01516)	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)
			YANKTON						
425440097212501	93N55W 4BBC	79-07-03	1200	211DKOT	<26	1.2	1.0	.06	.1

STATION NUMBER	DATE OF SAMPLE	CYANIDE TOTAL (MG/L AS CN) (00720)	OXYGEN, DIS-SOLVED (MG/L) (00300)	SULFIDE TOTAL (MG/L AS S) (00745)
		YANKTON	YANKTON	
425440097212501	79-07-03	--	--	.1

< Less than.

☆U.S. GOVERNMENT PRINTING OFFICE: 1980-668-762/204 REG.#6

October 1, 1978

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

POSTAGE AND FEES PAID
U.S. DEPARTMENT OF THE INTERIO
INT 413

U.S. MAIL

U.S. DEPARTMENT OF THE INTERIOR
Geological Survey
Room 312 Federal Building, 200 4th Street SW
Huron, SD 57350

OFFICIAL BUSINESS
PENALTY FOR PRIVATE USE $300

SPECIAL 4TH CLASS BOOK RATE